



ANALYTICAL REPORT

PREPARED FOR

Attn: Brant Landers
AECOM Technical Services Inc.
1001 Bishop Street
Ste 1600
Honolulu HI 96813

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JOB DESCRIPTION

PFAS, AFFF Concentrate

JOB NUMBER

320-95204-1

Eurofins Sacramento

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northern California, LLC Project Manager.

Authorization



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Definitions/Glossary

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*5+	Isotope dilution analyte is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Enclosed are the Non-Target Analysis (NTA) results for the single sample submitted to Eurofins in Job 320-95204 with client ID 'ADIT6-PIPE-AFFFN01-22DEC'. Analysis was requested via LC-QTOF MS (liquid chromatography quadrupole time-of-flight mass spectrometry) for identification of potential PFAS analytes not determined in the routine targeted analyses that was also applied to this sample. The NTA determination inherently incurs an increased level of uncertainty and certified reference standards are not used to confirm reported results

Sample Preparation

1 mL of sample ADIT6-PIPE-AFFFN01-22DEC was diluted 1000X in water due to the potential for high concentrations of both target and non-target analytes, as well as the empirically observed characteristics of the sample (foaming). A 150 uL aliquot of the aqueous dilution was adjusted to a final volume of 300 uL with methanol and the resulting extract was analyzed by LC-QTOF MS.

Analysis

The sample extract was introduced into the LC system utilizing an optimized gradient to enhance the identification of early eluting compounds. The gradient ramps slowly over a period of 20 minutes where the compounds are separated on a 3x50mm Phenomenex Gemini C18 analytical column using 20mM ammonium acetate in water and methanol as mobile phases. The SCIEX X500r quadrupole time-of-flight mass spectrometer (QTOF MS) was set to run in sequential Electrospray Ionization (ESI) techniques in both positive and negative polarities utilizing the same gradient and mobile phases.

Results

Data were processed with SCIEX MarkerView deconvolution software. This software extracts the raw chromatograms across a defined mass range from 0-1500 amu and examines peaks of interest utilizing exact mass and MS/MS fragmentation. The peaks are compared to comprehensive fluorinated compound libraries where the software algorithm assigns possible matches to each peak, or feature. The observed features were then evaluated by a Eurofins analyst to confirm ample signal-to-noise as well as confirming the compound fit to the library match. The reported results include only peaks with a signal-to-noise greater than 10:1 and an absolute intensity greater than 1000 counts.

One limitation the software cannot account for are multiple isomers of the same compound. While the skeletal backbone and molecular formula will be the same, the match might represent a structural isomer of the identified compound.

These data are all qualitative in nature. While identified compounds do have different areas or intensities, this should not be interpreted as more or less abundant in the sample. Vastly different ionization efficiencies of NTA compounds can occur which impedes speculation about relative concentrations.

These results are summarized in the tables below.

Receipt

The sample was received on 12/13/2022 9:20 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 9.4° C.

Receipt Exceptions

The following sample was received at the laboratory outside the required temperature criteria: ADIT6-PIPE-AFFFN01-22DEC (320-95204-1). Sample was received out of temperature at 9.4C. No cooling agent.

LCMS

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for the following sample: ADIT6-PIPE-AFFFN01-22DEC (320-95204-1). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The low level continuing calibration verification (CCVL) associated with batch 320-642483 recovered above the upper control limit for 10:2 FTCA. The CCVL is used as a sensitivity check. The bracketing CCVs were within control limits. The sample associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported.

Method 537 (modified): The transition mass ratio was outside the established ratio limit for 10:2 FTCA associated to this data set. This is indicated by the "R" flag in the raw data. The bracketing continuing calibration verifications (CCVs) are within control limits for this analyte. Therefore there is no impact on the data. (CCVL 320-642483/2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Client Sample ID: ADIT6-PIPE-AFFFN01-22DEC

Lab Sample ID: 320-95204-1

Sample Analysis Not Complete.

This Detection Summary does not include radiochemical test results.

Summary 2022.12.27_SWNEG_B_007.wiff2 - 320-95204-A-1-A

#	Analyte Peak Name	Mass Error Confidence	Fragment Mass Error Confidence	RT Confidence	Isotope Confidence	Library Confidence	Formula Confidence	Ion Ratio Confidence	Sample Name
308	6:2 fluorotelomer thia propanoamido dimethyl ethyl sulfonate	✓	●	●	▲	✓	●	●	320-95204-A-1-A

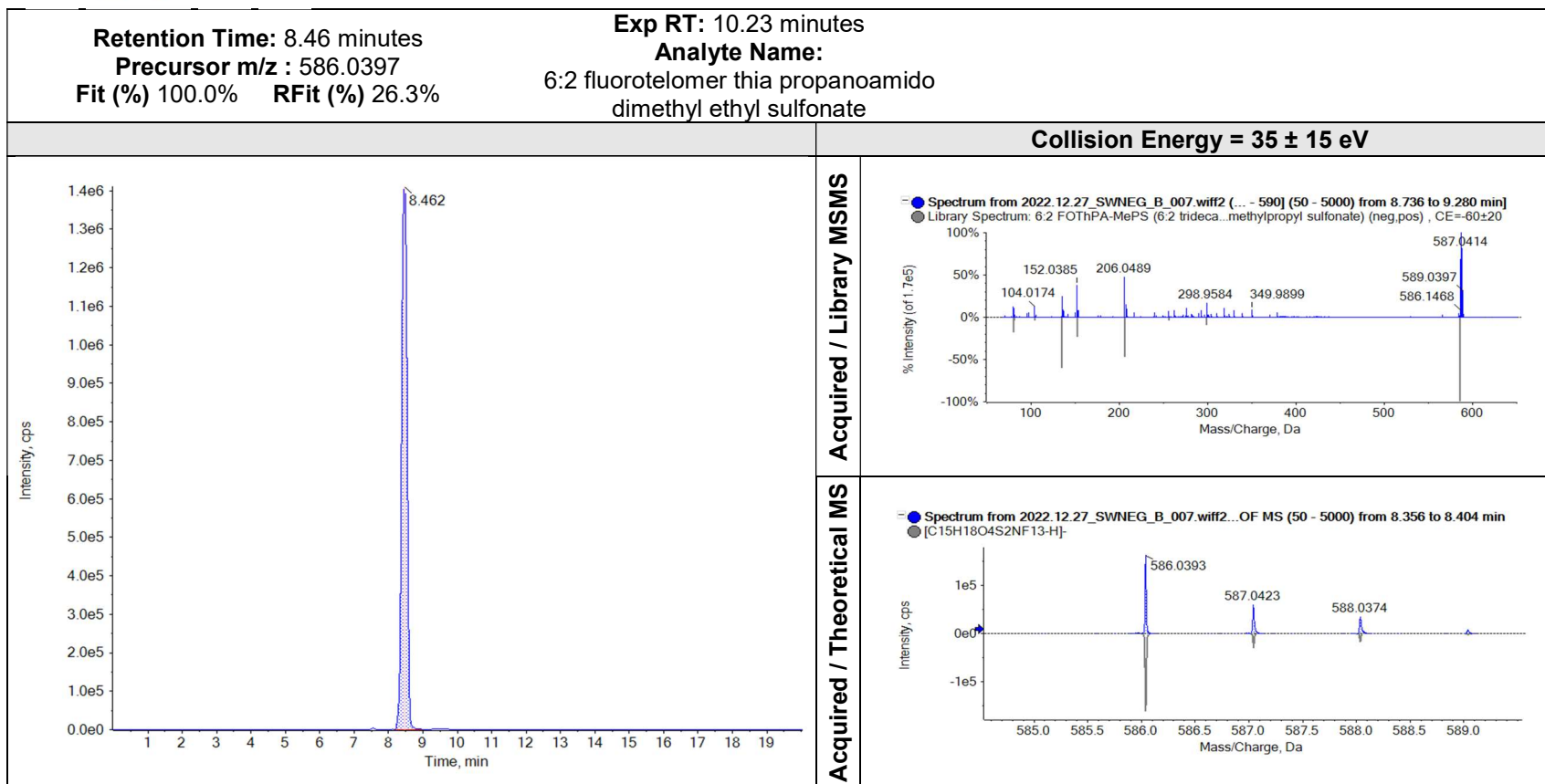
#	Analyte Peak Name	Sample Type	Component Name	Area	Calculated Concentration	Formula	Precursor Mass	Found At Mass	Mass Error (ppm)	Library Hit
308	6:2 fluorotelomer thia propanoamido dimethyl ethyl sulfonate	Unknown	6:2 fluorotelomer thia propanoamido dimethyl ethyl sulfonate	1.569e+07	<2 points	C15H18O4S2NF13	586.040	586.0393	-0.7	6:2 FOTHPA-MePS (6:2 tridecafluorooctyl thiapropanoamido-methylpropyl sulfonate) (neg,pos) Smart Confirmation

#	Analyte Peak Name	Library Score	Isotope Ratio Difference
308	6:2 fluorotelomer thia propanoamido dimethyl ethyl sulfonate	100.0	18.5

End of Table

6:2 fluorotelomer thia propanoamido dimethyl ethyl sulfonate

(Mass/FragMass/RT/Isotope/Library/Formula/Ion Ratio) ✓



Summary 2022.12.27_SWPOS_A_007.wiff2 - 320-95204-A-1-A

#	Analyte Peak Name	Mass Error Confidence	Fragment Mass Error Confidence	RT Confidence	Isotope Confidence	Library Confidence	Formula Confidence	Ion Ratio Confidence	Sample Name
76	6:2 fluorotelomer thia propanoamido dimethyl ethyl sulfonate	✓	●	●	▲	✓	●	●	320-95204-A-1-A
506	6:2 fluorotelomer thia hydroxy propyl trimethyl ammonium	✓	●	●	▲	✓	●	●	320-95204-A-1-A

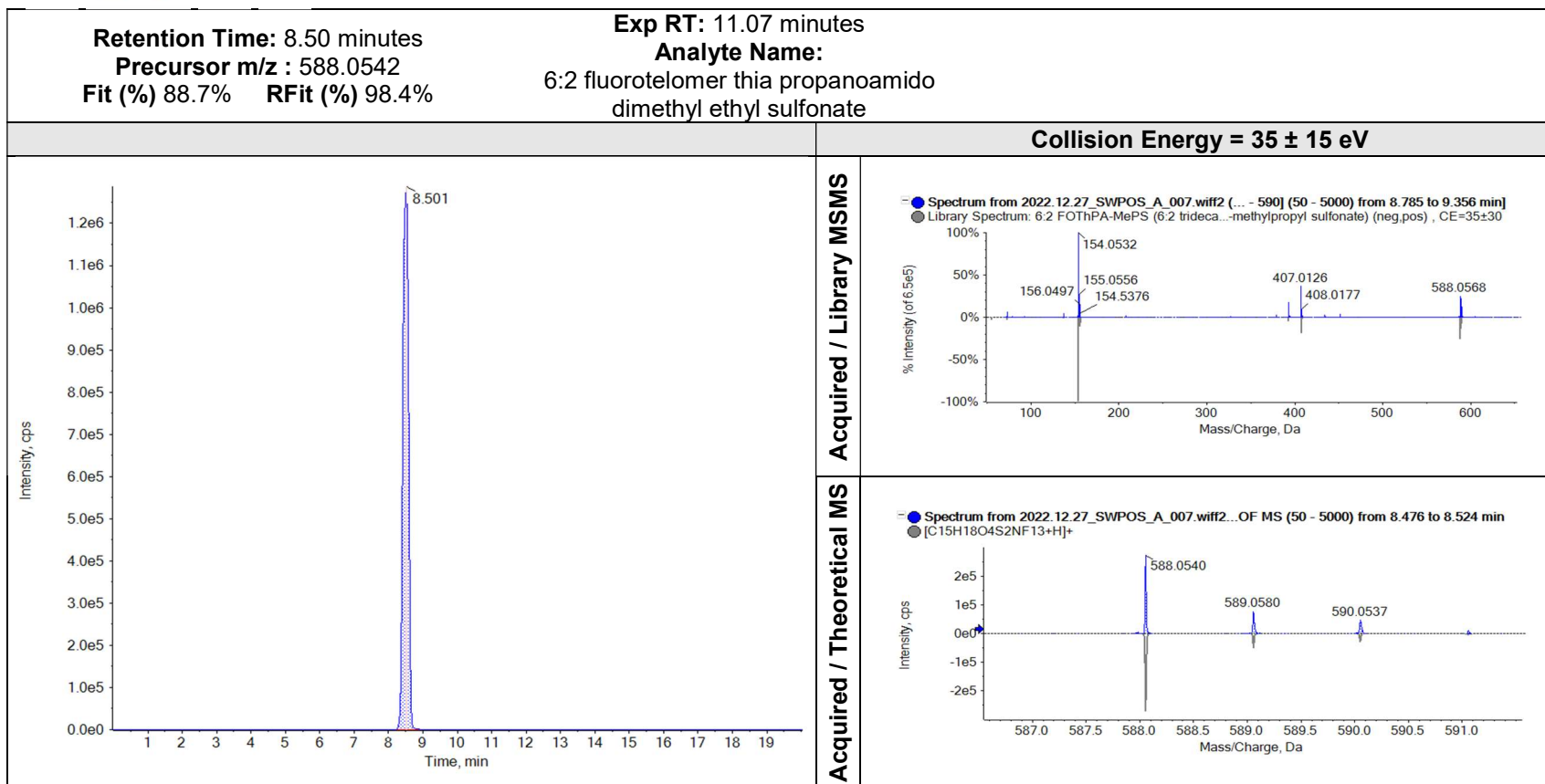
#	Analyte Peak Name	Sample Type	Component Name	Area	Calculated Concentration	Formula	Precursor Mass	Found At Mass	Mass Error (ppm)	Library Hit
76	6:2 fluorotelomer thia propanoamido dimethyl ethyl sulfonate	Unknown	6:2 fluorotelomer thia propanoamido dimethyl ethyl sulfonate	1.484e+07	<2 points	C15H18O4S2NF13	588.054	588.0540	-0.4	6:2 FOTHPA-MePS (6:2 tridecafluorooctyl thiapropanoamido-methylpropyl sulfonate) (neg,pos) Smart Confirmation
506	6:2 fluorotelomer thia hydroxy propyl trimethyl ammonium	Unknown	6:2 fluorotelomer thia hydroxy propyl trimethyl ammonium	7.664e+06	<2 points	C14H18OSNF13	496.097	496.0973	-0.3	6:2 fluorotelomer thioether 2-propanol trimethyl quaternary amine (pos) Smart Confirmation

#	Analyte Peak Name	Library Score	Isotope Ratio Difference
76	6:2 fluorotelomer thia propanoamido dimethyl ethyl sulfonate	88.7	10.2
506	6:2 fluorotelomer thia hydroxy propyl trimethyl ammonium	100.0	9.6

End of Table

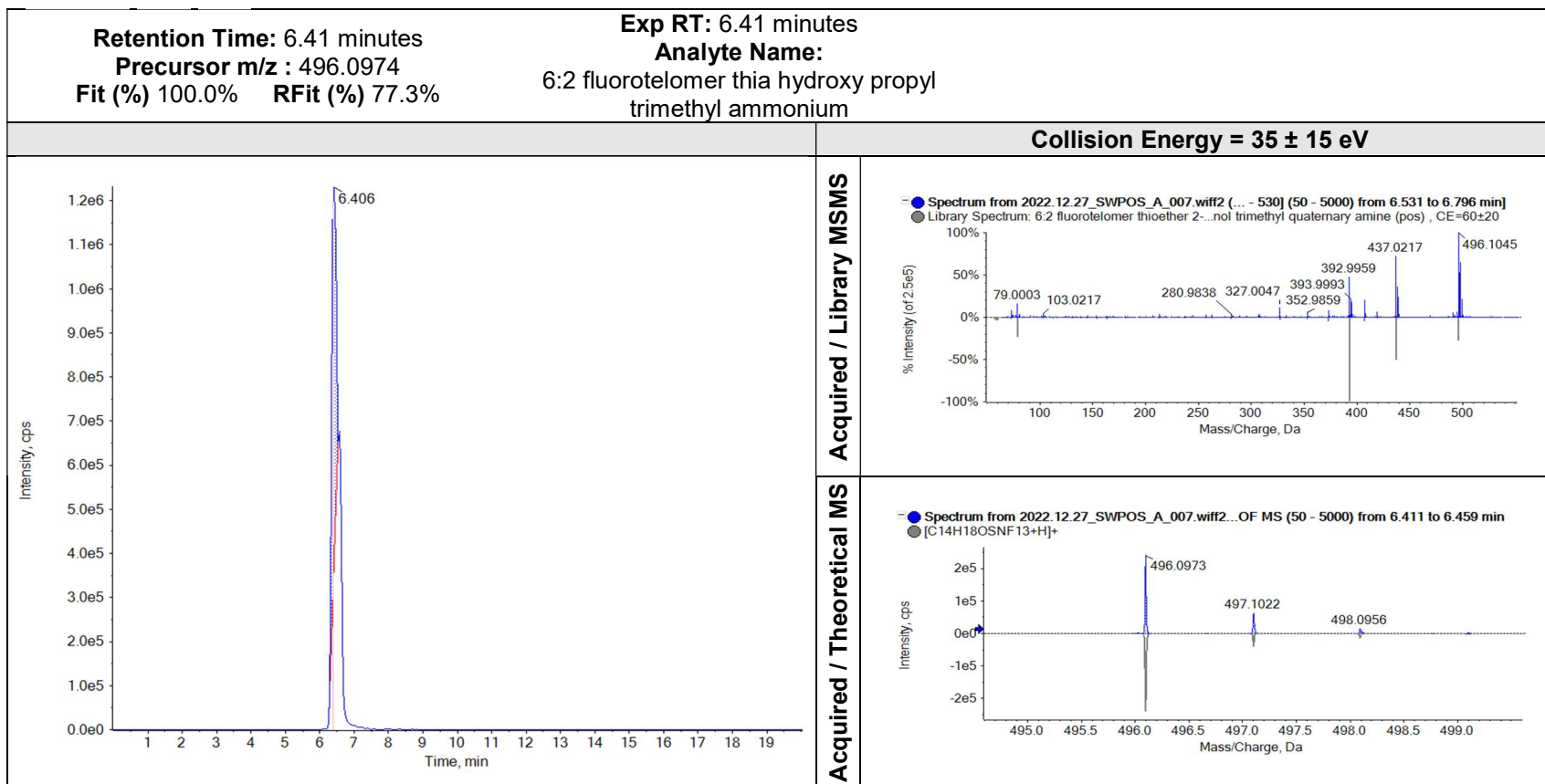
6:2 fluorotelomer thia propanoamido dimethyl ethyl sulfonate

(Mass/FragMass/RT/Isotope/Library/Formula/Ion Ratio) ✓



6:2 fluorotelomer thia hydroxy propyl trimethyl ammonium

(Mass/FragMass/RT/Isotope/Library/Formula/Ion Ratio)



Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Client Sample ID: ADIT6-PIPE-AFFFN01-22DEC

Lab Sample ID: 320-95204-1

Date Collected: 12/08/22 14:00

Matrix: Water

Date Received: 12/13/22 09:20

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	880000		630000	300000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluoropentanoic acid (PFPeA)	110000	J	250000	61000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluorohexanoic acid (PFHxA)	1500000		250000	73000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluoroheptanoic acid (PFHpA)	ND		250000	31000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluorooctanoic acid (PFOA)	210000	J	250000	110000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluorononanoic acid (PFNA)	ND		250000	34000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluorodecanoic acid (PFDA)	ND		250000	39000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluoroundecanoic acid (PFUnA)	ND		250000	140000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluorododecanoic acid (PFDoA)	ND		250000	69000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluorotridecanoic acid (PFTrDA)	ND		250000	160000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluorotetradecanoic acid (PFTeA)	ND		250000	91000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		250000	110000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		250000	120000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluorobutanesulfonic acid (PFBS)	ND		250000	25000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluoropentanesulfonic acid (PFPeS)	ND		250000	38000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluorohexanesulfonic acid (PFHxS)	ND		250000	71000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		250000	24000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluorooctanesulfonic acid (PFOS)	ND		250000	68000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluorononanesulfonic acid (PFNS)	ND		250000	46000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluorodecanesulfonic acid (PFDS)	ND		250000	40000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluorododecanesulfonic acid (PFDoS)	ND		250000	120000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Perfluorooctanesulfonamide (FOSA)	ND		250000	120000	ng/L		12/19/22 18:17	12/22/22 16:24	1
NMeFOSAA	ND		630000	150000	ng/L		12/19/22 18:17	12/22/22 16:24	1
NEtFOSAA	ND		630000	160000	ng/L		12/19/22 18:17	12/22/22 16:24	1
4:2 FTS	73000	J	250000	30000	ng/L		12/19/22 18:17	12/22/22 16:24	1
6:2 FTS	29000000		630000	310000	ng/L		12/19/22 18:17	12/22/22 16:24	1
8:2 FTS	ND		250000	58000	ng/L		12/19/22 18:17	12/22/22 16:24	1
10:2 FTS	ND		250000	84000	ng/L		12/19/22 18:17	12/22/22 16:24	1
NEtFOSA	ND		250000	110000	ng/L		12/19/22 18:17	12/22/22 16:24	1
NMeFOSA	ND		250000	54000	ng/L		12/19/22 18:17	12/22/22 16:24	1
NMeFOSE	ND		500000	180000	ng/L		12/19/22 18:17	12/22/22 16:24	1
NEtFOSE	ND		250000	110000	ng/L		12/19/22 18:17	12/22/22 16:24	1
HFPO-DA (GenX)	ND		500000	190000	ng/L		12/19/22 18:17	12/22/22 16:24	1
9Cl-PF3ONS	ND		250000	30000	ng/L		12/19/22 18:17	12/22/22 16:24	1
11Cl-PF3OUdS	ND		250000	40000	ng/L		12/19/22 18:17	12/22/22 16:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		250000	50000	ng/L		12/19/22 18:17	12/22/22 16:24	1
3:3 FTCA	ND		250000	54000	ng/L		12/19/22 18:17	12/22/22 16:24	1
5:3 FTCA	ND		250000	41000	ng/L		12/19/22 18:17	12/22/22 16:24	1
7:3 FTCA	ND		250000	69000	ng/L		12/19/22 18:17	12/22/22 16:24	1
6:2 FTCA	ND		250000	120000	ng/L		12/19/22 18:17	12/22/22 16:24	1
8:2 FTCA	ND		250000	41000	ng/L		12/19/22 18:17	12/22/22 16:24	1
10:2 FTCA	ND		380000	170000	ng/L		12/19/22 18:17	12/22/22 16:24	1
PFECHS	ND		250000	56000	ng/L		12/19/22 18:17	12/22/22 16:24	1
PFPPrS	ND		250000	30000	ng/L		12/19/22 18:17	12/22/22 16:24	1
NFDHA	ND		250000	78000	ng/L		12/19/22 18:17	12/22/22 16:24	1

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Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Client Sample ID: ADIT6-PIPE-AFFFN01-22DEC

Lab Sample ID: 320-95204-1

Date Collected: 12/08/22 14:00

Matrix: Water

Date Received: 12/13/22 09:20

Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PFMBA	ND		250000	33000	ng/L		12/19/22 18:17	12/22/22 16:24	1
PFMPA	ND		250000	35000	ng/L		12/19/22 18:17	12/22/22 16:24	1
PFEESA	ND		250000	36000	ng/L		12/19/22 18:17	12/22/22 16:24	1
PFMOAA	ND		250000	51000	ng/L		12/19/22 18:17	12/22/22 16:24	1
PFPE-1	ND		250000	36000	ng/L		12/19/22 18:17	12/22/22 16:24	1
PFO4DA	ND		250000	50000	ng/L		12/19/22 18:17	12/22/22 16:24	1
PFO3OA	ND		250000	110000	ng/L		12/19/22 18:17	12/22/22 16:24	1
PFO2HxA	ND		250000	69000	ng/L		12/19/22 18:17	12/22/22 16:24	1
PFO5DA	ND		250000	130000	ng/L		12/19/22 18:17	12/22/22 16:24	1
PMPA	ND		250000	43000	ng/L		12/19/22 18:17	12/22/22 16:24	1
PEPA	ND		250000	60000	ng/L		12/19/22 18:17	12/22/22 16:24	1
PFPPrA	ND		250000	44000	ng/L		12/19/22 18:17	12/22/22 16:24	1
R-EVE	ND		250000	39000	ng/L		12/19/22 18:17	12/22/22 16:24	1
NVHOS	ND		380000	160000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Hydro-EVE Acid	ND		250000	30000	ng/L		12/19/22 18:17	12/22/22 16:24	1
R-PSDCA	ND		380000	180000	ng/L		12/19/22 18:17	12/22/22 16:24	1
Hydro-PS Acid	ND		250000	55000	ng/L		12/19/22 18:17	12/22/22 16:24	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	49		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C4 PFBA	114		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C5 PFPeA	118		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C2 PFHxA	107		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C4 PFHpA	112		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C4 PFOA	98		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C5 PFNA	93		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C2 PFDA	39		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C2 PFUnA	113		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C2 PFDoA	123		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C2 PFTeDA	105		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C2 PFHxDA	107		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C3 PFBS	107		25 - 150	12/19/22 18:17	12/22/22 16:24	1
18O2 PFHxS	106		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C4 PFOS	86		25 - 150	12/19/22 18:17	12/22/22 16:24	1
d3-NMeFOSAA	108		25 - 150	12/19/22 18:17	12/22/22 16:24	1
d5-NEtFOSAA	111		25 - 150	12/19/22 18:17	12/22/22 16:24	1
M2-4:2 FTS	107		25 - 150	12/19/22 18:17	12/22/22 16:24	1
M2-6:2 FTS	109		25 - 150	12/19/22 18:17	12/22/22 16:24	1
M2-8:2 FTS	37		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C2 10:2 FTS	297	*5+	25 - 150	12/19/22 18:17	12/22/22 16:24	1
d-N-MeFOSA-M	120		20 - 150	12/19/22 18:17	12/22/22 16:24	1
d-N-EtFOSA-M	109		20 - 150	12/19/22 18:17	12/22/22 16:24	1
d7-N-MeFOSE-M	125	*5+	10 - 120	12/19/22 18:17	12/22/22 16:24	1
d9-N-EtFOSE-M	120		10 - 120	12/19/22 18:17	12/22/22 16:24	1
13C3 HFPO-DA	115		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C-6:2 FTCA	114		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C-8:2 FTCA	117		25 - 150	12/19/22 18:17	12/22/22 16:24	1
13C-10:2 FTCA	153	*5+	25 - 150	12/19/22 18:17	12/22/22 16:24	1

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Default Detection Limits

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Prep: 3535

Analyte	RL	MDL	Units
10:2 FTCA	3.0	1.4	ng/L
10:2 FTS	2.0	0.67	ng/L
11Cl-PF3OUdS	2.0	0.32	ng/L
3:3 FTCA	2.0	0.43	ng/L
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.0	0.40	ng/L
4:2 FTS	2.0	0.24	ng/L
5:3 FTCA	2.0	0.33	ng/L
6:2 FTCA	2.0	0.96	ng/L
6:2 FTS	5.0	2.5	ng/L
7:3 FTCA	2.0	0.55	ng/L
8:2 FTCA	2.0	0.33	ng/L
8:2 FTS	2.0	0.46	ng/L
9Cl-PF3ONS	2.0	0.24	ng/L
HFPO-DA (GenX)	4.0	1.5	ng/L
Hydro-EVE Acid	2.0	0.24	ng/L
Hydro-PS Acid	2.0	0.44	ng/L
NEtFOSA	2.0	0.87	ng/L
NEtFOSAA	5.0	1.3	ng/L
NEtFOSE	2.0	0.85	ng/L
NFDHA	2.0	0.62	ng/L
NMeFOSA	2.0	0.43	ng/L
NMeFOSAA	5.0	1.2	ng/L
NMeFOSE	4.0	1.4	ng/L
NVHOS	3.0	1.3	ng/L
PEPA	2.0	0.48	ng/L
Perfluorobutanesulfonic acid (PFBS)	2.0	0.20	ng/L
Perfluorobutanoic acid (PFBA)	5.0	2.4	ng/L
Perfluorodecanesulfonic acid (PFDS)	2.0	0.32	ng/L
Perfluorodecanoic acid (PFDA)	2.0	0.31	ng/L
Perfluorododecanesulfonic acid (PFDoS)	2.0	0.97	ng/L
Perfluorododecanoic acid (PFDoA)	2.0	0.55	ng/L
Perfluoroheptanesulfonic acid (PFHpS)	2.0	0.19	ng/L
Perfluoroheptanoic acid (PFHpA)	2.0	0.25	ng/L
Perfluorohexanesulfonic acid (PFHxS)	2.0	0.57	ng/L
Perfluorohexanoic acid (PFHxA)	2.0	0.58	ng/L
Perfluoro-n-hexadecanoic acid (PFHxDA)	2.0	0.89	ng/L
Perfluoro-n-octadecanoic acid (PFODA)	2.0	0.94	ng/L
Perfluorononanesulfonic acid (PFNS)	2.0	0.37	ng/L
Perfluorononanoic acid (PFNA)	2.0	0.27	ng/L
Perfluorooctanesulfonamide (FOSA)	2.0	0.98	ng/L
Perfluorooctanesulfonic acid (PFOS)	2.0	0.54	ng/L
Perfluorooctanoic acid (PFOA)	2.0	0.85	ng/L
Perfluoropentanesulfonic acid (PFPeS)	2.0	0.30	ng/L
Perfluoropentanoic acid (PFPeA)	2.0	0.49	ng/L
Perfluorotetradecanoic acid (PFTeA)	2.0	0.73	ng/L
Perfluorotridecanoic acid (PFTTrDA)	2.0	1.3	ng/L
Perfluoroundecanoic acid (PFUnA)	2.0	1.1	ng/L
PFECHS	2.0	0.45	ng/L
PFEESA	2.0	0.29	ng/L
PFMBA	2.0	0.26	ng/L
PFMOAA	2.0	0.41	ng/L
PFMPA	2.0	0.28	ng/L

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Default Detection Limits

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Prep: 3535

Analyte	RL	MDL	Units
PFO2HxA	2.0	0.55	ng/L
PFO3OA	2.0	0.89	ng/L
PFO4DA	2.0	0.40	ng/L
PFO5DA	2.0	1.0	ng/L
PFPE-1	2.0	0.29	ng/L
PFPrA	2.0	0.35	ng/L
PFPrS	2.0	0.24	ng/L
PMPA	2.0	0.34	ng/L
R-EVE	2.0	0.31	ng/L
R-PSDCA	3.0	1.4	ng/L

Isotope Dilution Summary

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFOSA (25-150)	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)
320-95204-1	ADIT6-PIPE-AFFFN01-22DEC	49	114	118	107	112	98	93	39
LCS 320-641482/2-A	Lab Control Sample	113	109	112	105	103	102	113	105
LCSD 320-641482/3-A	Lab Control Sample Dup	104	101	103	99	101	101	110	98
MB 320-641482/1-A	Method Blank	108	106	113	104	107	104	110	104

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFUnA (25-150)	PFDaA (25-150)	PFTDA (25-150)	PFHxDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	d3NMFOS (25-150)
320-95204-1	ADIT6-PIPE-AFFFN01-22DEC	113	123	105	107	107	106	86	108
LCS 320-641482/2-A	Lab Control Sample	106	81	93	93	107	104	99	108
LCSD 320-641482/3-A	Lab Control Sample Dup	104	97	97	90	96	96	94	96
MB 320-641482/1-A	Method Blank	101	98	95	88	101	99	93	99

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	d5NEFOS (25-150)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)	M102FTS (25-150)	dMeFOSA (20-150)	dEtFOSA (20-150)	NMFM (10-120)
320-95204-1	ADIT6-PIPE-AFFFN01-22DEC	111	107	109	37	297 *5+	120	109	125 *5+
LCS 320-641482/2-A	Lab Control Sample	107	107	101	106	91	108	87	106
LCSD 320-641482/3-A	Lab Control Sample Dup	100	95	97	96	102	99	99	102
MB 320-641482/1-A	Method Blank	98	103	101	101	106	100	100	99

		Percent Isotope Dilution Recovery (Acceptance Limits)				
Lab Sample ID	Client Sample ID	NEFM (10-120)	HFPODA (25-150)	MFHEA (25-150)	MFOEA (25-150)	MFDEA (25-150)
320-95204-1	ADIT6-PIPE-AFFFN01-22DEC	120	115	114	117	153 *5+
LCS 320-641482/2-A	Lab Control Sample	100	111	108	112	107
LCSD 320-641482/3-A	Lab Control Sample Dup	110	107	102	115	106
MB 320-641482/1-A	Method Blank	112	111	105	123	106

Surrogate Legend

PFOSA = 13C8 FOSA
PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDaA = 13C2 PFDaA
PFTDA = 13C2 PFTeDA
PFHxDA = 13C2 PFHxDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
M102FTS = 13C2 10:2 FTS
dMeFOSA = d-N-MeFOSA-M

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Isotope Dilution Summary

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

dEtFOSA = d-N-EtFOSA-M
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
HFPODA = $^{13}\text{C}_3$ HFPO-DA
MFHEA = ^{13}C -6:2 FTCA
MFOEA = ^{13}C -8:2 FTCA
MFDEA = ^{13}C -10:2 FTCA

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-641482/1-A

Matrix: Water

Analysis Batch: 642490

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 641482

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1300	600	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluoropentanoic acid (PFPeA)	ND		500	120	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluorohexanoic acid (PFHxA)	ND		500	150	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluoroheptanoic acid (PFHpA)	ND		500	63	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluorooctanoic acid (PFOA)	ND		500	210	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluorononanoic acid (PFNA)	ND		500	68	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluorodecanoic acid (PFDA)	ND		500	78	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluoroundecanoic acid (PFUnA)	ND		500	280	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluorododecanoic acid (PFDoA)	ND		500	140	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluorotridecanoic acid (PFTrDA)	ND		500	330	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluorotetradecanoic acid (PFTeA)	ND		500	180	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		500	220	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		500	240	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluorobutanesulfonic acid (PFBS)	ND		500	50	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluoropentanesulfonic acid (PFPeS)	ND		500	75	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluorohexanesulfonic acid (PFHxS)	ND		500	140	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		500	48	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluorooctanesulfonic acid (PFOS)	ND		500	140	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluorononanesulfonic acid (PFNS)	ND		500	93	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluorodecanesulfonic acid (PFDS)	ND		500	80	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluorododecanesulfonic acid (PFDoS)	ND		500	240	ng/L		12/19/22 18:17	12/22/22 15:53	1
Perfluorooctanesulfonamide (FOSA)	ND		500	250	ng/L		12/19/22 18:17	12/22/22 15:53	1
NMeFOSAA	ND		1300	300	ng/L		12/19/22 18:17	12/22/22 15:53	1
NEtFOSAA	ND		1300	330	ng/L		12/19/22 18:17	12/22/22 15:53	1
4:2 FTS	ND		500	60	ng/L		12/19/22 18:17	12/22/22 15:53	1
6:2 FTS	ND		1300	630	ng/L		12/19/22 18:17	12/22/22 15:53	1
8:2 FTS	ND		500	120	ng/L		12/19/22 18:17	12/22/22 15:53	1
10:2 FTS	ND		500	170	ng/L		12/19/22 18:17	12/22/22 15:53	1
NEtFOSA	ND		500	220	ng/L		12/19/22 18:17	12/22/22 15:53	1
NMeFOSA	ND		500	110	ng/L		12/19/22 18:17	12/22/22 15:53	1
NMeFOSE	ND		1000	350	ng/L		12/19/22 18:17	12/22/22 15:53	1
NEtFOSE	ND		500	210	ng/L		12/19/22 18:17	12/22/22 15:53	1
HFPO-DA (GenX)	ND		1000	380	ng/L		12/19/22 18:17	12/22/22 15:53	1
9Cl-PF3ONS	ND		500	60	ng/L		12/19/22 18:17	12/22/22 15:53	1
11Cl-PF3OUdS	ND		500	80	ng/L		12/19/22 18:17	12/22/22 15:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		500	100	ng/L		12/19/22 18:17	12/22/22 15:53	1
3:3 FTCA	ND		500	110	ng/L		12/19/22 18:17	12/22/22 15:53	1
5:3 FTCA	ND		500	83	ng/L		12/19/22 18:17	12/22/22 15:53	1
7:3 FTCA	ND		500	140	ng/L		12/19/22 18:17	12/22/22 15:53	1
6:2 FTCA	ND		500	240	ng/L		12/19/22 18:17	12/22/22 15:53	1
8:2 FTCA	ND		500	83	ng/L		12/19/22 18:17	12/22/22 15:53	1
10:2 FTCA	ND		750	340	ng/L		12/19/22 18:17	12/22/22 15:53	1
PFECHS	ND		500	110	ng/L		12/19/22 18:17	12/22/22 15:53	1
PFPrS	ND		500	60	ng/L		12/19/22 18:17	12/22/22 15:53	1

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QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-641482/1-A

Matrix: Water

Analysis Batch: 642490

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 641482

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
NFDHA	ND		500	160	ng/L		12/19/22 18:17	12/22/22 15:53	1
PFMBA	ND		500	65	ng/L		12/19/22 18:17	12/22/22 15:53	1
PFMPA	ND		500	70	ng/L		12/19/22 18:17	12/22/22 15:53	1
PFEESA	ND		500	73	ng/L		12/19/22 18:17	12/22/22 15:53	1
PFMOAA	ND		500	100	ng/L		12/19/22 18:17	12/22/22 15:53	1
PFPE-1	ND		500	73	ng/L		12/19/22 18:17	12/22/22 15:53	1
PFO4DA	ND		500	100	ng/L		12/19/22 18:17	12/22/22 15:53	1
PFO3OA	ND		500	220	ng/L		12/19/22 18:17	12/22/22 15:53	1
PFO2HxA	ND		500	140	ng/L		12/19/22 18:17	12/22/22 15:53	1
PFO5DA	ND		500	250	ng/L		12/19/22 18:17	12/22/22 15:53	1
PMPA	ND		500	85	ng/L		12/19/22 18:17	12/22/22 15:53	1
PEPA	ND		500	120	ng/L		12/19/22 18:17	12/22/22 15:53	1
PFPrA	ND		500	88	ng/L		12/19/22 18:17	12/22/22 15:53	1
R-EVE	ND		500	78	ng/L		12/19/22 18:17	12/22/22 15:53	1
NVHOS	ND		750	330	ng/L		12/19/22 18:17	12/22/22 15:53	1
Hydro-EVE Acid	ND		500	60	ng/L		12/19/22 18:17	12/22/22 15:53	1
R-PSDCA	ND		750	350	ng/L		12/19/22 18:17	12/22/22 15:53	1
Hydro-PS Acid	ND		500	110	ng/L		12/19/22 18:17	12/22/22 15:53	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	108		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C4 PFBA	106		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C5 PFPeA	113		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C2 PFHxA	104		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C4 PFHpA	107		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C4 PFOA	104		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C5 PFNA	110		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C2 PFDA	104		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C2 PFUnA	101		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C2 PFDoA	98		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C2 PFTeDA	95		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C2 PFHxDA	88		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C3 PFBS	101		25 - 150	12/19/22 18:17	12/22/22 15:53	1
18O2 PFHxS	99		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C4 PFOS	93		25 - 150	12/19/22 18:17	12/22/22 15:53	1
d3-NMeFOSAA	99		25 - 150	12/19/22 18:17	12/22/22 15:53	1
d5-NEtFOSAA	98		25 - 150	12/19/22 18:17	12/22/22 15:53	1
M2-4:2 FTS	103		25 - 150	12/19/22 18:17	12/22/22 15:53	1
M2-6:2 FTS	101		25 - 150	12/19/22 18:17	12/22/22 15:53	1
M2-8:2 FTS	101		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C2 10:2 FTS	106		25 - 150	12/19/22 18:17	12/22/22 15:53	1
d-N-MeFOSA-M	100		20 - 150	12/19/22 18:17	12/22/22 15:53	1
d-N-EtFOSA-M	100		20 - 150	12/19/22 18:17	12/22/22 15:53	1
d7-N-MeFOSE-M	99		10 - 120	12/19/22 18:17	12/22/22 15:53	1
d9-N-EtFOSE-M	112		10 - 120	12/19/22 18:17	12/22/22 15:53	1
13C3 HFPO-DA	111		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C-6:2 FTCA	105		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C-8:2 FTCA	123		25 - 150	12/19/22 18:17	12/22/22 15:53	1
13C-10:2 FTCA	106		25 - 150	12/19/22 18:17	12/22/22 15:53	1

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QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: LCS 320-641482/2-A

Matrix: Water

Analysis Batch: 642490

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 641482

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	10000	10100		ng/L		101	76 - 136
Perfluoropentanoic acid (PFPeA)	10000	9670		ng/L		97	71 - 131
Perfluorohexanoic acid (PFHxA)	10000	10600		ng/L		106	73 - 133
Perfluoroheptanoic acid (PFHpA)	10000	10700		ng/L		107	72 - 132
Perfluorooctanoic acid (PFOA)	10000	10500		ng/L		105	70 - 130
Perfluorononanoic acid (PFNA)	10000	9840		ng/L		98	75 - 135
Perfluorodecanoic acid (PFDA)	10000	10800		ng/L		108	76 - 136
Perfluoroundecanoic acid (PFUnA)	10000	10100		ng/L		101	68 - 128
Perfluorododecanoic acid (PFDoA)	10000	12700		ng/L		127	71 - 131
Perfluorotridecanoic acid (PFTTrDA)	10000	13100		ng/L		131	71 - 131
Perfluorotetradecanoic acid (PFTeA)	10000	10900		ng/L		109	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	10000	10300		ng/L		103	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	10000	9850		ng/L		98	58 - 145
Perfluorobutanesulfonic acid (PFBS)	8880	8860		ng/L		100	67 - 127
Perfluoropentanesulfonic acid (PFPeS)	9400	9840		ng/L		105	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	9120	9120		ng/L		100	59 - 119
Perfluoroheptanesulfonic acid (PFHpS)	9540	10400		ng/L		109	76 - 136
Perfluorooctanesulfonic acid (PFOS)	9300	9960		ng/L		107	70 - 130
Perfluorononanesulfonic acid (PFNS)	9620	11100		ng/L		115	75 - 135
Perfluorodecanesulfonic acid (PFDS)	9640	11100		ng/L		115	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	9700	9600		ng/L		99	67 - 127
Perfluorooctanesulfonamide (FOSA)	10000	10300		ng/L		103	73 - 133
NMeFOSAA	10000	10300		ng/L		103	76 - 136
NEtFOSAA	10000	10400		ng/L		104	76 - 136
4:2 FTS	9380	9270		ng/L		99	79 - 139
6:2 FTS	9520	10300		ng/L		108	59 - 175
8:2 FTS	9600	9530		ng/L		99	75 - 135
10:2 FTS	9660	9340		ng/L		97	64 - 142
NEtFOSA	10000	11700		ng/L		117	78 - 138
NMeFOSA	10000	10400		ng/L		104	67 - 154
NMeFOSE	10000	10700		ng/L		107	70 - 130
NEtFOSE	10000	10200		ng/L		102	71 - 131
HFPO-DA (GenX)	10000	9720		ng/L		97	51 - 173
9Cl-PF3ONS	9340	10600		ng/L		113	75 - 135
11Cl-PF3OUdS	9440	10400		ng/L		111	54 - 114
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	9440	10400		ng/L		110	79 - 139

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QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-641482/2-A

Matrix: Water

Analysis Batch: 642490

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 641482

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
3:3 FTCA	10000	11100		ng/L		111	70 - 130
5:3 FTCA	10000	10400		ng/L		104	70 - 130
7:3 FTCA	10000	9970		ng/L		100	70 - 130
6:2 FTCA	10000	9220		ng/L		92	70 - 130
8:2 FTCA	10000	8070		ng/L		81	70 - 130
10:2 FTCA	10000	8730		ng/L		87	70 - 130
PFECHS	9240	10300		ng/L		111	70 - 130
PFPrS	9200	9370		ng/L		102	70 - 130
NFDHA	10000	10700		ng/L		107	70 - 130
PFMBA	10000	10100		ng/L		101	70 - 130
PFMPA	10000	10200		ng/L		102	70 - 130
PFEESA	8920	9610		ng/L		108	70 - 130
PFMOAA	10000	10600		ng/L		106	70 - 130
PFPE-1	10000	10500		ng/L		105	70 - 130
PFO4DA	10000	11200		ng/L		112	70 - 130
PFO3OA	10000	11700		ng/L		117	70 - 130
PFO2HxA	10000	10100		ng/L		101	70 - 130
PFO5DA	10000	12200		ng/L		122	70 - 130
PMPA	10000	11500		ng/L		115	70 - 130
PEPA	10000	10800		ng/L		108	70 - 130
PFPrA	9700	8560		ng/L		88	70 - 130
R-EVE	10000	10100		ng/L		101	70 - 130
NVHOS	10000	10800		ng/L		108	70 - 130
Hydro-EVE Acid	10000	11000		ng/L		110	70 - 130
R-PSDCA	10000	10400		ng/L		104	70 - 130
Hydro-PS Acid	10000	11100		ng/L		111	70 - 130

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C8 FOSA	113		25 - 150
13C4 PFBA	109		25 - 150
13C5 PFPeA	112		25 - 150
13C2 PFHxA	105		25 - 150
13C4 PFHpA	103		25 - 150
13C4 PFOA	102		25 - 150
13C5 PFNA	113		25 - 150
13C2 PFDA	105		25 - 150
13C2 PFUnA	106		25 - 150
13C2 PFDoA	81		25 - 150
13C2 PFTeDA	93		25 - 150
13C2 PFHxDA	93		25 - 150
13C3 PFBS	107		25 - 150
18O2 PFHxS	104		25 - 150
13C4 PFOS	99		25 - 150
d3-NMeFOSAA	108		25 - 150
d5-NEtFOSAA	107		25 - 150
M2-4:2 FTS	107		25 - 150
M2-6:2 FTS	101		25 - 150
M2-8:2 FTS	106		25 - 150
13C2 10:2 FTS	91		25 - 150

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QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-641482/2-A

Matrix: Water

Analysis Batch: 642490

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 641482

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
d-N-MeFOSA-M	108		20 - 150
d-N-EtFOSA-M	87		20 - 150
d7-N-MeFOSE-M	106		10 - 120
d9-N-EtFOSE-M	100		10 - 120
13C3 HFPO-DA	111		25 - 150
13C-6:2 FTCA	108		25 - 150
13C-8:2 FTCA	112		25 - 150
13C-10:2 FTCA	107		25 - 150

Lab Sample ID: LCSD 320-641482/3-A

Matrix: Water

Analysis Batch: 642490

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 641482

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	
							Limits		RPD	Limit
Perfluorobutanoic acid (PFBA)	10000	9830		ng/L		98	76 - 136		2	30
Perfluoropentanoic acid (PFPeA)	10000	9610		ng/L		96	71 - 131		1	30
Perfluorohexanoic acid (PFHxA)	10000	10300		ng/L		103	73 - 133		3	30
Perfluoroheptanoic acid (PFHpA)	10000	10600		ng/L		106	72 - 132		1	30
Perfluorooctanoic acid (PFOA)	10000	10400		ng/L		104	70 - 130		1	30
Perfluorononanoic acid (PFNA)	10000	9470		ng/L		95	75 - 135		4	30
Perfluorodecanoic acid (PFDA)	10000	10700		ng/L		107	76 - 136		0	30
Perfluoroundecanoic acid (PFUnA)	10000	9650		ng/L		96	68 - 128		4	30
Perfluorododecanoic acid (PFDoA)	10000	10900		ng/L		109	71 - 131		15	30
Perfluorotridecanoic acid (PFTTrDA)	10000	12000		ng/L		120	71 - 131		9	30
Perfluorotetradecanoic acid (PFTTeA)	10000	9430		ng/L		94	70 - 130		14	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	10000	10200		ng/L		102	76 - 136		1	30
Perfluoro-n-octadecanoic acid (PFODA)	10000	9630		ng/L		96	58 - 145		2	30
Perfluorobutanesulfonic acid (PFBS)	8880	9170		ng/L		103	67 - 127		3	30
Perfluoropentanesulfonic acid (PFPeS)	9400	9730		ng/L		104	66 - 126		1	30
Perfluorohexanesulfonic acid (PFHxS)	9120	9080		ng/L		100	59 - 119		0	30
Perfluoroheptanesulfonic acid (PFHpS)	9540	10400		ng/L		109	76 - 136		1	30
Perfluorooctanesulfonic acid (PFOS)	9300	9490		ng/L		102	70 - 130		5	30
Perfluorononanesulfonic acid (PFNS)	9620	10400		ng/L		109	75 - 135		6	30
Perfluorodecanesulfonic acid (PFDS)	9640	10200		ng/L		106	71 - 131		8	30
Perfluorododecanesulfonic acid (PFDoS)	9700	10500		ng/L		109	67 - 127		9	30
Perfluorooctanesulfonamide (FOSA)	10000	10000		ng/L		100	73 - 133		3	30
NMeFOSAA	10000	10600		ng/L		106	76 - 136		3	30
NEtFOSAA	10000	9790		ng/L		98	76 - 136		6	30

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QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-641482/3-A
Matrix: Water
Analysis Batch: 642490

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 641482

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4:2 FTS	9380	9090		ng/L		97	79 - 139	2	30
6:2 FTS	9520	9780		ng/L		103	59 - 175	5	30
8:2 FTS	9600	9230		ng/L		96	75 - 135	3	30
10:2 FTS	9660	9330		ng/L		97	64 - 142	0	30
NEtFOSA	10000	11000		ng/L		110	78 - 138	7	30
NMeFOSA	10000	10300		ng/L		103	67 - 154	1	30
NMeFOSE	10000	10900		ng/L		109	70 - 130	2	30
NEtFOSE	10000	10500		ng/L		105	71 - 131	3	30
HFPO-DA (GenX)	10000	9800		ng/L		98	51 - 173	1	30
9Cl-PF3ONS	9340	10000		ng/L		108	75 - 135	5	30
11Cl-PF3OUdS	9440	9820		ng/L		104	54 - 114	6	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	9440	10200		ng/L		108	79 - 139	2	30
3:3 FTCA	10000	11500		ng/L		115	70 - 130	3	30
5:3 FTCA	10000	10100		ng/L		101	70 - 130	2	30
7:3 FTCA	10000	8770		ng/L		88	70 - 130	13	30
6:2 FTCA	10000	10600		ng/L		106	70 - 130	14	30
8:2 FTCA	10000	7860		ng/L		79	70 - 130	3	30
10:2 FTCA	10000	9090		ng/L		91	70 - 130	4	30
PFECHS	9240	9390		ng/L		102	70 - 130	9	30
PFPrS	9200	9660		ng/L		105	70 - 130	3	30
NFDHA	10000	10500		ng/L		105	70 - 130	2	30
PFMBA	10000	10300		ng/L		103	70 - 130	2	30
PFMPA	10000	10200		ng/L		102	70 - 130	0	30
PFEESA	8920	9680		ng/L		109	70 - 130	1	30
PFMOAA	10000	10900		ng/L		109	70 - 130	2	30
PFPE-1	10000	10400		ng/L		104	70 - 130	1	30
PFO4DA	10000	10400		ng/L		104	70 - 130	7	30
PFO3OA	10000	10800		ng/L		108	70 - 130	8	30
PFO2HxA	10000	11000		ng/L		110	70 - 130	9	30
PFO5DA	10000	10200		ng/L		102	70 - 130	18	30
PMPA	10000	11600		ng/L		116	70 - 130	0	30
PEPA	10000	10900		ng/L		109	70 - 130	1	30
PFPrA	9700	8750		ng/L		90	70 - 130	2	30
R-EVE	10000	9920		ng/L		99	70 - 130	1	30
NVHOS	10000	11400		ng/L		114	70 - 130	5	30
Hydro-EVE Acid	10000	10600		ng/L		106	70 - 130	3	30
R-PSDCA	10000	10200		ng/L		102	70 - 130	2	30
Hydro-PS Acid	10000	10400		ng/L		104	70 - 130	6	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C8 FOSA	104		25 - 150
13C4 PFBA	101		25 - 150
13C5 PFPeA	103		25 - 150
13C2 PFHxA	99		25 - 150
13C4 PFHpA	101		25 - 150
13C4 PFOA	101		25 - 150
13C5 PFNA	110		25 - 150
13C2 PFDA	98		25 - 150

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QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-641482/3-A

Matrix: Water

Analysis Batch: 642490

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 641482

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C2 PFUnA	104		25 - 150
13C2 PFDoA	97		25 - 150
13C2 PFTeDA	97		25 - 150
13C2 PFHxDA	90		25 - 150
13C3 PFBS	96		25 - 150
18O2 PFHxS	96		25 - 150
13C4 PFOS	94		25 - 150
d3-NMeFOSAA	96		25 - 150
d5-NEtFOSAA	100		25 - 150
M2-4:2 FTS	95		25 - 150
M2-6:2 FTS	97		25 - 150
M2-8:2 FTS	96		25 - 150
13C2 10:2 FTS	102		25 - 150
d-N-MeFOSA-M	99		20 - 150
d-N-EtFOSA-M	99		20 - 150
d7-N-MeFOSE-M	102		10 - 120
d9-N-EtFOSE-M	110		10 - 120
13C3 HFPO-DA	107		25 - 150
13C-6:2 FTCA	102		25 - 150
13C-8:2 FTCA	115		25 - 150
13C-10:2 FTCA	106		25 - 150

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

LCMS

Prep Batch: 641482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-95204-1	ADIT6-PIPE-AFFFN01-22DEC	Total/NA	Water	3535	
MB 320-641482/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-641482/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-641482/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 642490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-95204-1	ADIT6-PIPE-AFFFN01-22DEC	Total/NA	Water	537 (modified)	641482
MB 320-641482/1-A	Method Blank	Total/NA	Water	537 (modified)	641482
LCS 320-641482/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	641482
LCSD 320-641482/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	641482

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Client Sample ID: ADIT6-PIPE-AFFFN01-22DEC

Lab Sample ID: 320-95204-1

Date Collected: 12/08/22 14:00

Matrix: Water

Date Received: 12/13/22 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			0.002 mL	10.0 mL	641482	12/19/22 18:17	FX	EET SAC
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	642490	12/22/22 16:24	RS1	EET SAC

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-31-23
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-30-23
Hawaii	State	<cert No.>	01-29-23
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-23
Oregon	NELAP	4040	01-29-23
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	01-23-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Sacramento

Method Summary

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	EET SAC
3535	Solid-Phase Extraction (SPE)	SW846	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: AECOM Technical Services Inc.
Project/Site: PFAS, AFFF Concentrate

Job ID: 320-95204-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-95204-1	ADIT6-PIPE-AFFFN01-22DEC	Water	12/08/22 14:00	12/13/22 09:20

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Instrument ID: A18 Analysis Batch Number: 641843Lab Sample ID: IC 320-641843/2 Client Sample ID: _____Date Analyzed: 12/21/22 12:10 Lab File ID: 2022.12.21_A18_PFC+_ICAL GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
MTP	1.51	Assign Peak	YS2U	12/21/22 13:20
PFPrA	1.92	Assign Peak	YS2U	12/21/22 13:20
PFMOAA	2.40	Baseline	YS2U	12/21/22 13:20
Perfluorobutanoic acid (PFBA)	2.70	Baseline	YS2U	12/21/22 13:20
PMPA	2.77	Baseline	YS2U	12/21/22 13:21
PFPrS	2.78	Baseline	YS2U	12/21/22 13:21
NVHOS	2.81	Baseline	YS2U	12/21/22 13:21
PFMPA	2.84	Baseline	YS2U	12/21/22 13:21
PFO2HxA	2.99	Baseline	YS2U	12/21/22 13:21
3:3 FTCA	3.08	Baseline	YS2U	12/21/22 13:21
PEPA	3.19	Baseline	YS2U	12/21/22 13:22
NFDHA	3.46	Baseline	YS2U	12/21/22 13:22
Perfluorohexanoic acid (PFHxA)	3.53	Baseline	YS2U	12/21/22 13:22
Perfluoropentanesulfonic acid (PFPeS)	3.56	Baseline	YS2U	12/21/22 13:23
PFO3OA	3.61	Baseline	YS2U	12/21/22 13:23
HFPO-DA (GenX)	3.68	Baseline	YS2U	12/21/22 13:23
Perfluorohexanesulfonic acid (PFHxS)	4.08	Isomers	YS2U	12/21/22 13:23
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	4.14	Baseline	YS2U	12/21/22 13:25
PFPE-1	4.17	Baseline	YS2U	12/21/22 13:25
6:2 FTUCA	4.20	Baseline	YS2U	12/21/22 13:25
6:2 FTCA	4.23	Assign Peak	YS2U	12/21/22 13:26
PFO4DA	4.32	Assign Peak	YS2U	12/21/22 13:27
Perfluorooctanoic acid (PFOA)	4.63	Baseline	YS2U	12/21/22 13:27
PFO5DA	5.05	Baseline	YS2U	12/21/22 13:28
Perfluorooctanesulfonic acid (PFOS)	5.17	Assign Peak	YS2U	12/21/22 13:28
Perfluorononanoic acid (PFNA)	5.19	Baseline	YS2U	12/21/22 13:29
8:2 FTUCA	5.36	Baseline	YS2U	12/21/22 13:29

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Instrument ID: A18 Analysis Batch Number: 641843

Lab Sample ID: IC 320-641843/2 Client Sample ID: _____

Date Analyzed: 12/21/22 12:10 Lab File ID: 2022.12.21_A18_PFC+_ICAL GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
8:2 FTCA	5.38	Assign Peak	YS2U	12/21/22 13:29
8:2 FTS	5.69	Assign Peak	YS2U	12/21/22 13:30
NMeFOSAA	5.94	Isomers	YS2U	12/21/22 13:30
10:2 FTCA	6.36	Assign Peak	YS2U	12/21/22 13:31
NMeFOSA	6.37	Baseline	YS2U	12/21/22 13:31
10:2 FTS	6.61	Baseline	YS2U	12/21/22 13:31
Perfluorotetradecanoic acid (PFTeA)	7.31	Baseline	YS2U	12/21/22 13:32
10:2 Fluorotelomer phosphate diester	8.94	Assign Peak	YS2U	12/22/22 06:02

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Instrument ID: A18 Analysis Batch Number: 641843Lab Sample ID: IC 320-641843/3 Client Sample ID: _____Date Analyzed: 12/21/22 12:20 Lab File ID: 2022.12.21_A18_PFC+_ICAL GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
MTP	1.51	Assign Peak	YS2U	12/21/22 13:34
PFMOAA	2.40	Baseline	YS2U	12/21/22 13:34
NVHOS	2.80	Baseline	YS2U	12/21/22 13:35
PFMPA	2.84	Baseline	YS2U	12/21/22 13:35
PFO3OA	3.61	Baseline	YS2U	12/21/22 13:36
Perfluorohexanesulfonic acid (PFHxS)	4.07	Isomers	YS2U	12/21/22 13:36
6:2 FTCA	4.23	Baseline	YS2U	12/21/22 13:38
Perfluorooctanoic acid (PFOA)	4.62	Peak Tail	YS2U	12/21/22 13:38
PFO5DA	5.06	Baseline	YS2U	12/21/22 13:39
Perfluorooctanesulfonic acid (PFOS)	5.18	Isomers	YS2U	12/21/22 13:39
8:2 FTUCA	5.35	Baseline	YS2U	12/21/22 13:40
8:2 FTCA	5.36	Assign Peak	YS2U	12/21/22 13:40
NEtFOSAA	6.19	Peak Tail	YS2U	12/21/22 13:41
10:2 FTCA	6.36	Assign Peak	YS2U	12/21/22 13:42
NMeFOSA	6.37	Baseline	YS2U	12/21/22 13:42
10:2 Fluorotelomer phosphate diester	8.92	Assign Peak	YS2U	12/22/22 06:01

Lab Sample ID: IC 320-641843/4 Client Sample ID: _____Date Analyzed: 12/21/22 12:30 Lab File ID: 2022.12.21_A18_PFC+_ICAL GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
MTP	1.51	Baseline	YS2U	12/21/22 13:48
PFPrA	1.91	Baseline	YS2U	12/21/22 13:49
Perfluorooctanesulfonic acid (PFOS)	5.18	Isomers	YS2U	12/21/22 13:49
10:2 Fluorotelomer phosphate diester	8.93	Peak assignment corrected	YS2U	12/22/22 06:02

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Instrument ID: A18 Analysis Batch Number: 641843Lab Sample ID: ICIS 320-641843/5 Client Sample ID: _____Date Analyzed: 12/21/22 12:40 Lab File ID: 2022.12.21_A18_PFC+_ICAL GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
10:2 Fluorotelomer phosphate diester	8.91	Peak assignment corrected	YS2U	12/22/22 06:03

Lab Sample ID: IC 320-641843/6 Client Sample ID: _____Date Analyzed: 12/21/22 12:51 Lab File ID: 2022.12.21_A18_PFC+_ICAL GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
NMeFOSAA	5.90	Isomers	YS2U	12/21/22 13:55
10:2 Fluorotelomer phosphate diester	8.89	Peak assignment corrected	YS2U	12/22/22 06:05

Lab Sample ID: IC 320-641843/7 Client Sample ID: _____Date Analyzed: 12/21/22 13:01 Lab File ID: 2022.12.21_A18_PFC+_ICAL GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
10:2 Fluorotelomer phosphate diester	8.90	Peak assignment corrected	YS2U	12/22/22 06:06

Lab Sample ID: IC 320-641843/8 Client Sample ID: _____Date Analyzed: 12/21/22 13:11 Lab File ID: 2022.12.21_A18_PFC+_ICAL GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
MTP	1.48	Split Peak	YS2U	12/21/22 13:58
10:2 Fluorotelomer phosphate diester	8.90	Peak assignment corrected	YS2U	12/22/22 06:07

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Instrument ID: A18 Analysis Batch Number: 641843Lab Sample ID: ICB 320-641843/9 Client Sample ID: _____Date Analyzed: 12/21/22 13:21 Lab File ID: 2022.12.21_A18_PFC+_ICAL GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoro-n-octadecanoic acid (PFODA)	8.39	Baseline	YS2U	12/22/22 05:34
PEPA		Invalid Compound ID	YS2U	12/22/22 05:29
Perfluorooctanoic acid (PFOA)		Invalid Compound ID	YS2U	12/22/22 05:30
PFO4DA		Invalid Compound ID	YS2U	12/22/22 05:30

Lab Sample ID: ICV 320-641843/10 Client Sample ID: _____Date Analyzed: 12/21/22 13:31 Lab File ID: 2022.12.21_A18_PFC+_ICAL GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	5.14	Isomers	YS2U	12/21/22 14:12
NMeFOSAA	5.90	Isomers	YS2U	12/21/22 14:13
NEtFOSAA	6.14	Isomers	YS2U	12/21/22 14:13
NMeFOSE	6.32	Isomers	YS2U	12/21/22 14:13
NMeFOSA	6.34	Isomers	YS2U	12/21/22 14:13
NEtFOSE	6.58	Isomers	YS2U	12/21/22 14:13
NEtFOSA	6.61	Isomers	YS2U	12/21/22 14:14
10:2 Fluorotelomer phosphate diester	8.88	Peak assignment corrected	YS2U	12/22/22 06:09

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Instrument ID: A18 Analysis Batch Number: 642483

Lab Sample ID: CCB 320-642483/1 Client Sample ID: _____

Date Analyzed: 12/22/22 10:39 Lab File ID: 2022.12.21_A18_PFC_A_004. GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	4.56	Baseline	ruangyots akuld	12/23/22 13:04
Perfluoro-n-hexadecanoic acid (PFHxDA)	7.79	Baseline	ruangyots akuld	12/23/22 13:05
PEPA		Invalid Compound ID	ruangyots akuld	12/23/22 13:04

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Instrument ID: A18 Analysis Batch Number: 642483Lab Sample ID: CCVL 320-642483/2 Client Sample ID: _____Date Analyzed: 12/22/22 10:50 Lab File ID: 2022.12.21_A18_PFC_A_005. GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
MTP	1.42	Baseline	sanjumnai r	12/23/22 12:24
PFPrA	1.84	Baseline	sanjumnai r	12/23/22 12:24
PFMOAA	2.37	Baseline	sanjumnai r	12/23/22 12:23
HFPO-DA (GenX)	3.64	Baseline	sanjumnai r	12/23/22 13:31
Perfluoroheptanoic acid (PFHpA)	4.01	Baseline	sanjumnai r	12/23/22 12:23
Perfluorohexanesulfonic acid (PFHxS)	4.03	Baseline	sanjumnai r	12/23/22 12:23
6:2 FTCA	4.19	Baseline	sanjumnai r	12/23/22 12:23
Perfluorooctanoic acid (PFOA)	4.57	Baseline	sanjumnai r	12/23/22 12:23
Perfluorooctanesulfonic acid (PFOS)	5.12	Baseline	sanjumnai r	12/23/22 12:22
8:2 FTCA	5.31	Baseline	sanjumnai r	12/23/22 12:21
NEtFOSAA	6.11	Baseline	sanjumnai r	12/23/22 12:22
10:2 FTCA	6.28	Baseline	sanjumnai r	12/23/22 12:22

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Instrument ID: A18 Analysis Batch Number: 642483Lab Sample ID: CCV 320-642483/3 CCVIS Client Sample ID: _____Date Analyzed: 12/22/22 11:00 Lab File ID: 2022.12.21_A18_PFC_A_006. GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
MTP	1.43	Baseline	sanjumnai r	12/23/22 12:20
PFPrA	1.85	Baseline	sanjumnai r	12/23/22 12:20
Perfluorooctanoic acid (PFOA)	4.56	Baseline	sanjumnai r	12/23/22 12:20
NEtFOSAA	6.09	Baseline	sanjumnai r	12/23/22 12:20

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Instrument ID: A18 Analysis Batch Number: 642490Lab Sample ID: CCV 320-642490/20 Client Sample ID: _____Date Analyzed: 12/22/22 15:33 Lab File ID: 2022.12.21_A18_PFC_A_034. GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	4.57	Baseline	sanjumnai r	12/23/22 12:35
NEtFOSAA	6.10	Baseline	sanjumnai r	12/23/22 12:35

Lab Sample ID: CCV 320-642490/21 Client Sample ID: _____Date Analyzed: 12/22/22 15:43 Lab File ID: 2022.12.21_A18_PFC_A_035. GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PFPrA	1.86	Baseline	sanjumnai r	12/23/22 12:37
PFMOAA	2.37	Baseline	sanjumnai r	12/23/22 12:37
Perfluorooctanoic acid (PFOA)	4.56	Baseline	sanjumnai r	12/23/22 12:36
NEtFOSAA	6.10	Baseline	sanjumnai r	12/23/22 12:36

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Instrument ID: A18 Analysis Batch Number: 642490Lab Sample ID: MB 320-641482/1-A Client Sample ID: _____Date Analyzed: 12/22/22 15:53 Lab File ID: 2022.12.21_A18_PFC_A_036. GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	4.58	Baseline	sanjumnai r	12/23/22 12:43
7:3 FTCA		Invalid Compound ID	sanjumnai r	12/23/22 12:43
PEPA		Invalid Compound ID	sanjumnai r	12/23/22 12:43
Perfluorohexanoic acid (PFHxA)		Invalid Compound ID	sanjumnai r	12/23/22 12:43
PMPA		Invalid Compound ID	sanjumnai r	12/23/22 12:43

Lab Sample ID: LCS 320-641482/2-A Client Sample ID: _____Date Analyzed: 12/22/22 16:03 Lab File ID: 2022.12.21_A18_PFC_A_037. GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PFPrA	1.86	Baseline	sanjumnai r	12/23/22 12:44
NEtFOSAA	6.08	Baseline	sanjumnai r	12/23/22 12:44

Lab Sample ID: LCSD 320-641482/3-A Client Sample ID: _____Date Analyzed: 12/22/22 16:14 Lab File ID: 2022.12.21_A18_PFC_A_038. GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PFPrA	1.86	Baseline	sanjumnai r	12/23/22 12:45
Perfluorooctanoic acid (PFOA)	4.57	Baseline	sanjumnai r	12/23/22 12:45
NEtFOSAA	6.10	Baseline	sanjumnai r	12/23/22 12:45

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Instrument ID: A18 Analysis Batch Number: 642490Lab Sample ID: 320-95204-1 Client Sample ID: ADIT6-PIPE-AFFFN01-22DECDate Analyzed: 12/22/22 16:24 Lab File ID: 2022.12.21_A18_PFC_A_039. GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
4:2 FTS	3.44	Baseline	sanjumnai r	12/23/22 12:46
Perfluoroheptanoic acid (PFHpA)	4.01	Baseline	sanjumnai r	12/23/22 12:46
5:3 FTCA	4.10	Baseline	sanjumnai r	12/23/22 12:46
Perfluoro-n-hexadecanoic acid (PFHxDA)	7.79	Baseline	sanjumnai r	12/23/22 12:46
7:3 FTCA		Invalid Compound ID	sanjumnai r	12/23/22 12:46
NVHOS		Invalid Compound ID	sanjumnai r	12/23/22 12:47
PEPA		Invalid Compound ID	sanjumnai r	12/23/22 12:46

Lab Sample ID: CCV 320-642490/28 Client Sample ID: _____Date Analyzed: 12/22/22 16:54 Lab File ID: 2022.12.21_A18_PFC_A_042. GC Column: Gemini C18 3x ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PFPrA	1.88	Baseline	sanjumnai r	12/23/22 12:41
PFO4DA	4.28	Baseline	sanjumnai r	12/23/22 12:42
Perfluorooctanoic acid (PFOA)	4.57	Baseline	sanjumnai r	12/23/22 12:42

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
LCMPFC_IDA+_00430	05/28/23	11/28/22	Methanol, Lot 220066	200 mL	LCMPFC_IDA+_00420	50 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-NMeFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024165 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.0238 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							18O2 PFHxS	0.0237 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
.LCMPFC_IDA+_00420	05/28/23	11/28/22	Methanol, Lot 220066	500 mL	LCd-NMeFOSA-M_00035	1 mL	d-N-EtFOSA-M	0.1 ug/mL
					LCd-NMeFOSA-M_00035	1 mL	d-N-MeFOSA-M	0.1 ug/mL
					LCd3-NMeFOSAA_00047	1 mL	d3-NMeFOSAA	0.1 ug/mL
					LCd5-NMeFOSAA_00048	1 mL	d5-NMeFOSAA	0.1 ug/mL
					LCd7-NMeFOSEM_00035	1 mL	d7-N-MeFOSE-M	0.1 ug/mL
					LCd9-NMeFOSEM_00032	1 mL	d9-N-EtFOSE-M	0.1 ug/mL
					LCM10:2 FTS_00007	1 mL	13C2 10:2 FTS	0.09666 ug/mL
					LCM2-4:FTS_00037	1 mL	M2-4:2 FTS	0.0938 ug/mL
					LCM2-6:FTS_00043	1 mL	M2-6:2 FTS	0.0952 ug/mL
					LCM2-8:2FTS_00046	1 mL	M2-8:2 FTS	0.096 ug/mL
					LCM2PFHxDA_00051	1 mL	13C2 PFHxDA	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCM2PFTeDA 00049	1 mL	13C2 PFTeDA	0.1 ug/mL
					LCM3HFPO-DA 00041	1 mL	13C3 HFPO-DA	0.1 ug/mL
					LCM4-6:2diPAP_00008	1 mL	13C4-6:2 diPAP	0.0973068 ug/mL
					LCM4-8:2diPAP_00009	1 mL	13C4-8:2 diPAP	0.097837 ug/mL
					LCM4PFHFA 00045	1 mL	13C4 PFHpA	0.1 ug/mL
					LCM5PFPEA 00048	1 mL	13C5 PFPeA	0.1 ug/mL
					LCM8FOSA 00054	1 mL	13C8 FOSA	0.1 ug/mL
					LCMFDEA 00015	1 mL	13C-10:2 FTCA	0.1 ug/mL
					LCMFDUEA 00014	1 mL	13C-10:2 FTUCA	0.1 ug/mL
					LCMFHEA 00013	1 mL	13C-6:2 FTCA	0.1 ug/mL
					LCMFHUEA 00015	1 mL	13C-6:2 FTUCA	0.1 ug/mL
					LCMFOEA 00014	1 mL	13C-8:2 FTCA	0.1 ug/mL
					LCMFOUEA 00014	1 mL	13C-8:2 FTUCA	0.1 ug/mL
					LCMPFBA 00049	1 mL	13C4 PFBA	0.1 ug/mL
					LCMPFBS 00036	1 mL	13C3 PFBS	0.0932 ug/mL
					LCMPFDA 00057	1 mL	13C2 PFDA	0.1 ug/mL
					LCMPFDoA 00050	1 mL	13C2 PFDoA	0.1 ug/mL
					LCMPFHxA 00060	1 mL	13C2 PFHxA	0.1 ug/mL
					LCMPFHxS 00050	1 mL	18O2 PFHxS	0.0948 ug/mL
					LCMPFNA 00048	1 mL	13C5 PFNA	0.1 ug/mL
					LCMPFOA 00054	1 mL	13C4 PFOA	0.1 ug/mL
					LCMPFOS 00066	1 mL	13C4 PFOS	0.0958 ug/mL
					LCMPFUDa 00052	1 mL	13C2 PFUnA	0.1 ug/mL
..LCd-NEtFOSA-M 00035	03/17/27		WELLINGTON, Lot dNetFOSA0322M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
..LCd-NMeFOSA-M 00035	10/07/26		WELLINGTON, Lot dNMeFOSA1021M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
..LCd3-NMeFOSAA 00047	02/22/27		WELLINGTON, Lot d3NMeFOSAA0222		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
..LCd5-NEtFOSAA 00048	05/11/27		WELLINGTON, Lot d5NEtFOSAA0522		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
..LCd7-NMeFOSEM 00035	01/27/27		WELLINGTON, Lot d7NMeFOSE1221M		(Purchased Reagent)		d7-N-MeFOSE-M	50 ug/mL
..LCd9-NEtFOSEM 00032	01/27/27		WELLINGTON, Lot d9NEtFOSE1221M		(Purchased Reagent)		d9-N-EtFOSE-M	50 ug/mL
..LCM10:2 FTS_00007	04/26/26		Cambridge Isotope Laboratories, Lot SEBC-003		(Purchased Reagent)		13C2 10:2 FTS	48.33 ug/mL
..LCM2-4:FTS 00037	04/22/27		Wellington, Lot M242FTS0422		(Purchased Reagent)		M2-4:2 FTS	46.9 ug/mL
..LCM2-6:FTS 00043	08/04/27		WELLINGTON, Lot M262FTS0722		(Purchased Reagent)		M2-6:2 FTS	47.6 ug/mL
..LCM2-8:2FTS 00046	02/22/27		WELLINGTON, Lot M282FTS0222		(Purchased Reagent)		M2-8:2 FTS	48 ug/mL
..LCM2PFHxDA 00051	11/23/26		Wellington Laboratories, Lot M2PFHxDA1121		(Purchased Reagent)		13C2 PFHxDA	50 ug/mL
..LCM2PFTeDA 00049	05/11/27		Wellington Laboratories, Lot M2PFTeDA0522		(Purchased Reagent)		13C2 PFTeDA	50 ug/mL
..LCM3HFPO-DA 00041	05/12/25		WELLINGTON, Lot M3HFPODA0522		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
..LCM4-6:2diPAP 00008	08/05/26		Wellington, Lot M462diPAP0721		(Purchased Reagent)		13C4-6:2 diPAP	48.6534 ug/mL
..LCM4-8:2diPAP 00009	12/01/26		Wellington, Lot M482diPAP1121		(Purchased Reagent)		13C4-8:2 diPAP	48.9185 ug/mL
..LCM4PFHFA 00045	12/07/26		Wellington Laboratories, Lot M4PFHpA1121		(Purchased Reagent)		13C4 PFHpA	50 ug/mL
..LCM5PFPEA 00048	08/10/26		Wellington Laboratories, Lot M5PFPeA0821		(Purchased Reagent)		13C5 PFPeA	50 ug/mL
..LCM8FOSA 00054	08/16/27		Wellington Laboratories, Lot M8FOSA0822I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
..LCMFDEA 00015	06/08/25		Wellington Laboratories, Lot MFDEA0622		(Purchased Reagent)		13C-10:2 FTCA	50 ug/mL
..LCMFDUEA 00014	11/22/23		Wellington Laboratories, Lot MFDUEA1221		(Purchased Reagent)		13C-10:2 FTUCA	50 ug/mL
..LCMFHEA 00013	06/23/25		Wellington Laboratories, Lot MFHEA0622		(Purchased Reagent)		13C-6:2 FTCA	50 ug/mL
..LCMFHUEA 00015	02/18/24		Wellington Laboratories, Lot MFHUEA0322		(Purchased Reagent)		13C-6:2 FTUCA	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCMFOEA 00014	11/22/24		Wellington Laboratories, Lot MFOEA1121		(Purchased Reagent)		13C-8:2 FTCA	50 ug/mL
..LCMFOUEA 00014	09/12/24		Wellington Laboratorie, Lot MFOUEA0922		(Purchased Reagent)		13C-8:2 FTUCA	50 ug/mL
..LCMPFBA 00049	07/12/26		Wellington Laboratories, Lot MPFBA0621		(Purchased Reagent)		13C4 PFBA	50 ug/mL
..LCMPFBS 00036	07/12/27		Wellington Laboratories, Lot M3PFBS0722		(Purchased Reagent)		13C3 PFBS	46.6 ug/mL
..LCMPFDA 00057	06/08/27		Wellington Laboratories, Lot MPFDA0522		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA 00050	08/05/27		Wellington Laboratories, Lot MPFDoA0822		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA 00060	10/04/26		Wellington Laboratories, Lot MPFHxA0921		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS 00050	06/08/27		Wellington Laboratories, Lot MPFHxS0522		(Purchased Reagent)		18O2 PFHxS	47.4 ug/mL
..LCMPFNA 00048	10/29/26		Wellington Laboratories, Lot MPFNA1021		(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA 00054	07/21/27		Wellington Laboratories, Lot MPFOA0722		(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS 00066	07/05/27		Wellington Laboratories, Lot MPFOS0622		(Purchased Reagent)		13C4 PFOS	47.9 ug/mL
..LCMPFUDa 00052	08/16/27		Wellington Laboratories, Lot MPFUDa0822		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
LCPFC+6C_ICV_00021	02/08/23	10/20/22	MeOH/H2O, Lot 218266	200 mL	LCMPFC_ICALSU_00057	10 mL	13C2 PFOA	1.25 ng/mL
..LCMPFC ICALSU 00057	04/03/23	10/19/22	Methanol, Lot 218266	200 mL	LCM2PFOA 00037	100 uL	13C2 PFOA	0.025 ug/mL
..LCM2PFOA 00037	12/09/26		Wellington Laboratories, Lot M2PFOA0122		(Purchased Reagent)		13C2 PFOA	50 ug/mL
LCPFC+6C_ICV_00021	02/08/23	10/20/22	MeOH/H2O, Lot 218266	200 mL	LC537_ICVMIX_00011	0.25 mL	11Cl-PF3OUds	2.5 ng/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.5 ng/mL
							9Cl-PF3ONS	2.5 ng/mL
							HFPO-DA (GenX)	2.5 ng/mL
							NEtFOSAA	2.5 ng/mL
							NMeFOSAA	2.5 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	2.5 ng/mL
							Perfluorodecanoic acid (PFDA)	2.5 ng/mL
							Perfluorododecanoic acid (PFDoA)	2.625 ng/mL
							Perfluoroheptanoic acid (PFHpA)	2.5 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	2.5 ng/mL
							Perfluorohexanoic acid (PFHxA)	2.5 ng/mL
							Perfluorononanoic acid (PFNA)	2.625 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	2.5 ng/mL
							Perfluorooctanoic acid (PFOA)	2.625 ng/mL
							Perfluorotetradecanoic acid (PFTeA)	2.5 ng/mL
							Perfluorotridecanoic acid (PFTTrDA)	2.5 ng/mL
							Perfluoroundecanoic acid (PFUnA)	2.625 ng/mL
					LCMPFC_ICALSU_00057	10 mL	d-N-EtFOSA-M	1.25 ng/mL
							d-N-MeFOSA-M	1.25 ng/mL
							d3-NMeFOSAA	1.25 ng/mL
							d5-NEtFOSAA	1.25 ng/mL
							d7-N-MeFOSE-M	1.25 ng/mL
							d9-N-EtFOSE-M	1.25 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C2 10:2 FTS	1.20625 ng/mL
							M2-4:2 FTS	1.1725 ng/mL
							M2-6:2 FTS	1.1875 ng/mL
							M2-8:2 FTS	1.2 ng/mL
							13C2 PFHxDA	1.25 ng/mL
							13C2 PFTeDA	1.25 ng/mL
							13C3 HFPO-DA	1.25 ng/mL
							13C4-6:2 diPAP	1.21633 ng/mL
							13C4-8:2 diPAP	1.22296 ng/mL
							13C4 PFHpA	1.25 ng/mL
							13C5 PFPeA	1.25 ng/mL
							13C8 FOSA	1.25 ng/mL
							13C-10:2 FTCA	1.25 ng/mL
							13C-10:2 FTUCA	1.25 ng/mL
							13C-6:2 FTCA	1.25 ng/mL
							13C-6:2 FTUCA	1.25 ng/mL
							13C-8:2 FTCA	1.25 ng/mL
							13C-8:2 FTUCA	1.25 ng/mL
							13C4 PFBA	1.25 ng/mL
							13C3 PFBS	1.165 ng/mL
							13C2 PFDA	1.25 ng/mL
							13C2 PFDoA	1.25 ng/mL
							13C2 PFHxA	1.25 ng/mL
							18O2 PFHxS	1.1825 ng/mL
							13C5 PFNA	1.25 ng/mL
							13C4 PFOA	1.25 ng/mL
							13C4 PFOS	1.1975 ng/mL
							13C2 PFUnA	1.25 ng/mL
					LCPFC3ICVSP_00023	1 mL	10:2 FTS	2.4155 ng/mL
							4:2 FTS	2.336 ng/mL
							6:2 FTS	2.3725 ng/mL
							8:2 FTS	2.4675 ng/mL
							NetFOSA	2.5 ng/mL
							NetFOSE	2.5 ng/mL
							NMeFOSA	2.5 ng/mL
							NMeFOSE	2.5 ng/mL
							Perfluorobutanoic acid (PFBA)	2.2565 ng/mL
							Perfluorododecanesulfonic acid (PFDoS)	2.42 ng/mL
							Perfluorodecanesulfonic acid (PFDS)	2.351 ng/mL
							Perfluoroheptanesulfonic acid (PFHpS)	2.3785 ng/mL
							Perfluoro-n-hexadecanoic acid (PFHxDA)	2.5 ng/mL
							Perfluorononanesulfonic acid (PFNS)	2.3995 ng/mL
							Perfluoro-n-octadecanoic acid (PFODA)	2.5 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorooctanesulfonamide (FOSA)	2.5 ng/mL
							Perfluoropentanoic acid (PFPeA)	2.299 ng/mL
							Perfluoropentanesulfonic acid (PFPeS)	2.3455 ng/mL
					LCPFC3SP_P1_00032	25 mL	NFDHA	2.5 ng/mL
							3:3 FTCA	2.5 ng/mL
							5:3 FTCA	2.5 ng/mL
							7:3 FTCA	2.5 ng/mL
							10:2 FTCA	2.5 ng/mL
							6:2 FTCA	2.5 ng/mL
							8:2 FTCA	2.5 ng/mL
							PFPrS	2.3 ng/mL
							PFMPA	2.5 ng/mL
							PFMBA	2.5 ng/mL
							PFECHS	2.305 ng/mL
							PFEESA	2.23 ng/mL
							PFPrA	2.425 ng/mL
					LCPFC3SP_TB3_00041	5 mL	Hydro-PS Acid	2.5 ng/mL
							R-PSDCA	2.5 ng/mL
							Hydro-EVE Acid	2.5 ng/mL
							NVHOS	2.5 ng/mL
							PEPA	2.5 ng/mL
							PFPE-1	2.5 ng/mL
							PFMOAA	2.5 ng/mL
							PFO2HxA	2.5 ng/mL
							PFO3OA	2.5 ng/mL
							PFO4DA	2.5 ng/mL
							PFO5DA	2.5 ng/mL
							PMPA	2.5 ng/mL
							R-EVE	2.5 ng/mL
.LC537_ICVMIX_00011	06/07/27	Absolute Standards Inc., Lot 060727			(Purchased Reagent)		11Cl-PF30UdS	2 ug/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2 ug/mL
							9Cl-PF3ONS	2 ug/mL
							HFPO-DA (GenX)	2 ug/mL
							NEtFOSAA	2 ug/mL
							NMeFOSAA	2 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	2 ug/mL
							Perfluorodecanoic acid (PFDA)	2 ug/mL
							Perfluorododecanoic acid (PFDoA)	2.1 ug/mL
							Perfluoroheptanoic acid (PFHpA)	2 ug/mL
							Perfluorohexanesulfonic acid (PFHxS)	2 ug/mL
							Perfluorohexanoic acid (PFHxA)	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorononanoic acid (PFNA)	2.1 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	2 ug/mL
							Perfluorooctanoic acid (PFOA)	2.1 ug/mL
							Perfluorotetradecanoic acid (PFTeA)	2 ug/mL
							Perfluorotridecanoic acid (PFTrDA)	2 ug/mL
							Perfluoroundecanoic acid (PFUnA)	2.1 ug/mL
.LCMPFC_ICALSU_00057	04/03/23	10/19/22	Methanol, Lot 218266	200 mL	LCMPFC_IDA+_00378	200 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-NMeFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024125 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.02375 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							18O2 PFHxS	0.02365 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
..LCMPFC_IDA+_00378	04/03/23	10/04/22	Methanol, Lot 218266	200 mL	LCMPFC_IDA+_00376	50 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							d3-NMeFOSAA	0.025 ug/mL
							d5-NetFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024125 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.02375 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							18O2 PFHxS	0.02365 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
...LCMPFC_IDA+_00376	04/03/23	10/03/22	Methanol, Lot 218266	500 mL	LCd-NetFOSA-M_00034	1 mL	d-N-EtFOSA-M	0.1 ug/mL
					LCd-NMeFOSA-M_00035	1 mL	d-N-MeFOSA-M	0.1 ug/mL
					LCd3-NMeFOSAA_00046	1 mL	d3-NMeFOSAA	0.1 ug/mL
					LCd5-NetFOSAA_00047	1 mL	d5-NetFOSAA	0.1 ug/mL
					LCd7-NMeFOSEM_00035	1 mL	d7-N-MeFOSE-M	0.1 ug/mL
					LCd9-NetFOSEM_00032	1 mL	d9-N-EtFOSE-M	0.1 ug/mL
					LCM10:2 FTS_00005	1 mL	13C2 10:2 FTS	0.0965 ug/mL
					LCM2-4:FTS_00036	1 mL	M2-4:2 FTS	0.0938 ug/mL
					LCM2-6:FTS_00040	1 mL	M2-6:2 FTS	0.095 ug/mL
					LCM2-8:2FTS_00045	1 mL	M2-8:2 FTS	0.096 ug/mL
					LCM2PFHxDA_00050	1 mL	13C2 PFHxDA	0.1 ug/mL
					LCM2PFTeDA_00048	1 mL	13C2 PFTeDA	0.1 ug/mL
					LCM3HFPO-DA_00040	1 mL	13C3 HFPO-DA	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCM4-6:2diPAP_00008	1 mL	13C4-6:2 diPAP	0.0973068 ug/mL
					LCM4-8:2diPAP_00008	1 mL	13C4-8:2 diPAP	0.097837 ug/mL
					LCM4PFHFA 00047	1 mL	13C4 PFHpA	0.1 ug/mL
					LCM5PFPEA 00048	1 mL	13C5 PFPeA	0.1 ug/mL
					LCM8FOSA 00053	1 mL	13C8 FOSA	0.1 ug/mL
					LCMFDEA 00014	1 mL	13C-10:2 FTCA	0.1 ug/mL
					LCMFDUEA 00013	1 mL	13C-10:2 FTUCA	0.1 ug/mL
					LCMFHEA 00012	1 mL	13C-6:2 FTCA	0.1 ug/mL
					LCMFHUEA 00015	1 mL	13C-6:2 FTUCA	0.1 ug/mL
					LCMFOEA 00011	1 mL	13C-8:2 FTCA	0.1 ug/mL
					LCMFOUEA 00013	1 mL	13C-8:2 FTUCA	0.1 ug/mL
					LCMPFBA 00050	1 mL	13C4 PFBA	0.1 ug/mL
					LCMPFBS 00035	1 mL	13C3 PFBS	0.0932 ug/mL
					LCMPFDA 00056	1 mL	13C2 PFDA	0.1 ug/mL
					LCMPFDoA 00049	1 mL	13C2 PFDoA	0.1 ug/mL
					LCMPFHxA 00055	1 mL	13C2 PFHxA	0.1 ug/mL
					LCMPFHxS 00048	1 mL	18O2 PFHxS	0.0946 ug/mL
					LCMPFNA 00048	1 mL	13C5 PFNA	0.1 ug/mL
					LCMPFOA 00052	1 mL	13C4 PFOA	0.1 ug/mL
					LCMPFOS 00064	1 mL	13C4 PFOS	0.0958 ug/mL
					LCMPFUDa 00051	1 mL	13C2 PFUnA	0.1 ug/mL
....LCd-NEtFOSA-M 00034	03/17/27		WELLINGTON, Lot dNetFOSA0322M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
....LCd-NMeFOSA-M 00035	10/07/26		WELLINGTON, Lot dNMeFOSA1021M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
....LCd3-NMeFOSAA 00046	02/22/27		WELLINGTON, Lot d3NMeFOSAA0222		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
....LCd5-NEtFOSAA 00047	09/28/26		WELLINGTON, Lot d5NEtFOSAA0921		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
....LCd7-NMeFOSEM 00035	01/27/27		WELLINGTON, Lot d7NMeFOSE1221M		(Purchased Reagent)		d7-N-MeFOSE-M	50 ug/mL
....LCd9-NEtFOSEM 00032	01/27/27		WELLINGTON, Lot d9NEtFOSE1221M		(Purchased Reagent)		d9-N-EtFOSE-M	50 ug/mL
....LCM10:2 FTS_00005	04/26/26		Cambridge Isotope Laboratories, Lot SEBC-003		(Purchased Reagent)		13C2 10:2 FTS	48.25 ug/mL
....LCM2-4:FTS 00036	10/13/26		Wellington, Lot M242FTS1021		(Purchased Reagent)		M2-4:2 FTS	46.9 ug/mL
....LCM2-6:FTS 00040	10/13/26		WELLINGTON, Lot M262FTS1021		(Purchased Reagent)		M2-6:2 FTS	47.5 ug/mL
....LCM2-8:2FTS 00045	11/23/26		WELLINGTON, Lot M282FTS1121		(Purchased Reagent)		M2-8:2 FTS	48 ug/mL
....LCM2PFHxDA 00050	11/23/26		Wellington Laboratories, Lot M2PFHxDA1121		(Purchased Reagent)		13C2 PFHxDA	50 ug/mL
....LCM2PFTEdA 00048	11/22/26		Wellington Laboratories, Lot M2PFTEdA1121		(Purchased Reagent)		13C2 PFTEdA	50 ug/mL
....LCM3HFPO-DA 00040	11/11/24		WELLINGTON, Lot M3HFPODA1121		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
....LCM4-6:2diPAP 00008	08/05/26		Wellington, Lot M462diPAP0721		(Purchased Reagent)		13C4-6:2 diPAP	48.6534 ug/mL
....LCM4-8:2diPAP 00008	12/01/26		Wellington, Lot M482diPAP1121		(Purchased Reagent)		13C4-8:2 diPAP	48.9185 ug/mL
....LCM4PFHFA 00047	12/07/26		Wellington Laboratories, Lot M4PFHpA1121		(Purchased Reagent)		13C4 PFHpA	50 ug/mL
....LCM5PFPEA 00048	08/10/26		Wellington Laboratories, Lot M5PFPeA0821		(Purchased Reagent)		13C5 PFPeA	50 ug/mL
....LCM8FOSA 00053	03/17/27		Wellington Laboratories, Lot M8FOSA0322I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
....LCMFDEA 00014	09/27/24		Wellington Laboratories, Lot MFDEA0921		(Purchased Reagent)		13C-10:2 FTCA	50 ug/mL
....LCMFDUEA 00013	11/22/23		Wellington Laboratories, Lot MFDUEA1221		(Purchased Reagent)		13C-10:2 FTUCA	50 ug/mL
....LCMFHEA 00012	09/29/24		Wellington Laboratories, Lot MFHEA0921		(Purchased Reagent)		13C-6:2 FTCA	50 ug/mL
....LCMFHUEA 00015	02/18/24		Wellington Laboratories, Lot MFHUEA0322		(Purchased Reagent)		13C-6:2 FTUCA	50 ug/mL
....LCMFOEA 00011	11/22/24		Wellington Laboratories, Lot MFOEA1121		(Purchased Reagent)		13C-8:2 FTCA	50 ug/mL
....LCMFOUEA 00013	12/07/23		Wellington Laboratorie, Lot MFOUEA1121		(Purchased Reagent)		13C-8:2 FTUCA	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
....LCMPFBA 00050	07/12/26		Wellington Laboratories, Lot MPFBA0621		(Purchased Reagent)		13C4 PFBA	50 ug/mL
....LCMPFBS 00035	02/07/27		Wellington Laboratories, Lot M3PFBS0222		(Purchased Reagent)		13C3 PFBS	46.6 ug/mL
....LCMPFDA 00056	12/08/26		Wellington Laboratories, Lot MPFDA1221		(Purchased Reagent)		13C2 PFDA	50 ug/mL
....LCMPFDoA 00049	03/17/27		Wellington Laboratories, Lot MPFDoA0322		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
....LCMPFHxA 00055	10/04/26		Wellington Laboratories, Lot MPFHxA0921		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
....LCMPFHxS 00048	10/29/26		Wellington Laboratories, Lot MPFHxS1021		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
....LCMPFNA 00048	10/29/26		Wellington Laboratories, Lot MPFNA1021		(Purchased Reagent)		13C5 PFNA	50 ug/mL
....LCMPFOA 00052	12/07/26		Wellington Laboratories, Lot MPFOA1121		(Purchased Reagent)		13C4 PFOA	50 ug/mL
....LCMPFOS 00064	01/27/27		Wellington Laboratories, Lot MPFOS0122		(Purchased Reagent)		13C4 PFOS	47.9 ug/mL
....LCMPFUDa 00051	12/09/26		Wellington Laboratories, Lot MPFUDa1221		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
.LCPFC3ICVSP_00023	04/20/23	10/20/22	Methanol, Lot 218266	10 mL	LC10:2FTS2_00004	100 uL	10:2 FTS	0.4831 ug/mL
					LC4:2FTS2_00003	100 uL	4:2 FTS	0.4672 ug/mL
					LC6:2FTS2_00003	100 uL	6:2 FTS	0.4745 ug/mL
					LC8:2FTS2_00003	100 uL	8:2 FTS	0.4935 ug/mL
					LCN-EtFOSA-M2_00002	50 uL	NEtFOSA	0.5 ug/mL
					LCN-EtFOSE-M2_00004	100 uL	NEtFOSE	0.5 ug/mL
					LCN-MeFOSA-M2_00001	50 uL	NMeFOSA	0.5 ug/mL
					LCN-MeFOSE-M2_00004	100 uL	NMeFOSE	0.5 ug/mL
					LCPFBA2_00003	100 uL	Perfluorobutanoic acid (PFBA)	0.4513 ug/mL
					LCPFDoS_00016	100 uL	Perfluorododecanesulfonic acid (PFDoS)	0.484 ug/mL
					LCPFDS2_00005	100 uL	Perfluorodecanesulfonic acid (PFDS)	0.4702 ug/mL
					LCPFHpS2_00002	100 uL	Perfluoroheptanesulfonic acid (PFHpS)	0.4757 ug/mL
					LCPFHxDA2_00002	100 uL	Perfluoro-n-hexadecanoic acid (PFHxDA)	0.5 ug/mL
					LCPFNs2_00003	100 uL	Perfluorononanesulfonic acid (PFNS)	0.4799 ug/mL
					LCPFODA2_00003	100 uL	Perfluoro-n-octadecanoic acid (PFODA)	0.5 ug/mL
					LCPFOSA2_00002	100 uL	Perfluorooctanesulfonamide (FOSA)	0.5 ug/mL
					LCPFPeA2_00003	100 uL	Perfluoropentanoic acid (PFPeA)	0.4598 ug/mL
					LCPFPeS2_00003	100 uL	Perfluoropentanesulfonic acid (PFPeS)	0.4691 ug/mL
..LC10:2FTS2_00004	08/20/24		CAMBRIDGE ISOTOPE, Lot SDJH-001		(Purchased Reagent)		10:2 FTS	48.31 ug/mL
..LC4:2FTS2_00003	09/03/24		CAMBRIDGE ISOTOPE, Lot SDIJ-026A		(Purchased Reagent)		4:2 FTS	46.72 ug/mL
..LC6:2FTS2_00003	09/04/24		CAMBRIDGE ISOTOPE, Lot SDJH-017		(Purchased Reagent)		6:2 FTS	47.45 ug/mL
..LC8:2FTS2_00003	08/20/24		CAMBRIDGE ISOTOPE, Lot SDIJ-022A		(Purchased Reagent)		8:2 FTS	49.35 ug/mL
..LCN-EtFOSA-M2_00002	01/17/25		CAMBRIDGE ISOTOPE, Lot SDIL-031		(Purchased Reagent)		NEtFOSA	100 ug/mL
..LCN-EtFOSE-M2_00004	09/30/25		CAMBRIDGE ISOTOPE, Lot SEAA-007		(Purchased Reagent)		NEtFOSE	50 ug/mL
..LCN-MeFOSA-M2_00001	07/22/24		CAMBRIDGE SOURCE, Lot SDIL-039		(Purchased Reagent)		NMeFOSA	100 ug/mL
..LCN-MeFOSE-M2_00004	09/30/25		CAMBRIDGE ISOTOPE, Lot SEAA-009		(Purchased Reagent)		NMeFOSE	50 ug/mL
..LCPFBA2_00003	01/20/25		CAMBRIDGE ISOTOPE, Lot SDJL-002		(Purchased Reagent)		Perfluorobutanoic acid (PFBA)	45.13 ug/mL
..LCPFDoS_00016	07/09/26		Wellington Laboratories, Lot LPFDoS0721		(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCPFDS2_00005	09/08/26		CAMBRIDGE ISOTOPE LABORATORIES, Lot SEBG-007		(Purchased Reagent)		Perfluorodecanesulfonic acid (PFDS)	47.02 ug/mL
..LCPFHps2_00002	04/07/31		Cambridge Isotope Laboratories, Lot SEBC-007		(Purchased Reagent)		Perfluoroheptanesulfonic acid (PFHpS)	47.57 ug/mL
..LCPFHxDA2_00002	04/30/25		CAMBRIDGE ISOTOPE, Lot SDJH-014		(Purchased Reagent)		Perfluoro-n-hexadecanoic acid (PFHxDA)	50 ug/mL
..LCPFNS2_00003	09/29/26		CAMBRIDGE ISOTOPE, Lot SDEF-007		(Purchased Reagent)		Perfluorononanesulfonic acid (PFNS)	47.99 ug/mL
..LCPFODA2_00003	02/20/25		CAMBRIDGE ISOTOPE, Lot SDJH-015		(Purchased Reagent)		Perfluoro-n-octadecanoic acid (PFODA)	50 ug/mL
..LCPFOSA2_00002	01/23/25		CAMBRIDGE ISOTOPE, Lot SDJH-016		(Purchased Reagent)		Perfluorooctanesulfonamide (FOSA)	50 ug/mL
..LCPFPeA2_00003	09/27/24		Cambridge Isotope, Lot SDJF-016		(Purchased Reagent)		Perfluoropentanoic acid (PFPeA)	45.98 ug/mL
..LCPFPes2_00003	09/29/26		CAMBRIDGE ISOTOPE, Lot SDEF-005		(Purchased Reagent)		Perfluoropentanesulfonic acid (PFPeS)	46.91 ug/mL
.LCPFC3SP_P1_00032	02/08/23	10/20/22	Methanol, Lot 218266	250 mL	LC-36-OPFHpA 00011	100 uL	NFDHA	0.02 ug/mL
					LC3:3FTCA 00004	100 uL	3:3 FTCA	0.02 ug/mL
					LC5:3FTCA 00008	100 uL	5:3 FTCA	0.02 ug/mL
					LC7:3FTCA 00006	100 uL	7:3 FTCA	0.02 ug/mL
					LCFDEA 00005	100 uL	10:2 FTCA	0.02 ug/mL
					LCFHEA 00009	100 uL	6:2 FTCA	0.02 ug/mL
					LCFOEA 00004	100 uL	8:2 FTCA	0.02 ug/mL
					LCLPFPPrS 00007	100 uL	PFPrS	0.0184 ug/mL
					LCPF4OPeA 00014	100 uL	PFMPA	0.02 ug/mL
					LCPF5OHxA 00011	100 uL	PFMBA	0.02 ug/mL
					LCPFECHS 00005	100 uL	PFECHS	0.01844 ug/mL
					LCPFEESA 00009	100 uL	PFEESA	0.01784 ug/mL
					LCPPropionic 00026	100 uL	PFPrA	0.0194 ug/mL
..LC-36-OPFHpA 00011	10/14/26		Wellington Laboratories, Lot 36OPFHpA0921		(Purchased Reagent)		NFDHA	50 ug/mL
..LC3:3FTCA 00004	02/03/27		Wellington Laboratories, Lot FPrPA0122		(Purchased Reagent)		3:3 FTCA	50 ug/mL
..LC5:3FTCA 00008	01/05/27		Wellington Laboratories, Lot FPePA1221		(Purchased Reagent)		5:3 FTCA	50 ug/mL
..LC7:3FTCA 00006	11/12/25		Wellington Laboratories, Lot FHpPA1020		(Purchased Reagent)		7:3 FTCA	50 ug/mL
..LCFDEA 00005	07/07/23		Wellington Laboratories, Lot FDEA0720		(Purchased Reagent)		10:2 FTCA	50 ug/mL
..LCFHEA 00009	01/05/25		Wellington Laboratories, Lot FHEA1221		(Purchased Reagent)		6:2 FTCA	50 ug/mL
..LCFOEA 00004	08/25/23		Wellington Laboratories, Lot FOEA0820		(Purchased Reagent)		8:2 FTCA	50 ug/mL
..LCLPFPPrS 00007	07/12/26		Wellington Laboratories, Lot LPFPrS0721		(Purchased Reagent)		PFPrS	46 ug/mL
..LCPF4OPeA 00014	10/19/26		Wellington Laboratories, Lot PF4OPeA0921		(Purchased Reagent)		PFMPA	50 ug/mL
..LCPF5OHxA 00011	10/19/26		Wellington Laboratories, Lot PF5OHxA1021		(Purchased Reagent)		PFMBA	50 ug/mL
..LCPFECHS 00005	10/14/26		Wellington Laboratories, Lot PFECHS1021		(Purchased Reagent)		PFECHS	46.1 ug/mL
..LCPFEESA 00009	11/22/26		Wellington Laboratories, Lot PFEESA1121		(Purchased Reagent)		PFEESA	44.6 ug/mL
..LCPPropionic 00026	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	LCPPropionic 00025	5 mL	PFPrA	48.5 ug/mL
...LCPPropionic 00025	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	Propionic Acd 00002	100 uL	PFPrA	970 ug/mL
...Propionic Acid 00002	06/09/25		Sigma Aldrich, Lot MKCK6675		(Purchased Reagent)		PFPrA	97 %
.LCPFC3SP_TB3_00041	02/11/23	08/11/22	Methanol, Lot 217743	500 mL	LCBP2 00004	50 uL	Hydro-PS Acid	0.1 ug/mL
					LCBP6 00004	50 uL	R-PSDCA	0.1 ug/mL
					LCHEVEA 00003	50 uL	Hydro-EVE Acid	0.1 ug/mL
					LCNVHOS 00003	50 uL	NVHOS	0.1 ug/mL
					LCPEPA 00005	50 uL	PEPA	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFECA G 00004	50 uL	PFPE-1	0.1 ug/mL
					LCPFMOAA 00007	50 uL	PFMOAA	0.1 ug/mL
					LCPFO2HxA 00005	50 uL	PFO2HxA	0.1 ug/mL
					LCPFO3OA 00006	50 uL	PFO3OA	0.1 ug/mL
					LCPFO4DA 00005	50 uL	PFO4DA	0.1 ug/mL
					LCPFO5DoA 00004	50 uL	PFO5DA	0.1 ug/mL
					LCPPMA 00005	50 uL	PMPA	0.1 ug/mL
					LCR-EVE 00005	50 uL	R-EVE	0.1 ug/mL
..LCBP2 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydro-PS Acid	0.1 %
..LCBP6 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-PSDCA	0.1 %
..LCHEVEA 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydro-EVE Acid	0.1 %
..LCNVHOS 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		NVHOS	0.1 %
..LCPEPA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PEPA	0.1 %
..LCPFECA G 00004	01/23/24		Chemours, Lot NA		(Purchased Reagent)		PFPE-1	1000 ug/mL
..LCPFMOAA 00007	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFMOAA	0.1 %
..LCPFO2HxA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO2HxA	0.1 %
..LCPFO3OA 00006	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO3OA	0.1 %
..LCPFO4DA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO4DA	0.1 %
..LCPFO5DoA 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO5DA	0.1 %
..LCPPMA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PMPA	0.1 %
..LCR-EVE 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-EVE	0.1 %
LCPFC+6C_LL0_00033	01/09/23	10/12/22	MeOH/H2O, Lot 218266	200 mL	LCPFC+6C_LL0_00028	200 mL	13C2 PFOA	1.25 ng/mL
..LCPFC+6C_LL0_00028	01/09/23	10/12/22	MeOH/H2O, Lot 218266	1 L	LCMPFC_ICALSU_00056	50 mL	13C2 PFOA	1.25 ng/mL
..LCMPFC_ICALSU_00056	01/09/23	08/16/22	Methanol, Lot 218262	200 mL	LCM2PFOA_00037	100 uL	13C2 PFOA	0.025 ug/mL
...LCM2PFOA_00037	12/09/26		Wellington Laboratories, Lot M2PFOA0122		(Purchased Reagent)		13C2 PFOA	50 ug/mL
LCPFC+6C_LL0_00033	01/09/23	10/12/22	MeOH/H2O, Lot 218266	200 mL	LCPFC+6C_LL0_00028	200 mL	d-N-EtFOSA-M	1.25 ng/mL
							d-N-MeFOSA-M	1.25 ng/mL
							d3-NMeFOSAA	1.25 ng/mL
							d5-NMeFOSAA	1.25 ng/mL
							d7-N-MeFOSE-M	1.25 ng/mL
							d9-N-EtFOSE-M	1.25 ng/mL
							13C2 10:2 FTS	1.20825 ng/mL
							M2-4:2 FTS	1.1675 ng/mL
							M2-6:2 FTS	1.19 ng/mL
							M2-8:2 FTS	1.2 ng/mL
							13C2 PFHxDA	1.25 ng/mL
							13C2 PFTeDA	1.25 ng/mL
							13C3 HFPO-DA	1.25 ng/mL
							13C4-6:2 diPAP	1.21633 ng/mL
							13C4-8:2 diPAP	1.22296 ng/mL
							13C4 PFHpA	1.25 ng/mL
							13C5 PFPeA	1.25 ng/mL
							13C8 FOSA	1.25 ng/mL
							13C-10:2 FTCA	1.25 ng/mL
							13C-10:2 FTUCA	1.25 ng/mL
							13C-6:2 FTCA	1.25 ng/mL
							13C-6:2 FTUCA	1.25 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-8:2 FTCA	1.25 ng/mL
							13C-8:2 FTUCA	1.25 ng/mL
							13C4 PFBA	1.25 ng/mL
							13C3 PFBS	1.165 ng/mL
							13C2 PFDA	1.25 ng/mL
							13C2 PFDoA	1.25 ng/mL
							13C2 PFHxA	1.25 ng/mL
							1802 PFHxS	1.185 ng/mL
							13C5 PFNA	1.25 ng/mL
							13C4 PFOA	1.25 ng/mL
							13C4 PFOS	1.1975 ng/mL
							13C2 PFUnA	1.25 ng/mL
.LCPFC+6C_LL0_00028	01/09/23	10/12/22	MeOH/H2O, Lot 218266	1 L	LCMPFC_ICALSU_00056	50 mL	d-N-EtFOSA-M	1.25 ng/mL
							d-N-MeFOSA-M	1.25 ng/mL
							d3-NMeFOSAA	1.25 ng/mL
							d5-NEtFOSAA	1.25 ng/mL
							d7-N-MeFOSE-M	1.25 ng/mL
							d9-N-EtFOSE-M	1.25 ng/mL
							13C2 10:2 FTS	1.20825 ng/mL
							M2-4:2 FTS	1.1675 ng/mL
							M2-6:2 FTS	1.19 ng/mL
							M2-8:2 FTS	1.2 ng/mL
							13C2 PFHxDA	1.25 ng/mL
							13C2 PFTeDA	1.25 ng/mL
							13C3 HFPO-DA	1.25 ng/mL
							13C4-6:2 diPAP	1.21633 ng/mL
							13C4-8:2 diPAP	1.22296 ng/mL
							13C4 PFHpA	1.25 ng/mL
							13C5 PFPeA	1.25 ng/mL
							13C8 FOSA	1.25 ng/mL
							13C-10:2 FTCA	1.25 ng/mL
							13C-10:2 FTUCA	1.25 ng/mL
							13C-6:2 FTCA	1.25 ng/mL
							13C-6:2 FTUCA	1.25 ng/mL
							13C-8:2 FTCA	1.25 ng/mL
							13C-8:2 FTUCA	1.25 ng/mL
							13C4 PFBA	1.25 ng/mL
							13C3 PFBS	1.165 ng/mL
							13C2 PFDA	1.25 ng/mL
							13C2 PFDoA	1.25 ng/mL
							13C2 PFHxA	1.25 ng/mL
							1802 PFHxS	1.185 ng/mL
							13C5 PFNA	1.25 ng/mL
							13C4 PFOA	1.25 ng/mL
							13C4 PFOS	1.1975 ng/mL
							13C2 PFUnA	1.25 ng/mL
..LCMPFC_ICALSU_00056	01/09/23	08/16/22	Methanol, Lot 218262	200 mL	LCMPFC_IDA+_00324	200 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							d3-NMeFOSAA	0.025 ug/mL
							d5-NEtFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024165 ug/mL
							M2-4:2 FTS	0.02335 ug/mL
							M2-6:2 FTS	0.0238 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							18O2 PFHxS	0.0237 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
...LCMPFC_IDA+_00324	01/09/23	07/09/22	Methanol, Lot 218262	200 mL	LCMPFC_IDA+_00321	50 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-NEtFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024165 ug/mL
							M2-4:2 FTS	0.02335 ug/mL
							M2-6:2 FTS	0.0238 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							18O2 PFHxS	0.0237 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
....LCMPFC_IDA+_00321	01/09/23	07/09/22	Methanol, Lot 218262	500 mL	LCd-NEtFOSA-M_00032	1 mL	d-N-EtFOSA-M	0.1 ug/mL
					LCd-NMeFOSA-M_00033	1 mL	d-N-MeFOSA-M	0.1 ug/mL
					LCd3-NMeFOSAA_00046	1 mL	d3-NMeFOSAA	0.1 ug/mL
					LCd5-NEtFOSAA_00047	1 mL	d5-NEtFOSAA	0.1 ug/mL
					LCd7-NMeFOSEM_00034	1 mL	d7-N-MeFOSEM	0.1 ug/mL
					LCd9-NEtFOSEM_00031	1 mL	d9-N-EtFOSEM	0.1 ug/mL
					LCM10:2 FTS_00006	1 mL	13C2 10:2 FTS	0.09666 ug/mL
					LCM2-4:FTS_00034	1 mL	M2-4:2 FTS	0.0934 ug/mL
					LCM2-6:FTS_00042	1 mL	M2-6:2 FTS	0.0952 ug/mL
					LCM2-8:2FTS_00045	1 mL	M2-8:2 FTS	0.096 ug/mL
					LCM2PFHxDA_00050	1 mL	13C2 PFHxDA	0.1 ug/mL
					LCM2PFTeDA_00048	1 mL	13C2 PFTeDA	0.1 ug/mL
					LCM3HFPO-DA_00040	1 mL	13C3 HFPO-DA	0.1 ug/mL
					LCM4-6:2diPAP_00008	1 mL	13C4-6:2 diPAP	0.0973068 ug/mL
					LCM4-8:2diPAP_00008	1 mL	13C4-8:2 diPAP	0.097837 ug/mL
					LCM4PFHPA_00046	1 mL	13C4 PFHpA	0.1 ug/mL
					LCM5PFPEA_00048	1 mL	13C5 PFPeA	0.1 ug/mL
					LCM8FOSA_00051	1 mL	13C8 FOSA	0.1 ug/mL
					LCMFDEA_00012	1 mL	13C-10:2 FTCA	0.1 ug/mL
					LCMFDEUA_00012	1 mL	13C-10:2 FTUCA	0.1 ug/mL
					LCMFHEA_00012	1 mL	13C-6:2 FTCA	0.1 ug/mL
					LCMFHUEA_00014	1 mL	13C-6:2 FTUCA	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCMFOEA 00011	1 mL	13C-8:2 FTCA	0.1 ug/mL
					LCMFOUEA 00012	1 mL	13C-8:2 FTUCA	0.1 ug/mL
					LCMPFBA 00050	1 mL	13C4 PFBA	0.1 ug/mL
					LCMPFBS 00035	1 mL	13C3 PFBS	0.0932 ug/mL
					LCMPFDA 00055	1 mL	13C2 PFDA	0.1 ug/mL
					LCMPFDoA 00049	1 mL	13C2 PFDoA	0.1 ug/mL
					LCMPFHxA 00055	1 mL	13C2 PFHxA	0.1 ug/mL
					LCMPFHxS 00049	1 mL	18O2 PFHxS	0.0948 ug/mL
					LCMPFNA 00045	1 mL	13C5 PFNA	0.1 ug/mL
					LCMPFOA 00052	1 mL	13C4 PFOA	0.1 ug/mL
					LCMPFOS 00064	1 mL	13C4 PFOS	0.0958 ug/mL
					LCMPFUDa 00051	1 mL	13C2 PFUnA	0.1 ug/mL
....LCd-NEtFOSA-M 00032	08/10/26		WELLINGTON, Lot dNetFOSA0821M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
....LCd-NMeFOSA-M 00033	10/07/26		WELLINGTON, Lot dNMeFOSA1021M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
....LCd3-NMeFOSAA 00046	02/22/27		WELLINGTON, Lot d3NMeFOSAA0222		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
....LCd5-NetFOSAA 00047	09/28/26		WELLINGTON, Lot d5NetFOSAA0921		(Purchased Reagent)		d5-NetFOSAA	50 ug/mL
....LCd7-NMeFOSEM 00034	01/27/27		WELLINGTON, Lot d7NMeFOSE1221M		(Purchased Reagent)		d7-N-MeFOSE-M	50 ug/mL
....LCd9-NetFOSEM 00031	01/27/27		WELLINGTON, Lot d9NetFOSE1221M		(Purchased Reagent)		d9-N-EtFOSE-M	50 ug/mL
....LCM10:2 FTS_00006	04/26/26		Cambridge Isotope Laboratories, Lot SEBC-003		(Purchased Reagent)		13C2 10:2 FTS	48.33 ug/mL
....LCM2-4:FTS 00034	10/13/26		Wellington, Lot M242FTS1021		(Purchased Reagent)		M2-4:2 FTS	46.7 ug/mL
....LCM2-6:FTS 00042	02/22/27		WELLINGTON, Lot M262FTS0222		(Purchased Reagent)		M2-6:2 FTS	47.6 ug/mL
....LCM2-8:2FTS 00045	11/23/26		WELLINGTON, Lot M282FTS1121		(Purchased Reagent)		M2-8:2 FTS	48 ug/mL
....LCM2PFHxDA 00050	11/23/26		Wellington Laboratories, Lot M2PFHxDA1121		(Purchased Reagent)		13C2 PFHxDA	50 ug/mL
....LCM2PFTeDA 00048	11/22/26		Wellington Laboratories, Lot M2PFTeDA1121		(Purchased Reagent)		13C2 PFTeDA	50 ug/mL
....LCM3HFPO-DA 00040	11/11/24		WELLINGTON, Lot M3HFPODA1121		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
....LCM4-6:2diPAP 00008	08/05/26		Wellington, Lot M462diPAP0721		(Purchased Reagent)		13C4-6:2 diPAP	48.6534 ug/mL
....LCM4-8:2diPAP 00008	12/01/26		Wellington, Lot M482diPAP1121		(Purchased Reagent)		13C4-8:2 diPAP	48.9185 ug/mL
....LCM4PFHPA 00046	12/07/26		Wellington Laboratories, Lot M4PFHPA1121		(Purchased Reagent)		13C4 PFHPa	50 ug/mL
....LCM5PFPEA 00048	08/10/26		Wellington Laboratories, Lot M5PFPeA0821		(Purchased Reagent)		13C5 PFPeA	50 ug/mL
....LCM8FOSA 00051	10/12/26		Wellington Laboratories, Lot M8FOSA0921I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
....LCMFDEA 00012	09/27/24		Wellington Laboratories, Lot MFDEA0921		(Purchased Reagent)		13C-10:2 FTCA	50 ug/mL
....LCMFDEUA 00012	11/22/23		Wellington Laboratories, Lot MFDUEA1221		(Purchased Reagent)		13C-10:2 FTUCA	50 ug/mL
....LCMFHEA 00012	09/29/24		Wellington Laboratories, Lot MFHEA0921		(Purchased Reagent)		13C-6:2 FTCA	50 ug/mL
....LCMFHUEA 00014	02/18/24		Wellington Laboratories, Lot MFHUEA0322		(Purchased Reagent)		13C-6:2 FTUCA	50 ug/mL
....LCMFOEA 00011	11/22/24		Wellington Laboratories, Lot MFOEA1121		(Purchased Reagent)		13C-8:2 FTCA	50 ug/mL
....LCMFOUEA 00012	12/07/23		Wellington Laboratorie, Lot MFOUEA1121		(Purchased Reagent)		13C-8:2 FTUCA	50 ug/mL
....LCMPFBA 00050	07/12/26		Wellington Laboratories, Lot MPFBA0621		(Purchased Reagent)		13C4 PFBA	50 ug/mL
....LCMPFBS 00035	02/07/27		Wellington Laboratories, Lot M3PFBS0222		(Purchased Reagent)		13C3 PFBS	46.6 ug/mL
....LCMPFDA 00055	12/08/26		Wellington Laboratories, Lot MPFDA1221		(Purchased Reagent)		13C2 PFDA	50 ug/mL
....LCMPFDoA 00049	03/17/27		Wellington Laboratories, Lot MPFDoA0322		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
....LCMPFHxA 00055	10/04/26		Wellington Laboratories, Lot MPFHxA0921		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
....LCMPFHxS 00049	10/29/26		Wellington Laboratories, Lot MPFHxS1021		(Purchased Reagent)		18O2 PFHxS	47.4 ug/mL
....LCMPFNA 00045	10/29/26		Wellington Laboratories, Lot MPFNA1021		(Purchased Reagent)		13C5 PFNA	50 ug/mL
....LCMPFOA 00052	12/07/26		Wellington Laboratories, Lot MPFOA1121		(Purchased Reagent)		13C4 PFOA	50 ug/mL
....LCMPFOS 00064	01/27/27		Wellington Laboratories, Lot MPFOS0122		(Purchased Reagent)		13C4 PFOS	47.9 ug/mL
....LCMPFUDa 00051	12/09/26		Wellington Laboratories, Lot MPFUDa1221		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
LCPFC+6C_LL0_00039	05/16/23	12/01/22	MeOH/H2O, Lot 217743	200 mL	LCPFC+6C_LL0_00034	200 mL	13C2 PFOA	1.25 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.LCPFC+6C_LL0_00034	05/16/23	12/01/22	MeOH/H2O, Lot 217743	1 L	LCMPFC_ICALSU_00058	50 mL	13C2 PFOA	1.25 ng/mL
..LCMPFC_ICALSU_00058	05/16/23	11/19/22	Methanol, Lot 220066	200 mL	LCM2PFOA_00038	100 uL	13C2 PFOA	0.025 ug/mL
...LCM2PFOA_00038	08/29/27	Wellington Laboratories, Lot M2PFOA0822			(Purchased Reagent)		13C2 PFOA	50 ug/mL
LCPFC+6C_LL0_00039	05/16/23	12/01/22	MeOH/H2O, Lot 217743	200 mL	LCPFC+6C_LL0_00034	200 mL	d-N-EtFOSA-M	1.25 ng/mL
							d-N-MeFOSA-M	1.25 ng/mL
							d3-NMeFOSAA	1.25 ng/mL
							d5-NMeFOSAA	1.25 ng/mL
							d7-N-MeFOSE-M	1.25 ng/mL
							d9-N-EtFOSE-M	1.25 ng/mL
							13C2 10:2 FTS	1.20825 ng/mL
							M2-4:2 FTS	1.1725 ng/mL
							M2-6:2 FTS	1.19 ng/mL
							M2-8:2 FTS	1.2 ng/mL
							13C2 PFHxDA	1.25 ng/mL
							13C2 PFTeDA	1.25 ng/mL
							13C3 HFPO-DA	1.25 ng/mL
							13C4-6:2 diPAP	1.21633 ng/mL
							13C4-8:2 diPAP	1.22296 ng/mL
							13C4 PFHpA	1.25 ng/mL
							13C5 PFPeA	1.25 ng/mL
							13C8 FOSA	1.25 ng/mL
							13C-10:2 FTCA	1.25 ng/mL
							13C-10:2 FTUCA	1.25 ng/mL
							13C-6:2 FTCA	1.25 ng/mL
							13C-6:2 FTUCA	1.25 ng/mL
							13C-8:2 FTCA	1.25 ng/mL
							13C-8:2 FTUCA	1.25 ng/mL
							13C4 PFBA	1.25 ng/mL
							13C3 PFBS	1.165 ng/mL
							13C2 PFDA	1.25 ng/mL
							13C2 PFDoA	1.25 ng/mL
							13C2 PFHxA	1.25 ng/mL
							18O2 PFHxS	1.185 ng/mL
							13C5 PFNA	1.25 ng/mL
							13C4 PFOA	1.25 ng/mL
							13C4 PFOS	1.1975 ng/mL
							13C2 PFUnA	1.25 ng/mL
.LCPFC+6C_LL0_00034	05/16/23	12/01/22	MeOH/H2O, Lot 217743	1 L	LCMPFC_ICALSU_00058	50 mL	d-N-EtFOSA-M	1.25 ng/mL
							d-N-MeFOSA-M	1.25 ng/mL
							d3-NMeFOSAA	1.25 ng/mL
							d5-NMeFOSAA	1.25 ng/mL
							d7-N-MeFOSE-M	1.25 ng/mL
							d9-N-EtFOSE-M	1.25 ng/mL
							13C2 10:2 FTS	1.20825 ng/mL
							M2-4:2 FTS	1.1725 ng/mL
							M2-6:2 FTS	1.19 ng/mL
							M2-8:2 FTS	1.2 ng/mL
							13C2 PFHxDA	1.25 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C2 PFTeDA	1.25 ng/mL
							13C3 HFPO-DA	1.25 ng/mL
							13C4-6:2 diPAP	1.21633 ng/mL
							13C4-8:2 diPAP	1.22296 ng/mL
							13C4 PFHpA	1.25 ng/mL
							13C5 PFPeA	1.25 ng/mL
							13C8 FOSA	1.25 ng/mL
							13C-10:2 FTCA	1.25 ng/mL
							13C-10:2 FTUCA	1.25 ng/mL
							13C-6:2 FTCA	1.25 ng/mL
							13C-6:2 FTUCA	1.25 ng/mL
							13C-8:2 FTCA	1.25 ng/mL
							13C-8:2 FTUCA	1.25 ng/mL
							13C4 PFBA	1.25 ng/mL
							13C3 PFBS	1.165 ng/mL
							13C2 PFDA	1.25 ng/mL
							13C2 PFDoA	1.25 ng/mL
							13C2 PFHxA	1.25 ng/mL
							18O2 PFHxS	1.185 ng/mL
							13C5 PFNA	1.25 ng/mL
							13C4 PFOA	1.25 ng/mL
							13C4 PFOS	1.1975 ng/mL
							13C2 PFUnA	1.25 ng/mL
..LCMPFC_ICALSU_00058	05/16/23	11/19/22	Methanol, Lot 220066	200 mL	LCMPFC_IDA+_00414	200 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-NEtFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024165 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.0238 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							1802 PFHxS	0.0237 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
...LCMPFC_IDA+_00414	05/16/23	11/16/22	Methanol, Lot 218266	200 mL	LCMPFC_IDA+_00409	50 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-NEtFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024165 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.0238 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							1802 PFHxS	0.0237 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
....LCMPFC_IDA+_00409	05/16/23	11/16/22	Methanol, Lot 218266	500 mL	LCd-NEtFOSA-M 00035	1 mL	13C2 PFUnA	0.025 ug/mL
					LCd-NMeFOSA-M 00036	1 mL	d-N-EtFOSA-M	0.1 ug/mL
					LCd3-NMeFOSAA 00047	1 mL	d-N-MeFOSA-M	0.1 ug/mL
					LCd5-NEtFOSAA 00048	1 mL	d3-NMeFOSAA	0.1 ug/mL
					LCd7-NMeFOSEM 00035	1 mL	d5-NEtFOSAA	0.1 ug/mL
					LCd9-NEtFOSEM 00032	1 mL	d7-N-MeFOSE-M	0.1 ug/mL
					LCM10:2 FTS 00007	1 mL	d9-N-EtFOSE-M	0.1 ug/mL
					LCM2-4:FTS 00037	1 mL	13C2 10:2 FTS	0.09666 ug/mL
					LCM2-6:FTS 00043	1 mL	M2-4:2 FTS	0.0938 ug/mL
					LCM2-8:2FTS 00046	1 mL	M2-6:2 FTS	0.0952 ug/mL
					LCM2PFHxDA 00051	1 mL	M2-8:2 FTS	0.096 ug/mL
					LCM2PFTeDA 00049	1 mL	13C2 PFHxDA	0.1 ug/mL
					LCM3HFPO-DA 00041	1 mL	13C2 PFTeDA	0.1 ug/mL
					LCM4-6:2diPAP_00008	1 mL	13C3 HFPO-DA	0.1 ug/mL
					LCM4-8:2diPAP_00009	1 mL	13C4-6:2 diPAP	0.0973068 ug/mL
					LCM4PFHFA 00048	1 mL	13C4-8:2 diPAP	0.097837 ug/mL
					LCM5PFPEA 00049	1 mL	13C4 PFHpA	0.1 ug/mL
					LCM8FOSA 00054	1 mL	13C5 PFPeA	0.1 ug/mL
					LCMFDEA 00015	1 mL	13C8 FOSA	0.1 ug/mL
					LCMFDUEA 00014	1 mL	13C-10:2 FTCA	0.1 ug/mL
					LCMFHEA 00013	1 mL	13C-10:2 FTUCA	0.1 ug/mL
					LCMFHUEA 00015	1 mL	13C-6:2 FTCA	0.1 ug/mL
					LCMFOEA 00014	1 mL	13C-6:2 FTUCA	0.1 ug/mL
					LCMFOUEA 00013	1 mL	13C-8:2 FTCA	0.1 ug/mL
					LCMPFBA 00050	1 mL	13C-8:2 FTUCA	0.1 ug/mL
					LCMPFBS 00036	1 mL	13C4 PFBA	0.1 ug/mL
					LCMPFDA 00057	1 mL	13C3 PFBS	0.0932 ug/mL
					LCMPFDoA 00050	1 mL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA 00060	1 mL	13C2 PFDoA	0.1 ug/mL
					LCMPFHxS 00050	1 mL	13C2 PFHxA	0.1 ug/mL
					LCMPFNA 00049	1 mL	18O2 PFHxS	0.0948 ug/mL
					LCMPFOA 00054	1 mL	13C5 PFNA	0.1 ug/mL
					LCMPFOS 00066	1 mL	13C4 PFOA	0.1 ug/mL
					LCMPFudA 00052	1 mL	13C4 PFOS	0.0958 ug/mL
....LCd-NEtFOSA-M 00035	03/17/27		WELLINGTON, Lot dNetFOSA0322M		(Purchased Reagent)		13C2 PFUnA	0.1 ug/mL
....LCd-NMeFOSA-M 00036	05/06/27		WELLINGTON, Lot dNMeFOSA0422M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
....LCd3-NMeFOSAA 00047	02/22/27		WELLINGTON, Lot d3NMeFOSAA0222		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
....LCd5-NEtFOSAA 00048	05/11/27		WELLINGTON, Lot d5NetFOSAA0522		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
....LCd7-NMeFOSEM 00035	01/27/27		WELLINGTON, Lot d7NMeFOSE1221M		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
....LCd9-NEtFOSEM 00032	01/27/27		WELLINGTON, Lot d9NetFOSE1221M		(Purchased Reagent)		d7-N-MeFOSE-M	50 ug/mL
....LCM10:2 FTS_00007	04/26/26		Cambridge Isotope Laboratories, Lot SEBC-003		(Purchased Reagent)		d9-N-EtFOSE-M	50 ug/mL
....LCM2-4:FTS 00037	04/22/27		Wellington, Lot M242FTS0422		(Purchased Reagent)		13C2 10:2 FTS	48.33 ug/mL
....LCM2-6:FTS 00043	08/04/27		WELLINGTON, Lot M262FTS0722		(Purchased Reagent)		M2-4:2 FTS	46.9 ug/mL
....LCM2-8:2FTS 00046	02/22/27		WELLINGTON, Lot M282FTS0222		(Purchased Reagent)		M2-6:2 FTS	47.6 ug/mL
							M2-8:2 FTS	48 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.....LCM2PFHxDA 00051	11/23/26	Wellington Laboratories, Lot M2PFHxDA1121			(Purchased Reagent)		13C2 PFHxDA	50 ug/mL
.....LCM2PFTeDA 00049	05/11/27	Wellington Laboratories, Lot M2PFTeDA0522			(Purchased Reagent)		13C2 PFTeDA	50 ug/mL
.....LCM3HFPO-DA 00041	05/12/25	WELLINGTON, Lot M3HFPODA0522			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
.....LCM4-6:2diPAP 00008	08/05/26	Wellington, Lot M462diPAP0721			(Purchased Reagent)		13C4-6:2 diPAP	48.6534 ug/mL
.....LCM4-8:2diPAP 00009	12/01/26	Wellington, Lot M482diPAP1121			(Purchased Reagent)		13C4-8:2 diPAP	48.9185 ug/mL
.....LCM4PFHFA 00048	07/21/27	Wellington Laboratories, Lot M4PFHFA0722			(Purchased Reagent)		13C4 PFHFA	50 ug/mL
.....LCM5PFPEA 00049	08/10/26	Wellington Laboratories, Lot M5PFPEA0821			(Purchased Reagent)		13C5 PFPEA	50 ug/mL
.....LCM8FOSA 00054	08/16/27	Wellington Laboratories, Lot M8FOSA0822I			(Purchased Reagent)		13C8 FOSA	50 ug/mL
.....LCMFDEA 00015	06/08/25	Wellington Laboratories, Lot MFDFA0622			(Purchased Reagent)		13C-10:2 FTCA	50 ug/mL
.....LCMFDUEA 00014	11/22/23	Wellington Laboratories, Lot MFDUEA1221			(Purchased Reagent)		13C-10:2 FTUCA	50 ug/mL
.....LCMFHEA 00013	06/23/25	Wellington Laboratories, Lot MFHEA0622			(Purchased Reagent)		13C-6:2 FTCA	50 ug/mL
.....LCMFHUEA 00015	02/18/24	Wellington Laboratories, Lot MFHUEA0322			(Purchased Reagent)		13C-6:2 FTUCA	50 ug/mL
.....LCMFOEA 00014	11/22/24	Wellington Laboratories, Lot MFOEA1121			(Purchased Reagent)		13C-8:2 FTCA	50 ug/mL
.....LCMFOUEA 00013	12/07/23	Wellington Laboratorie, Lot MFOUEA1121			(Purchased Reagent)		13C-8:2 FTUCA	50 ug/mL
.....LCMPFBA 00050	07/12/26	Wellington Laboratories, Lot MPFBA0621			(Purchased Reagent)		13C4 PFBA	50 ug/mL
.....LCMPFBS 00036	07/12/27	Wellington Laboratories, Lot M3PFBS0722			(Purchased Reagent)		13C3 PFBS	46.6 ug/mL
.....LCMPFDA 00057	06/08/27	Wellington Laboratories, Lot MPFDA0522			(Purchased Reagent)		13C2 PFDA	50 ug/mL
.....LCMPFDoA 00050	08/05/27	Wellington Laboratories, Lot MPFDoA0822			(Purchased Reagent)		13C2 PFDoA	50 ug/mL
.....LCMPFHxA 00060	10/04/26	Wellington Laboratories, Lot MPFHxA0921			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
.....LCMPFHxS 00050	06/08/27	Wellington Laboratories, Lot MPFHxS0522			(Purchased Reagent)		1802 PFHxS	47.4 ug/mL
.....LCMPFNA 00049	08/04/27	Wellington Laboratories, Lot MPFNA0722			(Purchased Reagent)		13C5 PFNA	50 ug/mL
.....LCMPFOA 00054	07/21/27	Wellington Laboratories, Lot MPFOA0722			(Purchased Reagent)		13C4 PFOA	50 ug/mL
.....LCMPFOS 00066	07/05/27	Wellington Laboratories, Lot MPFOS0622			(Purchased Reagent)		13C4 PFOS	47.9 ug/mL
.....LCMPFUDa 00052	08/16/27	Wellington Laboratories, Lot MPFUDa0822			(Purchased Reagent)		13C2 PFUnA	50 ug/mL
LCPFC+6C_LL1_00007	02/08/23	10/19/22	MeOH/H2O, Lot 218266	200 mL	LCMPFC_ICALSU_00057	10 mL	13C2 PFOA	1.25 ng/mL
							13C8 PFOA	1.25 ng/mL
							13C8 PFOS	1.195 ng/mL
							d-N-EtFOSA-M	1.25 ng/mL
							d-N-MeFOSA-M	1.25 ng/mL
							d3-NMeFOSAA	1.25 ng/mL
							d5-NMeFOSAA	1.25 ng/mL
							d7-N-MeFOSE-M	1.25 ng/mL
							d9-N-EtFOSE-M	1.25 ng/mL
							13C2 10:2 FTS	1.20625 ng/mL
							M2-4:2 FTS	1.1725 ng/mL
							M2-6:2 FTS	1.1875 ng/mL
							M2-8:2 FTS	1.2 ng/mL
							13C2 PFHxDA	1.25 ng/mL
							13C2 PFTeDA	1.25 ng/mL
							13C3 HFPO-DA	1.25 ng/mL
							13C4-6:2 diPAP	1.21633 ng/mL
							13C4-8:2 diPAP	1.22296 ng/mL
							13C4 PFHFA	1.25 ng/mL
							13C5 PFPEA	1.25 ng/mL
							13C8 FOSA	1.25 ng/mL
							13C-10:2 FTCA	1.25 ng/mL
							13C-10:2 FTUCA	1.25 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-6:2 FTCA	1.25 ng/mL
							13C-6:2 FTUCA	1.25 ng/mL
							13C-8:2 FTCA	1.25 ng/mL
							13C-8:2 FTUCA	1.25 ng/mL
							13C4 PFBA	1.25 ng/mL
							13C3 PFBS	1.165 ng/mL
							13C2 PFDA	1.25 ng/mL
							13C2 PFDoA	1.25 ng/mL
							13C2 PFHxA	1.25 ng/mL
							1802 PFHxS	1.1825 ng/mL
							13C5 PFNA	1.25 ng/mL
							13C4 PFOA	1.25 ng/mL
							13C4 PFOS	1.1975 ng/mL
							13C2 PFUnA	1.25 ng/mL
					LCPFC+SP+6_00107	0.25 mL	NFDHA	0.025 ng/mL
							10:2 diPAP	0.0251245 ng/mL
							10:2 FTS	0.02415 ng/mL
							11Cl-PF3OUdS	0.0236 ng/mL
							3:3 FTCA	0.025 ng/mL
							4:2 FTS	0.02345 ng/mL
							5:3 FTCA	0.025 ng/mL
							6:2 diPAP	0.0243234 ng/mL
							6:2 FTS	0.0238 ng/mL
							6:2/8:2 diPAP	0.0243976 ng/mL
							7:3 FTCA	0.025 ng/mL
							8:2 diPAP	0.0244571 ng/mL
							8:2 FTS	0.024 ng/mL
							9Cl-PF3ONS	0.02335 ng/mL
							NEtFOSAA	0.025 ng/mL
							NMeFOSAA	0.025 ng/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.0236 ng/mL
							FBSA	0.025 ng/mL
							10:2 FTCA	0.025 ng/mL
							10:2 FTUCA	0.025 ng/mL
							6:2 FTCA	0.025 ng/mL
							6:2 FTUCA	0.025 ng/mL
							FHxSA	0.025 ng/mL
							8:2 FTCA	0.025 ng/mL
							8:2 FTUCA	0.025 ng/mL
							HFPO-DA (GenX)	0.025 ng/mL
							PFPrS	0.023 ng/mL
							NEtFOSA	0.025 ng/mL
							NEtFOSE	0.025 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							NMeFOSA	0.025 ng/mL
							NMeFOSE	0.025 ng/mL
							PFMPA	0.025 ng/mL
							PFMBA	0.025 ng/mL
							Perfluorobutanoic acid (PFBA)	0.025 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	0.0222 ng/mL
							Perfluorodecanoic acid (PFDA)	0.025 ng/mL
							Perfluorododecanoic acid (PFDoA)	0.025 ng/mL
							Perfluorododecanesulfonic acid (PFDoS)	0.02425 ng/mL
							Perfluorodecanesulfonic acid (PFDS)	0.0241 ng/mL
							PFECHS	0.0231 ng/mL
							PFEESA	0.0223 ng/mL
							Perfluoroheptanoic acid (PFHpA)	0.025 ng/mL
							Perfluoroheptanesulfonic acid (PFHpS)	0.02385 ng/mL
							Perfluorohexanoic acid (PFHxA)	0.025 ng/mL
							Perfluoro-n-hexadecanoic acid (PFHxDA)	0.025 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	0.0228 ng/mL
							Perfluorononanoic acid (PFNA)	0.025 ng/mL
							Perfluorononanesulfonic acid (PFNS)	0.02405 ng/mL
							Perfluorooctanoic acid (PFOA)	0.025 ng/mL
							Perfluoro-n-octadecanoic acid (PFODA)	0.025 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	0.02325 ng/mL
							Perfluorooctanesulfonamide (FOSA)	0.025 ng/mL
							Perfluoropentanoic acid (PFPeA)	0.025 ng/mL
							Perfluoropentanesulfonic acid (PFPeS)	0.0235 ng/mL
							Perfluorotetradecanoic acid (PFTeA)	0.025 ng/mL
							Perfluorotridecanoic acid (PFTrDA)	0.025 ng/mL
							Perfluoroundecanoic acid (PFUnA)	0.025 ng/mL
							PFPrA	0.02425 ng/mL
					LCPFC3SP_P3_00033	0.25 mL	PS Acid	0.025 ng/mL
							Hydro-PS Acid	0.025 ng/mL
							R-PSDA	0.025 ng/mL
							Hydrolyzed PSDA	0.025 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							R-PSDCA	0.025 ng/mL
							EVE Acid	0.025 ng/mL
							Hydro-EVE Acid	0.025 ng/mL
							MTP	0.025 ng/mL
							NVHOS	0.025 ng/mL
							PEPA	0.025 ng/mL
							PFPE-1	0.025 ng/mL
							PFMOAA	0.025 ng/mL
							PFO2HxA	0.025 ng/mL
							PFO3OA	0.025 ng/mL
							PFO4DA	0.025 ng/mL
							PFO5DA	0.025 ng/mL
							PMPA	0.025 ng/mL
							R-EVE	0.025 ng/mL
.LCMPFC_ICALSU_00057	04/03/23	10/19/22	Methanol, Lot 218266	200 mL	LCM2PFOA_00037	100 uL	13C2 PFOA	0.025 ug/mL
					LCM8PFOA_00003	100 uL	13C8 PFOA	0.025 ug/mL
					LCM8PFOS_00005	100 uL	13C8 PFOS	0.0239 ug/mL
					LCMPFC_IDA+_00378	200 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-NEtFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024125 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.02375 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C2 PFHxA	0.025 ug/mL
							1802 PFHxS	0.02365 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
..LCM2PFOA 00037	12/09/26	Wellington Laboratories, Lot M2PFOA0122			(Purchased Reagent)		13C2 PFOA	50 ug/mL
..LCM8PFOA 00003	07/22/25	Wellington Laboratories, Lot M8PFOA0720			(Purchased Reagent)		13C8 PFOA	50 ug/mL
..LCM8PFOS 00005	01/14/26	Wellington Laboratories, Lot M8PFOS0121			(Purchased Reagent)		13C8 PFOS	47.8 ug/mL
..LCMPFC_IDA+_00378	04/03/23	10/04/22	Methanol, Lot 218266	200 mL	LCMPFC_IDA+_00376	50 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-N-EtFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024125 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.02375 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							1802 PFHxS	0.02365 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
...LCMPFC_IDA+_00376	04/03/23	10/03/22	Methanol, Lot 218266	500 mL	LCd-NEtFOSA-M 00034	1 mL	d-N-EtFOSA-M	0.1 ug/mL
					LCd-NMeFOSA-M 00035	1 mL	d-N-MeFOSA-M	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCd3-NMeFOSAA 00046	1 mL	d3-NMeFOSAA	0.1 ug/mL
					LCd5-NEtFOSAA 00047	1 mL	d5-NEtFOSAA	0.1 ug/mL
					LCd7-NMeFOSEM 00035	1 mL	d7-N-MeFOSE-M	0.1 ug/mL
					LCd9-NEtFOSEM 00032	1 mL	d9-N-EtFOSE-M	0.1 ug/mL
					LCM10:2 FTS 00005	1 mL	13C2 10:2 FTS	0.0965 ug/mL
					LCM2-4:FTS 00036	1 mL	M2-4:2 FTS	0.0938 ug/mL
					LCM2-6:FTS 00040	1 mL	M2-6:2 FTS	0.095 ug/mL
					LCM2-8:2FTS 00045	1 mL	M2-8:2 FTS	0.096 ug/mL
					LCM2PFHxDA 00050	1 mL	13C2 PFHxDA	0.1 ug/mL
					LCM2PFTeDA 00048	1 mL	13C2 PFTeDA	0.1 ug/mL
					LCM3HFPO-DA 00040	1 mL	13C3 HFPO-DA	0.1 ug/mL
					LCM4-6:2diPAP_00008	1 mL	13C4-6:2 diPAP	0.0973068 ug/mL
					LCM4-8:2diPAP_00008	1 mL	13C4-8:2 diPAP	0.097837 ug/mL
					LCM4PFHPA 00047	1 mL	13C4 PFHPa	0.1 ug/mL
					LCM5PFPEA 00048	1 mL	13C5 PFPeA	0.1 ug/mL
					LCM8FOSA 00053	1 mL	13C8 FOSA	0.1 ug/mL
					LCMFDEA 00014	1 mL	13C-10:2 FTCA	0.1 ug/mL
					LCMFDUEA 00013	1 mL	13C-10:2 FTUCA	0.1 ug/mL
					LCMFHEA 00012	1 mL	13C-6:2 FTCA	0.1 ug/mL
					LCMFHUEA 00015	1 mL	13C-6:2 FTUCA	0.1 ug/mL
					LCMFOEA 00011	1 mL	13C-8:2 FTCA	0.1 ug/mL
					LCMFOUEA 00013	1 mL	13C-8:2 FTUCA	0.1 ug/mL
					LCMPFBA 00050	1 mL	13C4 PFBA	0.1 ug/mL
					LCMPFBS 00035	1 mL	13C3 PFBS	0.0932 ug/mL
					LCMPFDA 00056	1 mL	13C2 PFDA	0.1 ug/mL
					LCMPFDoA 00049	1 mL	13C2 PFDoA	0.1 ug/mL
					LCMPFHxA 00055	1 mL	13C2 PFHxA	0.1 ug/mL
					LCMPFHxS 00048	1 mL	18O2 PFHxS	0.0946 ug/mL
					LCMPFNA 00048	1 mL	13C5 PFNA	0.1 ug/mL
					LCMPFOA 00052	1 mL	13C4 PFOA	0.1 ug/mL
					LCMPFOS 00064	1 mL	13C4 PFOS	0.0958 ug/mL
					LCMPFUDa 00051	1 mL	13C2 PFUnA	0.1 ug/mL
....LCd-NEtFOSA-M 00034	03/17/27		WELLINGTON, Lot dNEtFOSA0322M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
....LCd-NMeFOSA-M 00035	10/07/26		WELLINGTON, Lot dNMeFOSA1021M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
....LCd3-NMeFOSAA 00046	02/22/27		WELLINGTON, Lot d3NMeFOSAA0222		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
....LCd5-NEtFOSAA 00047	09/28/26		WELLINGTON, Lot d5NEtFOSAA0921		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
....LCd7-NMeFOSEM 00035	01/27/27		WELLINGTON, Lot d7NMeFOSE1221M		(Purchased Reagent)		d7-N-MeFOSE-M	50 ug/mL
....LCd9-NEtFOSEM 00032	01/27/27		WELLINGTON, Lot d9NEtFOSE1221M		(Purchased Reagent)		d9-N-EtFOSE-M	50 ug/mL
....LCM10:2 FTS_00005	04/26/26		Cambridge Isotope Laboratories, Lot SEBC-003		(Purchased Reagent)		13C2 10:2 FTS	48.25 ug/mL
....LCM2-4:FTS 00036	10/13/26		Wellington, Lot M242FTS1021		(Purchased Reagent)		M2-4:2 FTS	46.9 ug/mL
....LCM2-6:FTS 00040	10/13/26		WELLINGTON, Lot M262FTS1021		(Purchased Reagent)		M2-6:2 FTS	47.5 ug/mL
....LCM2-8:2FTS 00045	11/23/26		WELLINGTON, Lot M282FTS1121		(Purchased Reagent)		M2-8:2 FTS	48 ug/mL
....LCM2PFHxDA 00050	11/23/26		Wellington Laboratories, Lot M2PFHxDA1121		(Purchased Reagent)		13C2 PFHxDA	50 ug/mL
....LCM2PFTeDA 00048	11/22/26		Wellington Laboratories, Lot M2PFTeDA1121		(Purchased Reagent)		13C2 PFTeDA	50 ug/mL
....LCM3HFPO-DA 00040	11/11/24		WELLINGTON, Lot M3HFPODA1121		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
....LCM4-6:2diPAP 00008	08/05/26		Wellington, Lot M462diPAP0721		(Purchased Reagent)		13C4-6:2 diPAP	48.6534 ug/mL
....LCM4-8:2diPAP 00008	12/01/26		Wellington, Lot M482diPAP1121		(Purchased Reagent)		13C4-8:2 diPAP	48.9185 ug/mL
....LCM4PFHPA 00047	12/07/26		Wellington Laboratories, Lot M4PFHpA1121		(Purchased Reagent)		13C4 PFHpA	50 ug/mL
....LCM5PFPEA 00048	08/10/26		Wellington Laboratories, Lot M5PFPeA0821		(Purchased Reagent)		13C5 PFPeA	50 ug/mL
....LCM8FOSA 00053	03/17/27		Wellington Laboratories, Lot M8FOSA0322I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
....LCMFDEA 00014	09/27/24		Wellington Laboratories, Lot MFDEA0921		(Purchased Reagent)		13C-10:2 FTCA	50 ug/mL
....LCMFDEUA 00013	11/22/23		Wellington Laboratories, Lot MFDUEA1221		(Purchased Reagent)		13C-10:2 FTUCA	50 ug/mL
....LCMFHEA 00012	09/29/24		Wellington Laboratories, Lot MFHEA0921		(Purchased Reagent)		13C-6:2 FTCA	50 ug/mL
....LCMFHUEA 00015	02/18/24		Wellington Laboratories, Lot MFHUEA0322		(Purchased Reagent)		13C-6:2 FTUCA	50 ug/mL
....LCMFOEA 00011	11/22/24		Wellington Laboratories, Lot MFOEA1121		(Purchased Reagent)		13C-8:2 FTCA	50 ug/mL
....LCMFOUEA 00013	12/07/23		Wellington Laboratorie, Lot MFOUEA1121		(Purchased Reagent)		13C-8:2 FTUCA	50 ug/mL
....LCMPFBA 00050	07/12/26		Wellington Laboratories, Lot MPFBA0621		(Purchased Reagent)		13C4 PFBA	50 ug/mL
....LCMPFBS 00035	02/07/27		Wellington Laboratories, Lot M3PFBS0222		(Purchased Reagent)		13C3 PFBS	46.6 ug/mL
....LCMPFDA 00056	12/08/26		Wellington Laboratories, Lot MPFDA1221		(Purchased Reagent)		13C2 PFDA	50 ug/mL
....LCMPFDoA 00049	03/17/27		Wellington Laboratories, Lot MPFDoA0322		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
....LCMPFHxA 00055	10/04/26		Wellington Laboratories, Lot MPFHxA0921		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
....LCMPFHxS 00048	10/29/26		Wellington Laboratories, Lot MPFHxS1021		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
....LCMPFNA 00048	10/29/26		Wellington Laboratories, Lot MPFNA1021		(Purchased Reagent)		13C5 PFNA	50 ug/mL
....LCMPFOA 00052	12/07/26		Wellington Laboratories, Lot MPFOA1121		(Purchased Reagent)		13C4 PFOA	50 ug/mL
....LCMPFOS 00064	01/27/27		Wellington Laboratories, Lot MPFOS0122		(Purchased Reagent)		13C4 PFOS	47.9 ug/mL
....LCMPFUdA 00051	12/09/26		Wellington Laboratories, Lot MPFUdA1221		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
.LCPFC+SP+6_00107	02/08/23	10/04/22	Methanol, Lot 218266	250 mL	LCPFC+SP+6_00098	50 mL	NFDHA	0.02 ug/mL
							10:2 diPAP	0.0200996 ug/mL
							10:2 FTS	0.01932 ug/mL
							11Cl-PF3OUds	0.01888 ug/mL
							3:3 FTCA	0.02 ug/mL
							4:2 FTS	0.01876 ug/mL
							5:3 FTCA	0.02 ug/mL
							6:2 diPAP	0.0194587 ug/mL
							6:2 FTS	0.01904 ug/mL
							6:2/8:2 diPAP	0.0195181 ug/mL
							7:3 FTCA	0.02 ug/mL
							8:2 diPAP	0.0195657 ug/mL
							8:2 FTS	0.0192 ug/mL
							9Cl-PF3ONS	0.01868 ug/mL
							NEtFOSAA	0.02 ug/mL
							NMeFOSAA	0.02 ug/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.01888 ug/mL
							FBSA	0.02 ug/mL
							10:2 FTCA	0.02 ug/mL
							10:2 FTUCA	0.02 ug/mL
							6:2 FTCA	0.02 ug/mL
							6:2 FTUCA	0.02 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							FHxSA	0.02 ug/mL
							8:2 FTCA	0.02 ug/mL
							8:2 FTUCA	0.02 ug/mL
							HFPO-DA (GenX)	0.02 ug/mL
							PFPPrS	0.0184 ug/mL
							NEtFOSA	0.02 ug/mL
							NEtFOSE	0.02 ug/mL
							NMeFOSA	0.02 ug/mL
							NMeFOSE	0.02 ug/mL
							PFMPA	0.02 ug/mL
							PFMBA	0.02 ug/mL
							Perfluorobutanoic acid (PFBA)	0.02 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.01776 ug/mL
							Perfluorodecanoic acid (PFDA)	0.02 ug/mL
							Perfluorododecanoic acid (PFDoA)	0.02 ug/mL
							Perfluorododecanesulfonic acid (PFDoS)	0.0194 ug/mL
							Perfluorodecanesulfonic acid (PFDS)	0.01928 ug/mL
							PFECHS	0.01848 ug/mL
							PFEESA	0.01784 ug/mL
							Perfluoroheptanoic acid (PFHpA)	0.02 ug/mL
							Perfluoroheptanesulfonic acid (PFHpS)	0.01908 ug/mL
							Perfluorohexanoic acid (PFHxA)	0.02 ug/mL
							Perfluoro-n-hexadecanoic acid (PFHxDA)	0.02 ug/mL
							Perfluorohexanesulfonic acid (PFHxS)	0.01824 ug/mL
							Perfluorononanoic acid (PFNA)	0.02 ug/mL
							Perfluorononanesulfonic acid (PFNS)	0.01924 ug/mL
							Perfluorooctanoic acid (PFOA)	0.02 ug/mL
							Perfluoro-n-octadecanoic acid (PFODA)	0.02 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	0.0186 ug/mL
							Perfluorooctanesulfonamide (FOSA)	0.02 ug/mL
							Perfluoropentanoic acid (PFPeA)	0.02 ug/mL
							Perfluoropentanesulfonic acid (PFPeS)	0.0188 ug/mL
							Perfluorotetradecanoic acid (PFTeA)	0.02 ug/mL
							Perfluorotridecanoic acid (PFTTrDA)	0.02 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCPFC+SP+6_00098	02/08/23	10/03/22	Methanol, Lot 218266	500 mL			Perfluoroundecanoic acid (PFUnA)	0.02 ug/mL
							PFPPrA	0.0194 ug/mL
					LC-36-OPFHpa_00011	1 mL	NFDHA	0.1 ug/mL
					LC10:2diPAPim_00016	1.09 mL	10:2 diPAP	0.100498 ug/mL
					LC10:2FTS_00016	1 mL	10:2 FTS	0.0966 ug/mL
					LC11CIPF3OUds_00023	1 mL	11C1-PF3OUds	0.0944 ug/mL
					LC3:3FTCA_00005	1 mL	3:3 FTCA	0.1 ug/mL
					LC4:2FTS_00024	1 mL	4:2 FTS	0.0938 ug/mL
					LC5:3FTCA_00008	1 mL	5:3 FTCA	0.1 ug/mL
					LC6:2diPAP_00009	1 mL	6:2 diPAP	0.0972936 ug/mL
					LC6:2FTS_00024	1 mL	6:2 FTS	0.0952 ug/mL
					LC62/82diPAP_00007	1 mL	6:2/8:2 diPAP	0.0975904 ug/mL
					LC7:3FTCA_00007	1 mL	7:3 FTCA	0.1 ug/mL
					LC8:2diPAP_00007	1 mL	8:2 diPAP	0.0978284 ug/mL
					LC8:2FTS_00024	1 mL	8:2 FTS	0.096 ug/mL
					LC9CI-PF3ONS_00023	1 mL	9C1-PF3ONS	0.0934 ug/mL
					LCbr-NEtFOSAA_00023	1 mL	NEtFOSAA	0.1 ug/mL
					LCbr-NMeFOSAA_00022	1 mL	NMeFOSAA	0.1 ug/mL
					LCDONA_00032	1 mL	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.0944 ug/mL
					LCFBSA-I_00007	1 mL	FBSA	0.1 ug/mL
					LCFDEA_00009	1 mL	10:2 FTCA	0.1 ug/mL
					LCFDUEA_00007	1 mL	10:2 FTUCA	0.1 ug/mL
					LCFHUEA_00009	1 mL	6:2 FTCA	0.1 ug/mL
					LCFHUEA_00009	1 mL	6:2 FTUCA	0.1 ug/mL
					LCFHxSA-I_00009	1 mL	FHxSA	0.1 ug/mL
					LCFOEA_00010	1 mL	8:2 FTCA	0.1 ug/mL
					LCFOUEA_00007	1 mL	8:2 FTUCA	0.1 ug/mL
					LCHFPO-DA_00027	1 mL	HFPO-DA (GenX)	0.1 ug/mL
					LCLPFPPrS_00009	1 mL	PFPPrS	0.092 ug/mL
					LCN-EtFOSA-M_00025	1 mL	NEtFOSA	0.1 ug/mL
					LCN-EtFOSE-M_00018	1 mL	NEtFOSE	0.1 ug/mL
					LCN-MeFOSA-M_00027	1 mL	NMeFOSA	0.1 ug/mL
					LCN-MeFOSE-M_00021	1 mL	NMeFOSE	0.1 ug/mL
					LCPF4OPeA_00015	1 mL	PFMPA	0.1 ug/mL
					LCPF5OHxA_00011	1 mL	PFMBA	0.1 ug/mL
					LCPFBA_00028	1 mL	Perfluorobutanoic acid (PFBA)	0.1 ug/mL
					LCPFBFA_00025	1 mL	Perfluorobutanesulfonic acid (PFBS)	0.0888 ug/mL
					LCPFDA_00033	1 mL	Perfluorodecanoic acid (PFDA)	0.1 ug/mL
					LCPFDoA_00031	1 mL	Perfluorododecanoic acid (PFDoA)	0.1 ug/mL
					LCPFDoS_00020	1 mL	Perfluorododecanesulfonic acid (PFDoS)	0.097 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFDOSA_00016	1 mL	Perfluorodecanesulfonic acid (PFDS)	0.0964 ug/mL
					LCPFECHS_00007	1 mL	PFECHS	0.0924 ug/mL
					LCPFEESA_00010	1 mL	PFEESA	0.0892 ug/mL
					LCPFHpa_00035	1 mL	Perfluoroheptanoic acid (PFHpA)	0.1 ug/mL
					LCPFHpsA_00021	1 mL	Perfluoroheptanesulfonic acid (PFHpS)	0.0954 ug/mL
					LCPFHxA_00033	1 mL	Perfluorohexanoic acid (PFHxA)	0.1 ug/mL
					LCPFHxDA_00028	1 mL	Perfluoro-n-hexadecanoic acid (PFHxDA)	0.1 ug/mL
					LCPFHxS-br_00027	1 mL	Perfluorohexanesulfonic acid (PFHxS)	0.0912 ug/mL
					LCPFNA_00035	1 mL	Perfluorononanoic acid (PFNA)	0.1 ug/mL
					LCPFNS_00020	1 mL	Perfluorononanesulfonic acid (PFNS)	0.0962 ug/mL
					LCPFOA_00032	1 mL	Perfluorooctanoic acid (PFOA)	0.1 ug/mL
					LCPFODA_00028	1 mL	Perfluoro-n-octadecanoic acid (PFODA)	0.1 ug/mL
					LCPFOS-br_00029	1 mL	Perfluorooctanesulfonic acid (PFOS)	0.093 ug/mL
					LCPFOSA_00029	1 mL	Perfluorooctanesulfonamide (FOSA)	0.1 ug/mL
					LCPFPeA_00028	1 mL	Perfluoropentanoic acid (PFPeA)	0.1 ug/mL
					LCPFPeS_00020	1 mL	Perfluoropentanesulfonic acid (PFPeS)	0.094 ug/mL
					LCPFTeDA_00032	1 mL	Perfluorotetradecanoic acid (PFTeA)	0.1 ug/mL
					LCPFTrDA_00030	1 mL	Perfluorotridecanoic acid (PFTTrDA)	0.1 ug/mL
					LCPFUdA_00033	1 mL	Perfluoroundecanoic acid (PFUnA)	0.1 ug/mL
					LCPPropionic_00024	1 mL	PFPrA	0.097 ug/mL
...LC-36-OFFHpA_00011	10/14/26	Wellington Laboratories, Lot 36OPFHpa0921			(Purchased Reagent)		NFDHA	50 ug/mL
...LC10:2diPAPim_00016	02/08/23	08/08/22	Methanol, Lot 217743	200 mL	LC10:2diPAPim_00015	100 mL	10:2 diPAP	46.1 ug/mL
....LC10:2diPAPim_00015	02/08/23	08/08/22	Methanol, Lot 217743	1000 mL	LC10:2diPAP_00005	0.0922 g	10:2 diPAP	92.2 ug/mL
.....LC10:2diPAP_00005	11/13/23	Toronto Research Chemicals, Lot 5-BKS-67-1			(Purchased Reagent)		10:2 diPAP	100 %
...LC10:2FTS_00016	01/27/27	WELLINGTON, Lot 102FTS0122			(Purchased Reagent)		10:2 FTS	48.3 ug/mL
...LC11CIPF3OUdS_00023	02/08/27	Wellington Laboratories, Lot 11CIPF3OUdS0222			(Purchased Reagent)		11C1-PF3OUdS	47.2 ug/mL
...LC3:3FTCA_00005	02/03/27	Wellington Laboratories, Lot FPrPA0122			(Purchased Reagent)		3:3 FTCA	50 ug/mL
...LC4:2FTS_00024	04/22/27	WELLINGTON, Lot 42FTS0422			(Purchased Reagent)		4:2 FTS	46.9 ug/mL
...LC5:3FTCA_00008	01/05/27	Wellington Laboratories, Lot FPePA1221			(Purchased Reagent)		5:3 FTCA	50 ug/mL
...LC6:2diPAP_00009	03/18/27	Wellington, Lot 62diPAP0222			(Purchased Reagent)		6:2 diPAP	48.6468 ug/mL
...LC6:2FTS_00024	01/04/27	WELLINGTON, Lot 62FTS1221			(Purchased Reagent)		6:2 FTS	47.6 ug/mL
...LC62/82diPAP_00007	01/26/26	Wellington, Lot 6282diPAP0121			(Purchased Reagent)		6:2/8:2 diPAP	48.7952 ug/mL
...LC7:3FTCA_00007	10/13/26	Wellington Laboratories, Lot FHpPA1021			(Purchased Reagent)		7:3 FTCA	50 ug/mL
...LC8:2diPAP_00007	09/09/25	Wellington, Lot 82diPAP0920			(Purchased Reagent)		8:2 diPAP	48.9142 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LC8:2FTS 00024	02/08/27		WELLINGTON, Lot 82FTS0122		(Purchased Reagent)		8:2 FTS	48 ug/mL
...LC9CI-PF3ONS_00023	11/22/26		Wellington Laboratories, Lot 9CIPF3ONS1121		(Purchased Reagent)		9CI-PF3ONS	46.7 ug/mL
...LCbr-NetFOSAA 00023	11/23/26		WELLINGTON, Lot brNetFOSAA1121		(Purchased Reagent)		NetFOSAA	50 ug/mL
...LCbr-NMeFOSAA 00022	07/13/26		WELLINGTON, Lot brNMeFOSAA0621		(Purchased Reagent)		NMeFOSAA	50 ug/mL
...LCDONA_00032	04/18/27		WELLINGTON, Lot NADONA0422		(Purchased Reagent)		4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.2 ug/mL
...LCFBSA-I 00007	11/10/26		Wellington, Lot FBSA1121I		(Purchased Reagent)		FBSA	50 ug/mL
...LCFDEA 00009	09/28/24		Wellington Laboratories, Lot FDEA0921		(Purchased Reagent)		10:2 FTCA	50 ug/mL
...LCFDUEA 00007	10/29/23		Wellington Laboratories, Lot FDUEA1021		(Purchased Reagent)		10:2 FTUCA	50 ug/mL
...LCFHEA 00009	01/05/25		Wellington Laboratories, Lot FHEA1221		(Purchased Reagent)		6:2 FTCA	50 ug/mL
...LCFHUEA 00009	09/03/23		Wellington Laboratories, Lot FHUEA0921		(Purchased Reagent)		6:2 FTUCA	50 ug/mL
...LCFHxSA-I 00009	12/29/26		Wellington, Lot FHXSA1221I		(Purchased Reagent)		FHXSA	50 ug/mL
...LCFOEA 00010	08/18/24		Wellington Laboratories, Lot FOEA0821		(Purchased Reagent)		8:2 FTCA	50 ug/mL
...LCFOUEA 00007	12/29/23		Wellington Laboratories, Lot FOUEA1221		(Purchased Reagent)		8:2 FTUCA	50 ug/mL
...LCHFPO-DA 00027	04/05/25		WELLINGTON, Lot HFPODA0322		(Purchased Reagent)		HFPO-DA (GenX)	50 ug/mL
...LCLPFPPrS 00009	04/20/27		Wellington Laboratories, Lot LPFPPrS0422		(Purchased Reagent)		PFPrS	46 ug/mL
...LCN-EtFOSA-M 00025	04/20/27		WELLINGTON, Lot NetFOSA0422M		(Purchased Reagent)		NetFOSA	50 ug/mL
...LCN-EtFOSE-M 00018	09/23/26		WELLINGTON, Lot NetFOSE0921M		(Purchased Reagent)		NetFOSE	50 ug/mL
...LCN-MeFOSA-M 00027	02/28/27		WELLINGTON, Lot NMeFOSA0222M		(Purchased Reagent)		NMeFOSA	50 ug/mL
...LCN-MeFOSE-M 00021	05/13/27		WELLINGTON, Lot NMeFOSE0522M		(Purchased Reagent)		NMeFOSE	50 ug/mL
...LCPFF40PeA 00015	08/02/27		Wellington Laboratories, Lot PF40PeA0722		(Purchased Reagent)		PFMPA	50 ug/mL
...LCPFF5OHxA 00011	10/19/26		Wellington Laboratories, Lot PF5OHxA1021		(Purchased Reagent)		PFMBA	50 ug/mL
...LCPFFBA 00028	04/18/27		Wellington Laboratories, Lot PFBA0422		(Purchased Reagent)		Perfluorobutanoic acid (PFBA)	50 ug/mL
...LCPFFBSA_00025	04/05/27		Wellington Laboratories, Lot LPFBS0322		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.4 ug/mL
...LCPFFDA 00033	02/22/27		Wellington Laboratories, Lot PFDA0222		(Purchased Reagent)		Perfluorodecanoic acid (PFDA)	50 ug/mL
...LCPFFDoA_00031	01/27/27		Wellington Laboratories, Lot PFDoA0122		(Purchased Reagent)		Perfluorododecanoic acid (PFDoA)	50 ug/mL
...LCPFFDoS_00020	04/20/27		Wellington Laboratories, Lot LPFFDoS0422		(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48.5 ug/mL
...LCPFFDSA_00016	02/22/27		Wellington Laboratories, Lot LPFDS0222		(Purchased Reagent)		Perfluorodecanesulfonic acid (PFDS)	48.2 ug/mL
...LCPFFECHS 00007	03/28/27		Wellington Laboratories, Lot PFECHS0222		(Purchased Reagent)		PFECHS	46.2 ug/mL
...LCPFEESA 00010	11/22/26		Wellington Laboratories, Lot PFEESA1121		(Purchased Reagent)		PFEESA	44.6 ug/mL
...LCPFFHpA_00035	03/17/27		Wellington Laboratories, Lot PFHpA0222		(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	50 ug/mL
...LCPFFHpSA_00021	01/27/27		Wellington Laboratories, Lot LPFFHpS0122		(Purchased Reagent)		Perfluoroheptanesulfonic acid (PFHpS)	47.7 ug/mL
...LCPFFHxA 00033	01/27/27		Wellington Laboratories, Lot PFHxA0122		(Purchased Reagent)		Perfluorohexanoic acid (PFHxA)	50 ug/mL
...LCPFFHxDA_00028	02/23/27		Wellington Laboratories, Lot PFHxDA0222		(Purchased Reagent)		Perfluoro-n-hexadecanoic acid (PFHxDA)	50 ug/mL
...LCPFFHxS-br_00027	12/07/26		Wellington Laboratories, Lot brPFHxSK1211		(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	45.6 ug/mL
...LCPFFNA 00035	01/27/27		Wellington Laboratories, Lot PFNA0122		(Purchased Reagent)		Perfluorononanoic acid (PFNA)	50 ug/mL
...LCPFFNS_00020	04/20/27		Wellington Laboratories, Lot LPFNS0422		(Purchased Reagent)		Perfluorononanesulfonic acid (PFNS)	48.1 ug/mL
...LCPFFOA_00032	02/22/27		Wellington Laboratories, Lot PFOA0222		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL

REAGENT TRACEABILITY SUMMARY

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LCPFODA_00028	09/03/26		Wellington Laboratories, Lot PFODA0821		(Purchased Reagent)		Perfluoro-n-octadecanoic acid (PFODA)	50 ug/mL
...LCPFOS-br_00029	12/07/26		Wellington Laboratories, Lot brPFOSK1121		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.5 ug/mL
...LCPFOSA_00029	04/05/27		Wellington Laboratories, Lot FOSA0322I		(Purchased Reagent)		Perfluorooctanesulfonamide (FOSA)	50 ug/mL
...LCPFPeA_00028	02/08/27		Wellington Laboratories, Lot PFPeA0122		(Purchased Reagent)		Perfluoropentanoic acid (PFPeA)	50 ug/mL
...LCPFPeS_00020	02/07/27		Wellington Laboratories, Lot LPFPeS0122		(Purchased Reagent)		Perfluoropentanesulfonic acid (PFPeS)	47 ug/mL
...LCPFTeDA_00032	02/28/27		Wellington Laboratories, Lot PFTeDA0222		(Purchased Reagent)		Perfluorotetradecanoic acid (PFTeA)	50 ug/mL
...LCPFTTrDA_00030	02/07/27		Wellington Laboratories, Lot PFTTrDA0122		(Purchased Reagent)		Perfluorotridecanoic acid (PFTTrDA)	50 ug/mL
...LCPFUdA_00033	02/22/27		Wellington Laboratories, Lot PFUdA0222		(Purchased Reagent)		Perfluoroundecanoic acid (PFUnA)	50 ug/mL
...LCPropionic_00024	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	LCPropionic_00023	5 mL	PFPPrA	48.5 ug/mL
....LCPropionic_00023	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	Propionic Acd 00002	100 uL	PFPPrA	970 ug/mL
.....Propionic Acd 00002	06/09/25		Sigma Aldrich, Lot MKCK6675		(Purchased Reagent)		PFPPrA	97 %
.LCPFC3SP_P3_00033	02/09/23	08/09/22	Methanol, Lot 217743	250 mL	LCPFC3SP_TB3_00039	50 mL	PS Acid	0.02 ug/mL
							Hydro-PS Acid	0.02 ug/mL
							R-PSDA	0.02 ug/mL
							Hydrolyzed PSDA	0.02 ug/mL
							R-PSDCA	0.02 ug/mL
							EVE Acid	0.02 ug/mL
							Hydro-EVE Acid	0.02 ug/mL
							MTP	0.02 ug/mL
							NVHOS	0.02 ug/mL
							PEPA	0.02 ug/mL
							PFPE-1	0.02 ug/mL
							PFMOAA	0.02 ug/mL
							PFO2HxA	0.02 ug/mL
							PFO3OA	0.02 ug/mL
							PFO4DA	0.02 ug/mL
							PFO5DA	0.02 ug/mL
							PMPA	0.02 ug/mL
							R-EVE	0.02 ug/mL
..LCPFC3SP_TB3_00039	02/09/23	08/09/22	Methanol, Lot 217743	500 mL	LCBP1_00005	50 uL	PS Acid	0.1 ug/mL
					LCBP2_00004	50 uL	Hydro-PS Acid	0.1 ug/mL
					LCBP4_00003	50 uL	R-PSDA	0.1 ug/mL
					LCBP5_00004	50 uL	Hydrolyzed PSDA	0.1 ug/mL
					LCBP6_00004	50 uL	R-PSDCA	0.1 ug/mL
					LCEVEA_00004	50 uL	EVE Acid	0.1 ug/mL
					LCHEVEA_00003	50 uL	Hydro-EVE Acid	0.1 ug/mL
					LCMTP_00003	50 uL	MTP	0.1 ug/mL
					LCNVHOS_00003	50 uL	NVHOS	0.1 ug/mL
					LCPEPA_00005	50 uL	PEPA	0.1 ug/mL
					LCPFECA_G_00004	50 uL	PFPE-1	0.1 ug/mL
					LCPFMOAA_00007	50 uL	PFMOAA	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

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SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFO2HxA 00005	50 uL	PFO2HxA	0.1 ug/mL
					LCPFO3OA 00006	50 uL	PFO3OA	0.1 ug/mL
					LCPFO4DA 00005	50 uL	PFO4DA	0.1 ug/mL
					LCPFO5DoA 00004	50 uL	PFO5DA	0.1 ug/mL
					LCPMPA 00005	50 uL	PMPA	0.1 ug/mL
					LCR-EVE 00005	50 uL	R-EVE	0.1 ug/mL
...LCBP1 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PS Acid	0.1 %
...LCBP2 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydro-PS Acid	0.1 %
...LCBP4 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-PSDA	0.1 %
...LCBP5 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydrolyzed PSDA	0.1 %
...LCBP6 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-PSDCA	0.1 %
...LCEVEA 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		EVE Acid	0.1 %
...LCHEVEA 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydro-EVE Acid	0.1 %
...LCMTP 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		MTP	0.1 %
...LCNVHOS 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		NVHOS	0.1 %
...LCPEPA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PEPA	0.1 %
...LCPFECA G 00004	01/23/24		Chemours, Lot NA		(Purchased Reagent)		PFPE-1	1000 ug/mL
...LCPFMOAA 00007	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFMOAA	0.1 %
...LCPFO2HxA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO2HxA	0.1 %
...LCPFO3OA 00006	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO3OA	0.1 %
...LCPFO4DA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO4DA	0.1 %
...LCPFO5DoA 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO5DA	0.1 %
...LCPMPA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PMPA	0.1 %
...LCR-EVE 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-EVE	0.1 %
LCPFC+6C_LL2_00010	02/08/23	10/19/22	MeOH/H2O, Lot 218266	500 mL	LCMPFC_ICALSU_00057	25 mL	13C2 PFOA	1.25 ng/mL
							13C8 PFOA	1.25 ng/mL
							13C8 PFOS	1.195 ng/mL
							d-N-EtFOSA-M	1.25 ng/mL
							d-N-MeFOSA-M	1.25 ng/mL
							d3-NMeFOSAA	1.25 ng/mL
							d5-NEtFOSAA	1.25 ng/mL
							d7-N-MeFOSE-M	1.25 ng/mL
							d9-N-EtFOSE-M	1.25 ng/mL
							13C2 10:2 FTS	1.20625 ng/mL
							M2-4:2 FTS	1.1725 ng/mL
							M2-6:2 FTS	1.1875 ng/mL
							M2-8:2 FTS	1.2 ng/mL
							13C2 PFHxDA	1.25 ng/mL
							13C2 PFTeDA	1.25 ng/mL
							13C3 HFPO-DA	1.25 ng/mL
							13C4-6:2 diPAP	1.21633 ng/mL
							13C4-8:2 diPAP	1.22296 ng/mL
							13C4 PFHpA	1.25 ng/mL
							13C5 PFPeA	1.25 ng/mL
							13C8 FOSA	1.25 ng/mL
							13C-10:2 FTCA	1.25 ng/mL
							13C-10:2 FTUCA	1.25 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-6:2 FTCA	1.25 ng/mL
							13C-6:2 FTUCA	1.25 ng/mL
							13C-8:2 FTCA	1.25 ng/mL
							13C-8:2 FTUCA	1.25 ng/mL
							13C4 PFBA	1.25 ng/mL
							13C3 PFBS	1.165 ng/mL
							13C2 PFDA	1.25 ng/mL
							13C2 PFDoA	1.25 ng/mL
							13C2 PFHxA	1.25 ng/mL
							1802 PFHxS	1.1825 ng/mL
							13C5 PFNA	1.25 ng/mL
							13C4 PFOA	1.25 ng/mL
							13C4 PFOS	1.1975 ng/mL
					LCPFC+SP+6_00107	1.25 mL	13C2 PFUnA	1.25 ng/mL
							NFDHA	0.05 ng/mL
							10:2 diPAP	0.050249 ng/mL
							10:2 FTS	0.0483 ng/mL
							11Cl-PF3OUdS	0.0472 ng/mL
							3:3 FTCA	0.05 ng/mL
							4:2 FTS	0.0469 ng/mL
							5:3 FTCA	0.05 ng/mL
							6:2 diPAP	0.0486468 ng/mL
							6:2 FTS	0.0476 ng/mL
							6:2/8:2 diPAP	0.0487952 ng/mL
							7:3 FTCA	0.05 ng/mL
							8:2 diPAP	0.0489142 ng/mL
							8:2 FTS	0.048 ng/mL
							9Cl-PF3ONS	0.0467 ng/mL
							NetFOSAA	0.05 ng/mL
							NMeFOSAA	0.05 ng/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.0472 ng/mL
							FBSA	0.05 ng/mL
							10:2 FTCA	0.05 ng/mL
							10:2 FTUCA	0.05 ng/mL
							6:2 FTCA	0.05 ng/mL
							6:2 FTUCA	0.05 ng/mL
							FHxSA	0.05 ng/mL
							8:2 FTCA	0.05 ng/mL
							8:2 FTUCA	0.05 ng/mL
							HFPO-DA (GenX)	0.05 ng/mL
							PFPrS	0.046 ng/mL
							NetFOSA	0.05 ng/mL
							NetFOSE	0.05 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							NMeFOSA	0.05 ng/mL
							NMeFOSE	0.05 ng/mL
							PFMPA	0.05 ng/mL
							PFMBA	0.05 ng/mL
							Perfluorobutanoic acid (PFBA)	0.05 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	0.0444 ng/mL
							Perfluorodecanoic acid (PFDA)	0.05 ng/mL
							Perfluorododecanoic acid (PFDoA)	0.05 ng/mL
							Perfluorododecanesulfonic acid (PFDoS)	0.0485 ng/mL
							Perfluorodecanesulfonic acid (PFDS)	0.0482 ng/mL
							PFECHS	0.0462 ng/mL
							PFEESA	0.0446 ng/mL
							Perfluoroheptanoic acid (PFHpA)	0.05 ng/mL
							Perfluoroheptanesulfonic acid (PFHpS)	0.0477 ng/mL
							Perfluorohexanoic acid (PFHxA)	0.05 ng/mL
							Perfluoro-n-hexadecanoic acid (PFHxDA)	0.05 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	0.0456 ng/mL
							Perfluorononanoic acid (PFNA)	0.05 ng/mL
							Perfluorononanesulfonic acid (PFNS)	0.0481 ng/mL
							Perfluorooctanoic acid (PFOA)	0.05 ng/mL
							Perfluoro-n-octadecanoic acid (PFODA)	0.05 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	0.0465 ng/mL
							Perfluorooctanesulfonamide (FOSA)	0.05 ng/mL
							Perfluoropentanoic acid (PFPeA)	0.05 ng/mL
							Perfluoropentanesulfonic acid (PFPeS)	0.047 ng/mL
							Perfluorotetradecanoic acid (PFTeA)	0.05 ng/mL
							Perfluorotridecanoic acid (PFTrDA)	0.05 ng/mL
							Perfluoroundecanoic acid (PFUnA)	0.05 ng/mL
							PFPrA	0.0485 ng/mL
					LCPFC3SP_P3_00033	1.25 mL	PS Acid	0.05 ng/mL
							Hydro-PS Acid	0.05 ng/mL
							R-PSDA	0.05 ng/mL
							Hydrolyzed PSDA	0.05 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							R-PSDCA	0.05 ng/mL
							EVE Acid	0.05 ng/mL
							Hydro-EVE Acid	0.05 ng/mL
							MTP	0.05 ng/mL
							NVHOS	0.05 ng/mL
							PEPA	0.05 ng/mL
							PFPE-1	0.05 ng/mL
							PFMOAA	0.05 ng/mL
							PFO2HxA	0.05 ng/mL
							PFO3OA	0.05 ng/mL
							PFO4DA	0.05 ng/mL
							PFO5DA	0.05 ng/mL
							PMPA	0.05 ng/mL
							R-EVE	0.05 ng/mL
.LCMPFC_ICALSU_00057	04/03/23	10/19/22	Methanol, Lot 218266	200 mL	LCM2PFOA_00037	100 uL	13C2 PFOA	0.025 ug/mL
					LCM8PFOA_00003	100 uL	13C8 PFOA	0.025 ug/mL
					LCM8PFOS_00005	100 uL	13C8 PFOS	0.0239 ug/mL
					LCMPFC_IDA+_00378	200 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-NMeFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024125 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.02375 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C2 PFHxA	0.025 ug/mL
							1802 PFHxS	0.02365 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
..LCM2PFOA 00037	12/09/26	Wellington Laboratories, Lot M2PFOA0122			(Purchased Reagent)		13C2 PFOA	50 ug/mL
..LCM8PFOA 00003	07/22/25	Wellington Laboratories, Lot M8PFOA0720			(Purchased Reagent)		13C8 PFOA	50 ug/mL
..LCM8PFOS 00005	01/14/26	Wellington Laboratories, Lot M8PFOS0121			(Purchased Reagent)		13C8 PFOS	47.8 ug/mL
..LCMPFC_IDA+_00378	04/03/23	10/04/22	Methanol, Lot 218266	200 mL	LCMPFC_IDA+_00376	50 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-N-EtFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024125 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.02375 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							1802 PFHxS	0.02365 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
...LCMPFC_IDA+_00376	04/03/23	10/03/22	Methanol, Lot 218266	500 mL	LCd-N-EtFOSA-M 00034	1 mL	d-N-EtFOSA-M	0.1 ug/mL
					LCd-NMeFOSA-M 00035	1 mL	d-N-MeFOSA-M	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCd3-NMeFOSAA 00046	1 mL	d3-NMeFOSAA	0.1 ug/mL
					LCd5-NEtFOSAA 00047	1 mL	d5-NEtFOSAA	0.1 ug/mL
					LCd7-NMeFOSEM 00035	1 mL	d7-N-MeFOSE-M	0.1 ug/mL
					LCd9-NEtFOSEM 00032	1 mL	d9-N-EtFOSE-M	0.1 ug/mL
					LCM10:2 FTS 00005	1 mL	13C2 10:2 FTS	0.0965 ug/mL
					LCM2-4:FTS 00036	1 mL	M2-4:2 FTS	0.0938 ug/mL
					LCM2-6:FTS 00040	1 mL	M2-6:2 FTS	0.095 ug/mL
					LCM2-8:2FTS 00045	1 mL	M2-8:2 FTS	0.096 ug/mL
					LCM2PFHxDA 00050	1 mL	13C2 PFHxDA	0.1 ug/mL
					LCM2PFTeDA 00048	1 mL	13C2 PFTeDA	0.1 ug/mL
					LCM3HFPO-DA 00040	1 mL	13C3 HFPO-DA	0.1 ug/mL
					LCM4-6:2diPAP_00008	1 mL	13C4-6:2 diPAP	0.0973068 ug/mL
					LCM4-8:2diPAP_00008	1 mL	13C4-8:2 diPAP	0.097837 ug/mL
					LCM4PFHFA 00047	1 mL	13C4 PFHFA	0.1 ug/mL
					LCM5PFPEA 00048	1 mL	13C5 PFPeA	0.1 ug/mL
					LCM8FOSA 00053	1 mL	13C8 FOSA	0.1 ug/mL
					LCMFDEA 00014	1 mL	13C-10:2 FTCA	0.1 ug/mL
					LCMFDUEA 00013	1 mL	13C-10:2 FTUCA	0.1 ug/mL
					LCMFHEA 00012	1 mL	13C-6:2 FTCA	0.1 ug/mL
					LCMFHUEA 00015	1 mL	13C-6:2 FTUCA	0.1 ug/mL
					LCMFOEA 00011	1 mL	13C-8:2 FTCA	0.1 ug/mL
					LCMFOUEA 00013	1 mL	13C-8:2 FTUCA	0.1 ug/mL
					LCMPFBA 00050	1 mL	13C4 PFBA	0.1 ug/mL
					LCMPFBS 00035	1 mL	13C3 PFBS	0.0932 ug/mL
					LCMPFDA 00056	1 mL	13C2 PFDA	0.1 ug/mL
					LCMPFDoA 00049	1 mL	13C2 PFDoA	0.1 ug/mL
					LCMPFHxA 00055	1 mL	13C2 PFHxA	0.1 ug/mL
					LCMPFHxS 00048	1 mL	18O2 PFHxS	0.0946 ug/mL
					LCMPFNA 00048	1 mL	13C5 PFNA	0.1 ug/mL
					LCMPFOA 00052	1 mL	13C4 PFOA	0.1 ug/mL
					LCMPFOS 00064	1 mL	13C4 PFOS	0.0958 ug/mL
					LCMPFUDa 00051	1 mL	13C2 PFUnA	0.1 ug/mL
....LCd-NEtFOSA-M 00034	03/17/27		WELLINGTON, Lot dNetFOSA0322M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
....LCd-NMeFOSA-M 00035	10/07/26		WELLINGTON, Lot dNMeFOSA1021M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
....LCd3-NMeFOSAA 00046	02/22/27		WELLINGTON, Lot d3NMeFOSAA0222		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
....LCd5-NEtFOSAA 00047	09/28/26		WELLINGTON, Lot d5NEtFOSAA0921		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
....LCd7-NMeFOSEM 00035	01/27/27		WELLINGTON, Lot d7NMeFOSE1221M		(Purchased Reagent)		d7-N-MeFOSE-M	50 ug/mL
....LCd9-NEtFOSEM 00032	01/27/27		WELLINGTON, Lot d9NEtFOSE1221M		(Purchased Reagent)		d9-N-EtFOSE-M	50 ug/mL
....LCM10:2 FTS_00005	04/26/26		Cambridge Isotope Laboratories, Lot SEBC-003		(Purchased Reagent)		13C2 10:2 FTS	48.25 ug/mL
....LCM2-4:FTS 00036	10/13/26		Wellington, Lot M242FTS1021		(Purchased Reagent)		M2-4:2 FTS	46.9 ug/mL
....LCM2-6:FTS 00040	10/13/26		WELLINGTON, Lot M262FTS1021		(Purchased Reagent)		M2-6:2 FTS	47.5 ug/mL
....LCM2-8:2FTS 00045	11/23/26		WELLINGTON, Lot M282FTS1121		(Purchased Reagent)		M2-8:2 FTS	48 ug/mL
....LCM2PFHxDA 00050	11/23/26		Wellington Laboratories, Lot M2PFHxDA1121		(Purchased Reagent)		13C2 PFHxDA	50 ug/mL
....LCM2PFTeDA 00048	11/22/26		Wellington Laboratories, Lot M2PFTeDA1121		(Purchased Reagent)		13C2 PFTeDA	50 ug/mL
....LCM3HFPO-DA 00040	11/11/24		WELLINGTON, Lot M3HFPODA1121		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
....LCM4-6:2diPAP 00008	08/05/26		Wellington, Lot M462diPAP0721		(Purchased Reagent)		13C4-6:2 diPAP	48.6534 ug/mL
....LCM4-8:2diPAP 00008	12/01/26		Wellington, Lot M482diPAP1121		(Purchased Reagent)		13C4-8:2 diPAP	48.9185 ug/mL
....LCM4PFHPA 00047	12/07/26		Wellington Laboratories, Lot M4PFHpA1121		(Purchased Reagent)		13C4 PFHpA	50 ug/mL
....LCM5PFPEA 00048	08/10/26		Wellington Laboratories, Lot M5PFPeA0821		(Purchased Reagent)		13C5 PFPeA	50 ug/mL
....LCM8FOSA 00053	03/17/27		Wellington Laboratories, Lot M8FOSA0322I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
....LCMFDEA 00014	09/27/24		Wellington Laboratories, Lot MFDEA0921		(Purchased Reagent)		13C-10:2 FTCA	50 ug/mL
....LCMFDUEA 00013	11/22/23		Wellington Laboratories, Lot MFDUEA1221		(Purchased Reagent)		13C-10:2 FTUCA	50 ug/mL
....LCMFHEA 00012	09/29/24		Wellington Laboratories, Lot MFHEA0921		(Purchased Reagent)		13C-6:2 FTCA	50 ug/mL
....LCMFHUEA 00015	02/18/24		Wellington Laboratories, Lot MFHUEA0322		(Purchased Reagent)		13C-6:2 FTUCA	50 ug/mL
....LCMFOEA 00011	11/22/24		Wellington Laboratories, Lot MFOEA1121		(Purchased Reagent)		13C-8:2 FTCA	50 ug/mL
....LCMFOUEA 00013	12/07/23		Wellington Laboratorie, Lot MFOUEA1121		(Purchased Reagent)		13C-8:2 FTUCA	50 ug/mL
....LCMPFBA 00050	07/12/26		Wellington Laboratories, Lot MPFBA0621		(Purchased Reagent)		13C4 PFBA	50 ug/mL
....LCMPFBS 00035	02/07/27		Wellington Laboratories, Lot M3PFBS0222		(Purchased Reagent)		13C3 PFBS	46.6 ug/mL
....LCMPFDA 00056	12/08/26		Wellington Laboratories, Lot MPFDA1221		(Purchased Reagent)		13C2 PFDA	50 ug/mL
....LCMPFDoA 00049	03/17/27		Wellington Laboratories, Lot MPFDoA0322		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
....LCMPFHxA 00055	10/04/26		Wellington Laboratories, Lot MPFHxA0921		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
....LCMPFHxS 00048	10/29/26		Wellington Laboratories, Lot MPFHxS1021		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
....LCMPFNA 00048	10/29/26		Wellington Laboratories, Lot MPFNA1021		(Purchased Reagent)		13C5 PFNA	50 ug/mL
....LCMPFOA 00052	12/07/26		Wellington Laboratories, Lot MPFOA1121		(Purchased Reagent)		13C4 PFOA	50 ug/mL
....LCMPFOS 00064	01/27/27		Wellington Laboratories, Lot MPFOS0122		(Purchased Reagent)		13C4 PFOS	47.9 ug/mL
....LCMPFUdA 00051	12/09/26		Wellington Laboratories, Lot MPFUdA1221		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
.LCPFC+SP+6_00107	02/08/23	10/04/22	Methanol, Lot 218266	250 mL	LCPFC+SP+6_00098	50 mL	NFDHA	0.02 ug/mL
							10:2 diPAP	0.0200996 ug/mL
							10:2 FTS	0.01932 ug/mL
							11Cl-PF3OUds	0.01888 ug/mL
							3:3 FTCA	0.02 ug/mL
							4:2 FTS	0.01876 ug/mL
							5:3 FTCA	0.02 ug/mL
							6:2 diPAP	0.0194587 ug/mL
							6:2 FTS	0.01904 ug/mL
							6:2/8:2 diPAP	0.0195181 ug/mL
							7:3 FTCA	0.02 ug/mL
							8:2 diPAP	0.0195657 ug/mL
							8:2 FTS	0.0192 ug/mL
							9Cl-PF3ONS	0.01868 ug/mL
							NEtFOSAA	0.02 ug/mL
							NMeFOSAA	0.02 ug/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.01888 ug/mL
							FBSA	0.02 ug/mL
							10:2 FTCA	0.02 ug/mL
							10:2 FTUCA	0.02 ug/mL
							6:2 FTCA	0.02 ug/mL
							6:2 FTUCA	0.02 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							FHxSA	0.02 ug/mL
							8:2 FTCA	0.02 ug/mL
							8:2 FTUCA	0.02 ug/mL
							HFPO-DA (GenX)	0.02 ug/mL
							PFPrS	0.0184 ug/mL
							NEtFOSA	0.02 ug/mL
							NEtFOSE	0.02 ug/mL
							NMeFOSA	0.02 ug/mL
							NMeFOSE	0.02 ug/mL
							PFMPA	0.02 ug/mL
							PFMBA	0.02 ug/mL
							Perfluorobutanoic acid (PFBA)	0.02 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.01776 ug/mL
							Perfluorodecanoic acid (PFDA)	0.02 ug/mL
							Perfluorododecanoic acid (PFDoA)	0.02 ug/mL
							Perfluorododecanesulfonic acid (PFDoS)	0.0194 ug/mL
							Perfluorodecanesulfonic acid (PFDS)	0.01928 ug/mL
							PFECHS	0.01848 ug/mL
							PFEESA	0.01784 ug/mL
							Perfluoroheptanoic acid (PFHpA)	0.02 ug/mL
							Perfluoroheptanesulfonic acid (PFHpS)	0.01908 ug/mL
							Perfluorohexanoic acid (PFHxA)	0.02 ug/mL
							Perfluoro-n-hexadecanoic acid (PFHxDA)	0.02 ug/mL
							Perfluorohexanesulfonic acid (PFHxS)	0.01824 ug/mL
							Perfluorononanoic acid (PFNA)	0.02 ug/mL
							Perfluorononanesulfonic acid (PFNS)	0.01924 ug/mL
							Perfluorooctanoic acid (PFOA)	0.02 ug/mL
							Perfluoro-n-octadecanoic acid (PFODA)	0.02 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	0.0186 ug/mL
							Perfluorooctanesulfonamide (FOSA)	0.02 ug/mL
							Perfluoropentanoic acid (PFPeA)	0.02 ug/mL
							Perfluoropentanesulfonic acid (PFPeS)	0.0188 ug/mL
							Perfluorotetradecanoic acid (PFTeA)	0.02 ug/mL
							Perfluorotridecanoic acid (PFTTrDA)	0.02 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCPFC+SP+6_00098	02/08/23	10/03/22	Methanol, Lot 218266	500 mL			Perfluoroundecanoic acid (PFUnA)	0.02 ug/mL
							PFPPrA	0.0194 ug/mL
					LC-36-OPFHpa_00011	1 mL	NFDHA	0.1 ug/mL
					LC10:2diPAPim_00016	1.09 mL	10:2 diPAP	0.100498 ug/mL
					LC10:2FTS_00016	1 mL	10:2 FTS	0.0966 ug/mL
					LC11CIPF3OUds_00023	1 mL	11C1-PF3OUds	0.0944 ug/mL
					LC3:3FTCA_00005	1 mL	3:3 FTCA	0.1 ug/mL
					LC4:2FTS_00024	1 mL	4:2 FTS	0.0938 ug/mL
					LC5:3FTCA_00008	1 mL	5:3 FTCA	0.1 ug/mL
					LC6:2diPAP_00009	1 mL	6:2 diPAP	0.0972936 ug/mL
					LC6:2FTS_00024	1 mL	6:2 FTS	0.0952 ug/mL
					LC62/82diPAP_00007	1 mL	6:2/8:2 diPAP	0.0975904 ug/mL
					LC7:3FTCA_00007	1 mL	7:3 FTCA	0.1 ug/mL
					LC8:2diPAP_00007	1 mL	8:2 diPAP	0.0978284 ug/mL
					LC8:2FTS_00024	1 mL	8:2 FTS	0.096 ug/mL
					LC9CI-PF3ONS_00023	1 mL	9C1-PF3ONS	0.0934 ug/mL
					LCbr-NEtFOSAA_00023	1 mL	NEtFOSAA	0.1 ug/mL
					LCbr-NMeFOSAA_00022	1 mL	NMeFOSAA	0.1 ug/mL
					LCDONA_00032	1 mL	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.0944 ug/mL
					LCFBSA-I_00007	1 mL	FBSA	0.1 ug/mL
					LCFDEA_00009	1 mL	10:2 FTCA	0.1 ug/mL
					LCFDUEA_00007	1 mL	10:2 FTUCA	0.1 ug/mL
					LCFHUEA_00009	1 mL	6:2 FTCA	0.1 ug/mL
					LCFHUEA_00009	1 mL	6:2 FTUCA	0.1 ug/mL
					LCFHxSA-I_00009	1 mL	FHxSA	0.1 ug/mL
					LCFOEA_00010	1 mL	8:2 FTCA	0.1 ug/mL
					LCFOUEA_00007	1 mL	8:2 FTUCA	0.1 ug/mL
					LCHFPO-DA_00027	1 mL	HFPO-DA (GenX)	0.1 ug/mL
					LCLPFPPrS_00009	1 mL	PFPPrS	0.092 ug/mL
					LCN-EtFOSA-M_00025	1 mL	NEtFOSA	0.1 ug/mL
					LCN-EtFOSE-M_00018	1 mL	NEtFOSE	0.1 ug/mL
					LCN-MeFOSA-M_00027	1 mL	NMeFOSA	0.1 ug/mL
					LCN-MeFOSE-M_00021	1 mL	NMeFOSE	0.1 ug/mL
					LCPF40PeA_00015	1 mL	PFMPA	0.1 ug/mL
					LCPF5OHxA_00011	1 mL	PFMBA	0.1 ug/mL
					LCPFBA_00028	1 mL	Perfluorobutanoic acid (PFBA)	0.1 ug/mL
					LCPFBFA_00025	1 mL	Perfluorobutanesulfonic acid (PFBS)	0.0888 ug/mL
					LCPFDA_00033	1 mL	Perfluorodecanoic acid (PFDA)	0.1 ug/mL
					LCPFDaA_00031	1 mL	Perfluorododecanoic acid (PFDoA)	0.1 ug/mL
					LCPFDoS_00020	1 mL	Perfluorododecanesulfonic acid (PFDoS)	0.097 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFDASA_00016	1 mL	Perfluorodecanesulfonic acid (PFDS)	0.0964 ug/mL
					LCPFECHS_00007	1 mL	PFECHS	0.0924 ug/mL
					LCPFEESA_00010	1 mL	PFEESA	0.0892 ug/mL
					LCPFHpA_00035	1 mL	Perfluoroheptanoic acid (PFHpA)	0.1 ug/mL
					LCPFHpSA_00021	1 mL	Perfluoroheptanesulfonic acid (PFHpS)	0.0954 ug/mL
					LCPFHxA_00033	1 mL	Perfluorohexanoic acid (PFHxA)	0.1 ug/mL
					LCPFHxDA_00028	1 mL	Perfluoro-n-hexadecanoic acid (PFHxDA)	0.1 ug/mL
					LCPFHxS-br_00027	1 mL	Perfluorohexanesulfonic acid (PFHxS)	0.0912 ug/mL
					LCPFNA_00035	1 mL	Perfluorononanoic acid (PFNA)	0.1 ug/mL
					LCPFNS_00020	1 mL	Perfluorononanesulfonic acid (PFNS)	0.0962 ug/mL
					LCPFOA_00032	1 mL	Perfluorooctanoic acid (PFOA)	0.1 ug/mL
					LCPFODA_00028	1 mL	Perfluoro-n-octadecanoic acid (PFODA)	0.1 ug/mL
					LCPFOS-br_00029	1 mL	Perfluorooctanesulfonic acid (PFOS)	0.093 ug/mL
					LCPFOSA_00029	1 mL	Perfluorooctanesulfonamide (FOSA)	0.1 ug/mL
					LCPFPeA_00028	1 mL	Perfluoropentanoic acid (PFPeA)	0.1 ug/mL
					LCPFPeS_00020	1 mL	Perfluoropentanesulfonic acid (PFPeS)	0.094 ug/mL
					LCPFTeDA_00032	1 mL	Perfluorotetradecanoic acid (PFTeA)	0.1 ug/mL
					LCPFTrDA_00030	1 mL	Perfluorotridecanoic acid (PFTrDA)	0.1 ug/mL
					LCPFUDa_00033	1 mL	Perfluoroundecanoic acid (PFUnA)	0.1 ug/mL
					LCPPropionic_00024	1 mL	PFPrA	0.097 ug/mL
...LC-36-OPFHpA_00011	10/14/26	Wellington Laboratories, Lot 36OPFHpA0921		(Purchased Reagent)		NFDHA	50 ug/mL	
...LC10:2diPAPim_00016	02/08/23	08/08/22	Methanol, Lot 217743	200 mL	LC10:2diPAPim_00015	100 mL	10:2 diPAP	46.1 ug/mL
....LC10:2diPAPim_00015	02/08/23	08/08/22	Methanol, Lot 217743	1000 mL	LC10:2diPAP_00005	0.0922 g	10:2 diPAP	92.2 ug/mL
.....LC10:2diPAP_00005	11/13/23	Toronto Research Chemicals, Lot 5-BKS-67-1		(Purchased Reagent)		10:2 diPAP	100 %	
...LC10:2FTS_00016	01/27/27	WELLINGTON, Lot 102FTS0122		(Purchased Reagent)		10:2 FTS	48.3 ug/mL	
...LC11CIPF3OUdS_00023	02/08/27	Wellington Laboratories, Lot 11CIPF3OUdS0222		(Purchased Reagent)		11C1-PF3OUdS	47.2 ug/mL	
...LC3:3FTCA_00005	02/03/27	Wellington Laboratories, Lot FPrPA0122		(Purchased Reagent)		3:3 FTCA	50 ug/mL	
...LC4:2FTS_00024	04/22/27	WELLINGTON, Lot 42FTS0422		(Purchased Reagent)		4:2 FTS	46.9 ug/mL	
...LC5:3FTCA_00008	01/05/27	Wellington Laboratories, Lot FPePA1221		(Purchased Reagent)		5:3 FTCA	50 ug/mL	
...LC6:2diPAP_00009	03/18/27	Wellington, Lot 62diPAP0222		(Purchased Reagent)		6:2 diPAP	48.6468 ug/mL	
...LC6:2FTS_00024	01/04/27	WELLINGTON, Lot 62FTS1221		(Purchased Reagent)		6:2 FTS	47.6 ug/mL	
...LC62/82diPAP_00007	01/26/26	Wellington, Lot 6282diPAP0121		(Purchased Reagent)		6:2/8:2 diPAP	48.7952 ug/mL	
...LC7:3FTCA_00007	10/13/26	Wellington Laboratories, Lot FHpPA1021		(Purchased Reagent)		7:3 FTCA	50 ug/mL	
...LC8:2diPAP_00007	09/09/25	Wellington, Lot 82diPAP0920		(Purchased Reagent)		8:2 diPAP	48.9142 ug/mL	

REAGENT TRACEABILITY SUMMARY

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LC8:2FTS 00024	02/08/27		WELLINGTON, Lot 82FTS0122		(Purchased Reagent)		8:2 FTS	48 ug/mL
...LC9CI-PF3ONS_00023	11/22/26		Wellington Laboratories, Lot 9CIPF3ONS1121		(Purchased Reagent)		9CI-PF3ONS	46.7 ug/mL
...LCbr-NetFOSAA 00023	11/23/26		WELLINGTON, Lot brNetFOSAA1121		(Purchased Reagent)		NetFOSAA	50 ug/mL
...LCbr-NMeFOSAA 00022	07/13/26		WELLINGTON, Lot brNMeFOSAA0621		(Purchased Reagent)		NMeFOSAA	50 ug/mL
...LCDONA_00032	04/18/27		WELLINGTON, Lot NADONA0422		(Purchased Reagent)		4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.2 ug/mL
...LCFBSA-I 00007	11/10/26		Wellington, Lot FBSA1121I		(Purchased Reagent)		FBSA	50 ug/mL
...LCFDEA 00009	09/28/24		Wellington Laboratories, Lot FDEA0921		(Purchased Reagent)		10:2 FTCA	50 ug/mL
...LCFDUEA 00007	10/29/23		Wellington Laboratories, Lot FDUEA1021		(Purchased Reagent)		10:2 FTUCA	50 ug/mL
...LCFHEA 00009	01/05/25		Wellington Laboratories, Lot FHEA1221		(Purchased Reagent)		6:2 FTCA	50 ug/mL
...LCFHUEA 00009	09/03/23		Wellington Laboratories, Lot FHUEA0921		(Purchased Reagent)		6:2 FTUCA	50 ug/mL
...LCFHxSA-I 00009	12/29/26		Wellington, Lot FHxSA1221I		(Purchased Reagent)		FHxSA	50 ug/mL
...LCFOEA 00010	08/18/24		Wellington Laboratories, Lot FOEA0821		(Purchased Reagent)		8:2 FTCA	50 ug/mL
...LCFOUEA 00007	12/29/23		Wellington Laboratories, Lot FOUEA1221		(Purchased Reagent)		8:2 FTUCA	50 ug/mL
...LCHFPO-DA 00027	04/05/25		WELLINGTON, Lot HFPODA0322		(Purchased Reagent)		HFPO-DA (GenX)	50 ug/mL
...LCLPFPrS 00009	04/20/27		Wellington Laboratories, Lot LPFPrS0422		(Purchased Reagent)		PFPPrS	46 ug/mL
...LCN-EtFOSA-M 00025	04/20/27		WELLINGTON, Lot NetFOSA0422M		(Purchased Reagent)		NetFOSA	50 ug/mL
...LCN-EtFOSE-M 00018	09/23/26		WELLINGTON, Lot NetFOSE0921M		(Purchased Reagent)		NetFOSE	50 ug/mL
...LCN-MeFOSA-M 00027	02/28/27		WELLINGTON, Lot NMeFOSA0222M		(Purchased Reagent)		NMeFOSA	50 ug/mL
...LCN-MeFOSE-M 00021	05/13/27		WELLINGTON, Lot NMeFOSE0522M		(Purchased Reagent)		NMeFOSE	50 ug/mL
...LCPFF40PeA 00015	08/02/27		Wellington Laboratories, Lot PF40PeA0722		(Purchased Reagent)		PFMPA	50 ug/mL
...LCPFF5OHxA 00011	10/19/26		Wellington Laboratories, Lot PF5OHxA1021		(Purchased Reagent)		PFMBA	50 ug/mL
...LCPFFBA 00028	04/18/27		Wellington Laboratories, Lot PFBA0422		(Purchased Reagent)		Perfluorobutanoic acid (PFBA)	50 ug/mL
...LCPFFBSA_00025	04/05/27		Wellington Laboratories, Lot LPFBS0322		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.4 ug/mL
...LCPFFDA 00033	02/22/27		Wellington Laboratories, Lot PFDA0222		(Purchased Reagent)		Perfluorodecanoic acid (PFDA)	50 ug/mL
...LCPFFDoA_00031	01/27/27		Wellington Laboratories, Lot PFDoA0122		(Purchased Reagent)		Perfluorododecanoic acid (PFDoA)	50 ug/mL
...LCPFFDoS_00020	04/20/27		Wellington Laboratories, Lot LPFFDoS0422		(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48.5 ug/mL
...LCPFFDSA_00016	02/22/27		Wellington Laboratories, Lot LPFDS0222		(Purchased Reagent)		Perfluorodecanesulfonic acid (PFDS)	48.2 ug/mL
...LCPFFECHS 00007	03/28/27		Wellington Laboratories, Lot PFECHS0222		(Purchased Reagent)		PFECHS	46.2 ug/mL
...LCPFEESA 00010	11/22/26		Wellington Laboratories, Lot PFEESA1121		(Purchased Reagent)		PFEESA	44.6 ug/mL
...LCPFFHpA_00035	03/17/27		Wellington Laboratories, Lot PFHpA0222		(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	50 ug/mL
...LCPFFHpSA_00021	01/27/27		Wellington Laboratories, Lot LPFFHpS0122		(Purchased Reagent)		Perfluoroheptanesulfonic acid (PFHpS)	47.7 ug/mL
...LCPFFHxA 00033	01/27/27		Wellington Laboratories, Lot PFHxA0122		(Purchased Reagent)		Perfluorohexanoic acid (PFHxA)	50 ug/mL
...LCPFFHxDA_00028	02/23/27		Wellington Laboratories, Lot PFHxDA0222		(Purchased Reagent)		Perfluoro-n-hexadecanoic acid (PFHxDA)	50 ug/mL
...LCPFFHxS-br_00027	12/07/26		Wellington Laboratories, Lot brPFHxSK1211		(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	45.6 ug/mL
...LCPFFNA 00035	01/27/27		Wellington Laboratories, Lot PFNA0122		(Purchased Reagent)		Perfluorononanoic acid (PFNA)	50 ug/mL
...LCPFFNS_00020	04/20/27		Wellington Laboratories, Lot LPFNS0422		(Purchased Reagent)		Perfluorononanesulfonic acid (PFNS)	48.1 ug/mL
...LCPFFOA_00032	02/22/27		Wellington Laboratories, Lot PFOA0222		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LCPFODA_00028	09/03/26	Wellington Laboratories, Lot PFODA0821			(Purchased Reagent)		Perfluoro-n-octadecanoic acid (PFODA)	50 ug/mL
...LCPFOS-br_00029	12/07/26	Wellington Laboratories, Lot brPFOSK1121			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.5 ug/mL
...LCPFOSA_00029	04/05/27	Wellington Laboratories, Lot FOSA0322I			(Purchased Reagent)		Perfluorooctanesulfonamide (FOSA)	50 ug/mL
...LCPFPeA_00028	02/08/27	Wellington Laboratories, Lot PFPeA0122			(Purchased Reagent)		Perfluoropentanoic acid (PFPeA)	50 ug/mL
...LCPFPeS_00020	02/07/27	Wellington Laboratories, Lot LPFPeS0122			(Purchased Reagent)		Perfluoropentanesulfonic acid (PFPeS)	47 ug/mL
...LCPFTeDA_00032	02/28/27	Wellington Laboratories, Lot PFTeDA0222			(Purchased Reagent)		Perfluorotetradecanoic acid (PFTeA)	50 ug/mL
...LCPFTrDA_00030	02/07/27	Wellington Laboratories, Lot PFTTrDA0122			(Purchased Reagent)		Perfluorotridecanoic acid (PFTTrDA)	50 ug/mL
...LCPFuDA_00033	02/22/27	Wellington Laboratories, Lot PFuDA0222			(Purchased Reagent)		Perfluoroundecanoic acid (PFUnA)	50 ug/mL
...LCPropionic_00024	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	LCPropionic_00023	5 mL	PFPPrA	48.5 ug/mL
....LCPropionic_00023	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	Propionic Acd 00002	100 uL	PFPPrA	970 ug/mL
.....Propionic Acd 00002	06/09/25	Sigma Aldrich, Lot MKCK6675			(Purchased Reagent)		PFPPrA	97 %
.LCPFC3SP_P3_00033	02/09/23	08/09/22	Methanol, Lot 217743	250 mL	LCPFC3SP_TB3_00039	50 mL	PS Acid	0.02 ug/mL
							Hydro-PS Acid	0.02 ug/mL
							R-PSDA	0.02 ug/mL
							Hydrolyzed PSDA	0.02 ug/mL
							R-PSDCA	0.02 ug/mL
							EVE Acid	0.02 ug/mL
							Hydro-EVE Acid	0.02 ug/mL
							MTP	0.02 ug/mL
							NVHOS	0.02 ug/mL
							PEPA	0.02 ug/mL
							PFPE-1	0.02 ug/mL
							PFMOAA	0.02 ug/mL
							PFO2HxA	0.02 ug/mL
							PFO3OA	0.02 ug/mL
							PFO4DA	0.02 ug/mL
							PFO5DA	0.02 ug/mL
							PMPA	0.02 ug/mL
							R-EVE	0.02 ug/mL
..LCPFC3SP_TB3_00039	02/09/23	08/09/22	Methanol, Lot 217743	500 mL	LCBP1_00005	50 uL	PS Acid	0.1 ug/mL
					LCBP2_00004	50 uL	Hydro-PS Acid	0.1 ug/mL
					LCBP4_00003	50 uL	R-PSDA	0.1 ug/mL
					LCBP5_00004	50 uL	Hydrolyzed PSDA	0.1 ug/mL
					LCBP6_00004	50 uL	R-PSDCA	0.1 ug/mL
					LCEVEA_00004	50 uL	EVE Acid	0.1 ug/mL
					LCHEVEA_00003	50 uL	Hydro-EVE Acid	0.1 ug/mL
					LCMTP_00003	50 uL	MTP	0.1 ug/mL
					LCNVHOS_00003	50 uL	NVHOS	0.1 ug/mL
					LCPEPA_00005	50 uL	PEPA	0.1 ug/mL
					LCPFECA_G_00004	50 uL	PFPE-1	0.1 ug/mL
					LCPFM0AA_00007	50 uL	PFMOAA	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFO2HxA 00005	50 uL	PFO2HxA	0.1 ug/mL
					LCPFO3OA 00006	50 uL	PFO3OA	0.1 ug/mL
					LCPFO4DA 00005	50 uL	PFO4DA	0.1 ug/mL
					LCPFO5DoA 00004	50 uL	PFO5DA	0.1 ug/mL
					LCPMPA 00005	50 uL	PMPA	0.1 ug/mL
					LCR-EVE 00005	50 uL	R-EVE	0.1 ug/mL
...LCBP1 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PS Acid	0.1 %
...LCBP2 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydro-PS Acid	0.1 %
...LCBP4 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-PSDA	0.1 %
...LCBP5 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydrolyzed PSDA	0.1 %
...LCBP6 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-PSDCA	0.1 %
...LCEVEA 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		EVE Acid	0.1 %
...LCHEVEA 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydro-EVE Acid	0.1 %
...LCMTP 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		MTP	0.1 %
...LCNVHOS 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		NVHOS	0.1 %
...LCPEPA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PEPA	0.1 %
...LCPFECA G 00004	01/23/24		Chemours, Lot NA		(Purchased Reagent)		PFPE-1	1000 ug/mL
...LCPFMOAA 00007	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFMOAA	0.1 %
...LCPFO2HxA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO2HxA	0.1 %
...LCPFO3OA 00006	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO3OA	0.1 %
...LCPFO4DA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO4DA	0.1 %
...LCPFO5DoA 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO5DA	0.1 %
...LCPMPA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PMPA	0.1 %
...LCR-EVE 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-EVE	0.1 %
LCPFC+6C_LL3_00006	02/08/23	10/19/22	MeOH/H2O, Lot 218266	200 mL	LCMPFC_ICALSU_00057	10 mL	13C2 PFOA	1.25 ng/mL
							13C8 PFOA	1.25 ng/mL
							13C8 PFOS	1.195 ng/mL
							d-N-EtFOSA-M	1.25 ng/mL
							d-N-MeFOSA-M	1.25 ng/mL
							d3-NMeFOSAA	1.25 ng/mL
							d5-NEtFOSAA	1.25 ng/mL
							d7-N-MeFOSE-M	1.25 ng/mL
							d9-N-EtFOSE-M	1.25 ng/mL
							13C2 10:2 FTS	1.20625 ng/mL
							M2-4:2 FTS	1.1725 ng/mL
							M2-6:2 FTS	1.1875 ng/mL
							M2-8:2 FTS	1.2 ng/mL
							13C2 PFHxDA	1.25 ng/mL
							13C2 PFTeDA	1.25 ng/mL
							13C3 HFPO-DA	1.25 ng/mL
							13C4-6:2 diPAP	1.21633 ng/mL
							13C4-8:2 diPAP	1.22296 ng/mL
							13C4 PFHpA	1.25 ng/mL
							13C5 PFPeA	1.25 ng/mL
							13C8 FOSA	1.25 ng/mL
							13C-10:2 FTCA	1.25 ng/mL
							13C-10:2 FTUCA	1.25 ng/mL

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-6:2 FTCA	1.25 ng/mL
							13C-6:2 FTUCA	1.25 ng/mL
							13C-8:2 FTCA	1.25 ng/mL
							13C-8:2 FTUCA	1.25 ng/mL
							13C4 PFBA	1.25 ng/mL
							13C3 PFBS	1.165 ng/mL
							13C2 PFDA	1.25 ng/mL
							13C2 PFDoA	1.25 ng/mL
							13C2 PFHxA	1.25 ng/mL
							1802 PFHxS	1.1825 ng/mL
							13C5 PFNA	1.25 ng/mL
							13C4 PFOA	1.25 ng/mL
							13C4 PFOS	1.1975 ng/mL
							13C2 PFUnA	1.25 ng/mL
					LCPFC+SP+6_00107	2.5 mL	NFDHA	0.25 ng/mL
							10:2 diPAP	0.251245 ng/mL
							10:2 FTS	0.2415 ng/mL
							11Cl-PF3OUdS	0.236 ng/mL
							3:3 FTCA	0.25 ng/mL
							4:2 FTS	0.2345 ng/mL
							5:3 FTCA	0.25 ng/mL
							6:2 diPAP	0.243234 ng/mL
							6:2 FTS	0.238 ng/mL
							6:2/8:2 diPAP	0.243976 ng/mL
							7:3 FTCA	0.25 ng/mL
							8:2 diPAP	0.244571 ng/mL
							8:2 FTS	0.24 ng/mL
							9Cl-PF3ONS	0.2335 ng/mL
							NEtFOSAA	0.25 ng/mL
							NMeFOSAA	0.25 ng/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.236 ng/mL
							FBSA	0.25 ng/mL
							10:2 FTCA	0.25 ng/mL
							10:2 FTUCA	0.25 ng/mL
							6:2 FTCA	0.25 ng/mL
							6:2 FTUCA	0.25 ng/mL
							FHxSA	0.25 ng/mL
							8:2 FTCA	0.25 ng/mL
							8:2 FTUCA	0.25 ng/mL
							HFPO-DA (GenX)	0.25 ng/mL
							PFPrS	0.23 ng/mL
							NEtFOSA	0.25 ng/mL
							NEtFOSE	0.25 ng/mL

REAGENT TRACEABILITY SUMMARY

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SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							NMeFOSA	0.25 ng/mL
							NMeFOSE	0.25 ng/mL
							PFMPA	0.25 ng/mL
							PFMBA	0.25 ng/mL
							Perfluorobutanoic acid (PFBA)	0.25 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	0.222 ng/mL
							Perfluorodecanoic acid (PFDA)	0.25 ng/mL
							Perfluorododecanoic acid (PFDoA)	0.25 ng/mL
							Perfluorododecanesulfonic acid (PFDoS)	0.2425 ng/mL
							Perfluorodecanesulfonic acid (PFDS)	0.241 ng/mL
							PFECHS	0.231 ng/mL
							PFEESA	0.223 ng/mL
							Perfluoroheptanoic acid (PFHpA)	0.25 ng/mL
							Perfluoroheptanesulfonic acid (PFHpS)	0.2385 ng/mL
							Perfluorohexanoic acid (PFHxA)	0.25 ng/mL
							Perfluoro-n-hexadecanoic acid (PFHxDA)	0.25 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	0.228 ng/mL
							Perfluorononanoic acid (PFNA)	0.25 ng/mL
							Perfluorononanesulfonic acid (PFNS)	0.2405 ng/mL
							Perfluorooctanoic acid (PFOA)	0.25 ng/mL
							Perfluoro-n-octadecanoic acid (PFODA)	0.25 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	0.2325 ng/mL
							Perfluorooctanesulfonamide (FOSA)	0.25 ng/mL
							Perfluoropentanoic acid (PFPeA)	0.25 ng/mL
							Perfluoropentanesulfonic acid (PFPeS)	0.235 ng/mL
							Perfluorotetradecanoic acid (PFTeA)	0.25 ng/mL
							Perfluorotridecanoic acid (PFTrDA)	0.25 ng/mL
							Perfluoroundecanoic acid (PFUnA)	0.25 ng/mL
							PFPrA	0.2425 ng/mL
					LCPFC3SP_P3_00033	2.5 mL	PS Acid	0.25 ng/mL
							Hydro-PS Acid	0.25 ng/mL
							R-PSDA	0.25 ng/mL
							Hydrolyzed PSDA	0.25 ng/mL

REAGENT TRACEABILITY SUMMARY

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							R-PSDCA	0.25 ng/mL
							EVE Acid	0.25 ng/mL
							Hydro-EVE Acid	0.25 ng/mL
							MTP	0.25 ng/mL
							NVHOS	0.25 ng/mL
							PEPA	0.25 ng/mL
							PFPE-1	0.25 ng/mL
							PFMOAA	0.25 ng/mL
							PFO2HxA	0.25 ng/mL
							PFO3OA	0.25 ng/mL
							PFO4DA	0.25 ng/mL
							PFO5DA	0.25 ng/mL
							PMPA	0.25 ng/mL
							R-EVE	0.25 ng/mL
.LCMPFC_ICALSU_00057	04/03/23	10/19/22	Methanol, Lot 218266	200 mL	LCM2PFOA_00037	100 uL	13C2 PFOA	0.025 ug/mL
					LCM8PFOA_00003	100 uL	13C8 PFOA	0.025 ug/mL
					LCM8PFOS_00005	100 uL	13C8 PFOS	0.0239 ug/mL
					LCMPFC_IDA+_00378	200 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-NMeFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024125 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.02375 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C2 PFHxA	0.025 ug/mL
							1802 PFHxS	0.02365 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
..LCM2PFOA 00037	12/09/26	Wellington Laboratories, Lot M2PFOA0122			(Purchased Reagent)		13C2 PFOA	50 ug/mL
..LCM8PFOA 00003	07/22/25	Wellington Laboratories, Lot M8PFOA0720			(Purchased Reagent)		13C8 PFOA	50 ug/mL
..LCM8PFOS 00005	01/14/26	Wellington Laboratories, Lot M8PFOS0121			(Purchased Reagent)		13C8 PFOS	47.8 ug/mL
..LCMPFC_IDA+_00378	04/03/23	10/04/22	Methanol, Lot 218266	200 mL	LCMPFC_IDA+_00376	50 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-N-EtFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024125 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.02375 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							1802 PFHxS	0.02365 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
...LCMPFC_IDA+_00376	04/03/23	10/03/22	Methanol, Lot 218266	500 mL	LCd-NEtFOSA-M 00034	1 mL	d-N-EtFOSA-M	0.1 ug/mL
					LCd-NMeFOSA-M 00035	1 mL	d-N-MeFOSA-M	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCd3-NMeFOSAA 00046	1 mL	d3-NMeFOSAA	0.1 ug/mL
					LCd5-NEtFOSAA 00047	1 mL	d5-NEtFOSAA	0.1 ug/mL
					LCd7-NMeFOSEM 00035	1 mL	d7-N-MeFOSE-M	0.1 ug/mL
					LCd9-NEtFOSEM 00032	1 mL	d9-N-EtFOSE-M	0.1 ug/mL
					LCM10:2 FTS 00005	1 mL	13C2 10:2 FTS	0.0965 ug/mL
					LCM2-4:FTS 00036	1 mL	M2-4:2 FTS	0.0938 ug/mL
					LCM2-6:FTS 00040	1 mL	M2-6:2 FTS	0.095 ug/mL
					LCM2-8:2FTS 00045	1 mL	M2-8:2 FTS	0.096 ug/mL
					LCM2PFHxDA 00050	1 mL	13C2 PFHxDA	0.1 ug/mL
					LCM2PFTeDA 00048	1 mL	13C2 PFTeDA	0.1 ug/mL
					LCM3HFPO-DA 00040	1 mL	13C3 HFPO-DA	0.1 ug/mL
					LCM4-6:2diPAP_00008	1 mL	13C4-6:2 diPAP	0.0973068 ug/mL
					LCM4-8:2diPAP_00008	1 mL	13C4-8:2 diPAP	0.097837 ug/mL
					LCM4PFHFA 00047	1 mL	13C4 PFHFA	0.1 ug/mL
					LCM5PFPEA 00048	1 mL	13C5 PFPeA	0.1 ug/mL
					LCM8FOSA 00053	1 mL	13C8 FOSA	0.1 ug/mL
					LCMFDEA 00014	1 mL	13C-10:2 FTCA	0.1 ug/mL
					LCMFDUEA 00013	1 mL	13C-10:2 FTUCA	0.1 ug/mL
					LCMFHEA 00012	1 mL	13C-6:2 FTCA	0.1 ug/mL
					LCMFHUEA 00015	1 mL	13C-6:2 FTUCA	0.1 ug/mL
					LCMFOEA 00011	1 mL	13C-8:2 FTCA	0.1 ug/mL
					LCMFOUEA 00013	1 mL	13C-8:2 FTUCA	0.1 ug/mL
					LCMPFBA 00050	1 mL	13C4 PFBA	0.1 ug/mL
					LCMPFBS 00035	1 mL	13C3 PFBS	0.0932 ug/mL
					LCMPFDA 00056	1 mL	13C2 PFDA	0.1 ug/mL
					LCMPFDoA 00049	1 mL	13C2 PFDoA	0.1 ug/mL
					LCMPFHxA 00055	1 mL	13C2 PFHxA	0.1 ug/mL
					LCMPFHxS 00048	1 mL	18O2 PFHxS	0.0946 ug/mL
					LCMPFNA 00048	1 mL	13C5 PFNA	0.1 ug/mL
					LCMPFOA 00052	1 mL	13C4 PFOA	0.1 ug/mL
					LCMPFOS 00064	1 mL	13C4 PFOS	0.0958 ug/mL
					LCMPFUDa 00051	1 mL	13C2 PFUnA	0.1 ug/mL
....LCd-NEtFOSA-M 00034	03/17/27		WELLINGTON, Lot dNEtFOSA0322M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
....LCd-NMeFOSA-M 00035	10/07/26		WELLINGTON, Lot dNMeFOSA1021M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
....LCd3-NMeFOSAA 00046	02/22/27		WELLINGTON, Lot d3NMeFOSAA0222		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
....LCd5-NEtFOSAA 00047	09/28/26		WELLINGTON, Lot d5NEtFOSAA0921		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
....LCd7-NMeFOSEM 00035	01/27/27		WELLINGTON, Lot d7NMeFOSE1221M		(Purchased Reagent)		d7-N-MeFOSE-M	50 ug/mL
....LCd9-NEtFOSEM 00032	01/27/27		WELLINGTON, Lot d9NEtFOSE1221M		(Purchased Reagent)		d9-N-EtFOSE-M	50 ug/mL
....LCM10:2 FTS_00005	04/26/26		Cambridge Isotope Laboratories, Lot SEBC-003		(Purchased Reagent)		13C2 10:2 FTS	48.25 ug/mL
....LCM2-4:FTS 00036	10/13/26		Wellington, Lot M242FTS1021		(Purchased Reagent)		M2-4:2 FTS	46.9 ug/mL
....LCM2-6:FTS 00040	10/13/26		WELLINGTON, Lot M262FTS1021		(Purchased Reagent)		M2-6:2 FTS	47.5 ug/mL
....LCM2-8:2FTS 00045	11/23/26		WELLINGTON, Lot M282FTS1121		(Purchased Reagent)		M2-8:2 FTS	48 ug/mL
....LCM2PFHxDA 00050	11/23/26		Wellington Laboratories, Lot M2PFHxDA1121		(Purchased Reagent)		13C2 PFHxDA	50 ug/mL
....LCM2PFTeDA 00048	11/22/26		Wellington Laboratories, Lot M2PFTeDA1121		(Purchased Reagent)		13C2 PFTeDA	50 ug/mL
....LCM3HFPO-DA 00040	11/11/24		WELLINGTON, Lot M3HFPODA1121		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
....LCM4-6:2diPAP 00008	08/05/26		Wellington, Lot M462diPAP0721		(Purchased Reagent)		13C4-6:2 diPAP	48.6534 ug/mL
....LCM4-8:2diPAP 00008	12/01/26		Wellington, Lot M482diPAP1121		(Purchased Reagent)		13C4-8:2 diPAP	48.9185 ug/mL
....LCM4PFHPA 00047	12/07/26		Wellington Laboratories, Lot M4PFHpA1121		(Purchased Reagent)		13C4 PFHpA	50 ug/mL
....LCM5PFPEA 00048	08/10/26		Wellington Laboratories, Lot M5PFPeA0821		(Purchased Reagent)		13C5 PFPeA	50 ug/mL
....LCM8FOSA 00053	03/17/27		Wellington Laboratories, Lot M8FOSA0322I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
....LCMFDEA 00014	09/27/24		Wellington Laboratories, Lot MFDEA0921		(Purchased Reagent)		13C-10:2 FTCA	50 ug/mL
....LCMFDUEA 00013	11/22/23		Wellington Laboratories, Lot MFDUEA1221		(Purchased Reagent)		13C-10:2 FTUCA	50 ug/mL
....LCMFHEA 00012	09/29/24		Wellington Laboratories, Lot MFHEA0921		(Purchased Reagent)		13C-6:2 FTCA	50 ug/mL
....LCMFHUEA 00015	02/18/24		Wellington Laboratories, Lot MFHUEA0322		(Purchased Reagent)		13C-6:2 FTUCA	50 ug/mL
....LCMFOEA 00011	11/22/24		Wellington Laboratories, Lot MFOEA1121		(Purchased Reagent)		13C-8:2 FTCA	50 ug/mL
....LCMFOUEA 00013	12/07/23		Wellington Laboratorie, Lot MFOUEA1121		(Purchased Reagent)		13C-8:2 FTUCA	50 ug/mL
....LCMPFBA 00050	07/12/26		Wellington Laboratories, Lot MPFBA0621		(Purchased Reagent)		13C4 PFBA	50 ug/mL
....LCMPFBS 00035	02/07/27		Wellington Laboratories, Lot M3PFBS0222		(Purchased Reagent)		13C3 PFBS	46.6 ug/mL
....LCMPFDA 00056	12/08/26		Wellington Laboratories, Lot MPFDA1221		(Purchased Reagent)		13C2 PFDA	50 ug/mL
....LCMPFDoA 00049	03/17/27		Wellington Laboratories, Lot MPFDoA0322		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
....LCMPFHxA 00055	10/04/26		Wellington Laboratories, Lot MPFHxA0921		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
....LCMPFHxS 00048	10/29/26		Wellington Laboratories, Lot MPFHxS1021		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
....LCMPFNA 00048	10/29/26		Wellington Laboratories, Lot MPFNA1021		(Purchased Reagent)		13C5 PFNA	50 ug/mL
....LCMPFOA 00052	12/07/26		Wellington Laboratories, Lot MPFOA1121		(Purchased Reagent)		13C4 PFOA	50 ug/mL
....LCMPFOS 00064	01/27/27		Wellington Laboratories, Lot MPFOS0122		(Purchased Reagent)		13C4 PFOS	47.9 ug/mL
....LCMPFUdA 00051	12/09/26		Wellington Laboratories, Lot MPFUdA1221		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
.LCPFC+SP+6_00107	02/08/23	10/04/22	Methanol, Lot 218266	250 mL	LCPFC+SP+6_00098	50 mL	NFDHA	0.02 ug/mL
							10:2 diPAP	0.0200996 ug/mL
							10:2 FTS	0.01932 ug/mL
							11Cl-PF3OUds	0.01888 ug/mL
							3:3 FTCA	0.02 ug/mL
							4:2 FTS	0.01876 ug/mL
							5:3 FTCA	0.02 ug/mL
							6:2 diPAP	0.0194587 ug/mL
							6:2 FTS	0.01904 ug/mL
							6:2/8:2 diPAP	0.0195181 ug/mL
							7:3 FTCA	0.02 ug/mL
							8:2 diPAP	0.0195657 ug/mL
							8:2 FTS	0.0192 ug/mL
							9Cl-PF3ONS	0.01868 ug/mL
							NEtFOSAA	0.02 ug/mL
							NMeFOSAA	0.02 ug/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.01888 ug/mL
							FBSA	0.02 ug/mL
							10:2 FTCA	0.02 ug/mL
							10:2 FTUCA	0.02 ug/mL
							6:2 FTCA	0.02 ug/mL
							6:2 FTUCA	0.02 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							FHxSA	0.02 ug/mL
							8:2 FTCA	0.02 ug/mL
							8:2 FTUCA	0.02 ug/mL
							HFPO-DA (GenX)	0.02 ug/mL
							PFPPrS	0.0184 ug/mL
							NEtFOSA	0.02 ug/mL
							NEtFOSE	0.02 ug/mL
							NMeFOSA	0.02 ug/mL
							NMeFOSE	0.02 ug/mL
							PFMPA	0.02 ug/mL
							PFMBA	0.02 ug/mL
							Perfluorobutanoic acid (PFBA)	0.02 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.01776 ug/mL
							Perfluorodecanoic acid (PFDA)	0.02 ug/mL
							Perfluorododecanoic acid (PFDoA)	0.02 ug/mL
							Perfluorododecanesulfonic acid (PFDoS)	0.0194 ug/mL
							Perfluorodecanesulfonic acid (PFDS)	0.01928 ug/mL
							PFECHS	0.01848 ug/mL
							PFEESA	0.01784 ug/mL
							Perfluoroheptanoic acid (PFHpA)	0.02 ug/mL
							Perfluoroheptanesulfonic acid (PFHpS)	0.01908 ug/mL
							Perfluorohexanoic acid (PFHxA)	0.02 ug/mL
							Perfluoro-n-hexadecanoic acid (PFHxDA)	0.02 ug/mL
							Perfluorohexanesulfonic acid (PFHxS)	0.01824 ug/mL
							Perfluorononanoic acid (PFNA)	0.02 ug/mL
							Perfluorononanesulfonic acid (PFNS)	0.01924 ug/mL
							Perfluorooctanoic acid (PFOA)	0.02 ug/mL
							Perfluoro-n-octadecanoic acid (PFODA)	0.02 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	0.0186 ug/mL
							Perfluorooctanesulfonamide (FOSA)	0.02 ug/mL
							Perfluoropentanoic acid (PFPeA)	0.02 ug/mL
							Perfluoropentanesulfonic acid (PFPeS)	0.0188 ug/mL
							Perfluorotetradecanoic acid (PFTeA)	0.02 ug/mL
							Perfluorotridecanoic acid (PFTTrDA)	0.02 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCPFC+SP+6_00098	02/08/23	10/03/22	Methanol, Lot 218266	500 mL			Perfluoroundecanoic acid (PFUnA)	0.02 ug/mL
							PFPPrA	0.0194 ug/mL
					LC-36-OPFHpa_00011	1 mL	NFDHA	0.1 ug/mL
					LC10:2diPAPim_00016	1.09 mL	10:2 diPAP	0.100498 ug/mL
					LC10:2FTS_00016	1 mL	10:2 FTS	0.0966 ug/mL
					LC11CIPF3OUds_00023	1 mL	11C1-PF3OUds	0.0944 ug/mL
					LC3:3FTCA_00005	1 mL	3:3 FTCA	0.1 ug/mL
					LC4:2FTS_00024	1 mL	4:2 FTS	0.0938 ug/mL
					LC5:3FTCA_00008	1 mL	5:3 FTCA	0.1 ug/mL
					LC6:2diPAP_00009	1 mL	6:2 diPAP	0.0972936 ug/mL
					LC6:2FTS_00024	1 mL	6:2 FTS	0.0952 ug/mL
					LC62/82diPAP_00007	1 mL	6:2/8:2 diPAP	0.0975904 ug/mL
					LC7:3FTCA_00007	1 mL	7:3 FTCA	0.1 ug/mL
					LC8:2diPAP_00007	1 mL	8:2 diPAP	0.0978284 ug/mL
					LC8:2FTS_00024	1 mL	8:2 FTS	0.096 ug/mL
					LC9CI-PF3ONS_00023	1 mL	9C1-PF3ONS	0.0934 ug/mL
					LCbr-NEtFOSAA_00023	1 mL	NEtFOSAA	0.1 ug/mL
					LCbr-NMeFOSAA_00022	1 mL	NMeFOSAA	0.1 ug/mL
					LCDONA_00032	1 mL	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.0944 ug/mL
					LCFBSA-I_00007	1 mL	FBSA	0.1 ug/mL
					LCFDEA_00009	1 mL	10:2 FTCA	0.1 ug/mL
					LCFDUEA_00007	1 mL	10:2 FTUCA	0.1 ug/mL
					LCFHUEA_00009	1 mL	6:2 FTCA	0.1 ug/mL
					LCFHUEA_00009	1 mL	6:2 FTUCA	0.1 ug/mL
					LCFHxSA-I_00009	1 mL	FHxSA	0.1 ug/mL
					LCFOEA_00010	1 mL	8:2 FTCA	0.1 ug/mL
					LCFOUEA_00007	1 mL	8:2 FTUCA	0.1 ug/mL
					LCHFPO-DA_00027	1 mL	HFPO-DA (GenX)	0.1 ug/mL
					LCLPFPPrS_00009	1 mL	PFPPrS	0.092 ug/mL
					LCN-EtFOSA-M_00025	1 mL	NEtFOSA	0.1 ug/mL
					LCN-EtFOSE-M_00018	1 mL	NEtFOSE	0.1 ug/mL
					LCN-MeFOSA-M_00027	1 mL	NMeFOSA	0.1 ug/mL
					LCN-MeFOSE-M_00021	1 mL	NMeFOSE	0.1 ug/mL
					LCPF40PeA_00015	1 mL	PFMPA	0.1 ug/mL
					LCPF5OHxA_00011	1 mL	PFMBA	0.1 ug/mL
					LCPFBA_00028	1 mL	Perfluorobutanoic acid (PFBA)	0.1 ug/mL
					LCPFBFA_00025	1 mL	Perfluorobutanesulfonic acid (PFBS)	0.0888 ug/mL
					LCPFDA_00033	1 mL	Perfluorodecanoic acid (PFDA)	0.1 ug/mL
					LCPFDaA_00031	1 mL	Perfluorododecanoic acid (PFDoA)	0.1 ug/mL
					LCPFDoS_00020	1 mL	Perfluorododecanesulfonic acid (PFDoS)	0.097 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

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SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFDOSA_00016	1 mL	Perfluorodecanesulfonic acid (PFDS)	0.0964 ug/mL
					LCPFECHS_00007	1 mL	PFECHS	0.0924 ug/mL
					LCPFEESA_00010	1 mL	PFEESA	0.0892 ug/mL
					LCPFHpa_00035	1 mL	Perfluoroheptanoic acid (PFHpA)	0.1 ug/mL
					LCPFHpsA_00021	1 mL	Perfluoroheptanesulfonic acid (PFHpS)	0.0954 ug/mL
					LCPFHxA_00033	1 mL	Perfluorohexanoic acid (PFHxA)	0.1 ug/mL
					LCPFHxDA_00028	1 mL	Perfluoro-n-hexadecanoic acid (PFHxDA)	0.1 ug/mL
					LCPFHxS-br_00027	1 mL	Perfluorohexanesulfonic acid (PFHxS)	0.0912 ug/mL
					LCPFNA_00035	1 mL	Perfluorononanoic acid (PFNA)	0.1 ug/mL
					LCPFNS_00020	1 mL	Perfluorononanesulfonic acid (PFNS)	0.0962 ug/mL
					LCPFOA_00032	1 mL	Perfluorooctanoic acid (PFOA)	0.1 ug/mL
					LCPFODA_00028	1 mL	Perfluoro-n-octadecanoic acid (PFODA)	0.1 ug/mL
					LCPFOS-br_00029	1 mL	Perfluorooctanesulfonic acid (PFOS)	0.093 ug/mL
					LCPFOSA_00029	1 mL	Perfluorooctanesulfonamide (FOSA)	0.1 ug/mL
					LCPFPeA_00028	1 mL	Perfluoropentanoic acid (PFPeA)	0.1 ug/mL
					LCPFPeS_00020	1 mL	Perfluoropentanesulfonic acid (PFPeS)	0.094 ug/mL
					LCPFTeDA_00032	1 mL	Perfluorotetradecanoic acid (PFTeA)	0.1 ug/mL
					LCPFTrDA_00030	1 mL	Perfluorotridecanoic acid (PFTTrDA)	0.1 ug/mL
					LCPFUdA_00033	1 mL	Perfluoroundecanoic acid (PFUnA)	0.1 ug/mL
					LCPPropionic_00024	1 mL	PFPrA	0.097 ug/mL
...LC-36-OFFHpA_00011	10/14/26	Wellington Laboratories, Lot 36OPFHpa0921			(Purchased Reagent)		NFDHA	50 ug/mL
...LC10:2diPAPim_00016	02/08/23	08/08/22	Methanol, Lot 217743	200 mL	LC10:2diPAPim_00015	100 mL	10:2 diPAP	46.1 ug/mL
....LC10:2diPAPim_00015	02/08/23	08/08/22	Methanol, Lot 217743	1000 mL	LC10:2diPAP_00005	0.0922 g	10:2 diPAP	92.2 ug/mL
....LC10:2diPAP_00005	11/13/23	Toronto Research Chemicals, Lot 5-BKS-67-1			(Purchased Reagent)		10:2 diPAP	100 %
...LC10:2FTS_00016	01/27/27	WELLINGTON, Lot 102FTS0122			(Purchased Reagent)		10:2 FTS	48.3 ug/mL
...LC11CIPF3OUdS_00023	02/08/27	Wellington Laboratories, Lot 11CIPF3OUdS0222			(Purchased Reagent)		11C1-PF3OUdS	47.2 ug/mL
...LC3:3FTCA_00005	02/03/27	Wellington Laboratories, Lot FPrPA0122			(Purchased Reagent)		3:3 FTCA	50 ug/mL
...LC4:2FTS_00024	04/22/27	WELLINGTON, Lot 42FTS0422			(Purchased Reagent)		4:2 FTS	46.9 ug/mL
...LC5:3FTCA_00008	01/05/27	Wellington Laboratories, Lot FPePA1221			(Purchased Reagent)		5:3 FTCA	50 ug/mL
...LC6:2diPAP_00009	03/18/27	Wellington, Lot 62diPAP0222			(Purchased Reagent)		6:2 diPAP	48.6468 ug/mL
...LC6:2FTS_00024	01/04/27	WELLINGTON, Lot 62FTS1221			(Purchased Reagent)		6:2 FTS	47.6 ug/mL
...LC62/82diPAP_00007	01/26/26	Wellington, Lot 6282diPAP0121			(Purchased Reagent)		6:2/8:2 diPAP	48.7952 ug/mL
...LC7:3FTCA_00007	10/13/26	Wellington Laboratories, Lot FHpPA1021			(Purchased Reagent)		7:3 FTCA	50 ug/mL
...LC8:2diPAP_00007	09/09/25	Wellington, Lot 82diPAP0920			(Purchased Reagent)		8:2 diPAP	48.9142 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

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SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LC8:2FTS 00024	02/08/27		WELLINGTON, Lot 82FTS0122		(Purchased Reagent)		8:2 FTS	48 ug/mL
...LC9CI-PF3ONS_00023	11/22/26		Wellington Laboratories, Lot 9CIPF3ONS1121		(Purchased Reagent)		9CI-PF3ONS	46.7 ug/mL
...LCbr-NetFOSAA 00023	11/23/26		WELLINGTON, Lot brNetFOSAA1121		(Purchased Reagent)		NetFOSAA	50 ug/mL
...LCbr-NMeFOSAA 00022	07/13/26		WELLINGTON, Lot brNMeFOSAA0621		(Purchased Reagent)		NMeFOSAA	50 ug/mL
...LCDONA_00032	04/18/27		WELLINGTON, Lot NADONA0422		(Purchased Reagent)		4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.2 ug/mL
...LCFBSA-I 00007	11/10/26		Wellington, Lot FBSA1121I		(Purchased Reagent)		FBSA	50 ug/mL
...LCFDEA 00009	09/28/24		Wellington Laboratories, Lot FDEA0921		(Purchased Reagent)		10:2 FTCA	50 ug/mL
...LCFDUEA 00007	10/29/23		Wellington Laboratories, Lot FDUEA1021		(Purchased Reagent)		10:2 FTUCA	50 ug/mL
...LCFHEA 00009	01/05/25		Wellington Laboratories, Lot FHEA1221		(Purchased Reagent)		6:2 FTCA	50 ug/mL
...LCFHUEA 00009	09/03/23		Wellington Laboratories, Lot FHUEA0921		(Purchased Reagent)		6:2 FTUCA	50 ug/mL
...LCFHxSA-I 00009	12/29/26		Wellington, Lot FHXSA1221I		(Purchased Reagent)		FHXSA	50 ug/mL
...LCFOEA 00010	08/18/24		Wellington Laboratories, Lot FOEA0821		(Purchased Reagent)		8:2 FTCA	50 ug/mL
...LCFOUEA 00007	12/29/23		Wellington Laboratories, Lot FOUEA1221		(Purchased Reagent)		8:2 FTUCA	50 ug/mL
...LCHFPO-DA 00027	04/05/25		WELLINGTON, Lot HFPODA0322		(Purchased Reagent)		HFPO-DA (GenX)	50 ug/mL
...LCLPFPPrS 00009	04/20/27		Wellington Laboratories, Lot LPFPPrS0422		(Purchased Reagent)		PFPrS	46 ug/mL
...LCN-EtFOSA-M 00025	04/20/27		WELLINGTON, Lot NetFOSA0422M		(Purchased Reagent)		NetFOSA	50 ug/mL
...LCN-EtFOSE-M 00018	09/23/26		WELLINGTON, Lot NetFOSE0921M		(Purchased Reagent)		NetFOSE	50 ug/mL
...LCN-MeFOSA-M 00027	02/28/27		WELLINGTON, Lot NMeFOSA0222M		(Purchased Reagent)		NMeFOSA	50 ug/mL
...LCN-MeFOSE-M 00021	05/13/27		WELLINGTON, Lot NMeFOSE0522M		(Purchased Reagent)		NMeFOSE	50 ug/mL
...LCPFF40PeA 00015	08/02/27		Wellington Laboratories, Lot PF40PeA0722		(Purchased Reagent)		PFMPA	50 ug/mL
...LCPFF5OHxA 00011	10/19/26		Wellington Laboratories, Lot PF5OHxA1021		(Purchased Reagent)		PFMBA	50 ug/mL
...LCPFFBA 00028	04/18/27		Wellington Laboratories, Lot PFBA0422		(Purchased Reagent)		Perfluorobutanoic acid (PFBA)	50 ug/mL
...LCPFFBSA_00025	04/05/27		Wellington Laboratories, Lot LPFBS0322		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.4 ug/mL
...LCPFFDA 00033	02/22/27		Wellington Laboratories, Lot PFDA0222		(Purchased Reagent)		Perfluorodecanoic acid (PFDA)	50 ug/mL
...LCPFFDoA_00031	01/27/27		Wellington Laboratories, Lot PFDoA0122		(Purchased Reagent)		Perfluorododecanoic acid (PFDoA)	50 ug/mL
...LCPFFDoS_00020	04/20/27		Wellington Laboratories, Lot LPFFDoS0422		(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48.5 ug/mL
...LCPFFDSA_00016	02/22/27		Wellington Laboratories, Lot LPFDS0222		(Purchased Reagent)		Perfluorodecanesulfonic acid (PFDS)	48.2 ug/mL
...LCPFFECHS 00007	03/28/27		Wellington Laboratories, Lot PFECHS0222		(Purchased Reagent)		PFECHS	46.2 ug/mL
...LCPFEESA 00010	11/22/26		Wellington Laboratories, Lot PFEESA1121		(Purchased Reagent)		PFEESA	44.6 ug/mL
...LCPFFHpA_00035	03/17/27		Wellington Laboratories, Lot PFHpA0222		(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	50 ug/mL
...LCPFFHpSA_00021	01/27/27		Wellington Laboratories, Lot LPFFHpS0122		(Purchased Reagent)		Perfluoroheptanesulfonic acid (PFHpS)	47.7 ug/mL
...LCPFFHxA 00033	01/27/27		Wellington Laboratories, Lot PFHxA0122		(Purchased Reagent)		Perfluorohexanoic acid (PFHxA)	50 ug/mL
...LCPFFHxDA_00028	02/23/27		Wellington Laboratories, Lot PFHxDA0222		(Purchased Reagent)		Perfluoro-n-hexadecanoic acid (PFHxDA)	50 ug/mL
...LCPFFHxS-br_00027	12/07/26		Wellington Laboratories, Lot brPFHxSK1211		(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	45.6 ug/mL
...LCPFFNA 00035	01/27/27		Wellington Laboratories, Lot PFNA0122		(Purchased Reagent)		Perfluorononanoic acid (PFNA)	50 ug/mL
...LCPFFNS_00020	04/20/27		Wellington Laboratories, Lot LPFNS0422		(Purchased Reagent)		Perfluorononanesulfonic acid (PFNS)	48.1 ug/mL
...LCPFFOA_00032	02/22/27		Wellington Laboratories, Lot PFOA0222		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LCPFODA_00028	09/03/26		Wellington Laboratories, Lot PFODA0821		(Purchased Reagent)		Perfluoro-n-octadecanoic acid (PFODA)	50 ug/mL
...LCPFOS-br_00029	12/07/26		Wellington Laboratories, Lot brPFOSK1121		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.5 ug/mL
...LCPFOSA_00029	04/05/27		Wellington Laboratories, Lot FOSA0322I		(Purchased Reagent)		Perfluorooctanesulfonamide (FOSA)	50 ug/mL
...LCPFPeA_00028	02/08/27		Wellington Laboratories, Lot PFPeA0122		(Purchased Reagent)		Perfluoropentanoic acid (PFPeA)	50 ug/mL
...LCPFPeS_00020	02/07/27		Wellington Laboratories, Lot LPFPeS0122		(Purchased Reagent)		Perfluoropentanesulfonic acid (PFPeS)	47 ug/mL
...LCPFTeDA_00032	02/28/27		Wellington Laboratories, Lot PFTeDA0222		(Purchased Reagent)		Perfluorotetradecanoic acid (PFTeA)	50 ug/mL
...LCPFTTrDA_00030	02/07/27		Wellington Laboratories, Lot PFTTrDA0122		(Purchased Reagent)		Perfluorotridecanoic acid (PFTTrDA)	50 ug/mL
...LCPFUdA_00033	02/22/27		Wellington Laboratories, Lot PFUdA0222		(Purchased Reagent)		Perfluoroundecanoic acid (PFUnA)	50 ug/mL
...LCPropionic_00024	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	LCPropionic_00023	5 mL	PFPPrA	48.5 ug/mL
...LCPropionic_00023	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	Propionic Acd 00002	100 uL	PFPPrA	970 ug/mL
....Propionic Acd 00002	06/09/25		Sigma Aldrich, Lot MKCK6675		(Purchased Reagent)		PFPPrA	97 %
.LCPFC3SP_P3_00033	02/09/23	08/09/22	Methanol, Lot 217743	250 mL	LCPFC3SP_TB3_00039	50 mL	PS Acid	0.02 ug/mL
							Hydro-PS Acid	0.02 ug/mL
							R-PSDA	0.02 ug/mL
							Hydrolyzed PSDA	0.02 ug/mL
							R-PSDCA	0.02 ug/mL
							EVE Acid	0.02 ug/mL
							Hydro-EVE Acid	0.02 ug/mL
							MTP	0.02 ug/mL
							NVHOS	0.02 ug/mL
							PEPA	0.02 ug/mL
							PFPE-1	0.02 ug/mL
							PFM0AA	0.02 ug/mL
							PFO2HxA	0.02 ug/mL
							PFO3OA	0.02 ug/mL
							PFO4DA	0.02 ug/mL
							PFO5DA	0.02 ug/mL
							PMPA	0.02 ug/mL
							R-EVE	0.02 ug/mL
..LCPFC3SP_TB3_00039	02/09/23	08/09/22	Methanol, Lot 217743	500 mL	LCBP1_00005	50 uL	PS Acid	0.1 ug/mL
					LCBP2_00004	50 uL	Hydro-PS Acid	0.1 ug/mL
					LCBP4_00003	50 uL	R-PSDA	0.1 ug/mL
					LCBP5_00004	50 uL	Hydrolyzed PSDA	0.1 ug/mL
					LCBP6_00004	50 uL	R-PSDCA	0.1 ug/mL
					LCEVEA_00004	50 uL	EVE Acid	0.1 ug/mL
					LCHEVEA_00003	50 uL	Hydro-EVE Acid	0.1 ug/mL
					LCMTP_00003	50 uL	MTP	0.1 ug/mL
					LCNVHOS_00003	50 uL	NVHOS	0.1 ug/mL
					LCPEPA_00005	50 uL	PEPA	0.1 ug/mL
					LCPFECA_G_00004	50 uL	PFPE-1	0.1 ug/mL
					LCPFM0AA_00007	50 uL	PFM0AA	0.1 ug/mL

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFO2HxA 00005	50 uL	PFO2HxA	0.1 ug/mL
					LCPFO3OA 00006	50 uL	PFO3OA	0.1 ug/mL
					LCPFO4DA 00005	50 uL	PFO4DA	0.1 ug/mL
					LCPFO5DoA 00004	50 uL	PFO5DA	0.1 ug/mL
					LCPMPA 00005	50 uL	PMPA	0.1 ug/mL
					LCR-EVE 00005	50 uL	R-EVE	0.1 ug/mL
...LCBP1 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PS Acid	0.1 %
...LCBP2 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydro-PS Acid	0.1 %
...LCBP4 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-PSDA	0.1 %
...LCBP5 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydrolyzed PSDA	0.1 %
...LCBP6 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-PSDCA	0.1 %
...LCEVEA 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		EVE Acid	0.1 %
...LCHEVEA 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydro-EVE Acid	0.1 %
...LCMTP 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		MTP	0.1 %
...LCNVHOS 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		NVHOS	0.1 %
...LCPEPA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PEPA	0.1 %
...LCPFECA G 00004	01/23/24		Chemours, Lot NA		(Purchased Reagent)		PFPE-1	1000 ug/mL
...LCPFMOAA 00007	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFMOAA	0.1 %
...LCPFO2HxA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO2HxA	0.1 %
...LCPFO3OA 00006	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO3OA	0.1 %
...LCPFO4DA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO4DA	0.1 %
...LCPFO5DoA 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO5DA	0.1 %
...LCPMPA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PMPA	0.1 %
...LCR-EVE 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-EVE	0.1 %
LCPFC+6C_LL4_00008	02/08/23	10/19/22	MeOH/H2O, Lot 218266	500 mL	LCMPFC_ICALSU_00057	25 mL	13C2 PFOA	1.25 ng/mL
							13C8 PFOA	1.25 ng/mL
							13C8 PFOS	1.195 ng/mL
							d-N-EtFOSA-M	1.25 ng/mL
							d-N-MeFOSA-M	1.25 ng/mL
							d3-NMeFOSAA	1.25 ng/mL
							d5-NEtFOSAA	1.25 ng/mL
							d7-N-MeFOSE-M	1.25 ng/mL
							d9-N-EtFOSE-M	1.25 ng/mL
							13C2 10:2 FTS	1.20625 ng/mL
							M2-4:2 FTS	1.1725 ng/mL
							M2-6:2 FTS	1.1875 ng/mL
							M2-8:2 FTS	1.2 ng/mL
							13C2 PFHxDA	1.25 ng/mL
							13C2 PFTeDA	1.25 ng/mL
							13C3 HFPO-DA	1.25 ng/mL
							13C4-6:2 diPAP	1.21633 ng/mL
							13C4-8:2 diPAP	1.22296 ng/mL
							13C4 PFHpA	1.25 ng/mL
							13C5 PFPeA	1.25 ng/mL
							13C8 FOSA	1.25 ng/mL
							13C-10:2 FTCA	1.25 ng/mL
							13C-10:2 FTUCA	1.25 ng/mL

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-6:2 FTCA	1.25 ng/mL
							13C-6:2 FTUCA	1.25 ng/mL
							13C-8:2 FTCA	1.25 ng/mL
							13C-8:2 FTUCA	1.25 ng/mL
							13C4 PFBA	1.25 ng/mL
							13C3 PFBS	1.165 ng/mL
							13C2 PFDA	1.25 ng/mL
							13C2 PFDoA	1.25 ng/mL
							13C2 PFHxA	1.25 ng/mL
							1802 PFHxS	1.1825 ng/mL
							13C5 PFNA	1.25 ng/mL
							13C4 PFOA	1.25 ng/mL
							13C4 PFOS	1.1975 ng/mL
							13C2 PFUnA	1.25 ng/mL
					LCPFC+SP+6_00107	25 mL	NFDHA	1 ng/mL
							10:2 diPAP	1.00498 ng/mL
							10:2 FTS	0.966 ng/mL
							11C1-PF3OUds	0.944 ng/mL
							3:3 FTCA	1 ng/mL
							4:2 FTS	0.938 ng/mL
							5:3 FTCA	1 ng/mL
							6:2 diPAP	0.972936 ng/mL
							6:2 FTS	0.952 ng/mL
							6:2/8:2 diPAP	0.975904 ng/mL
							7:3 FTCA	1 ng/mL
							8:2 diPAP	0.978284 ng/mL
							8:2 FTS	0.96 ng/mL
							9C1-PF3ONS	0.934 ng/mL
							NetFOSAA	1 ng/mL
							NMeFOSAA	1 ng/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.944 ng/mL
							FBSA	1 ng/mL
							10:2 FTCA	1 ng/mL
							10:2 FTUCA	1 ng/mL
							6:2 FTCA	1 ng/mL
							6:2 FTUCA	1 ng/mL
							FHxSA	1 ng/mL
							8:2 FTCA	1 ng/mL
							8:2 FTUCA	1 ng/mL
							HFPO-DA (GenX)	1 ng/mL
							PFFrS	0.92 ng/mL
							NetFOSA	1 ng/mL
							NetFOSE	1 ng/mL
							NMeFOSA	1 ng/mL

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							NMeFOSE	1 ng/mL
							PFMPA	1 ng/mL
							PFMBA	1 ng/mL
							Perfluorobutanoic acid (PFBA)	1 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	0.888 ng/mL
							Perfluorodecanoic acid (PFDA)	1 ng/mL
							Perfluorododecanoic acid (PFDoA)	1 ng/mL
							Perfluorododecanesulfonic acid (PFDoS)	0.97 ng/mL
							Perfluorodecanesulfonic acid (PFDS)	0.964 ng/mL
							PFECHS	0.924 ng/mL
							PFEESA	0.892 ng/mL
							Perfluoroheptanoic acid (PFHpA)	1 ng/mL
							Perfluoroheptanesulfonic acid (PFHpS)	0.954 ng/mL
							Perfluorohexanoic acid (PFHxA)	1 ng/mL
							Perfluoro-n-hexadecanoic acid (PFHxDA)	1 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	0.912 ng/mL
							Perfluorononanoic acid (PFNA)	1 ng/mL
							Perfluorononanesulfonic acid (PFNS)	0.962 ng/mL
							Perfluorooctanoic acid (PFOA)	1 ng/mL
							Perfluoro-n-octadecanoic acid (PFODA)	1 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	0.93 ng/mL
							Perfluorooctanesulfonamide (FOSA)	1 ng/mL
							Perfluoropentanoic acid (PFPeA)	1 ng/mL
							Perfluoropentanesulfonic acid (PFPeS)	0.94 ng/mL
							Perfluorotetradecanoic acid (PFTeA)	1 ng/mL
							Perfluorotridecanoic acid (PFTrDA)	1 ng/mL
							Perfluoroundecanoic acid (PFUnA)	1 ng/mL
							PFPrA	0.97 ng/mL
					LCPFC3SP_TB3_00040	5 mL	PS Acid	1 ng/mL
					Hydro-PS Acid		1 ng/mL	
					R-PSDA		1 ng/mL	
					Hydrolyzed PSDA		1 ng/mL	
					R-PSDCA		1 ng/mL	

REAGENT TRACEABILITY SUMMARY

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.LCMPFC_ICALSU_00057	04/03/23	10/19/22	Methanol, Lot 218266	200 mL	LCM2PFOA_00037	100 uL	EVE Acid	1 ng/mL
							Hydro-EVE Acid	1 ng/mL
							MTP	1 ng/mL
							NVHOS	1 ng/mL
							PEPA	1 ng/mL
							PFPE-1	1 ng/mL
							PFMOAA	1 ng/mL
							PFO2HxA	1 ng/mL
							PFO3OA	1 ng/mL
							PFO4DA	1 ng/mL
							PFO5DA	1 ng/mL
							PMPA	1 ng/mL
							R-EVE	1 ng/mL
					LCM8PFOA_00003	100 uL	13C2 PFOA	0.025 ug/mL
							13C8 PFOA	0.025 ug/mL
							13C8 PFOS	0.0239 ug/mL
					LCMPFC_IDA+_00378	200 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-NEtFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024125 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.02375 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1802 PFHxS	0.02365 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
..LCM2PFOA_00037	12/09/26		Wellington Laboratories, Lot M2PFOA0122		(Purchased Reagent)		13C2 PFOA	50 ug/mL
..LCM8PFOA_00003	07/22/25		Wellington Laboratories, Lot M8PFOA0720		(Purchased Reagent)		13C8 PFOA	50 ug/mL
..LCM8PFOS_00005	01/14/26		Wellington Laboratories, Lot M8PFOS0121		(Purchased Reagent)		13C8 PFOS	47.8 ug/mL
..LCMPFC_IDA+_00378	04/03/23	10/04/22	Methanol, Lot 218266	200 mL	LCMPFC_IDA+_00376	50 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-NEtFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024125 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.02375 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							1802 PFHxS	0.02365 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
...LCMPFC_IDA+_00376	04/03/23	10/03/22	Methanol, Lot 218266	500 mL	LCd-NEtFOSA-M_00034	1 mL	d-N-EtFOSA-M	0.1 ug/mL
					LCd-NMeFOSA-M_00035	1 mL	d-N-MeFOSA-M	0.1 ug/mL
					LCd3-NMeFOSAA_00046	1 mL	d3-NMeFOSAA	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCd5-NEtFOSAA 00047	1 mL	d5-NEtFOSAA	0.1 ug/mL
					LCd7-NMeFOSEM 00035	1 mL	d7-N-MeFOSE-M	0.1 ug/mL
					LCd9-NEtFOSEM 00032	1 mL	d9-N-EtFOSE-M	0.1 ug/mL
					LCM10:2 FTS 00005	1 mL	13C2 10:2 FTS	0.0965 ug/mL
					LCM2-4:FTS 00036	1 mL	M2-4:2 FTS	0.0938 ug/mL
					LCM2-6:FTS 00040	1 mL	M2-6:2 FTS	0.095 ug/mL
					LCM2-8:2FTS 00045	1 mL	M2-8:2 FTS	0.096 ug/mL
					LCM2PFHxDA 00050	1 mL	13C2 PFHxDA	0.1 ug/mL
					LCM2PFTeDA 00048	1 mL	13C2 PFTeDA	0.1 ug/mL
					LCM3HFPO-DA 00040	1 mL	13C3 HFPO-DA	0.1 ug/mL
					LCM4-6:2diPAP_00008	1 mL	13C4-6:2 diPAP	0.0973068 ug/mL
					LCM4-8:2diPAP_00008	1 mL	13C4-8:2 diPAP	0.097837 ug/mL
					LCM4PFHFA 00047	1 mL	13C4 PFHpA	0.1 ug/mL
					LCM5PFPEA 00048	1 mL	13C5 PFPeA	0.1 ug/mL
					LCM8FOSA 00053	1 mL	13C8 FOSA	0.1 ug/mL
					LCMFDEA 00014	1 mL	13C-10:2 FTCA	0.1 ug/mL
					LCMFDUEA 00013	1 mL	13C-10:2 FTUCA	0.1 ug/mL
					LCMFHEA 00012	1 mL	13C-6:2 FTCA	0.1 ug/mL
					LCMFHUEA 00015	1 mL	13C-6:2 FTUCA	0.1 ug/mL
					LCMFOEA 00011	1 mL	13C-8:2 FTCA	0.1 ug/mL
					LCMFOUEA 00013	1 mL	13C-8:2 FTUCA	0.1 ug/mL
					LCMPFBA 00050	1 mL	13C4 PFBA	0.1 ug/mL
					LCMPFBS 00035	1 mL	13C3 PFBS	0.0932 ug/mL
					LCMPFDA 00056	1 mL	13C2 PFDA	0.1 ug/mL
					LCMPFDoA 00049	1 mL	13C2 PFDoA	0.1 ug/mL
					LCMPFHxA 00055	1 mL	13C2 PFHxA	0.1 ug/mL
					LCMPFHxS 00048	1 mL	18O2 PFHxS	0.0946 ug/mL
					LCMPFNA 00048	1 mL	13C5 PFNA	0.1 ug/mL
					LCMPFOA 00052	1 mL	13C4 PFOA	0.1 ug/mL
					LCMPFOS 00064	1 mL	13C4 PFOS	0.0958 ug/mL
					LCMPFUdA 00051	1 mL	13C2 PFUnA	0.1 ug/mL
....LCd-NEtFOSA-M 00034	03/17/27		WELLINGTON, Lot dNetFOSA0322M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
....LCd-NMeFOSA-M 00035	10/07/26		WELLINGTON, Lot dNMeFOSA1021M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
....LCd3-NMeFOSAA 00046	02/22/27		WELLINGTON, Lot d3NMeFOSAA0222		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
....LCd5-NEtFOSAA 00047	09/28/26		WELLINGTON, Lot d5NEtFOSAA0921		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
....LCd7-NMeFOSEM 00035	01/27/27		WELLINGTON, Lot d7NMeFOSE1221M		(Purchased Reagent)		d7-N-MeFOSE-M	50 ug/mL
....LCd9-NEtFOSEM 00032	01/27/27		WELLINGTON, Lot d9NEtFOSE1221M		(Purchased Reagent)		d9-N-EtFOSE-M	50 ug/mL
....LCM10:2 FTS_00005	04/26/26		Cambridge Isotope Laboratories, Lot SEBC-003		(Purchased Reagent)		13C2 10:2 FTS	48.25 ug/mL
....LCM2-4:FTS 00036	10/13/26		Wellington, Lot M242FTS1021		(Purchased Reagent)		M2-4:2 FTS	46.9 ug/mL
....LCM2-6:FTS 00040	10/13/26		WELLINGTON, Lot M262FTS1021		(Purchased Reagent)		M2-6:2 FTS	47.5 ug/mL
....LCM2-8:2FTS 00045	11/23/26		WELLINGTON, Lot M282FTS1121		(Purchased Reagent)		M2-8:2 FTS	48 ug/mL
....LCM2PFHxDA 00050	11/23/26		Wellington Laboratories, Lot M2PFHxDA1121		(Purchased Reagent)		13C2 PFHxDA	50 ug/mL
....LCM2PFTeDA 00048	11/22/26		Wellington Laboratories, Lot M2PFTeDA1121		(Purchased Reagent)		13C2 PFTeDA	50 ug/mL
....LCM3HFPO-DA 00040	11/11/24		WELLINGTON, Lot M3HFPODA1121		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
....LCM4-6:2diPAP 00008	08/05/26		Wellington, Lot M462diPAP0721		(Purchased Reagent)		13C4-6:2 diPAP	48.6534 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
....LCM4-8:2diPAP 00008	12/01/26		Wellington, Lot M482diPAP1121		(Purchased Reagent)		13C4-8:2 diPAP	48.9185 ug/mL
....LCM4PFHPA 00047	12/07/26		Wellington Laboratories, Lot M4PFHpA1121		(Purchased Reagent)		13C4 PFHpA	50 ug/mL
....LCM5PFPEA 00048	08/10/26		Wellington Laboratories, Lot M5PFPeA0821		(Purchased Reagent)		13C5 PFPeA	50 ug/mL
....LCM8FOSA 00053	03/17/27		Wellington Laboratories, Lot M8FOSA0322I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
....LCMFDEA 00014	09/27/24		Wellington Laboratories, Lot MFDEA0921		(Purchased Reagent)		13C-10:2 FTCA	50 ug/mL
....LCMFDUEA 00013	11/22/23		Wellington Laboratories, Lot MFDUEA1221		(Purchased Reagent)		13C-10:2 FTUCA	50 ug/mL
....LCMFHEA 00012	09/29/24		Wellington Laboratories, Lot MFHEA0921		(Purchased Reagent)		13C-6:2 FTCA	50 ug/mL
....LCMFHUEA 00015	02/18/24		Wellington Laboratories, Lot MFHUEA0322		(Purchased Reagent)		13C-6:2 FTUCA	50 ug/mL
....LCMFOEA 00011	11/22/24		Wellington Laboratories, Lot MFOEA1121		(Purchased Reagent)		13C-8:2 FTCA	50 ug/mL
....LCMFOUEA 00013	12/07/23		Wellington Laboratorie, Lot MFOUEA1121		(Purchased Reagent)		13C-8:2 FTUCA	50 ug/mL
....LCMPFBA 00050	07/12/26		Wellington Laboratories, Lot MPFBA0621		(Purchased Reagent)		13C4 PFBA	50 ug/mL
....LCMPFBS 00035	02/07/27		Wellington Laboratories, Lot M3PFBS0222		(Purchased Reagent)		13C3 PFBS	46.6 ug/mL
....LCMPFDA 00056	12/08/26		Wellington Laboratories, Lot MPFDA1221		(Purchased Reagent)		13C2 PFDA	50 ug/mL
....LCMPFDoA 00049	03/17/27		Wellington Laboratories, Lot MPFDoA0322		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
....LCMPFHxA 00055	10/04/26		Wellington Laboratories, Lot MPFHxA0921		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
....LCMPFHxS 00048	10/29/26		Wellington Laboratories, Lot MPFHxS1021		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
....LCMPFNA 00048	10/29/26		Wellington Laboratories, Lot MPFNA1021		(Purchased Reagent)		13C5 PFNA	50 ug/mL
....LCMPFOA 00052	12/07/26		Wellington Laboratories, Lot MPFOA1121		(Purchased Reagent)		13C4 PFOA	50 ug/mL
....LCMPFOS 00064	01/27/27		Wellington Laboratories, Lot MPFOS0122		(Purchased Reagent)		13C4 PFOS	47.9 ug/mL
....LCMPFUDa 00051	12/09/26		Wellington Laboratories, Lot MPFUDa1221		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
.LCPFC+SP+6_00107	02/08/23	10/04/22	Methanol, Lot 218266	250 mL	LCPFC+SP+6_00098	50 mL	NFDHA	0.02 ug/mL
							10:2 diPAP	0.0200996 ug/mL
							10:2 FTS	0.01932 ug/mL
							11C1-PF3OUdS	0.01888 ug/mL
							3:3 FTCA	0.02 ug/mL
							4:2 FTS	0.01876 ug/mL
							5:3 FTCA	0.02 ug/mL
							6:2 diPAP	0.0194587 ug/mL
							6:2 FTS	0.01904 ug/mL
							6:2/8:2 diPAP	0.0195181 ug/mL
							7:3 FTCA	0.02 ug/mL
							8:2 diPAP	0.0195657 ug/mL
							8:2 FTS	0.0192 ug/mL
							9C1-PF3ONS	0.01868 ug/mL
							NEtFOSAA	0.02 ug/mL
							NMeFOSAA	0.02 ug/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.01888 ug/mL
							FBSA	0.02 ug/mL
							10:2 FTCA	0.02 ug/mL
							10:2 FTUCA	0.02 ug/mL
							6:2 FTCA	0.02 ug/mL
							6:2 FTUCA	0.02 ug/mL
							FHxSA	0.02 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							8:2 FTCA	0.02 ug/mL
							8:2 FTUCA	0.02 ug/mL
							HFPO-DA (GenX)	0.02 ug/mL
							PFPrS	0.0184 ug/mL
							NEtFOSA	0.02 ug/mL
							NEtFOSE	0.02 ug/mL
							NMeFOSA	0.02 ug/mL
							NMeFOSE	0.02 ug/mL
							PFMPA	0.02 ug/mL
							PFMBA	0.02 ug/mL
							Perfluorobutanoic acid (PFBA)	0.02 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.01776 ug/mL
							Perfluorodecanoic acid (PFDA)	0.02 ug/mL
							Perfluorododecanoic acid (PFDoA)	0.02 ug/mL
							Perfluorododecanesulfonic acid (PFDoS)	0.0194 ug/mL
							Perfluorodecanesulfonic acid (PFDS)	0.01928 ug/mL
							PFECHS	0.01848 ug/mL
							PFEESA	0.01784 ug/mL
							Perfluoroheptanoic acid (PFHpA)	0.02 ug/mL
							Perfluoroheptanesulfonic acid (PFHpS)	0.01908 ug/mL
							Perfluorohexanoic acid (PFHxA)	0.02 ug/mL
							Perfluoro-n-hexadecanoic acid (PFHxDA)	0.02 ug/mL
							Perfluorohexanesulfonic acid (PFHxS)	0.01824 ug/mL
							Perfluorononanoic acid (PFNA)	0.02 ug/mL
							Perfluorononanesulfonic acid (PFNS)	0.01924 ug/mL
							Perfluorooctanoic acid (PFOA)	0.02 ug/mL
							Perfluoro-n-octadecanoic acid (PFODA)	0.02 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	0.0186 ug/mL
							Perfluorooctanesulfonamide (FOSA)	0.02 ug/mL
							Perfluoropentanoic acid (PFPeA)	0.02 ug/mL
							Perfluoropentanesulfonic acid (PFPeS)	0.0188 ug/mL
							Perfluorotetradecanoic acid (PFTeA)	0.02 ug/mL
							Perfluorotridecanoic acid (PFTTrDA)	0.02 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCPFC+SP+6_00098	02/08/23	10/03/22	Methanol, Lot 218266	500 mL			Perfluoroundecanoic acid (PFUnA)	0.02 ug/mL
							PFPPrA	0.0194 ug/mL
					LC-36-OPFHpa_00011	1 mL	NFDHA	0.1 ug/mL
					LC10:2diPAPim_00016	1.09 mL	10:2 diPAP	0.100498 ug/mL
					LC10:2FTS_00016	1 mL	10:2 FTS	0.0966 ug/mL
					LC11CIPF3OUds_00023	1 mL	11C1-PF3OUds	0.0944 ug/mL
					LC3:3FTCA_00005	1 mL	3:3 FTCA	0.1 ug/mL
					LC4:2FTS_00024	1 mL	4:2 FTS	0.0938 ug/mL
					LC5:3FTCA_00008	1 mL	5:3 FTCA	0.1 ug/mL
					LC6:2diPAP_00009	1 mL	6:2 diPAP	0.0972936 ug/mL
					LC6:2FTS_00024	1 mL	6:2 FTS	0.0952 ug/mL
					LC62/82diPAP_00007	1 mL	6:2/8:2 diPAP	0.0975904 ug/mL
					LC7:3FTCA_00007	1 mL	7:3 FTCA	0.1 ug/mL
					LC8:2diPAP_00007	1 mL	8:2 diPAP	0.0978284 ug/mL
					LC8:2FTS_00024	1 mL	8:2 FTS	0.096 ug/mL
					LC9CI-PF3ONS_00023	1 mL	9C1-PF3ONS	0.0934 ug/mL
					LCbr-NEtFOSAA_00023	1 mL	NEtFOSAA	0.1 ug/mL
					LCbr-NMeFOSAA_00022	1 mL	NMeFOSAA	0.1 ug/mL
					LCDONA_00032	1 mL	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.0944 ug/mL
					LCFBSA-I_00007	1 mL	FBSA	0.1 ug/mL
					LCFDEA_00009	1 mL	10:2 FTCA	0.1 ug/mL
					LCFDUEA_00007	1 mL	10:2 FTUCA	0.1 ug/mL
					LCFHUEA_00009	1 mL	6:2 FTCA	0.1 ug/mL
					LCFHUEA_00009	1 mL	6:2 FTUCA	0.1 ug/mL
					LCFHxSA-I_00009	1 mL	FHxSA	0.1 ug/mL
					LCFOEA_00010	1 mL	8:2 FTCA	0.1 ug/mL
					LCFOUEA_00007	1 mL	8:2 FTUCA	0.1 ug/mL
					LCHFPO-DA_00027	1 mL	HFPO-DA (GenX)	0.1 ug/mL
					LCLPFPPrS_00009	1 mL	PFPPrS	0.092 ug/mL
					LCN-EtFOSA-M_00025	1 mL	NEtFOSA	0.1 ug/mL
					LCN-EtFOSE-M_00018	1 mL	NEtFOSE	0.1 ug/mL
					LCN-MeFOSA-M_00027	1 mL	NMeFOSA	0.1 ug/mL
					LCN-MeFOSE-M_00021	1 mL	NMeFOSE	0.1 ug/mL
					LCPF4OPeA_00015	1 mL	PFMPA	0.1 ug/mL
					LCPF5OHxA_00011	1 mL	PFMBA	0.1 ug/mL
					LCPFBA_00028	1 mL	Perfluorobutanoic acid (PFBA)	0.1 ug/mL
					LCPFBFA_00025	1 mL	Perfluorobutanesulfonic acid (PFBS)	0.0888 ug/mL
					LCPFDA_00033	1 mL	Perfluorodecanoic acid (PFDA)	0.1 ug/mL
					LCPFDaA_00031	1 mL	Perfluorododecanoic acid (PFDaA)	0.1 ug/mL
					LCPFDoS_00020	1 mL	Perfluorododecanesulfonic acid (PFDoS)	0.097 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

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SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFDASA_00016	1 mL	Perfluorodecanesulfonic acid (PFDS)	0.0964 ug/mL
					LCPFECHS_00007	1 mL	PFECHS	0.0924 ug/mL
					LCPFEESA_00010	1 mL	PFEESA	0.0892 ug/mL
					LCPFHpa_00035	1 mL	Perfluoroheptanoic acid (PFHpA)	0.1 ug/mL
					LCPFHpsA_00021	1 mL	Perfluoroheptanesulfonic acid (PFHpS)	0.0954 ug/mL
					LCPFHxA_00033	1 mL	Perfluorohexanoic acid (PFHxA)	0.1 ug/mL
					LCPFHxDA_00028	1 mL	Perfluoro-n-hexadecanoic acid (PFHxDA)	0.1 ug/mL
					LCPFHxS-br_00027	1 mL	Perfluorohexanesulfonic acid (PFHxS)	0.0912 ug/mL
					LCPFNA_00035	1 mL	Perfluorononanoic acid (PFNA)	0.1 ug/mL
					LCPFNS_00020	1 mL	Perfluorononanesulfonic acid (PFNS)	0.0962 ug/mL
					LCPFOA_00032	1 mL	Perfluorooctanoic acid (PFOA)	0.1 ug/mL
					LCPFODA_00028	1 mL	Perfluoro-n-octadecanoic acid (PFODA)	0.1 ug/mL
					LCPFOS-br_00029	1 mL	Perfluorooctanesulfonic acid (PFOS)	0.093 ug/mL
					LCPFOSA_00029	1 mL	Perfluorooctanesulfonamide (FOSA)	0.1 ug/mL
					LCPFPeA_00028	1 mL	Perfluoropentanoic acid (PFPeA)	0.1 ug/mL
					LCPFPeS_00020	1 mL	Perfluoropentanesulfonic acid (PFPeS)	0.094 ug/mL
					LCPFTeDA_00032	1 mL	Perfluorotetradecanoic acid (PFTeA)	0.1 ug/mL
					LCPFTrDA_00030	1 mL	Perfluorotridecanoic acid (PFTTrDA)	0.1 ug/mL
					LCPFUdA_00033	1 mL	Perfluoroundecanoic acid (PFUnA)	0.1 ug/mL
					LCPPropionic_00024	1 mL	PFPrA	0.097 ug/mL
...LC-36-OFFHpA_00011	10/14/26	Wellington Laboratories, Lot 36OPFHpa0921			(Purchased Reagent)		NFDHA	50 ug/mL
...LC10:2diPAPim_00016	02/08/23	08/08/22	Methanol, Lot 217743	200 mL	LC10:2diPAPim_00015	100 mL	10:2 diPAP	46.1 ug/mL
....LC10:2diPAPim_00015	02/08/23	08/08/22	Methanol, Lot 217743	1000 mL	LC10:2diPAP_00005	0.0922 g	10:2 diPAP	92.2 ug/mL
....LC10:2diPAP_00005	11/13/23	Toronto Research Chemicals, Lot 5-BKS-67-1			(Purchased Reagent)		10:2 diPAP	100 %
...LC10:2FTS_00016	01/27/27	WELLINGTON, Lot 102FTS0122			(Purchased Reagent)		10:2 FTS	48.3 ug/mL
...LC11CIPF3OUdS_00023	02/08/27	Wellington Laboratories, Lot 11CIPF3OUdS0222			(Purchased Reagent)		11C1-PF3OUdS	47.2 ug/mL
...LC3:3FTCA_00005	02/03/27	Wellington Laboratories, Lot FPrPA0122			(Purchased Reagent)		3:3 FTCA	50 ug/mL
...LC4:2FTS_00024	04/22/27	WELLINGTON, Lot 42FTS0422			(Purchased Reagent)		4:2 FTS	46.9 ug/mL
...LC5:3FTCA_00008	01/05/27	Wellington Laboratories, Lot FPePA1221			(Purchased Reagent)		5:3 FTCA	50 ug/mL
...LC6:2diPAP_00009	03/18/27	Wellington, Lot 62diPAP0222			(Purchased Reagent)		6:2 diPAP	48.6468 ug/mL
...LC6:2FTS_00024	01/04/27	WELLINGTON, Lot 62FTS1221			(Purchased Reagent)		6:2 FTS	47.6 ug/mL
...LC62/82diPAP_00007	01/26/26	Wellington, Lot 6282diPAP0121			(Purchased Reagent)		6:2/8:2 diPAP	48.7952 ug/mL
...LC7:3FTCA_00007	10/13/26	Wellington Laboratories, Lot FHpPA1021			(Purchased Reagent)		7:3 FTCA	50 ug/mL
...LC8:2diPAP_00007	09/09/25	Wellington, Lot 82diPAP0920			(Purchased Reagent)		8:2 diPAP	48.9142 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LC8:2FTS 00024	02/08/27		WELLINGTON, Lot 82FTS0122		(Purchased Reagent)		8:2 FTS	48 ug/mL
...LC9CI-PF3ONS_00023	11/22/26		Wellington Laboratories, Lot 9CIPF3ONS1121		(Purchased Reagent)		9CI-PF3ONS	46.7 ug/mL
...LCbr-NetFOSAA 00023	11/23/26		WELLINGTON, Lot brNetFOSAA1121		(Purchased Reagent)		NetFOSAA	50 ug/mL
...LCbr-NMeFOSAA 00022	07/13/26		WELLINGTON, Lot brNMeFOSAA0621		(Purchased Reagent)		NMeFOSAA	50 ug/mL
...LCDONA_00032	04/18/27		WELLINGTON, Lot NADONA0422		(Purchased Reagent)		4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.2 ug/mL
...LCFBSA-I 00007	11/10/26		Wellington, Lot FBSA1121I		(Purchased Reagent)		FBSA	50 ug/mL
...LCFDEA 00009	09/28/24		Wellington Laboratories, Lot FDEA0921		(Purchased Reagent)		10:2 FTCA	50 ug/mL
...LCFDUEA 00007	10/29/23		Wellington Laboratories, Lot FDUEA1021		(Purchased Reagent)		10:2 FTUCA	50 ug/mL
...LCFHEA 00009	01/05/25		Wellington Laboratories, Lot FHEA1221		(Purchased Reagent)		6:2 FTCA	50 ug/mL
...LCFHUEA 00009	09/03/23		Wellington Laboratories, Lot FHUEA0921		(Purchased Reagent)		6:2 FTUCA	50 ug/mL
...LCFHxSA-I 00009	12/29/26		Wellington, Lot FHXSA1221I		(Purchased Reagent)		FHXSA	50 ug/mL
...LCFOEA 00010	08/18/24		Wellington Laboratories, Lot FOEA0821		(Purchased Reagent)		8:2 FTCA	50 ug/mL
...LCFOUEA 00007	12/29/23		Wellington Laboratories, Lot FOUEA1221		(Purchased Reagent)		8:2 FTUCA	50 ug/mL
...LCHFPO-DA 00027	04/05/25		WELLINGTON, Lot HFPODA0322		(Purchased Reagent)		HFPO-DA (GenX)	50 ug/mL
...LCLPFPPrS 00009	04/20/27		Wellington Laboratories, Lot LPFPPrS0422		(Purchased Reagent)		PFPrS	46 ug/mL
...LCN-EtFOSA-M 00025	04/20/27		WELLINGTON, Lot NetFOSA0422M		(Purchased Reagent)		NetFOSA	50 ug/mL
...LCN-EtFOSE-M 00018	09/23/26		WELLINGTON, Lot NetFOSE0921M		(Purchased Reagent)		NetFOSE	50 ug/mL
...LCN-MeFOSA-M 00027	02/28/27		WELLINGTON, Lot NMeFOSA0222M		(Purchased Reagent)		NMeFOSA	50 ug/mL
...LCN-MeFOSE-M 00021	05/13/27		WELLINGTON, Lot NMeFOSE0522M		(Purchased Reagent)		NMeFOSE	50 ug/mL
...LCPFF40PeA 00015	08/02/27		Wellington Laboratories, Lot PF40PeA0722		(Purchased Reagent)		PFMPA	50 ug/mL
...LCPFF5OHxA 00011	10/19/26		Wellington Laboratories, Lot PF5OHxA1021		(Purchased Reagent)		PFMBA	50 ug/mL
...LCPFFBA 00028	04/18/27		Wellington Laboratories, Lot PFBA0422		(Purchased Reagent)		Perfluorobutanoic acid (PFBA)	50 ug/mL
...LCPFFBSA_00025	04/05/27		Wellington Laboratories, Lot LPFBS0322		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.4 ug/mL
...LCPFFDA 00033	02/22/27		Wellington Laboratories, Lot PFDA0222		(Purchased Reagent)		Perfluorodecanoic acid (PFDA)	50 ug/mL
...LCPFFDoA_00031	01/27/27		Wellington Laboratories, Lot PFDoA0122		(Purchased Reagent)		Perfluorododecanoic acid (PFDoA)	50 ug/mL
...LCPFFDoS_00020	04/20/27		Wellington Laboratories, Lot LPFFDoS0422		(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48.5 ug/mL
...LCPFFDSA_00016	02/22/27		Wellington Laboratories, Lot LPFDS0222		(Purchased Reagent)		Perfluorodecanesulfonic acid (PFDS)	48.2 ug/mL
...LCPFFECHS 00007	03/28/27		Wellington Laboratories, Lot PFECHS0222		(Purchased Reagent)		PFECHS	46.2 ug/mL
...LCPFEESA 00010	11/22/26		Wellington Laboratories, Lot PFEESA1121		(Purchased Reagent)		PFEESA	44.6 ug/mL
...LCPFFHpA_00035	03/17/27		Wellington Laboratories, Lot PFHpA0222		(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	50 ug/mL
...LCPFFHpSA_00021	01/27/27		Wellington Laboratories, Lot LPFFHpS0122		(Purchased Reagent)		Perfluoroheptanesulfonic acid (PFHpS)	47.7 ug/mL
...LCPFFHxA 00033	01/27/27		Wellington Laboratories, Lot PFHxA0122		(Purchased Reagent)		Perfluorohexanoic acid (PFHxA)	50 ug/mL
...LCPFFHxDA_00028	02/23/27		Wellington Laboratories, Lot PFHxDA0222		(Purchased Reagent)		Perfluoro-n-hexadecanoic acid (PFHxDA)	50 ug/mL
...LCPFFHxS-br_00027	12/07/26		Wellington Laboratories, Lot brPFHxSK1211		(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	45.6 ug/mL
...LCPFFNA 00035	01/27/27		Wellington Laboratories, Lot PFNA0122		(Purchased Reagent)		Perfluorononanoic acid (PFNA)	50 ug/mL
...LCPFFNS_00020	04/20/27		Wellington Laboratories, Lot LPFNS0422		(Purchased Reagent)		Perfluorononanesulfonic acid (PFNS)	48.1 ug/mL
...LCPFFOA_00032	02/22/27		Wellington Laboratories, Lot PFOA0222		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL

REAGENT TRACEABILITY SUMMARY

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LCPFODA_00028	09/03/26	Wellington Laboratories, Lot PFODA0821			(Purchased Reagent)		Perfluoro-n-octadecanoic acid (PFODA)	50 ug/mL
...LCPFOS-br_00029	12/07/26	Wellington Laboratories, Lot brPFOSK1121			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.5 ug/mL
...LCPFOSA_00029	04/05/27	Wellington Laboratories, Lot FOSA0322I			(Purchased Reagent)		Perfluorooctanesulfonamide (FOSA)	50 ug/mL
...LCPFPeA_00028	02/08/27	Wellington Laboratories, Lot PFPeA0122			(Purchased Reagent)		Perfluoropentanoic acid (PFPeA)	50 ug/mL
...LCPFPeS_00020	02/07/27	Wellington Laboratories, Lot LPFPeS0122			(Purchased Reagent)		Perfluoropentanesulfonic acid (PFPeS)	47 ug/mL
...LCPFTeDA_00032	02/28/27	Wellington Laboratories, Lot PFTeDA0222			(Purchased Reagent)		Perfluorotetradecanoic acid (PFTeA)	50 ug/mL
...LCPFTTrDA_00030	02/07/27	Wellington Laboratories, Lot PFTTrDA0122			(Purchased Reagent)		Perfluorotridecanoic acid (PFTTrDA)	50 ug/mL
...LCPFUdA_00033	02/22/27	Wellington Laboratories, Lot PFUdA0222			(Purchased Reagent)		Perfluoroundecanoic acid (PFUnA)	50 ug/mL
...LCPropionic_00024	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	LCPropionic_00023	5 mL	PFPrA	48.5 ug/mL
....LCPropionic_00023	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	Propionic Acd_00002	100 uL	PFPrA	970 ug/mL
.....Propionic Acd_00002	06/09/25	Sigma Aldrich, Lot MKCK6675			(Purchased Reagent)		PFPrA	97 %
.LCPFC3SP_TB3_00040	02/11/23	08/11/22	Methanol, Lot 217743	500 mL	LCBP1_00005	50 uL	PS Acid	0.1 ug/mL
					LCBP2_00004	50 uL	Hydro-PS Acid	0.1 ug/mL
					LCBP4_00003	50 uL	R-PSDA	0.1 ug/mL
					LCBP5_00004	50 uL	Hydrolyzed PSDA	0.1 ug/mL
					LCBP6_00004	50 uL	R-PSDCA	0.1 ug/mL
					LCEVEA_00004	50 uL	EVE Acid	0.1 ug/mL
					LCHEVEA_00003	50 uL	Hydro-EVE Acid	0.1 ug/mL
					LCMTP_00003	50 uL	MTP	0.1 ug/mL
					LCNVHOS_00003	50 uL	NVHOS	0.1 ug/mL
					LCPEPA_00005	50 uL	PEPA	0.1 ug/mL
					LCPFECA_G_00004	50 uL	PFPE-1	0.1 ug/mL
					LCPFMOAA_00007	50 uL	PFMOAA	0.1 ug/mL
					LCPFO2HxA_00005	50 uL	PFO2HxA	0.1 ug/mL
					LCPFO3OA_00006	50 uL	PFO3OA	0.1 ug/mL
					LCPFO4DA_00005	50 uL	PFO4DA	0.1 ug/mL
					LCPFO5DoA_00004	50 uL	PFO5DA	0.1 ug/mL
					LCPMPA_00005	50 uL	PMPA	0.1 ug/mL
					LCR-EVE_00005	50 uL	R-EVE	0.1 ug/mL
..LCBP1_00005	08/10/26	Chemours, Lot NA			(Purchased Reagent)		PS Acid	0.1 %
..LCBP2_00004	08/10/26	Chemours, Lot NA			(Purchased Reagent)		Hydro-PS Acid	0.1 %
..LCBP4_00003	08/10/26	Chemours, Lot NA			(Purchased Reagent)		R-PSDA	0.1 %
..LCBP5_00004	08/10/26	Chemours, Lot NA			(Purchased Reagent)		Hydrolyzed PSDA	0.1 %
..LCBP6_00004	08/10/26	Chemours, Lot NA			(Purchased Reagent)		R-PSDCA	0.1 %
..LCEVEA_00004	08/10/26	Chemours, Lot NA			(Purchased Reagent)		EVE Acid	0.1 %
..LCHEVEA_00003	08/10/26	Chemours, Lot NA			(Purchased Reagent)		Hydro-EVE Acid	0.1 %
..LCMTP_00003	08/10/26	Chemours, Lot NA			(Purchased Reagent)		MTP	0.1 %
..LCNVHOS_00003	08/10/26	Chemours, Lot NA			(Purchased Reagent)		NVHOS	0.1 %
..LCPEPA_00005	08/10/26	Chemours, Lot NA			(Purchased Reagent)		PEPA	0.1 %
..LCPFECA_G_00004	01/23/24	Chemours, Lot NA			(Purchased Reagent)		PFPE-1	1000 ug/mL
..LCPFMOAA_00007	08/10/26	Chemours, Lot NA			(Purchased Reagent)		PFMOAA	0.1 %

REAGENT TRACEABILITY SUMMARY

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SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCPFO2HxA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO2HxA	0.1 %
..LCPFO3OA 00006	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO3OA	0.1 %
..LCPFO4DA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO4DA	0.1 %
..LCPFO5DoA 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO5DA	0.1 %
..LCPMPA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PMPA	0.1 %
..LCR-EVE_00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-EVE	0.1 %
LCPFC+6C_LL5_00009	02/08/23	10/19/22	MeOH/H2O, Lot 218266	500 mL	LCMPFC_ICALSU_00057	25 mL	13C2 PFOA	1.25 ng/mL
							13C8 PFOA	1.25 ng/mL
							13C8 PFOS	1.195 ng/mL
							d-N-EtFOSA-M	1.25 ng/mL
							d-N-MeFOSA-M	1.25 ng/mL
							d3-NMeFOSAA	1.25 ng/mL
							d5-NEtFOSAA	1.25 ng/mL
							d7-N-MeFOSE-M	1.25 ng/mL
							d9-N-EtFOSE-M	1.25 ng/mL
							13C2 10:2 FTS	1.20625 ng/mL
							M2-4:2 FTS	1.1725 ng/mL
							M2-6:2 FTS	1.1875 ng/mL
							M2-8:2 FTS	1.2 ng/mL
							13C2 PFHxDA	1.25 ng/mL
							13C2 PFTeDA	1.25 ng/mL
							13C3 HFPO-DA	1.25 ng/mL
							13C4-6:2 diPAP	1.21633 ng/mL
							13C4-8:2 diPAP	1.22296 ng/mL
							13C4 PFHpA	1.25 ng/mL
							13C5 PFPeA	1.25 ng/mL
							13C8 FOSA	1.25 ng/mL
							13C-10:2 FTCA	1.25 ng/mL
							13C-10:2 FTUCA	1.25 ng/mL
							13C-6:2 FTCA	1.25 ng/mL
							13C-6:2 FTUCA	1.25 ng/mL
							13C-8:2 FTCA	1.25 ng/mL
							13C-8:2 FTUCA	1.25 ng/mL
							13C4 PFBA	1.25 ng/mL
							13C3 PFBS	1.165 ng/mL
							13C2 PFDA	1.25 ng/mL
							13C2 PFDoA	1.25 ng/mL
							13C2 PFHxA	1.25 ng/mL
							18O2 PFHxS	1.1825 ng/mL
							13C5 PFNA	1.25 ng/mL
							13C4 PFOA	1.25 ng/mL
							13C4 PFOS	1.1975 ng/mL
							13C2 PFUnA	1.25 ng/mL
					LCPFC+SP+6_00107	62.5 mL	NFDHA	2.5 ng/mL
					10:2 diPAP		2.51245 ng/mL	
					10:2 FTS		2.415 ng/mL	
					11C1-PF3OUdS		2.36 ng/mL	

REAGENT TRACEABILITY SUMMARY

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							3:3 FTCA	2.5 ng/mL
							4:2 FTS	2.345 ng/mL
							5:3 FTCA	2.5 ng/mL
							6:2 diPAP	2.43234 ng/mL
							6:2 FTS	2.38 ng/mL
							6:2/8:2 diPAP	2.43976 ng/mL
							7:3 FTCA	2.5 ng/mL
							8:2 diPAP	2.44571 ng/mL
							8:2 FTS	2.4 ng/mL
							9Cl-PF3ONS	2.335 ng/mL
							NEtFOSAA	2.5 ng/mL
							NMeFOSAA	2.5 ng/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.36 ng/mL
							FBSA	2.5 ng/mL
							10:2 FTCA	2.5 ng/mL
							10:2 FTUCA	2.5 ng/mL
							6:2 FTCA	2.5 ng/mL
							6:2 FTUCA	2.5 ng/mL
							FHxSA	2.5 ng/mL
							8:2 FTCA	2.5 ng/mL
							8:2 FTUCA	2.5 ng/mL
							HFPO-DA (GenX)	2.5 ng/mL
							PFPPrS	2.3 ng/mL
							NEtFOSA	2.5 ng/mL
							NEtFOSE	2.5 ng/mL
							NMeFOSA	2.5 ng/mL
							NMeFOSE	2.5 ng/mL
							PFMPA	2.5 ng/mL
							PFMBA	2.5 ng/mL
							Perfluorobutanoic acid (PFBA)	2.5 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	2.22 ng/mL
							Perfluorodecanoic acid (PFDA)	2.5 ng/mL
							Perfluorododecanoic acid (PFDoA)	2.5 ng/mL
							Perfluorododecanesulfonic acid (PFDoS)	2.425 ng/mL
							Perfluorodecanesulfonic acid (PFDS)	2.41 ng/mL
							PFECHS	2.31 ng/mL
							PFEESA	2.23 ng/mL
							Perfluoroheptanoic acid (PFHpA)	2.5 ng/mL
							Perfluoroheptanesulfonic acid (PFHpS)	2.385 ng/mL
							Perfluorohexanoic acid (PFHxA)	2.5 ng/mL
							Perfluoro-n-hexadecanoic acid (PFHxDA)	2.5 ng/mL

REAGENT TRACEABILITY SUMMARY

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorohexanesulfonic acid (PFHxS)	2.28 ng/mL
							Perfluorononanoic acid (PFNA)	2.5 ng/mL
							Perfluorononanesulfonic acid (PFNS)	2.405 ng/mL
							Perfluorooctanoic acid (PFOA)	2.5 ng/mL
							Perfluoro-n-octadecanoic acid (PFODA)	2.5 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	2.325 ng/mL
							Perfluorooctanesulfonamide (FOSA)	2.5 ng/mL
							Perfluoropentanoic acid (PFPeA)	2.5 ng/mL
							Perfluoropentanesulfonic acid (PFPeS)	2.35 ng/mL
							Perfluorotetradecanoic acid (PFTeA)	2.5 ng/mL
							Perfluorotridecanoic acid (PFTrDA)	2.5 ng/mL
							Perfluoroundecanoic acid (PFUnA)	2.5 ng/mL
							PFPrA	2.425 ng/mL
					LCPFC3SP_TB3_00040	12.5 mL	PS Acid	2.5 ng/mL
							Hydro-PS Acid	2.5 ng/mL
							R-PSDA	2.5 ng/mL
							Hydrolyzed PSDA	2.5 ng/mL
							R-PSDCA	2.5 ng/mL
							EVE Acid	2.5 ng/mL
							Hydro-EVE Acid	2.5 ng/mL
							MTP	2.5 ng/mL
							NVHOS	2.5 ng/mL
							PEPA	2.5 ng/mL
							PFPE-1	2.5 ng/mL
							PFMOAA	2.5 ng/mL
							PFO2HxA	2.5 ng/mL
							PFO3OA	2.5 ng/mL
							PFO4DA	2.5 ng/mL
							PFO5DA	2.5 ng/mL
							PMPA	2.5 ng/mL
							R-EVE	2.5 ng/mL
.LCMPFC_ICALSU_00057	04/03/23	10/19/22	Methanol, Lot 218266	200 mL	LCM2PFOA 00037	100 uL	13C2 PFOA	0.025 ug/mL
					LCM8PFOA 00003	100 uL	13C8 PFOA	0.025 ug/mL
					LCM8PFOS 00005	100 uL	13C8 PFOS	0.0239 ug/mL
					LCMPFC_IDA+_00378	200 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-NMeFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL

REAGENT TRACEABILITY SUMMARY

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024125 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.02375 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							18O2 PFHxS	0.02365 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
..LCM2PFOA_00037	12/09/26		Wellington Laboratories, Lot M2PFOA0122		(Purchased Reagent)		13C2 PFOA	50 ug/mL
..LCM8PFOA_00003	07/22/25		Wellington Laboratories, Lot M8PFOA0720		(Purchased Reagent)		13C8 PFOA	50 ug/mL
..LCM8PFOS_00005	01/14/26		Wellington Laboratories, Lot M8PFOS0121		(Purchased Reagent)		13C8 PFOS	47.8 ug/mL
..LCMPFC_IDA+_00378	04/03/23	10/04/22	Methanol, Lot 218266	200 mL	LCMPFC_IDA+_00376	50 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-NEtFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024125 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.02375 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

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SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							18O2 PFHxS	0.02365 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
...LCMPFC_IDA+_00376	04/03/23	10/03/22	Methanol, Lot 218266	500 mL	LCd-NEtFOSA-M_00034	1 mL	d-N-EtFOSA-M	0.1 ug/mL
					LCd-NMeFOSA-M_00035	1 mL	d-N-MeFOSA-M	0.1 ug/mL
					LCd3-NMeFOSAA_00046	1 mL	d3-NMeFOSAA	0.1 ug/mL
					LCd5-NEtFOSAA_00047	1 mL	d5-NEtFOSAA	0.1 ug/mL
					LCd7-NMeFOSEM_00035	1 mL	d7-N-MeFOSE-M	0.1 ug/mL
					LCd9-NEtFOSEM_00032	1 mL	d9-N-EtFOSE-M	0.1 ug/mL
					LCM10:2 FTS_00005	1 mL	13C2 10:2 FTS	0.0965 ug/mL
					LCM2-4:FTS_00036	1 mL	M2-4:2 FTS	0.0938 ug/mL
					LCM2-6:FTS_00040	1 mL	M2-6:2 FTS	0.095 ug/mL
					LCM2-8:2FTS_00045	1 mL	M2-8:2 FTS	0.096 ug/mL
					LCM2PFHxDA_00050	1 mL	13C2 PFHxDA	0.1 ug/mL
					LCM2PFTeDA_00048	1 mL	13C2 PFTeDA	0.1 ug/mL
					LCM3HFPO-DA_00040	1 mL	13C3 HFPO-DA	0.1 ug/mL
					LCM4-6:2diPAP_00008	1 mL	13C4-6:2 diPAP	0.0973068 ug/mL
					LCM4-8:2diPAP_00008	1 mL	13C4-8:2 diPAP	0.097837 ug/mL
					LCM4PFHPA_00047	1 mL	13C4 PFHpA	0.1 ug/mL
					LCM5PFPEA_00048	1 mL	13C5 PFPeA	0.1 ug/mL
					LCM8FOSA_00053	1 mL	13C8 FOSA	0.1 ug/mL
					LCMFDEA_00014	1 mL	13C-10:2 FTCA	0.1 ug/mL
					LCMFDEUA_00013	1 mL	13C-10:2 FTUCA	0.1 ug/mL
					LCMFHEA_00012	1 mL	13C-6:2 FTCA	0.1 ug/mL
					LCMFHUEA_00015	1 mL	13C-6:2 FTUCA	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCMFOEA 00011	1 mL	13C-8:2 FTCA	0.1 ug/mL
					LCMFOUEA 00013	1 mL	13C-8:2 FTUCA	0.1 ug/mL
					LCMPFBA 00050	1 mL	13C4 PFBA	0.1 ug/mL
					LCMPFBS 00035	1 mL	13C3 PFBS	0.0932 ug/mL
					LCMPFDA 00056	1 mL	13C2 PFDA	0.1 ug/mL
					LCMPFDoA 00049	1 mL	13C2 PFDoA	0.1 ug/mL
					LCMPFHxA 00055	1 mL	13C2 PFHxA	0.1 ug/mL
					LCMPFHxS 00048	1 mL	18O2 PFHxS	0.0946 ug/mL
					LCMPFNA 00048	1 mL	13C5 PFNA	0.1 ug/mL
					LCMPFOA 00052	1 mL	13C4 PFOA	0.1 ug/mL
					LCMPFOS 00064	1 mL	13C4 PFOS	0.0958 ug/mL
					LCMPFUdA 00051	1 mL	13C2 PFUnA	0.1 ug/mL
....LCd-NEtFOSA-M 00034	03/17/27		WELLINGTON, Lot dNEtFOSA0322M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
....LCd-NMeFOSA-M 00035	10/07/26		WELLINGTON, Lot dNMeFOSA1021M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
....LCd3-NMeFOSAA 00046	02/22/27		WELLINGTON, Lot d3NMeFOSAA0222		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
....LCd5-NEtFOSAA 00047	09/28/26		WELLINGTON, Lot d5NEtFOSAA0921		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
....LCd7-NMeFOSEM 00035	01/27/27		WELLINGTON, Lot d7NMeFOSE1221M		(Purchased Reagent)		d7-N-MeFOSE-M	50 ug/mL
....LCd9-NEtFOSEM 00032	01/27/27		WELLINGTON, Lot d9NEtFOSE1221M		(Purchased Reagent)		d9-N-EtFOSE-M	50 ug/mL
....LCM10:2 FTS_00005	04/26/26		Cambridge Isotope Laboratories, Lot SEBC-003		(Purchased Reagent)		13C2 10:2 FTS	48.25 ug/mL
....LCM2-4:FTS 00036	10/13/26		Wellington, Lot M242FTS1021		(Purchased Reagent)		M2-4:2 FTS	46.9 ug/mL
....LCM2-6:FTS 00040	10/13/26		WELLINGTON, Lot M262FTS1021		(Purchased Reagent)		M2-6:2 FTS	47.5 ug/mL
....LCM2-8:2FTS 00045	11/23/26		WELLINGTON, Lot M282FTS1121		(Purchased Reagent)		M2-8:2 FTS	48 ug/mL
....LCM2PFHxDA 00050	11/23/26		Wellington Laboratories, Lot M2PFHxDA1121		(Purchased Reagent)		13C2 PFHxDA	50 ug/mL
....LCM2PFTeDA 00048	11/22/26		Wellington Laboratories, Lot M2PFTeDA1121		(Purchased Reagent)		13C2 PFTeDA	50 ug/mL
....LCM3HFPO-DA 00040	11/11/24		WELLINGTON, Lot M3HFPODA1121		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
....LCM4-6:2diPAP 00008	08/05/26		Wellington, Lot M462diPAP0721		(Purchased Reagent)		13C4-6:2 diPAP	48.6534 ug/mL
....LCM4-8:2diPAP 00008	12/01/26		Wellington, Lot M482diPAP1121		(Purchased Reagent)		13C4-8:2 diPAP	48.9185 ug/mL
....LCM4PFHPA 00047	12/07/26		Wellington Laboratories, Lot M4PFHPA1121		(Purchased Reagent)		13C4 PFHPA	50 ug/mL
....LCM5PFPEA 00048	08/10/26		Wellington Laboratories, Lot M5PFPeA0821		(Purchased Reagent)		13C5 PFPeA	50 ug/mL
....LCM8FOSA 00053	03/17/27		Wellington Laboratories, Lot M8FOSA0322I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
....LCMFDEA 00014	09/27/24		Wellington Laboratories, Lot MFDEA0921		(Purchased Reagent)		13C-10:2 FTCA	50 ug/mL
....LCMFDUEA 00013	11/22/23		Wellington Laboratories, Lot MFDUEA1221		(Purchased Reagent)		13C-10:2 FTUCA	50 ug/mL
....LCMFHEA 00012	09/29/24		Wellington Laboratories, Lot MFHEA0921		(Purchased Reagent)		13C-6:2 FTCA	50 ug/mL
....LCMFHUEA 00015	02/18/24		Wellington Laboratories, Lot MFHUEA0322		(Purchased Reagent)		13C-6:2 FTUCA	50 ug/mL
....LCMFOEA 00011	11/22/24		Wellington Laboratories, Lot MFOEA1121		(Purchased Reagent)		13C-8:2 FTCA	50 ug/mL
....LCMFOUEA 00013	12/07/23		Wellington Laboratorie, Lot MFOUEA1121		(Purchased Reagent)		13C-8:2 FTUCA	50 ug/mL
....LCMPFBA 00050	07/12/26		Wellington Laboratories, Lot MPFBA0621		(Purchased Reagent)		13C4 PFBA	50 ug/mL
....LCMPFBS 00035	02/07/27		Wellington Laboratories, Lot M3PFBS0222		(Purchased Reagent)		13C3 PFBS	46.6 ug/mL
....LCMPFDA 00056	12/08/26		Wellington Laboratories, Lot MPFDA1221		(Purchased Reagent)		13C2 PFDA	50 ug/mL
....LCMPFDoA 00049	03/17/27		Wellington Laboratories, Lot MPFDoA0322		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
....LCMPFHxA 00055	10/04/26		Wellington Laboratories, Lot MPFHxA0921		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
....LCMPFHxS 00048	10/29/26		Wellington Laboratories, Lot MPFHxS1021		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
....LCMPFNA 00048	10/29/26		Wellington Laboratories, Lot MPFNA1021		(Purchased Reagent)		13C5 PFNA	50 ug/mL
....LCMPFOA 00052	12/07/26		Wellington Laboratories, Lot MPFOA1121		(Purchased Reagent)		13C4 PFOA	50 ug/mL
....LCMPFOS 00064	01/27/27		Wellington Laboratories, Lot MPFOS1022		(Purchased Reagent)		13C4 PFOS	47.9 ug/mL
....LCMPFUdA 00051	12/09/26		Wellington Laboratories, Lot MPFUdA1221		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
.LCPFC+SP+6_00107	02/08/23	10/04/22	Methanol, Lot 218266	250 mL	LCPFC+SP+6_00098	50 mL	NFDHA	0.02 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							10:2 diPAP	0.0200996 ug/mL
							10:2 FTS	0.01932 ug/mL
							11Cl-PF3OUdS	0.01888 ug/mL
							3:3 FTCA	0.02 ug/mL
							4:2 FTS	0.01876 ug/mL
							5:3 FTCA	0.02 ug/mL
							6:2 diPAP	0.0194587 ug/mL
							6:2 FTS	0.01904 ug/mL
							6:2/8:2 diPAP	0.0195181 ug/mL
							7:3 FTCA	0.02 ug/mL
							8:2 diPAP	0.0195657 ug/mL
							8:2 FTS	0.0192 ug/mL
							9Cl-PF3ONS	0.01868 ug/mL
							NEtFOSAA	0.02 ug/mL
							NMeFOSAA	0.02 ug/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.01888 ug/mL
							FBSA	0.02 ug/mL
							10:2 FTCA	0.02 ug/mL
							10:2 FTUCA	0.02 ug/mL
							6:2 FTCA	0.02 ug/mL
							6:2 FTUCA	0.02 ug/mL
							FHxSA	0.02 ug/mL
							8:2 FTCA	0.02 ug/mL
							8:2 FTUCA	0.02 ug/mL
							HFPO-DA (GenX)	0.02 ug/mL
							PFPrS	0.0184 ug/mL
							NEtFOSA	0.02 ug/mL
							NEtFOSE	0.02 ug/mL
							NMeFOSA	0.02 ug/mL
							NMeFOSE	0.02 ug/mL
							PFMPA	0.02 ug/mL
							PFMBA	0.02 ug/mL
							Perfluorobutanoic acid (PFBA)	0.02 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.01776 ug/mL
							Perfluorodecanoic acid (PFDA)	0.02 ug/mL
							Perfluorododecanoic acid (PFDoA)	0.02 ug/mL
							Perfluorododecanesulfonic acid (PFDoS)	0.0194 ug/mL
							Perfluorodecanesulfonic acid (PFDS)	0.01928 ug/mL
							PFECHS	0.01848 ug/mL
							PFEESA	0.01784 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluoroheptanoic acid (PFHpA)	0.02 ug/mL
							Perfluoroheptanesulfonic acid (PFHpS)	0.01908 ug/mL
							Perfluorohexanoic acid (PFHxA)	0.02 ug/mL
							Perfluoro-n-hexadecanoic acid (PFHxDA)	0.02 ug/mL
							Perfluorohexanesulfonic acid (PFHxS)	0.01824 ug/mL
							Perfluorononanoic acid (PFNA)	0.02 ug/mL
							Perfluorononanesulfonic acid (PFNS)	0.01924 ug/mL
							Perfluorooctanoic acid (PFOA)	0.02 ug/mL
							Perfluoro-n-octadecanoic acid (PFODA)	0.02 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	0.0186 ug/mL
							Perfluorooctanesulfonamide (FOSA)	0.02 ug/mL
							Perfluoropentanoic acid (PFPeA)	0.02 ug/mL
							Perfluoropentanesulfonic acid (PFPeS)	0.0188 ug/mL
							Perfluorotetradecanoic acid (PFTeA)	0.02 ug/mL
							Perfluorotridecanoic acid (PFTrDA)	0.02 ug/mL
							Perfluoroundecanoic acid (PFUnA)	0.02 ug/mL
							PFPrA	0.0194 ug/mL
..LCPFC+SP+6_00098	02/08/23	10/03/22	Methanol, Lot 218266	500 mL	LC-36-OPFHpA_00011	1 mL	NFDHA	0.1 ug/mL
					LC10:2diPAPim_00016	1.09 mL	10:2 diPAP	0.100498 ug/mL
					LC10:2FTS_00016	1 mL	10:2 FTS	0.0966 ug/mL
					LC11CIPF3OUdS_00023	1 mL	11C1-PF3OUdS	0.0944 ug/mL
					LC3:3FTCA_00005	1 mL	3:3 FTCA	0.1 ug/mL
					LC4:2FTS_00024	1 mL	4:2 FTS	0.0938 ug/mL
					LC5:3FTCA_00008	1 mL	5:3 FTCA	0.1 ug/mL
					LC6:2diPAP_00009	1 mL	6:2 diPAP	0.0972936 ug/mL
					LC6:2FTS_00024	1 mL	6:2 FTS	0.0952 ug/mL
					LC62/82diPAP_00007	1 mL	6:2/8:2 diPAP	0.0975904 ug/mL
					LC7:3FTCA_00007	1 mL	7:3 FTCA	0.1 ug/mL
					LC8:2diPAP_00007	1 mL	8:2 diPAP	0.0978284 ug/mL
					LC8:2FTS_00024	1 mL	8:2 FTS	0.096 ug/mL
					LC9CI-PF3ONS_00023	1 mL	9C1-PF3ONS	0.0934 ug/mL
					LCbr-NETFOSAA_00023	1 mL	NETFOSAA	0.1 ug/mL
					LCbr-NMeFOSAA_00022	1 mL	NMeFOSAA	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCDONA_00032	1 mL	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.0944 ug/mL
					LCFBSA-I 00007	1 mL	FBSA	0.1 ug/mL
					LCFDEA 00009	1 mL	10:2 FTCA	0.1 ug/mL
					LCFDUEA 00007	1 mL	10:2 FTUCA	0.1 ug/mL
					LCFHFA 00009	1 mL	6:2 FTCA	0.1 ug/mL
					LCFHUEA 00009	1 mL	6:2 FTUCA	0.1 ug/mL
					LCFHxSA-I 00009	1 mL	FHxSA	0.1 ug/mL
					LCFOEA 00010	1 mL	8:2 FTCA	0.1 ug/mL
					LCFOUEA 00007	1 mL	8:2 FTUCA	0.1 ug/mL
					LCHFPO-DA 00027	1 mL	HFPO-DA (GenX)	0.1 ug/mL
					LCLPFPrS 00009	1 mL	PFPPrS	0.092 ug/mL
					LCN-EtFOSA-M 00025	1 mL	NETFOSA	0.1 ug/mL
					LCN-EtFOSE-M 00018	1 mL	NETFOSE	0.1 ug/mL
					LCN-MeFOSA-M 00027	1 mL	NMeFOSA	0.1 ug/mL
					LCN-MeFOSE-M 00021	1 mL	NMeFOSE	0.1 ug/mL
					LCPF4OPeA 00015	1 mL	PFMPA	0.1 ug/mL
					LCPF5OHxA 00011	1 mL	PFMBA	0.1 ug/mL
					LCPFBA 00028	1 mL	Perfluorobutanoic acid (PFBA)	0.1 ug/mL
					LCPFBSA_00025	1 mL	Perfluorobutanesulfonic acid (PFBS)	0.0888 ug/mL
					LCPFDA 00033	1 mL	Perfluorodecanoic acid (PFDA)	0.1 ug/mL
					LCPFDaA_00031	1 mL	Perfluorododecanoic acid (PFDoA)	0.1 ug/mL
					LCPFDoS_00020	1 mL	Perfluorododecanesulfonic acid (PFDoS)	0.097 ug/mL
					LCPFDSA_00016	1 mL	Perfluorodecanesulfonic acid (PFDS)	0.0964 ug/mL
					LCPFECHS 00007	1 mL	PFECHS	0.0924 ug/mL
					LCPFEESA 00010	1 mL	PFEESA	0.0892 ug/mL
					LCPFHpA_00035	1 mL	Perfluoroheptanoic acid (PFHpA)	0.1 ug/mL
					LCPFHpSA_00021	1 mL	Perfluoroheptanesulfonic acid (PFHpS)	0.0954 ug/mL
					LCPFHxA 00033	1 mL	Perfluorohexanoic acid (PFHxA)	0.1 ug/mL
					LCPFHxDA_00028	1 mL	Perfluoro-n-hexadecanoic acid (PFHxDA)	0.1 ug/mL
					LCPFHxS-br_00027	1 mL	Perfluorohexanesulfonic acid (PFHxS)	0.0912 ug/mL
					LCPFNA 00035	1 mL	Perfluorononanoic acid (PFNA)	0.1 ug/mL
					LCPFNS_00020	1 mL	Perfluorononanesulfonic acid (PFNS)	0.0962 ug/mL
					LCPFOA 00032	1 mL	Perfluorooctanoic acid (PFOA)	0.1 ug/mL
					LCPFODA_00028	1 mL	Perfluoro-n-octadecanoic acid (PFODA)	0.1 ug/mL
					LCPFOS-br_00029	1 mL	Perfluorooctanesulfonic acid (PFOS)	0.093 ug/mL
					LCPFOSA_00029	1 mL	Perfluorooctanesulfonamide (FOSA)	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFPeA_00028	1 mL	Perfluoropentanoic acid (PFPeA)	0.1 ug/mL
					LCPFPeS_00020	1 mL	Perfluoropentanesulfonic acid (PFPeS)	0.094 ug/mL
					LCPFTeDA_00032	1 mL	Perfluorotetradecanoic acid (PFTeA)	0.1 ug/mL
					LCPFTrDA_00030	1 mL	Perfluorotridecanoic acid (PFTTrDA)	0.1 ug/mL
					LCPFUDa_00033	1 mL	Perfluoroundecanoic acid (PFUnA)	0.1 ug/mL
					LCPPropionic_00024	1 mL	PFPrA	0.097 ug/mL
...LC-36-OFFHpa_00011	10/14/26	Wellington Laboratories, Lot 36OFFHpa0921			(Purchased Reagent)		NFDHA	50 ug/mL
...LC10:2diPAPim_00016	02/08/23	08/08/22	Methanol, Lot 217743	200 mL	LC10:2diPAPim_00015	100 mL	10:2 diPAP	46.1 ug/mL
....LC10:2diPAPim_00015	02/08/23	08/08/22	Methanol, Lot 217743	1000 mL	LC10:2diPAP_00005	0.0922 g	10:2 diPAP	92.2 ug/mL
.....LC10:2diPAP_00005	11/13/23	Toronto Research Chemicals, Lot 5-BKS-67-1			(Purchased Reagent)		10:2 diPAP	100 %
...LC10:2FTS_00016	01/27/27	WELLINGTON, Lot 102FTS0122			(Purchased Reagent)		10:2 FTS	48.3 ug/mL
...LC11CIPF3OUdS_00023	02/08/27	Wellington Laboratories, Lot 11CIPF3OUdS0222			(Purchased Reagent)		11C1-PF3OUdS	47.2 ug/mL
...LC3:3FTCA_00005	02/03/27	Wellington Laboratories, Lot FPrPA0122			(Purchased Reagent)		3:3 FTCA	50 ug/mL
...LC4:2FTS_00024	04/22/27	WELLINGTON, Lot 42FTS0422			(Purchased Reagent)		4:2 FTS	46.9 ug/mL
...LC5:3FTCA_00008	01/05/27	Wellington Laboratories, Lot FPePA1221			(Purchased Reagent)		5:3 FTCA	50 ug/mL
...LC6:2diPAP_00009	03/18/27	Wellington, Lot 62diPAP0222			(Purchased Reagent)		6:2 diPAP	48.6468 ug/mL
...LC6:2FTS_00024	01/04/27	WELLINGTON, Lot 62FTS1221			(Purchased Reagent)		6:2 FTS	47.6 ug/mL
...LC62/82diPAP_00007	01/26/26	Wellington, Lot 6282diPAP0121			(Purchased Reagent)		6:2/8:2 diPAP	48.7952 ug/mL
...LC7:3FTCA_00007	10/13/26	Wellington Laboratories, Lot FHpPA1021			(Purchased Reagent)		7:3 FTCA	50 ug/mL
...LC8:2diPAP_00007	09/09/25	Wellington, Lot 82diPAP0920			(Purchased Reagent)		8:2 diPAP	48.9142 ug/mL
...LC8:2FTS_00024	02/08/27	WELLINGTON, Lot 82FTS0122			(Purchased Reagent)		8:2 FTS	48 ug/mL
...LC9CI-PF3ONS_00023	11/22/26	Wellington Laboratories, Lot 9CIPF3ONS1121			(Purchased Reagent)		9C1-PF3ONS	46.7 ug/mL
...LCbr-NETFOSAA_00023	11/23/26	WELLINGTON, Lot brNETFOSAA1121			(Purchased Reagent)		NETFOSAA	50 ug/mL
...LCbr-NMeFOSAA_00022	07/13/26	WELLINGTON, Lot brNMeFOSAA0621			(Purchased Reagent)		NMeFOSAA	50 ug/mL
...LCDONA_00032	04/18/27	WELLINGTON, Lot NADONA0422			(Purchased Reagent)		4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.2 ug/mL
...LCFBSA-I_00007	11/10/26	Wellington, Lot FBSA1121I			(Purchased Reagent)		FBSA	50 ug/mL
...LCFDEA_00009	09/28/24	Wellington Laboratories, Lot FDEA0921			(Purchased Reagent)		10:2 FTCA	50 ug/mL
...LCFDUEA_00007	10/29/23	Wellington Laboratories, Lot FDUEA1021			(Purchased Reagent)		10:2 FTUCA	50 ug/mL
...LCFHFA_00009	01/05/25	Wellington Laboratories, Lot FHEA1221			(Purchased Reagent)		6:2 FTCA	50 ug/mL
...LCFHUEA_00009	09/03/23	Wellington Laboratories, Lot FHUEA0921			(Purchased Reagent)		6:2 FTUCA	50 ug/mL
...LCFHxSA-I_00009	12/29/26	Wellington, Lot FHxSA1221I			(Purchased Reagent)		FHxSA	50 ug/mL
...LCFOEA_00010	08/18/24	Wellington Laboratories, Lot FOEA0821			(Purchased Reagent)		8:2 FTCA	50 ug/mL
...LCFOUEA_00007	12/29/23	Wellington Laboratories, Lot FOUEA1221			(Purchased Reagent)		8:2 FTUCA	50 ug/mL
...LCHFPO-DA_00027	04/05/25	WELLINGTON, Lot HFPODA0322			(Purchased Reagent)		HFPO-DA (GenX)	50 ug/mL
...LCLPFPPrS_00009	04/20/27	Wellington Laboratories, Lot LPFPPrS0422			(Purchased Reagent)		PFPrS	46 ug/mL
...LCN-EtFOSA-M_00025	04/20/27	WELLINGTON, Lot NetFOSA0422M			(Purchased Reagent)		NETFOSA	50 ug/mL
...LCN-EtFOSE-M_00018	09/23/26	WELLINGTON, Lot NetFOSE0921M			(Purchased Reagent)		NETFOSE	50 ug/mL
...LCN-MeFOSA-M_00027	02/28/27	WELLINGTON, Lot NMeFOSA0222M			(Purchased Reagent)		NMeFOSA	50 ug/mL
...LCN-MeFOSE-M_00021	05/13/27	WELLINGTON, Lot NMeFOSE0522M			(Purchased Reagent)		NMeFOSE	50 ug/mL
...LCPF4OPeA_00015	08/02/27	Wellington Laboratories, Lot PF4OPeA0722			(Purchased Reagent)		PFMPA	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LCPF5OHxA_00011	10/19/26		Wellington Laboratories, Lot PF5OHxA1021		(Purchased Reagent)		PFMBA	50 ug/mL
...LCPFBFA_00028	04/18/27		Wellington Laboratories, Lot PFBA0422		(Purchased Reagent)		Perfluorobutanoic acid (PFBA)	50 ug/mL
...LCPFBFA_00025	04/05/27		Wellington Laboratories, Lot LPFBS0322		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.4 ug/mL
...LCPFDA_00033	02/22/27		Wellington Laboratories, Lot PFDA0222		(Purchased Reagent)		Perfluorodecanoic acid (PFDA)	50 ug/mL
...LCPFDoA_00031	01/27/27		Wellington Laboratories, Lot PFDoA0122		(Purchased Reagent)		Perfluorododecanoic acid (PFDoA)	50 ug/mL
...LCPFDoS_00020	04/20/27		Wellington Laboratories, Lot LPFDoS0422		(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48.5 ug/mL
...LCPFDSA_00016	02/22/27		Wellington Laboratories, Lot LPFDS0222		(Purchased Reagent)		Perfluorodecanesulfonic acid (PFDS)	48.2 ug/mL
...LCPFECHS_00007	03/28/27		Wellington Laboratories, Lot PFECHS0222		(Purchased Reagent)		PFECHS	46.2 ug/mL
...LCPFEESA_00010	11/22/26		Wellington Laboratories, Lot PFEESA1121		(Purchased Reagent)		PFEESA	44.6 ug/mL
...LCPFHpA_00035	03/17/27		Wellington Laboratories, Lot PFHpA0222		(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	50 ug/mL
...LCPFHpSA_00021	01/27/27		Wellington Laboratories, Lot LPFHpS0122		(Purchased Reagent)		Perfluoroheptanesulfonic acid (PFHpS)	47.7 ug/mL
...LCPFHxA_00033	01/27/27		Wellington Laboratories, Lot PFHxA0122		(Purchased Reagent)		Perfluorohexanoic acid (PFHxA)	50 ug/mL
...LCPFHxDA_00028	02/23/27		Wellington Laboratories, Lot PFHxDA0222		(Purchased Reagent)		Perfluoro-n-hexadecanoic acid (PFHxDA)	50 ug/mL
...LCPFHXS-br_00027	12/07/26		Wellington Laboratories, Lot brPFHxSK1211		(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHXS)	45.6 ug/mL
...LCPFNA_00035	01/27/27		Wellington Laboratories, Lot PFNA0122		(Purchased Reagent)		Perfluorononanoic acid (PFNA)	50 ug/mL
...LCPFNS_00020	04/20/27		Wellington Laboratories, Lot LPFNS0422		(Purchased Reagent)		Perfluorononanesulfonic acid (PFNS)	48.1 ug/mL
...LCPFOA_00032	02/22/27		Wellington Laboratories, Lot PFOA0222		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL
...LCPFODA_00028	09/03/26		Wellington Laboratories, Lot PFODA0821		(Purchased Reagent)		Perfluoro-n-octadecanoic acid (PFODA)	50 ug/mL
...LCPFOS-br_00029	12/07/26		Wellington Laboratories, Lot brPFOSK1121		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.5 ug/mL
...LCPFOSA_00029	04/05/27		Wellington Laboratories, Lot FOSA0322I		(Purchased Reagent)		Perfluorooctanesulfonamide (FOSA)	50 ug/mL
...LCPFPeA_00028	02/08/27		Wellington Laboratories, Lot FFPeA0122		(Purchased Reagent)		Perfluoropentanoic acid (FPFeA)	50 ug/mL
...LCPFPeS_00020	02/07/27		Wellington Laboratories, Lot LPFPeS0122		(Purchased Reagent)		Perfluoropentanesulfonic acid (FPFeS)	47 ug/mL
...LCPFTeDA_00032	02/28/27		Wellington Laboratories, Lot PFTeDA0222		(Purchased Reagent)		Perfluorotetradecanoic acid (PFTeA)	50 ug/mL
...LCPFTrDA_00030	02/07/27		Wellington Laboratories, Lot PFTTrDA0122		(Purchased Reagent)		Perfluorotridecanoic acid (PFTTrDA)	50 ug/mL
...LCPFUdA_00033	02/22/27		Wellington Laboratories, Lot PFUdA0222		(Purchased Reagent)		Perfluoroundecanoic acid (PFUnA)	50 ug/mL
...LCPropionic_00024	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	LCPropionic_00023	5 mL	PFPrA	48.5 ug/mL
....LCPropionic_00023	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	Propionic Acid_00002	100 uL	PFPrA	970 ug/mL
.....Propionic Acid_00002	06/09/25		Sigma Aldrich, Lot MKCK6675		(Purchased Reagent)		PFPrA	97 %
.LCPFC3SP_TB3_00040	02/11/23	08/11/22	Methanol, Lot 217743	500 mL	LCBP1_00005	50 uL	PS Acid	0.1 ug/mL
					LCBP2_00004	50 uL	Hydro-PS Acid	0.1 ug/mL
					LCBP4_00003	50 uL	R-PSDA	0.1 ug/mL
					LCBP5_00004	50 uL	Hydrolyzed PSDA	0.1 ug/mL
					LCBP6_00004	50 uL	R-PSDCA	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCEVEA 00004	50 uL	EVE Acid	0.1 ug/mL
					LCHEVEA 00003	50 uL	Hydro-EVE Acid	0.1 ug/mL
					LCMTP 00003	50 uL	MTP	0.1 ug/mL
					LCNVHOS 00003	50 uL	NVHOS	0.1 ug/mL
					LCPEPA 00005	50 uL	PEPA	0.1 ug/mL
					LCPFECa G 00004	50 uL	PFPE-1	0.1 ug/mL
					LCPFMOAA 00007	50 uL	PFMOAA	0.1 ug/mL
					LCPF02HxA 00005	50 uL	PFO2HxA	0.1 ug/mL
					LCPF03OA 00006	50 uL	PFO3OA	0.1 ug/mL
					LCPF04DA 00005	50 uL	PFO4DA	0.1 ug/mL
					LCPF05DoA 00004	50 uL	PFO5DA	0.1 ug/mL
					LCMPA 00005	50 uL	PMPA	0.1 ug/mL
					LCR-EVE 00005	50 uL	R-EVE	0.1 ug/mL
..LCBP1 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PS Acid	0.1 %
..LCBP2 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydro-PS Acid	0.1 %
..LCBP4 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-PSDA	0.1 %
..LCBP5 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydrolyzed PSDA	0.1 %
..LCBP6 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-PSDCA	0.1 %
..LCEVEA 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		EVE Acid	0.1 %
..LCHEVEA 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydro-EVE Acid	0.1 %
..LCMTP 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		MTP	0.1 %
..LCNVHOS 00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		NVHOS	0.1 %
..LCPEPA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PEPA	0.1 %
..LCPFECa G 00004	01/23/24		Chemours, Lot NA		(Purchased Reagent)		PFPE-1	1000 ug/mL
..LCPFMOAA 00007	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFMOAA	0.1 %
..LCPF02HxA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO2HxA	0.1 %
..LCPF03OA 00006	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO3OA	0.1 %
..LCPF04DA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO4DA	0.1 %
..LCPF05DoA 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO5DA	0.1 %
..LCMPA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PMPA	0.1 %
..LCR-EVE 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-EVE	0.1 %
LCPFC+6C_LL6_00006	02/08/23	10/19/22	MeOH/H2O, Lot 218266	200 mL	LCMPFC_ICALSU_00057	10 mL	13C2 PFOA	1.25 ng/mL
							13C8 PFOA	1.25 ng/mL
							13C8 PFOS	1.195 ng/mL
							d-N-EtFOSA-M	1.25 ng/mL
							d-N-MeFOSA-M	1.25 ng/mL
							d3-NMeFOSAA	1.25 ng/mL
							d5-NMeFOSAA	1.25 ng/mL
							d7-N-MeFOSE-M	1.25 ng/mL
							d9-N-EtFOSE-M	1.25 ng/mL
							13C2 10:2 FTS	1.20625 ng/mL
							M2-4:2 FTS	1.1725 ng/mL
							M2-6:2 FTS	1.1875 ng/mL
							M2-8:2 FTS	1.2 ng/mL
							13C2 PFHxDA	1.25 ng/mL
							13C2 PFTeDA	1.25 ng/mL
							13C3 HFPO-DA	1.25 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C4-6:2 diPAP	1.21633 ng/mL
							13C4-8:2 diPAP	1.22296 ng/mL
							13C4 PFHpA	1.25 ng/mL
							13C5 PFPeA	1.25 ng/mL
							13C8 FOSA	1.25 ng/mL
							13C-10:2 FTCA	1.25 ng/mL
							13C-10:2 FTUCA	1.25 ng/mL
							13C-6:2 FTCA	1.25 ng/mL
							13C-6:2 FTUCA	1.25 ng/mL
							13C-8:2 FTCA	1.25 ng/mL
							13C-8:2 FTUCA	1.25 ng/mL
							13C4 PFBA	1.25 ng/mL
							13C3 PFBS	1.165 ng/mL
							13C2 PFDA	1.25 ng/mL
							13C2 PFDoA	1.25 ng/mL
							13C2 PFHxA	1.25 ng/mL
							18O2 PFHxS	1.1825 ng/mL
							13C5 PFNA	1.25 ng/mL
							13C4 PFOA	1.25 ng/mL
							13C4 PFOS	1.1975 ng/mL
							13C2 PFUnA	1.25 ng/mL
					LCPFC+SP+6_00107	50 mL	NFDHA	5 ng/mL
							10:2 diPAP	5.0249 ng/mL
							10:2 FTS	4.83 ng/mL
							11Cl-PF3OUds	4.72 ng/mL
							3:3 FTCA	5 ng/mL
							4:2 FTS	4.69 ng/mL
							5:3 FTCA	5 ng/mL
							6:2 diPAP	4.86468 ng/mL
							6:2 FTS	4.76 ng/mL
							6:2/8:2 diPAP	4.87952 ng/mL
							7:3 FTCA	5 ng/mL
							8:2 diPAP	4.89142 ng/mL
							8:2 FTS	4.8 ng/mL
							9Cl-PF3ONS	4.67 ng/mL
							NEtFOSAA	5 ng/mL
							NMeFOSAA	5 ng/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	4.72 ng/mL
							FBSA	5 ng/mL
							10:2 FTCA	5 ng/mL
							10:2 FTUCA	5 ng/mL
							6:2 FTCA	5 ng/mL
							6:2 FTUCA	5 ng/mL
							FHxSA	5 ng/mL
							8:2 FTCA	5 ng/mL
							8:2 FTUCA	5 ng/mL
							HFPO-DA (GenX)	5 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							PFPrS	4.6 ng/mL
							NEtFOSA	5 ng/mL
							NEtFOSE	5 ng/mL
							NMeFOSA	5 ng/mL
							NMeFOSE	5 ng/mL
							PFMPA	5 ng/mL
							PFMBA	5 ng/mL
							Perfluorobutanoic acid (PFBA)	5 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	4.44 ng/mL
							Perfluorodecanoic acid (PFDA)	5 ng/mL
							Perfluorododecanoic acid (PFDoA)	5 ng/mL
							Perfluorododecanesulfonic acid (PFDoS)	4.85 ng/mL
							Perfluorodecanesulfonic acid (PFDS)	4.82 ng/mL
							PFECHS	4.62 ng/mL
							PFEESA	4.46 ng/mL
							Perfluoroheptanoic acid (PFHpA)	5 ng/mL
							Perfluoroheptanesulfonic acid (PFHpS)	4.77 ng/mL
							Perfluorohexanoic acid (PFHxA)	5 ng/mL
							Perfluoro-n-hexadecanoic acid (PFHxDA)	5 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	4.56 ng/mL
							Perfluorononanoic acid (PFNA)	5 ng/mL
							Perfluorononanesulfonic acid (PFNS)	4.81 ng/mL
							Perfluorooctanoic acid (PFOA)	5 ng/mL
							Perfluoro-n-octadecanoic acid (PFODA)	5 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	4.65 ng/mL
							Perfluorooctanesulfonamide (FOSA)	5 ng/mL
							Perfluoropentanoic acid (PFPeA)	5 ng/mL
							Perfluoropentanesulfonic acid (PFPeS)	4.7 ng/mL
							Perfluorotetradecanoic acid (PFTeA)	5 ng/mL
							Perfluorotridecanoic acid (PFTTrDA)	5 ng/mL
							Perfluoroundecanoic acid (PFUnA)	5 ng/mL
							PFPrA	4.85 ng/mL
					LCPFC3SP_TB3_00040	10 mL	PS Acid	5 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Hydro-PS Acid	5 ng/mL
							R-PSDA	5 ng/mL
							Hydrolyzed PSDA	5 ng/mL
							R-PSDCA	5 ng/mL
							EVE Acid	5 ng/mL
							Hydro-EVE Acid	5 ng/mL
							MTP	5 ng/mL
							NVHOS	5 ng/mL
							PEPA	5 ng/mL
							PFPE-1	5 ng/mL
							PFMOAA	5 ng/mL
							PFO2HxA	5 ng/mL
							PFO3OA	5 ng/mL
							PFO4DA	5 ng/mL
							PFO5DA	5 ng/mL
							PMPA	5 ng/mL
							R-EVE	5 ng/mL
.LCMPFC_ICALSU_00057	04/03/23	10/19/22	Methanol, Lot 218266	200 mL	LCM2PFOA_00037	100 uL	13C2 PFOA	0.025 ug/mL
					LCM8PFOA_00003	100 uL	13C8 PFOA	0.025 ug/mL
					LCM8PFOS_00005	100 uL	13C8 PFOS	0.0239 ug/mL
					LCMPFC_IDA+_00378	200 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-NEtFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024125 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.02375 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							18O2 PFHxS	0.02365 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
..LCM2PFOA_00037	12/09/26		Wellington Laboratories, Lot M2PFOA0122		(Purchased Reagent)	13C2 PFOA	50 ug/mL	
..LCM8PFOA_00003	07/22/25		Wellington Laboratories, Lot M8PFOA0720		(Purchased Reagent)	13C8 PFOA	50 ug/mL	
..LCM8PFOS_00005	01/14/26		Wellington Laboratories, Lot M8PFOS0121		(Purchased Reagent)	13C8 PFOS	47.8 ug/mL	
..LCMPFC_IDA+_00378	04/03/23	10/04/22	Methanol, Lot 218266	200 mL	LCMPFC_IDA+_00376	50 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-NEtFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024125 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.02375 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							18O2 PFHxS	0.02365 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LCMPFC_IDA+_00376	04/03/23	10/03/22	Methanol, Lot 218266	500 mL	LCd-NEtFOSA-M 00034	1 mL	13C2 PFUnA	0.025 ug/mL
					LCd-NMeFOSA-M 00035	1 mL	d-N-EtFOSA-M	0.1 ug/mL
					LCd3-NMeFOSAA 00046	1 mL	d-N-MeFOSA-M	0.1 ug/mL
					LCd5-NEtFOSAA 00047	1 mL	d3-NMeFOSAA	0.1 ug/mL
					LCd7-NMeFOSEM 00035	1 mL	d5-NEtFOSAA	0.1 ug/mL
					LCd9-NEtFOSEM 00032	1 mL	d7-N-MeFOSE-M	0.1 ug/mL
					LCM10:2 FTS 00005	1 mL	d9-N-EtFOSE-M	0.1 ug/mL
					LCM2-4:FTS 00036	1 mL	13C2 10:2 FTS	0.0965 ug/mL
					LCM2-6:FTS 00040	1 mL	M2-4:2 FTS	0.0938 ug/mL
					LCM2-8:2FTS 00045	1 mL	M2-6:2 FTS	0.095 ug/mL
					LCM2PFHxDA 00050	1 mL	M2-8:2 FTS	0.096 ug/mL
					LCM2PFTeDA 00048	1 mL	13C2 PFHxDA	0.1 ug/mL
					LCM3HFPO-DA 00040	1 mL	13C2 PFTeDA	0.1 ug/mL
					LCM4-6:2diPAP_00008	1 mL	13C3 HFPO-DA	0.1 ug/mL
					LCM4-8:2diPAP_00008	1 mL	13C4-6:2 diPAP	0.0973068 ug/mL
					LCM4PFHFA 00047	1 mL	13C4-8:2 diPAP	0.097837 ug/mL
					LCM5PFPEA 00048	1 mL	13C4 PFHpA	0.1 ug/mL
					LCM8FOSA 00053	1 mL	13C5 PFPeA	0.1 ug/mL
					LCMFDEA 00014	1 mL	13C8 FOSA	0.1 ug/mL
					LCMFDUEA 00013	1 mL	13C-10:2 FTCA	0.1 ug/mL
					LCMFHEA 00012	1 mL	13C-10:2 FTUCA	0.1 ug/mL
					LCMFHUEA 00015	1 mL	13C-6:2 FTCA	0.1 ug/mL
					LCMFOEA 00011	1 mL	13C-6:2 FTUCA	0.1 ug/mL
					LCMFOUEA 00013	1 mL	13C-8:2 FTCA	0.1 ug/mL
					LCMPFBA 00050	1 mL	13C-8:2 FTUCA	0.1 ug/mL
					LCMPFBS 00035	1 mL	13C4 PFBA	0.1 ug/mL
					LCMPFDA 00056	1 mL	13C3 PFBS	0.0932 ug/mL
					LCMPFDoA 00049	1 mL	13C2 PFDA	0.1 ug/mL
					LCMPFHxA 00055	1 mL	13C2 PFDoA	0.1 ug/mL
					LCMPFHxS 00048	1 mL	13C2 PFHxA	0.1 ug/mL
					LCMPFNA 00048	1 mL	18O2 PFHxS	0.0946 ug/mL
					LCMPFOA 00052	1 mL	13C5 PFNA	0.1 ug/mL
					LCMPFOS 00064	1 mL	13C4 PFOA	0.1 ug/mL
					LCMPFUDa 00051	1 mL	13C4 PFOS	0.0958 ug/mL
							13C2 PFUnA	0.1 ug/mL
....LCd-NEtFOSA-M 00034	03/17/27		WELLINGTON, Lot dNetFOSA0322M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
....LCd-NMeFOSA-M 00035	10/07/26		WELLINGTON, Lot dNMeFOSA1021M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
....LCd3-NMeFOSAA 00046	02/22/27		WELLINGTON, Lot d3NMeFOSAA0222		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
....LCd5-NEtFOSAA 00047	09/28/26		WELLINGTON, Lot d5NetFOSAA0921		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
....LCd7-NMeFOSEM 00035	01/27/27		WELLINGTON, Lot d7NMeFOSE1221M		(Purchased Reagent)		d7-N-MeFOSE-M	50 ug/mL
....LCd9-NEtFOSEM 00032	01/27/27		WELLINGTON, Lot d9NetFOSE1221M		(Purchased Reagent)		d9-N-EtFOSE-M	50 ug/mL
....LCM10:2 FTS_00005	04/26/26		Cambridge Isotope Laboratories, Lot SEBC-003		(Purchased Reagent)		13C2 10:2 FTS	48.25 ug/mL
....LCM2-4:FTS 00036	10/13/26		Wellington, Lot M242FTS1021		(Purchased Reagent)		M2-4:2 FTS	46.9 ug/mL
....LCM2-6:FTS 00040	10/13/26		WELLINGTON, Lot M262FTS1021		(Purchased Reagent)		M2-6:2 FTS	47.5 ug/mL
....LCM2-8:2FTS 00045	11/23/26		WELLINGTON, Lot M282FTS1121		(Purchased Reagent)		M2-8:2 FTS	48 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
....LCM2PFHxDA 00050	11/23/26	Wellington Laboratories, Lot M2PFHxDA1121			(Purchased Reagent)		13C2 PFHxDA	50 ug/mL
....LCM2PFTeDA 00048	11/22/26	Wellington Laboratories, Lot M2PFTeDA1121			(Purchased Reagent)		13C2 PFTeDA	50 ug/mL
....LCM3HFPO-DA 00040	11/11/24	WELLINGTON, Lot M3HFPODA1121			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
....LCM4-6:2diPAP 00008	08/05/26	Wellington, Lot M462diPAP0721			(Purchased Reagent)		13C4-6:2 diPAP	48.6534 ug/mL
....LCM4-8:2diPAP 00008	12/01/26	Wellington, Lot M482diPAP1121			(Purchased Reagent)		13C4-8:2 diPAP	48.9185 ug/mL
....LCM4PFHPA 00047	12/07/26	Wellington Laboratories, Lot M4PFHPA1121			(Purchased Reagent)		13C4 PFHPA	50 ug/mL
....LCM5PFPEA 00048	08/10/26	Wellington Laboratories, Lot M5PFPEA0821			(Purchased Reagent)		13C5 PFPEA	50 ug/mL
....LCM8FOSA 00053	03/17/27	Wellington Laboratories, Lot M8FOSA0322I			(Purchased Reagent)		13C8 FOSA	50 ug/mL
....LCMFDEA 00014	09/27/24	Wellington Laboratories, Lot MFDDEA0921			(Purchased Reagent)		13C-10:2 FTCA	50 ug/mL
....LCMFDUEA 00013	11/22/23	Wellington Laboratories, Lot MFDUEA1221			(Purchased Reagent)		13C-10:2 FTUCA	50 ug/mL
....LCMFHEA 00012	09/29/24	Wellington Laboratories, Lot MFHEA0921			(Purchased Reagent)		13C-6:2 FTCA	50 ug/mL
....LCMFHUEA 00015	02/18/24	Wellington Laboratories, Lot MFHUEA0322			(Purchased Reagent)		13C-6:2 FTUCA	50 ug/mL
....LCMFOEA 00011	11/22/24	Wellington Laboratories, Lot MFOEA1121			(Purchased Reagent)		13C-8:2 FTCA	50 ug/mL
....LCMFOUEA 00013	12/07/23	Wellington Laboratorie, Lot MFOUEA1121			(Purchased Reagent)		13C-8:2 FTUCA	50 ug/mL
....LCMPFBA 00050	07/12/26	Wellington Laboratories, Lot MPFBA0621			(Purchased Reagent)		13C4 PFBA	50 ug/mL
....LCMPFBS 00035	02/07/27	Wellington Laboratories, Lot M3PFBS0222			(Purchased Reagent)		13C3 PFBS	46.6 ug/mL
....LCMPFDA 00056	12/08/26	Wellington Laboratories, Lot MPFDA1221			(Purchased Reagent)		13C2 PFDA	50 ug/mL
....LCMPFDoA 00049	03/17/27	Wellington Laboratories, Lot MPFDoA0322			(Purchased Reagent)		13C2 PFDoA	50 ug/mL
....LCMPFHxA 00055	10/04/26	Wellington Laboratories, Lot MPFHxA0921			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
....LCMPFHxS 00048	10/29/26	Wellington Laboratories, Lot MPFHxS1021			(Purchased Reagent)		1802 PFHxS	47.3 ug/mL
....LCMPFNA 00048	10/29/26	Wellington Laboratories, Lot MPFNA1021			(Purchased Reagent)		13C5 PFNA	50 ug/mL
....LCMPFOA 00052	12/07/26	Wellington Laboratories, Lot MPFOA1121			(Purchased Reagent)		13C4 PFOA	50 ug/mL
....LCMPFOS 00064	01/27/27	Wellington Laboratories, Lot MPFOS0122			(Purchased Reagent)		13C4 PFOS	47.9 ug/mL
....LCMPFUDa 00051	12/09/26	Wellington Laboratories, Lot MPFUDa1221			(Purchased Reagent)		13C2 PFUnA	50 ug/mL
.LCPFC+SP+6_00107	02/08/23	10/04/22	Methanol, Lot 218266	250 mL	LCPFC+SP+6_00098	50 mL	NFDHA	0.02 ug/mL
							10:2 diPAP	0.0200996 ug/mL
							10:2 FTS	0.01932 ug/mL
							11C1-PF3OUdS	0.01888 ug/mL
							3:3 FTCA	0.02 ug/mL
							4:2 FTS	0.01876 ug/mL
							5:3 FTCA	0.02 ug/mL
							6:2 diPAP	0.0194587 ug/mL
							6:2 FTS	0.01904 ug/mL
							6:2/8:2 diPAP	0.0195181 ug/mL
							7:3 FTCA	0.02 ug/mL
							8:2 diPAP	0.0195657 ug/mL
							8:2 FTS	0.0192 ug/mL
							9C1-PF3ONS	0.01868 ug/mL
							NEtFOSAA	0.02 ug/mL
							NMeFOSAA	0.02 ug/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.01888 ug/mL
							FBSA	0.02 ug/mL
							10:2 FTCA	0.02 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							10:2 FTUCA	0.02 ug/mL
							6:2 FTCA	0.02 ug/mL
							6:2 FTUCA	0.02 ug/mL
							FHxSA	0.02 ug/mL
							8:2 FTCA	0.02 ug/mL
							8:2 FTUCA	0.02 ug/mL
							HFPO-DA (GenX)	0.02 ug/mL
							PFPPrS	0.0184 ug/mL
							NEtFOSA	0.02 ug/mL
							NEtFOSE	0.02 ug/mL
							NMeFOSA	0.02 ug/mL
							NMeFOSE	0.02 ug/mL
							PFMPA	0.02 ug/mL
							PFMBA	0.02 ug/mL
							Perfluorobutanoic acid (PFBA)	0.02 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.01776 ug/mL
							Perfluorodecanoic acid (PFDA)	0.02 ug/mL
							Perfluorododecanoic acid (PFDoA)	0.02 ug/mL
							Perfluorododecanesulfonic acid (PFDoS)	0.0194 ug/mL
							Perfluorodecanesulfonic acid (PFDS)	0.01928 ug/mL
							PFECHS	0.01848 ug/mL
							PFEESA	0.01784 ug/mL
							Perfluoroheptanoic acid (PFHpA)	0.02 ug/mL
							Perfluoroheptanesulfonic acid (PFHpS)	0.01908 ug/mL
							Perfluorohexanoic acid (PFHxA)	0.02 ug/mL
							Perfluoro-n-hexadecanoic acid (PFHxDA)	0.02 ug/mL
							Perfluorohexanesulfonic acid (PFHxS)	0.01824 ug/mL
							Perfluorononanoic acid (PFNA)	0.02 ug/mL
							Perfluorononanesulfonic acid (PFNS)	0.01924 ug/mL
							Perfluorooctanoic acid (PFOA)	0.02 ug/mL
							Perfluoro-n-octadecanoic acid (PFODA)	0.02 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	0.0186 ug/mL
							Perfluorooctanesulfonamide (FOSA)	0.02 ug/mL
							Perfluoropentanoic acid (PFPeA)	0.02 ug/mL
							Perfluoropentanesulfonic acid (PFPeS)	0.0188 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorotetradecanoic acid (PFTeA)	0.02 ug/mL
							Perfluorotridecanoic acid (PFTrDA)	0.02 ug/mL
							Perfluoroundecanoic acid (PFUnA)	0.02 ug/mL
							PFPrA	0.0194 ug/mL
..LCPFC+SP+6_00098	02/08/23	10/03/22	Methanol, Lot 218266	500 mL	LC-36-OPFHpA_00011	1 mL	NFDHA	0.1 ug/mL
					LC10:2diPAPim_00016	1.09 mL	10:2 diPAP	0.100498 ug/mL
					LC10:2FTS_00016	1 mL	10:2 FTS	0.0966 ug/mL
					LC11CIPF3OUds_00023	1 mL	11Cl-PF3OUds	0.0944 ug/mL
					LC3:3FTCA_00005	1 mL	3:3 FTCA	0.1 ug/mL
					LC4:2FTS_00024	1 mL	4:2 FTS	0.0938 ug/mL
					LC5:3FTCA_00008	1 mL	5:3 FTCA	0.1 ug/mL
					LC6:2diPAP_00009	1 mL	6:2 diPAP	0.0972936 ug/mL
					LC6:2FTS_00024	1 mL	6:2 FTS	0.0952 ug/mL
					LC62/82diPAP_00007	1 mL	6:2/8:2 diPAP	0.0975904 ug/mL
					LC7:3FTCA_00007	1 mL	7:3 FTCA	0.1 ug/mL
					LC8:2diPAP_00007	1 mL	8:2 diPAP	0.0978284 ug/mL
					LC8:2FTS_00024	1 mL	8:2 FTS	0.096 ug/mL
					LC9CI-PF3ONS_00023	1 mL	9Cl-PF3ONS	0.0934 ug/mL
					LCbr-NETFOSAA_00023	1 mL	NETFOSAA	0.1 ug/mL
					LCbr-NMeFOSAA_00022	1 mL	NMeFOSAA	0.1 ug/mL
					LCDONA_00032	1 mL	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.0944 ug/mL
					LCFBFA-I_00007	1 mL	FBFA	0.1 ug/mL
					LCFDEA_00009	1 mL	10:2 FTCA	0.1 ug/mL
					LCFDUEA_00007	1 mL	10:2 FTUCA	0.1 ug/mL
					LCFHFA_00009	1 mL	6:2 FTCA	0.1 ug/mL
					LCFHUEA_00009	1 mL	6:2 FTUCA	0.1 ug/mL
					LCFHxSA-I_00009	1 mL	FHxSA	0.1 ug/mL
					LCFOEA_00010	1 mL	8:2 FTCA	0.1 ug/mL
					LCFOUEA_00007	1 mL	8:2 FTUCA	0.1 ug/mL
					LCHFPO-DA_00027	1 mL	HFPO-DA (GenX)	0.1 ug/mL
					LCLPFPrS_00009	1 mL	PFPrS	0.092 ug/mL
					LCN-EtFOSA-M_00025	1 mL	NETFOSA	0.1 ug/mL
					LCN-EtFOSE-M_00018	1 mL	NETFOSE	0.1 ug/mL
					LCN-MeFOSA-M_00027	1 mL	NMeFOSA	0.1 ug/mL
					LCN-MeFOSE-M_00021	1 mL	NMeFOSE	0.1 ug/mL
					LCPF4OPeA_00015	1 mL	PFMPA	0.1 ug/mL
					LCPF5OHxA_00011	1 mL	PFMBA	0.1 ug/mL
					LCPFBA_00028	1 mL	Perfluorobutanoic acid (PFBA)	0.1 ug/mL
					LCPFBSA_00025	1 mL	Perfluorobutanesulfonic acid (PFBS)	0.0888 ug/mL
					LCPFDA_00033	1 mL	Perfluorodecanoic acid (PFDA)	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFDoA_00031	1 mL	Perfluorododecanoic acid (PFDoA)	0.1 ug/mL
					LCPFDoS_00020	1 mL	Perfluorododecanesulfonic acid (PFDoS)	0.097 ug/mL
					LCPFDSA_00016	1 mL	Perfluorodecanesulfonic acid (PFDS)	0.0964 ug/mL
					LCPFECHS_00007	1 mL	PFECHS	0.0924 ug/mL
					LCPFEESA_00010	1 mL	PFEESA	0.0892 ug/mL
					LCPFHpA_00035	1 mL	Perfluoroheptanoic acid (PFHpA)	0.1 ug/mL
					LCPFHpSA_00021	1 mL	Perfluoroheptanesulfonic acid (PFHpS)	0.0954 ug/mL
					LCPFHxA_00033	1 mL	Perfluorohexanoic acid (PFHxA)	0.1 ug/mL
					LCPFHxDA_00028	1 mL	Perfluoro-n-hexadecanoic acid (PFHxDA)	0.1 ug/mL
					LCPFHxS-br_00027	1 mL	Perfluorohexanesulfonic acid (PFHxS)	0.0912 ug/mL
					LCPFNA_00035	1 mL	Perfluorononanoic acid (PFNA)	0.1 ug/mL
					LCPFNS_00020	1 mL	Perfluorononanesulfonic acid (PFNS)	0.0962 ug/mL
					LCPFOA_00032	1 mL	Perfluorooctanoic acid (PFOA)	0.1 ug/mL
					LCPFODA_00028	1 mL	Perfluoro-n-octadecanoic acid (PFODA)	0.1 ug/mL
					LCPFOS-br_00029	1 mL	Perfluorooctanesulfonic acid (PFOS)	0.093 ug/mL
					LCPFOSA_00029	1 mL	Perfluorooctanesulfonamide (FOSA)	0.1 ug/mL
					LCPFPeA_00028	1 mL	Perfluoropentanoic acid (PFPeA)	0.1 ug/mL
					LCPFPeS_00020	1 mL	Perfluoropentanesulfonic acid (PFPeS)	0.094 ug/mL
					LCPFTeDA_00032	1 mL	Perfluorotetradecanoic acid (PFTeA)	0.1 ug/mL
					LCPFTrDA_00030	1 mL	Perfluorotridecanoic acid (PFTrDA)	0.1 ug/mL
					LCPFUDa_00033	1 mL	Perfluoroundecanoic acid (PFUnA)	0.1 ug/mL
					LCPPropionic_00024	1 mL	PFPrA	0.097 ug/mL
...LC-36-OPFHpA_00011	10/14/26	Wellington Laboratories, Lot 36OPFHpA0921			(Purchased Reagent)		NFDHA	50 ug/mL
...LC10:2diPAPim_00016	02/08/23	08/08/22	Methanol, Lot 217743	200 mL	LC10:2diPAPim_00015	100 mL	10:2 diPAP	46.1 ug/mL
....LC10:2diPAPim_00015	02/08/23	08/08/22	Methanol, Lot 217743	1000 mL	LC10:2diPAP_00005	0.0922 g	10:2 diPAP	92.2 ug/mL
.....LC10:2diPAP_00005	11/13/23	Toronto Research Chemicals, Lot 5-BKS-67-1			(Purchased Reagent)		10:2 diPAP	100 %
...LC10:2FTS_00016	01/27/27	WELLINGTON, Lot 102FTS0122			(Purchased Reagent)		10:2 FTS	48.3 ug/mL
...LC11CIPF3OUds_00023	02/08/27	Wellington Laboratories, Lot 11CIPF3OUds0222			(Purchased Reagent)		11C1-PF3OUds	47.2 ug/mL
...LC3:3FTCA_00005	02/03/27	Wellington Laboratories, Lot FPrPA0122			(Purchased Reagent)		3:3 FTCA	50 ug/mL
...LC4:2FTS_00024	04/22/27	WELLINGTON, Lot 42FTS0422			(Purchased Reagent)		4:2 FTS	46.9 ug/mL
...LC5:3FTCA_00008	01/05/27	Wellington Laboratories, Lot FPePA1221			(Purchased Reagent)		5:3 FTCA	50 ug/mL
...LC6:2diPAP_00009	03/18/27	Wellington, Lot 62diPAP0222			(Purchased Reagent)		6:2 diPAP	48.6468 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LC6:2FTS 00024	01/04/27		WELLINGTON, Lot 62FTS1221		(Purchased Reagent)		6:2 FTS	47.6 ug/mL
...LC62/82diPAP 00007	01/26/26		Wellington, Lot 6282diPAP0121		(Purchased Reagent)		6:2/8:2 diPAP	48.7952 ug/mL
...LC7:3FTCA 00007	10/13/26		Wellington Laboratories, Lot FHpPA1021		(Purchased Reagent)		7:3 FTCA	50 ug/mL
...LC8:2diPAP 00007	09/09/25		Wellington, Lot 82diPAP0920		(Purchased Reagent)		8:2 diPAP	48.9142 ug/mL
...LC8:2FTS 00024	02/08/27		WELLINGTON, Lot 82FTS0122		(Purchased Reagent)		8:2 FTS	48 ug/mL
...LC9CI-PF3ONS_00023	11/22/26		Wellington Laboratories, Lot 9CIPF3ONS1121		(Purchased Reagent)		9CI-PF3ONS	46.7 ug/mL
...LCbr-NetFOSAA 00023	11/23/26		WELLINGTON, Lot brNetFOSAA1121		(Purchased Reagent)		NetFOSAA	50 ug/mL
...LCbr-NMeFOSAA 00022	07/13/26		WELLINGTON, Lot brNMeFOSAA0621		(Purchased Reagent)		NMeFOSAA	50 ug/mL
...LCDONA_00032	04/18/27		WELLINGTON, Lot NADONA0422		(Purchased Reagent)		4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.2 ug/mL
...LCFBSA-I 00007	11/10/26		Wellington, Lot FBSA1121I		(Purchased Reagent)		FBSA	50 ug/mL
...LCFDEA 00009	09/28/24		Wellington Laboratories, Lot FDEA0921		(Purchased Reagent)		10:2 FTCA	50 ug/mL
...LCFDUEA 00007	10/29/23		Wellington Laboratories, Lot FDUEA1021		(Purchased Reagent)		10:2 FTUCA	50 ug/mL
...LCFHFA 00009	01/05/25		Wellington Laboratories, Lot FHEA1221		(Purchased Reagent)		6:2 FTCA	50 ug/mL
...LCFHUEA 00009	09/03/23		Wellington Laboratories, Lot FHUEA0921		(Purchased Reagent)		6:2 FTUCA	50 ug/mL
...LCFHxSA-I 00009	12/29/26		Wellington, Lot FHxSA1221I		(Purchased Reagent)		FHxSA	50 ug/mL
...LCFOEA 00010	08/18/24		Wellington Laboratories, Lot FOEA0821		(Purchased Reagent)		8:2 FTCA	50 ug/mL
...LCFOUEA 00007	12/29/23		Wellington Laboratories, Lot FOUEA1221		(Purchased Reagent)		8:2 FTUCA	50 ug/mL
...LCHFPO-DA 00027	04/05/25		WELLINGTON, Lot HFPODA0322		(Purchased Reagent)		HFPO-DA (GenX)	50 ug/mL
...LCLPFPPrS 00009	04/20/27		Wellington Laboratories, Lot LPFPPrS0422		(Purchased Reagent)		PFPrS	46 ug/mL
...LCN-EtFOSA-M 00025	04/20/27		WELLINGTON, Lot NetFOSA0422M		(Purchased Reagent)		NetFOSA	50 ug/mL
...LCN-EtFOSE-M 00018	09/23/26		WELLINGTON, Lot NetFOSE0921M		(Purchased Reagent)		NetFOSE	50 ug/mL
...LCN-MeFOSA-M 00027	02/28/27		WELLINGTON, Lot NMeFOSA0222M		(Purchased Reagent)		NMeFOSA	50 ug/mL
...LCN-MeFOSE-M 00021	05/13/27		WELLINGTON, Lot NMeFOSE0522M		(Purchased Reagent)		NMeFOSE	50 ug/mL
...LCPF40PeA 00015	08/02/27		Wellington Laboratories, Lot PF40PeA0722		(Purchased Reagent)		PFMPA	50 ug/mL
...LCPF5OHxA 00011	10/19/26		Wellington Laboratories, Lot PF5OHxA1021		(Purchased Reagent)		PFMBA	50 ug/mL
...LCPFBA 00028	04/18/27		Wellington Laboratories, Lot PFBA0422		(Purchased Reagent)		Perfluorobutanoic acid (PFBA)	50 ug/mL
...LCPFBSA_00025	04/05/27		Wellington Laboratories, Lot LPFBS0322		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.4 ug/mL
...LCPFDA 00033	02/22/27		Wellington Laboratories, Lot PFDA0222		(Purchased Reagent)		Perfluorodecanoic acid (PFDA)	50 ug/mL
...LCPFDoA_00031	01/27/27		Wellington Laboratories, Lot PFDoA0122		(Purchased Reagent)		Perfluorododecanoic acid (PFDoA)	50 ug/mL
...LCPFDoS_00020	04/20/27		Wellington Laboratories, Lot LPFDoS0422		(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48.5 ug/mL
...LCPFDSA_00016	02/22/27		Wellington Laboratories, Lot LPFDS0222		(Purchased Reagent)		Perfluorodecanesulfonic acid (PFDS)	48.2 ug/mL
...LCPFECBS 00007	03/28/27		Wellington Laboratories, Lot PFECHS0222		(Purchased Reagent)		PFECHS	46.2 ug/mL
...LCPFEEA 00010	11/22/26		Wellington Laboratories, Lot PFEEA1121		(Purchased Reagent)		PFEEA	44.6 ug/mL
...LCPFHpA_00035	03/17/27		Wellington Laboratories, Lot PFHpA0222		(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	50 ug/mL
...LCPFHpSA_00021	01/27/27		Wellington Laboratories, Lot LPFHps0122		(Purchased Reagent)		Perfluoroheptanesulfonic acid (PFHps)	47.7 ug/mL
...LCPFHxA 00033	01/27/27		Wellington Laboratories, Lot PFHxA0122		(Purchased Reagent)		Perfluorohexanoic acid (PFHxA)	50 ug/mL
...LCPFHxDA_00028	02/23/27		Wellington Laboratories, Lot PFHxDA0222		(Purchased Reagent)		Perfluoro-n-hexadecanoic acid (PFHxDA)	50 ug/mL
...LCPFHxS-br_00027	12/07/26		Wellington Laboratories, Lot brPFHxSK1211		(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	45.6 ug/mL
...LCPFNA 00035	01/27/27		Wellington Laboratories, Lot PFNA0122		(Purchased Reagent)		Perfluorononanoic acid (PFNA)	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LCPFNS_00020	04/20/27		Wellington Laboratories, Lot LPFNS0422		(Purchased Reagent)		Perfluorononanesulfonic acid (PFNS)	48.1 ug/mL
...LCPFOA_00032	02/22/27		Wellington Laboratories, Lot PFOA0222		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL
...LCPFODA_00028	09/03/26		Wellington Laboratories, Lot PFODA0821		(Purchased Reagent)		Perfluoro-n-octadecanoic acid (PFODA)	50 ug/mL
...LCPFOS-br_00029	12/07/26		Wellington Laboratories, Lot brPFOSK1121		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.5 ug/mL
...LCPFOSA_00029	04/05/27		Wellington Laboratories, Lot FOSA0322I		(Purchased Reagent)		Perfluorooctanesulfonamide (FOSA)	50 ug/mL
...LCPFPeA_00028	02/08/27		Wellington Laboratories, Lot PFPeA0122		(Purchased Reagent)		Perfluoropentanoic acid (PFPeA)	50 ug/mL
...LCPFPeS_00020	02/07/27		Wellington Laboratories, Lot LPFPeS0122		(Purchased Reagent)		Perfluoropentanesulfonic acid (PFPeS)	47 ug/mL
...LCPFTeDA_00032	02/28/27		Wellington Laboratories, Lot PFTeDA0222		(Purchased Reagent)		Perfluorotetradecanoic acid (PFTeA)	50 ug/mL
...LCPFTTrDA_00030	02/07/27		Wellington Laboratories, Lot PFTTrDA0122		(Purchased Reagent)		Perfluorotridecanoic acid (PFTTrDA)	50 ug/mL
...LCPFUdA_00033	02/22/27		Wellington Laboratories, Lot PFUdA0222		(Purchased Reagent)		Perfluoroundecanoic acid (PFUnA)	50 ug/mL
...LCPropionic_00024	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	LCPropionic_00023	5 mL	PFPrA	48.5 ug/mL
....LCPropionic_00023	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	Propionic Acd_00002	100 uL	PFPrA	970 ug/mL
.....Propionic Acid_00002	06/09/25		Sigma Aldrich, Lot MKCK6675		(Purchased Reagent)		PFPrA	97 %
..LCPFC3SP_TB3_00040	02/11/23	08/11/22	Methanol, Lot 217743	500 mL	LCBP1_00005	50 uL	PS Acid	0.1 ug/mL
					LCBP2_00004	50 uL	Hydro-PS Acid	0.1 ug/mL
					LCBP4_00003	50 uL	R-PSDA	0.1 ug/mL
					LCBP5_00004	50 uL	Hydrolyzed PSDA	0.1 ug/mL
					LCBP6_00004	50 uL	R-PSDCA	0.1 ug/mL
					LCEVEA_00004	50 uL	EVE Acid	0.1 ug/mL
					LCHEVEA_00003	50 uL	Hydro-EVE Acid	0.1 ug/mL
					LCMTP_00003	50 uL	MTP	0.1 ug/mL
					LCNVHOS_00003	50 uL	NVHOS	0.1 ug/mL
					LCPEPA_00005	50 uL	PEPA	0.1 ug/mL
					LCPFECA_G_00004	50 uL	PFPE-1	0.1 ug/mL
					LCPFMOAA_00007	50 uL	PFMOAA	0.1 ug/mL
					LCPFO2HxA_00005	50 uL	PFO2HxA	0.1 ug/mL
					LCPFO3OA_00006	50 uL	PFO3OA	0.1 ug/mL
					LCPFO4DA_00005	50 uL	PFO4DA	0.1 ug/mL
					LCPFO5DoA_00004	50 uL	PFO5DA	0.1 ug/mL
					LCPMPA_00005	50 uL	PMPA	0.1 ug/mL
					LCR-EVE_00005	50 uL	R-EVE	0.1 ug/mL
..LCBP1_00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PS Acid	0.1 %
..LCBP2_00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydro-PS Acid	0.1 %
..LCBP4_00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-PSDA	0.1 %
..LCBP5_00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydrolyzed PSDA	0.1 %
..LCBP6_00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-PSDCA	0.1 %
..LCEVEA_00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		EVE Acid	0.1 %
..LCHEVEA_00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydro-EVE Acid	0.1 %
..LCMTP_00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		MTP	0.1 %
..LCNVHOS_00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		NVHOS	0.1 %

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCPEPA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PEPA	0.1 %
..LCPFECA G 00004	01/23/24		Chemours, Lot NA		(Purchased Reagent)		PFPE-1	1000 ug/mL
..LCPFMOAA 00007	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO3OA	0.1 %
..LCPFO2HxA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO2HxA	0.1 %
..LCPFO3OA 00006	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO3OA	0.1 %
..LCPFO4DA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO4DA	0.1 %
..LCPFO5DoA 00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO5DA	0.1 %
..LCPMPA 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PMPA	0.1 %
..LCR-EVE 00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-EVE	0.1 %
LCPFC+6C_LL7_00006	02/08/23	10/19/22	MeOH/H2O, Lot 218266	200 mL	LCMPFC_ICALSU_00057	10 mL	13C2 PFOA	1.25 ng/mL
							13C8 PFOA	1.25 ng/mL
							13C8 PFOS	1.195 ng/mL
							d-N-EtFOSA-M	1.25 ng/mL
							d-N-MeFOSA-M	1.25 ng/mL
							d3-NMeFOSAA	1.25 ng/mL
							d5-NMeFOSAA	1.25 ng/mL
							d7-N-MeFOSE-M	1.25 ng/mL
							d9-N-EtFOSE-M	1.25 ng/mL
							13C2 10:2 FTS	1.20625 ng/mL
							M2-4:2 FTS	1.1725 ng/mL
							M2-6:2 FTS	1.1875 ng/mL
							M2-8:2 FTS	1.2 ng/mL
							13C2 PFHxDA	1.25 ng/mL
							13C2 PFTeDA	1.25 ng/mL
							13C3 HFPO-DA	1.25 ng/mL
							13C4-6:2 diPAP	1.21633 ng/mL
							13C4-8:2 diPAP	1.22296 ng/mL
							13C4 PFHpA	1.25 ng/mL
							13C5 PFPeA	1.25 ng/mL
							13C8 FOSA	1.25 ng/mL
							13C-10:2 FTCA	1.25 ng/mL
							13C-10:2 FTUCA	1.25 ng/mL
							13C-6:2 FTCA	1.25 ng/mL
							13C-6:2 FTUCA	1.25 ng/mL
							13C-8:2 FTCA	1.25 ng/mL
							13C-8:2 FTUCA	1.25 ng/mL
							13C4 PFBA	1.25 ng/mL
							13C3 PFBS	1.165 ng/mL
							13C2 PFDA	1.25 ng/mL
							13C2 PFDoA	1.25 ng/mL
							13C2 PFHxA	1.25 ng/mL
							18O2 PFHxS	1.1825 ng/mL
							13C5 PFNA	1.25 ng/mL
							13C4 PFOA	1.25 ng/mL
							13C4 PFOS	1.1975 ng/mL
							13C2 PFUnA	1.25 ng/mL
					LCPFC+SP+6_00107	100 mL	NFDHA	10 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							10:2 diPAP	10.0498 ng/mL
							10:2 FTS	9.66 ng/mL
							11Cl-PF3OUds	9.44 ng/mL
							3:3 FTCA	10 ng/mL
							4:2 FTS	9.38 ng/mL
							5:3 FTCA	10 ng/mL
							6:2 diPAP	9.72936 ng/mL
							6:2 FTS	9.52 ng/mL
							6:2/8:2 diPAP	9.75904 ng/mL
							7:3 FTCA	10 ng/mL
							8:2 diPAP	9.78284 ng/mL
							8:2 FTS	9.6 ng/mL
							9Cl-PF3ONS	9.34 ng/mL
							NEtFOSAA	10 ng/mL
							NMeFOSAA	10 ng/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	9.44 ng/mL
							FBSA	10 ng/mL
							10:2 FTCA	10 ng/mL
							10:2 FTUCA	10 ng/mL
							6:2 FTCA	10 ng/mL
							6:2 FTUCA	10 ng/mL
							FHxSA	10 ng/mL
							8:2 FTCA	10 ng/mL
							8:2 FTUCA	10 ng/mL
							HFPO-DA (GenX)	10 ng/mL
							PFPPrS	9.2 ng/mL
							NEtFOSA	10 ng/mL
							NEtFOSE	10 ng/mL
							NMeFOSA	10 ng/mL
							NMeFOSE	10 ng/mL
							PFMPA	10 ng/mL
							PFMBA	10 ng/mL
							Perfluorobutanoic acid (PFBA)	10 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	8.88 ng/mL
							Perfluorodecanoic acid (PFDA)	10 ng/mL
							Perfluorododecanoic acid (PFDoA)	10 ng/mL
							Perfluorododecanesulfonic acid (PFDoS)	9.7 ng/mL
							Perfluorodecanesulfonic acid (PFDS)	9.64 ng/mL
							PFECHS	9.24 ng/mL
							PFEESA	8.92 ng/mL
							Perfluoroheptanoic acid (PFHpA)	10 ng/mL
							Perfluoroheptanesulfonic acid (PFHpS)	9.54 ng/mL

REAGENT TRACEABILITY SUMMARY

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SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorohexanoic acid (PFHxA)	10 ng/mL
							Perfluoro-n-hexadecanoic acid (PFHxDA)	10 ng/mL
							Perfluorohexanesulfonic acid (PFHxS)	9.12 ng/mL
							Perfluorononanoic acid (PFNA)	10 ng/mL
							Perfluorononanesulfonic acid (PFNS)	9.62 ng/mL
							Perfluorooctanoic acid (PFOA)	10 ng/mL
							Perfluoro-n-octadecanoic acid (PFODA)	10 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	9.3 ng/mL
							Perfluorooctanesulfonamide (FOSA)	10 ng/mL
							Perfluoropentanoic acid (PFPeA)	10 ng/mL
							Perfluoropentanesulfonic acid (PFPeS)	9.4 ng/mL
							Perfluorotetradecanoic acid (PFTeA)	10 ng/mL
							Perfluorotridecanoic acid (PFTrDA)	10 ng/mL
							Perfluoroundecanoic acid (PFUnA)	10 ng/mL
							PFPrA	9.7 ng/mL
					LCPF3SP_TB3_00040	20 mL	PS Acid	10 ng/mL
							Hydro-PS Acid	10 ng/mL
							R-PSDA	10 ng/mL
							Hydrolyzed PSDA	10 ng/mL
							R-PSDCA	10 ng/mL
							EVE Acid	10 ng/mL
							Hydro-EVE Acid	10 ng/mL
							MTP	10 ng/mL
							NVHOS	10 ng/mL
							PEPA	10 ng/mL
.LCMPFC_ICALSU_00057	04/03/23	10/19/22	Methanol, Lot 218266	200 mL	LCM2PFOA_00037	100 uL	13C2 PFOA	0.025 ug/mL
					LCM8PFOA_00003	100 uL	13C8 PFOA	0.025 ug/mL
					LCM8PFOS_00005	100 uL	13C8 PFOS	0.0239 ug/mL
					LCMPFC_IDA+_00378	200 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

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SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							d3-NMeFOSAA	0.025 ug/mL
							d5-NEtFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024125 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.02375 ug/mL
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							18O2 PFHxS	0.02365 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
..LCM2PFOA_00037	12/09/26		Wellington Laboratories, Lot M2PFOA0122		(Purchased Reagent)		13C2 PFOA	50 ug/mL
..LCM8PFOA_00003	07/22/25		Wellington Laboratories, Lot M8PFOA0720		(Purchased Reagent)		13C8 PFOA	50 ug/mL
..LCM8PFOS_00005	01/14/26		Wellington Laboratories, Lot M8PFOS0121		(Purchased Reagent)		13C8 PFOS	47.8 ug/mL
..LCMPFC_IDA+_00378	04/03/23	10/04/22	Methanol, Lot 218266	200 mL	LCMPFC_IDA+_00376	50 mL	d-N-EtFOSA-M	0.025 ug/mL
							d-N-MeFOSA-M	0.025 ug/mL
							d3-NMeFOSAA	0.025 ug/mL
							d5-NEtFOSAA	0.025 ug/mL
							d7-N-MeFOSE-M	0.025 ug/mL
							d9-N-EtFOSE-M	0.025 ug/mL
							13C2 10:2 FTS	0.024125 ug/mL
							M2-4:2 FTS	0.02345 ug/mL
							M2-6:2 FTS	0.02375 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							M2-8:2 FTS	0.024 ug/mL
							13C2 PFHxDA	0.025 ug/mL
							13C2 PFTeDA	0.025 ug/mL
							13C3 HFPO-DA	0.025 ug/mL
							13C4-6:2 diPAP	0.0243267 ug/mL
							13C4-8:2 diPAP	0.0244592 ug/mL
							13C4 PFHpA	0.025 ug/mL
							13C5 PFPeA	0.025 ug/mL
							13C8 FOSA	0.025 ug/mL
							13C-10:2 FTCA	0.025 ug/mL
							13C-10:2 FTUCA	0.025 ug/mL
							13C-6:2 FTCA	0.025 ug/mL
							13C-6:2 FTUCA	0.025 ug/mL
							13C-8:2 FTCA	0.025 ug/mL
							13C-8:2 FTUCA	0.025 ug/mL
							13C4 PFBA	0.025 ug/mL
							13C3 PFBS	0.0233 ug/mL
							13C2 PFDA	0.025 ug/mL
							13C2 PFDoA	0.025 ug/mL
							13C2 PFHxA	0.025 ug/mL
							18O2 PFHxS	0.02365 ug/mL
							13C5 PFNA	0.025 ug/mL
							13C4 PFOA	0.025 ug/mL
							13C4 PFOS	0.02395 ug/mL
							13C2 PFUnA	0.025 ug/mL
...LCMPFC_IDA+_00376	04/03/23	10/03/22	Methanol, Lot 218266	500 mL	LCd-NEtFOSA-M_00034	1 mL	d-N-EtFOSA-M	0.1 ug/mL
					LCd-NMeFOSA-M_00035	1 mL	d-N-MeFOSA-M	0.1 ug/mL
					LCd3-NMeFOSAA_00046	1 mL	d3-NMeFOSAA	0.1 ug/mL
					LCd5-NEtFOSAA_00047	1 mL	d5-NEtFOSAA	0.1 ug/mL
					LCd7-NMeFOSEM_00035	1 mL	d7-N-MeFOSE-M	0.1 ug/mL
					LCd9-NEtFOSEM_00032	1 mL	d9-N-EtFOSE-M	0.1 ug/mL
					LCM10:2 FTS_00005	1 mL	13C2 10:2 FTS	0.0965 ug/mL
					LCM2-4:FTS_00036	1 mL	M2-4:2 FTS	0.0938 ug/mL
					LCM2-6:FTS_00040	1 mL	M2-6:2 FTS	0.095 ug/mL
					LCM2-8:2FTS_00045	1 mL	M2-8:2 FTS	0.096 ug/mL
					LCM2PFHxDA_00050	1 mL	13C2 PFHxDA	0.1 ug/mL
					LCM2PFTeDA_00048	1 mL	13C2 PFTeDA	0.1 ug/mL
					LCM3HFPO-DA_00040	1 mL	13C3 HFPO-DA	0.1 ug/mL
					LCM4-6:2diPAP_00008	1 mL	13C4-6:2 diPAP	0.0973068 ug/mL
					LCM4-8:2diPAP_00008	1 mL	13C4-8:2 diPAP	0.097837 ug/mL
					LCM4PFHPA_00047	1 mL	13C4 PFHpA	0.1 ug/mL
					LCM5PFPEA_00048	1 mL	13C5 PFPeA	0.1 ug/mL
					LCM8FOSA_00053	1 mL	13C8 FOSA	0.1 ug/mL
					LCMFDEA_00014	1 mL	13C-10:2 FTCA	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

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SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCMFDUEA 00013	1 mL	13C-10:2 FTUCA	0.1 ug/mL
					LCMFHEA 00012	1 mL	13C-6:2 FTCA	0.1 ug/mL
					LCMFHUEA 00015	1 mL	13C-6:2 FTUCA	0.1 ug/mL
					LCMFOEA 00011	1 mL	13C-8:2 FTCA	0.1 ug/mL
					LCMFOUEA 00013	1 mL	13C-8:2 FTUCA	0.1 ug/mL
					LCMPFBA 00050	1 mL	13C4 PFBA	0.1 ug/mL
					LCMPFBS 00035	1 mL	13C3 PFBS	0.0932 ug/mL
					LCMPFDA 00056	1 mL	13C2 PFDA	0.1 ug/mL
					LCMPFDoA 00049	1 mL	13C2 PFDoA	0.1 ug/mL
					LCMPFHxA 00055	1 mL	13C2 PFHxA	0.1 ug/mL
					LCMPFHxS 00048	1 mL	18O2 PFHxS	0.0946 ug/mL
					LCMPFNA 00048	1 mL	13C5 PFNA	0.1 ug/mL
					LCMPFOA 00052	1 mL	13C4 PFOA	0.1 ug/mL
					LCMPFOS 00064	1 mL	13C4 PFOS	0.0958 ug/mL
					LCMPFUdA 00051	1 mL	13C2 PFUnA	0.1 ug/mL
....LCd-NEtFOSA-M 00034	03/17/27		WELLINGTON, Lot dNEtFOSA0322M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
....LCd-NMeFOSA-M 00035	10/07/26		WELLINGTON, Lot dNMeFOSA1021M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
....LCd3-NMeFOSAA 00046	02/22/27		WELLINGTON, Lot d3NMeFOSAA0222		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
....LCd5-NEtFOSAA 00047	09/28/26		WELLINGTON, Lot d5NEtFOSAA0921		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
....LCd7-NMeFOSEM 00035	01/27/27		WELLINGTON, Lot d7NMeFOSE1221M		(Purchased Reagent)		d7-N-MeFOSE-M	50 ug/mL
....LCd9-NEtFOSEM 00032	01/27/27		WELLINGTON, Lot d9NEtFOSE1221M		(Purchased Reagent)		d9-N-EtFOSE-M	50 ug/mL
....LCM10:2 FTS_00005	04/26/26		Cambridge Isotope Laboratories, Lot SEBC-003		(Purchased Reagent)		13C2 10:2 FTS	48.25 ug/mL
....LCM2-4:FTS 00036	10/13/26		Wellington, Lot M242FTS1021		(Purchased Reagent)		M2-4:2 FTS	46.9 ug/mL
....LCM2-6:FTS 00040	10/13/26		WELLINGTON, Lot M262FTS1021		(Purchased Reagent)		M2-6:2 FTS	47.5 ug/mL
....LCM2-8:2FTS 00045	11/23/26		WELLINGTON, Lot M282FTS1121		(Purchased Reagent)		M2-8:2 FTS	48 ug/mL
....LCM2PFHxDA 00050	11/23/26		Wellington Laboratories, Lot M2PFHxDA1121		(Purchased Reagent)		13C2 PFHxDA	50 ug/mL
....LCM2PFTeDA 00048	11/22/26		Wellington Laboratories, Lot M2PFTeDA1121		(Purchased Reagent)		13C2 PFTeDA	50 ug/mL
....LCM3HFPO-DA 00040	11/11/24		WELLINGTON, Lot M3HFPODA1121		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
....LCM4-6:2diPAP 00008	08/05/26		Wellington, Lot M462diPAP0721		(Purchased Reagent)		13C4-6:2 diPAP	48.6534 ug/mL
....LCM4-8:2diPAP 00008	12/01/26		Wellington, Lot M482diPAP1121		(Purchased Reagent)		13C4-8:2 diPAP	48.9185 ug/mL
....LCM4PFHPA 00047	12/07/26		Wellington Laboratories, Lot M4PFHPA1121		(Purchased Reagent)		13C4 PFHPA	50 ug/mL
....LCM5PFPEA 00048	08/10/26		Wellington Laboratories, Lot M5PFPEA0821		(Purchased Reagent)		13C5 PFPEA	50 ug/mL
....LCM8FOSA 00053	03/17/27		Wellington Laboratories, Lot M8FOSA0322I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
....LCMFDEA 00014	09/27/24		Wellington Laboratories, Lot MFDEA0921		(Purchased Reagent)		13C-10:2 FTCA	50 ug/mL
....LCMFDUEA 00013	11/22/23		Wellington Laboratories, Lot MFDUEA1221		(Purchased Reagent)		13C-10:2 FTUCA	50 ug/mL
....LCMFHEA 00012	09/29/24		Wellington Laboratories, Lot MFHEA0921		(Purchased Reagent)		13C-6:2 FTCA	50 ug/mL
....LCMFHUEA 00015	02/18/24		Wellington Laboratories, Lot MFHUEA0322		(Purchased Reagent)		13C-6:2 FTUCA	50 ug/mL
....LCMFOEA 00011	11/22/24		Wellington Laboratories, Lot MFOEA1121		(Purchased Reagent)		13C-8:2 FTCA	50 ug/mL
....LCMFOUEA 00013	12/07/23		Wellington Laboratorie, Lot MFOUEA1121		(Purchased Reagent)		13C-8:2 FTUCA	50 ug/mL
....LCMPFBA 00050	07/12/26		Wellington Laboratories, Lot MPFBA0621		(Purchased Reagent)		13C4 PFBA	50 ug/mL
....LCMPFBS 00035	02/07/27		Wellington Laboratories, Lot M3PFBS0222		(Purchased Reagent)		13C3 PFBS	46.6 ug/mL
....LCMPFDA 00056	12/08/26		Wellington Laboratories, Lot MPFDA1221		(Purchased Reagent)		13C2 PFDA	50 ug/mL
....LCMPFDoA 00049	03/17/27		Wellington Laboratories, Lot MPFDoA0322		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
....LCMPFHxA 00055	10/04/26		Wellington Laboratories, Lot MPFHxA0921		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
....LCMPFHxS 00048	10/29/26		Wellington Laboratories, Lot MPFHxS1021		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
....LCMPFNA 00048	10/29/26		Wellington Laboratories, Lot MPFNA1021		(Purchased Reagent)		13C5 PFNA	50 ug/mL
....LCMPFOA 00052	12/07/26		Wellington Laboratories, Lot MPFOA1121		(Purchased Reagent)		13C4 PFOA	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
....LCMPFOS 00064	01/27/27		Wellington Laboratories, Lot MPFOS0122		(Purchased Reagent)		13C4 PFOS	47.9 ug/mL
....LCMPFudA 00051	12/09/26		Wellington Laboratories, Lot MPFudA1221		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
.LCPFC+SP+6_00107	02/08/23	10/04/22	Methanol, Lot 218266	250 mL	LCPFC+SP+6_00098	50 mL	NFDHA	0.02 ug/mL
							10:2 diPAP	0.0200996 ug/mL
							10:2 FTS	0.01932 ug/mL
							11Cl-PF3OUdS	0.01888 ug/mL
							3:3 FTCA	0.02 ug/mL
							4:2 FTS	0.01876 ug/mL
							5:3 FTCA	0.02 ug/mL
							6:2 diPAP	0.0194587 ug/mL
							6:2 FTS	0.01904 ug/mL
							6:2/8:2 diPAP	0.0195181 ug/mL
							7:3 FTCA	0.02 ug/mL
							8:2 diPAP	0.0195657 ug/mL
							8:2 FTS	0.0192 ug/mL
							9Cl-PF3ONS	0.01868 ug/mL
							NEtFOSAA	0.02 ug/mL
							NMeFOSAA	0.02 ug/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.01888 ug/mL
							FBSA	0.02 ug/mL
							10:2 FTCA	0.02 ug/mL
							10:2 FTUCA	0.02 ug/mL
							6:2 FTCA	0.02 ug/mL
							6:2 FTUCA	0.02 ug/mL
							FHxSA	0.02 ug/mL
							8:2 FTCA	0.02 ug/mL
							8:2 FTUCA	0.02 ug/mL
							HFPO-DA (GenX)	0.02 ug/mL
							PFPrS	0.0184 ug/mL
							NEtFOSA	0.02 ug/mL
							NEtFOSE	0.02 ug/mL
							NMeFOSA	0.02 ug/mL
							NMeFOSE	0.02 ug/mL
							PFMPA	0.02 ug/mL
							PFMBA	0.02 ug/mL
							Perfluorobutanoic acid (PFBA)	0.02 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.01776 ug/mL
							Perfluorodecanoic acid (PFDA)	0.02 ug/mL
							Perfluorododecanoic acid (PFDoA)	0.02 ug/mL
							Perfluorododecanesulfonic acid (PFDoS)	0.0194 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorodecanesulfonic acid (PFDS)	0.01928 ug/mL
							PFECHS	0.01848 ug/mL
							PFEESA	0.01784 ug/mL
							Perfluoroheptanoic acid (PFHpA)	0.02 ug/mL
							Perfluoroheptanesulfonic acid (PFHpS)	0.01908 ug/mL
							Perfluorohexanoic acid (PFHxA)	0.02 ug/mL
							Perfluoro-n-hexadecanoic acid (PFHxDA)	0.02 ug/mL
							Perfluorohexanesulfonic acid (PFHxS)	0.01824 ug/mL
							Perfluorononanoic acid (PFNA)	0.02 ug/mL
							Perfluorononanesulfonic acid (PFNS)	0.01924 ug/mL
							Perfluorooctanoic acid (PFOA)	0.02 ug/mL
							Perfluoro-n-octadecanoic acid (PFODA)	0.02 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	0.0186 ug/mL
							Perfluorooctanesulfonamide (FOSA)	0.02 ug/mL
							Perfluoropentanoic acid (PFPeA)	0.02 ug/mL
							Perfluoropentanesulfonic acid (PFPeS)	0.0188 ug/mL
							Perfluorotetradecanoic acid (PFTeA)	0.02 ug/mL
							Perfluorotridecanoic acid (PFTTrDA)	0.02 ug/mL
							Perfluoroundecanoic acid (PFUnA)	0.02 ug/mL
							PFPrA	0.0194 ug/mL
..LCPFC+SP+6_00098	02/08/23	10/03/22	Methanol, Lot 218266	500 mL	LC-36-OPFHpA_00011	1 mL	NFDHA	0.1 ug/mL
					LC10:2diPAPim_00016	1.09 mL	10:2 diPAP	0.100498 ug/mL
					LC10:2FTS_00016	1 mL	10:2 FTS	0.0966 ug/mL
					LC11CIPF3OUds_00023	1 mL	11C1-PF3OUds	0.0944 ug/mL
					LC3:3FTCA_00005	1 mL	3:3 FTCA	0.1 ug/mL
					LC4:2FTS_00024	1 mL	4:2 FTS	0.0938 ug/mL
					LC5:3FTCA_00008	1 mL	5:3 FTCA	0.1 ug/mL
					LC6:2diPAP_00009	1 mL	6:2 diPAP	0.0972936 ug/mL
					LC6:2FTS_00024	1 mL	6:2 FTS	0.0952 ug/mL
					LC62/82diPAP_00007	1 mL	6:2/8:2 diPAP	0.0975904 ug/mL
					LC7:3FTCA_00007	1 mL	7:3 FTCA	0.1 ug/mL
					LC8:2diPAP_00007	1 mL	8:2 diPAP	0.0978284 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LC8:2FTS_00024	1 mL	8:2 FTS	0.096 ug/mL
					LC9CI-PF3ONS_00023	1 mL	9CI-PF3ONS	0.0934 ug/mL
					LCbr-NetFOSAA_00023	1 mL	NetFOSAA	0.1 ug/mL
					LCbr-NMeFOSAA_00022	1 mL	NMeFOSAA	0.1 ug/mL
					LCDONA_00032	1 mL	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.0944 ug/mL
					LCFBSA-I_00007	1 mL	FBSA	0.1 ug/mL
					LCFDEA_00009	1 mL	10:2 FTCA	0.1 ug/mL
					LCFDUEA_00007	1 mL	10:2 FTUCA	0.1 ug/mL
					LCFHFA_00009	1 mL	6:2 FTCA	0.1 ug/mL
					LCFHUEA_00009	1 mL	6:2 FTUCA	0.1 ug/mL
					LCFHxSA-I_00009	1 mL	FHxSA	0.1 ug/mL
					LCFOEA_00010	1 mL	8:2 FTCA	0.1 ug/mL
					LCFOUEA_00007	1 mL	8:2 FTUCA	0.1 ug/mL
					LCHFPO-DA_00027	1 mL	HFPO-DA (GenX)	0.1 ug/mL
					LCLPFPrS_00009	1 mL	PFPrS	0.092 ug/mL
					LCN-EtFOSA-M_00025	1 mL	NetFOSA	0.1 ug/mL
					LCN-EtFOSE-M_00018	1 mL	NetFOSE	0.1 ug/mL
					LCN-MeFOSA-M_00027	1 mL	NMeFOSA	0.1 ug/mL
					LCN-MeFOSE-M_00021	1 mL	NMeFOSE	0.1 ug/mL
					LCPF4OPeA_00015	1 mL	PFMPA	0.1 ug/mL
					LCPF5OHxA_00011	1 mL	PFMBA	0.1 ug/mL
					LCPFBA_00028	1 mL	Perfluorobutanoic acid (PFBA)	0.1 ug/mL
					LCPFBSA_00025	1 mL	Perfluorobutanesulfonic acid (PFBS)	0.0888 ug/mL
					LCPFDA_00033	1 mL	Perfluorodecanoic acid (PFDA)	0.1 ug/mL
					LCPFDoA_00031	1 mL	Perfluorododecanoic acid (PFDoA)	0.1 ug/mL
					LCPFDoS_00020	1 mL	Perfluorododecanesulfonic acid (PFDoS)	0.097 ug/mL
					LCPFDSA_00016	1 mL	Perfluorodecanesulfonic acid (PFDS)	0.0964 ug/mL
					LCPFCHS_00007	1 mL	PFECHS	0.0924 ug/mL
					LCPFESA_00010	1 mL	PFEESA	0.0892 ug/mL
					LCPFHpA_00035	1 mL	Perfluoroheptanoic acid (PFHpA)	0.1 ug/mL
					LCPFHpSA_00021	1 mL	Perfluoroheptanesulfonic acid (PFHpS)	0.0954 ug/mL
					LCPFHxA_00033	1 mL	Perfluorohexanoic acid (PFHxA)	0.1 ug/mL
					LCPFHxDA_00028	1 mL	Perfluoro-n-hexadecanoic acid (PFHxDA)	0.1 ug/mL
					LCPFHxS-br_00027	1 mL	Perfluorohexanesulfonic acid (PFHxS)	0.0912 ug/mL
					LCPFNA_00035	1 mL	Perfluorononanoic acid (PFNA)	0.1 ug/mL
					LCPFNS_00020	1 mL	Perfluorononanesulfonic acid (PFNS)	0.0962 ug/mL
					LCPFOA_00032	1 mL	Perfluorooctanoic acid (PFOA)	0.1 ug/mL
					LCPFODA_00028	1 mL	Perfluoro-n-octadecanoic acid (PFODA)	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFOS-br_00029	1 mL	Perfluorooctanesulfonic acid (PFOS)	0.093 ug/mL
					LCPFOSA_00029	1 mL	Perfluorooctanesulfonamide (FOSA)	0.1 ug/mL
					LCPFPeA_00028	1 mL	Perfluoropentanoic acid (PFPeA)	0.1 ug/mL
					LCPFPeS_00020	1 mL	Perfluoropentanesulfonic acid (PFPeS)	0.094 ug/mL
					LCPFTeDA_00032	1 mL	Perfluorotetradecanoic acid (PFTeA)	0.1 ug/mL
					LCPFTrDA_00030	1 mL	Perfluorotridecanoic acid (PFTrDA)	0.1 ug/mL
					LCPFUdA_00033	1 mL	Perfluoroundecanoic acid (PFUnA)	0.1 ug/mL
					LCPropionic_00024	1 mL	PFPrA	0.097 ug/mL
...LC-36-OPFHpA_00011	10/14/26	Wellington Laboratories, Lot 36OPFHpA0921			(Purchased Reagent)		NFDHA	50 ug/mL
...LC10:2diPAPim_00016	02/08/23	08/08/22	Methanol, Lot 217743	200 mL	LC10:2diPAPim_00015	100 mL	10:2 diPAP	46.1 ug/mL
...LC10:2diPAPim_00015	02/08/23	08/08/22	Methanol, Lot 217743	1000 mL	LC10:2diPAP_00005	0.0922 g	10:2 diPAP	92.2 ug/mL
....LC10:2diPAP_00005	11/13/23	Toronto Research Chemicals, Lot 5-BKS-67-1			(Purchased Reagent)		10:2 diPAP	100 %
...LC10:2FTS_00016	01/27/27	WELLINGTON, Lot 102FTS0122			(Purchased Reagent)		10:2 FTS	48.3 ug/mL
...LC11CIPF3OUds_00023	02/08/27	Wellington Laboratories, Lot 11CIPF3OUds0222			(Purchased Reagent)		11C1-PF3OUds	47.2 ug/mL
...LC3:3FTCA_00005	02/03/27	Wellington Laboratories, Lot FPrPA0122			(Purchased Reagent)		3:3 FTCA	50 ug/mL
...LC4:2FTS_00024	04/22/27	WELLINGTON, Lot 42FTS0422			(Purchased Reagent)		4:2 FTS	46.9 ug/mL
...LC5:3FTCA_00008	01/05/27	Wellington Laboratories, Lot FPpPA1221			(Purchased Reagent)		5:3 FTCA	50 ug/mL
...LC6:2diPAP_00009	03/18/27	Wellington, Lot 62diPAP0222			(Purchased Reagent)		6:2 diPAP	48.6468 ug/mL
...LC6:2FTS_00024	01/04/27	WELLINGTON, Lot 62FTS1221			(Purchased Reagent)		6:2 FTS	47.6 ug/mL
...LC62/82diPAP_00007	01/26/26	Wellington, Lot 6282diPAP0121			(Purchased Reagent)		6:2/8:2 diPAP	48.7952 ug/mL
...LC7:3FTCA_00007	10/13/26	Wellington Laboratories, Lot FHpPA1021			(Purchased Reagent)		7:3 FTCA	50 ug/mL
...LC8:2diPAP_00007	09/09/25	Wellington, Lot 82diPAP0920			(Purchased Reagent)		8:2 diPAP	48.9142 ug/mL
...LC8:2FTS_00024	02/08/27	WELLINGTON, Lot 82FTS0122			(Purchased Reagent)		8:2 FTS	48 ug/mL
...LC9CI-PF3ONS_00023	11/22/26	Wellington Laboratories, Lot 9CIPF3ONS1121			(Purchased Reagent)		9C1-PF3ONS	46.7 ug/mL
...LCbr-NetFOSAA_00023	11/23/26	WELLINGTON, Lot brNetFOSAA1121			(Purchased Reagent)		NetFOSAA	50 ug/mL
...LCbr-NMeFOSAA_00022	07/13/26	WELLINGTON, Lot brNMeFOSAA0621			(Purchased Reagent)		NMeFOSAA	50 ug/mL
...LCDONA_00032	04/18/27	WELLINGTON, Lot NADONA0422			(Purchased Reagent)		4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.2 ug/mL
...LCFBSA-I_00007	11/10/26	Wellington, Lot FBSA1121I			(Purchased Reagent)		FBSA	50 ug/mL
...LCFDEA_00009	09/28/24	Wellington Laboratories, Lot FDEA0921			(Purchased Reagent)		10:2 FTCA	50 ug/mL
...LCFDUEA_00007	10/29/23	Wellington Laboratories, Lot FDUEA1021			(Purchased Reagent)		10:2 FTUCA	50 ug/mL
...LCFHFA_00009	01/05/25	Wellington Laboratories, Lot FHEA1221			(Purchased Reagent)		6:2 FTCA	50 ug/mL
...LCFHUEA_00009	09/03/23	Wellington Laboratories, Lot FHUEA0921			(Purchased Reagent)		6:2 FTUCA	50 ug/mL
...LCFHxSA-I_00009	12/29/26	Wellington, Lot FHxSA1221I			(Purchased Reagent)		FHxSA	50 ug/mL
...LCFOEA_00010	08/18/24	Wellington Laboratories, Lot FOEA0821			(Purchased Reagent)		8:2 FTCA	50 ug/mL
...LCFOUEA_00007	12/29/23	Wellington Laboratories, Lot FOUEA1221			(Purchased Reagent)		8:2 FTUCA	50 ug/mL
...LCHFPO-DA_00027	04/05/25	WELLINGTON, Lot HFPODA0322			(Purchased Reagent)		HFPO-DA (GenX)	50 ug/mL
...LCLPFPrS_00009	04/20/27	Wellington Laboratories, Lot LPFPrS0422			(Purchased Reagent)		PFPrS	46 ug/mL
...LCN-EtFOSA-M_00025	04/20/27	WELLINGTON, Lot NETFOSA0422M			(Purchased Reagent)		NetFOSA	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LCN-EtFOSE-M_00018	09/23/26		WELLINGTON, Lot NetFOSE0921M		(Purchased Reagent)		NetFOSE	50 ug/mL
...LCN-MeFOSA-M_00027	02/28/27		WELLINGTON, Lot NMeFOSA0222M		(Purchased Reagent)		NMeFOSA	50 ug/mL
...LCN-MeFOSE-M_00021	05/13/27		WELLINGTON, Lot NMeFOSE0522M		(Purchased Reagent)		NMeFOSE	50 ug/mL
...LCPF40PeA_00015	08/02/27		Wellington Laboratories, Lot PF40PeA0722		(Purchased Reagent)		PFMPA	50 ug/mL
...LCPF50HxA_00011	10/19/26		Wellington Laboratories, Lot PF50HxA1021		(Purchased Reagent)		PFMBA	50 ug/mL
...LCPFBA_00028	04/18/27		Wellington Laboratories, Lot PFBA0422		(Purchased Reagent)		Perfluorobutanoic acid (PFBA)	50 ug/mL
...LCPFBSA_00025	04/05/27		Wellington Laboratories, Lot LPFBS0322		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.4 ug/mL
...LCPFDA_00033	02/22/27		Wellington Laboratories, Lot PFDA0222		(Purchased Reagent)		Perfluorodecanoic acid (PFDA)	50 ug/mL
...LCPFDoA_00031	01/27/27		Wellington Laboratories, Lot PFDoA0122		(Purchased Reagent)		Perfluorododecanoic acid (PFDoA)	50 ug/mL
...LCPFDoS_00020	04/20/27		Wellington Laboratories, Lot LPFDoS0422		(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48.5 ug/mL
...LCPFDSA_00016	02/22/27		Wellington Laboratories, Lot LPFDS0222		(Purchased Reagent)		Perfluorodecanesulfonic acid (PFDS)	48.2 ug/mL
...LCPFECHS_00007	03/28/27		Wellington Laboratories, Lot PFECHS0222		(Purchased Reagent)		PFECHS	46.2 ug/mL
...LCPFEESA_00010	11/22/26		Wellington Laboratories, Lot PFEEESA1121		(Purchased Reagent)		PFEESA	44.6 ug/mL
...LCPFHpA_00035	03/17/27		Wellington Laboratories, Lot PFHpA0222		(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	50 ug/mL
...LCPFHpSA_00021	01/27/27		Wellington Laboratories, Lot LPFHpS0122		(Purchased Reagent)		Perfluoroheptanesulfonic acid (PFHpS)	47.7 ug/mL
...LCPFHxA_00033	01/27/27		Wellington Laboratories, Lot PFHxA0122		(Purchased Reagent)		Perfluorohexanoic acid (PFHxA)	50 ug/mL
...LCPFHxDA_00028	02/23/27		Wellington Laboratories, Lot PFHxDA0222		(Purchased Reagent)		Perfluoro-n-hexadecanoic acid (PFHxDA)	50 ug/mL
...LCPFHxS-br_00027	12/07/26		Wellington Laboratories, Lot brPFHxSK1211		(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	45.6 ug/mL
...LCPFNA_00035	01/27/27		Wellington Laboratories, Lot PFNA0122		(Purchased Reagent)		Perfluorononanoic acid (PFNA)	50 ug/mL
...LCPFNS_00020	04/20/27		Wellington Laboratories, Lot LPFNS0422		(Purchased Reagent)		Perfluorononanesulfonic acid (PFNS)	48.1 ug/mL
...LCPFOA_00032	02/22/27		Wellington Laboratories, Lot PFOA0222		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL
...LCPFODA_00028	09/03/26		Wellington Laboratories, Lot PFODA0821		(Purchased Reagent)		Perfluoro-n-octadecanoic acid (PFODA)	50 ug/mL
...LCPFOS-br_00029	12/07/26		Wellington Laboratories, Lot brPFOSK1121		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.5 ug/mL
...LCPFOSA_00029	04/05/27		Wellington Laboratories, Lot FOSA0322I		(Purchased Reagent)		Perfluorooctanesulfonamide (FOSA)	50 ug/mL
...LCPFPeA_00028	02/08/27		Wellington Laboratories, Lot FFPeA0122		(Purchased Reagent)		Perfluoropentanoic acid (FPPeA)	50 ug/mL
...LCPFPeS_00020	02/07/27		Wellington Laboratories, Lot LPFPeS0122		(Purchased Reagent)		Perfluoropentanesulfonic acid (FPPeS)	47 ug/mL
...LCPFTeDA_00032	02/28/27		Wellington Laboratories, Lot PFTeDA0222		(Purchased Reagent)		Perfluorotetradecanoic acid (PFTeA)	50 ug/mL
...LCPFTTrDA_00030	02/07/27		Wellington Laboratories, Lot PFTTrDA0122		(Purchased Reagent)		Perfluorotridecanoic acid (PFTTrDA)	50 ug/mL
...LCPFUdA_00033	02/22/27		Wellington Laboratories, Lot PFUdA0222		(Purchased Reagent)		Perfluoroundecanoic acid (PFUnA)	50 ug/mL
...LCPropionic_00024	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	LCPropionic_00023	5 mL	PFPrA	48.5 ug/mL
....LCPropionic_00023	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	Propionic Acd_00002	100 uL	PFPrA	970 ug/mL
....Propionic Acd_00002	06/09/25		Sigma Aldrich, Lot MKCK6675		(Purchased Reagent)		PFPrA	97 %
.LCPFC3SP_TB3_00040	02/11/23	08/11/22	Methanol, Lot 217743	500 mL	LCBP1_00005	50 uL	PS Acid	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCBP2_00004	50 uL	Hydro-PS Acid	0.1 ug/mL
					LCBP4_00003	50 uL	R-PSDA	0.1 ug/mL
					LCBP5_00004	50 uL	Hydrolyzed PSDA	0.1 ug/mL
					LCBP6_00004	50 uL	R-PSDCA	0.1 ug/mL
					LCEVEA_00004	50 uL	EVE Acid	0.1 ug/mL
					LCHEVEA_00003	50 uL	Hydro-EVE Acid	0.1 ug/mL
					LCMTP_00003	50 uL	MTP	0.1 ug/mL
					LCNVHOS_00003	50 uL	NVHOS	0.1 ug/mL
					LCPEPA_00005	50 uL	PEPA	0.1 ug/mL
					LCPFECA_G_00004	50 uL	PFPE-1	0.1 ug/mL
					LCPFMOAA_00007	50 uL	PFMOAA	0.1 ug/mL
					LCPFO2HxA_00005	50 uL	PFO2HxA	0.1 ug/mL
					LCPFO3OA_00006	50 uL	PFO3OA	0.1 ug/mL
					LCPFO4DA_00005	50 uL	PFO4DA	0.1 ug/mL
					LCPFO5DoA_00004	50 uL	PFO5DA	0.1 ug/mL
					LCMPMA_00005	50 uL	PMPA	0.1 ug/mL
					LCR-EVE_00005	50 uL	R-EVE	0.1 ug/mL
..LCBP1_00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PS Acid	0.1 %
..LCBP2_00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydro-PS Acid	0.1 %
..LCBP4_00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-PSDA	0.1 %
..LCBP5_00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydrolyzed PSDA	0.1 %
..LCBP6_00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-PSDCA	0.1 %
..LCEVEA_00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		EVE Acid	0.1 %
..LCHEVEA_00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydro-EVE Acid	0.1 %
..LCMTP_00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		MTP	0.1 %
..LCNVHOS_00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		NVHOS	0.1 %
..LCPEPA_00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PEPA	0.1 %
..LCPFECA_G_00004	01/23/24		Chemours, Lot NA		(Purchased Reagent)		PFPE-1	1000 ug/mL
..LCPFMOAA_00007	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFMOAA	0.1 %
..LCPFO2HxA_00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO2HxA	0.1 %
..LCPFO3OA_00006	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO3OA	0.1 %
..LCPFO4DA_00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO4DA	0.1 %
..LCPFO5DoA_00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO5DA	0.1 %
..LCMPMA_00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PMPA	0.1 %
..LCR-EVE_00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-EVE	0.1 %
LCPFC+SP+6_00105	02/08/23	10/04/22	Methanol, Lot 218266	250 mL	LCPFC+SP+6_00098	50 mL	NFDHA	0.02 ug/mL
							10:2 diPAP	0.0200996 ug/mL
							10:2 FTS	0.01932 ug/mL
							11Cl-PF3OUds	0.01888 ug/mL
							3:3 FTCA	0.02 ug/mL
							4:2 FTS	0.01876 ug/mL
							5:3 FTCA	0.02 ug/mL
							6:2 diPAP	0.0194587 ug/mL
							6:2 FTS	0.01904 ug/mL
							6:2/8:2 diPAP	0.0195181 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							7:3 FTCA	0.02 ug/mL
							8:2 diPAP	0.0195657 ug/mL
							8:2 FTS	0.0192 ug/mL
							9Cl-PF3ONS	0.01868 ug/mL
							NEtFOSAA	0.02 ug/mL
							NMeFOSAA	0.02 ug/mL
							4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.01888 ug/mL
							FBSA	0.02 ug/mL
							10:2 FTCA	0.02 ug/mL
							10:2 FTUCA	0.02 ug/mL
							6:2 FTCA	0.02 ug/mL
							6:2 FTUCA	0.02 ug/mL
							FHxSA	0.02 ug/mL
							8:2 FTCA	0.02 ug/mL
							8:2 FTUCA	0.02 ug/mL
							HFPO-DA (GenX)	0.02 ug/mL
							PFPPrS	0.0184 ug/mL
							NEtFOSA	0.02 ug/mL
							NEtFOSE	0.02 ug/mL
							NMeFOSA	0.02 ug/mL
							NMeFOSE	0.02 ug/mL
							PFMPA	0.02 ug/mL
							PFMBA	0.02 ug/mL
							Perfluorobutanoic acid (PFBA)	0.02 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.01776 ug/mL
							Perfluorodecanoic acid (PFDA)	0.02 ug/mL
							Perfluorododecanoic acid (PFDoA)	0.02 ug/mL
							Perfluorododecanesulfonic acid (PFDoS)	0.0194 ug/mL
							Perfluorodecanesulfonic acid (PFDS)	0.01928 ug/mL
							PFECHS	0.01848 ug/mL
							PFEESA	0.01784 ug/mL
							Perfluoroheptanoic acid (PFHpA)	0.02 ug/mL
							Perfluoroheptanesulfonic acid (PFHpS)	0.01908 ug/mL
							Perfluorohexanoic acid (PFHxA)	0.02 ug/mL
							Perfluoro-n-hexadecanoic acid (PFHxDA)	0.02 ug/mL
							Perfluorohexanesulfonic acid (PFHxS)	0.01824 ug/mL
							Perfluorononanoic acid (PFNA)	0.02 ug/mL
							Perfluorononanesulfonic acid (PFNS)	0.01924 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorooctanoic acid (PFOA)	0.02 ug/mL
							Perfluoro-n-octadecanoic acid (PFODA)	0.02 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	0.0186 ug/mL
							Perfluorooctanesulfonamide (FOSA)	0.02 ug/mL
							Perfluoropentanoic acid (PFPeA)	0.02 ug/mL
							Perfluoropentanesulfonic acid (PFPeS)	0.0188 ug/mL
							Perfluorotetradecanoic acid (PFTeA)	0.02 ug/mL
							Perfluorotridecanoic acid (PFTTrDA)	0.02 ug/mL
							Perfluoroundecanoic acid (PFUnA)	0.02 ug/mL
							PFPrA	0.0194 ug/mL
							NFDHA	0.1 ug/mL
.LCPFC+SP+6_00098	02/08/23	10/03/22	Methanol, Lot 218266	500 mL	LC-36-OPFHpA_00011	1 mL	10:2 diPAP	0.100498 ug/mL
					LC10:2diPAPim_00016	1.09 mL	10:2 FTS	0.0966 ug/mL
					LC11CIPF3OUds_00023	1 mL	11Cl-PF3OUds	0.0944 ug/mL
					LC3:3FTCA_00005	1 mL	3:3 FTCA	0.1 ug/mL
					LC4:2FTS_00024	1 mL	4:2 FTS	0.0938 ug/mL
					LC5:3FTCA_00008	1 mL	5:3 FTCA	0.1 ug/mL
					LC6:2diPAP_00009	1 mL	6:2 diPAP	0.0972936 ug/mL
					LC6:2FTS_00024	1 mL	6:2 FTS	0.0952 ug/mL
					LC62/82diPAP_00007	1 mL	6:2/8:2 diPAP	0.0975904 ug/mL
					LC7:3FTCA_00007	1 mL	7:3 FTCA	0.1 ug/mL
					LC8:2diPAP_00007	1 mL	8:2 diPAP	0.0978284 ug/mL
					LC8:2FTS_00024	1 mL	8:2 FTS	0.096 ug/mL
					LC9CI-PF3ONS_00023	1 mL	9Cl-PF3ONS	0.0934 ug/mL
					LCbr-NEtFOSAA_00023	1 mL	NEtFOSAA	0.1 ug/mL
					LCbr-NMeFOSAA_00022	1 mL	NMeFOSAA	0.1 ug/mL
					LCDONA_00032	1 mL	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.0944 ug/mL
					LCFBSA-I_00007	1 mL	FBSA	0.1 ug/mL
					LCFDEA_00009	1 mL	10:2 FTCA	0.1 ug/mL
					LCFDUEA_00007	1 mL	10:2 FTUCA	0.1 ug/mL
					LCFHFA_00009	1 mL	6:2 FTCA	0.1 ug/mL
					LCFHUEA_00009	1 mL	6:2 FTUCA	0.1 ug/mL
					LCFHxSA-I_00009	1 mL	FHxSA	0.1 ug/mL
					LCFOEA_00010	1 mL	8:2 FTCA	0.1 ug/mL
					LCFOUEA_00007	1 mL	8:2 FTUCA	0.1 ug/mL
					LCHFPO-DA_00027	1 mL	HFPO-DA (GenX)	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCLPFPrS_00009	1 mL	PFPrS	0.092 ug/mL
					LCN-EtFOSA-M_00025	1 mL	NEtFOSA	0.1 ug/mL
					LCN-EtFOSE-M_00018	1 mL	NEtFOSE	0.1 ug/mL
					LCN-MeFOSA-M_00027	1 mL	NMeFOSA	0.1 ug/mL
					LCN-MeFOSE-M_00021	1 mL	NMeFOSE	0.1 ug/mL
					LCPF40PeA_00015	1 mL	PFMPA	0.1 ug/mL
					LCPF50HxA_00011	1 mL	PFMBA	0.1 ug/mL
					LCPFBA_00028	1 mL	Perfluorobutanoic acid (PFBA)	0.1 ug/mL
					LCPFBSA_00025	1 mL	Perfluorobutanesulfonic acid (PFBS)	0.0888 ug/mL
					LCPFDA_00033	1 mL	Perfluorodecanoic acid (PFDA)	0.1 ug/mL
					LCPFDoA_00031	1 mL	Perfluorododecanoic acid (PFDoA)	0.1 ug/mL
					LCPFDoS_00020	1 mL	Perfluorododecanesulfonic acid (PFDoS)	0.097 ug/mL
					LCPFDSA_00016	1 mL	Perfluorodecanesulfonic acid (PFDS)	0.0964 ug/mL
					LCPFECBS_00007	1 mL	PFECHS	0.0924 ug/mL
					LCPFEEA_00010	1 mL	PFEESA	0.0892 ug/mL
					LCPFHpA_00035	1 mL	Perfluoroheptanoic acid (PFHpA)	0.1 ug/mL
					LCPFHpSA_00021	1 mL	Perfluoroheptanesulfonic acid (PFHpS)	0.0954 ug/mL
					LCPFHxA_00033	1 mL	Perfluorohexanoic acid (PFHxA)	0.1 ug/mL
					LCPFHxDA_00028	1 mL	Perfluoro-n-hexadecanoic acid (PFHxDA)	0.1 ug/mL
					LCPFHXS-br_00027	1 mL	Perfluorohexanesulfonic acid (PFHXS)	0.0912 ug/mL
					LCPFNA_00035	1 mL	Perfluorononanoic acid (PFNA)	0.1 ug/mL
					LCPFNS_00020	1 mL	Perfluorononanesulfonic acid (PFNS)	0.0962 ug/mL
					LCPFOA_00032	1 mL	Perfluorooctanoic acid (PFOA)	0.1 ug/mL
					LCPFODA_00028	1 mL	Perfluoro-n-octadecanoic acid (PFODA)	0.1 ug/mL
					LCPFOS-br_00029	1 mL	Perfluorooctanesulfonic acid (PFOS)	0.093 ug/mL
					LCPFOSA_00029	1 mL	Perfluorooctanesulfonamide (FOSA)	0.1 ug/mL
					LCPFPeA_00028	1 mL	Perfluoropentanoic acid (PFPeA)	0.1 ug/mL
					LCPFPeS_00020	1 mL	Perfluoropentanesulfonic acid (PFPeS)	0.094 ug/mL
					LCPFTeDA_00032	1 mL	Perfluorotetradecanoic acid (PFTeA)	0.1 ug/mL
					LCPFTrDA_00030	1 mL	Perfluorotridecanoic acid (PFTrDA)	0.1 ug/mL
					LCPFUDa_00033	1 mL	Perfluoroundecanoic acid (PFUnA)	0.1 ug/mL
					LCPPropionic_00024	1 mL	PFPrA	0.097 ug/mL
..LC-36-OPFHpa_00011	10/14/26	Wellington Laboratories, Lot 36OPFHpa0921			(Purchased Reagent)		NFDHA	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LC10:2diPAPim_00016	02/08/23	08/08/22	Methanol, Lot 217743	200 mL	LC10:2diPAPim_00015	100 mL	10:2 diPAP	46.1 ug/mL
...LC10:2diPAPim_00015	02/08/23	08/08/22	Methanol, Lot 217743	1000 mL	LC10:2diPAP_00005	0.0922 g	10:2 diPAP	92.2 ug/mL
....LC10:2diPAP_00005	11/13/23	Toronto Research Chemicals, Lot 5-BKS-67-1			(Purchased Reagent)		10:2 diPAP	100 %
..LC10:2FTS_00016	01/27/27	WELLINGTON, Lot 102FTS0122			(Purchased Reagent)		10:2 FTS	48.3 ug/mL
..LC11CIPF3OUdS_00023	02/08/27	Wellington Laboratories, Lot 11CIPF3OUdS0222			(Purchased Reagent)		11C1-PF3OUdS	47.2 ug/mL
..LC3:3FTCA_00005	02/03/27	Wellington Laboratories, Lot FPrPA0122			(Purchased Reagent)		3:3 FTCA	50 ug/mL
..LC4:2FTS_00024	04/22/27	WELLINGTON, Lot 42FTS0422			(Purchased Reagent)		4:2 FTS	46.9 ug/mL
..LC5:3FTCA_00008	01/05/27	Wellington Laboratories, Lot FPePA1221			(Purchased Reagent)		5:3 FTCA	50 ug/mL
..LC6:2diPAP_00009	03/18/27	Wellington, Lot 62diPAP0222			(Purchased Reagent)		6:2 diPAP	48.6468 ug/mL
..LC6:2FTS_00024	01/04/27	WELLINGTON, Lot 62FTS1221			(Purchased Reagent)		6:2 FTS	47.6 ug/mL
..LC62/82diPAP_00007	01/26/26	Wellington, Lot 6282diPAP0121			(Purchased Reagent)		6:2/8:2 diPAP	48.7952 ug/mL
..LC7:3FTCA_00007	10/13/26	Wellington Laboratories, Lot FHpPA1021			(Purchased Reagent)		7:3 FTCA	50 ug/mL
..LC8:2diPAP_00007	09/09/25	Wellington, Lot 82diPAP0920			(Purchased Reagent)		8:2 diPAP	48.9142 ug/mL
..LC8:2FTS_00024	02/08/27	WELLINGTON, Lot 82FTS0122			(Purchased Reagent)		8:2 FTS	48 ug/mL
..LC9CI-PF3ONS_00023	11/22/26	Wellington Laboratories, Lot 9CIPF3ONS1121			(Purchased Reagent)		9C1-PF3ONS	46.7 ug/mL
..LCBr-NETFOSAA_00023	11/23/26	WELLINGTON, Lot brNETFOSAA1121			(Purchased Reagent)		NETFOSAA	50 ug/mL
..LCBr-NMeFOSAA_00022	07/13/26	WELLINGTON, Lot brNMeFOSAA0621			(Purchased Reagent)		NMeFOSAA	50 ug/mL
..LCDONA_00032	04/18/27	WELLINGTON, Lot NADONA0422			(Purchased Reagent)		4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.2 ug/mL
..LCFBSA-I_00007	11/10/26	Wellington, Lot FBSA1121I			(Purchased Reagent)		FBSA	50 ug/mL
..LCFDEA_00009	09/28/24	Wellington Laboratories, Lot FDEA0921			(Purchased Reagent)		10:2 FTCA	50 ug/mL
..LCFDUEA_00007	10/29/23	Wellington Laboratories, Lot FDUEA1021			(Purchased Reagent)		10:2 FTUCA	50 ug/mL
..LCFHEA_00009	01/05/25	Wellington Laboratories, Lot FHEA1221			(Purchased Reagent)		6:2 FTCA	50 ug/mL
..LCFHUEA_00009	09/03/23	Wellington Laboratories, Lot FHUEA0921			(Purchased Reagent)		6:2 FTUCA	50 ug/mL
..LCFHxSA-I_00009	12/29/26	Wellington, Lot FHxSA1221I			(Purchased Reagent)		FHxSA	50 ug/mL
..LCFOEA_00010	08/18/24	Wellington Laboratories, Lot FOEA0821			(Purchased Reagent)		8:2 FTCA	50 ug/mL
..LCFOUEA_00007	12/29/23	Wellington Laboratories, Lot FOUEA1221			(Purchased Reagent)		8:2 FTUCA	50 ug/mL
..LCHFPO-DA_00027	04/05/25	WELLINGTON, Lot HFPODA0322			(Purchased Reagent)		HFPO-DA (GenX)	50 ug/mL
..LCLPFPrS_00009	04/20/27	Wellington Laboratories, Lot LPFPrS0422			(Purchased Reagent)		PFPrS	46 ug/mL
..LCN-EtFOSA-M_00025	04/20/27	WELLINGTON, Lot NetFOSA0422M			(Purchased Reagent)		NetFOSA	50 ug/mL
..LCN-EtFOSE-M_00018	09/23/26	WELLINGTON, Lot NetFOSE0921M			(Purchased Reagent)		NetFOSE	50 ug/mL
..LCN-MeFOSA-M_00027	02/28/27	WELLINGTON, Lot NMeFOSA0222M			(Purchased Reagent)		NMeFOSA	50 ug/mL
..LCN-MeFOSE-M_00021	05/13/27	WELLINGTON, Lot NMeFOSE0522M			(Purchased Reagent)		NMeFOSE	50 ug/mL
..LCPF4OPeA_00015	08/02/27	Wellington Laboratories, Lot PF4OPeA0722			(Purchased Reagent)		PFMPA	50 ug/mL
..LCPF5OHxA_00011	10/19/26	Wellington Laboratories, Lot PF5OHxA1021			(Purchased Reagent)		PFMBA	50 ug/mL
..LCPFBA_00028	04/18/27	Wellington Laboratories, Lot PFBA0422			(Purchased Reagent)		Perfluorobutanoic acid (PFBA)	50 ug/mL
..LCPFBSA_00025	04/05/27	Wellington Laboratories, Lot LPFBS0322			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.4 ug/mL
..LCPFDA_00033	02/22/27	Wellington Laboratories, Lot PFDA0222			(Purchased Reagent)		Perfluorodecanoic acid (PFDA)	50 ug/mL
..LCPFDoA_00031	01/27/27	Wellington Laboratories, Lot PFDoA0122			(Purchased Reagent)		Perfluorododecanoic acid (PFDoA)	50 ug/mL
..LCPFDoS_00020	04/20/27	Wellington Laboratories, Lot LPFDoS0422			(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48.5 ug/mL
..LCPFDSA_00016	02/22/27	Wellington Laboratories, Lot LPFDS0222			(Purchased Reagent)		Perfluorodecanesulfonic acid (PFDS)	48.2 ug/mL
..LCPFECBS_00007	03/28/27	Wellington Laboratories, Lot PFECBS0222			(Purchased Reagent)		PFECBS	46.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCPFEESA_00010	11/22/26	Wellington Laboratories, Lot PFEEESA1121			(Purchased Reagent)		PFEESA	44.6 ug/mL
..LCPFHpA_00035	03/17/27	Wellington Laboratories, Lot PFHpA0222			(Purchased Reagent)		Perfluoroheptanoic acid (PFHpA)	50 ug/mL
..LCPFHpSA_00021	01/27/27	Wellington Laboratories, Lot LPFHpS0122			(Purchased Reagent)		Perfluoroheptanesulfonic acid (PFHpS)	47.7 ug/mL
..LCPFHxA_00033	01/27/27	Wellington Laboratories, Lot PFHxA0122			(Purchased Reagent)		Perfluorohexanoic acid (PFHxA)	50 ug/mL
..LCPFHxDA_00028	02/23/27	Wellington Laboratories, Lot PFHxDA0222			(Purchased Reagent)		Perfluoro-n-hexadecanoic acid (PFHxDA)	50 ug/mL
..LCPFHxS-br_00027	12/07/26	Wellington Laboratories, Lot brPFHxSK1211			(Purchased Reagent)		Perfluorohexanesulfonic acid (PFHxS)	45.6 ug/mL
..LCPFNA_00035	01/27/27	Wellington Laboratories, Lot PFNA0122			(Purchased Reagent)		Perfluorononanoic acid (PFNA)	50 ug/mL
..LCPFNS_00020	04/20/27	Wellington Laboratories, Lot LPFNS0422			(Purchased Reagent)		Perfluorononanesulfonic acid (PFNS)	48.1 ug/mL
..LCPFOA_00032	02/22/27	Wellington Laboratories, Lot PFOA0222			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL
..LCPFODA_00028	09/03/26	Wellington Laboratories, Lot PFODA0821			(Purchased Reagent)		Perfluoro-n-octadecanoic acid (PFODA)	50 ug/mL
..LCPFOS-br_00029	12/07/26	Wellington Laboratories, Lot brPFOSK1121			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.5 ug/mL
..LCPFOSA_00029	04/05/27	Wellington Laboratories, Lot FOSA0322I			(Purchased Reagent)		Perfluorooctanesulfonamide (FOSA)	50 ug/mL
..LCPFPeA_00028	02/08/27	Wellington Laboratories, Lot PFPeA0122			(Purchased Reagent)		Perfluoropentanoic acid (PFPeA)	50 ug/mL
..LCPFPeS_00020	02/07/27	Wellington Laboratories, Lot LPFPeS0122			(Purchased Reagent)		Perfluoropentanesulfonic acid (PFPeS)	47 ug/mL
..LCPFTeDA_00032	02/28/27	Wellington Laboratories, Lot PFTeDA0222			(Purchased Reagent)		Perfluorotetradecanoic acid (PFTeA)	50 ug/mL
..LCPFTrDA_00030	02/07/27	Wellington Laboratories, Lot PFTTrDA0122			(Purchased Reagent)		Perfluorotridecanoic acid (PFTTrDA)	50 ug/mL
..LCPFUdA_00033	02/22/27	Wellington Laboratories, Lot PFUdA0222			(Purchased Reagent)		Perfluoroundecanoic acid (PFUnA)	50 ug/mL
..LCPropionic_00024	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	LCPPropionic_00023	5 mL	PFPrA	48.5 ug/mL
...LCPropionic_00023	02/08/23	08/08/22	Methanol, Lot 217743	100 mL	Propionic Acd 00002	100 uL	PFPrA	970 ug/mL
....Propionic Acd 00002	06/09/25	Sigma Aldrich, Lot MKCK6675			(Purchased Reagent)		PFPrA	97 %
LCPFC-IS+ 00375	06/16/23	12/16/22	Methanol, Lot 221042	200 mL	LCPFC-IS+ 00367	50 mL	13C2 PFOA	0.025 ug/mL
.LCPFC-IS+ 00367	06/16/23	12/16/22	Methanol, Lot 221042	500 mL	LCM2PFOA_00038	1 mL	13C2 PFOA	0.1 ug/mL
..LCM2PFOA_00038	08/29/27	Wellington Laboratories, Lot M2PFOA0822			(Purchased Reagent)		13C2 PFOA	50 ug/mL
LCPFC3SP_P3_00037	02/09/23	08/09/22	Methanol, Lot 217743	250 mL	LCPFC3SP_TB3_00039	50 mL	PS Acid	0.02 ug/mL
							Hydro-PS Acid	0.02 ug/mL
							R-PSDA	0.02 ug/mL
							Hydrolyzed PSDA	0.02 ug/mL
							R-PSDCA	0.02 ug/mL
							DFSA	0.02 ug/mL
							EVE Acid	0.02 ug/mL
							Hydro-EVE Acid	0.02 ug/mL
							MMF	0.02 ug/mL
							MTP	0.02 ug/mL
							NVHOS	0.02 ug/mL
							PEPA	0.02 ug/mL
							PFPE-1	0.02 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Sacramento

Job No.: 320-95204-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							PFO30A	0.02 ug/mL
							PFO4DA	0.02 ug/mL
							PFO5DA	0.02 ug/mL
							PMPA	0.02 ug/mL
							R-EVE	0.02 ug/mL
.LCPFC3SP_TB3_00039	02/09/23	08/09/22	Methanol, Lot 217743	500 mL	LCBP1_00005	50 uL	PS Acid	0.1 ug/mL
					LCBP2_00004	50 uL	Hydro-PS Acid	0.1 ug/mL
					LCBP4_00003	50 uL	R-PSDA	0.1 ug/mL
					LCBP5_00004	50 uL	Hydrolyzed PSDA	0.1 ug/mL
					LCBP6_00004	50 uL	R-PSDCA	0.1 ug/mL
					LCDFSA_00004	50 uL	DFSA	0.1 ug/mL
					LCEVEA_00004	50 uL	EVE Acid	0.1 ug/mL
					LCHEVEA_00003	50 uL	Hydro-EVE Acid	0.1 ug/mL
					LCMMF_00003	50 uL	MMF	0.1 ug/mL
					LCMTP_00003	50 uL	MTP	0.1 ug/mL
					LCNVHOS_00003	50 uL	NVHOS	0.1 ug/mL
					LCPEPA_00005	50 uL	PEPA	0.1 ug/mL
					LCPFECA_G_00004	50 uL	PFPE-1	0.1 ug/mL
					LCPFMOAA_00007	50 uL	PFO30A	0.1 ug/mL
					LCPFO2HxA_00005	50 uL	PFO4DA	0.1 ug/mL
					LCPFO30A_00006	50 uL	PFO5DA	0.1 ug/mL
					LCPFO4DA_00005	50 uL	PMPA	0.1 ug/mL
					LCPFO5DoA_00004	50 uL	R-EVE	0.1 ug/mL
					LCPMPA_00005	50 uL		
					LCR-EVE_00005	50 uL		
..LCBP1_00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PS Acid	0.1 %
..LCBP2_00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydro-PS Acid	0.1 %
..LCBP4_00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-PSDA	0.1 %
..LCBP5_00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydrolyzed PSDA	0.1 %
..LCBP6_00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-PSDCA	0.1 %
..LCDFSA_00004	08/23/26		Chemours, Lot NA		(Purchased Reagent)		DFSA	0.1 %
..LCEVEA_00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		EVE Acid	0.1 %
..LCHEVEA_00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		Hydro-EVE Acid	0.1 %
..LCMMF_00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		MMF	0.1 %
..LCMTP_00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		MTP	0.1 %
..LCNVHOS_00003	08/10/26		Chemours, Lot NA		(Purchased Reagent)		NVHOS	0.1 %
..LCPEPA_00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PEPA	0.1 %
..LCPFECA_G_00004	01/23/24		Chemours, Lot NA		(Purchased Reagent)		PFPE-1	1000 ug/mL
..LCPFMOAA_00007	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO30A	0.1 %
..LCPFO2HxA_00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO4DA	0.1 %
..LCPFO30A_00006	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PFO5DA	0.1 %
..LCPFO4DA_00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)		PMPA	0.1 %
..LCPFO5DoA_00004	08/10/26		Chemours, Lot NA		(Purchased Reagent)		R-EVE	0.1 %
..LCPMPA_00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)			
..LCR-EVE_00005	08/10/26		Chemours, Lot NA		(Purchased Reagent)			

Reagent

LC-36-OPFHpA_00011



3065158

ID: LC-36-OPFHpa_00011

Exp: 10/14/26 Pypd: PCY Opm: 06/16/22

PFECA B/3,6-OPFHpa Stock



WELLINGTON LABORATORIES

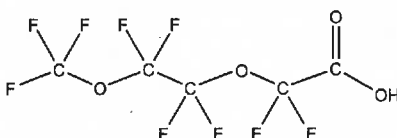
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 3,6-OPFHpa
COMPOUND: Perfluoro-3,6-dioxaheptanoic acid

LOT NUMBER: 36OPFHpa0921

STRUCTURE:

CAS #: 151772-58-6



MOLECULAR FORMULA: C₆HF₉O₄
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 296.04
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 10/14/2021

EXPIRY DATE: (mm/dd/yyyy) 10/14/2026

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 10/14/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

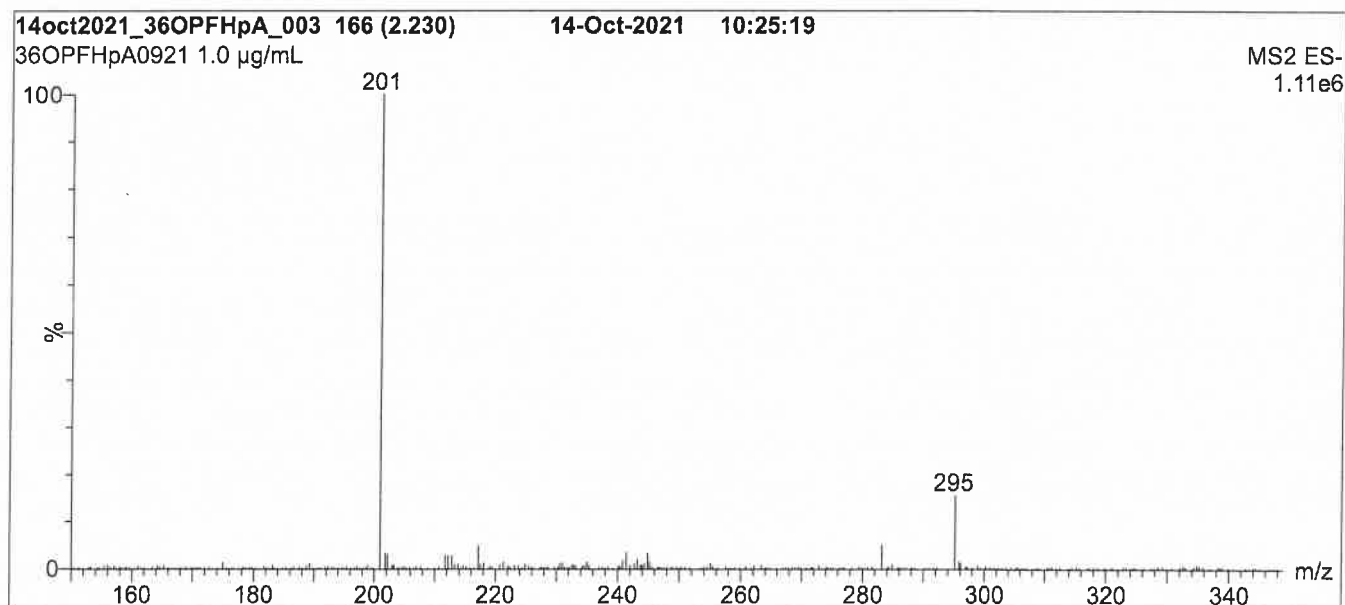
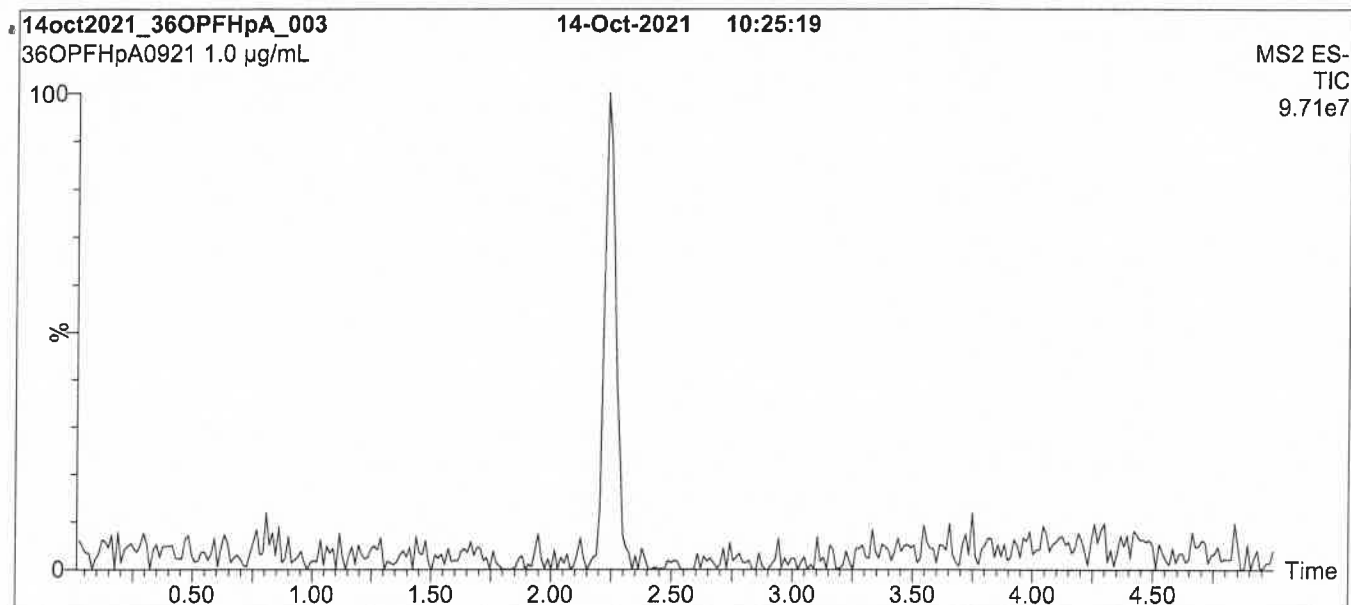
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: 3,6-OPFHpA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)

Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 1 min.

Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)

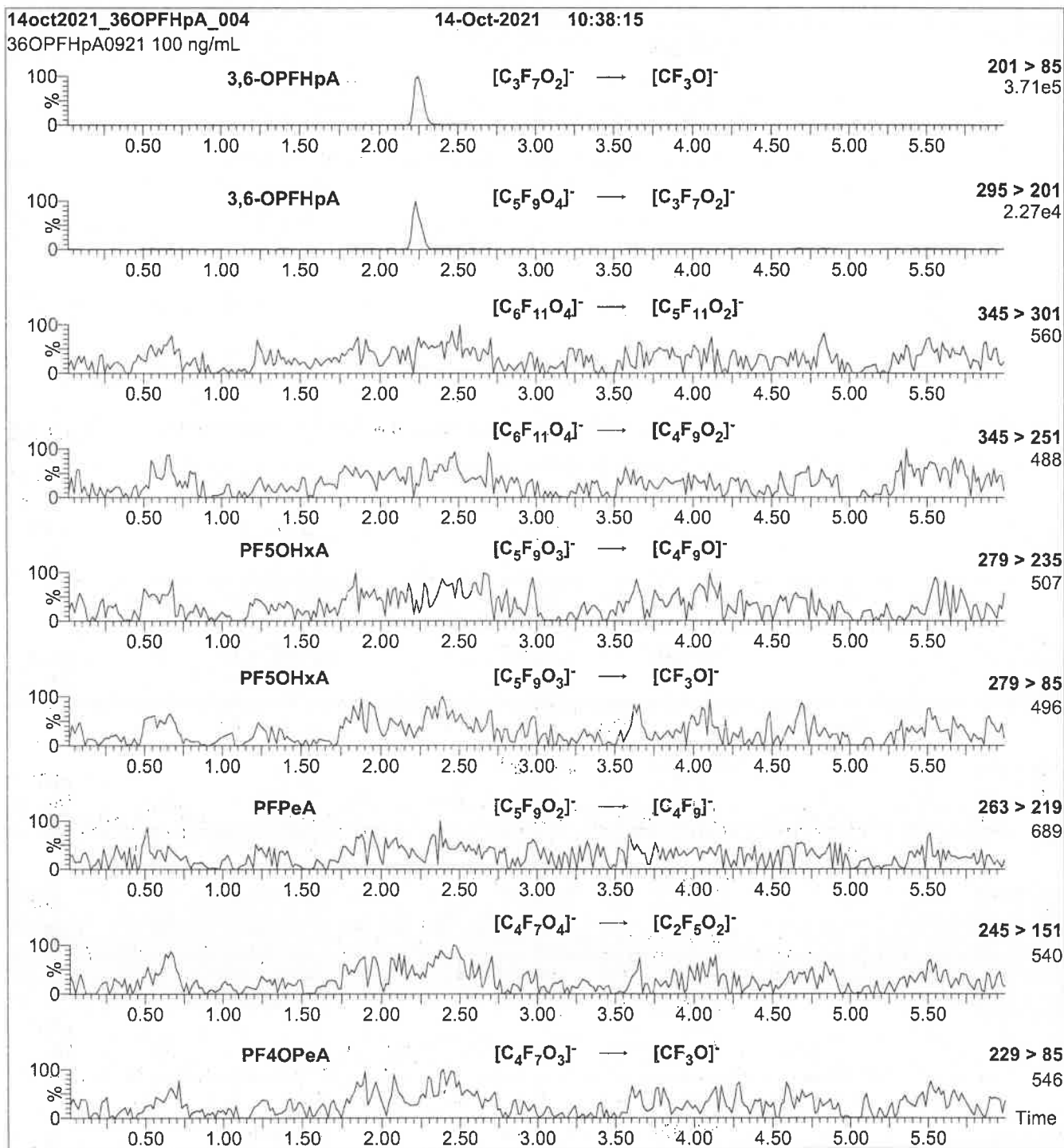
Capillary Voltage (kV) = 2.75

Cone Voltage (V) = 40.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: 3,6-OPFHpA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (3,6-OPFHpA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.20e-3

Collision Energy (eV) = 10

Reagent

LC10:2diPAP_00005

1. Identification

Catalogue Number

B516280

Lot Number

5-BKS-67-1



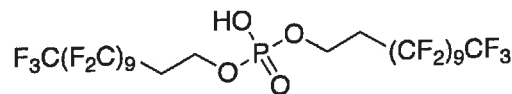
2981602

ID: LC10:2diPAP_00005
Exp: 11/13/23 Prpd:PCY Opn:04/19/22
10:2 diPAP

Product Name

Bis[2-(perfluorodecyl)ethyl] Phosphate

Structure



Synonyms

3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-Heneicosafuoro-1-dodecanol
1,1'-(Hydrogen Phosphate);

CAS Number

1895-26-7

Solubility

No Data Available

Shipping Condition

This Product Is Stable To Be Shipped At Room Temperature

Molecular Formula

C₂₄H₈F₄₂O₄P

Source of Product

Synthetic

Long Term Storage Conditions

-20°C

Molecular Weight

1190.23

Purity

95%

2. Warnings

Not Determined

3. Analytical Information

Tests

Appearance

Specifications

White to Off-White Solid

Results

White to Off-White Solid

NMR

Conforms to Structure

Conforms

F NMR

Conforms to Structure

Conforms

MS

Conforms to Structure

Conforms

Additional Information

TLC Conditions: C₁₈; Methanol : Water : Ammonium Hydroxide = 9 : 1 : 0.1; Visualized with UV and KMnO₄; Single Spot, R_f = 0.50.
Elemental Analysis: (Theoretical) %C: 24.22, %H: 0.76

based on the analytical results of the tests performed. NMR and Elemental Analysis (if available) may have an accuracy of ± 2%. Isotopic purity is based on the observation observed.
The specifications are subject to change without advance notice, and the specification values displayed here are the most up to date values.

Reviewed by	C of A Approved by	Test Date	Retest Date
		11/15/2019	11/13/2023
Toni Rantanen	My Nguyen		
Specialist	Quality Assurance	Quality Assurance Associate	12/29/2022

Reagent

LC10:2FTS_00016



2979946

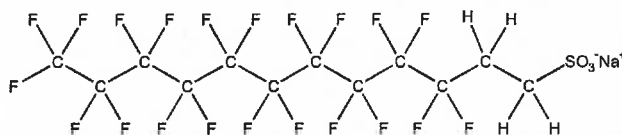
ID: LC10:2FTS_00016

Exp:01/27/22 Prod:IM Opn:04/19/22
10:2FTS

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS0122
COMPOUND: Sodium 1H,1H,2H,2H-perfluorododecanesulfonate
STRUCTURE: **CAS #:** 108026-35-3



MOLECULAR FORMULA: $C_{12}H_4F_{21}SO_3Na$ **MOLECULAR WEIGHT:** 650.18
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
48.3 ± 2.4 µg/mL (10:2FTS acid)
48.2 ± 2.4 µg/mL (10:2FTS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/27/2022
EXPIRY DATE: (mm/dd/yyyy) 01/27/2022
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 02/04/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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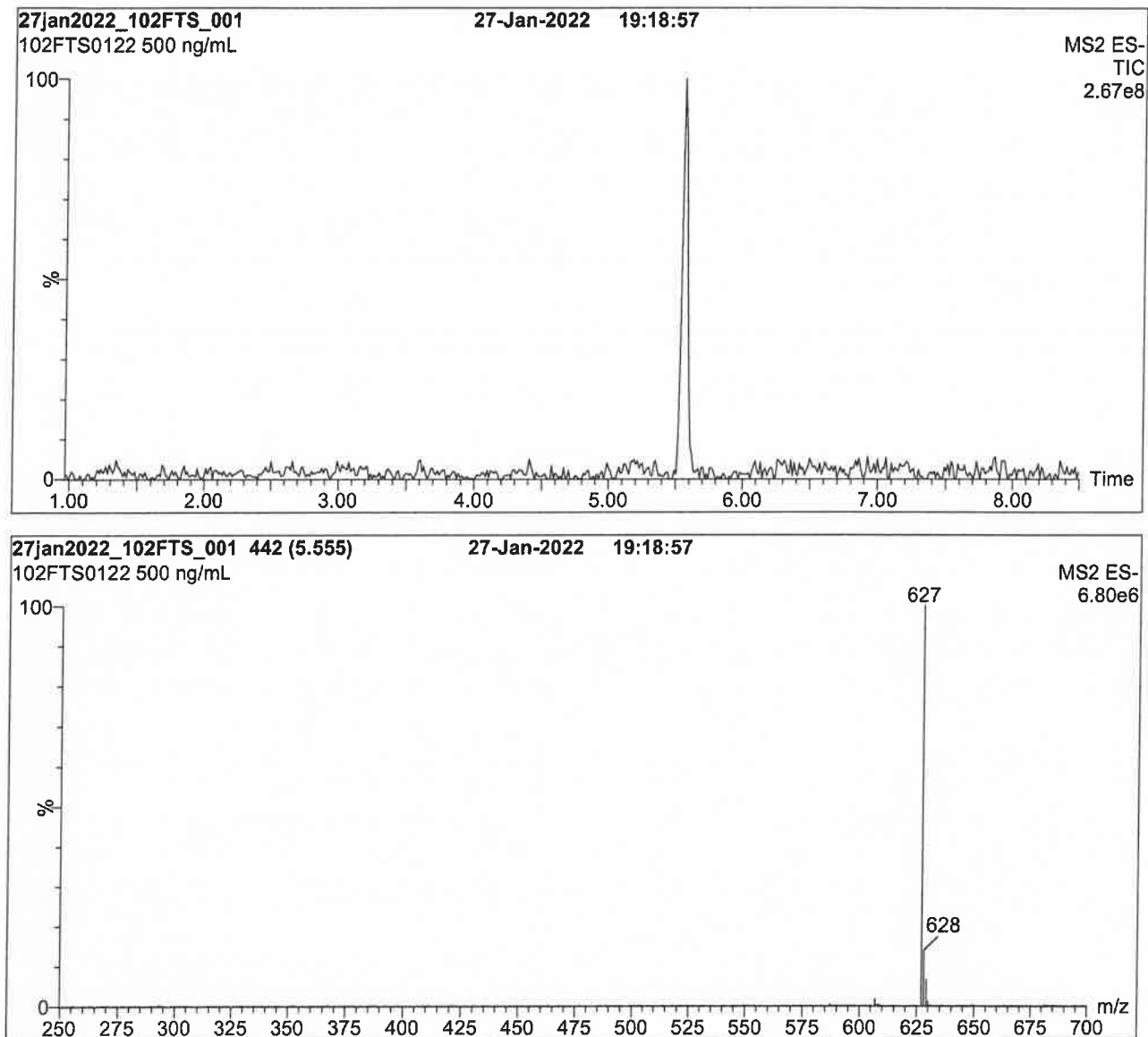
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For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: 10:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

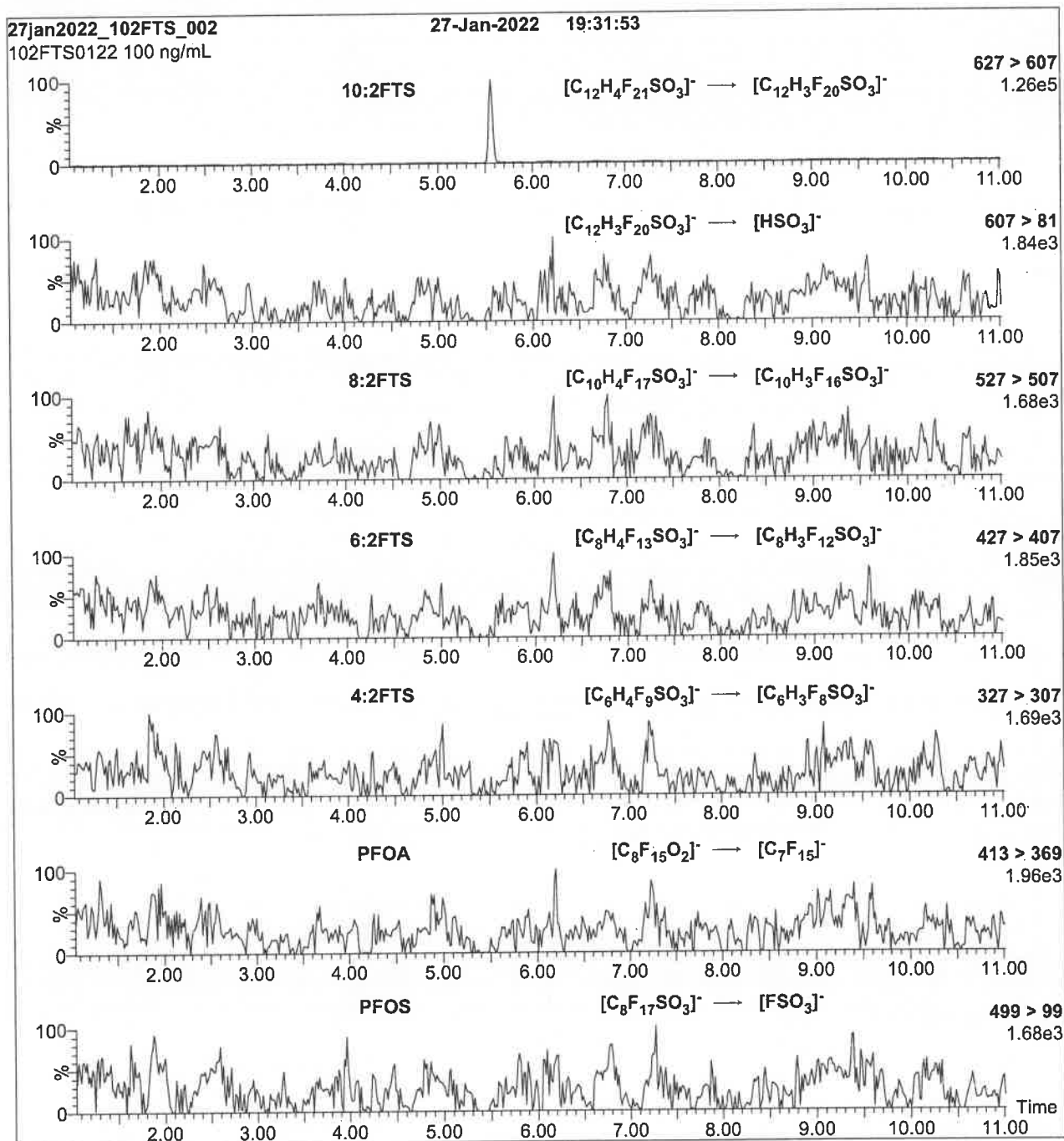
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 25.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: 10:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (10:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3

Collision Energy (eV) = 25

Reagent

LC10 : 2FTS2_00004



2981414
ID: LC10:2FTS2_00004
Exp:09/2024 Prod:MM Opn:04/07/22
10:2FTS Secondary Source

Product Name:
(Isotopic Label & Enrichment Specification)

1H,1H,2H,2H-PERFLUORODODECANE SULFONIC ACID
(10:2 FTS),SODIUM SALT(UNL)(CP 94%)50UG/ML IN MEOH

Lot Number:

SDJH-001

Catalog Number:

ULM-10754-S

Product Information

Chemical Purity Specification:

≥ 94%

MW*:

650.18

* For isotopically labeled compounds, MW listed is for the fully enriched product.

Labeled CAS Number:

NA

Unlabeled CAS Number:

108026-35-3

Chemical Formula:

C₁₂H₄F₂₁NaO₃S

Storage:

Store at room temperature away from light and moisture.

Intended Use:

For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated.

The retest date for this chemical has been designated based on CIL's experience in working with chemical standards for over 30 years, and includes review of actual analytical results and relevant literature references. The retest date is valid only for unopened vials or ampoules that have been stored as recommended.

Approved by: Marina Klionsky

Marina Klionsky, Quality Review

Quality Control Tests and Results

QC Release Date	8/20/2019
Expiration Date	8/20/2024
Concentration Based on Gravimetry (of the salt)	50.0 ± 0.5 µg/mL (k=2)
Chemical Purity of Neat Material(s)	100.0%

Additional Testing Information:

Retest/Review Date: 08/21/24

Reagent

LC11CIPF3OUds_00023



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

3065196
ID: LC11CIPF3OUdS_00023
Exp: 02/08/27 Pp'd: M Opn: 06/16/22
11CI-PF3OUdS

PRODUCT CODE:

11CI-PF3OUdS

LOT NUMBER:

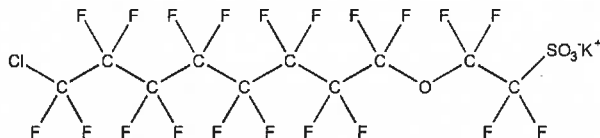
11CIPF3OUdS0222

COMPOUND:

Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate

STRUCTURE:**CAS #:**

83329-89-9

**MOLECULAR FORMULA:** $C_{10}F_{20}ClSO_4K$ **MOLECULAR WEIGHT:**

670.69

CONCENTRATION:

50.0 ± 2.5 µg/mL (K Salt)

SOLVENT(S):

Methanol

47.2 ± 2.4 µg/mL (11CI-PF3OUdS acid)

47.1 ± 2.4 µg/mL (11CI-PF3OUdS anion)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

02/08/2022

EXPIRY DATE: (mm/dd/yyyy)

02/08/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- This compound is a minor component of the commercial formulation known as F-53B.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:** 02/17/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

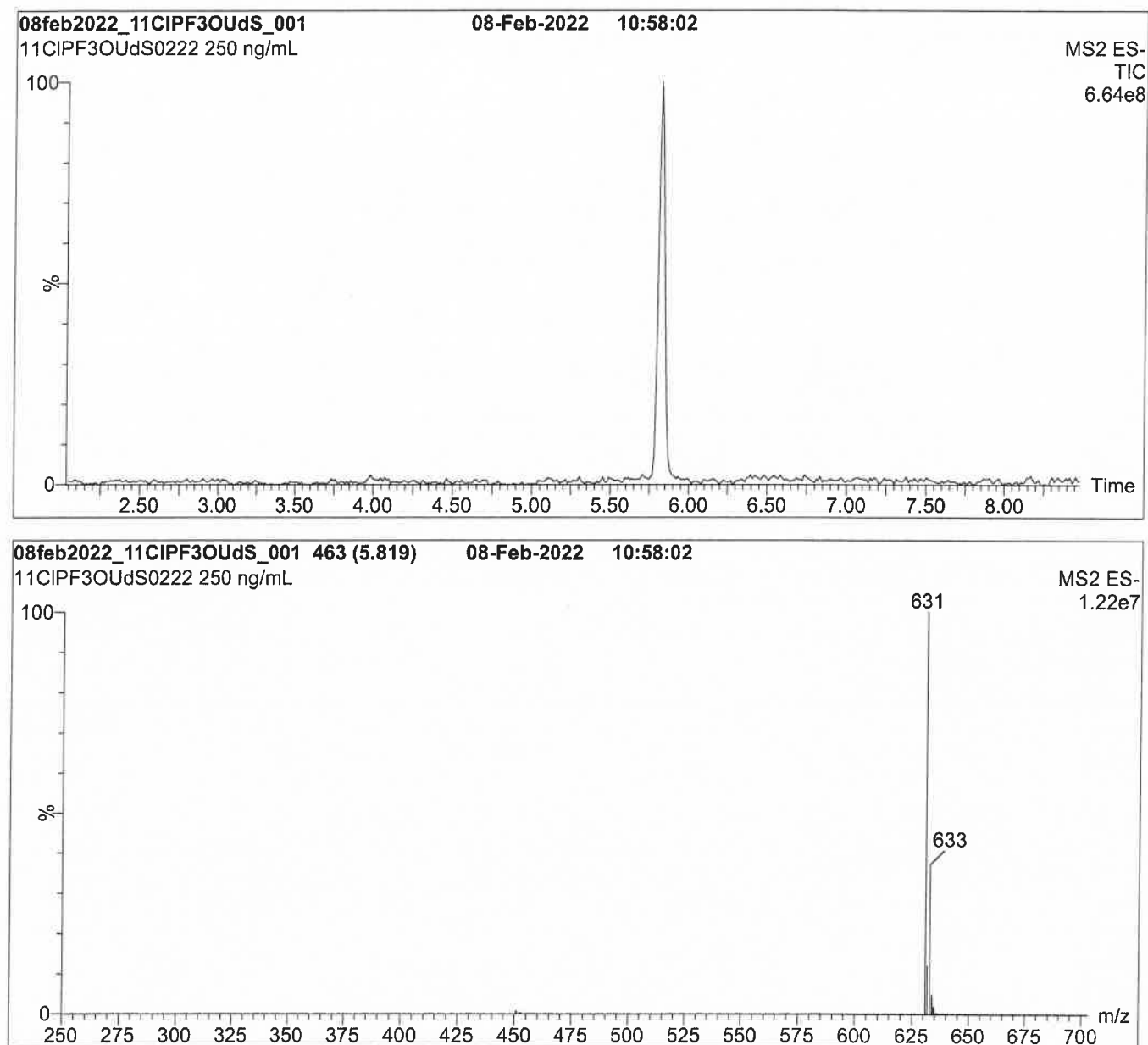
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: 11CI-PF3OUdS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

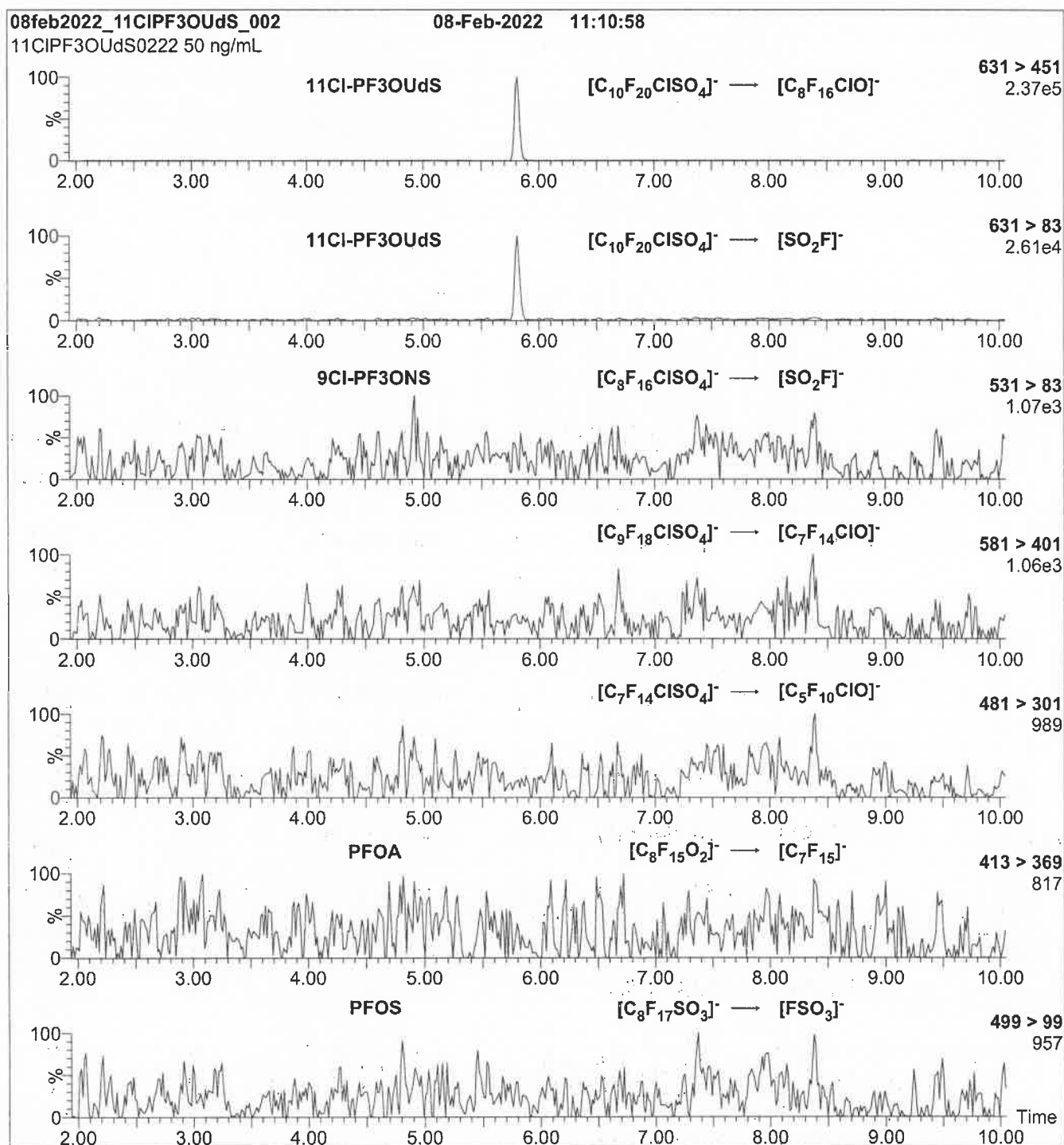
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 70.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 750

Figure 2: 11CI-PF3OUdS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (11CI-PF3OUdS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.35e-3

Collision Energy (eV) = 24

Reagent

LC3 : 3FTCA_00004



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FPrPA

LOT NUMBER:

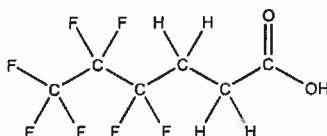
FPrPA0122

COMPOUND:

3-Perfluoropropyl propanoic acid

STRUCTURE:**CAS #:**

356-02-5

**MOLECULAR FORMULA:**C₆H₅F₇O₂**CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

242.09

CHEMICAL PURITY:

>98%

SOLVENT(S):

Methanol

LAST TESTED: (mm/dd/yyyy)

02/03/2022

EXPIRY DATE: (mm/dd/yyyy)

02/03/2027

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid (C₈H₃F₇O₂) as an impurity determined by ¹⁹F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

02/04/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

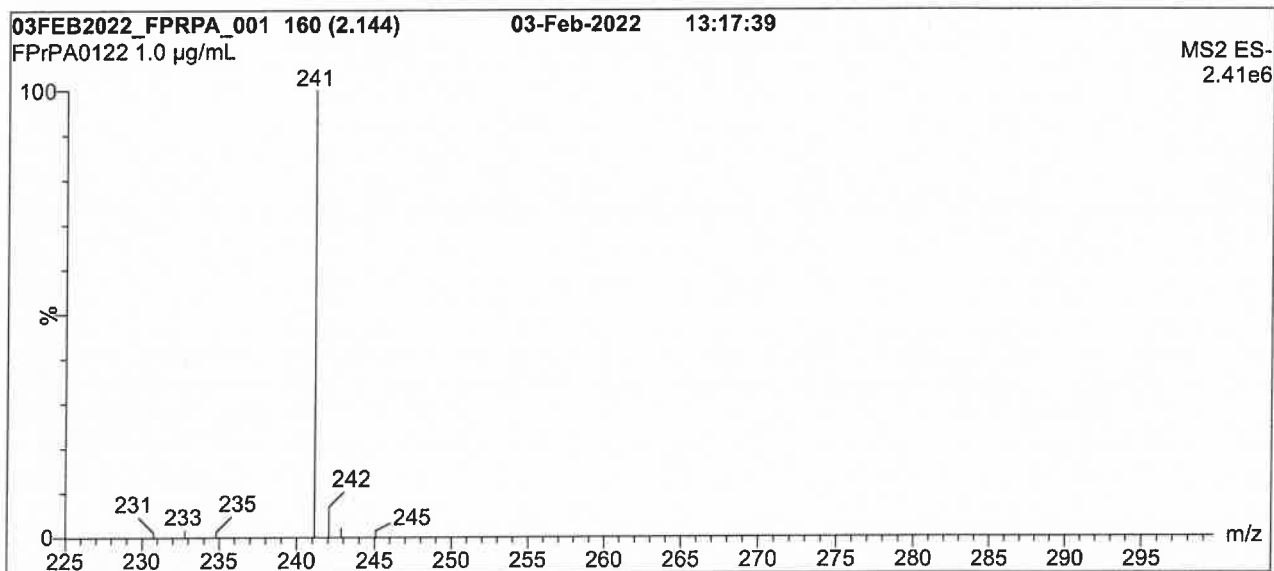
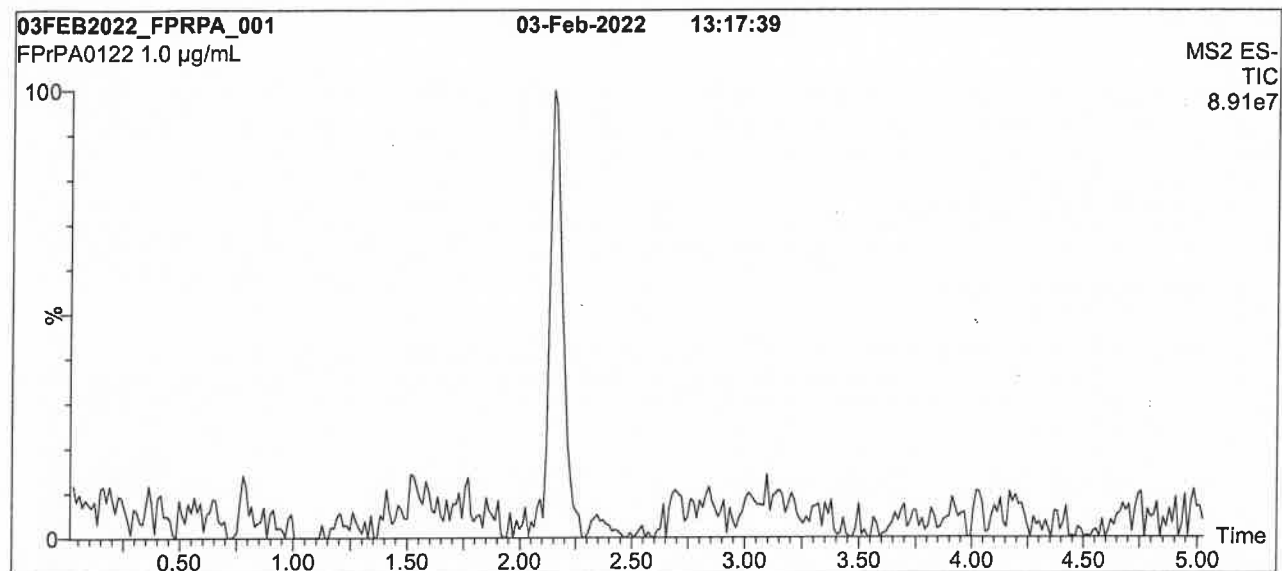
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: FPrPA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

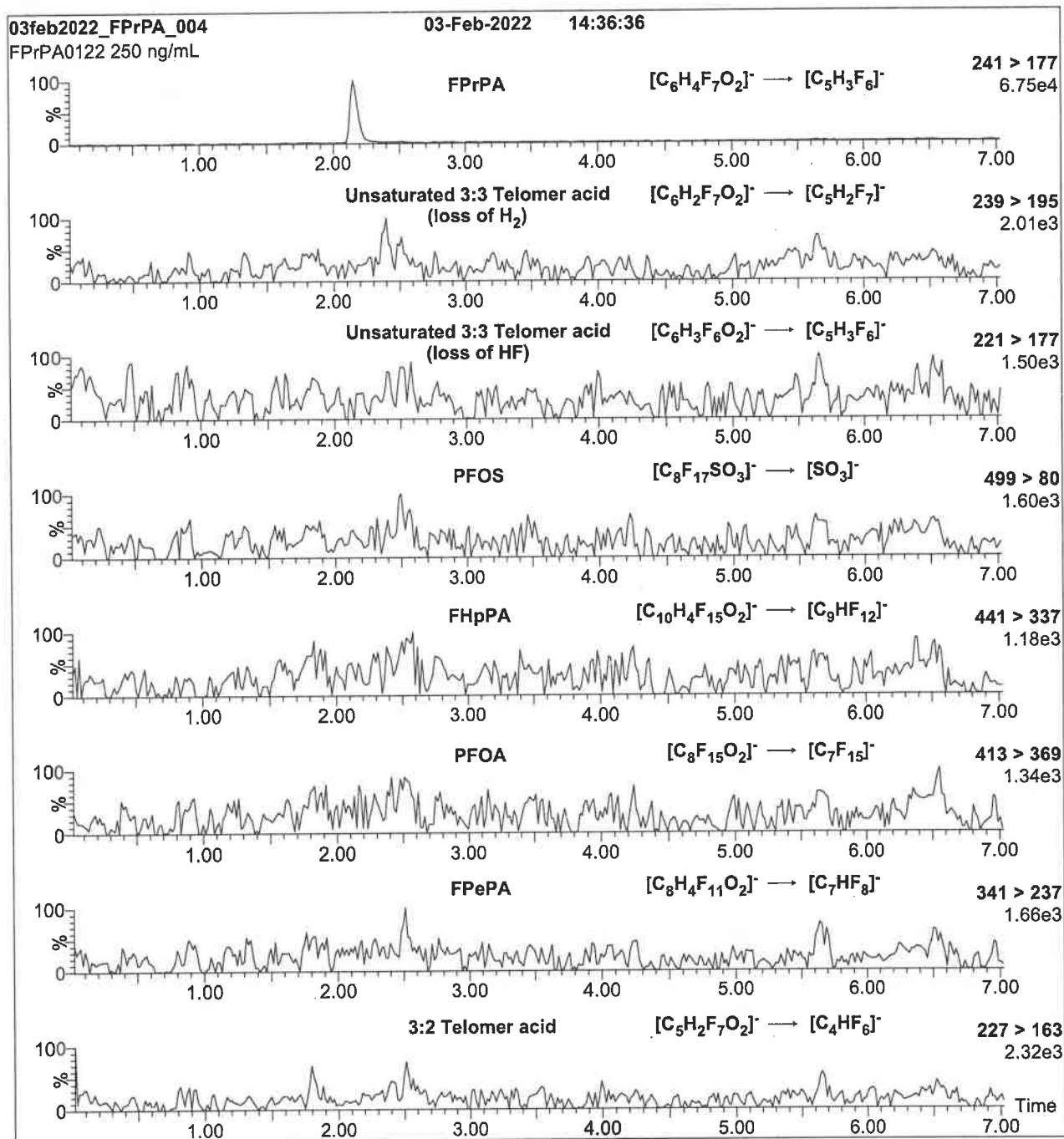
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: FPrPA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (FPrPA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.33e-3

Collision Energy (eV) = 10

Reagent

LC3 : 3FTCA_00005



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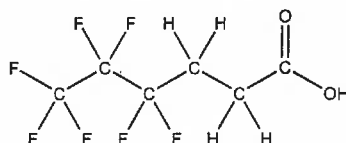
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPrPA
COMPOUND: 3-Perfluoropropyl propanoic acid

LOT NUMBER: FPrPA0122

STRUCTURE:

CAS #: 356-02-5



MOLECULAR FORMULA: C₆H₅F₇O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/03/2022
EXPIRY DATE: (mm/dd/yyyy) 02/03/2027
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 242.09
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid (C₆H₃F₇O₂) as an impurity determined by ¹⁹F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:
B.G. Chittim, General Manager

Date: 02/04/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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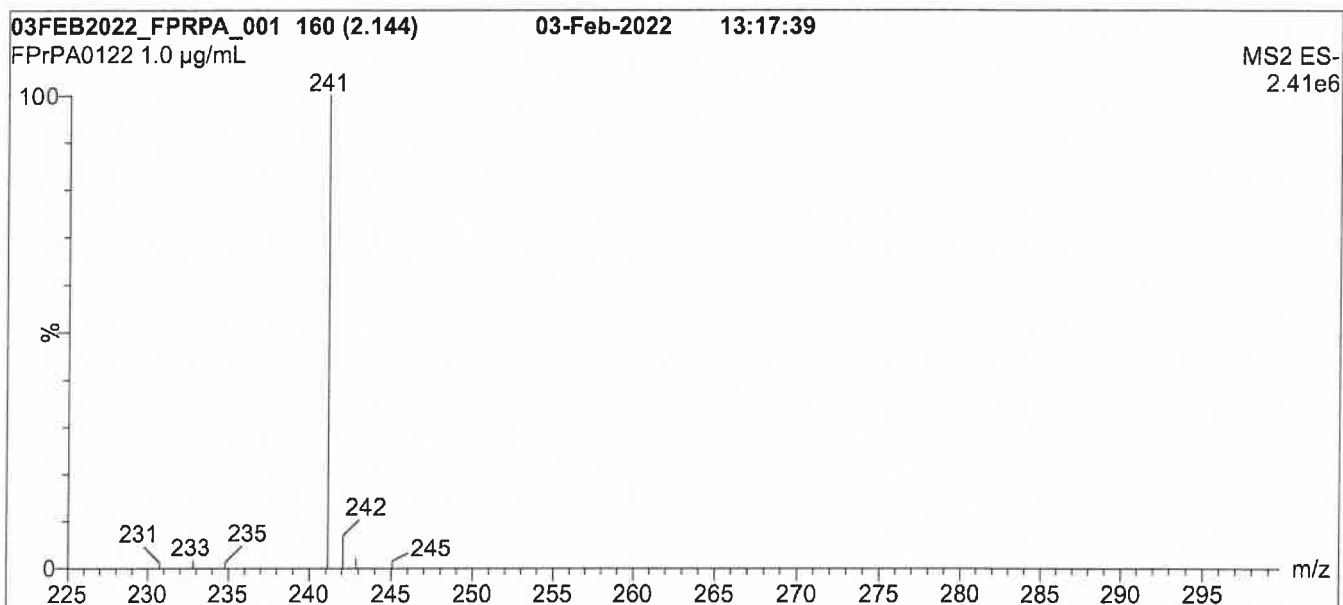
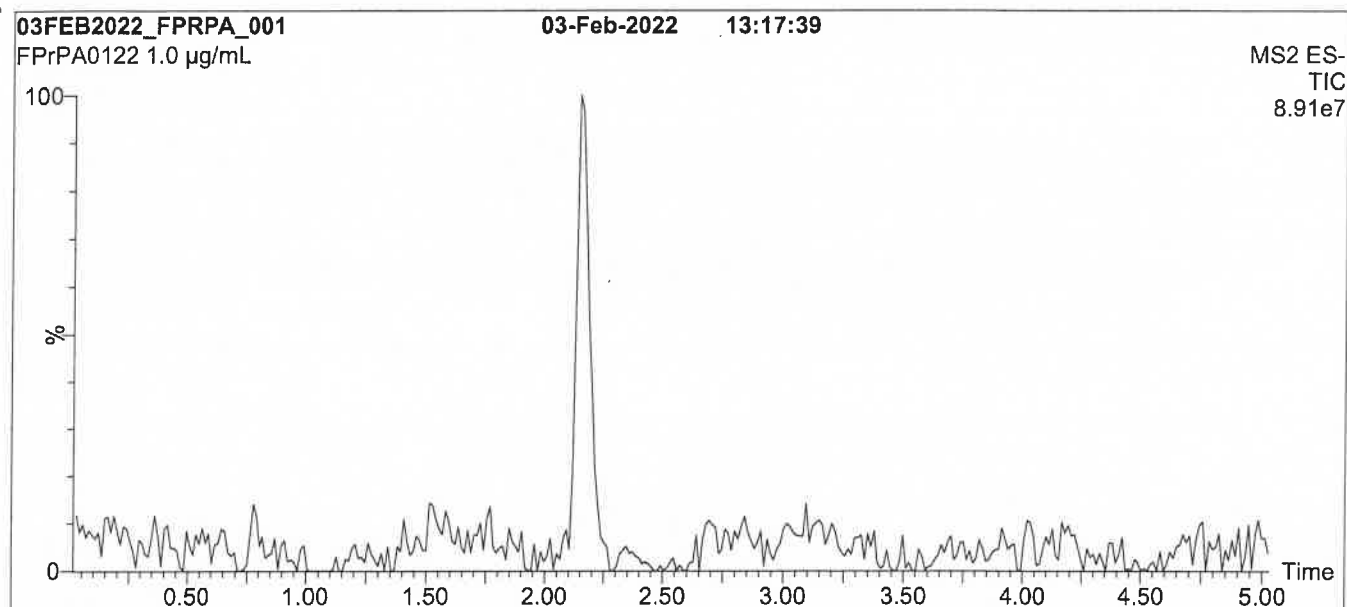
QUALITY MANAGEMENT:

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Figure 1: FPrPA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

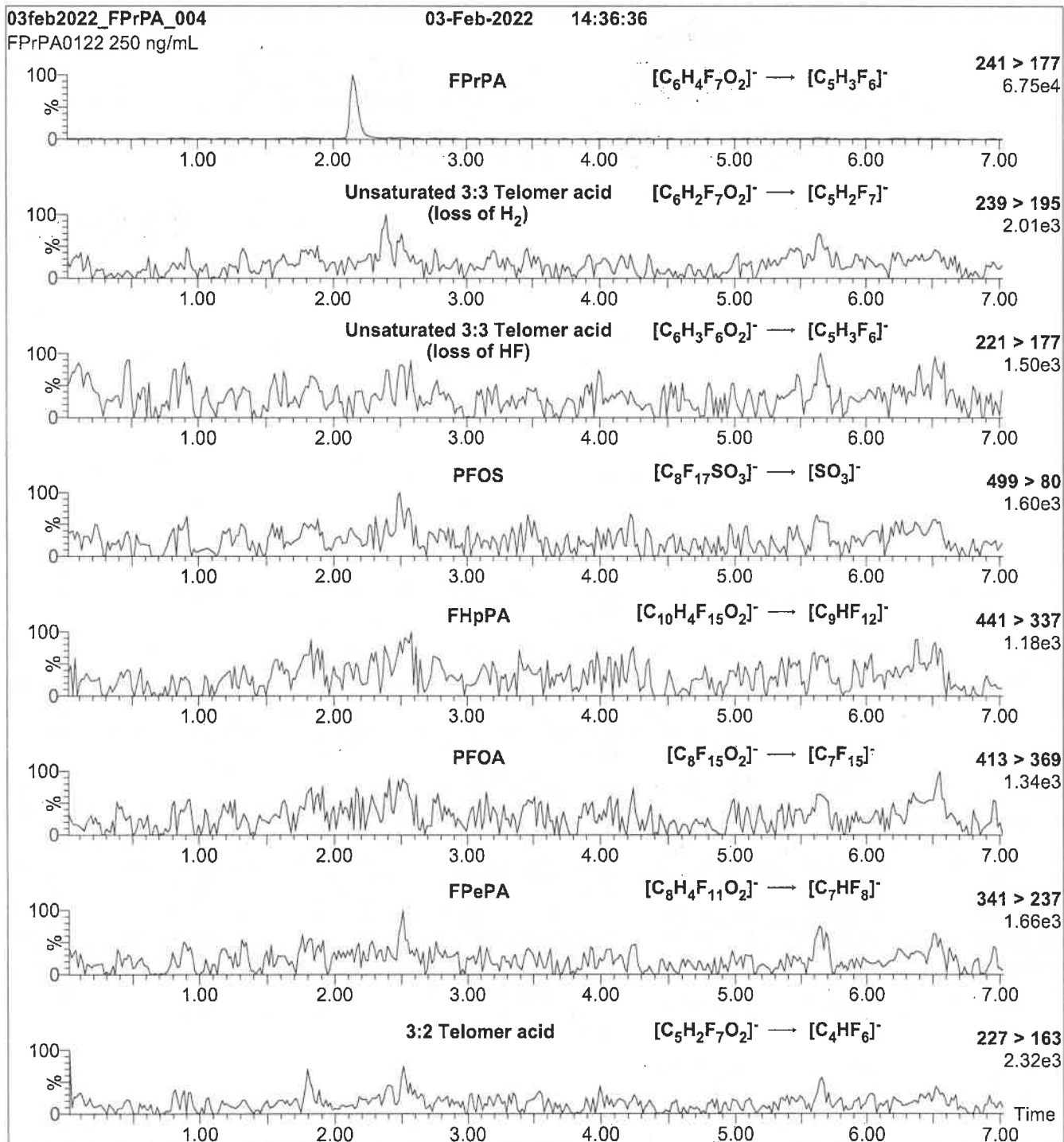
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: FPrPA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (FPrPA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.33e-3

Collision Energy (eV) = 10

Reagent

LC4 : 2FTS_00024



3064814

ID: LC4:2FTS_00024

Exp:04/22/27 Prod:PCY Opm:06/16/22
4:2FTS

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

4:2FTS

LOT NUMBER:

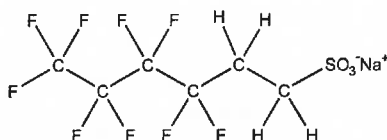
42FTS0422

COMPOUND:

Sodium 1H,1H,2H,2H-perfluorohexanesulfonate

STRUCTURE:**CAS #:**

27619-93-8

**MOLECULAR FORMULA:** $C_6H_4F_9SO_3Na$ **MOLECULAR WEIGHT:**

350.13

CONCENTRATION:

50.0 ± 2.5 µg/mL (Na salt)

SOLVENT(S):

Methanol

46.9 ± 2.3 µg/mL (4:2FTS acid)

46.7 ± 2.3 µg/mL (4:2FTS anion)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

04/22/2022

EXPIRY DATE: (mm/dd/yyyy)

04/22/2027

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE.

Certified By:

B.G. Chittim, General Manager

Date:

04/29/2022
(mm/dd/yyyy)

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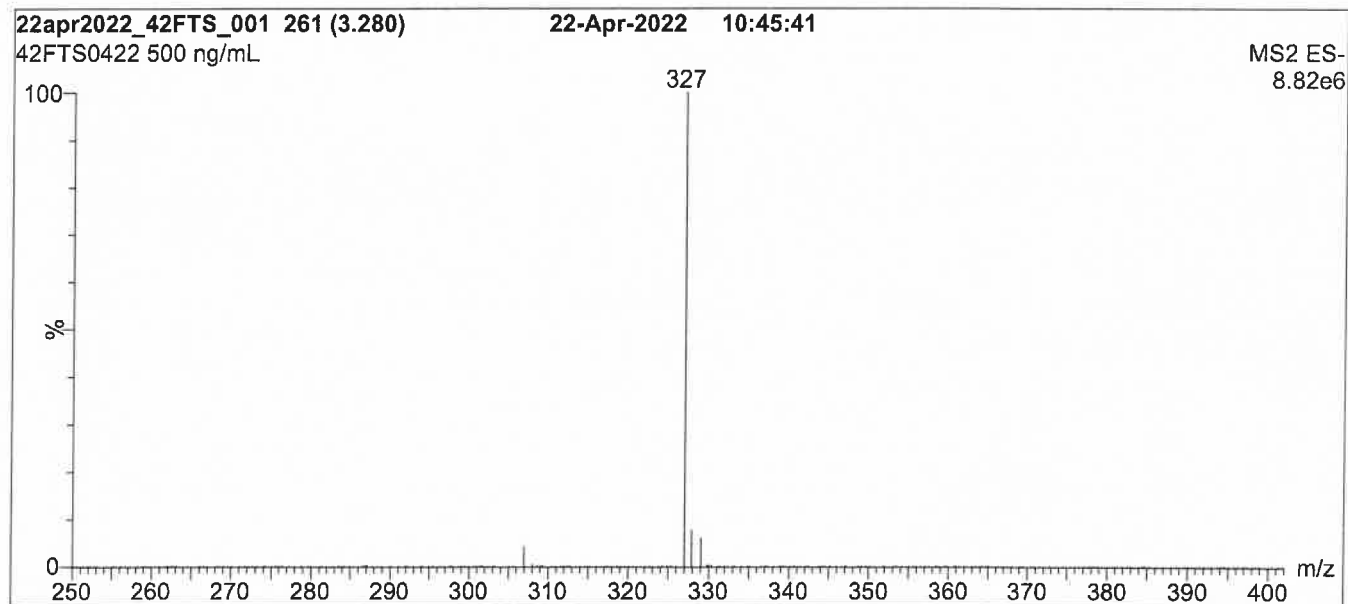
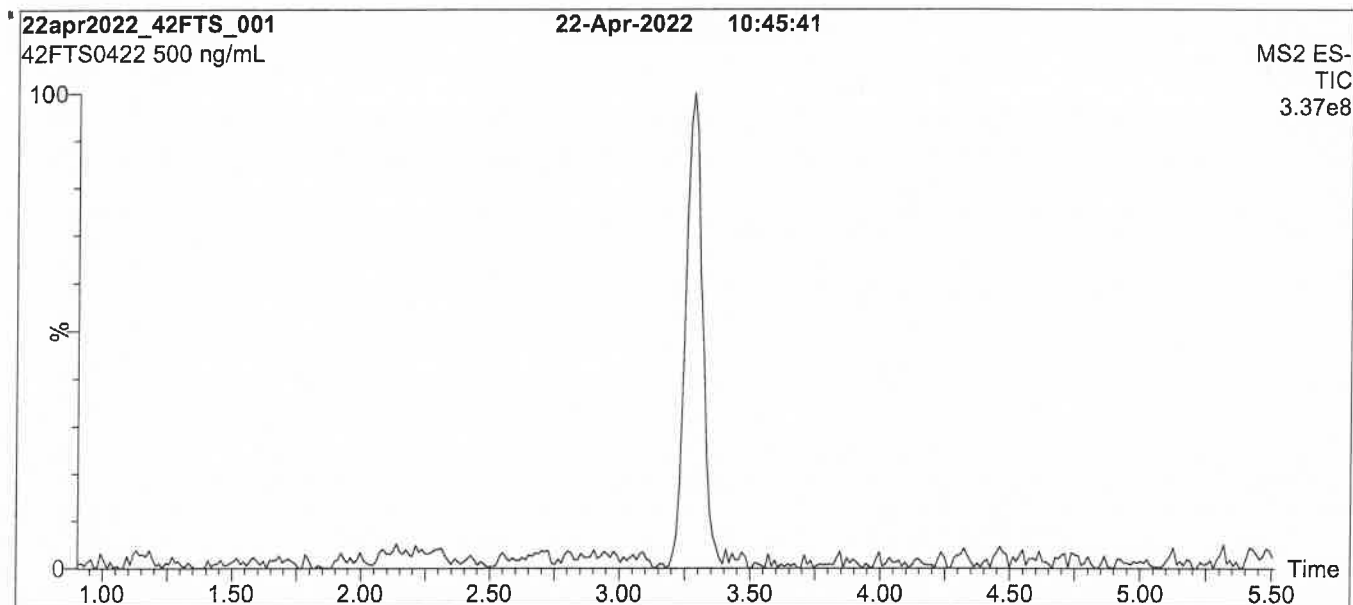
QUALITY MANAGEMENT:

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Figure 1: 4:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

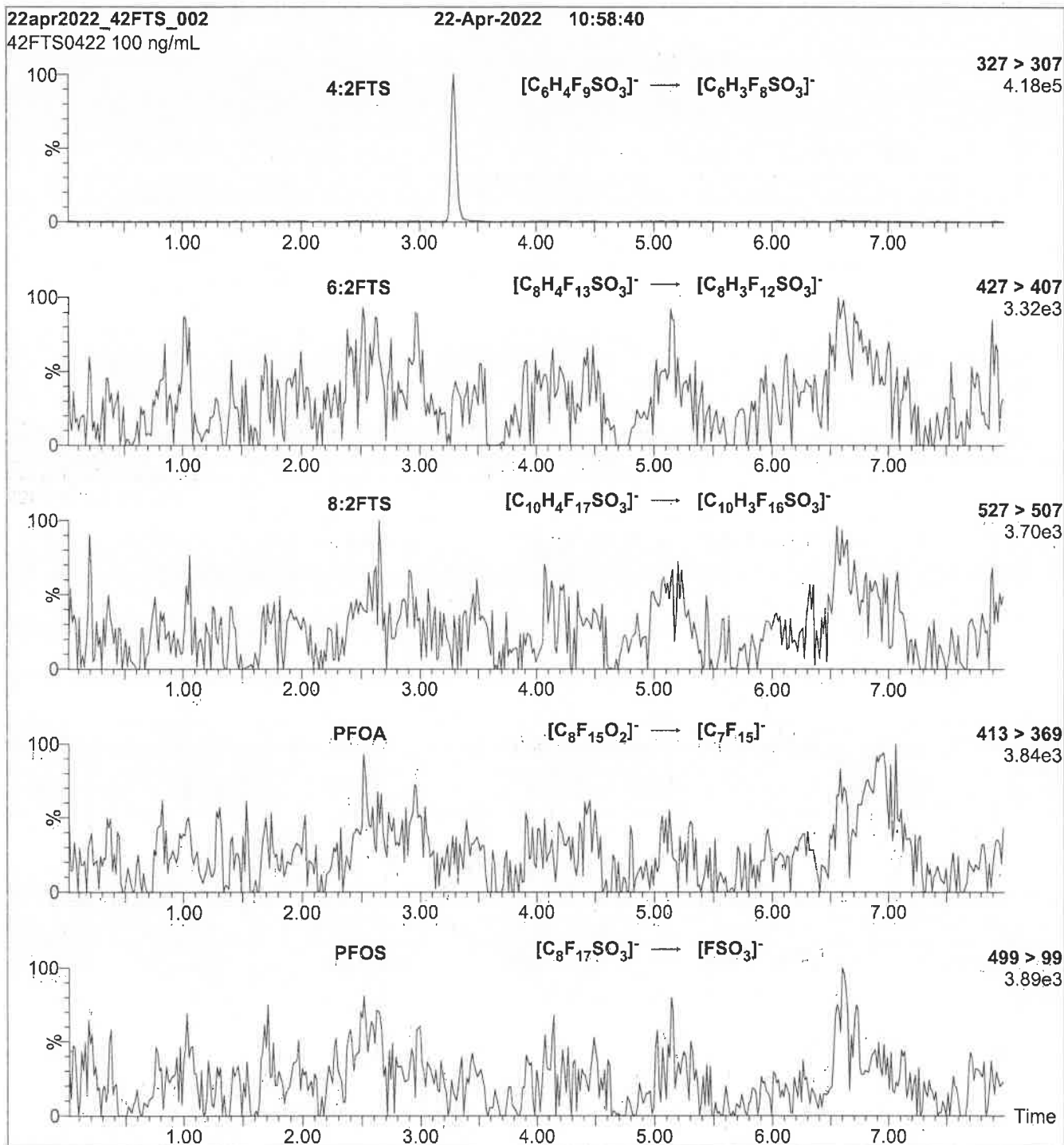
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 25.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: 4:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (4:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 18

Reagent

LC4 : 2FTS2_00003



Product Name: 1H,1H,2H,2H-PERFLUOROHEXANE SULFONATE (4:2 FTS),
(Isotopic Label & Enrichment Specification) SODIUM SALT (UNLABELED) 50 UG/ML IN METHANOL

Lot Number: SDIJ-026A

Catalog Number: ULM-10757-S

Product Information

Chemical Purity Specification: $\geq 98\%$

MW*: 350.13

* For isotopically labeled compounds, MW listed is for the fully enriched product.

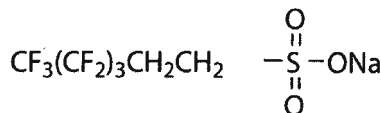
Labeled CAS Number: NA

Unlabeled CAS Number: 27619-93-8

Chemical Formula: C₆H₄F₉NaO₃S

Storage: Store at room temperature away from light and moisture.

Intended Use: For Research Use Only. Not for use in diagnostic procedures.



$$\frac{350.13}{327.14} = 1.0703 \quad \frac{327.14}{350.13} = 0.9343 \quad 0.9343 \times 50 \frac{\mu\text{g}}{\text{mL}} = 46.72 \frac{\mu\text{g}}{\text{mL}}$$

cy 8/2/21

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated.

The retest date for this chemical has been designated based on CIL's experience in working with chemical standards for over 30 years, and includes review of actual analytical results and relevant literature references. The retest date is valid only for unopened vials or ampoules that have been stored as recommended.

Approved by: Marina Kliensky

Marina Kliensky, Quality Review

Quality Control Tests and Results

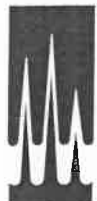
QC Release Date	9/03/2019
Expiration Date	9/03/2024
Concentration Based on Gravimetry	50.0 \pm 0.5 $\mu\text{g/mL}$ (k=2)
Chemical Purity of Neat Material(s)	100.0%

Additional Testing Information:

Retest/Review Date: 09/03/24

Reagent

LC5 : 3FTCA_00008



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

3065350
ID: LC5:3FTCA_00008
Exp: 01/05/27 Prod: 3M Opm: 06/16/22
5:3 FTCA/ FPePA Stock 50

PRODUCT CODE:

FPePA

LOT NUMBER:

FPePA1221

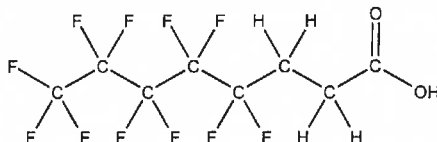
COMPOUND:

3-Perfluoropentyl propanoic acid

STRUCTURE:

CAS #:

914637-49-3



MOLECULAR FORMULA:

$C_8H_5F_{11}O_2$

MOLECULAR WEIGHT:

342.11

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

01/05/2022

EXPIRY DATE: (mm/dd/yyyy)

01/05/2027

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <0.5% of the unsaturated 5:3 telomer acid ($C_8H_3F_{11}O_2$) as an impurity determined by 1H NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 01/06/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

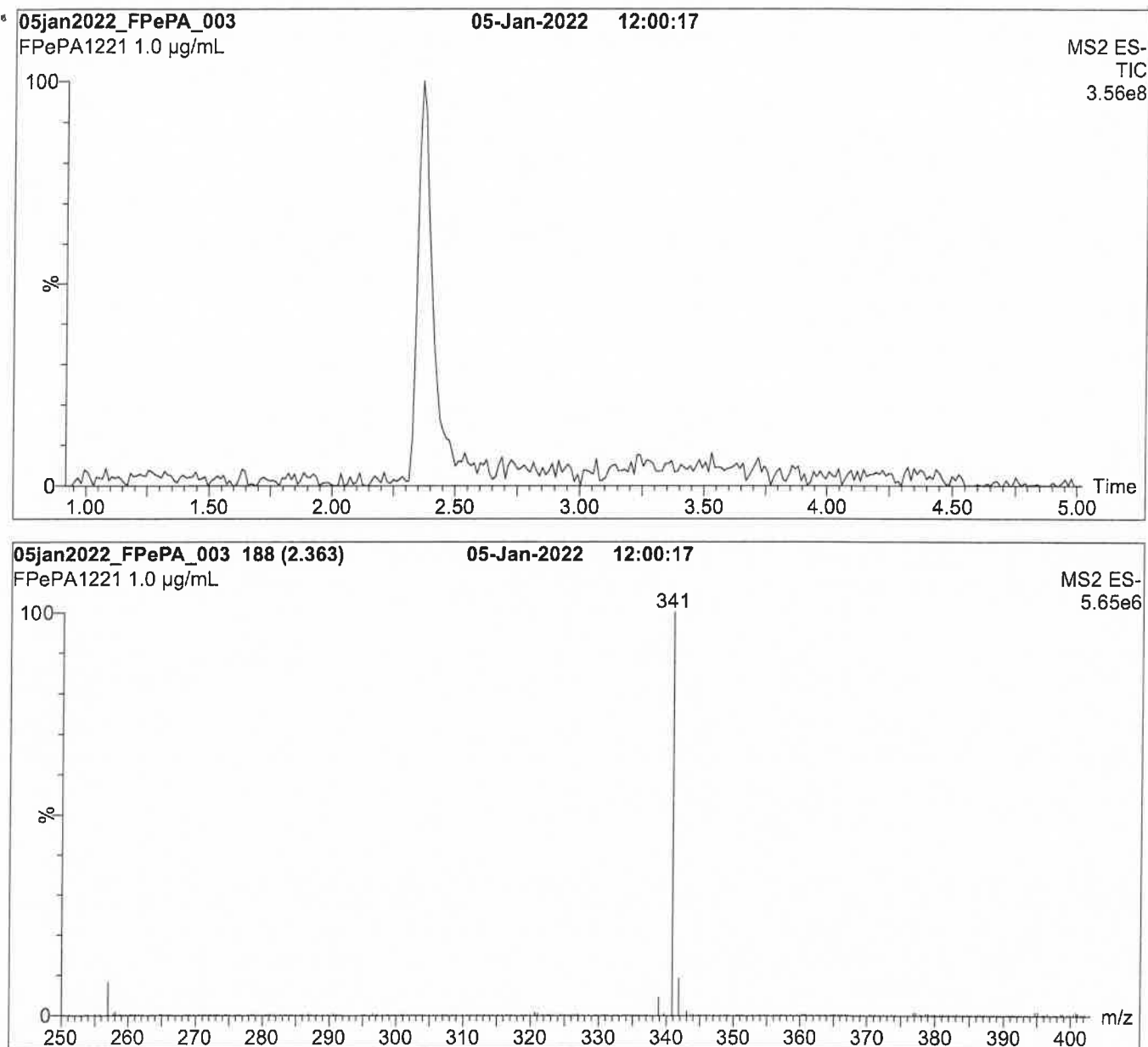
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: FPePA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

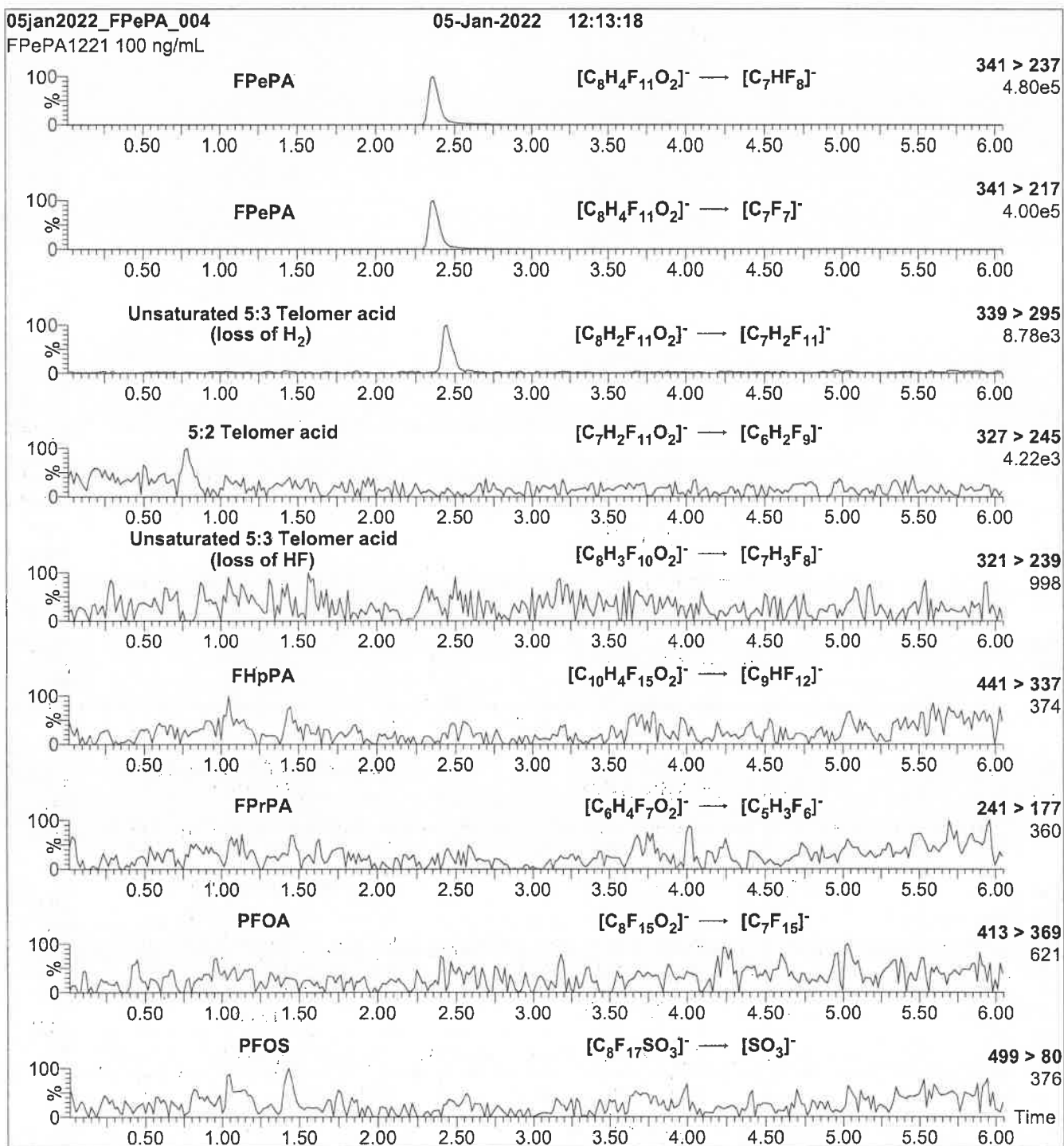
Capillary Voltage (kV) = 0.50

Cone Voltage (V) = 18.50

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: FPePA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (FPePA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.09e-3

Collision Energy (eV) = 10

Reagent

LC537_ICVMIX_00011

ABSOLUTE STANDARDS, INC.

ISO - 17034

Certificate of Analysis

Certified Reference Material (CRM)

Conformance: The "Certificate of Analysis" is applicable for CRM's, fulfilling the requirements in the current version of: ISO 17034.

Health & Safety: See the attached SDS & Certified Weight Report before use.

Intended Use: This Certified Reference Material (CRM) is intended primarily for use in the characterization of unknowns and the establishment of analyzer or instrument response factors by qualified personnel. Typical instrumental organic assays include: GC & LC, and inorganic assays include: ICP & AA. This product is for laboratory use only.

Characterization Values: In production, gravimetric/volumetric readings are certified to be within $\pm 0.5\%$ of the stated value & are valid between 18 °C & 30 °C. The measured characterization of uncertainty can be found on the Certified Weight Report. All product weighings are performed on an analytical balance that is calibrated to NIST Traceable standard weights & certified by the manufacturer. The volumetric glassware used is Class "A" type & conforms to ASTM E-288 unless otherwise stated. The solvents & compounds used are of the highest practical purity & typically meet or exceed ACS Reagent Grade & ACS Standards Grade specifications. The expanded uncertainty field on Certified Wt. Report represents CRM uncertainty as described in ISO 17034.

Homogeneity: Uncertainties that are due to the analytical procedure(s) are within $\pm 5\%$ unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within $\pm 5\%$ unless specifically stated on the Certified Wt. Report.

Stability: Uncertainties for short-term stability are determined in accordance with ISO 17034. Long-term stability is determined in accordance with ISO 17034. The shelf life is limited by the stated expiration for each product. Expiration dates and additional technical information can be found on the Certified Weight Report and on the product label.

Uncertainty: UCRM is the expanded uncertainty which utilizes a $K = 2$ (coverage factor of 2), in accordance with ISO 17034 as listed above (Characterization, Homogeneity, Verification, and Stability).

Purity & Identity: Organic solutions are typically formulated from neat materials whose purity & identity have been characterized by GC-MSD & LC-PDA techniques with comparison to a NIST Traceable library of mass spectra when available. Additional characterization techniques may include but are not limited to: refractive index measurements of liquids, melting point measurements of solids, & GC-FID, ECD, PID, ELCD, LC-PDA measurements for purity. Inorganic solutions & neats are typically formulated from materials whose purity & identity have been characterized by ICPMS with comparison to a NIST SRM® when available. Additional characterization techniques may include but are not limited to: titrimetry, and densitometry.

Storage: Sealed ampules and other containers should be stored in the dark and at temperatures indicated on the Certified Weight Report or product label. Certification by Absolute Standards, Inc. is typically valid for 3 years from the date of manufacture. Each product will show its own expiration date as the limit of certification. Certified values are not applicable to opened ampules or for any materials stored in re-sealable containers. Please see the "Certified Weight Report" for specific values and any exceptions.

Usage: Ampules & bottles should be brought to room temperature (18 to 30 °C) before opening. Sonication may be required for high concentration solutions or solutions that may precipitate during storage. After opening, care should be exercised to avoid concentration changes owing to evaporation of the solvent or essential components. We recommend that a suitable re-sealable container be available before opening an ampule to decant the standard for short-term storage and use.

Minimum Sample Size: 0.5 uL for analytical applications.

Legal Notice: Warranty of products are as described when shipped. No warranty as to fitness for any particular application is expressed or implied. Errant shipments and/or quality claims must be made within 10 days of receipt. Liability is limited solely to the replacement of the product or refund of purchase price.

Certifying Officer: Stephen J. Arpie, M.S., Director General

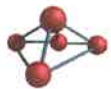
Page 1 of 2

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Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

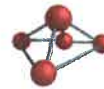
3112406
ID: LC537_ICVMIX_00011
Exp:06/01/21 Pp43M Opn:07/22/22
PFAC/IFAS Mix

ABSOLUTE STANDARDS, INC.

ISO - 17034



Understanding the Certified Weight Report



Each Certified Reference Material (CRM) is supported by a Certified Weight Report. Assigned values for concentrations and associated uncertainties are based upon NIST traceable masses & volumes used in production.

Part #
Lot #
Shelf Life

Target
Compounds

Method of
Analysis

Qualitative
Quantitative

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 10009R
Lot Number: 070716
Description: GLP Priority Pollutant Internal Standards
GC/MS Calibration - 6 components

Solvent(s): Methylene chloride
Lot#: 78782

Expiration Date: 070721
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 4000
NIST Test ID#: 822-275872-11

05-06 Balance Uncertainty
0.058 Peak Uncertainty

Weight(s) shown below were combined and diluted to (mL): 500.0

Formulated By: Paul Barron
Reviewed By: Pedro L. Rentes

MSDS Information
(Solvent Safety Info. On Attached pg.)

Compound	SN#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty (%)	Target Weight (g)	Actual Weight (g)	Actual Conc (µg/mL)	Expanded Uncertainty (µg/mL)	MSDS CAS#	OSHA PEL (TWA)	LD50
1,4-Dichlorobenzene-d4	118	PR-1848507287CB1	4000	98	0.2	2.04093	2.04339	4004.7	16.4	8888-82-1	N/A	or-rat 820mg/kg
2 Naphthalene-d8	229	PR-23280231812NP1	4000	99	0.2	2.02032	2.02084	4001.0	16.2	1148-65-2	10 ppm (50mg/m3/8h)	or-rat 490mg/kg
Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	16.2	16087-68-2	N/A	or-rat 600mg/kg
Phenanthrene-d10	249	PR-23055081211PN1	4000	98	0.2	2.04093	2.04138	4000.8	16.4	1817-22-2	N/A	N/A
Chrysene-d12	92	I-16260	4000	98	0.2	2.04093	2.04159	4001.3	16.4	1719-03-5	N/A	N/A
Perylene-d12	247	PR-24113	4000	98	0.2	2.04093	2.04159	4001.3	16.4	1820-86-3	N/A	N/A

Run 35, "P10009R L070716 (4000µg/mL in MeCl2)"

Run Length: 40.00 min, 23998 points at 10 points/second.
Created: Sat, Jul 6, 2019 at 1:54:53 PM.
Sampled: Sequence "070818-GC18M2", Method "GC18-M2".
Analyzed using Method "GC18-M2".

Comments
GC18-M2 Analysis by Melissa Stanciar
Column ID: SPB5-30 meter x 0.53mm x 1.5µm Film Thickness.
Flow rates: Total Flow = 300 mL/min, Helium (carrier) = 0.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) = 300 mL, Oven Temp 1 = 50°C (1 min).
Rate = 10°C/min, Oven Temp 2 = 300°C (14 min), Total Run Time = 60 Minutes, Injector Temp = 250°C.
FID Temp = 300°C, FID Signal = aDaq Channel 1.
Gas Chromatograph = HP 6890, Auto Sampler = HP 7873, Standard Injection = 0.5 µL, Range = 4

Peak No.	Name	FID RT (min.)
1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	6.98
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Supelco, Inc.
P#10009R L#070716
P#47006 L#AS669

Analyte	Sub/Abs Dev (%)
1,4-Dichlorobenzene-d4	2.55
Naphthalene-d8	2.43
Acenaphthene-d10	2.74
Phenanthrene-d10	0.05
Chrysene-d12	1.92
Perylene-d12	-1.73
Total	-0.56

Part # 10009R Lot # 041219 1 of 2 Printed: 5/8/2019, 12:55:50 PM

Formulator
Reviewer

Actual
Concentration

Uncertainty
Values

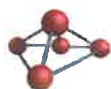
Health &
Safety

3rd Party
Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

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Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019





CERTIFIED WEIGHT REPORT

Part Number: **99896**
Lot Number: **060722**
Description: **PFOA's EPA 537.1 18 components**
Expiration Date: **060727**
Recommended Storage: **Freezer (0 °C)**
Nominal Concentration (µg/mL): **2.0**
NIST Test ID: **6UTB**

Solvent: **Methanol (1 mL KCl)**
Balance Uncertainty: **5E-05**
Flask Uncertainty: **0.001**

Lot# **042722**
Formulated By: **P. J. P. P.**
Prepared By: **P. J. P. P.**
Reviewed By: **P. J. P. P.**
DATE: **060722**

Volume(s) shown below were combined and diluted to (mL):
Note: All assigned values are ation concentrations.

Compound	Part Number	Lot Number	Division Factor	Initial Vol. (mL)	Uncertainty (mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty (µg/mL)	Free Acid Case	SDS Information	LD50
1. N-Ethylperfluorooctanesulfonic acid (n-NEPFOA)*	65806	060122	0.040	2.00	0.017	50.2	2.0	0.11	2991-50-6 (L)	N/A	N/A
2. N-Methylperfluorooctanesulfonic acid (n-MePFOA)*	4182	bnMePFOA0422	0.040	2.00	0.017	50.0	2.0	0.11	2355-31-9 (L)	N/A	N/A
3. Perfluoro-1-butanesulfonic acid (PFBS)	99193	030920	0.040	2.00	0.017	50.1	2.0	0.04	375-73-5	N/A	N/A
4. Perfluorodecanoic acid (PFDA)	99193	030920	0.040	2.00	0.017	51.1	2.0	0.11	335-78-2	N/A	0.01-0.1 mg/kg
5. Perfluorododecanoic acid (PFDDA)	99193	030920	0.040	2.00	0.017	52.7	2.1	0.11	307-55-1	N/A	N/A
6. Perfluorotetradecanoic acid (PFTDA)	99193	030920	0.040	2.00	0.017	50.1	2.0	0.11	375-85-9	N/A	N/A
7. Perfluorohexane-1-sulfonic acid (n-PFHS)	99193	030920	0.040	2.00	0.017	50.1	2.0	0.11	335-46-4 (L)	N/A	N/A
8. Perfluorooctanoic acid (PFOA)	99193	030920	0.040	2.00	0.017	50.8	2.0	0.11	307-24-4	N/A	N/A
9. Perfluorooctanoic acid (PFNA)	99193	030920	0.040	2.00	0.017	51.5	2.1	0.11	375-95-1	N/A	N/A
10. Perfluorooctanesulfonic acid (n-PFOS)	99193	030920	0.040	2.00	0.017	50.1	2.0	0.04	1783-23-1 (L)	N/A	N/A
11. Perfluorooctanoic acid (n-PFOA)	99193	030920	0.040	2.00	0.017	50.9	2.0	0.11	335-67-1 (L)	N/A	N/A
12. Perfluorodecanoic acid (PFDA)	99193	030920	0.040	2.00	0.017	50.9	2.0	0.11	375-06-7	N/A	N/A
13. Perfluorotetradecanoic acid (PFTDA)	99193	030920	0.040	2.00	0.017	52.3	2.1	0.11	72629-94-8	N/A	N/A
14. Perfluorooctanoic acid (PFNA)	99193	030920	0.040	2.00	0.017	50.1	2.0	0.03	2058-94-8	N/A	N/A
15. 2-(Heptafluoropropyl)-2,3,3-tetrafluoropropanoic acid (HFPD-DA)	99193	040522	0.040	2.00	0.017	50.1	2.0	0.03	13522-13-6	N/A	N/A
16. 11-Chlorooctadecanoic acid (11-Cl-PFOA)	4165	11ClPFOA0422	0.042	2.10	0.017	47.1	2.0	0.03	783051-92-9	N/A	N/A
17. 9-Chlorooctadecanoic acid (9-Cl-PFOA)	4164	9ClPFOA0422	0.042	2.10	0.017	46.8	2.0	0.03	75458-58-7	N/A	N/A
18. 4,8-Dioxo-3H-perfluorooctanoic acid (ADONA)	4103	NADONA021	0.042	2.10	0.017	47.1	2.0	0.03	919005-14-4	N/A	N/A

Perfluorooctanoic acid (linear)*	99193	030920	0.040	2.00	0.017	51.5	2.06	0.035	335-67-1 (L)	N/A	for test 180mg/kg
Perfluorooctanoic acid (branched isomer)*	99193	030920	0.040	2.00	0.017	0.6	0.02	0.000	335-67-1 (L)	N/A	for test 180mg/kg
Perfluorohexanesulfonic acid (linear)*	99193	030920	0.040	2.00	0.017	44.1	1.78	0.03	355-46-4 (L)	N/A	N/A
Perfluorohexanesulfonic acid (branched isomer)*	99193	030920	0.040	2.00	0.017	6.0	0.241	0.0041	355-46-4 (L)	N/A	N/A
Heptafluorooctanesulfonic acid (linear)*	99193	030920	0.040	2.00	0.017	38.1	1.52	0.03	1783-23-1 (L)	N/A	N/A
Heptafluorooctanesulfonic acid (branched isomer)*	99193	030920	0.040	2.00	0.017	7.5	0.30	0.005	1783-23-1 (L)	N/A	N/A
Heptafluorooctanesulfonic acid (branched isomer)*	99193	030920	0.040	2.00	0.017	4.0	0.16	0.003	1783-23-1 (L)	N/A	N/A
Heptafluorooctanesulfonic acid (branched isomer)*	99193	030920	0.040	2.00	0.017	0.5	0.020	0.0003	1783-23-1 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonic acid (linear)*	65806	060122	0.040	2.00	0.017	44.0	1.76	0.03	2991-50-6 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonic acid (branched)*	65806	060122	0.040	2.00	0.017	4.5	0.18	0.003	2991-50-6 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonic acid (branched)*	65806	060122	0.040	2.00	0.017	1.7	0.07	0.001	2991-50-6 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonic acid (branched)*	65806	060122	0.040	2.00	0.017	0.1	0.004	0.0001	2991-50-6 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonic acid (linear)*	4182	bnMePFOA0422	0.040	2.00	0.017	38.0	1.44	0.02	2355-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonic acid (branched)*	4182	bnMePFOA0422	0.040	2.00	0.017	6.5	0.26	0.004	2355-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonic acid (branched)*	4182	bnMePFOA0422	0.040	2.00	0.017	5.0	0.20	0.003	2355-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonic acid (branched)*	4182	bnMePFOA0422	0.040	2.00	0.017	2.5	0.10	0.0017	2355-31-9 (L)	N/A	N/A

*Concentrations for branched and linear isomers are based on LCMS chromatographic analysis only.

A qualitative standard (Sect. 3.19) is available for PFOA that contains the linear and branched isomers (Wellington Labs, Cat. No. T-PFOA, or equivalent). This qualitative PFOA standard must be purchased and used to identify the retention times of the branched PFOA isomers, but the linear only PFOA standard must be used for quantitation (Sect. 12.2) until a quantitative PFOA standard containing the branched and linear isomers becomes commercially available.1

• The certified value is the concentration calculated from gravimetric and volumetric measurements using the stated standards.
• Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
• Standards are certified (±) 0.5% of the stated value, unless otherwise stated.
• All standards, after opening sample, should be stored with caps tight and under appropriate laboratory conditions.
• Uncertainty Reference: Taylor, B.N., and Kuyat, C.D., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

Reagent

LC6:2diPAP_00009



2983641

ID: LC6:2diPAP_00009

Exp: 03/18/27 Prod: PCY Opm: 04/21/22

6:2diPAP 48.6468 ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

6:2diPAP

LOT NUMBER:

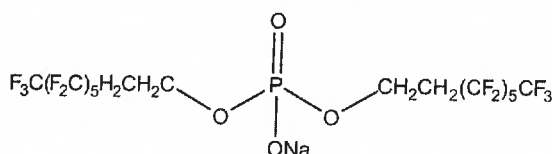
62diPAP0222

COMPOUND:

Sodium bis(1H,1H,2H,2H-perfluorooctyl) phosphate

STRUCTURE:**CAS #:**

407582-79-0

**MOLECULAR FORMULA:** $\text{C}_{16}\text{H}_{18}\text{F}_{26}\text{O}_4\text{PNa}$ **MOLECULAR WEIGHT:**

812.15

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

03/18/2022

EXPIRY DATE: (mm/dd/yyyy)

03/18/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

$$\begin{array}{r} 812.15 \\ - 22.99 \\ \hline 789.16 \\ + 1.01 (H) \\ \hline 790.17 \end{array}$$

$$\frac{790.17}{812.15} \times 50.0 \frac{\mu\text{g}}{\text{mL}} = 48.6468 \frac{\mu\text{g}}{\text{mL}}$$

PCY
4/21/22

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

03/28/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

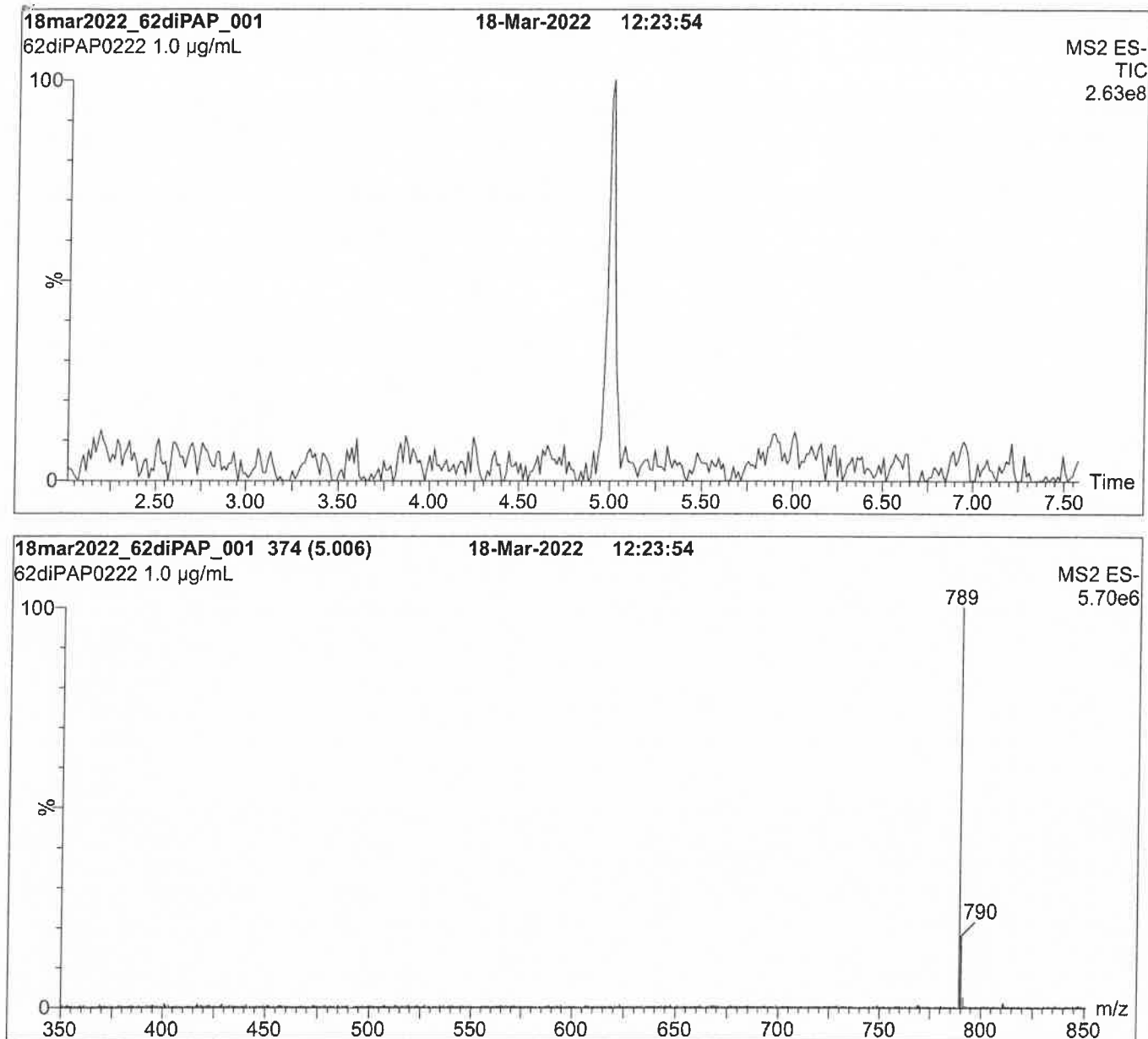
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: 6:2diPAP; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Zorbax Extend C18
1.8 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 35% H₂O (pH 9, adjusted with NH₄OH) / 65% MeOH
Ramp to 85% organic over 7 min and hold for
2.5 min before returning to initial conditions in 1 min.
Time: 12 min

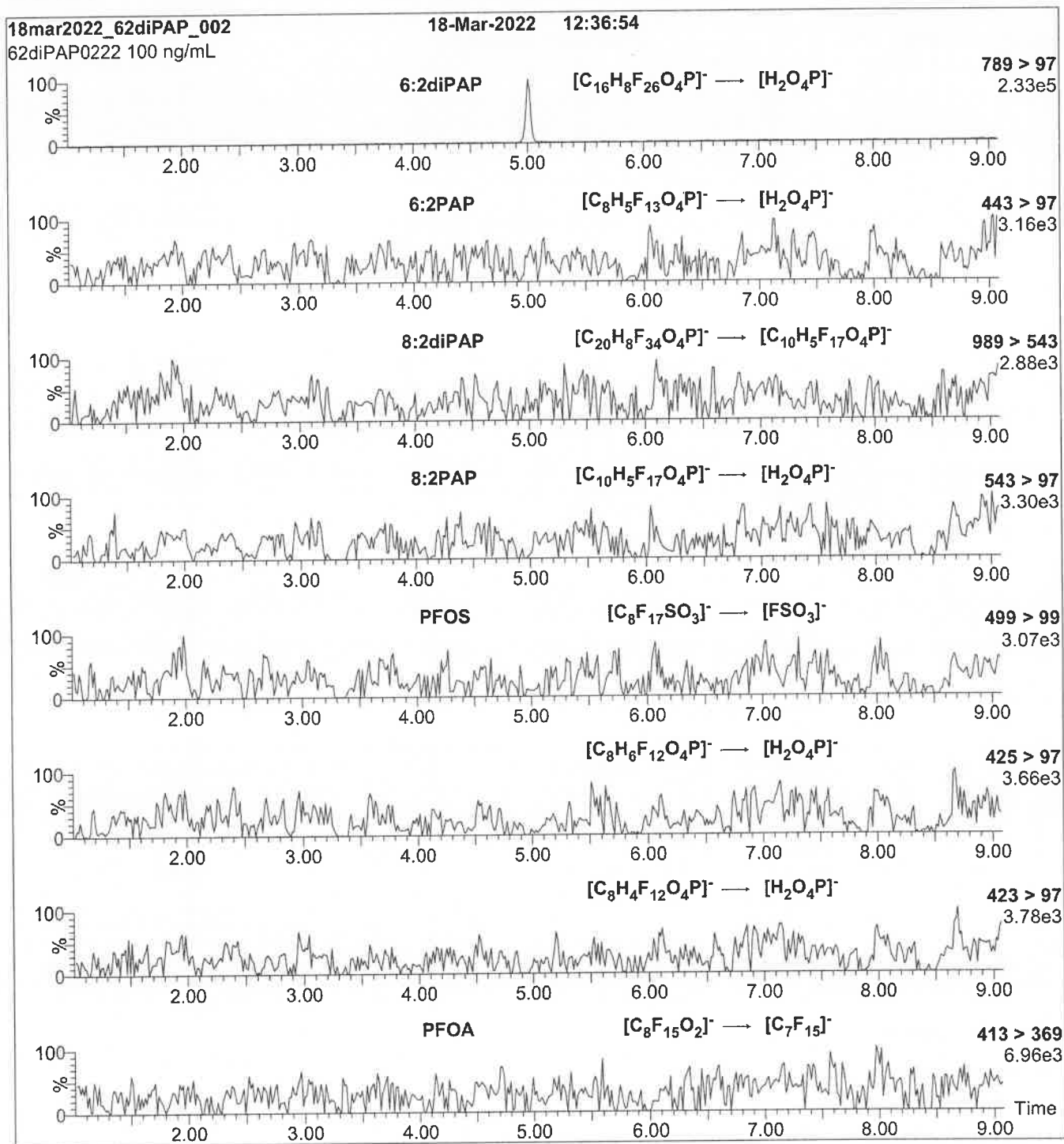
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (350 - 1200 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.80
Cone Voltage (V) = 45.00
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 650

Figure 2: 6:2diPAP; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (6:2diPAP)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.27e-3

Collision Energy (eV) = 38

Reagent

LC6:2FTS_00024



2979920

ID: LC6:2FTS_00024

Exp:01/04/27 Ppd:3M Opr:04/19/22
6:2FTS**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PRODUCT CODE:**

6:2FTS

LOT NUMBER:

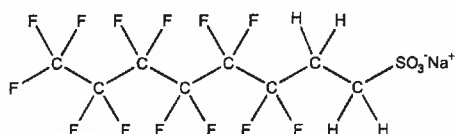
62FTS1221

COMPOUND:

Sodium 1H,1H,2H,2H-perfluorooctanesulfonate

STRUCTURE:**CAS #:**

27619-94-9

**MOLECULAR FORMULA:** $C_8H_4F_{13}SO_3Na$ **MOLECULAR WEIGHT:**

450.15

CONCENTRATION:

50.0 ± 2.5 µg/mL (Na salt)

SOLVENT(S):

Methanol

47.6 ± 2.4 µg/mL (6:2FTS acid)

47.4 ± 2.4 µg/mL (6:2FTS anion)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

01/04/2022

EXPIRY DATE: (mm/dd/yyyy)

01/04/2027

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

01/05/2022
(mm/dd/yyyy)**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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UNCERTAINTY:

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

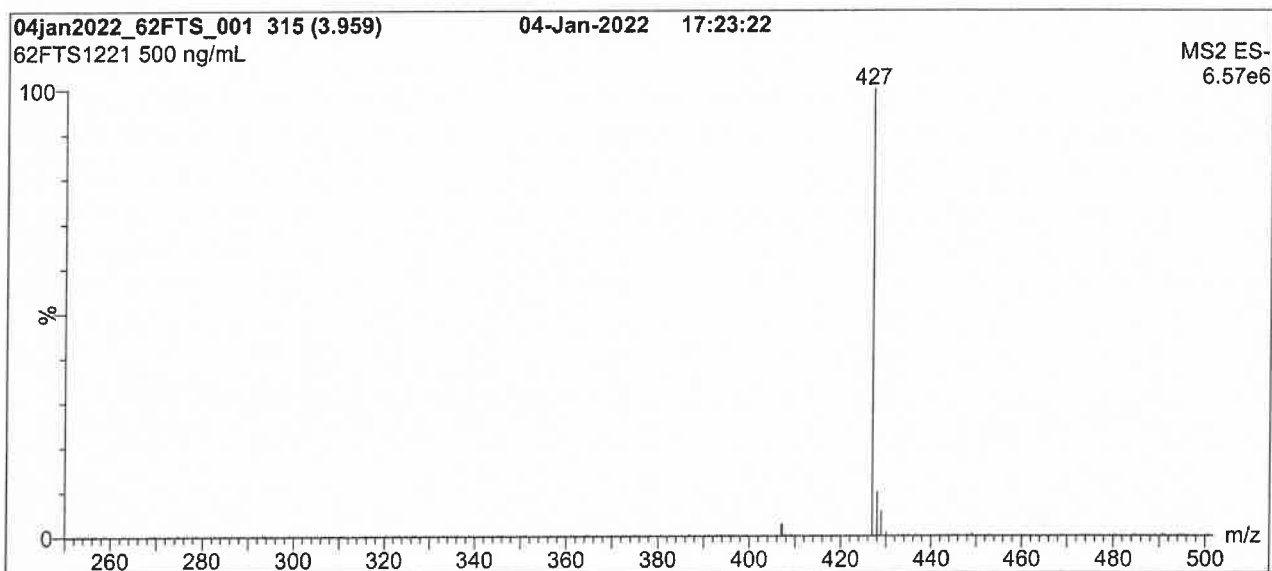
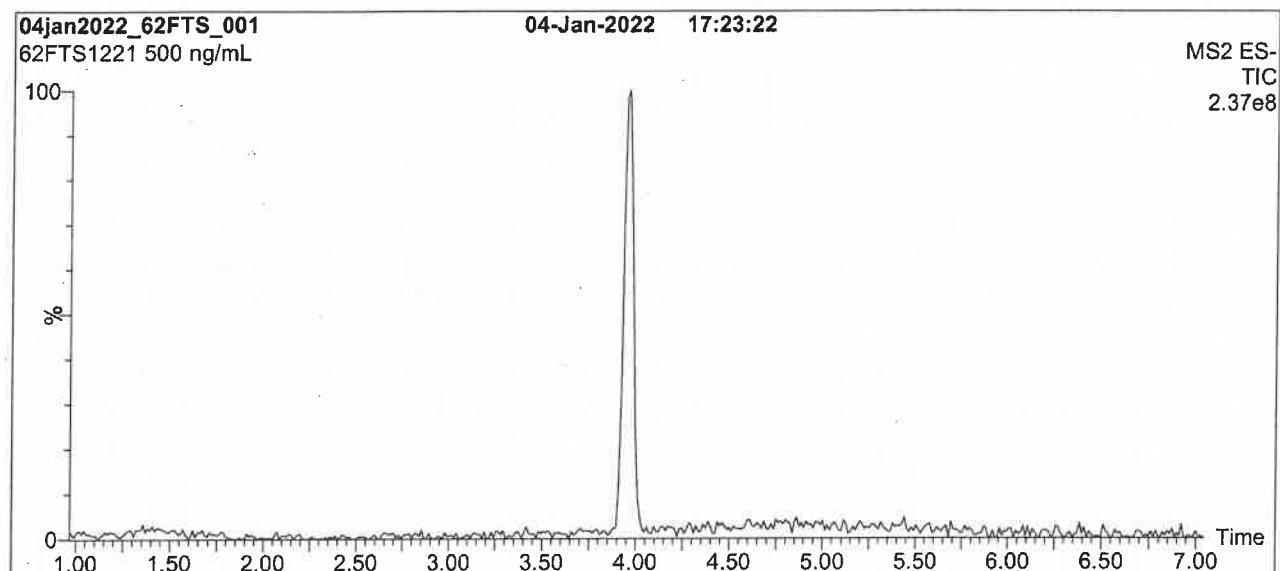
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



****For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com****

Figure 1: 6:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

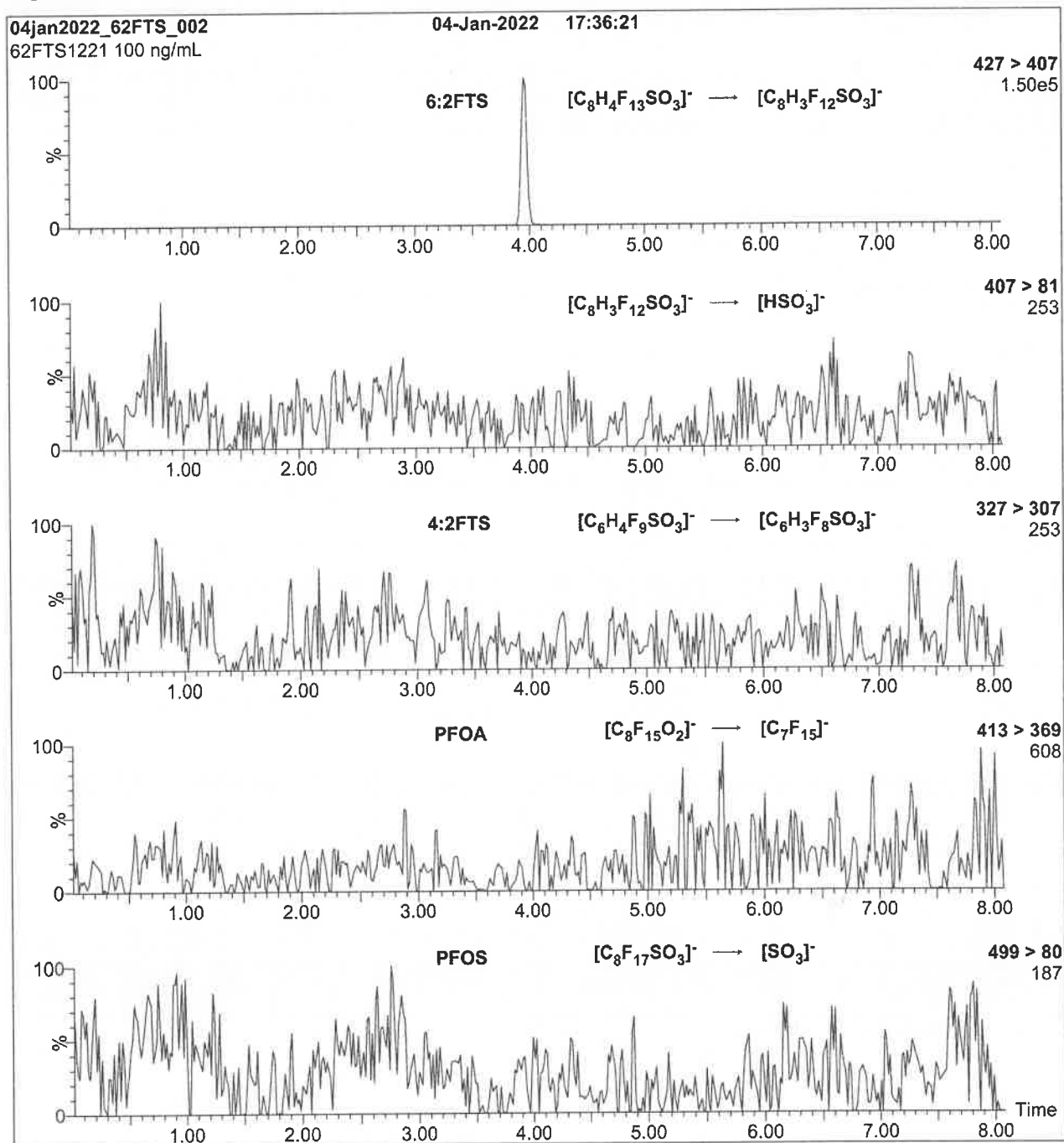
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: 6:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (6:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.20×10^{-3}

Collision Energy (eV) = 20

Reagent

LC6 : 2FTS2_00003

**Product Name:**

(Isotopic Label & Enrichment Specification)

1H,1H,2H,2H-PERFLUOROOCTANE SULFONATE (6:2 FTS),
SODIUM SALT (UNLABELED) 50 UG/ML IN METHANOL**Lot Number:**

SDJH-017

Catalog Number:

ULM-10756-S

Product Information

Chemical Purity Specification:

≥ 98%

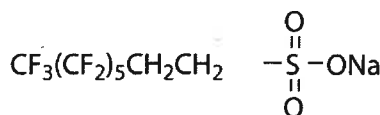
MW*:

* For isotopically labeled compounds, MW listed is for the fully enriched product.

450.15

Labeled CAS Number:

NA



Unlabeled CAS Number:

27619-94-9

Chemical Formula:

C₈H₄F₁₃NaO₃S

Storage:

Store at room temperature away from light and moisture.

Intended Use:

For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated.

The retest date for this chemical has been designated based on CIL's experience in working with chemical standards for over 30 years, and includes review of actual analytical results and relevant literature references. The retest date is valid only for unopened vials or ampoules that have been stored as recommended.

Approved by: Marina Klionsky

Marina Klionsky, Quality Review

Quality Control Tests and Results

QC Release Date

9/04/2019

Expiration Date

9/04/2024

Concentration Based on Gravimetry (of the salt)

50.0 ± 0.5 µg/mL (k=2)

Chemical Purity of Neat Material(s)

100.0%

Additional Testing Information:

Retest/Review Date: 09/05/24

Reagent

LC62/82diPAP_00007



2983646

ID: LC62/82diPAP_00007

Exp: 01/26/26 Pripd PCY Ogn: 04/21/22

6:2/8:2diPAP 48.7398 ug/ml



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

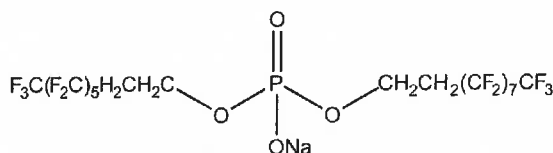
6:2/8:2diPAP

LOT NUMBER: 6282diPAP0121**COMPOUND:**

Sodium (1H,1H,2H,2H-perfluorooctyl-1H,1H,2H,2H-perfluorodecyl) phosphate

STRUCTURE:**CAS #:**

Not available

**MOLECULAR FORMULA:** $\text{C}_{18}\text{H}_{30}\text{F}_{30}\text{O}_4\text{PNa}$ **MOLECULAR WEIGHT:**

912.17

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

01/26/2021

EXPIRY DATE: (mm/dd/yyyy)

01/26/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.5% of sodium bis(1H,1H,2H,2H-perfluorooctyl) phosphate (6:2diPAP).

$$\begin{array}{r}
 889.18 \times 50 \frac{\mu\text{g}}{\text{mL}} = 48.7398 \frac{\mu\text{g}}{\text{mL}} \\
 912.17 \\
 - 22.99 \\
 \hline
 889.18 \\
 + 1.01 (\text{CH}) \\
 \hline
 890.19 \\
 890.19 \times 50 \frac{\mu\text{g}}{\text{mL}} = 48.7952 \frac{\mu\text{g}}{\text{mL}} \\
 912.17
 \end{array}$$

PCY 4/21/22
PCY 4/21/22

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**

 B.G. Chittim, General Manager
Date: 02/08/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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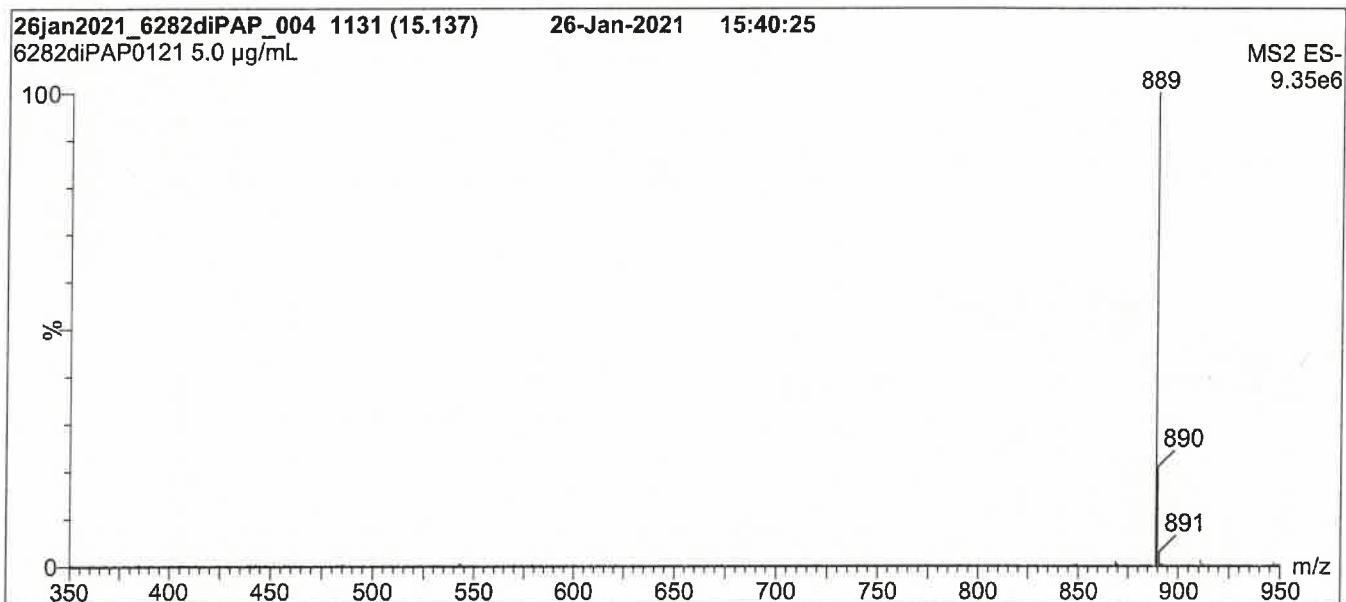
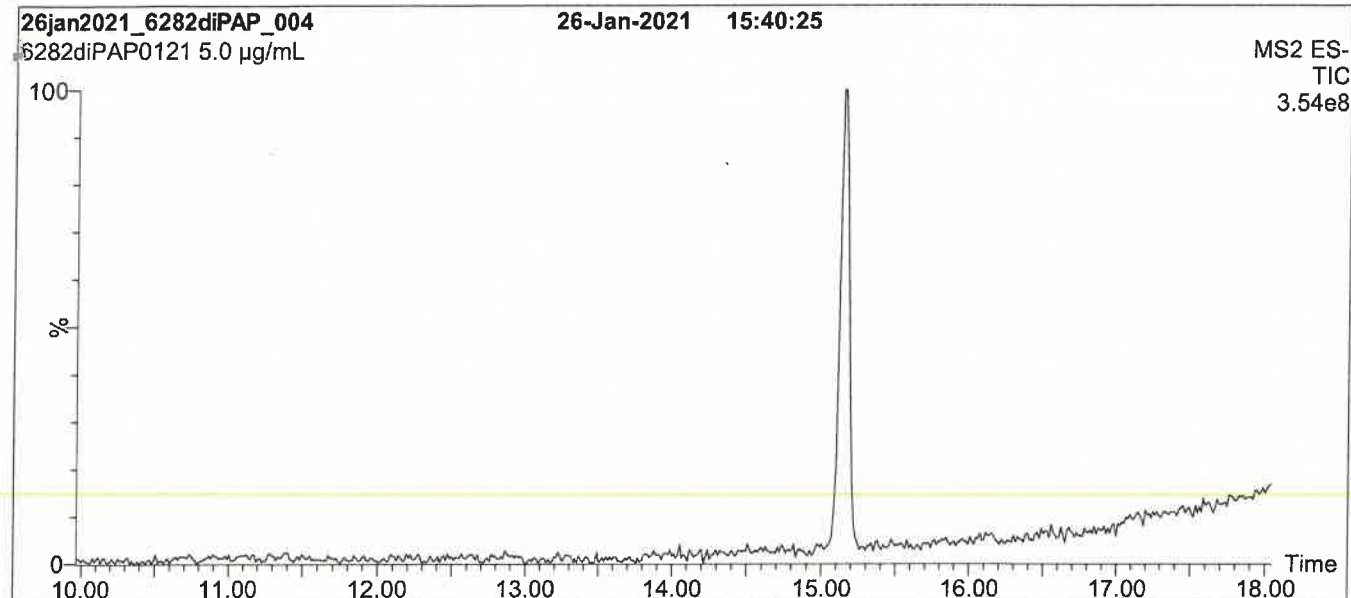
QUALITY MANAGEMENT:

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Figure 1: 6:2/8:2diPAP; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH C₁₈
1.7 µm, 2.1 x 50 mm

Mobile phase: Gradient

Start: 20% H₂O / 80% (80:20 MeOH:ACN)
(both with 2 mM NH₄OAc and 5 mM 1-methylpiperidine)
Ramp to 75% organic over 10 min, then ramp to 90%
organic over 10 min and hold for 3 min before returning
to initial conditions in 2 min.
Time: 25 min

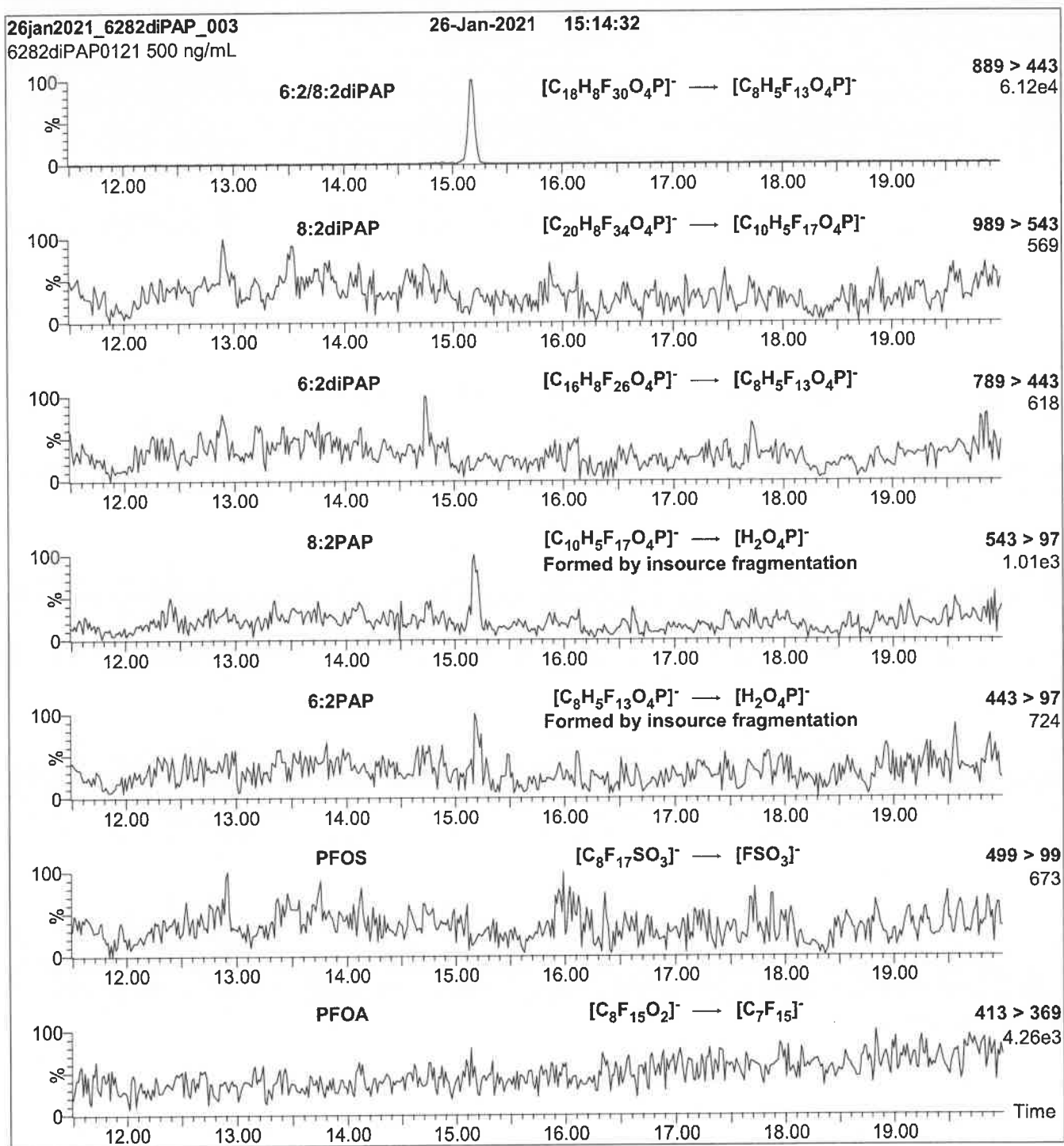
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (350 - 950 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.80
Cone Voltage (V) = 45.00
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 650

Figure 2: 6:2/8:2diPAP; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (6:2/8:2diPAP)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3

Collision Energy (eV) = 16

Reagent

LC7 : 3FTCA_00006



2980189

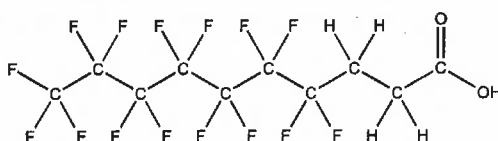
ID: LC7:3FTCA_00006

Exp: 11/12/25 Prod: PCY Opa: 04/19/22
7:3 FTCA/ FHpPA Stock 50**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PRODUCT CODE:**

FHpPA

LOT NUMBER: FHpPA1020**COMPOUND:**

3-Perfluoroheptyl propanoic acid

STRUCTURE:**CAS #:** 812-70-4**MOLECULAR FORMULA:** $C_{10}H_{15}F_{15}O_2$ **MOLECULAR WEIGHT:** 442.12**CONCENTRATION:** $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/12/2020

EXPIRY DATE: (mm/dd/yyyy)

11/12/2025

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:**11/27/2020
(mm/dd/yyyy)**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

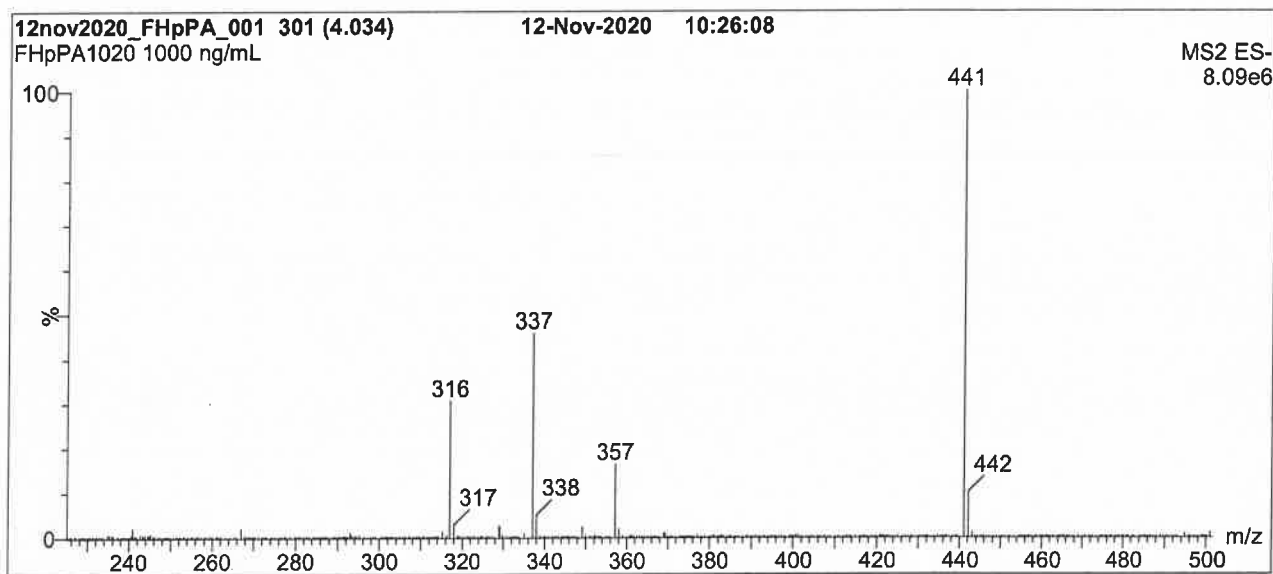
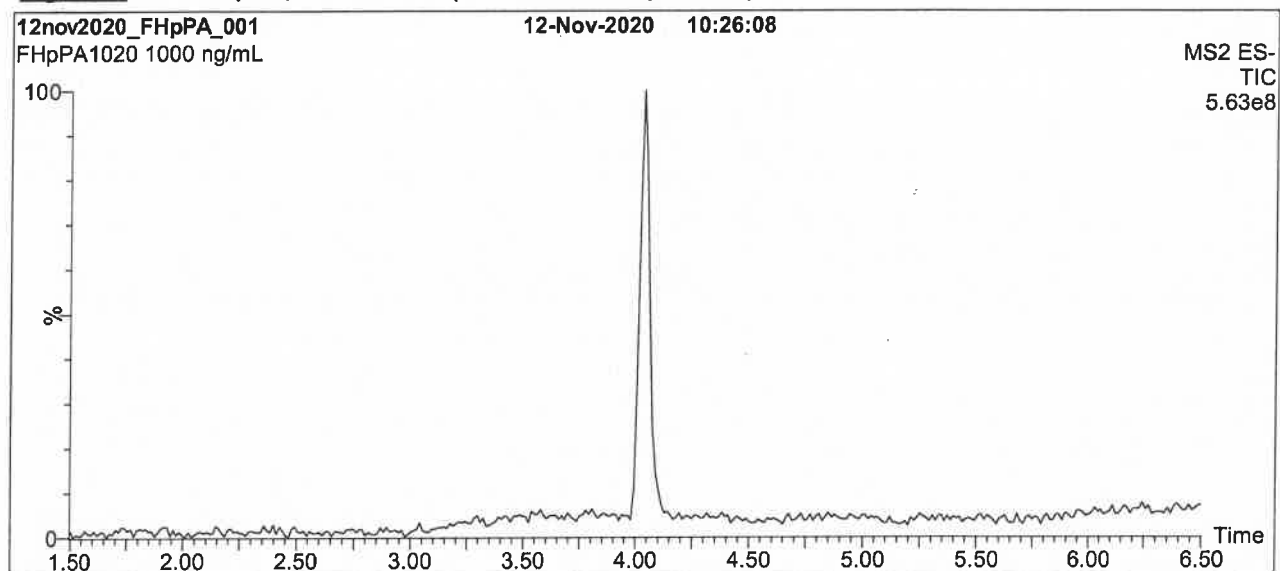
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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Figure 1: FHpPA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

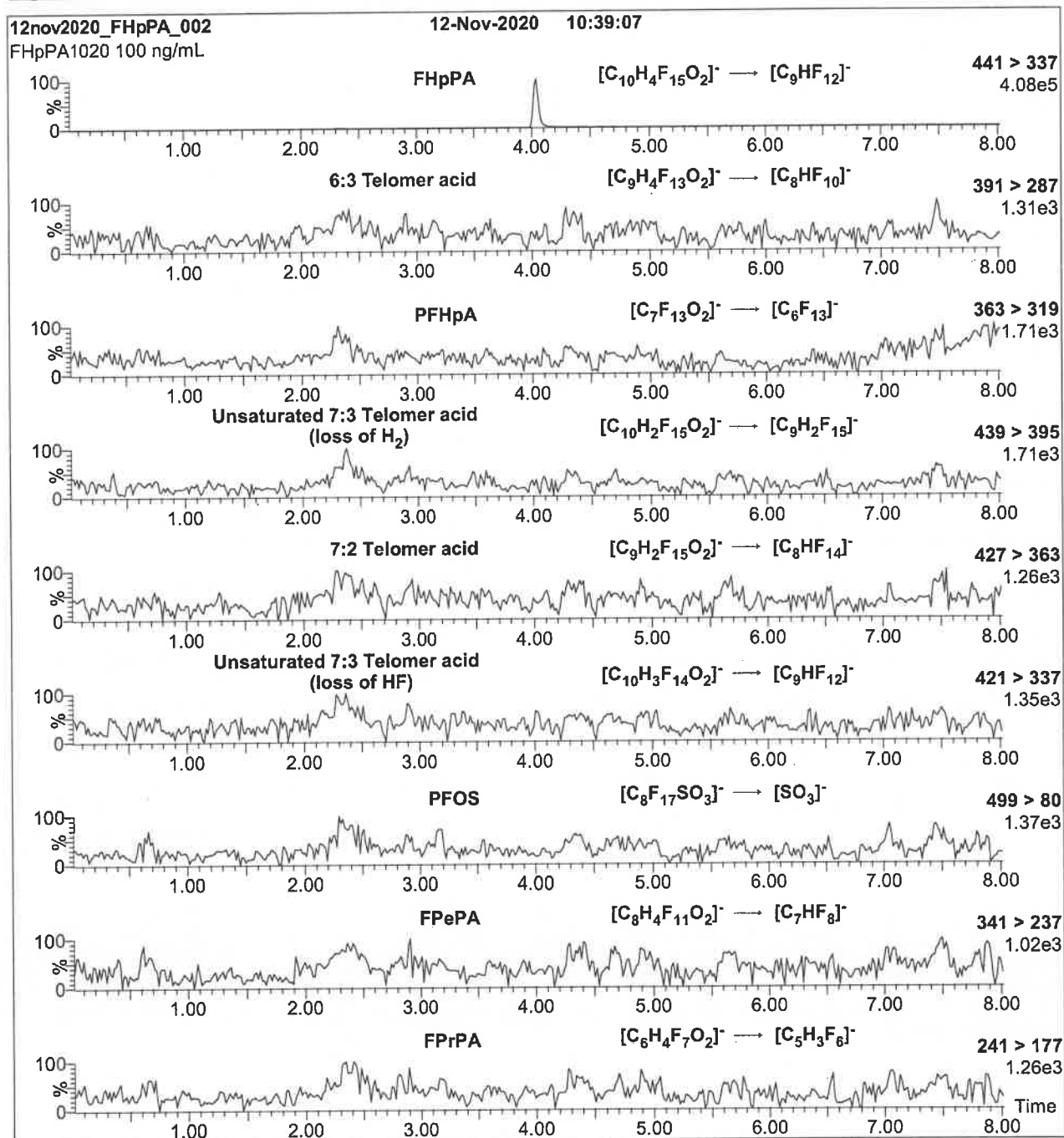
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 28.50
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: FHpPA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (FHpPA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.41e-3

Collision Energy (eV) = 8

Reagent

LC7 : 3FTCA_00007



3065380

ID: LC7-3FTCA_00007

Exp: 10/13/26 Ppdd: 04/06/16/22

7.3 FTCA/ FHpPA Stock 50



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHpPA

LOT NUMBER:

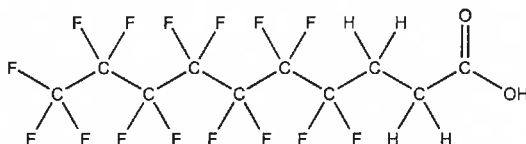
FHpPA1021

COMPOUND:

3-Perfluoroheptyl propanoic acid

STRUCTURE:**CAS #:**

812-70-4

**MOLECULAR FORMULA:** $C_{10}H_5F_{15}O_2$ **MOLECULAR WEIGHT:**

442.12

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

10/13/2021

EXPIRY DATE: (mm/dd/yyyy)

10/13/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

 B.G. Chittim, General Manager

Date: 10/29/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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EXPIRY DATE / PERIOD OF VALIDITY:

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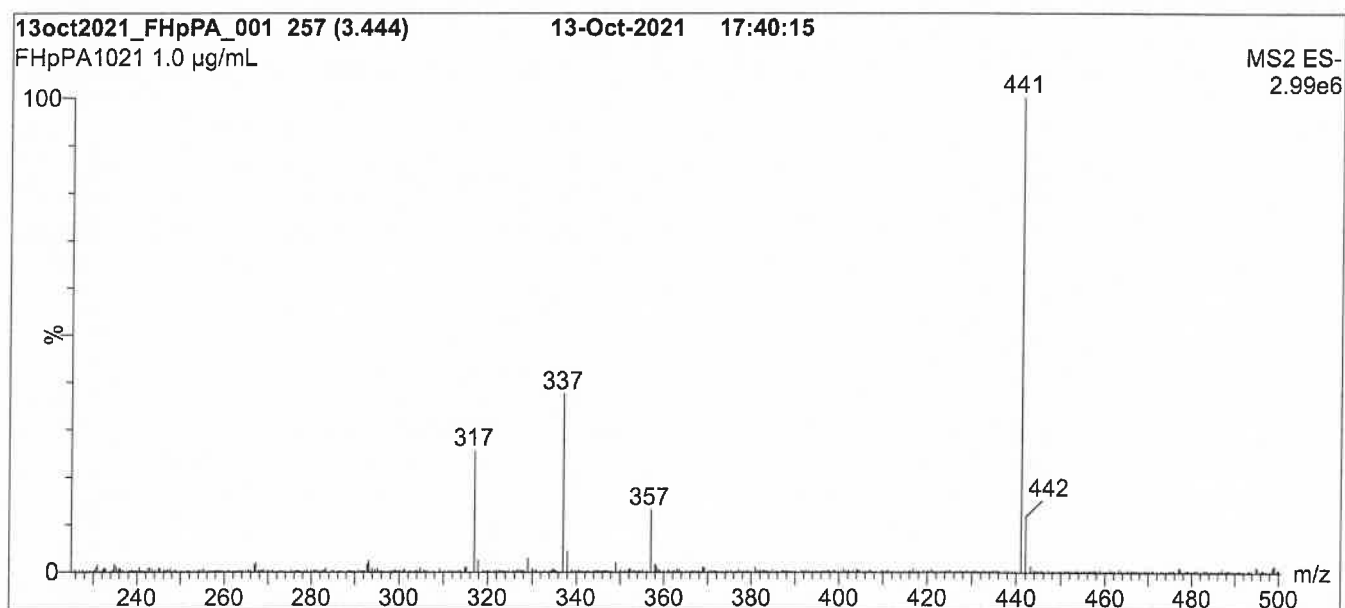
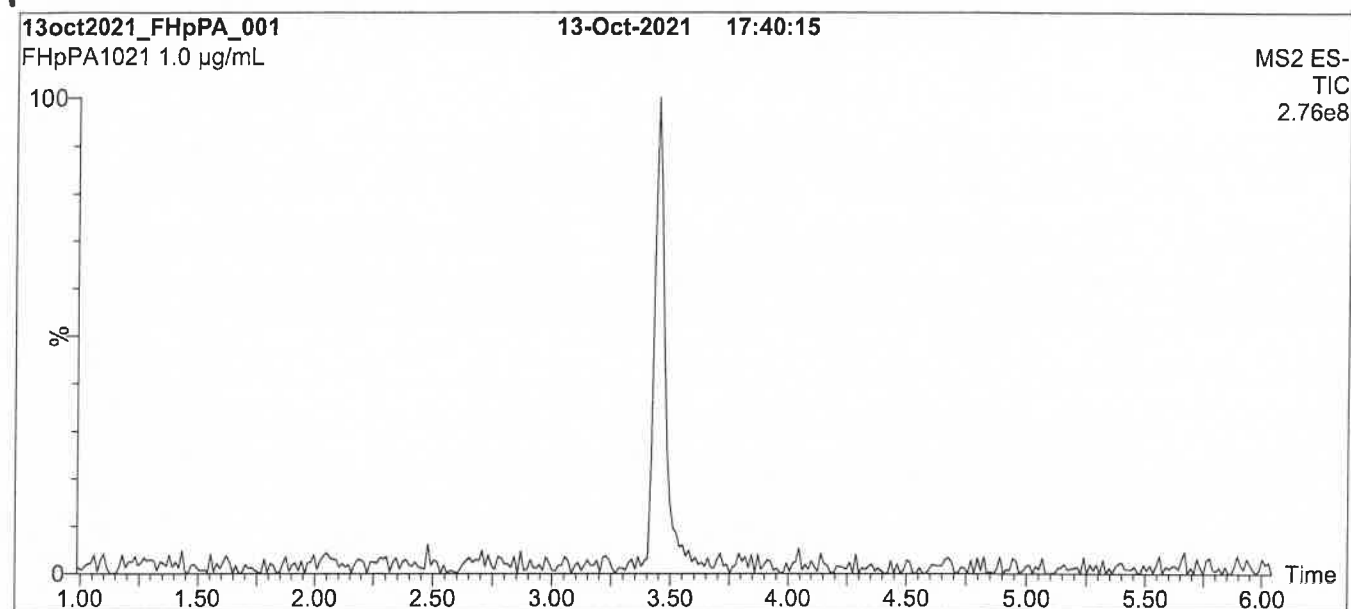
QUALITY MANAGEMENT:

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Figure 1: FHpPA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

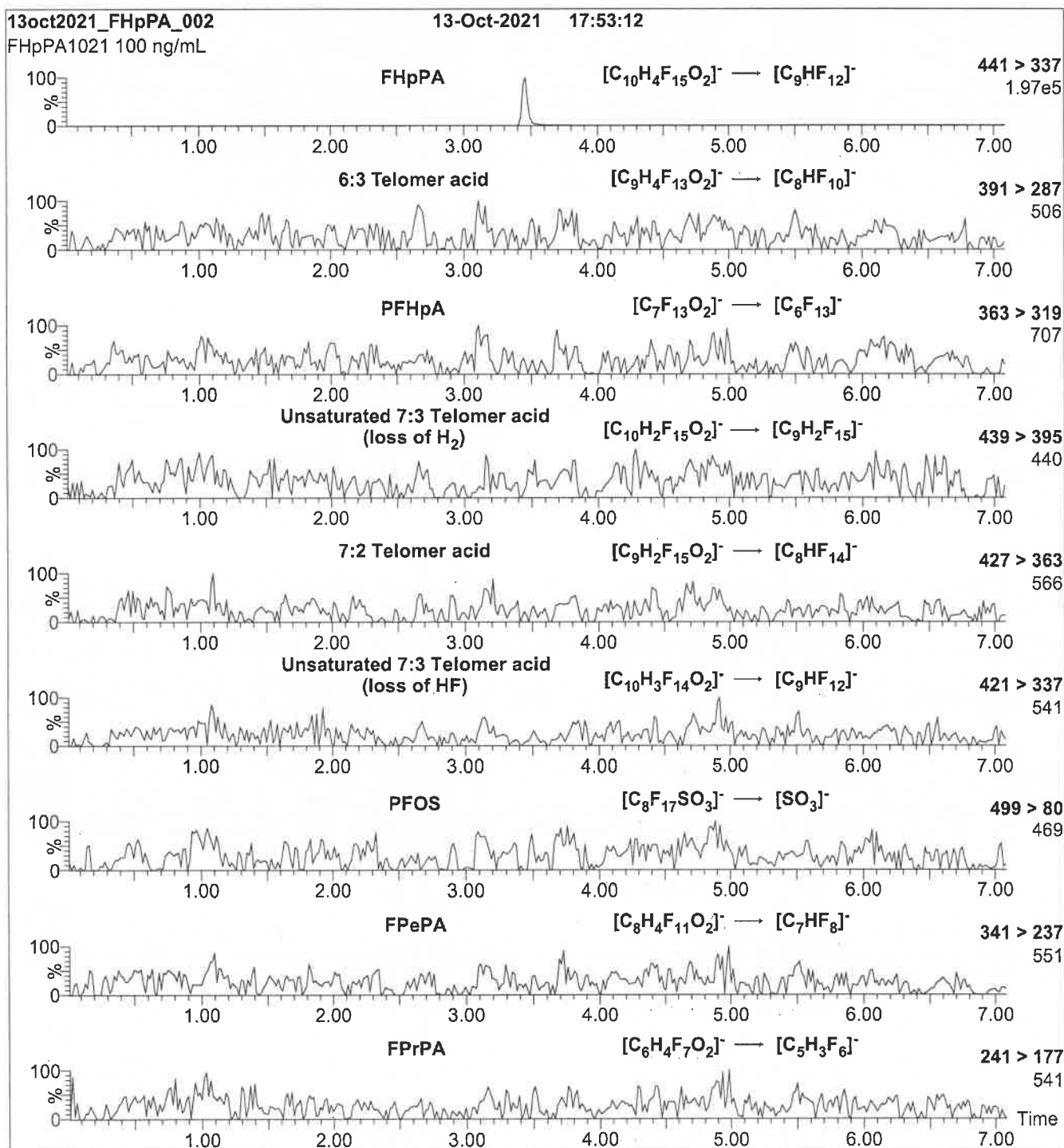
Capillary Voltage (kV) = 0.50

Cone Voltage (V) = 28.50

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: FHpPA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (FHpPA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.25e-3

Collision Energy (eV) = 8

Reagent

LC8 : 2diPAP_00007



2983638

ID: LC8:2diPAP_00007

Exp:09/09/25 Prpd:CV Opm:04/21/22

8:2diPAP 48.8643 ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

8:2diPAP

LOT NUMBER:

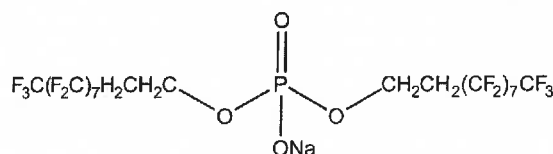
82diPAP0920

COMPOUND:

Sodium bis(1H,1H,2H,2H-perfluorodecyl)phosphate

STRUCTURE:**CAS #:**

Not available

**MOLECULAR FORMULA:** $C_{20}H_{18}F_{34}O_4PNa$ **CONCENTRATION:** $50.0 \pm 2.5 \mu\text{g/mL}$ **CHEMICAL PURITY:**

>98%

LAST TESTED: (mm/dd/yyyy)

09/09/2020

EXPIRY DATE: (mm/dd/yyyy)

09/09/2025

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

MOLECULAR WEIGHT:

1012.18

SOLVENT(S):

Methanol

$$\begin{array}{r} 1012.18 \\ - 22.99 \\ \hline 989.19 \end{array} + 1.01 = 990.2$$

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

$$\frac{990.2}{1012.18} \times 50 = 48.9142 \mu\text{g/mL}$$

CV 4/21/22

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

10/01/2020
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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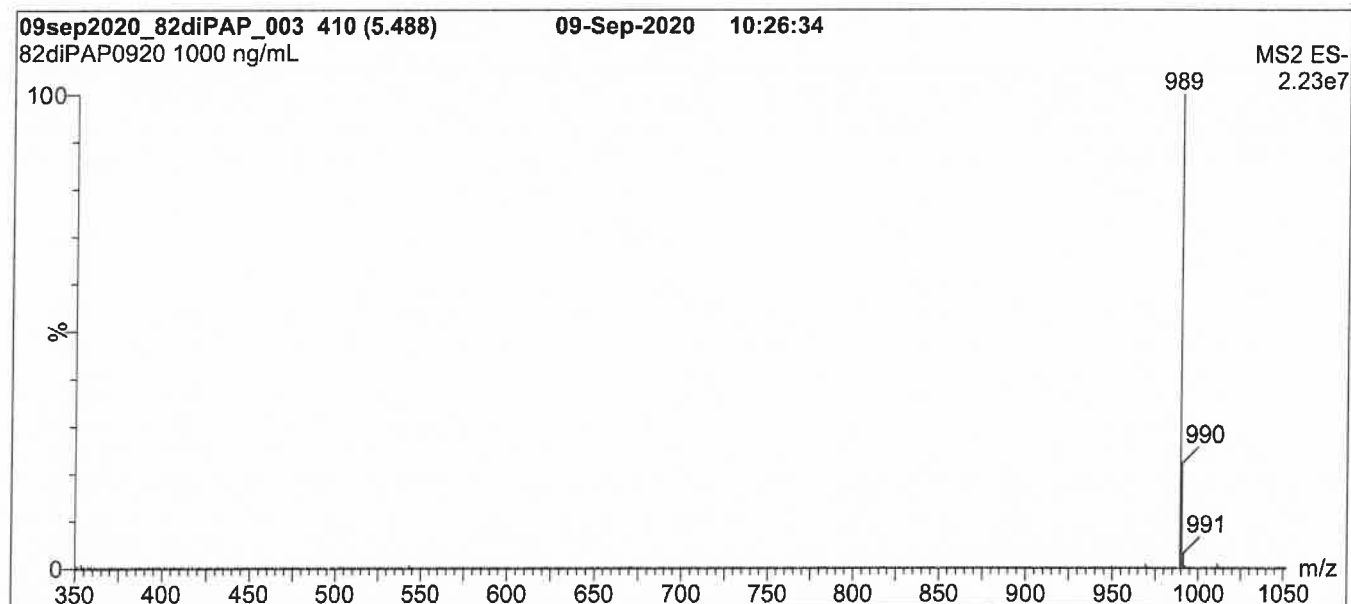
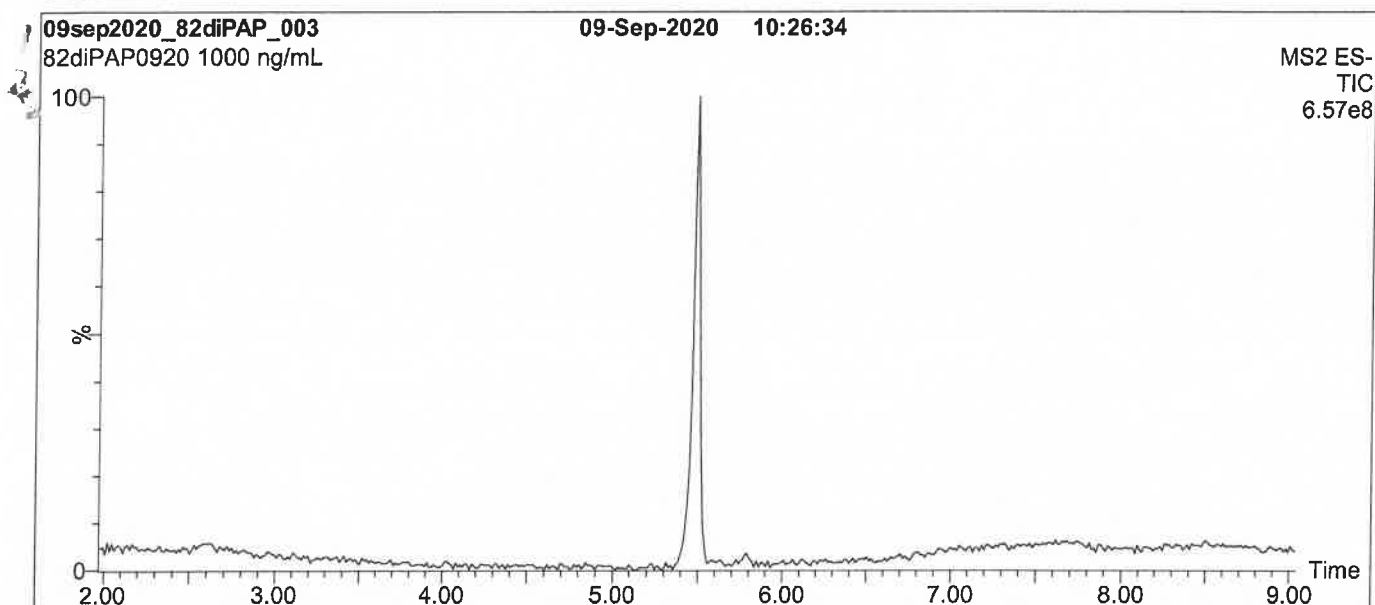
QUALITY MANAGEMENT:

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Figure 1: 8:2diPAP; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Waters Xevo TQ-S micro MS

Chromatographic Conditions

Column: Agilent Zorbax Extend C₁₈
1.8 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 35% H₂O (pH 9, adjusted with NH₄OH)
65% MeOH
Ramp to 85% organic over 7 min and hold for 2.5 min
before returning to initial conditions in 1 min.
Time: 12 min

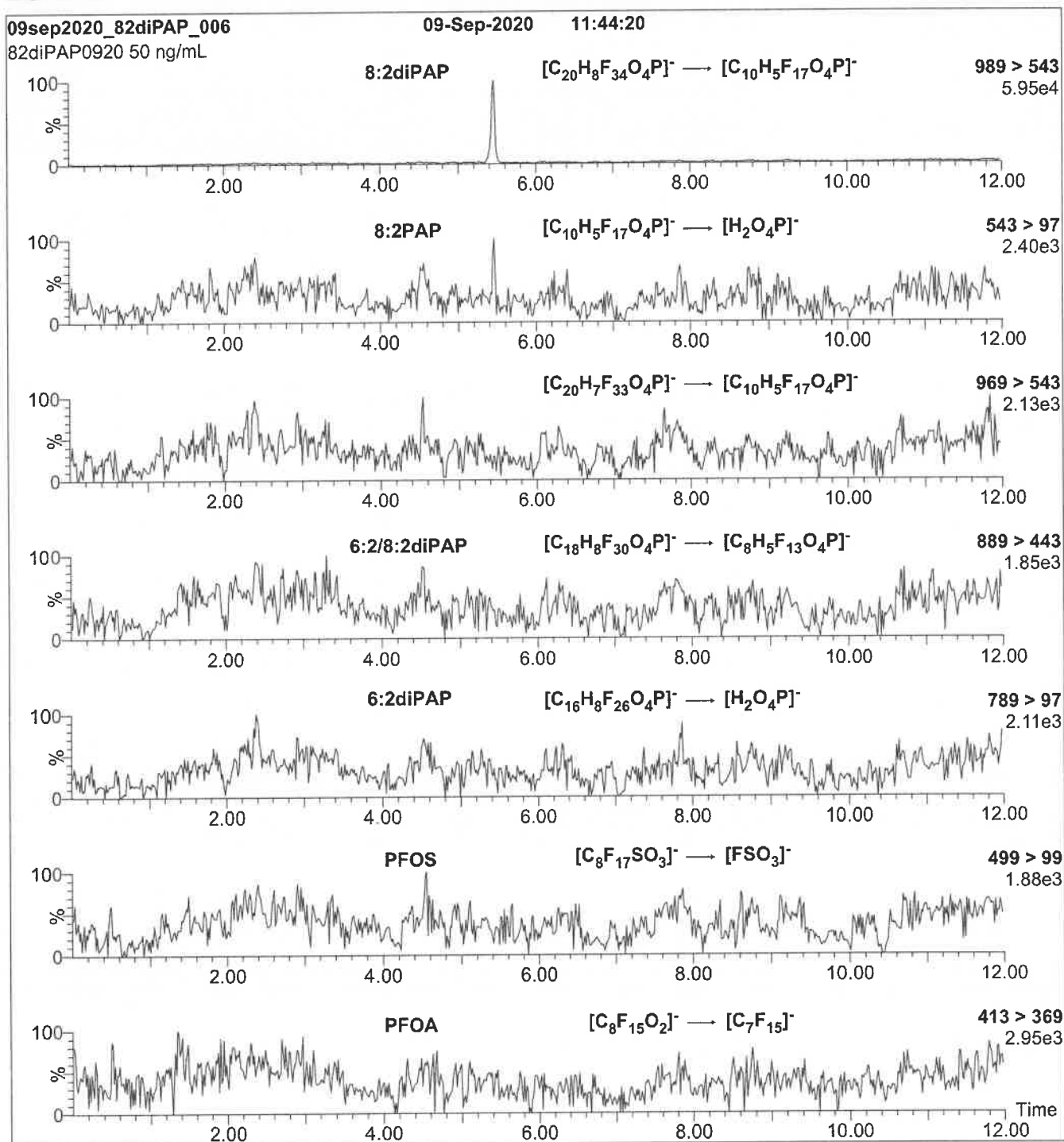
Flow: 300 μ L/min

MS Parameters

Experiment: Full Scan (350 - 1200 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 45.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: 8:2diPAP; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (8:2diPAP)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters

Collision Gas (mbar) = 3.47e-3

Collision Energy (eV) = 16

Reagent

LC8 : 2FTS_00024



2979839

ID: LC8:2FTS_00024

Exp:02/08/27 Prpd:IM Qm:04/19/22
8:2FTS**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PRODUCT CODE:**

8:2FTS

LOT NUMBER:

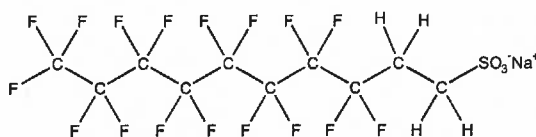
82FTS0122

COMPOUND:

Sodium 1H,1H,2H,2H-perfluorodecanesulfonate

STRUCTURE:**CAS #:**

27619-96-1

**MOLECULAR FORMULA:** $C_{10}H_4F_{17}SO_3Na$ **MOLECULAR WEIGHT:**

550.16

CONCENTRATION:

50.0 ± 2.5 µg/mL (Na salt)

SOLVENT(S):

Methanol

48.0 ± 2.4 µg/mL (8:2FTS acid)

47.9 ± 2.4 µg/mL (8:2FTS anion)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

02/08/2022

EXPIRY DATE: (mm/dd/yyyy)

02/08/2027

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

02/11/2022
(mm/dd/yyyy)**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

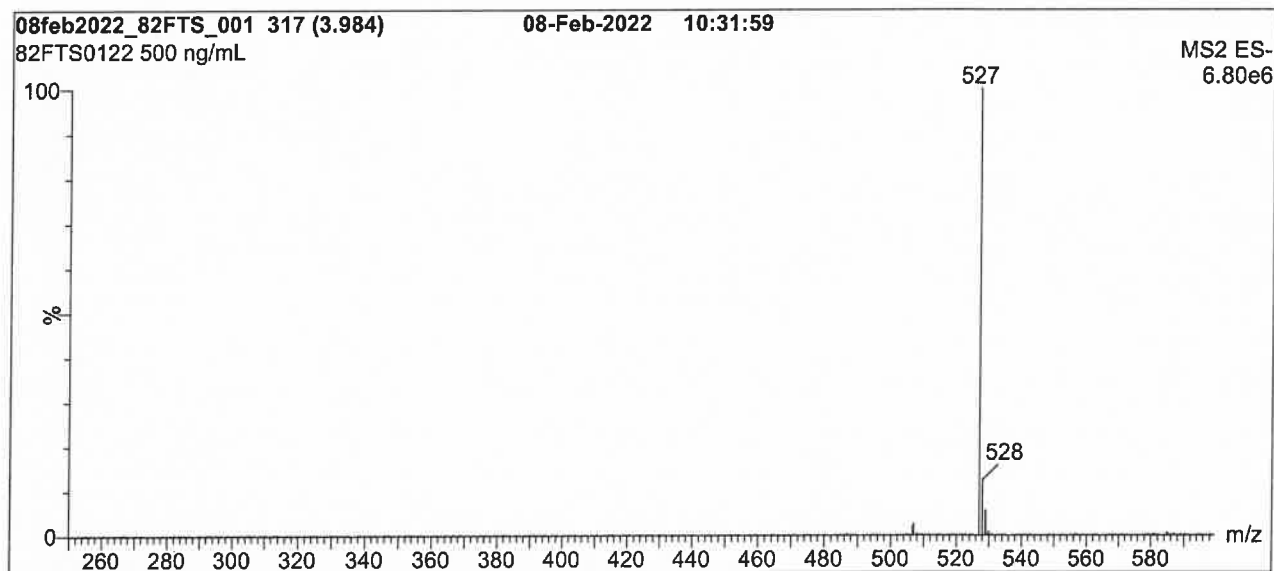
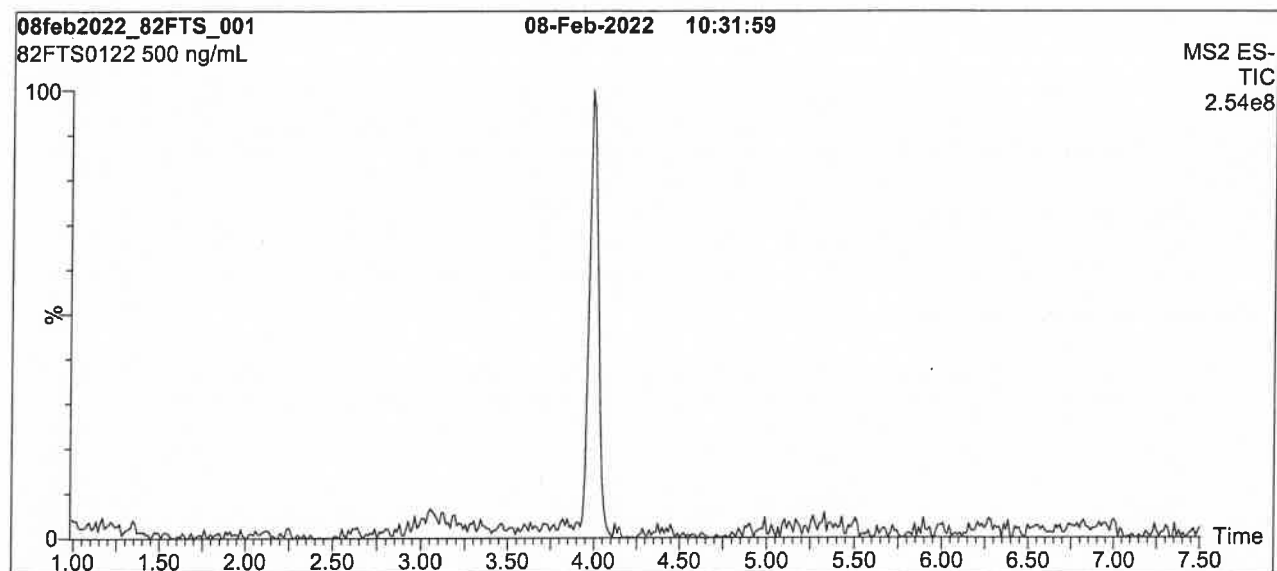
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: 8:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

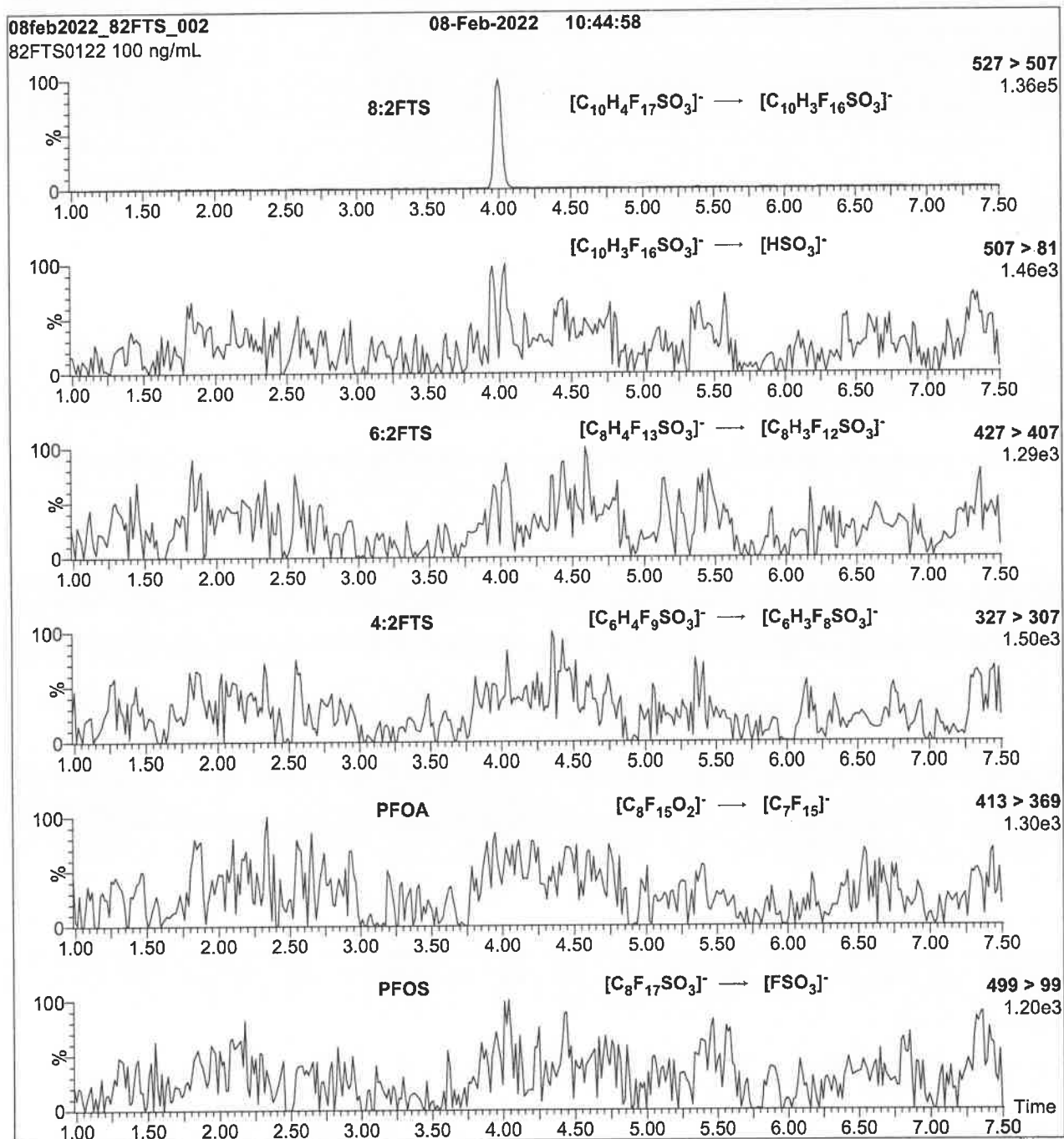
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: 8:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (8:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.35e-3

Collision Energy (eV) = 26

Reagent

LC8 : 2FTS2_00003

**Product Name:**

(Isotopic Label & Enrichment Specification)

1H,1H,2H,2H-PERFLUORODECANE SULFONATE (8:2 FTS),
SODIUM SALT (UNLABELED) 50 UG/ML IN METHANOL**Lot Number:**

SDIJ-022A

550.16

$$\frac{527.17}{550.16} = 0.9582 \times 51.5 = 49.35 \mu\text{g/mL}$$

Catalog Number:

ULM-10755-S

- 22.99

527.17

CV 8/2/21

Product Information

Chemical Purity Specification:

 $\geq 98\%$

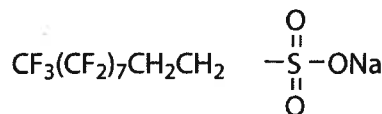
MW*:

* For isotopically labeled compounds, MW listed is for the fully enriched product.

550.16

Labeled CAS Number:

NA



Unlabeled CAS Number:

27619-96-1

Chemical Formula:

C10H4F17NaO3S

Storage:

Store at room temperature away from light and moisture.

Intended Use:

For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated.

The retest date for this chemical has been designated based on CIL's experience in working with chemical standards for over 30 years, and includes review of actual analytical results and relevant literature references. The retest date is valid only for unopened vials or ampoules that have been stored as recommended.

Approved by: Marina Klionsky

Marina Klionsky, Quality Review

Quality Control Tests and Results

QC Release Date

8/20/2019

Expiration Date

8/20/2024

Concentration Based on Gravimetry (of the salt)

51.5 \pm 0.5 $\mu\text{g/mL}$ (k=2)

Chemical Purity of Neat Material(s)

100.0%

Additional Testing Information:

Retest/Review Date: 08/21/24

Reagent

LC9CI-PF3ONS_00023



3065188
ID: LC9CI-PF3ONS_00023
Exp: 11/22/26 Prod: 06/16/22
9CI-PF3ONS

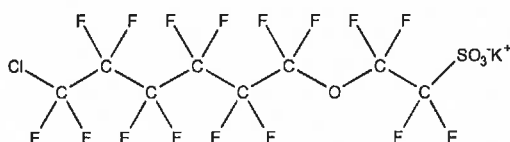


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 9CI-PF3ONS **LOT NUMBER:** 9CIPF3ONS1121
COMPOUND: Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate

STRUCTURE: **CAS #:** 73606-19-6



MOLECULAR FORMULA: $C_8F_{16}ClSO_4K$ **MOLECULAR WEIGHT:** 570.67
CONCENTRATION: 50.0 ± 2.5 µg/mL (K Salt) **SOLVENT(S):** Methanol
46.7 ± 2.3 µg/mL (9CI-PF3ONS acid)
46.6 ± 2.3 µg/mL (9CI-PF3ONS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/22/2021
EXPIRY DATE: (mm/dd/yyyy) 11/22/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- This compound is the major component of the commercial formulation known as F-53B.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 12/02/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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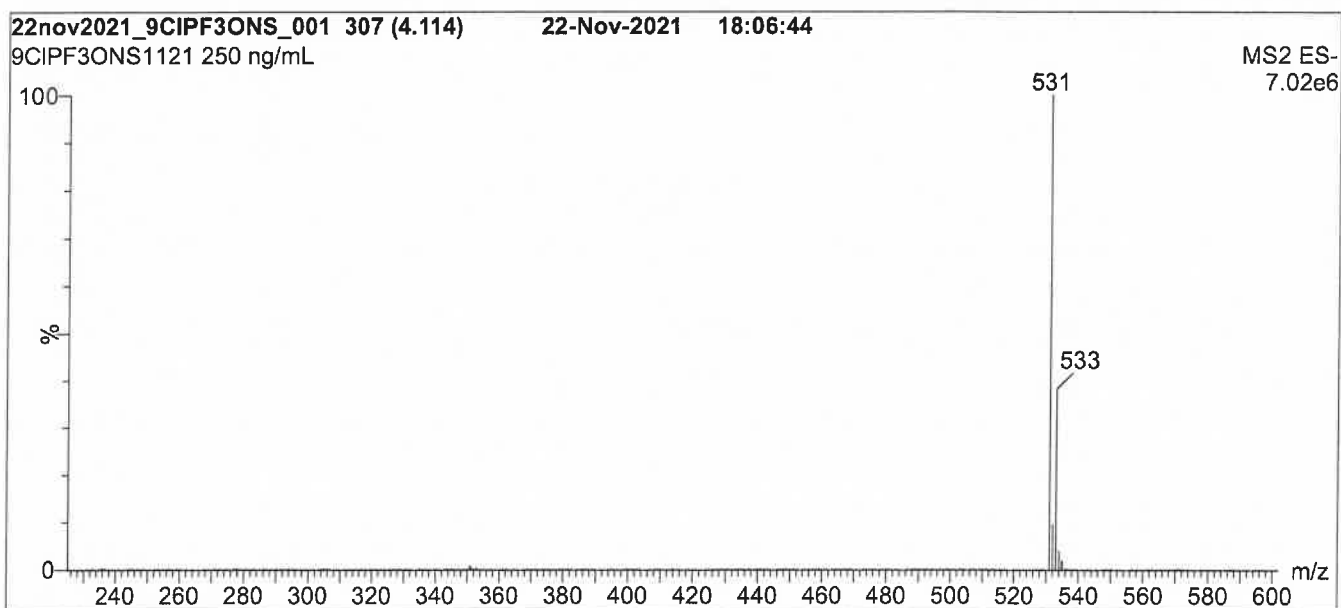
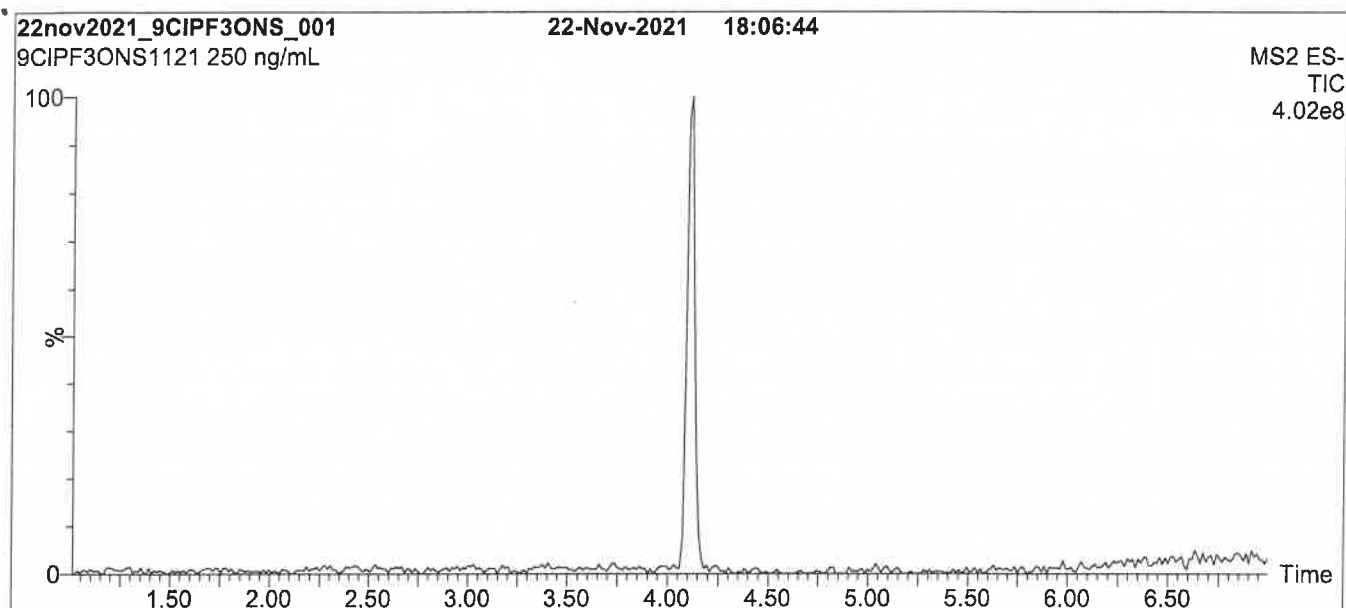
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: 9CI-PF3ONS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

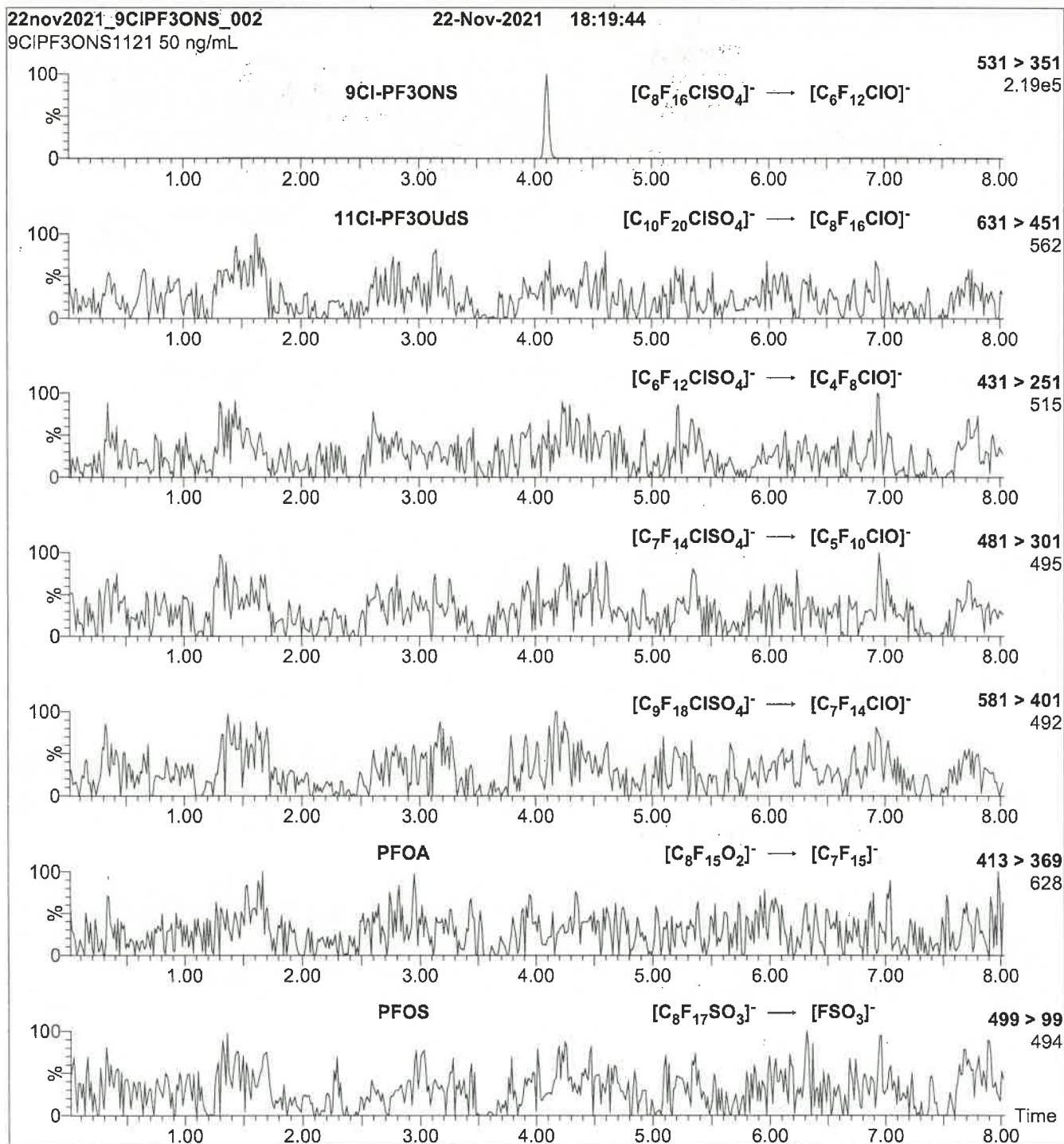
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: 9CI-PF3ONS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (9CI-PF3ONS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3

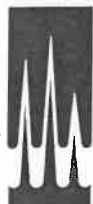
Collision Energy (eV) = 20

Reagent

LCbr-NEtFOSAA_00023



3064939

ID: LCbr-NEtFOSAA_00023
Exp: 11/23/26 Prod: PCY Opn: 06/16/22
br-N-NEtFOSAA branched and**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**br-NEtFOSAA****N-Ethylperfluorooctanesulfonamidoacetic
Acid Solution/Mixture of Linear and
Branched Isomers**

PRODUCT CODE: br-NEtFOSAA
LOT NUMBER: brNEtFOSAA1121
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 11/11/2021
LAST TESTED: (mm/dd/yyyy) 11/23/2021
EXPIRY DATE: (mm/dd/yyyy) 11/23/2026
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-ethylperfluorooctanesulfonamidoacetic acid (linear and branched isomers). The full name, structure and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the acetic acid moiety to its respective methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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EXPIRY DATE / PERIOD OF VALIDITY:

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QUALITY MANAGEMENT:

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Table A: br-NEtFOSAA; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad $ $\quad \quad \quad \text{C}_2\text{H}_5$	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	2.3
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	2.2
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	5.4
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	10.4
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$\text{CF}_3\text{C}(\text{CF}_3)(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	0.3
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$\text{CF}_3\text{C}(\text{CF}_3)\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	0.3
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$\text{CF}_3\text{C}(\text{CF}_3)\text{CF}_2\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	0.3
9	Other Unidentified Isomers		1.3

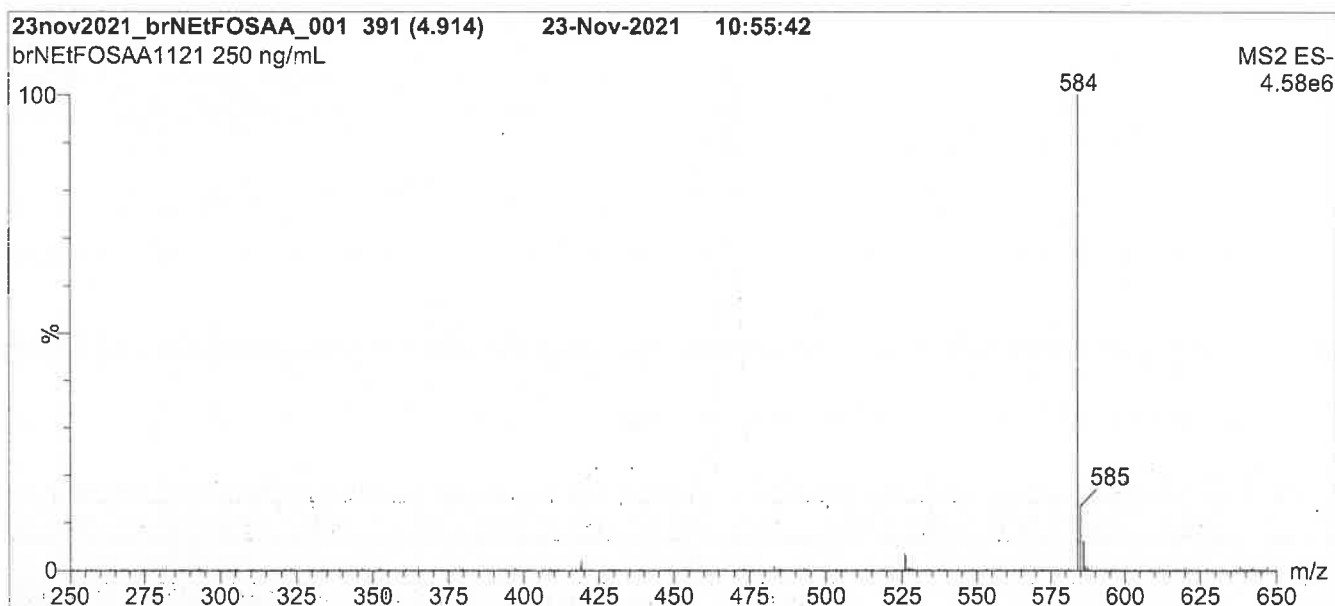
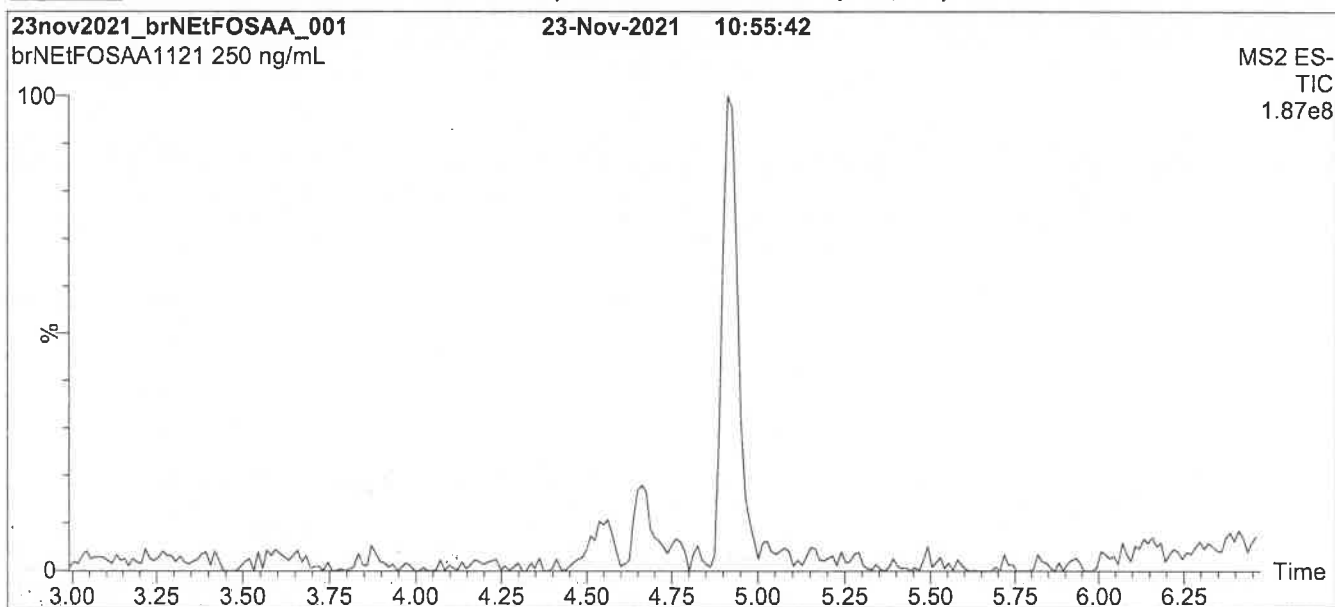
* Percent of total N-ethylperfluorooctanesulfonamidoacetic acid isomers only.

Certified By:


B.G. Chittim, General Manager

Date: 12/31/2021
(mm/dd/yyyy)

Figure 1: br-NEtFOSAA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

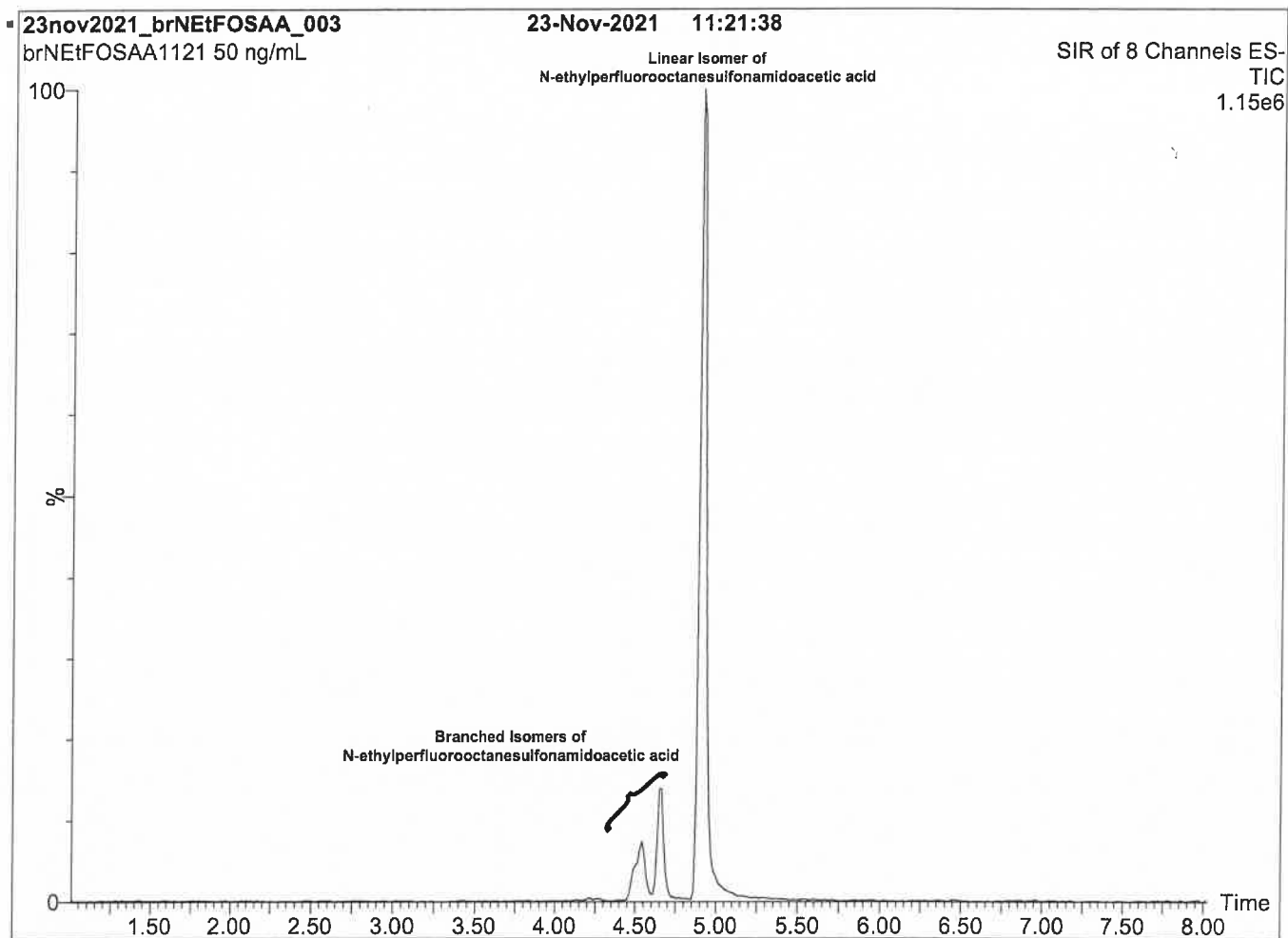
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: br-NEtFOSAA; LC/MS Data (SIR)



Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: SIR (8 channels)

Source: Electrospray (negative)

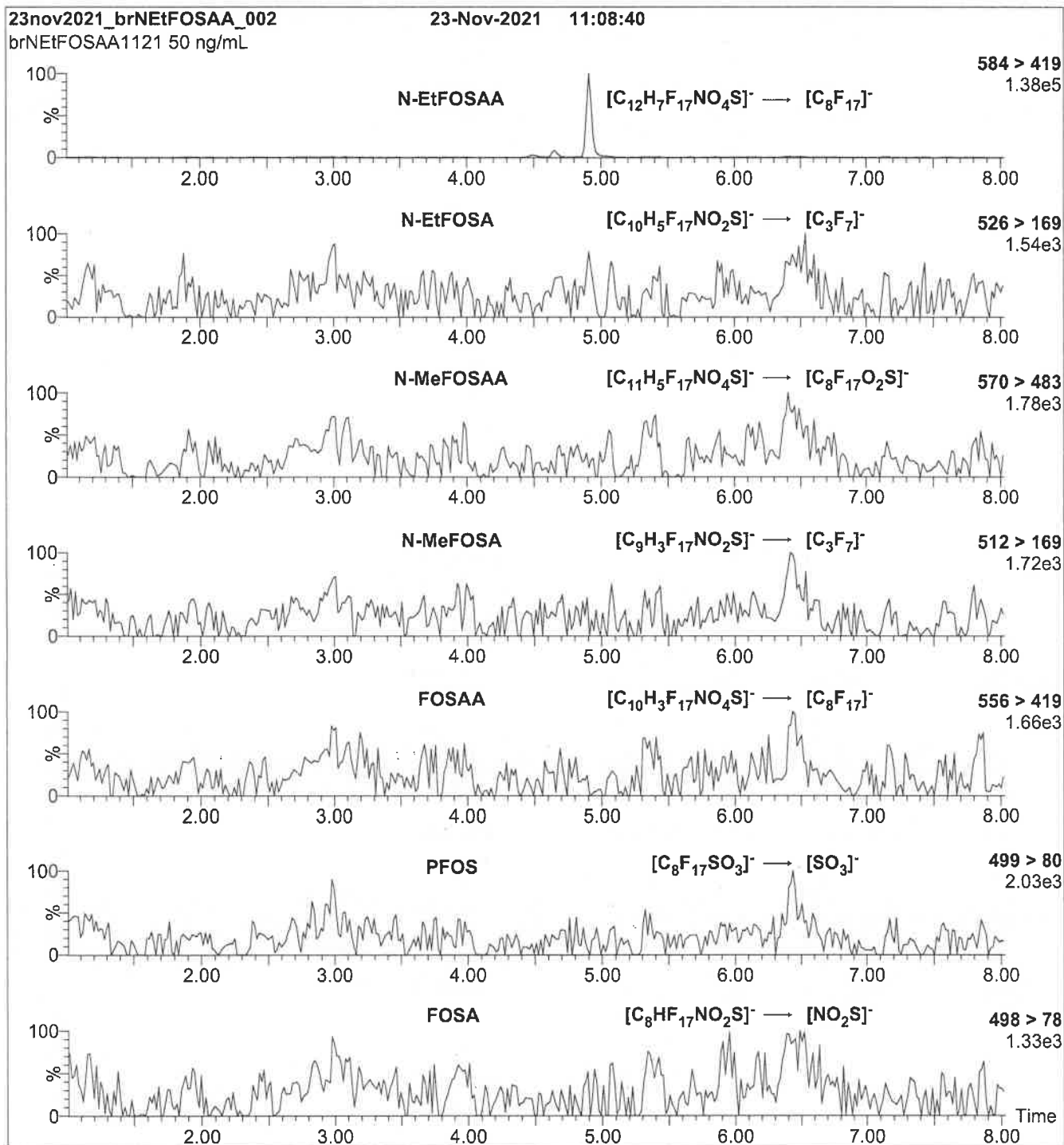
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = Variable (2-64)

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 3: br-NEtFOSAA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 3:

Injection: On-column (br-NEtFOSAA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.37e-3

Collision Energy (eV) = 18

Reagent

LCbr-NMeFOSAA_00022



3064942

ID: LCbr-NMeFOSAA_00022

Exp: 07/13/26 Prod PCY Opn: 06/16/22
N-MeFOSAA branched and li

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NMeFOSAA

N-Methylperfluorooctanesulfonamidoacetic Acid Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE: br-NMeFOSAA
LOT NUMBER: brNMeFOSAA0621
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 06/29/2021
LAST TESTED: (mm/dd/yyyy) 07/13/2021
EXPIRY DATE: (mm/dd/yyyy) 07/13/2026
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-methylperfluorooctanesulfonamidoacetic acid (linear and branched isomers). The full name, structure and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the acetic acid moiety to its respective methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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Table A: br-NMeFOSAA; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_3\underset{\text{CF}_3}{\text{CF}}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	0.7
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_2\underset{\text{CF}_3}{\text{CF}}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	2.0
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}_2\underset{\text{CF}_3}{\text{CF}}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	6.0
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$\text{CF}_3\underset{\text{CF}_3}{\text{CF}}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	14.0
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$\text{CF}_3\underset{\text{CF}_3}{\text{C}}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	0.2
7	Other Unidentified Isomers		1.1

* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

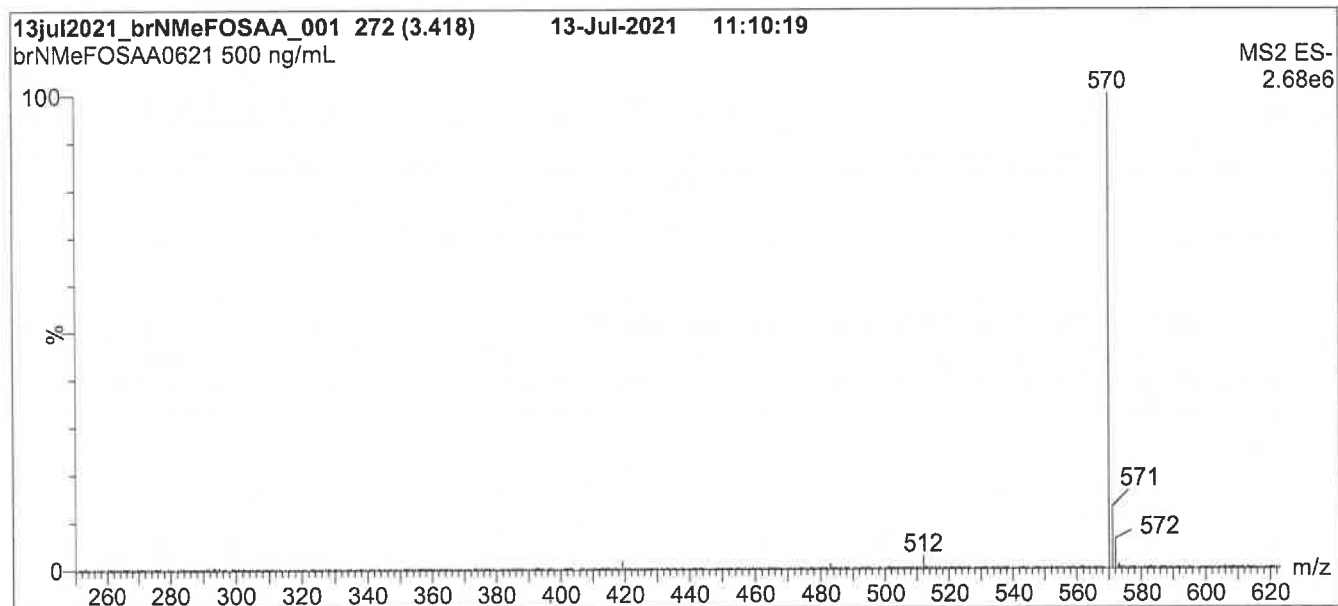
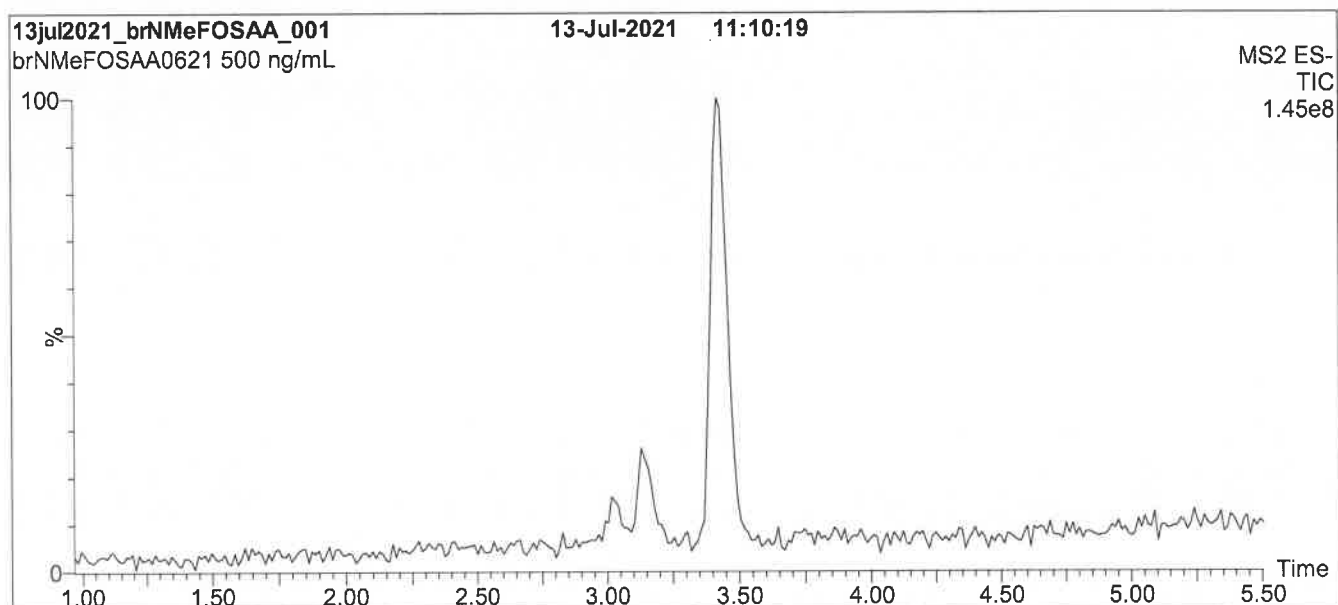
Certified By: _____

B.G. Chittim, General Manager

Date: 08/06/2021

(mm/dd/yyyy)

Figure 1: br-NMeFOSAA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 35% H₂O / 65% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 80% organic over 7 min and hold for 3 min
before returning to initial conditions over 0.75 min.
Time: 12 min

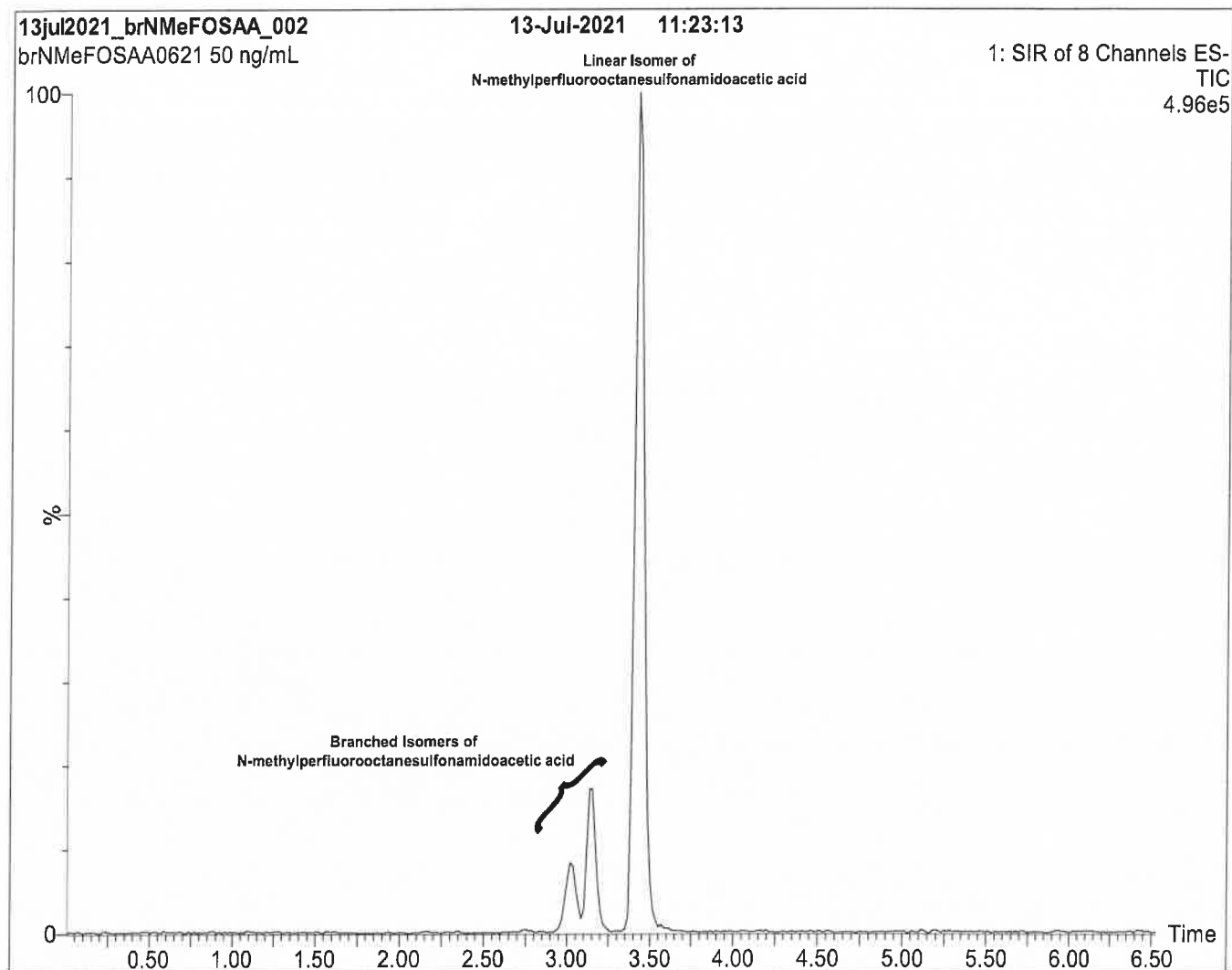
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: br-NMeFOSAA; LC/MS Data (SIR)



Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 35% H₂O / 65% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 80% organic over 7 min and hold for 3 min
before returning to initial conditions over 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

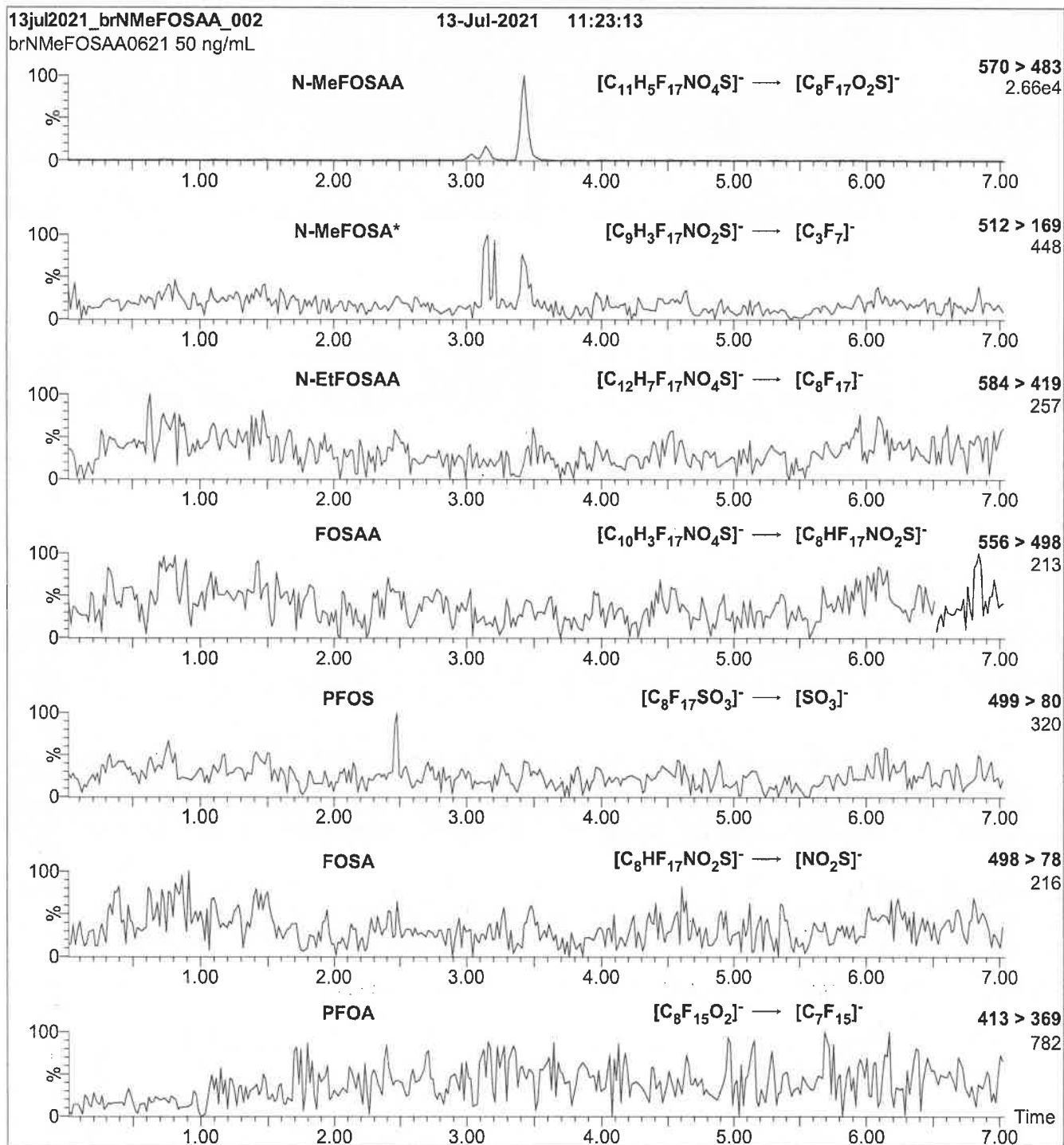
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = variable (2-64)

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 3: br-NMeFOSAA; LC/MS/MS Data (Selected MRM Transitions)



*Note: N-MeFOSA is formed by in-source fragmentation.

Conditions for Figure 3:

Injection: On-column (br-NMeFOSAA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 16

Reagent

LCd-NEtFOSA-M_00032



2856143

ID: LCd-NEtFOSA-M_00032

Exp:08/10/26 Prpd:M Oprn:01/12/22

d-N-EtFOSA-M



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

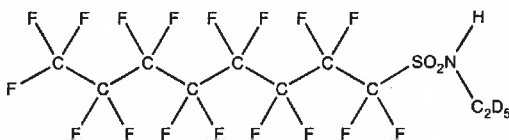
d-N-EtFOSA-M

LOT NUMBER:

dNEtFOSA0821M

COMPOUND:N-ethyl-d₅-perfluoro-1-octanesulfonamide**STRUCTURE:****CAS #:**

936109-40-9

**MOLECULAR FORMULA:**C₁₀D₅HF₁₇NO₂S**CONCENTRATION:**

50.0 ± 2.5 µg/mL

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

08/10/2021

EXPIRY DATE: (mm/dd/yyyy)

08/10/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

MOLECULAR WEIGHT:

532.23

SOLVENT(S):

Methanol

ISOTOPIC PURITY:≥98% ²H₅**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

08/19/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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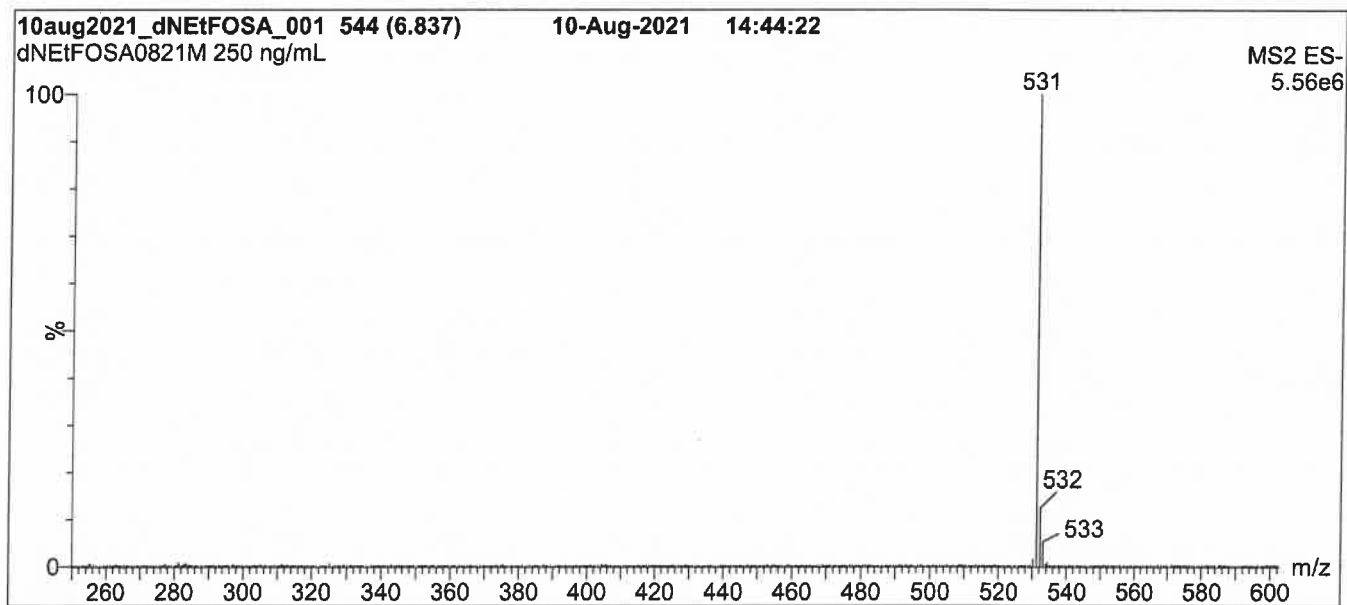
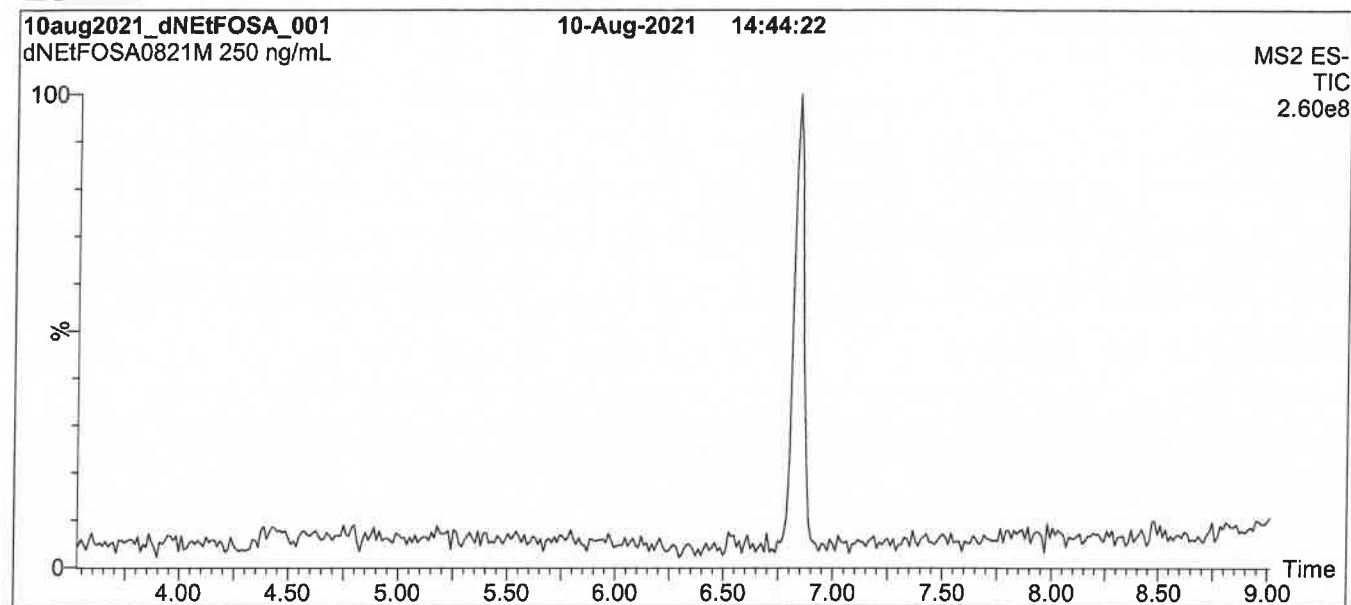
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: d-N-EtFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

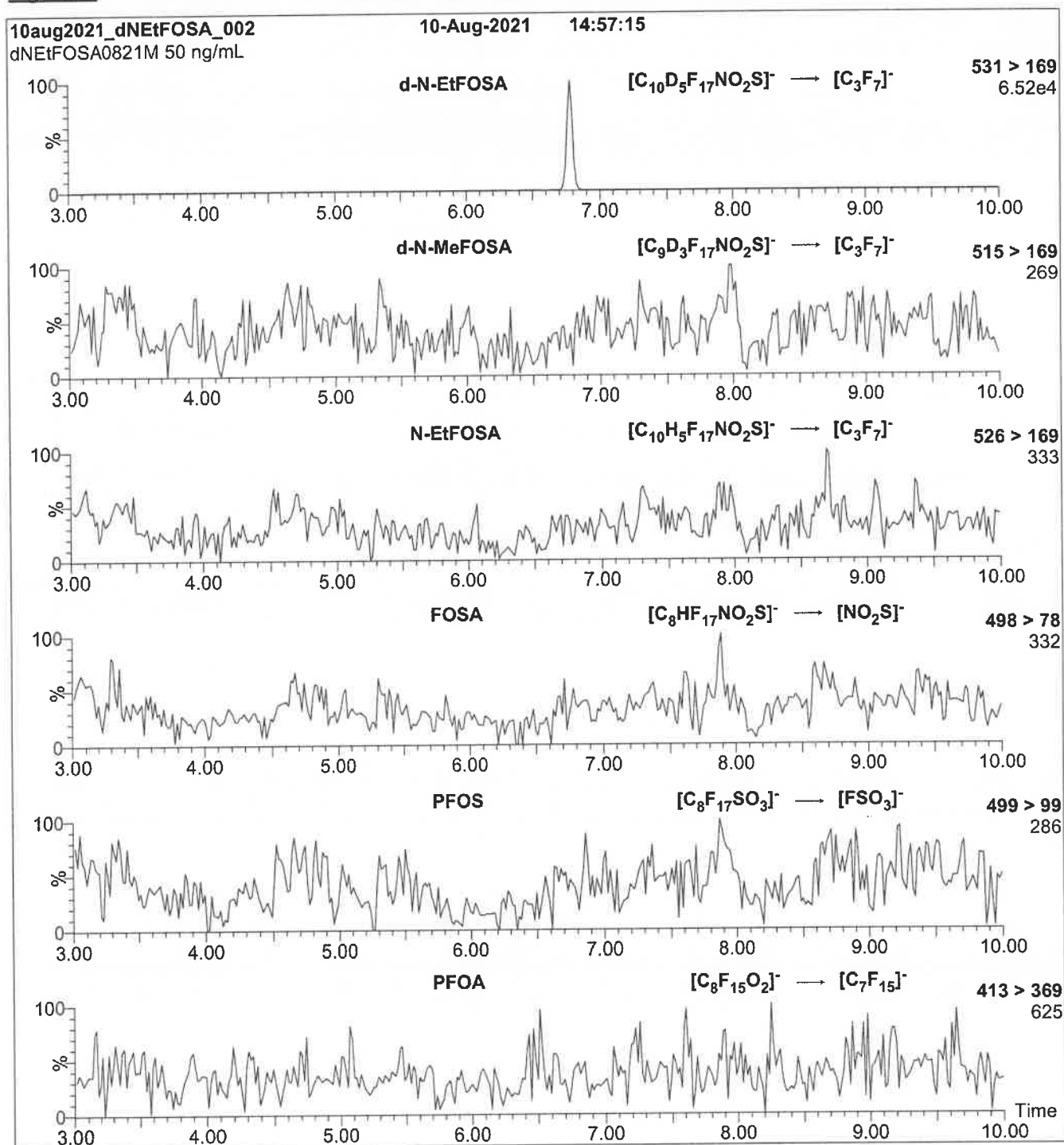
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: d-N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (d-N-EtFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.35e-3

Collision Energy (eV) = 24

Reagent

LCd-NEtFOSA-M_00034



2979355

ID: LCd-NEtFOSA-M_00034

Exp:03/17/27 Prpd:MI Opn:04/19/22

d-N-EtFOSA-M



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

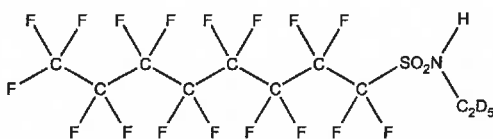
d-N-EtFOSA-M

LOT NUMBER:

dNEtFOSA0322M

COMPOUND:N-ethyl-d₅-perfluoro-1-octanesulfonamide**STRUCTURE:****CAS #:**

936109-40-9

**MOLECULAR FORMULA:**C₁₀D₅HF₁₇NO₂S**CONCENTRATION:**

50.0 ± 2.5 µg/mL

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

03/17/2022

EXPIRY DATE: (mm/dd/yyyy)

03/17/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

MOLECULAR WEIGHT:

532.23

SOLVENT(S):

Methanol

ISOTOPIC PURITY:≥98% ²H₅**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 04/11/2022

(mm/dd/yyyy)

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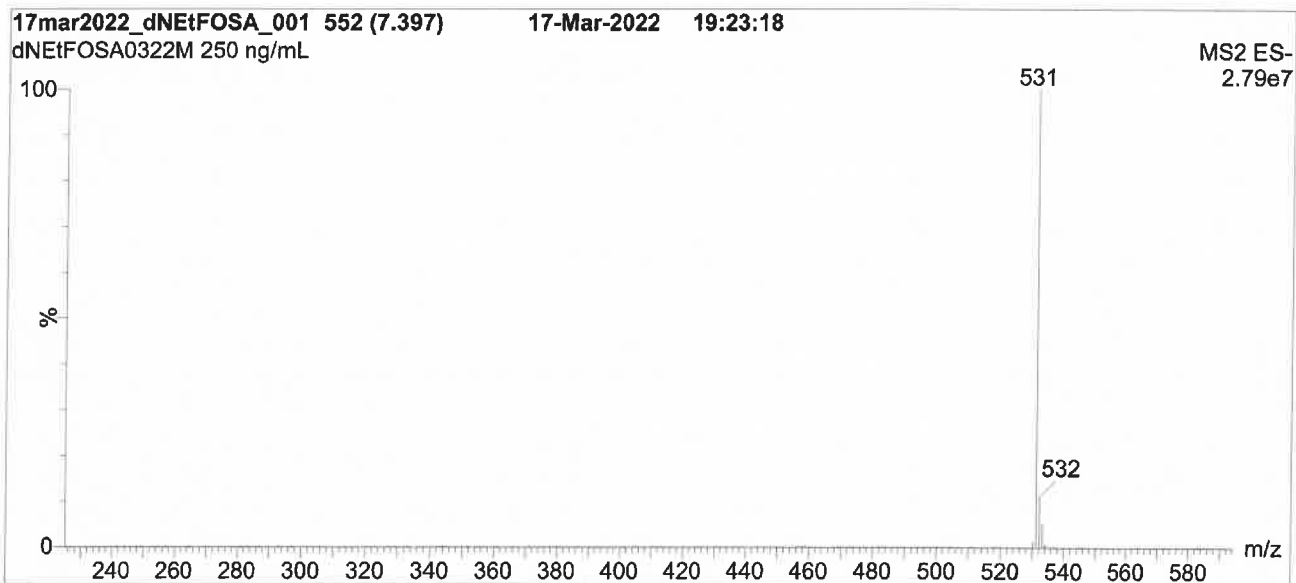
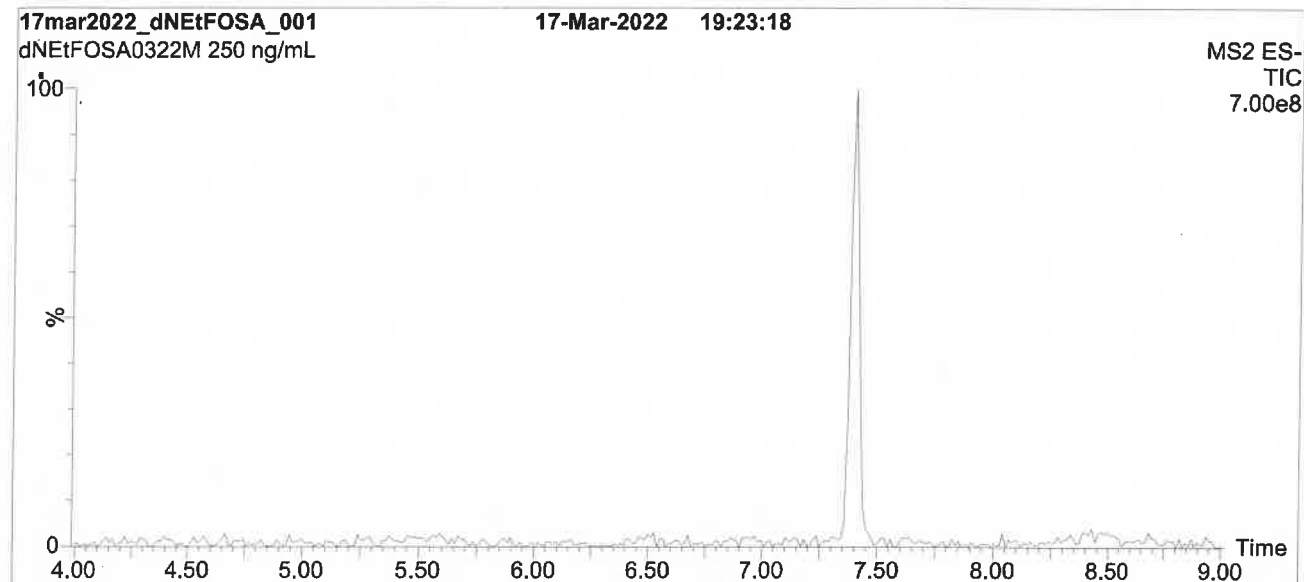
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Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

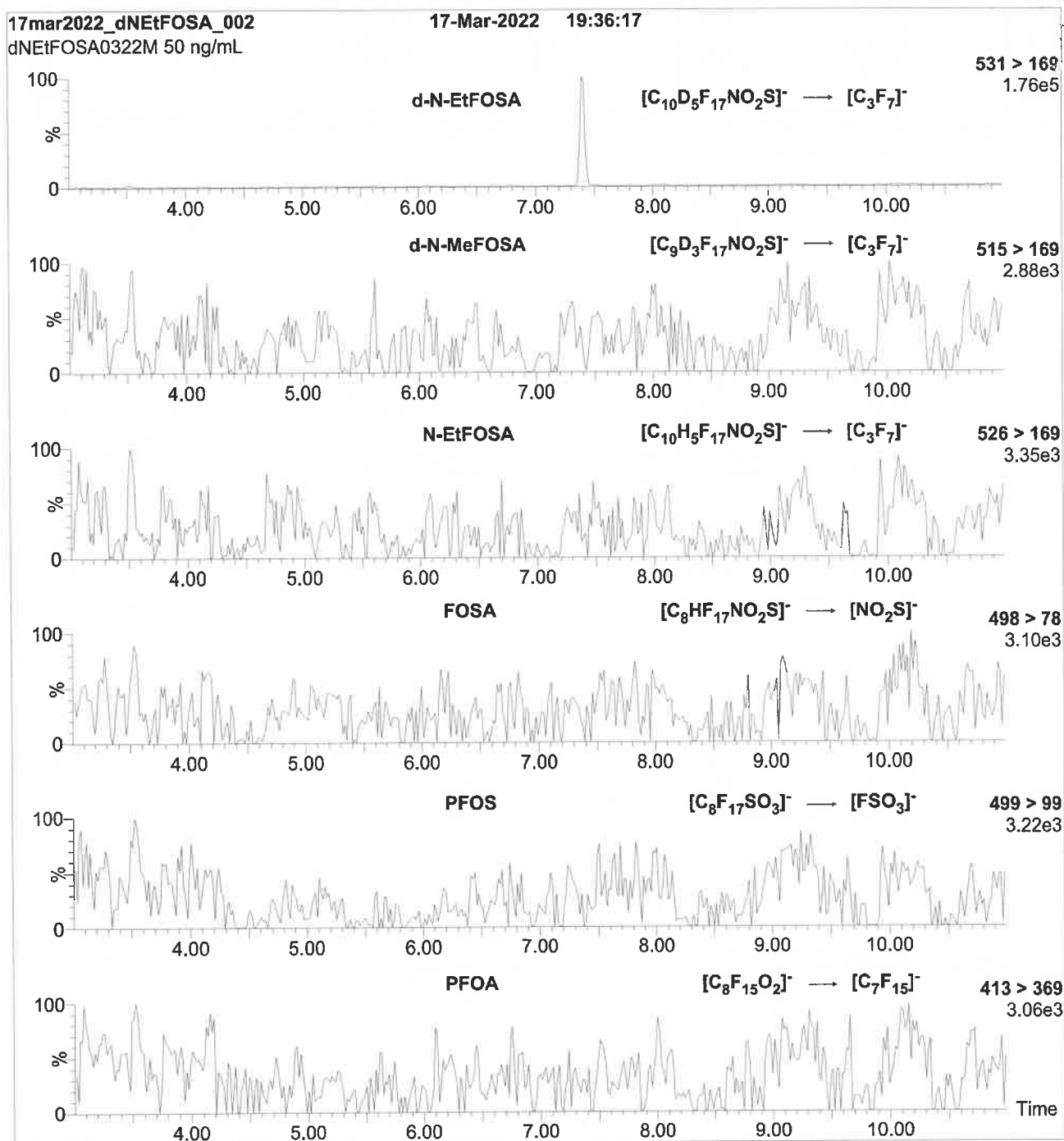
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: d-N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (d-N-EtFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.27e-3

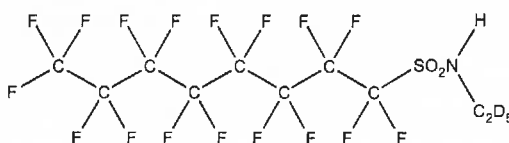
Collision Energy (eV) = 24

Reagent

LCd-NEtFOSA-M_00035



3180701

ID: LCd-NEtFOSA-M_00035
Exp:03/17/27 Prip:3M Opn:09/14/22
d-N-EtFOSA-M**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PRODUCT CODE:** d-N-EtFOSA-M
COMPOUND: N-ethyl-d₅-perfluoro-1-octanesulfonamide**LOT NUMBER:** dNEtFOSA0322M**STRUCTURE:****CAS #:** 936109-40-9

MOLECULAR FORMULA: C₁₀D₅HF₁₇NO₂S
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/17/2022
EXPIRY DATE: (mm/dd/yyyy) 03/17/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 532.23
SOLVENT(S): Methanol
ISOTOPIC PURITY: ≥98% ²H₅

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

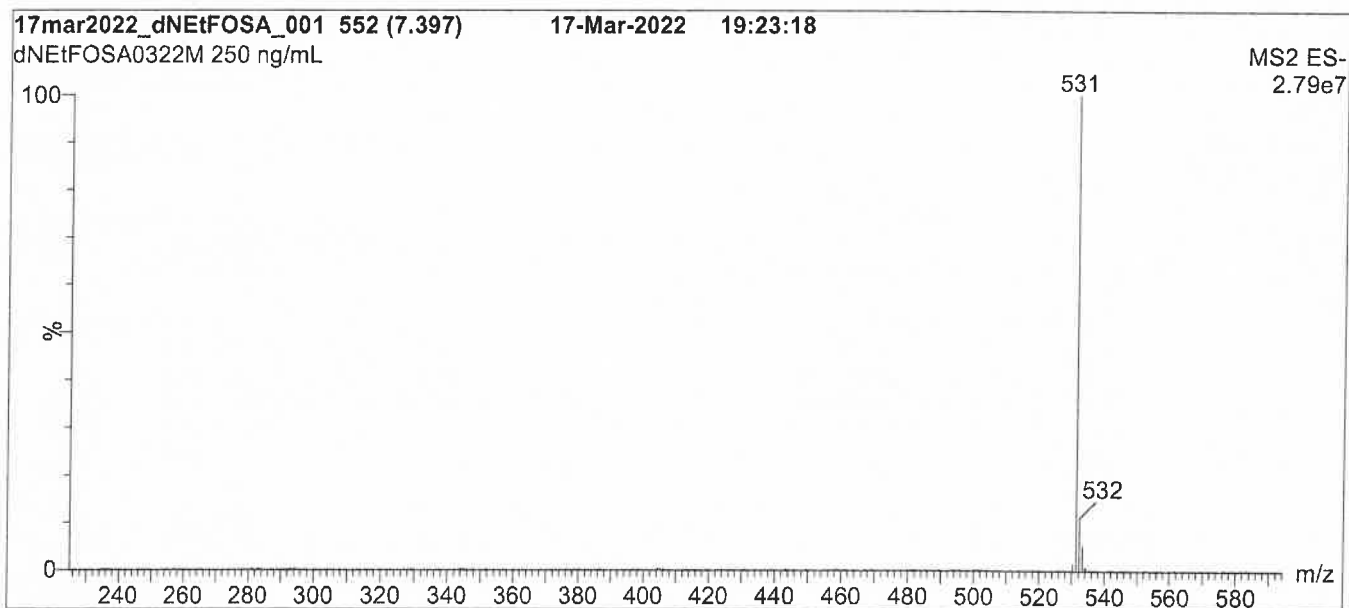
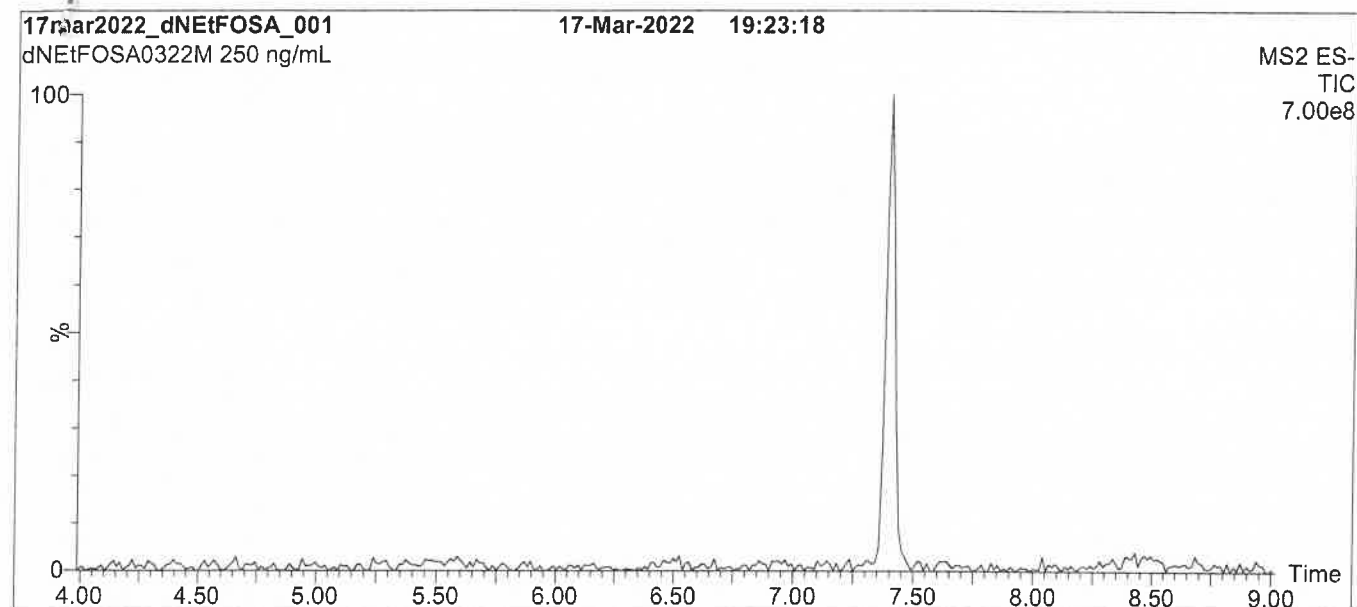
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Certified By: 
 B.G. Chittim, General Manager

Date: 04/11/2022
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

Capillary Voltage (kV) = 1.00

Cone Voltage (V) = 44.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Reagent

LCd-NMeFOSA-M_00033



2856127

ID: LCd-NMeFOSA-M_00033

Exp: 10/07/26 PrpdM Opn 01/12/22

d-N-MeFOSA-M



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

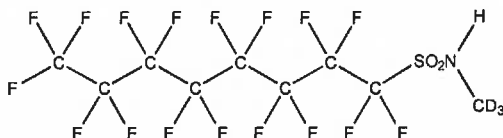
d-N-MeFOSA-M

LOT NUMBER:

dNMeFOSA1021M

COMPOUND:N-methyl-d₃-perfluoro-1-octanesulfonamide**STRUCTURE:****CAS #:**

936109-37-4

**MOLECULAR FORMULA:**C₈D₃HF₁₇NO₂S**CONCENTRATION:**

50.0 ± 2.5 µg/mL

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

10/07/2021

EXPIRY DATE: (mm/dd/yyyy)

10/07/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

MOLECULAR WEIGHT:

516.19

SOLVENT(S):

Methanol

ISOTOPIC PURITY:≥98% ²H₃**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:**10/08/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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LIMITED WARRANTY:

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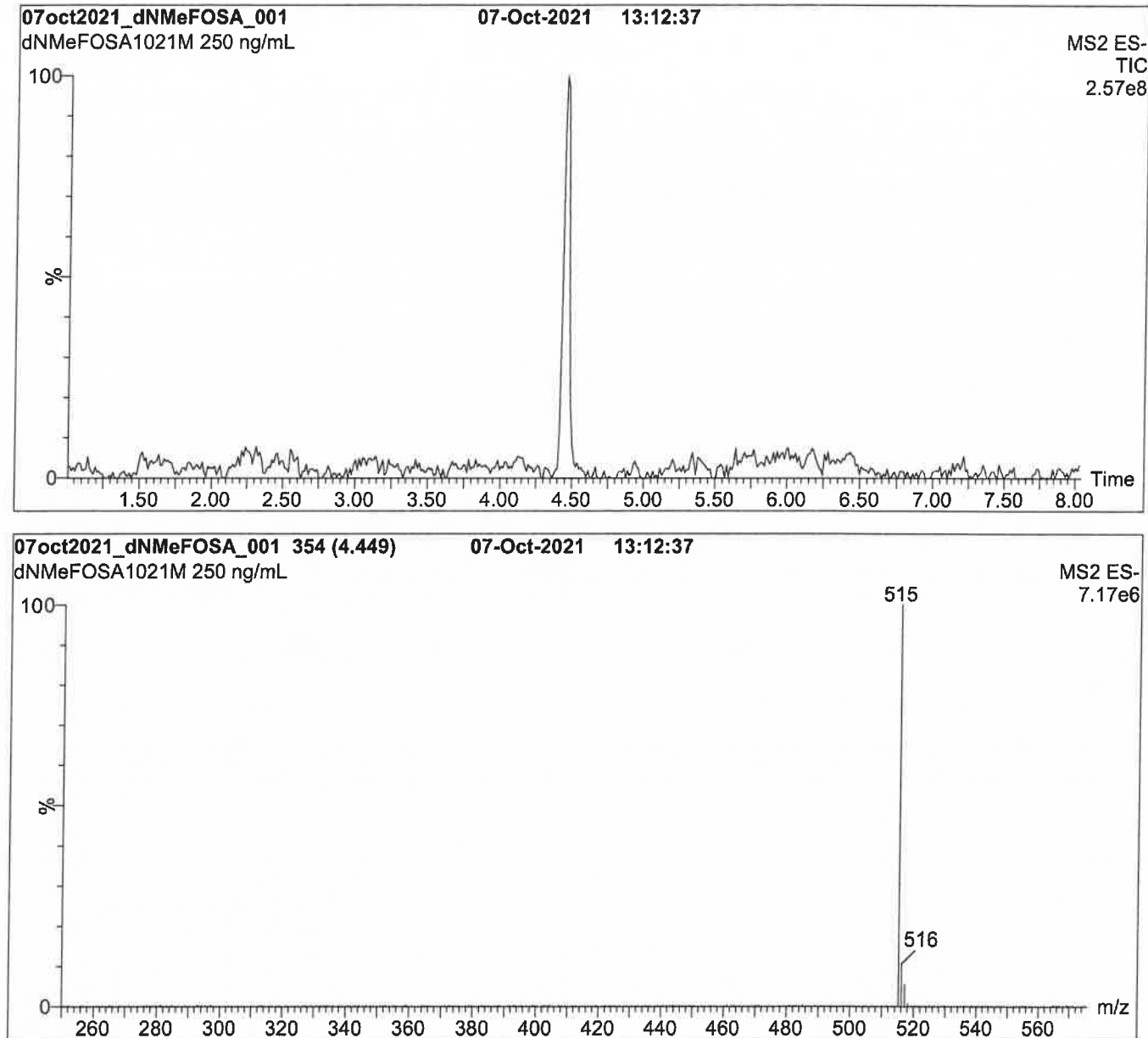
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: d-N-MeFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

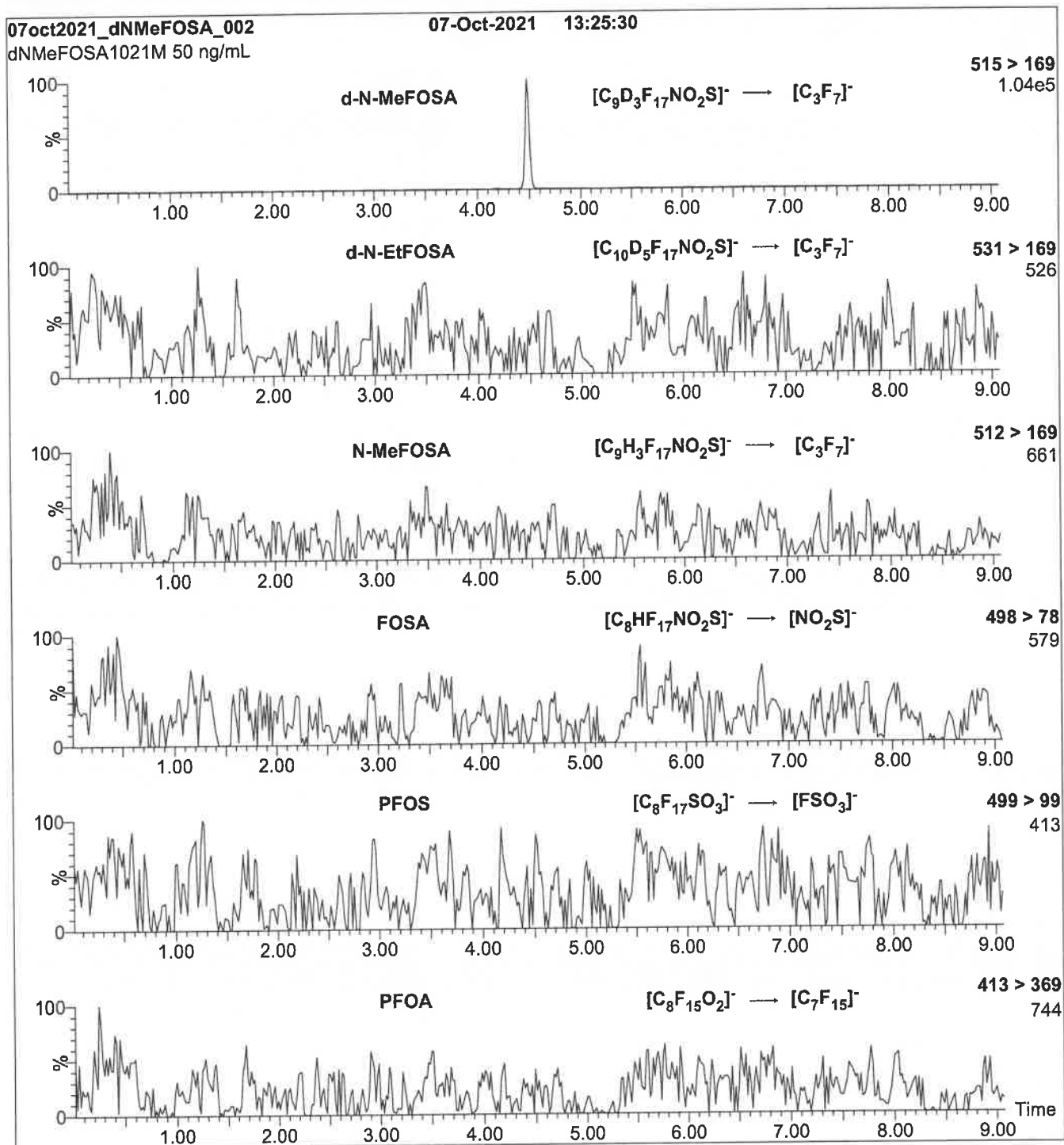
Capillary Voltage (kV) = 1.00

Cone Voltage (V) = 44.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: d-N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (d-N-MeFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 24

Reagent

LCd-NMeFOSA-M_00035



2979347

ID: LCd-NMeFOSA-M_00035
Exp: 10/07/26 Prp: 1M Opr: 04/19/22
d-N-MeFOSA-M**WELLINGTON
LABORATORIES****CERTIFICATE OF ANALYSIS
DOCUMENTATION****PRODUCT CODE:**

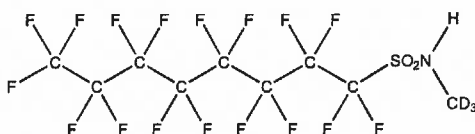
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936109-37-4

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CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

10/07/2021

EXPIRY DATE: (mm/dd/yyyy)

10/07/2026

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MOLECULAR WEIGHT:

516.19

SOLVENT(S):

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ISOTOPIC PURITY:≥98% ²H₃**DOCUMENTATION/ DATA ATTACHED:**

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Figure 2: LC/MS/MS Data (Selected MRM Transitions)

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10/08/2021
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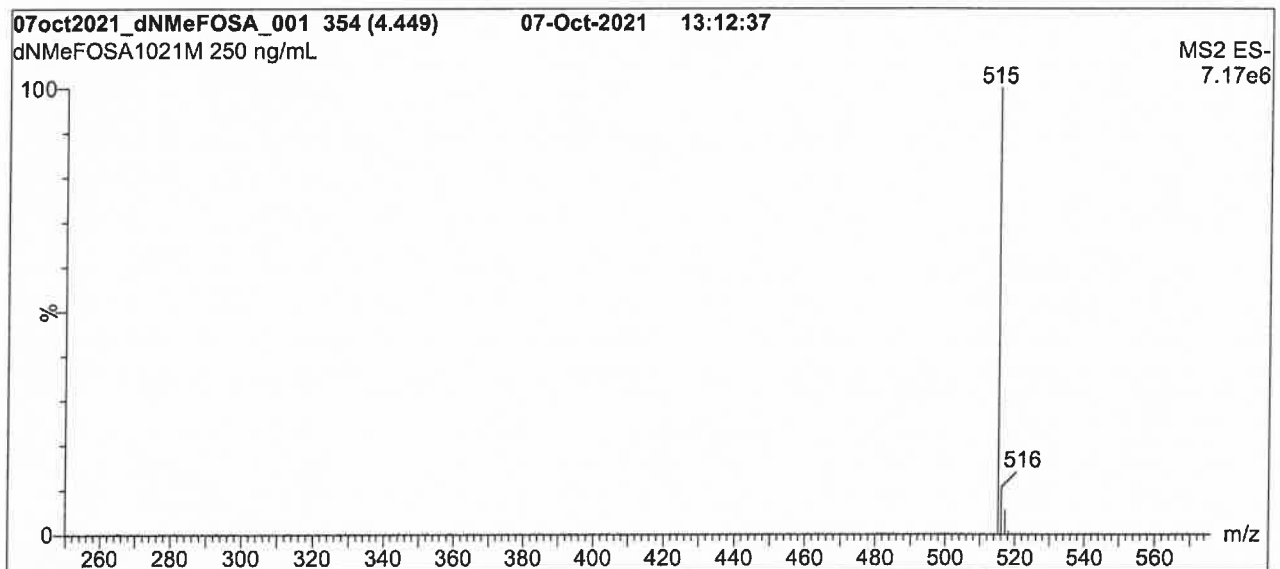
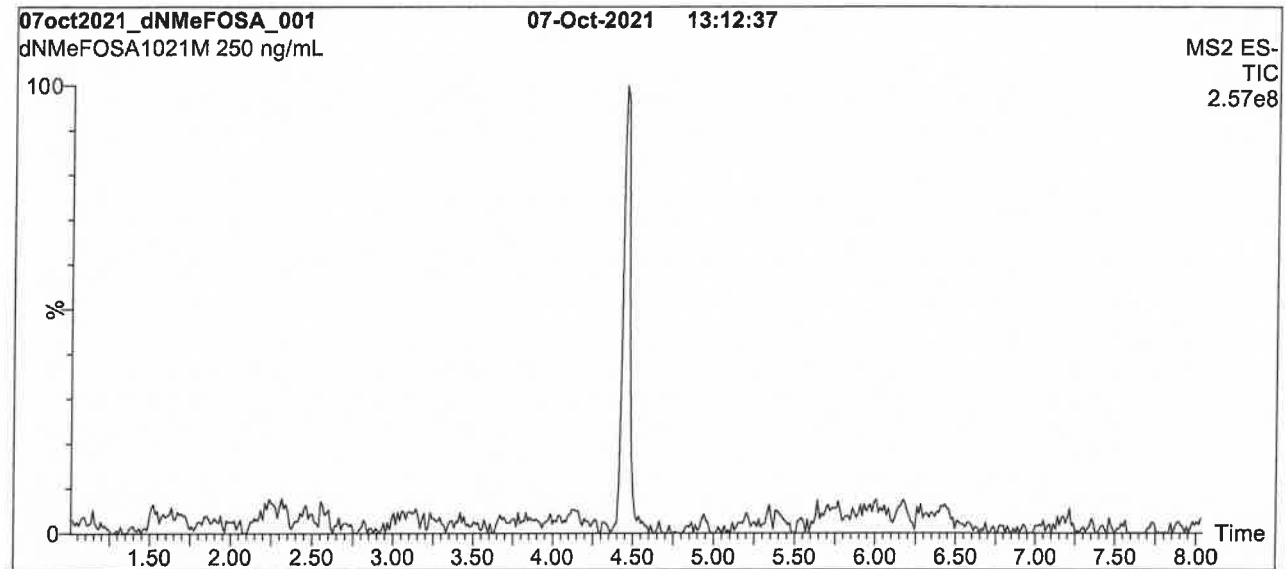
QUALITY MANAGEMENT:

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Figure 1: d-N-MeFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

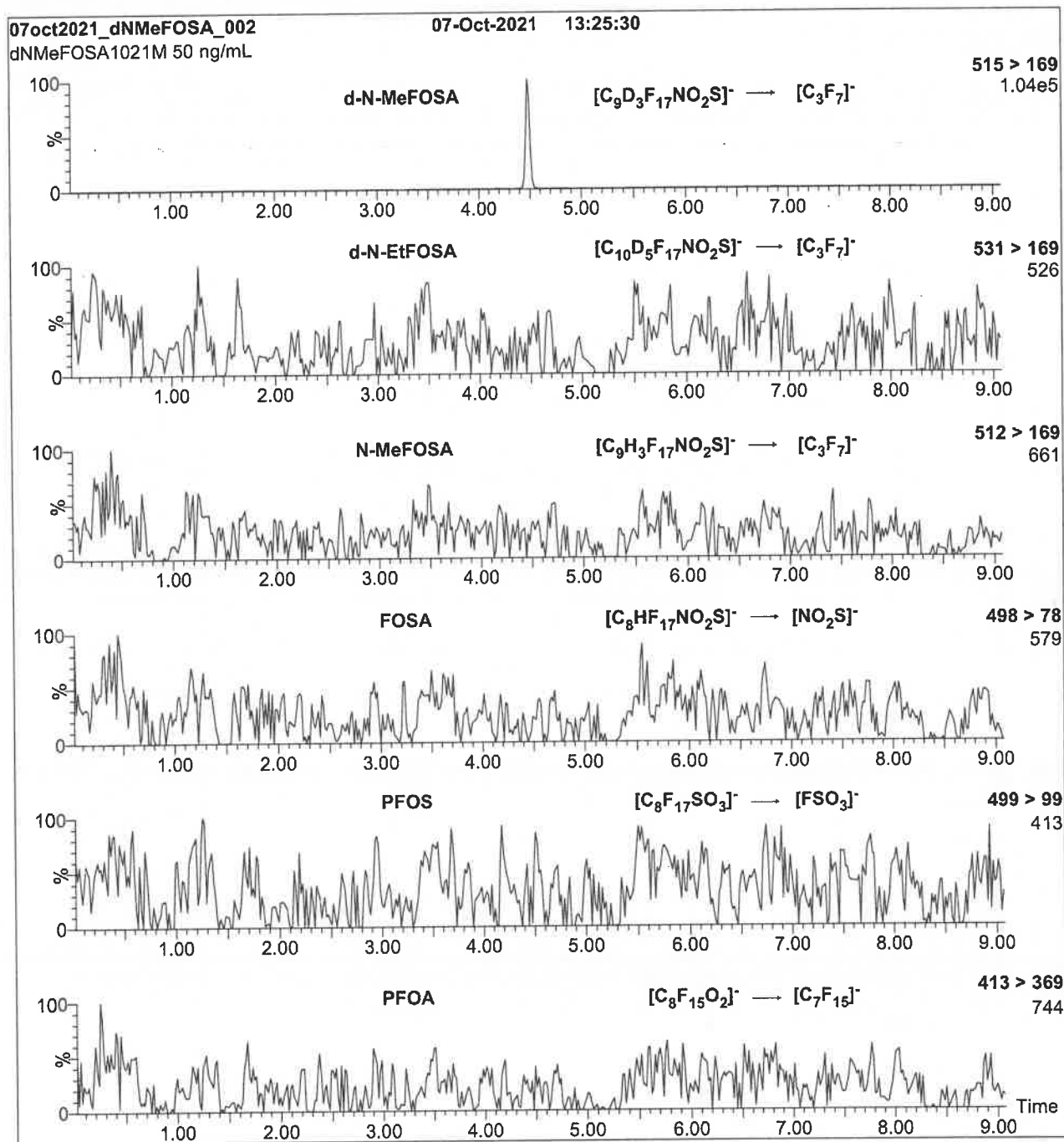
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: d-N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (d-N-MeFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 24

Reagent

LCd-NMeFOSA-M_00036



3180690

ID: LCd-NMeFOSA-M_00036

Exp:05/06/27 Prpd:MM Opn:09/14/22

d-N-MeFOSA-M



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

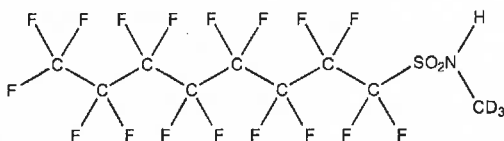
d-N-MeFOSA-M

LOT NUMBER:

dNMeFOSA0422M

COMPOUND:N-methyl-d₃-perfluoro-1-octanesulfonamide**STRUCTURE:****CAS #:**

936109-37-4

**MOLECULAR FORMULA:**C₈D₃HF₁₇NO₂S**CONCENTRATION:**

50.0 ± 2.5 µg/mL

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/06/2022

EXPIRY DATE: (mm/dd/yyyy)

05/06/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

MOLECULAR WEIGHT:

516.19

SOLVENT(S):

Methanol

ISOTOPIC PURITY:≥98% ²H₃**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

 B.G. Chittim, General Manager

Date:

05/09/2022
(mm/dd/yyyy)

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 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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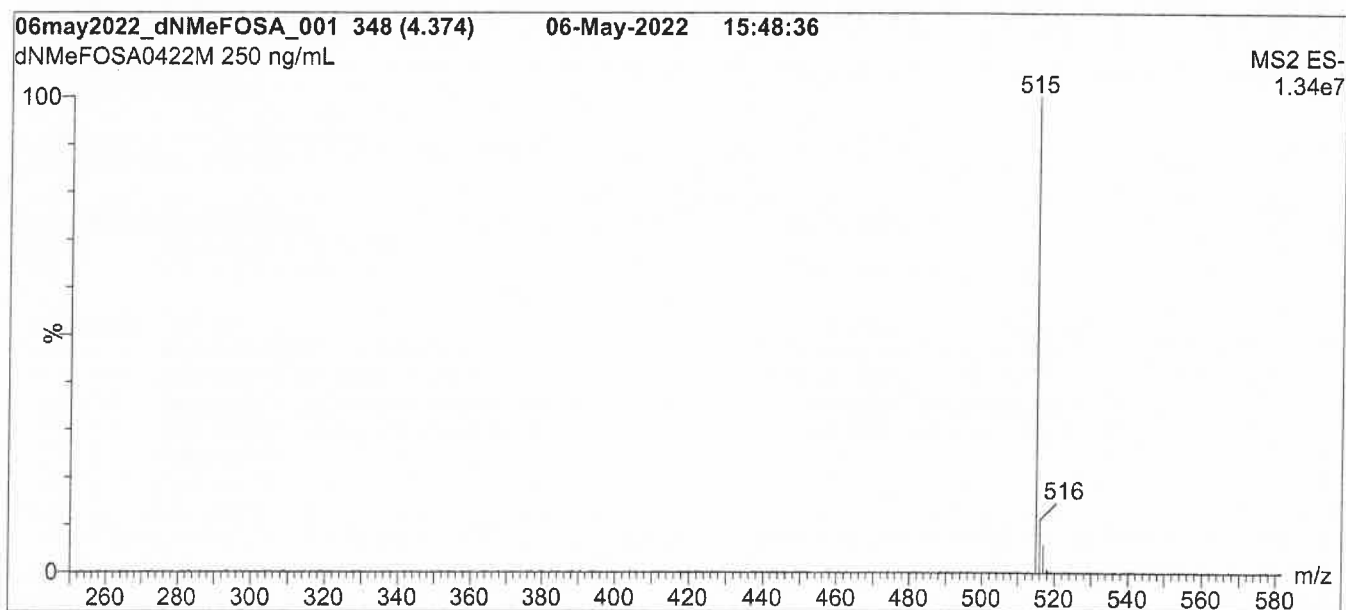
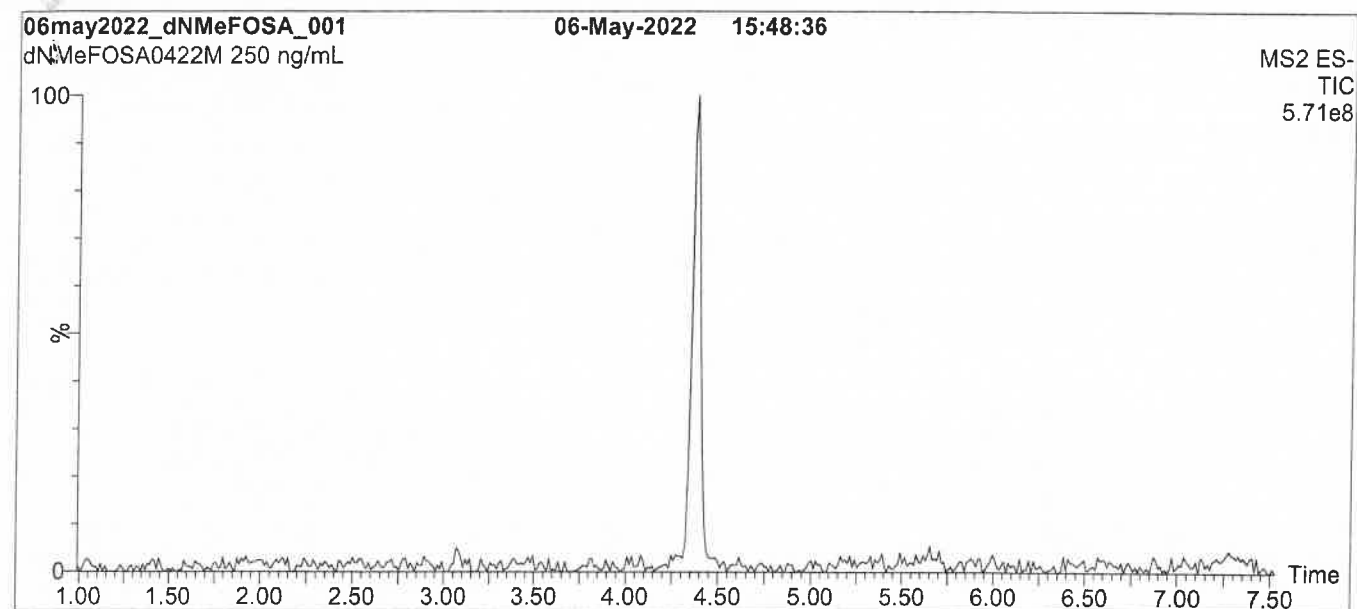
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Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

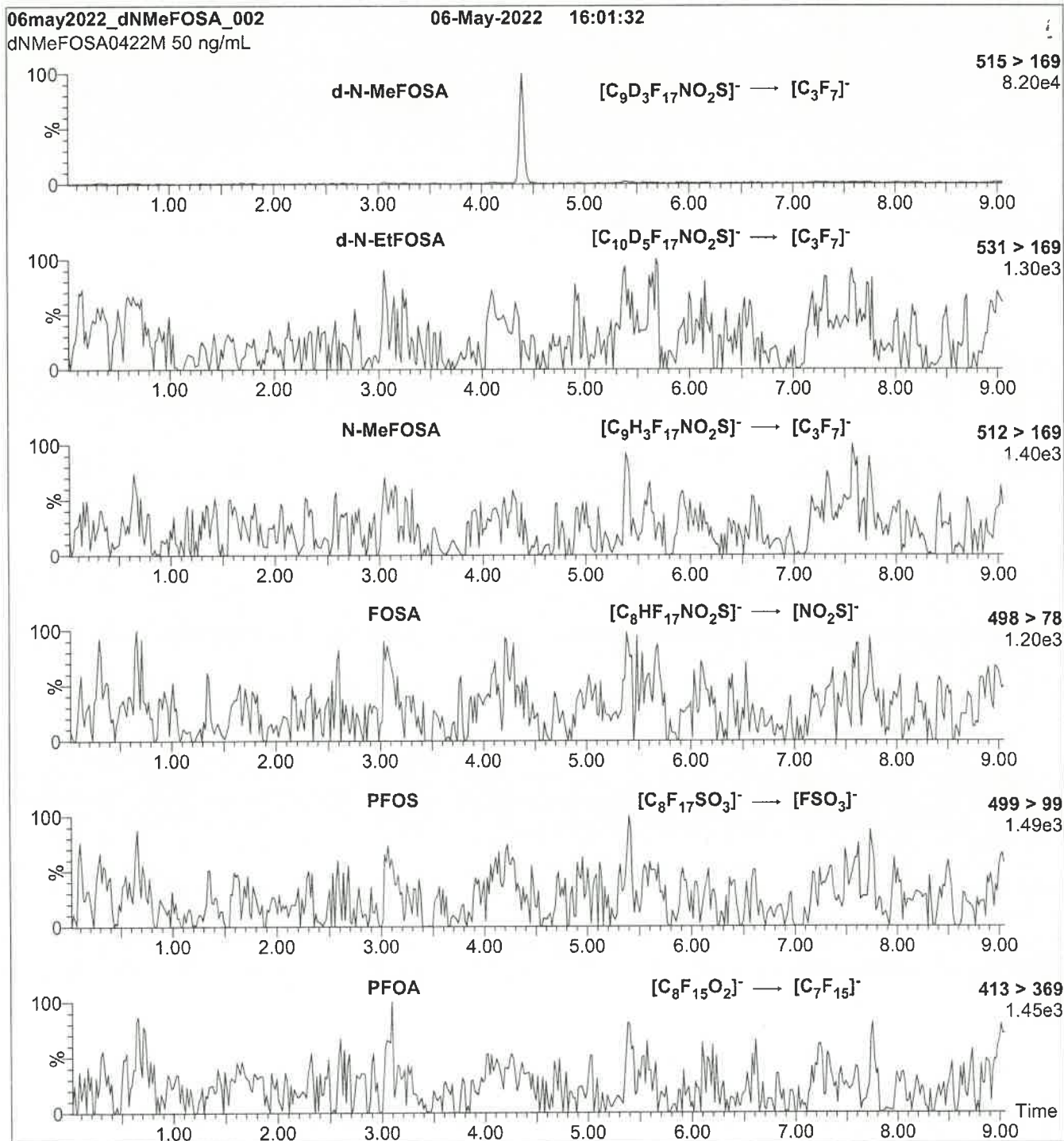
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: d-N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (d-N-MeFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.64e-3

Collision Energy (eV) = 24

Reagent

LCd3-NMeFOSAA_00046



2979416

ID: LCd3-NMeFOSAA_00046

Exp: 02/22/27 Prp: 1M Opn: 04/19/22

d3-N-MeFOSAA

**WELLINGTON
LABORATORIES****CERTIFICATE OF ANALYSIS
DOCUMENTATION****PRODUCT CODE:**

d3-N-MeFOSAA

LOT NUMBER:

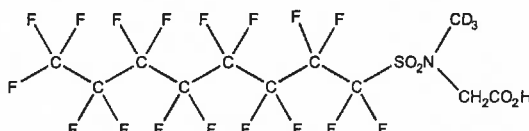
d3NMeFOSAA0222

COMPOUND:

N-methyl-d3-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE:**CAS #:**

1400690-70-1

**MOLECULAR FORMULA:** $C_{11}D_3H_3F_{17}NO_4S$ **MOLECULAR WEIGHT:**

574.23

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY: $\geq 98\% \text{ } ^2\text{H}_3$ **LAST TESTED:** (mm/dd/yyyy)

02/22/2022

EXPIRY DATE: (mm/dd/yyyy)

02/22/2027

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USECertified By: 

B.G. Chittim, General Manager

Date: 03/15/2022

(mm/dd/yyyy)

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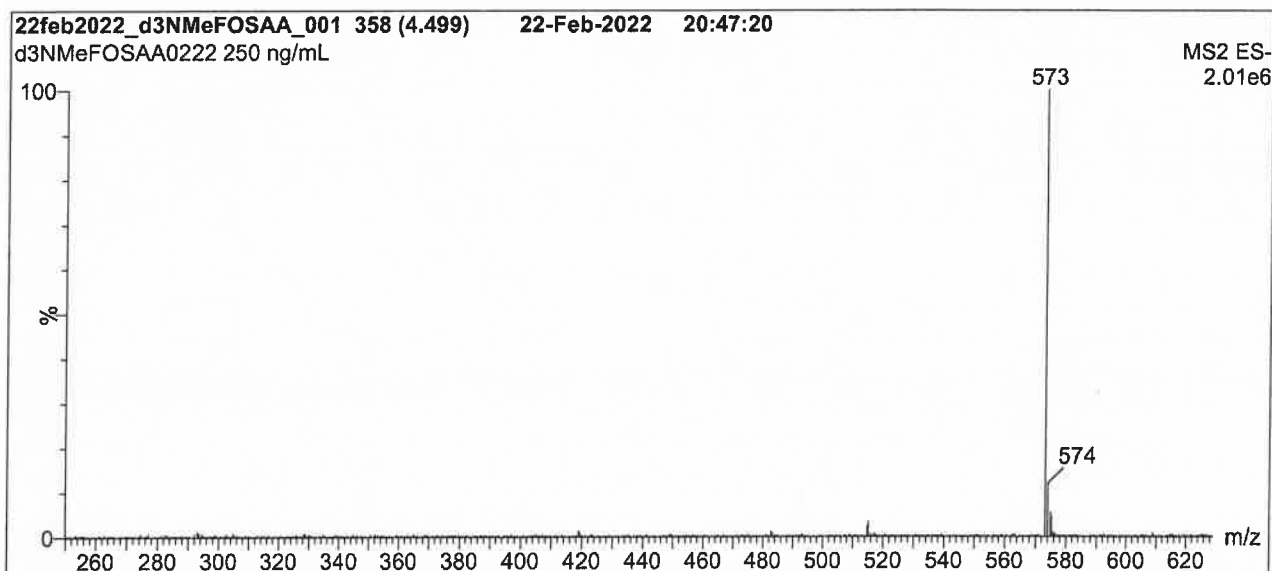
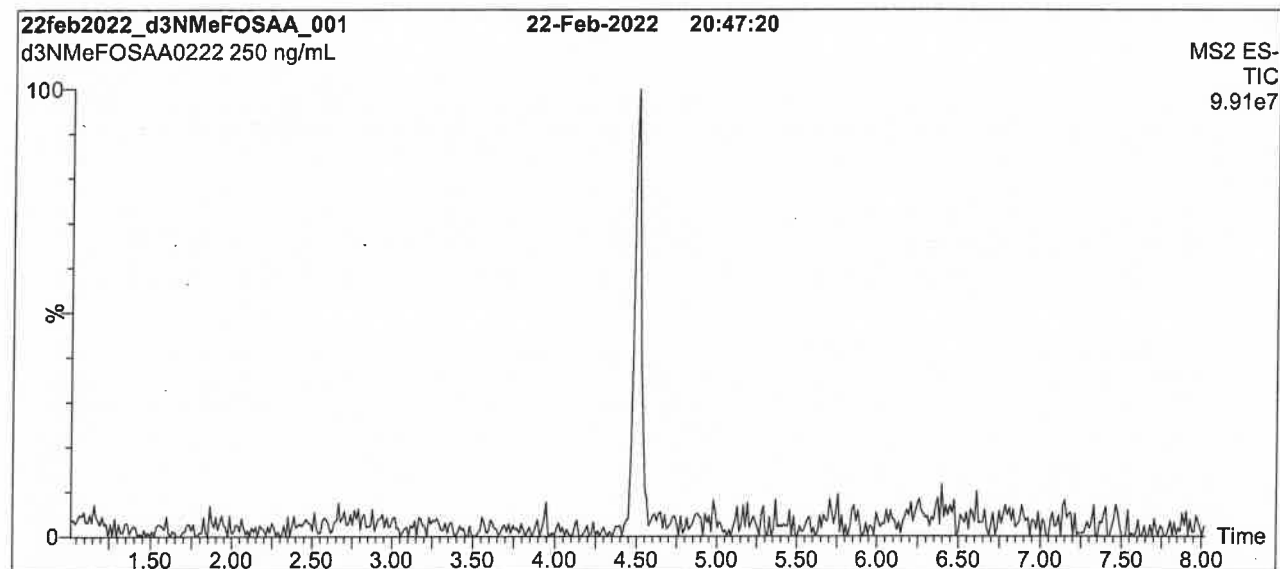
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: d3-N-MeFOSAA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

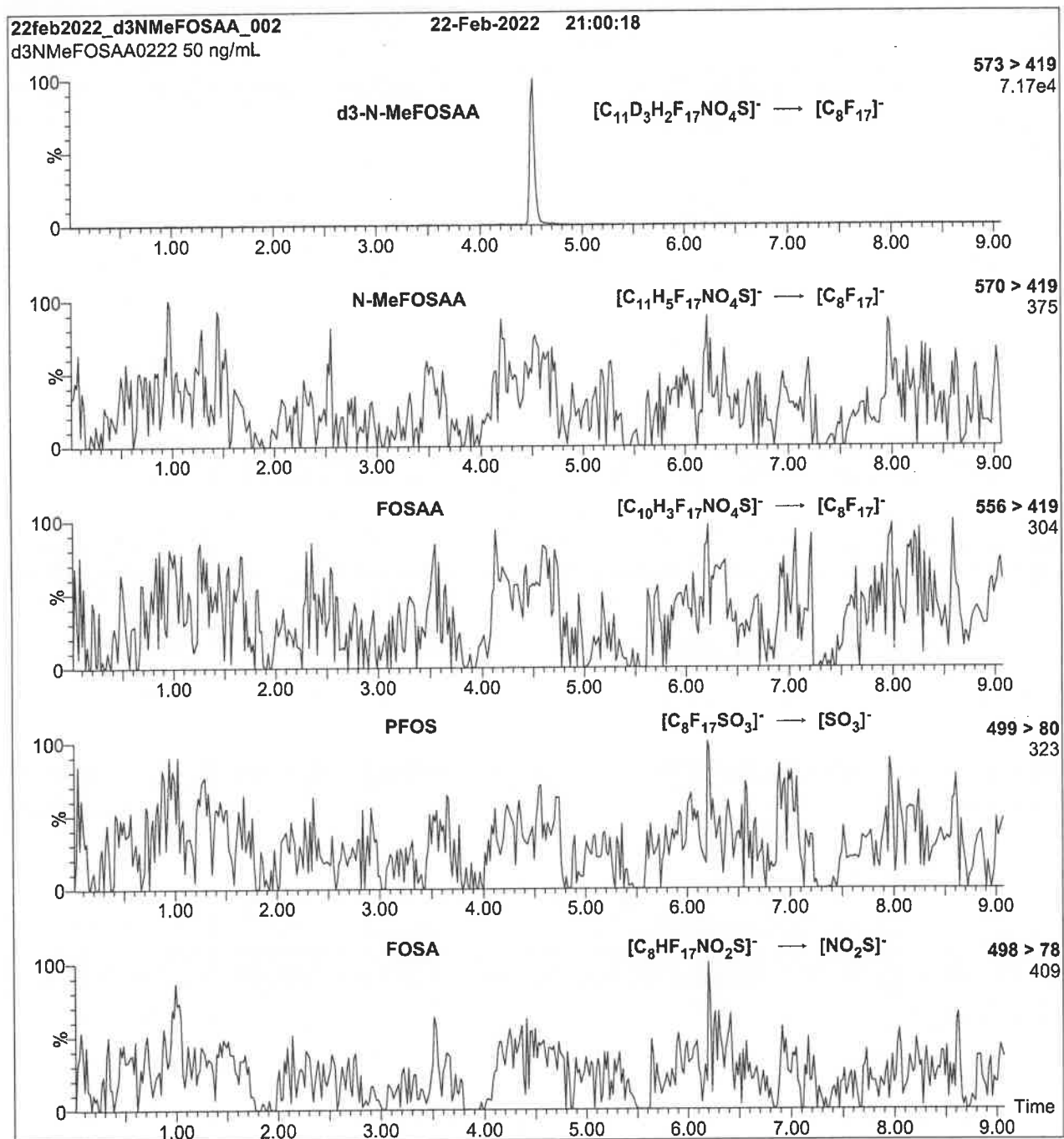
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 20.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: d3-N-MeFOSAA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (d3-N-MeFOSAA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 18

Reagent

LCd3-NMeFOSAA_00047

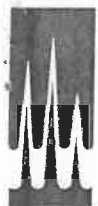


3180986

ID: LCd3-NMeFOSAA_00047

Exp: 02/22/27 Prpd. M

d3-N-MeFOSAA



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

d3-N-MeFOSAA

LOT NUMBER:

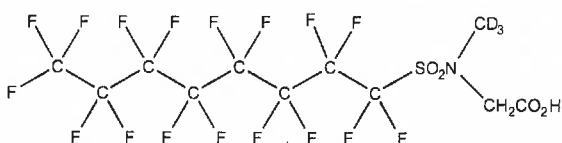
d3NMeFOSAA0222

COMPOUND:

N-methyl-d3-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE:**CAS #:**

1400690-70-1

**MOLECULAR FORMULA:** $C_{11}D_3H_3F_{17}NO_4S$ **CONCENTRATION:** $50.0 \pm 2.5 \mu\text{g/mL}$ **MOLECULAR WEIGHT:**

574.23

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY: $\geq 98\% \text{ } ^2\text{H}_3$ **LAST TESTED:** (mm/dd/yyyy)

02/22/2022

EXPIRY DATE: (mm/dd/yyyy)

02/22/2027

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 03/15/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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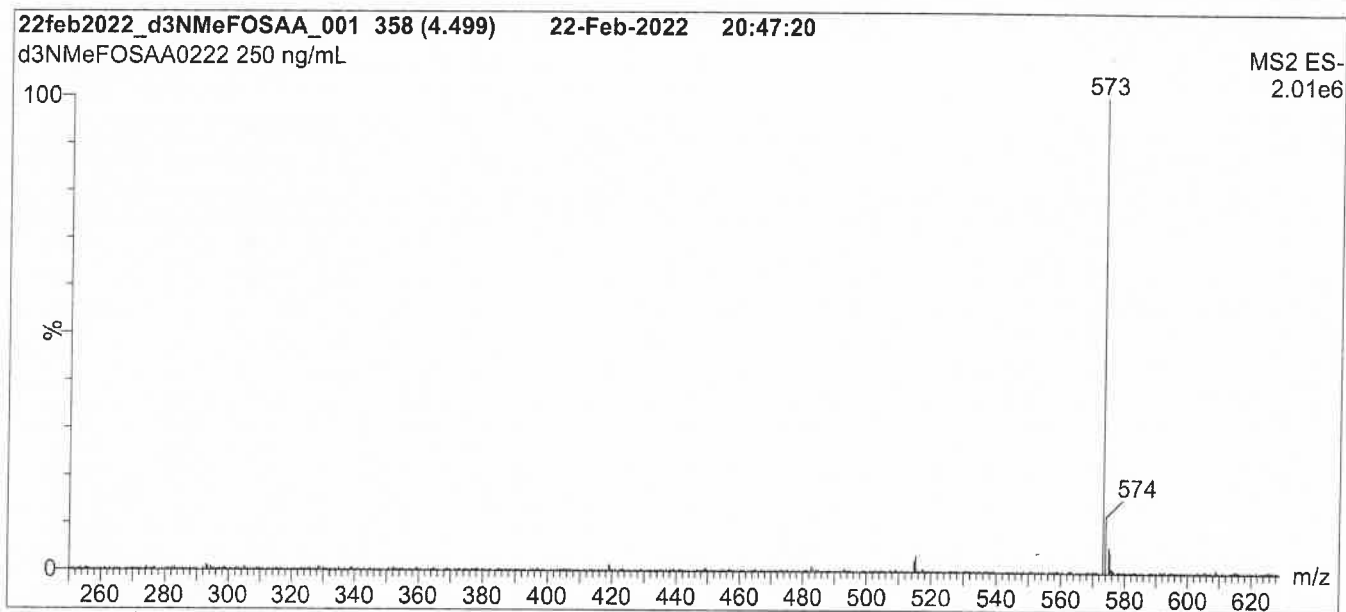
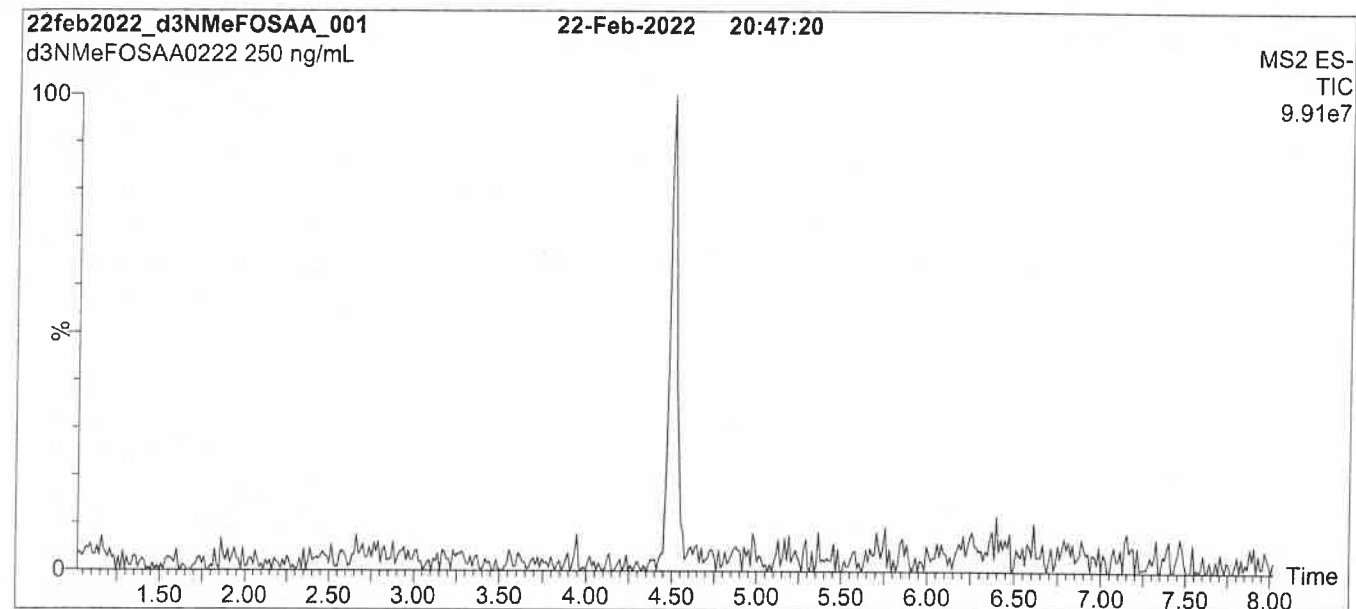
QUALITY MANAGEMENT:

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Figure 1: d3-N-MeFOSAA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

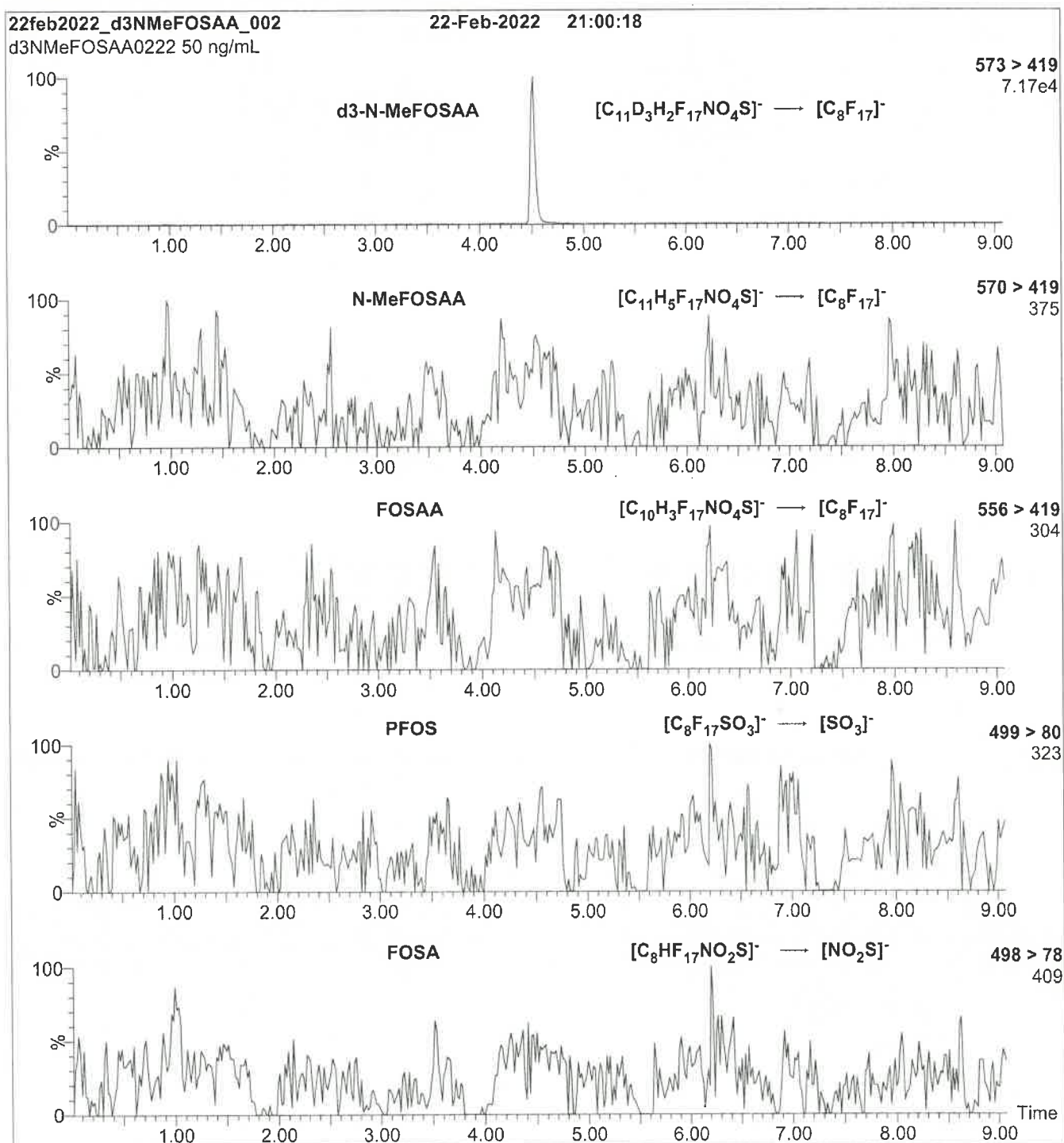
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: d3-N-MeFOSAA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (d3-N-MeFOSAA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 18

Reagent

LCd5-NEtFOSAA_00047



2979431

ID: LCd5-NEtFOSAA_00047

Exp: 09/28/26 Pp'd: 3M Opn: 04/19/22

d5-N-EtFOSAA

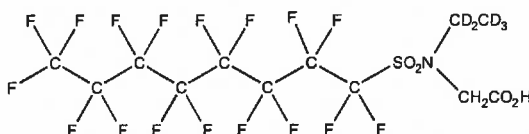


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: d5-N-EtFOSAA **LOT NUMBER:** d5NEtFOSAA0921
COMPOUND: N-ethyl-d5-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: C₁₂D₅H₃F₁₇NO₄S
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/28/2021
EXPIRY DATE: (mm/dd/yyyy) 09/28/2026
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 590.26
SOLVENT(S): Methanol
 Water (<1%)
ISOTOPIC PURITY: ≥98% ²H₅

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 10/01/2021
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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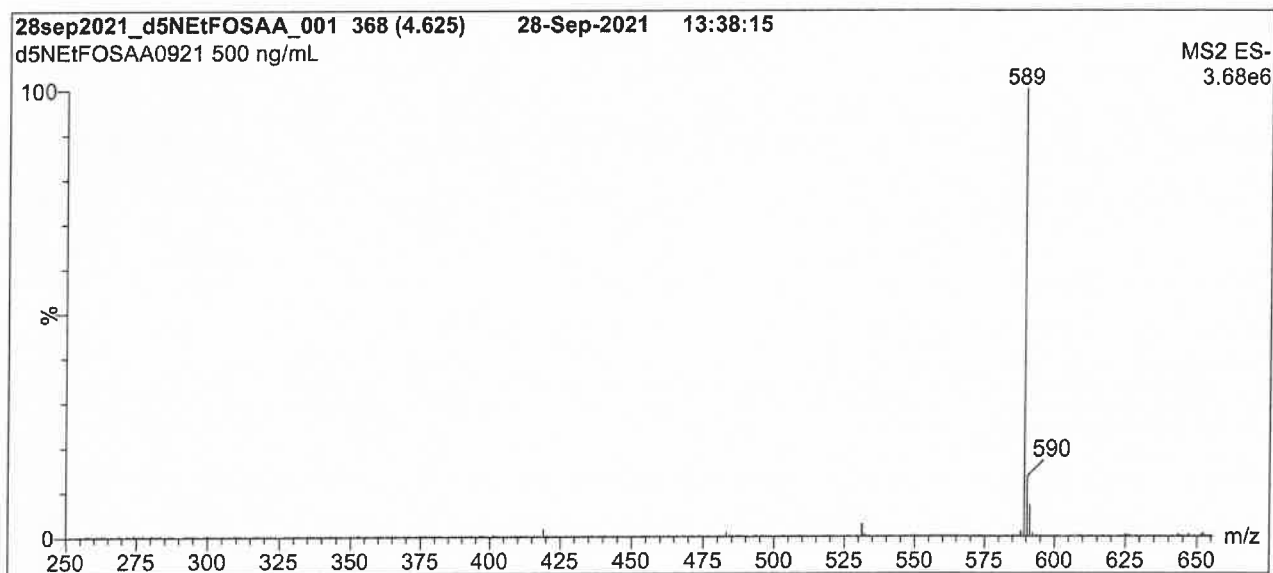
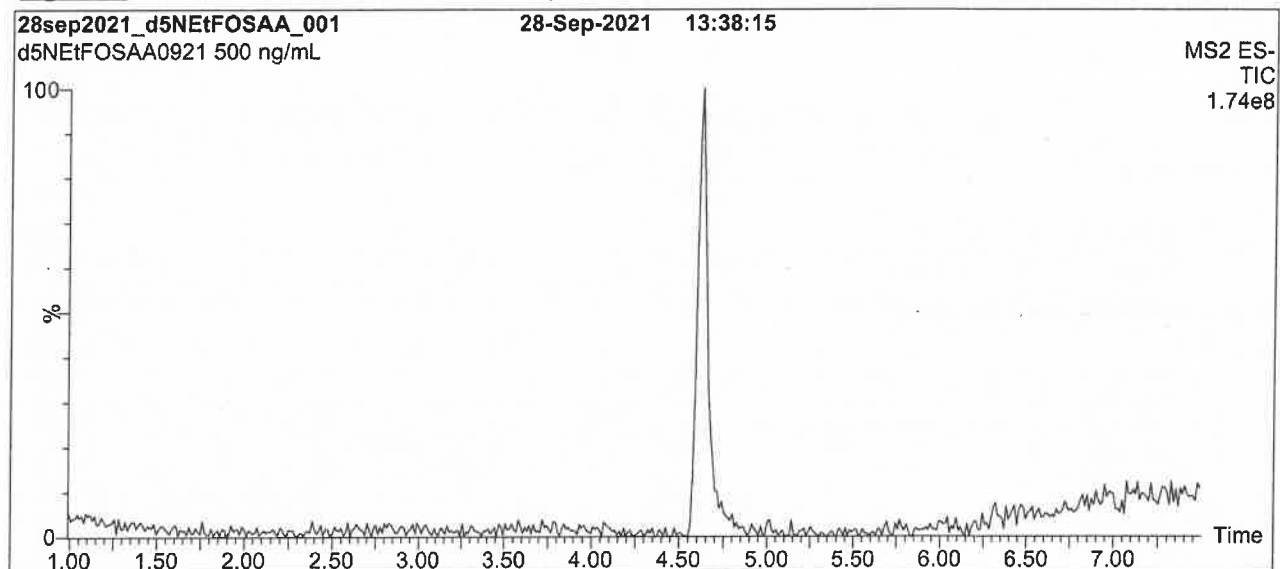
QUALITY MANAGEMENT:

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Figure 1: d5-N-EtFOSAA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

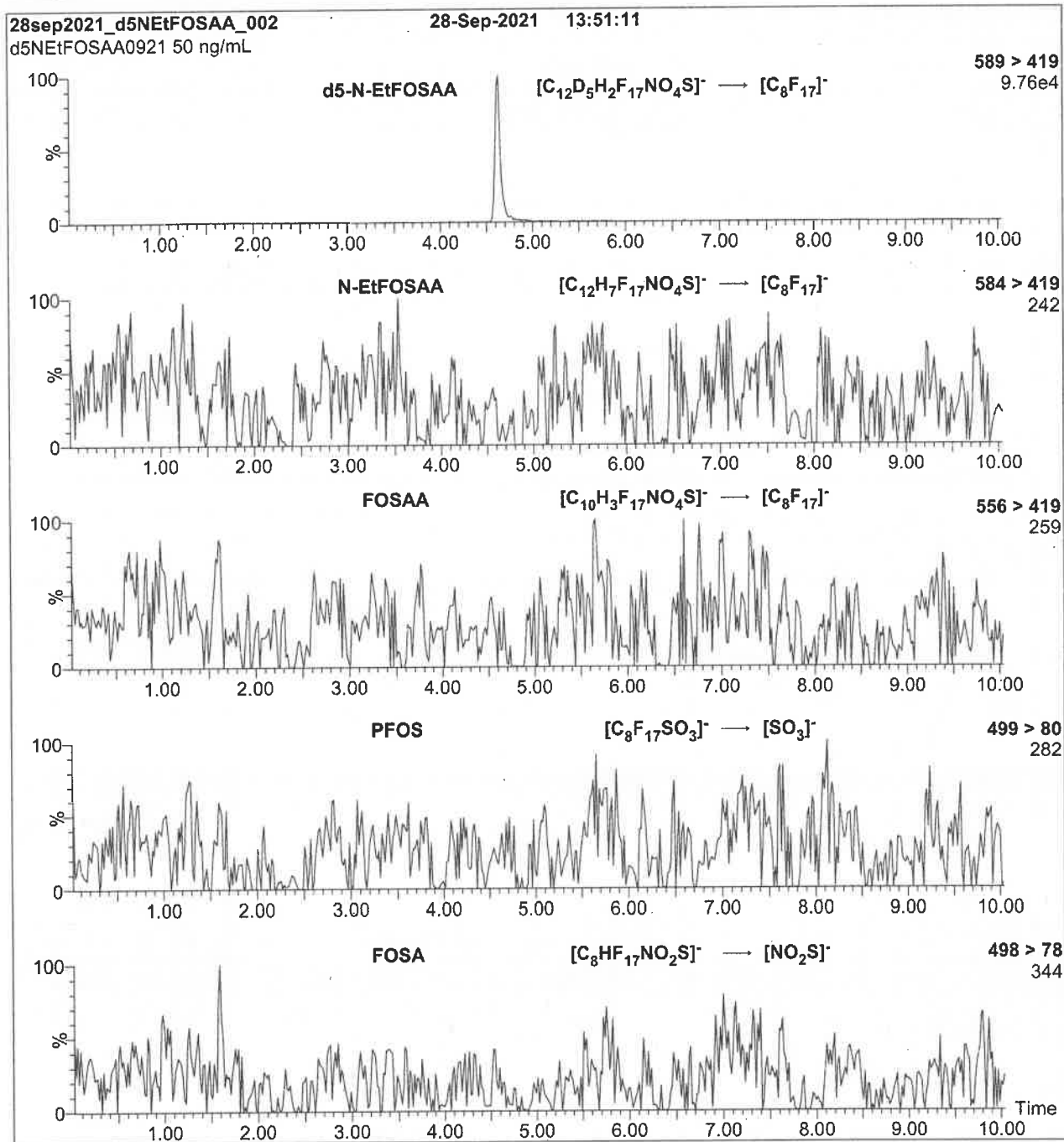
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 20.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: d5-N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (d5-N-EtFOSAA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.35e-3

Collision Energy (eV) = 18

Reagent

LCd5-NEtFOSAA_00048



3181025

ID: LCd5-NEtFOSAA_00048

Exp:05/11/27 Prpd:3M Opn:09/14/22

d5-N-EtFOSAA

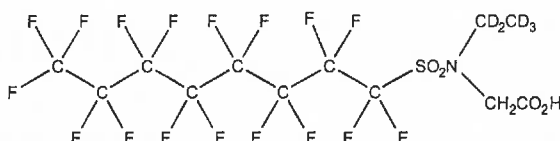


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: d5-N-EtFOSAA **LOT NUMBER:** d5NEtFOSAA0522
COMPOUND: N-ethyl-d5-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** 1265205-97-7



MOLECULAR FORMULA: C₁₂D₅H₃F₁₇NO₄S **MOLECULAR WEIGHT:** 590.26
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥98% ²H₅
LAST TESTED: (mm/dd/yyyy) 05/11/2022
EXPIRY DATE: (mm/dd/yyyy) 05/11/2027
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

05/24/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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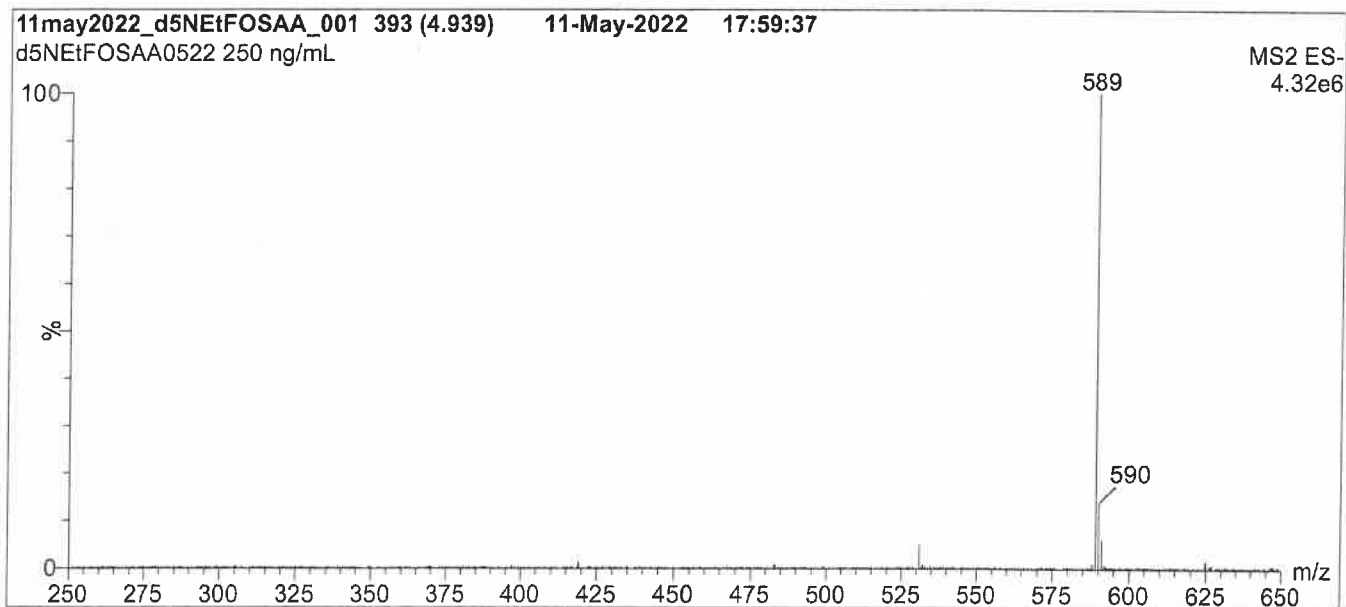
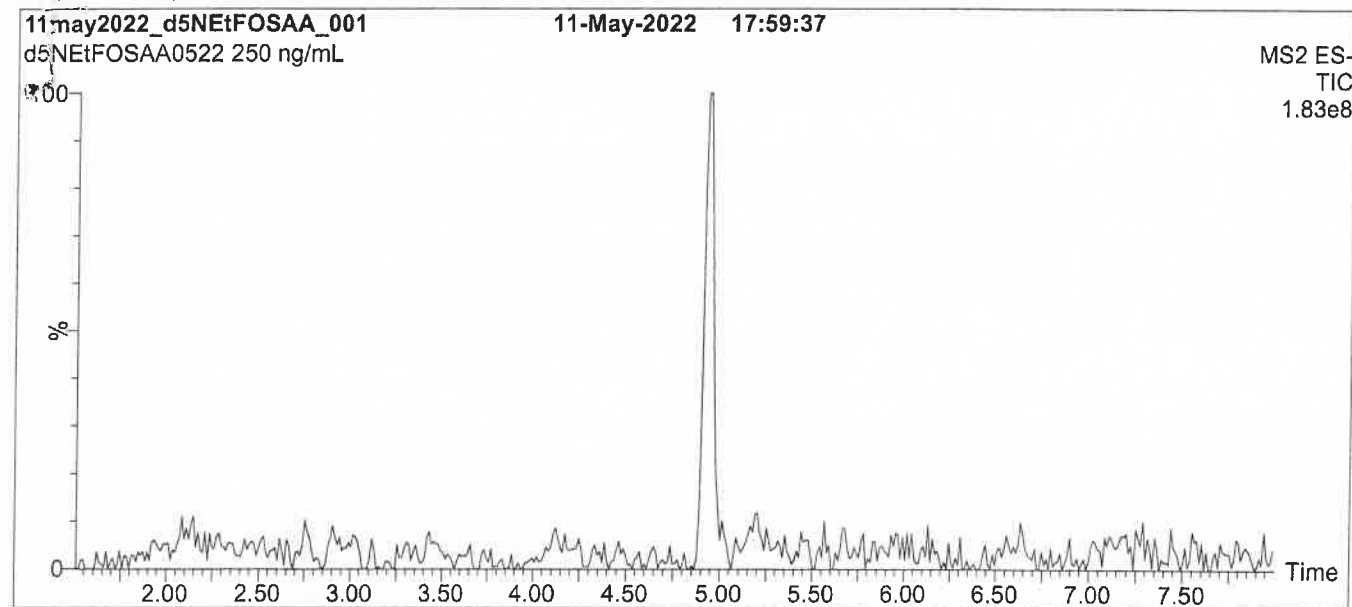
QUALITY MANAGEMENT:

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Figure 1: d5-N-EtFOSAA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

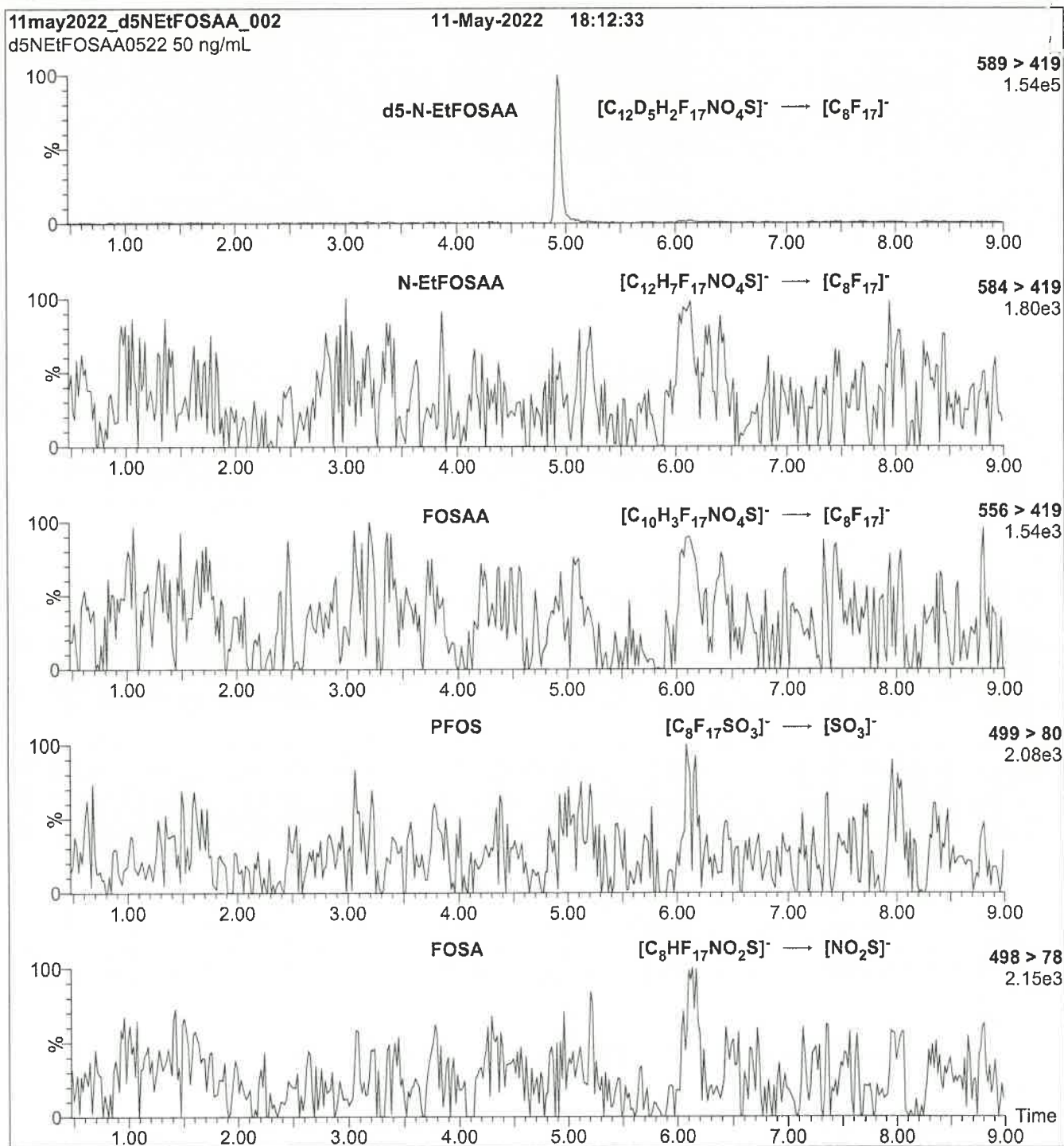
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: d5-N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (d5-N-EtFOSAA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.20e-3

Collision Energy (eV) = 18

Reagent

LCd7-NMeFOSEM_00034



2979374

ID: LCd7-NMeFOSEM_00034

Exp: 01/27/27 PdpdM Opn: 04/19/22

d7-N-MeFOSE-M

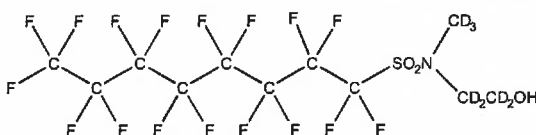


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: d7-N-MeFOSE-M **LOT NUMBER:** d7NMeFOSE1221M
COMPOUND: 2-(N-methyl-d3-perfluoro-1-octanesulfonamido)ethan-d4-ol

STRUCTURE: **CAS #:** 1265205-95-5



MOLECULAR FORMULA: $C_{11}D_7HF_{17}NO_3S$
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 12/16/2021 (HRGC/LRMS)
 01/27/2022 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 01/27/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 564.27
SOLVENT(S): Methanol
ISOTOPIC PURITY: $\geq 98\%$ 2H

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS Data (Full Scan and Mass Spectrum)

Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 02/03/2022
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

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Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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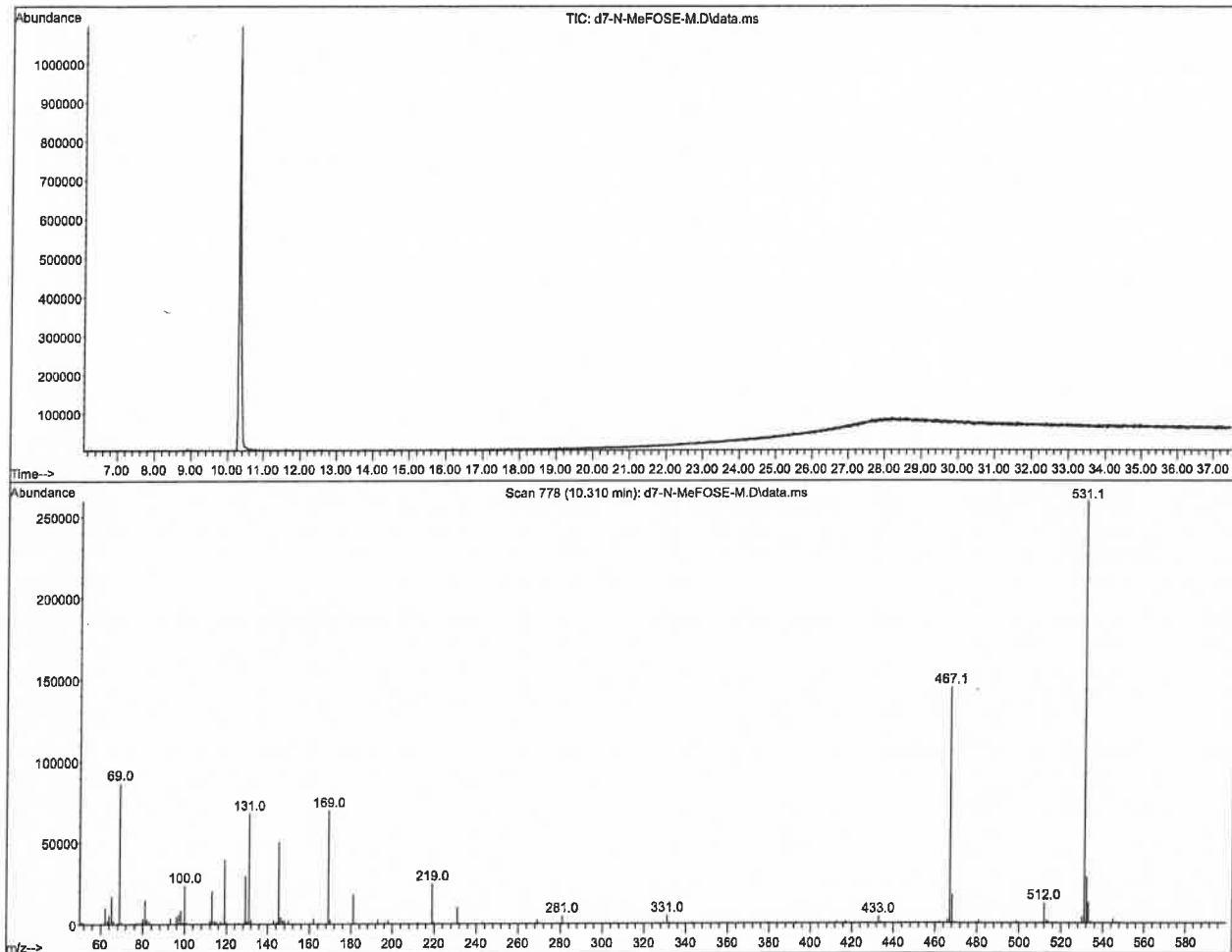
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: d7-N-MeFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column: 30 m DB-5 (0.25 mm id, 0.25 μ m film thickness) Agilent J&W

Flow: Constant at 1.0 mL/min

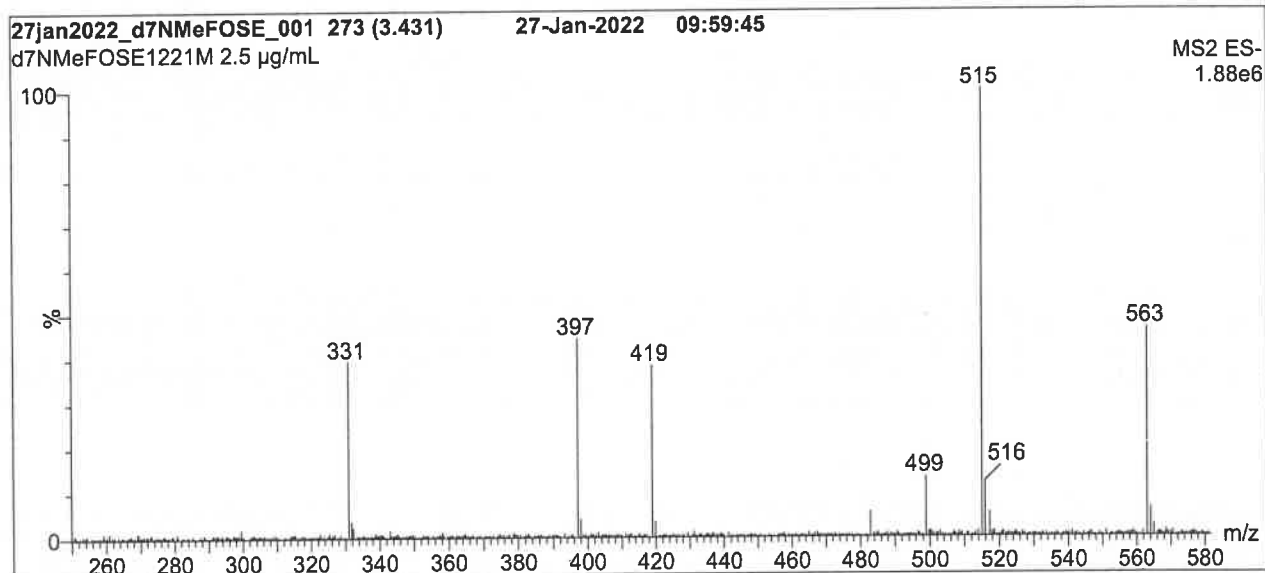
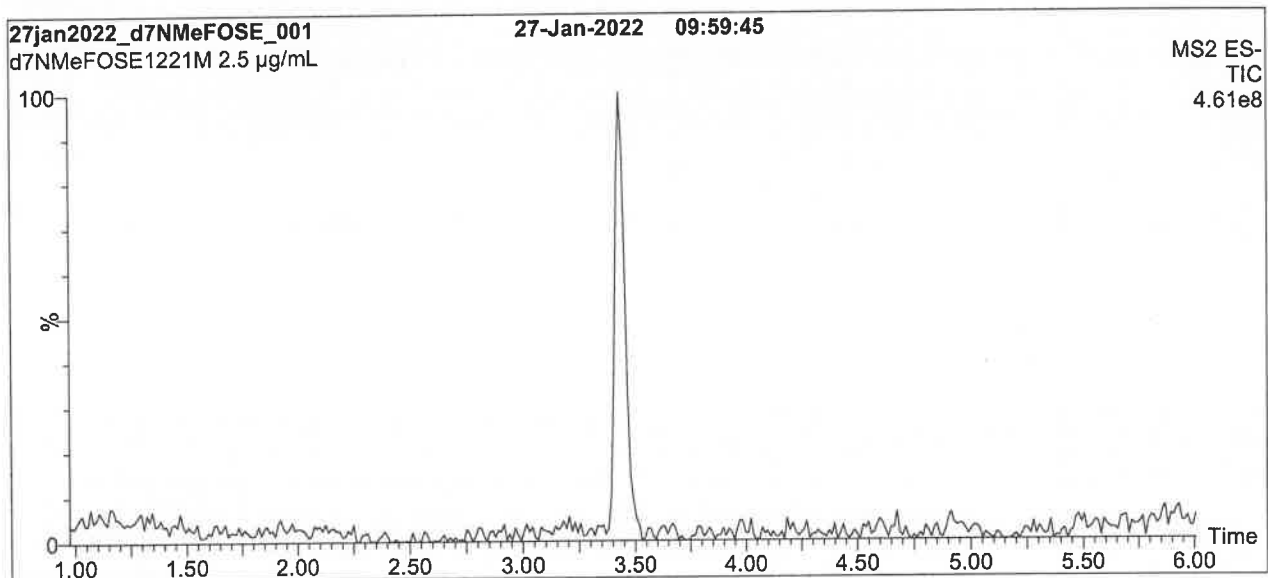
Injector: 250°C (Splitless Injection)

Oven: 100°C (5 min)
10°C/min to 310°C
310°C (10 min)

Ionization: EI+

Detector: 230°C
Full Scan (50-1000 amu)

Figure 2: d7-N-MeFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H₂O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

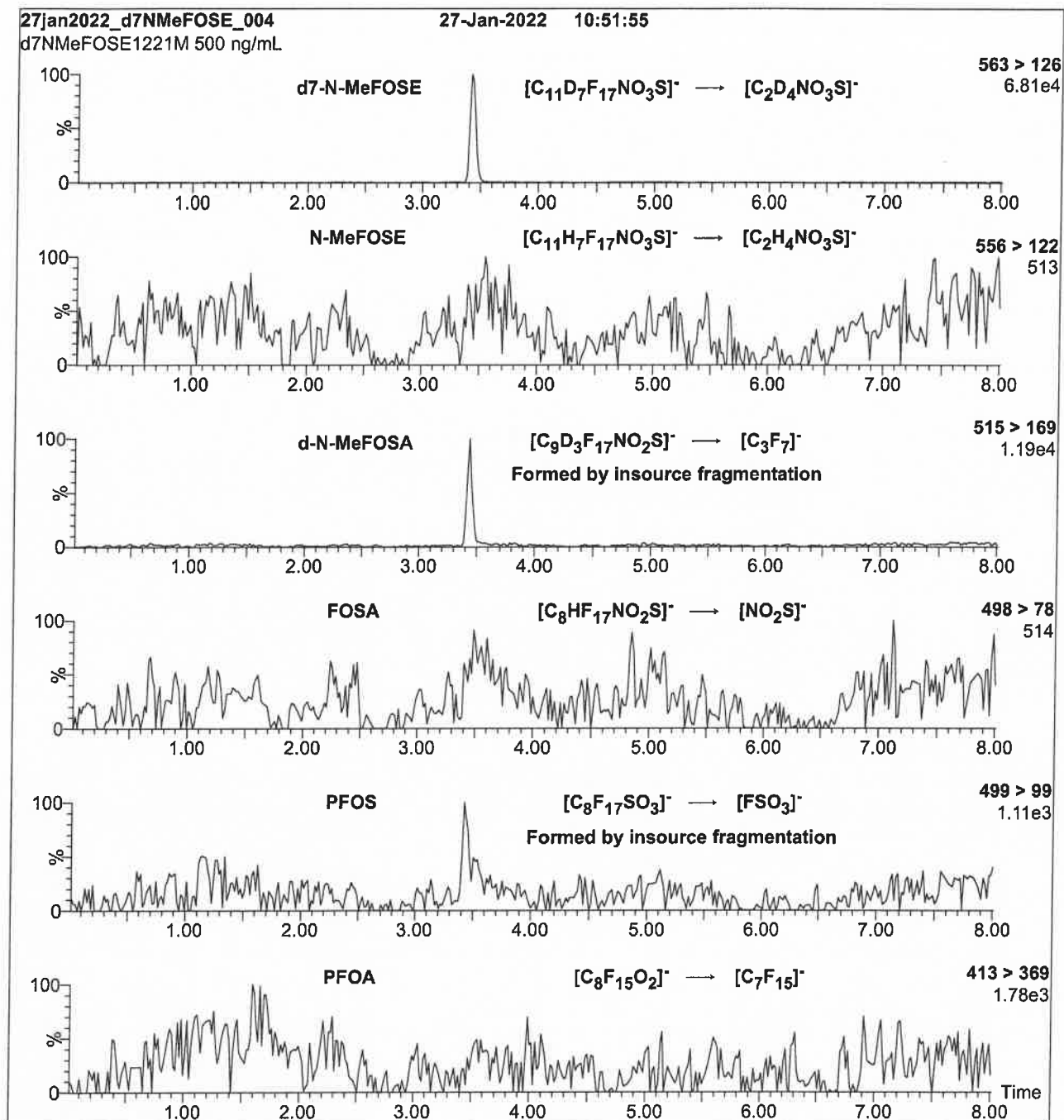
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (L/hr) = 1000

Figure 3: d7-N-MeFOSE-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 3:

Injection: On-column (d7-N-MeFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 36

Reagent

LCd7-NMeFOSEM_00035



3180763

ID: LCd7-NMeFOSEM_00035

Exp:01/27/27 Prpd:01/14/22

d7-N-MeFOSE-M



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

d7-N-MeFOSE-M

LOT NUMBER:

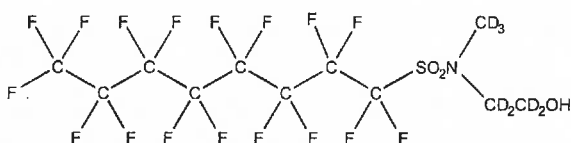
d7NMeFOSE1221M

COMPOUND:

2-(N-methyl-d3-perfluoro-1-octanesulfonamido)ethan-d4-ol

STRUCTURE:**CAS #:**

1265205-95-5

**MOLECULAR FORMULA:** $C_{11}D_7HF_{17}NO_3S$ **MOLECULAR WEIGHT:**

564.27

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥98% 2H_7 **LAST TESTED:** (mm/dd/yyyy)

12/16/2021 (HRGC/LRMS)

01/27/2022 (LC/MS)

EXPIRY DATE: (mm/dd/yyyy)

01/27/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS Data (Full Scan and Mass Spectrum)

Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

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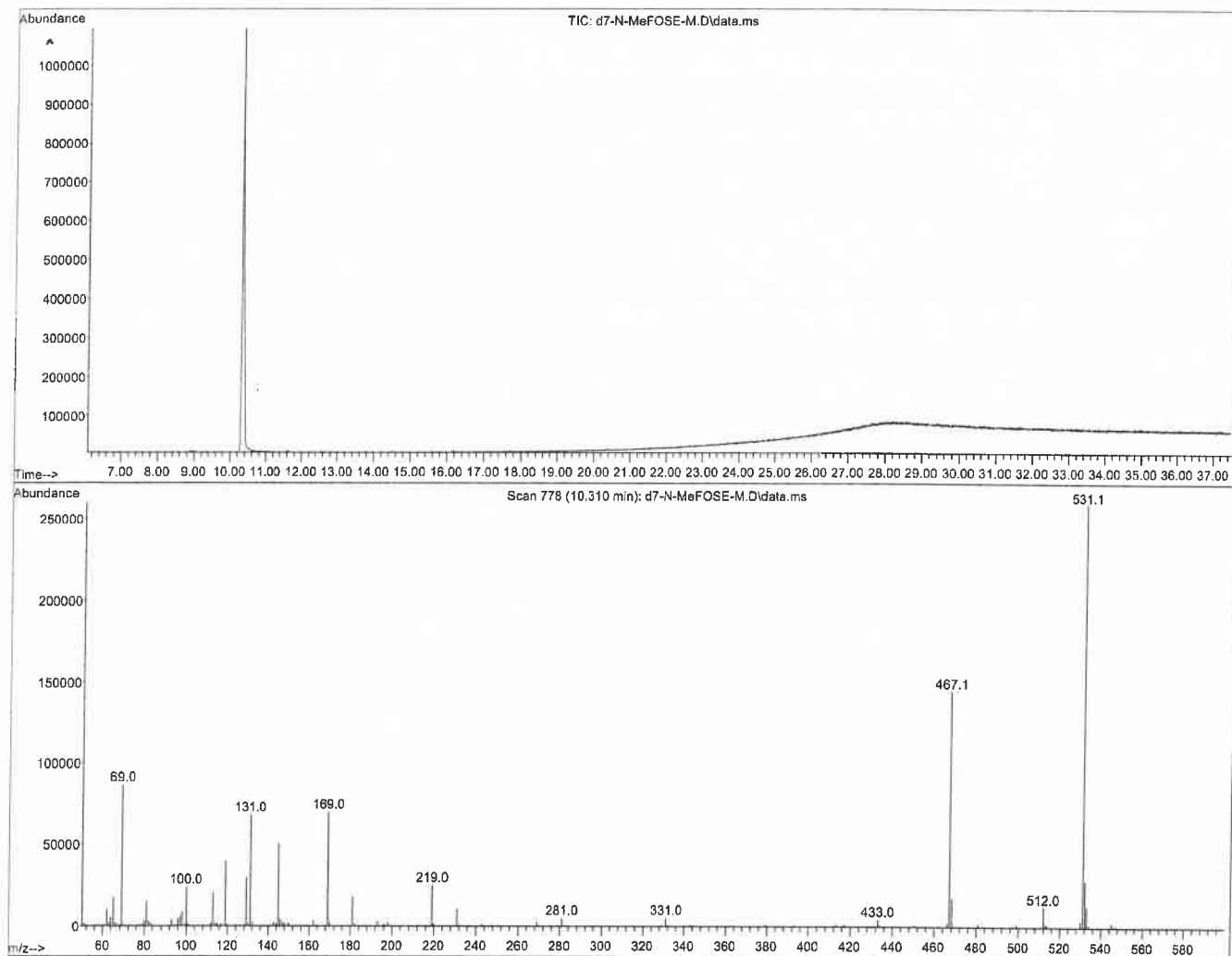
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Figure 1: d7-N-MeFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column: 30 m DB-5 (0.25 mm id, 0.25 μ m film thickness) Agilent J&W

Flow: Constant at 1.0 mL/min

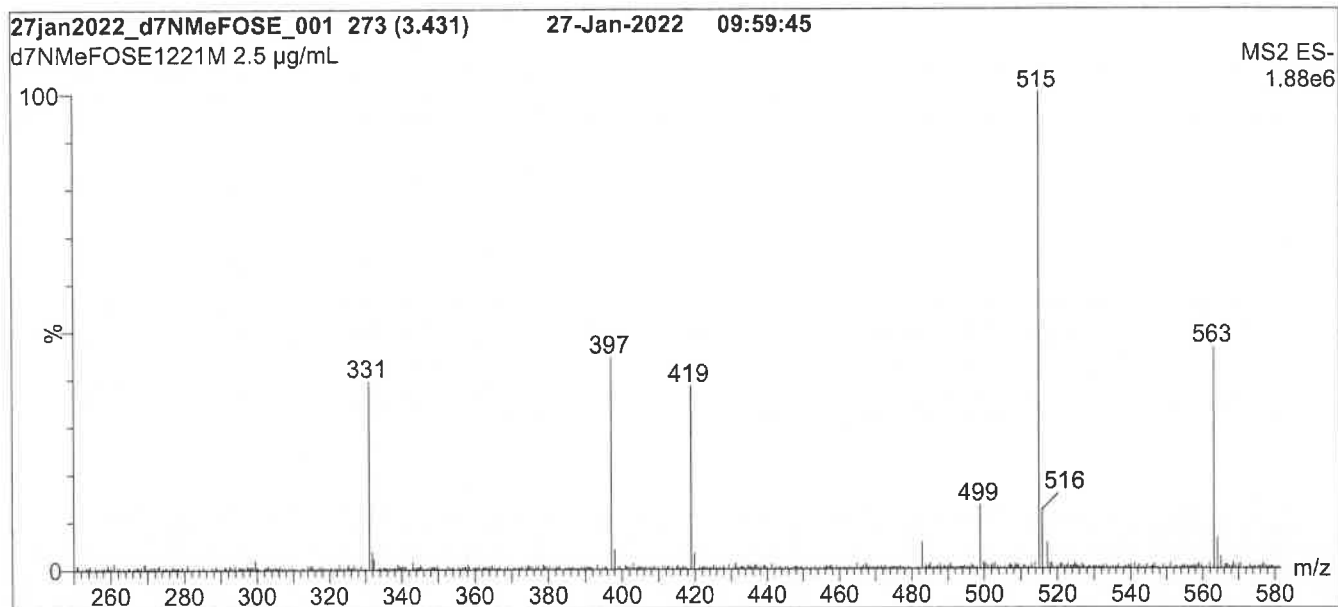
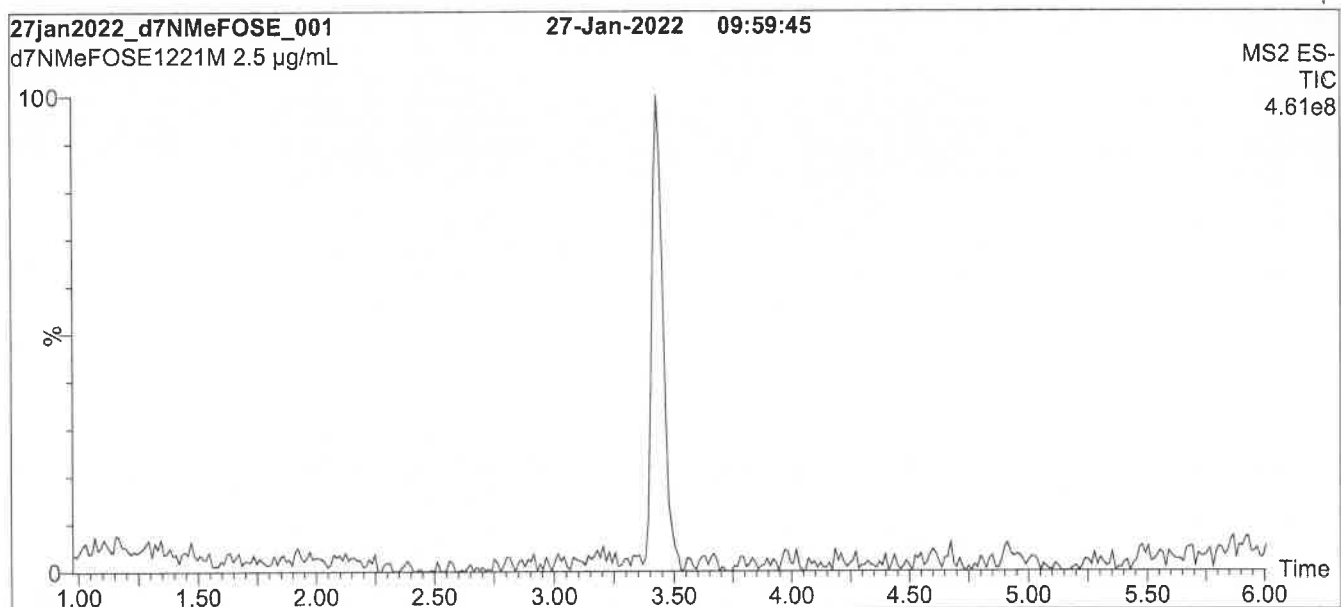
Injector: 250°C (Splitless Injection)

Oven: 100°C (5 min)
10°C/min to 310°C
310°C (10 min)

Ionization: EI+

Detector: 230°C
Full Scan (50-1000 amu)

Figure 2: d7-N-MeFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 70% MeOH

Ramp to 90% organic over 8 min and hold for

1.5 min before returning to initial conditions in 1 min.

Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

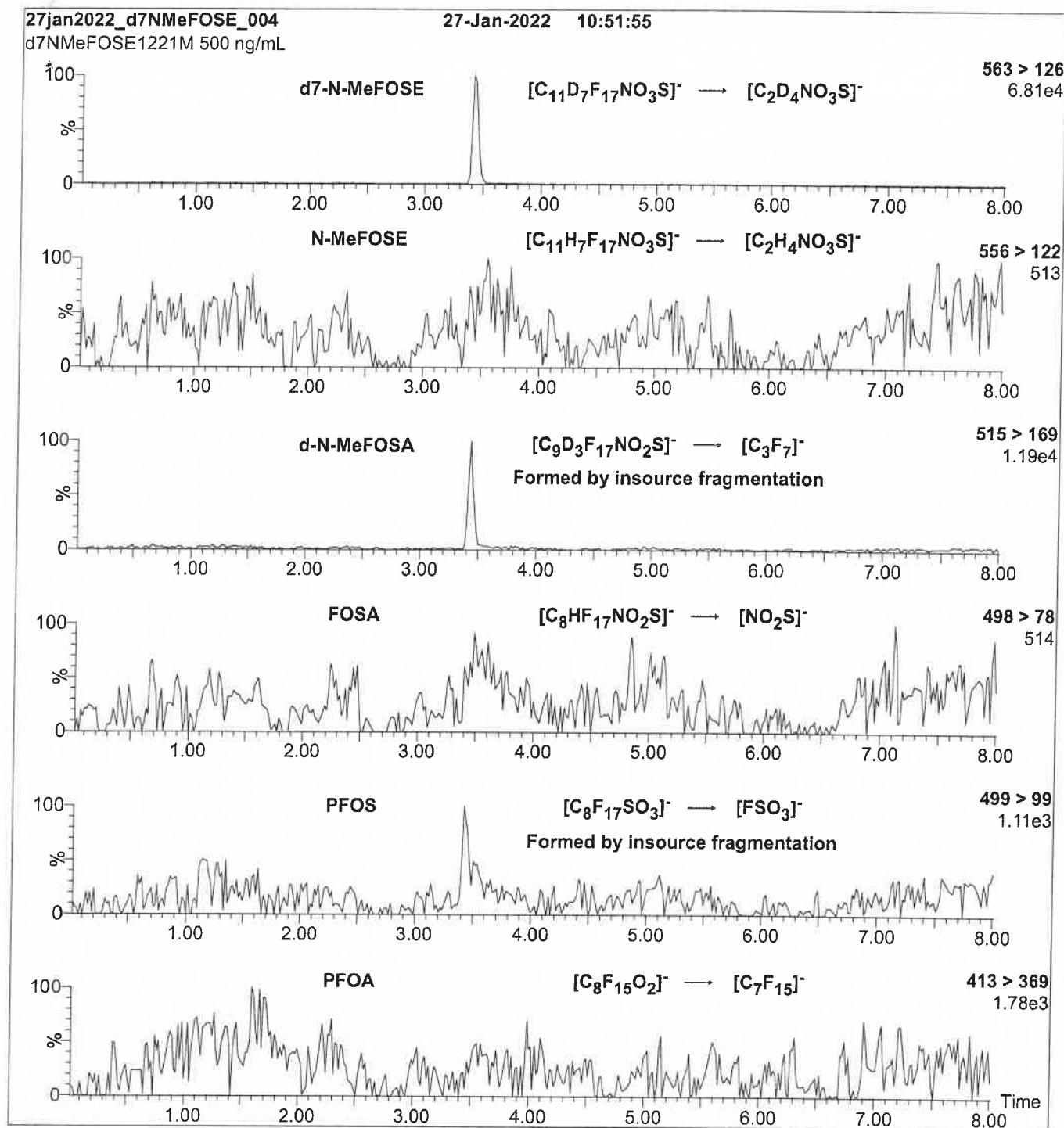
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 65.00

Desolvation Temperature (°C) = 450

Desolvation Gas Flow (L/hr) = 1000

Figure 3: d7-N-MeFOSE-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 3:

Injection: On-column (d7-N-MeFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 36

Reagent

LCd9-NEtFOSEM_00031



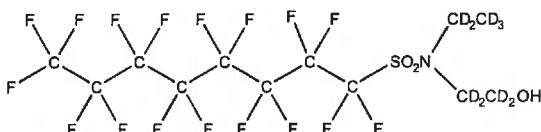
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ID: LCd9-NEtFOSEM_00031

Exp: 01/27/27 Pdpd: 04/19/22
d9-N-EtFOSE-M**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION

PRODUCT CODE: d9-N-EtFOSE-M **LOT NUMBER:** d9NEtFOSE1221M
COMPOUND: 2-(N-ethyl-d5-perfluoro-1-octanesulfonamido)ethan-d4-ol

STRUCTURE: **CAS #:** 1265205-96-6



MOLECULAR FORMULA: $C_{12}D_9HF_{17}NO_3S$ **MOLECULAR WEIGHT:** 580.31
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** $\geq 98\% \text{ } ^2\text{H}_8$
LAST TESTED: (mm/dd/yyyy) 12/13/2021 (HRGC/LRMS)
 01/27/2022 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 01/27/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

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Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

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Certified By:

 B.G. Chittim, General Manager

Date: 02/03/2022

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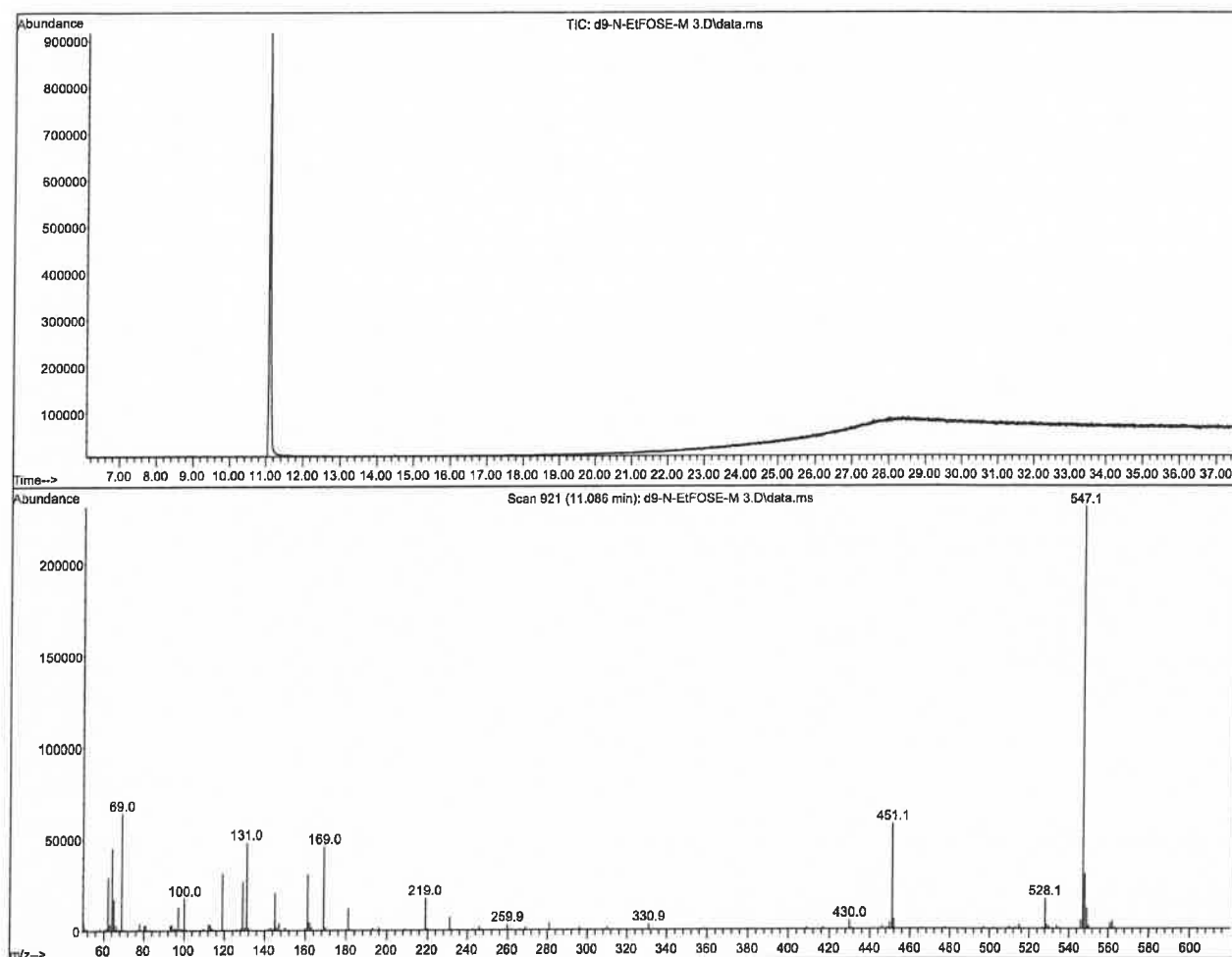
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• **Figure 1:** d9-N-EtFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)



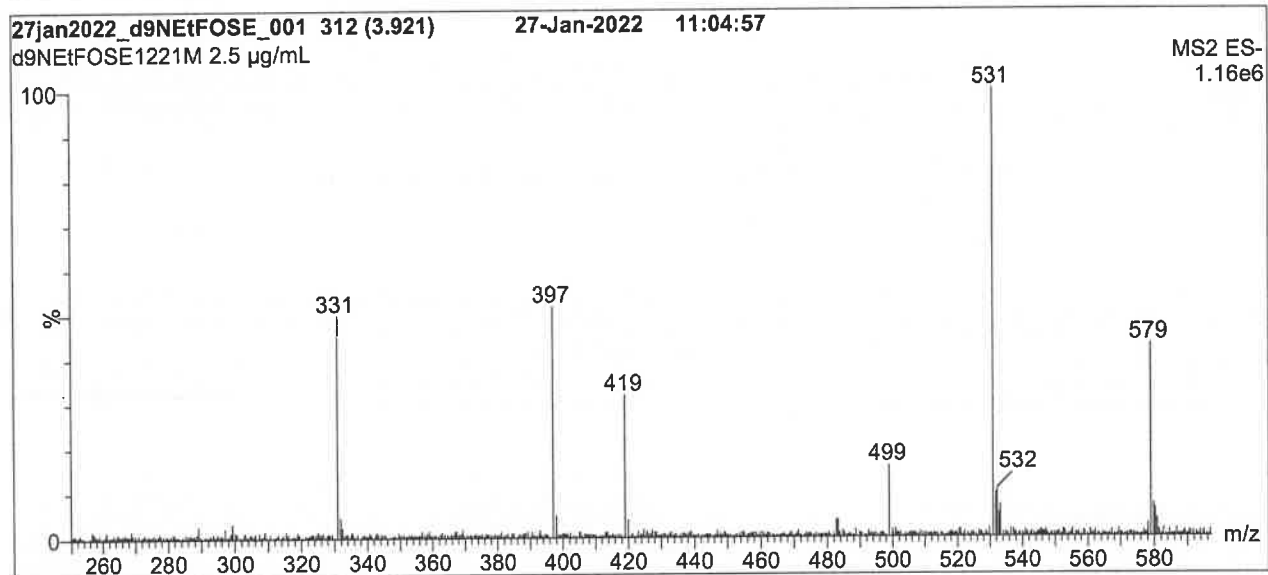
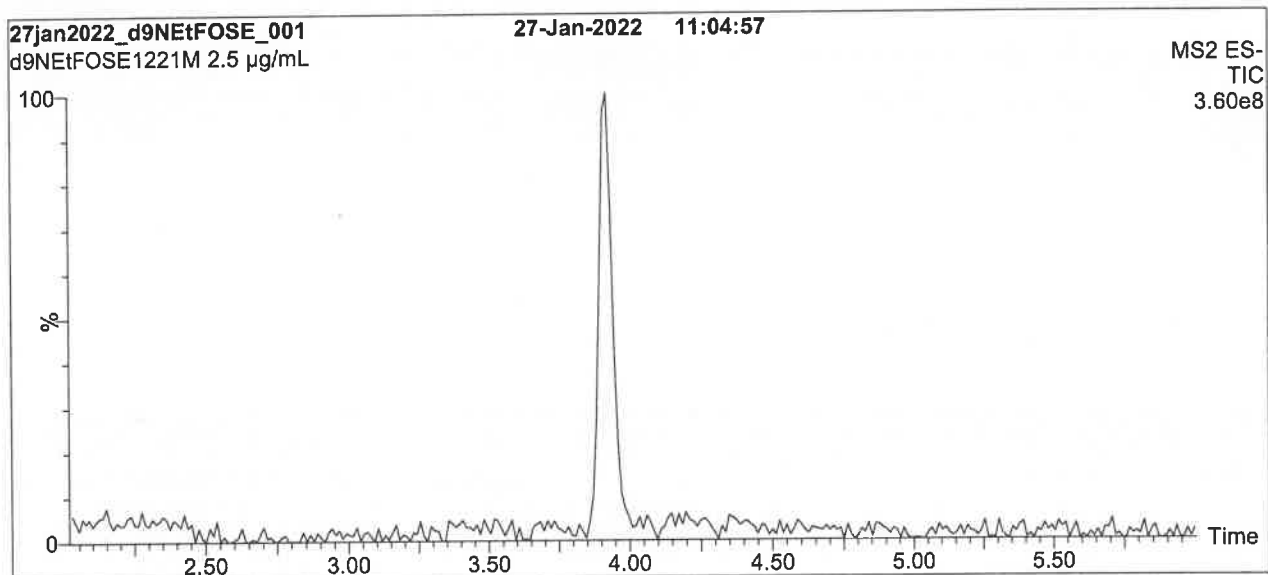
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Oven: 100°C (5 min)
10°C/min to 310°C
310°C (10 min)
Ionization: EI+
Detector: 230°C
Full Scan (50-1000 amu)

Figure 2: d9-N-EtFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H₂O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

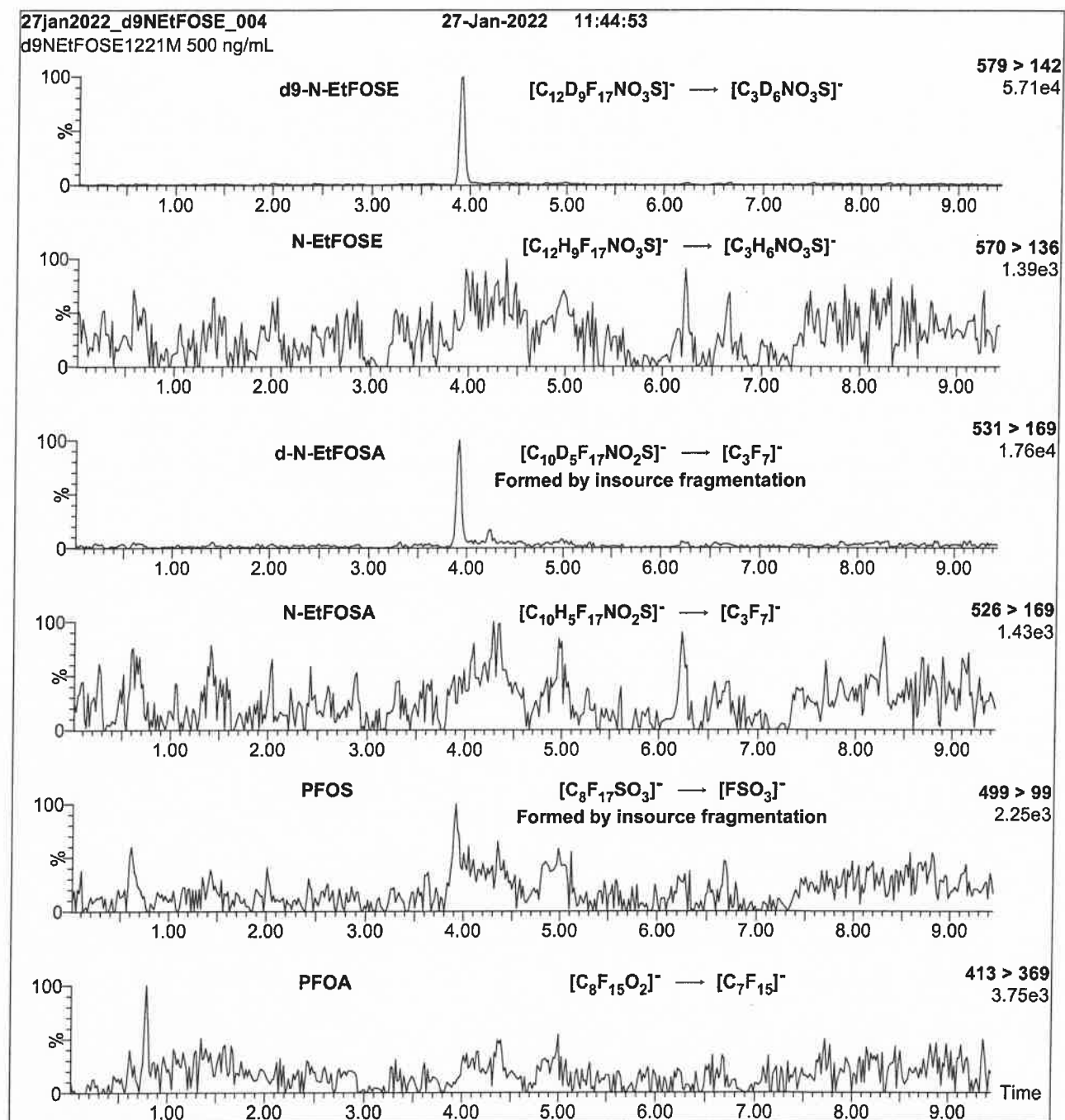
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (L/hr) = 1000

• **Figure 3:** d9-N-EtFOSE-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 3:

Injection: On-column (d9-N-EtFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 32

Reagent

LCd9-NEtFOSEM_00032

3180972
ID: LCd9-NEtFOSE-M_00032
Exp:01/27/27 Pypd:3M Opm:09/14/22
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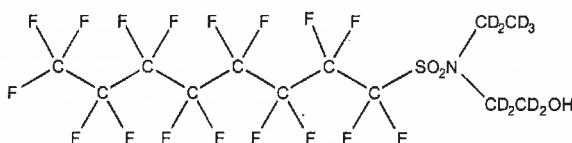


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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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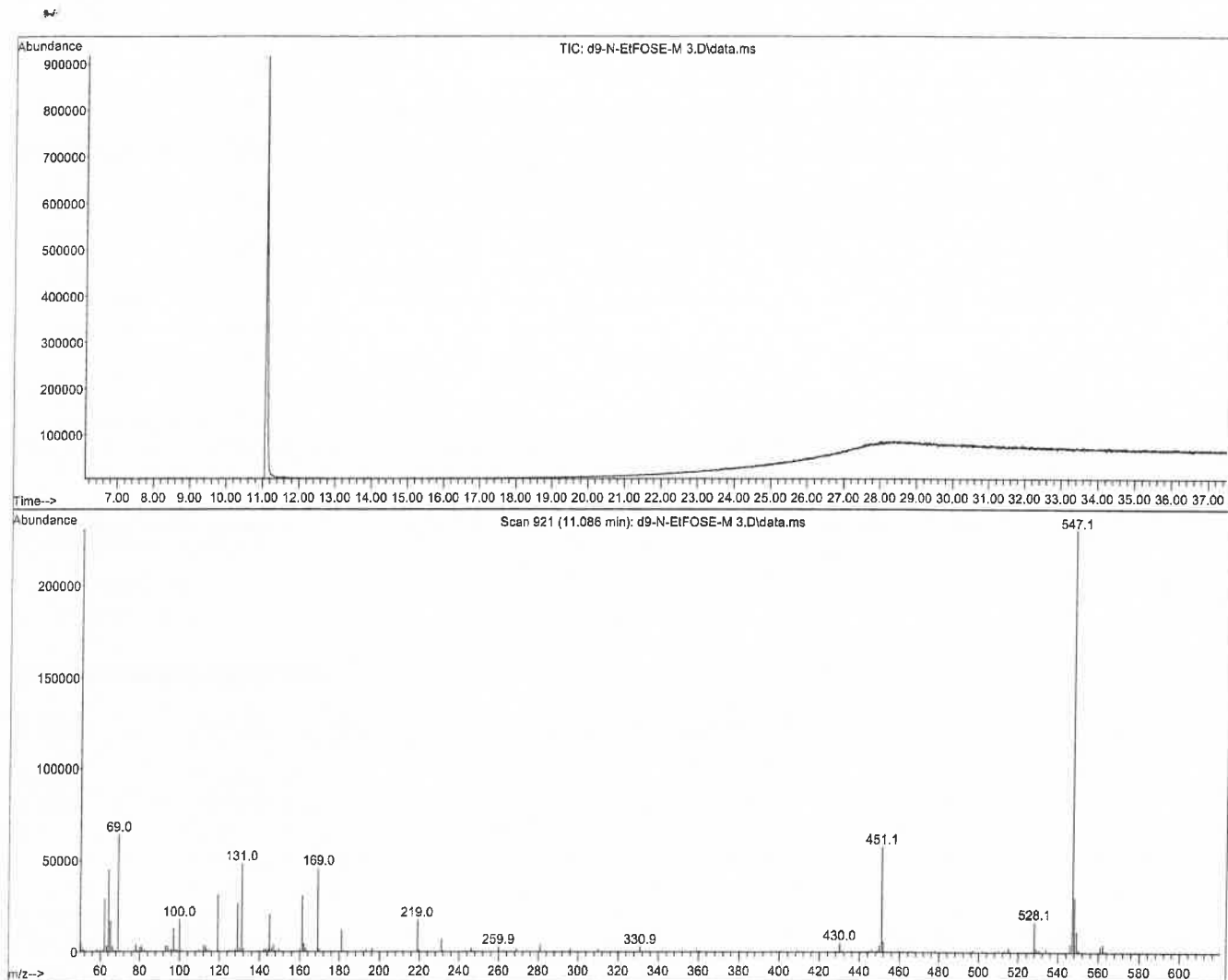
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: d9-N-EtFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column: 30 m DB-5 (0.25 mm id, 0.25 μ m film thickness) Agilent J&W

Flow: Constant at 1.0 mL/min

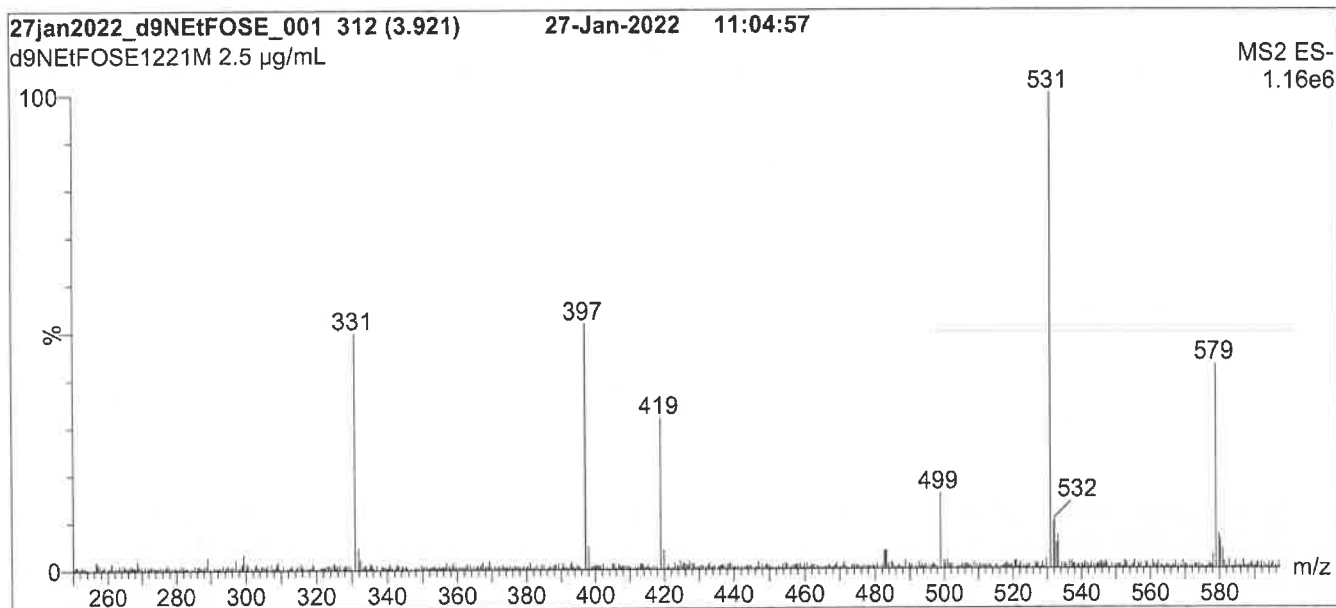
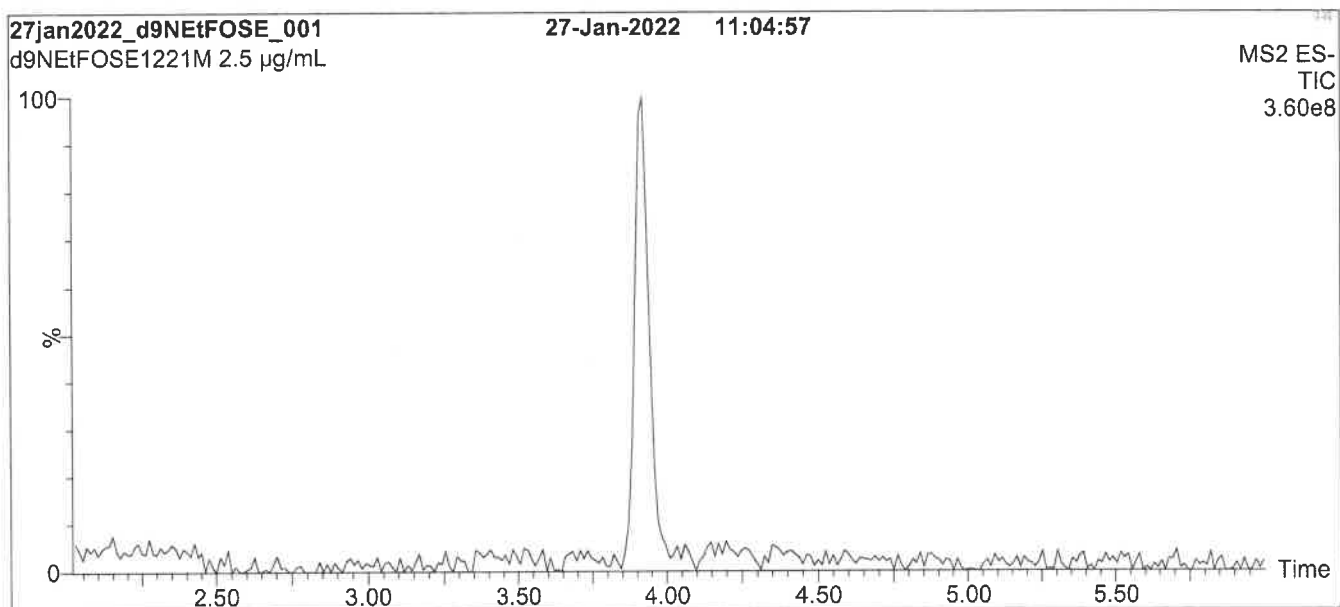
Injector: 250°C (Splitless Injection)

Oven: 100°C (5 min)
10°C/min to 310°C
310°C (10 min)

Ionization: EI+

Detector: 230°C
Full Scan (50-1000 amu)

Figure 2: d9-N-EtFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 70% MeOH

Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.

Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

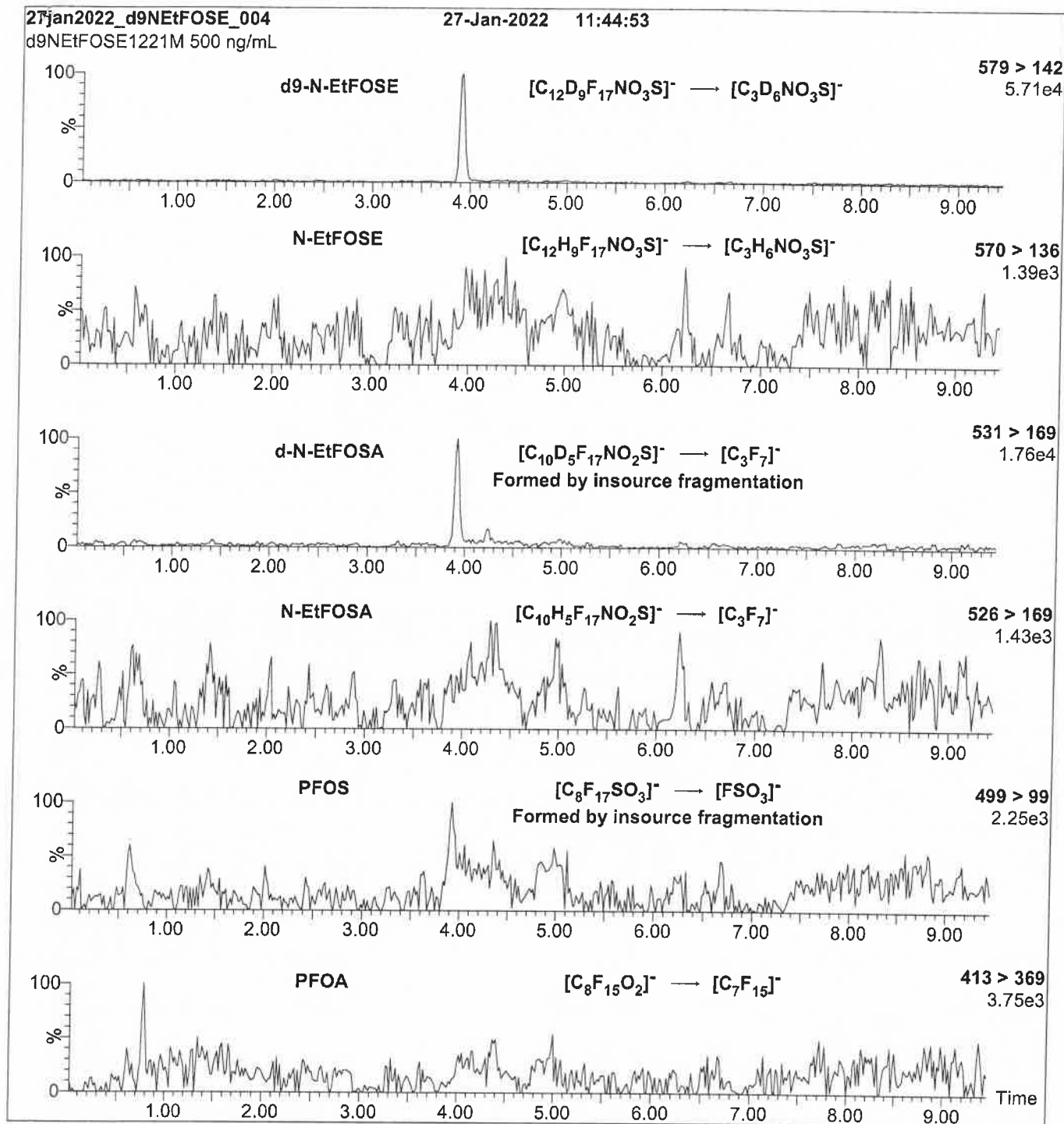
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 65.00

Desolvation Temperature (°C) = 450

Desolvation Gas Flow (L/hr) = 1000

Figure 3: d9-N-EtFOSE-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 3:

Injection: On-column (d9-N-EtFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 32

Reagent

LCDONA_00032



3112576

ID: LCDONA_00032

Exp:04/18/27 Prip:JM Opm:07/22/22
NaDONA**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PRODUCT CODE:**

NaDONA

LOT NUMBER:

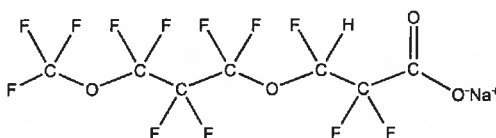
NaDONA0422

COMPOUND:

Sodium dodecafluoro-3H-4,8-dioxanonanoate

STRUCTURE:**CAS #:**

2250081-67-3

**MOLECULAR FORMULA:** $C_{12}H_2F_{11}O_4Na$ **MOLECULAR WEIGHT:**

400.05

CONCENTRATION:50.0 \pm 2.5 μ g/mL (Na Salt)**SOLVENT(S):**

Methanol

47.2 \pm 2.4 μ g/mL (NaDONA acid)

Water (<1%)

47.1 \pm 2.4 μ g/mL (NaDONA anion)**CHEMICAL PURITY:**

>98%

LAST TESTED: (mm/dd/yyyy)

04/18/2022

EXPIRY DATE: (mm/dd/yyyy)

04/18/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Product is commercially known as ADONA.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**

B.G. Chittim, General Manager
Date: 04/29/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • Info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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HOMOGENEITY:

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LIMITED WARRANTY:

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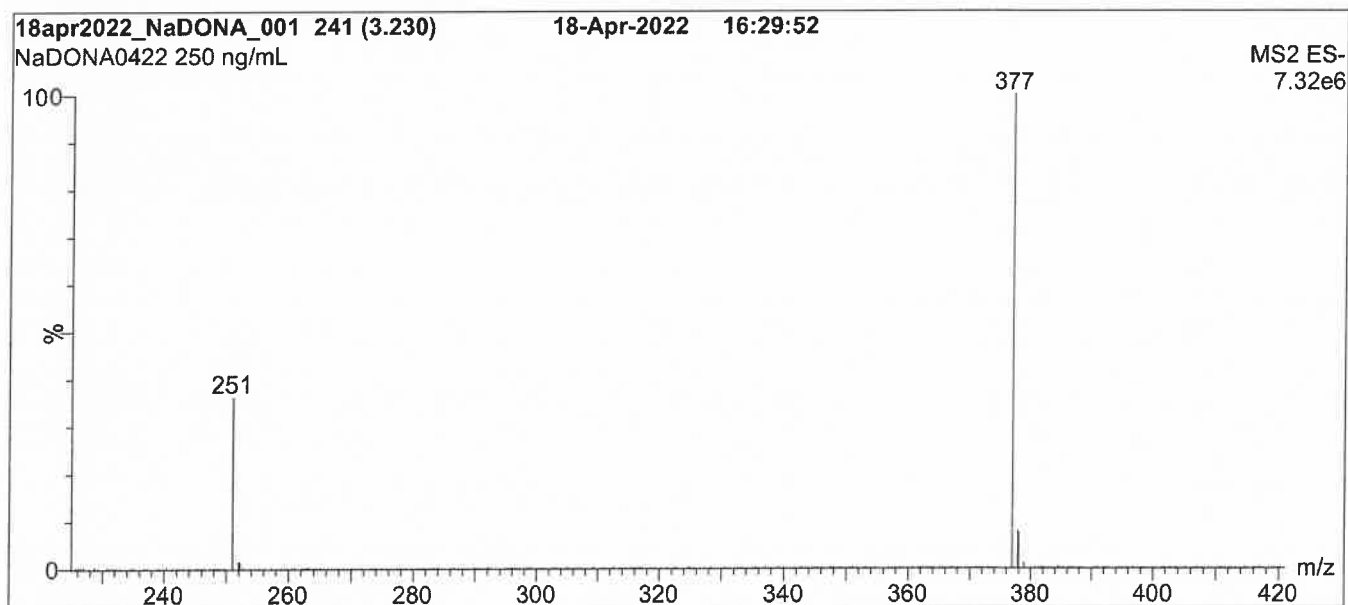
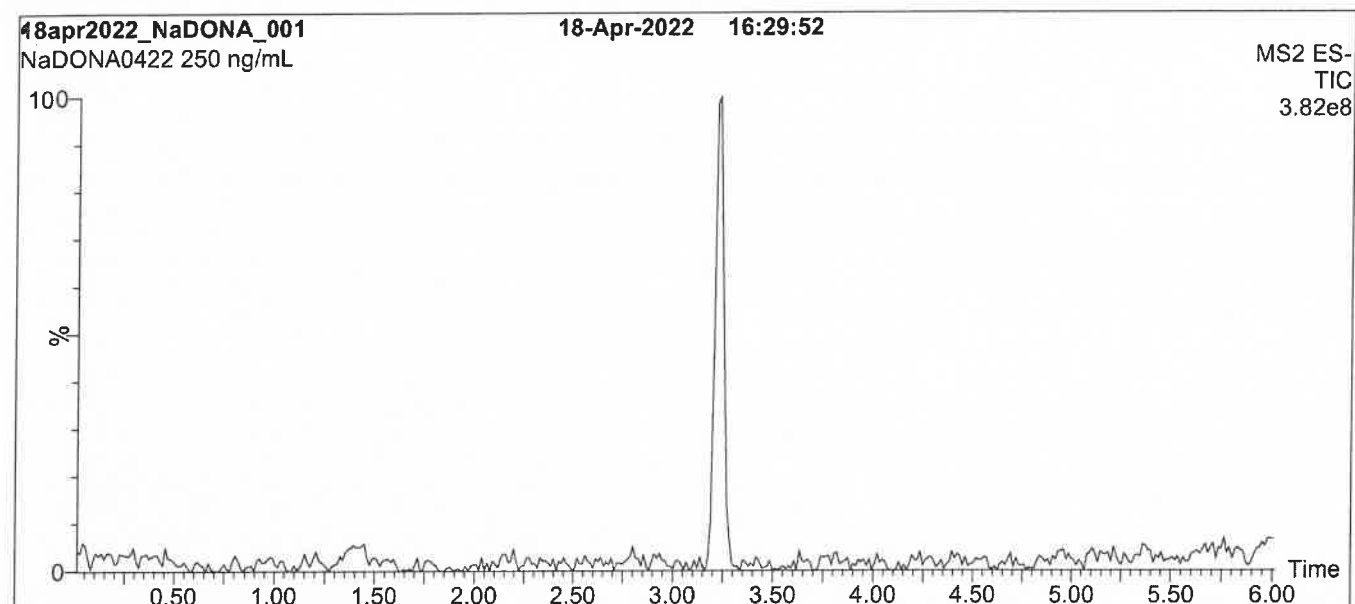
QUALITY MANAGEMENT:

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Figure 1: NaDONA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

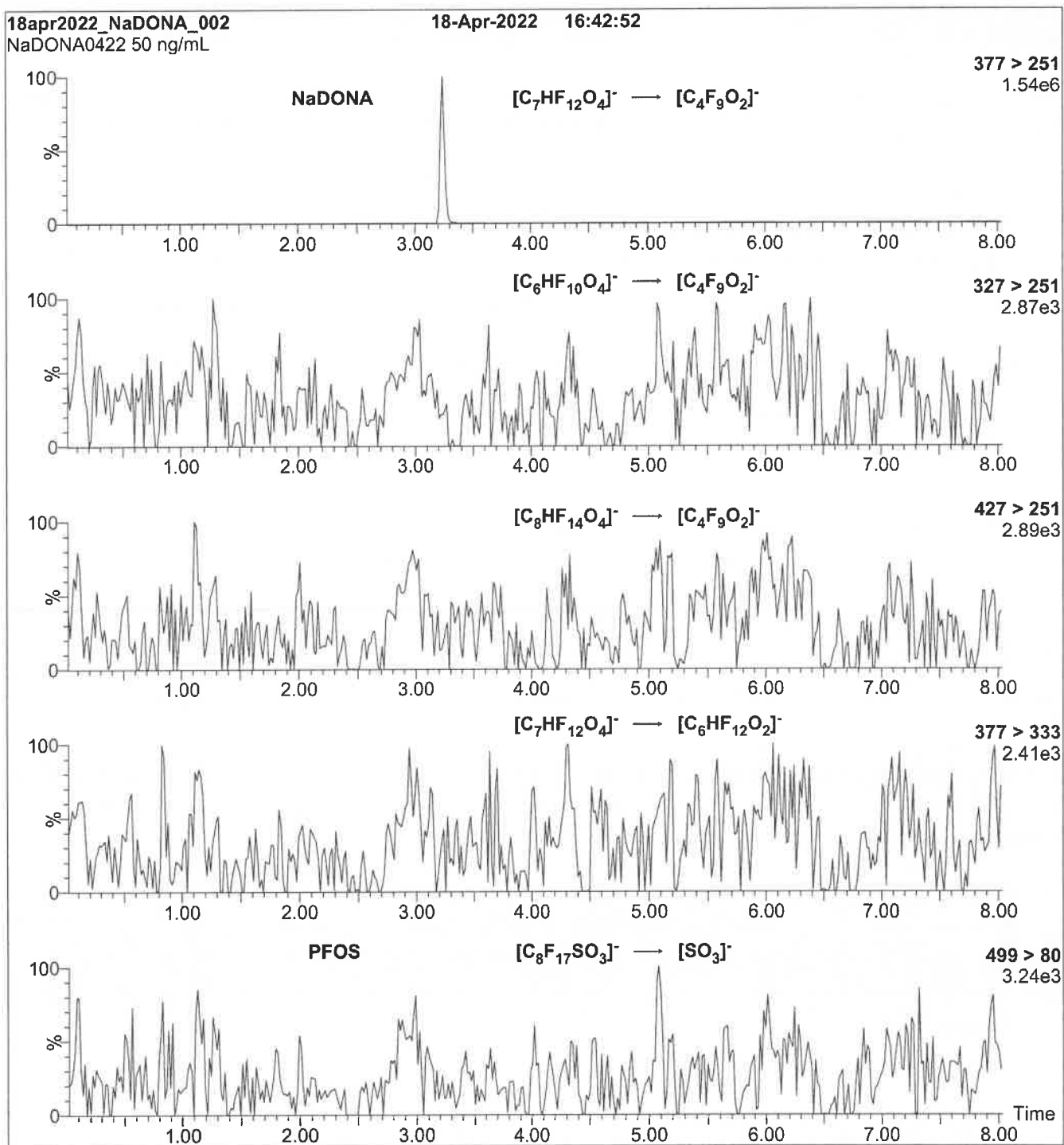
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: NaDONA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (NaDONA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.20e-3

Collision Energy (eV) = 10

Reagent

LCFBSA-I_00007



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

2991937
ID: LCFBSA-I_00007
Exp: 11/10/26 Pipd: CV Opr: 04/27/22
Perfluoro-1-butanefulfona

PRODUCT CODE:

FBSA-I

LOT NUMBER:

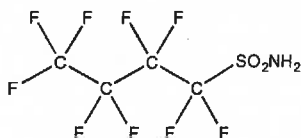
FBSA1121I

COMPOUND:

Perfluoro-1-butanefulfonamide

STRUCTURE:**CAS #:**

30334-69-1

**MOLECULAR FORMULA:** $C_4H_2F_9NO_2S$ **MOLECULAR WEIGHT:**

299.11

CONCENTRATION:50.0 \pm 2.5 μ g/mL**SOLVENT(S):**

Isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/10/2021

EXPIRY DATE: (mm/dd/yyyy)

11/10/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:**11/10/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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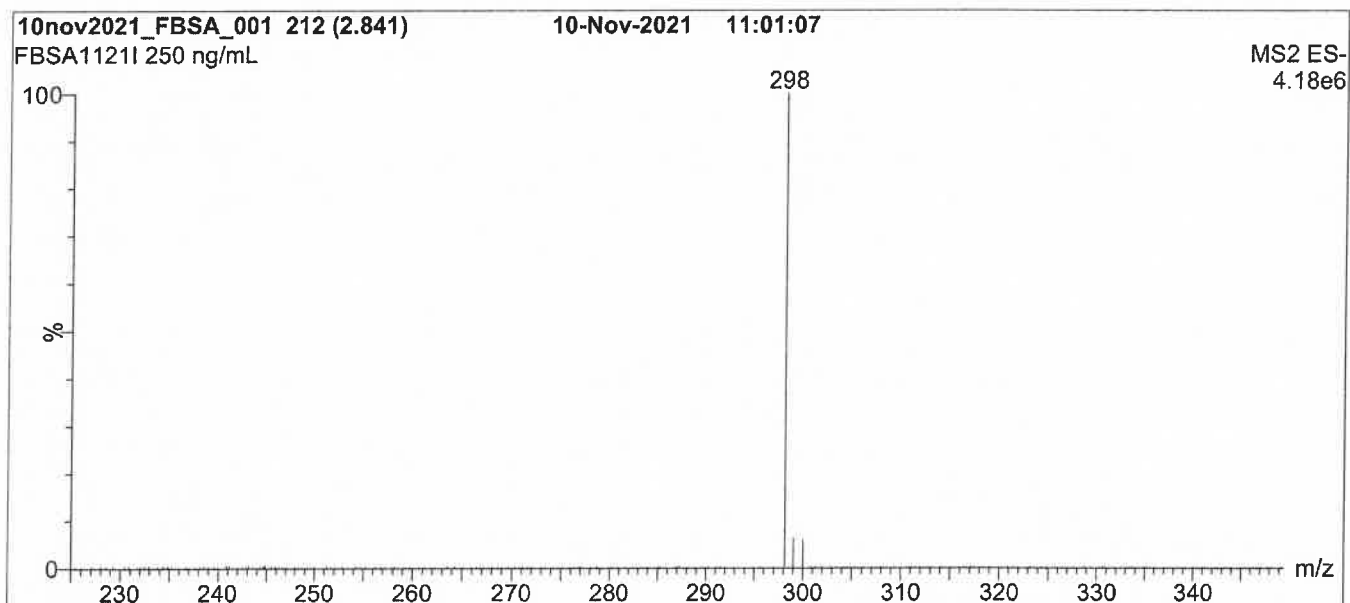
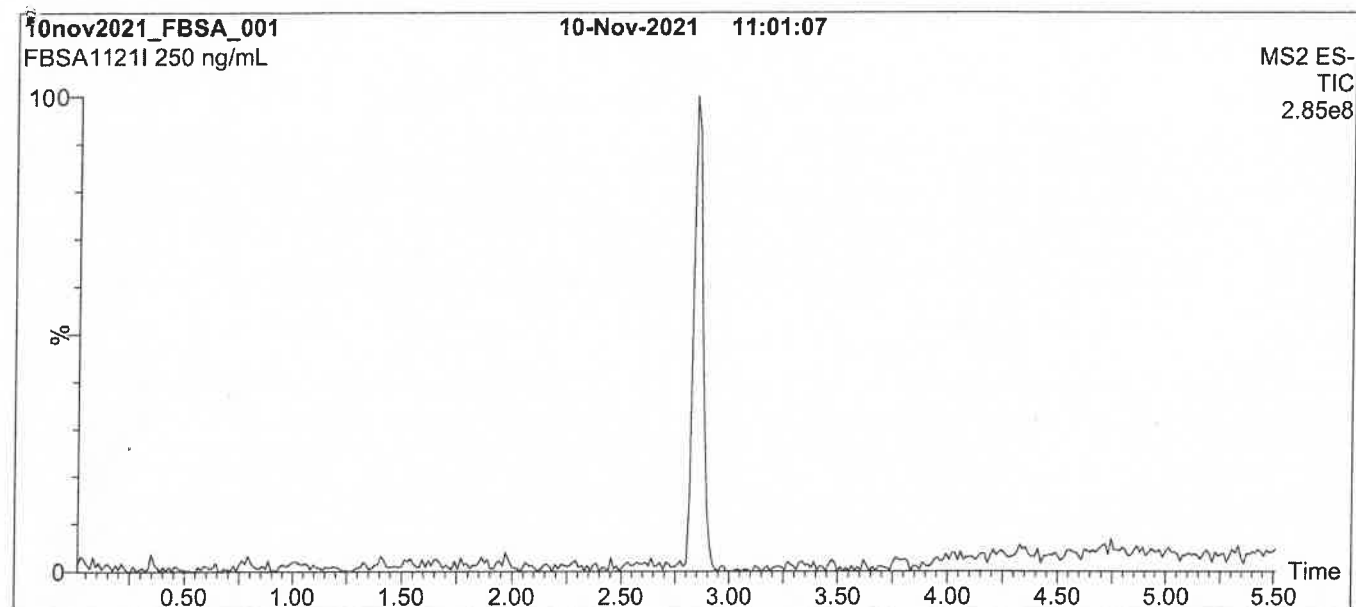
QUALITY MANAGEMENT:

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Figure 1: FBSA-I; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

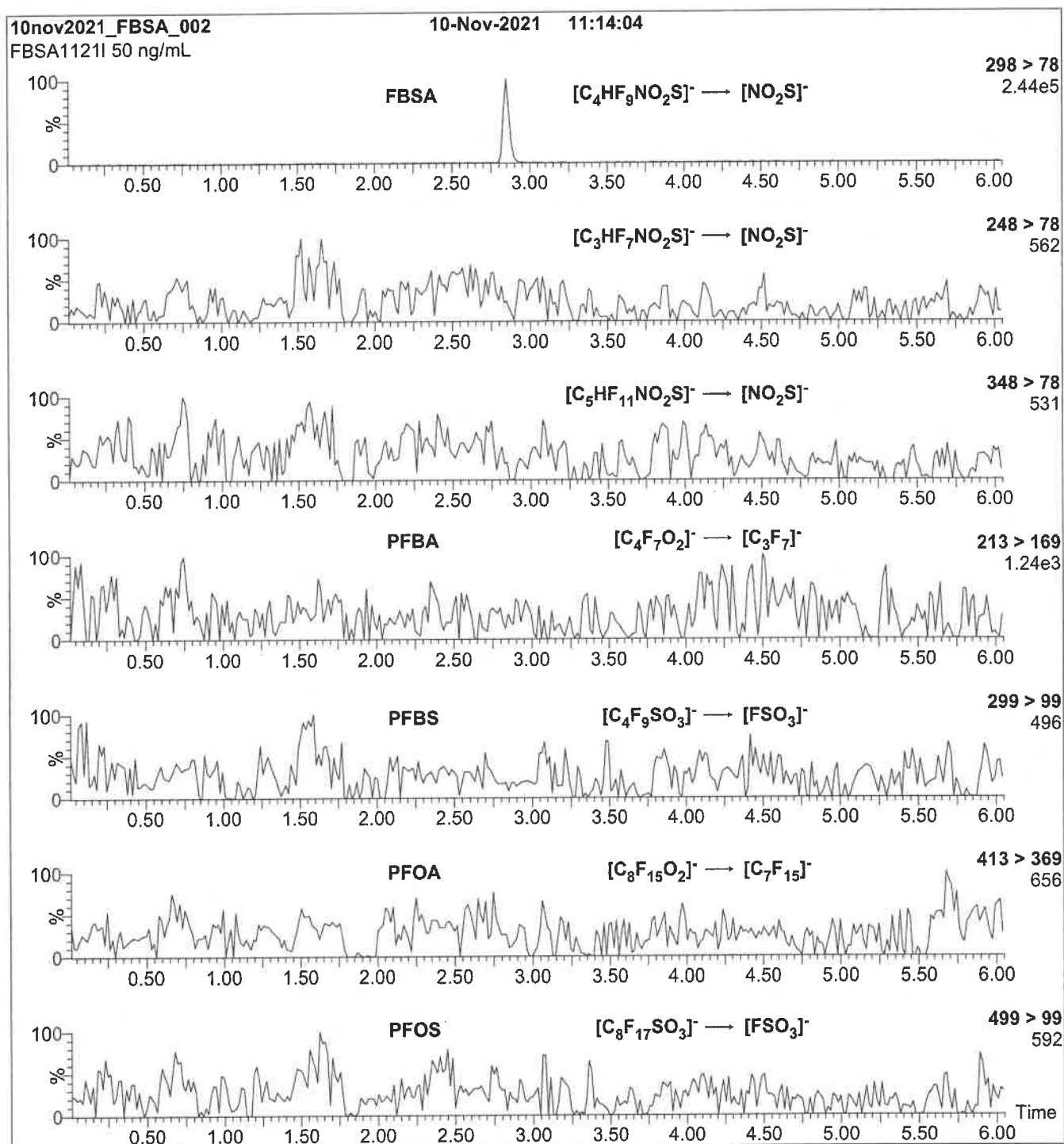
Capillary Voltage (kV) = 1.50

Cone Voltage (V) = 20.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: FBSA-I; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (FBSA-I)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.42e-3

Collision Energy (eV) = 30

Reagent

LCFDEA_00005



2718381

ID: LCFDEA_00005

Exp: 07/07/23 Pripd: M Opn: 10/05/21

10:2 FTCA Stock 50 ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FDEA

LOT NUMBER:

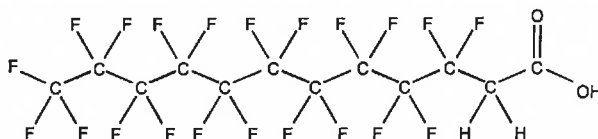
FDEA0720

COMPOUND:

2-Perfluorodecyl ethanoic acid

STRUCTURE:**CAS #:**

53826-13-4

**MOLECULAR FORMULA:** $C_{12}H_{13}F_{21}O_2$ **MOLECULAR WEIGHT:**

578.12

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

07/07/2020

EXPIRY DATE: (mm/dd/yyyy)

07/07/2023

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- This solution contains 3 molar equivalents of HCl to minimize degradation.
- The saturated telomer acid very slowly degrades to FDUEA in isopropanol. This degradation occurs at a much faster rate in MeOH, therefore any MeOH dilutions should be used on the same day that they are prepared and monitored for degradation. The rate of degradation can also increase significantly when handling the solution at ambient temperature or in the presence of base. Always store this solution at 4°C to minimize degradation.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**

 B.G. Chittim, General Manager
Date:07/08/2020
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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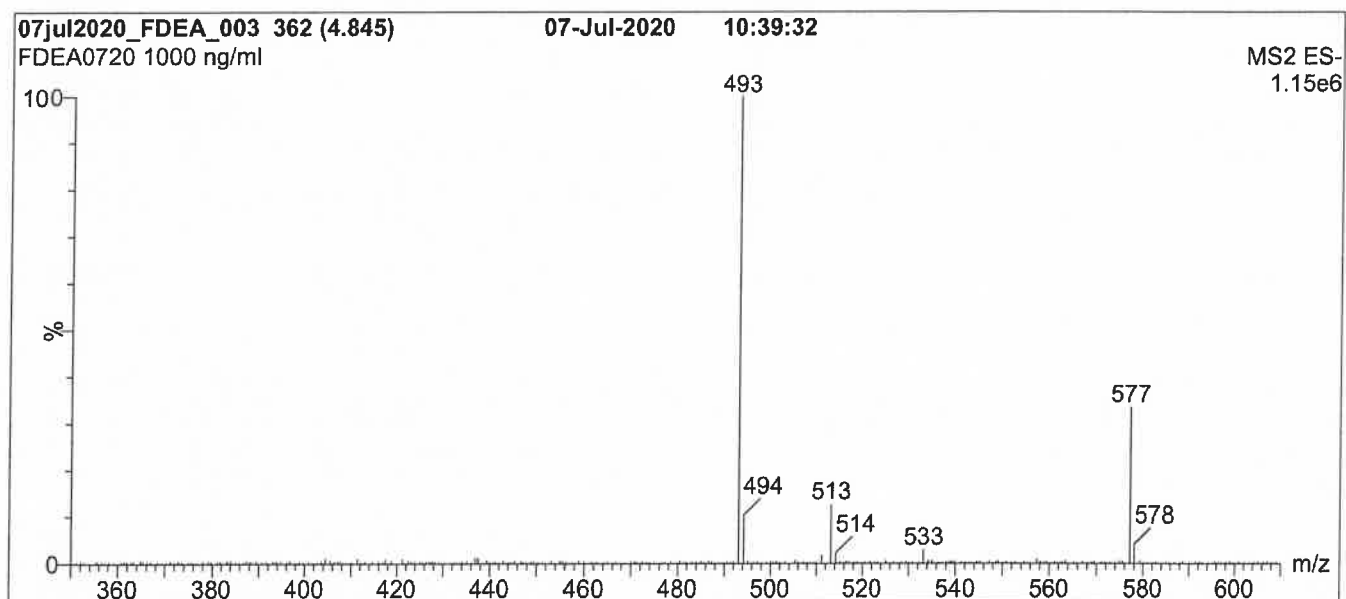
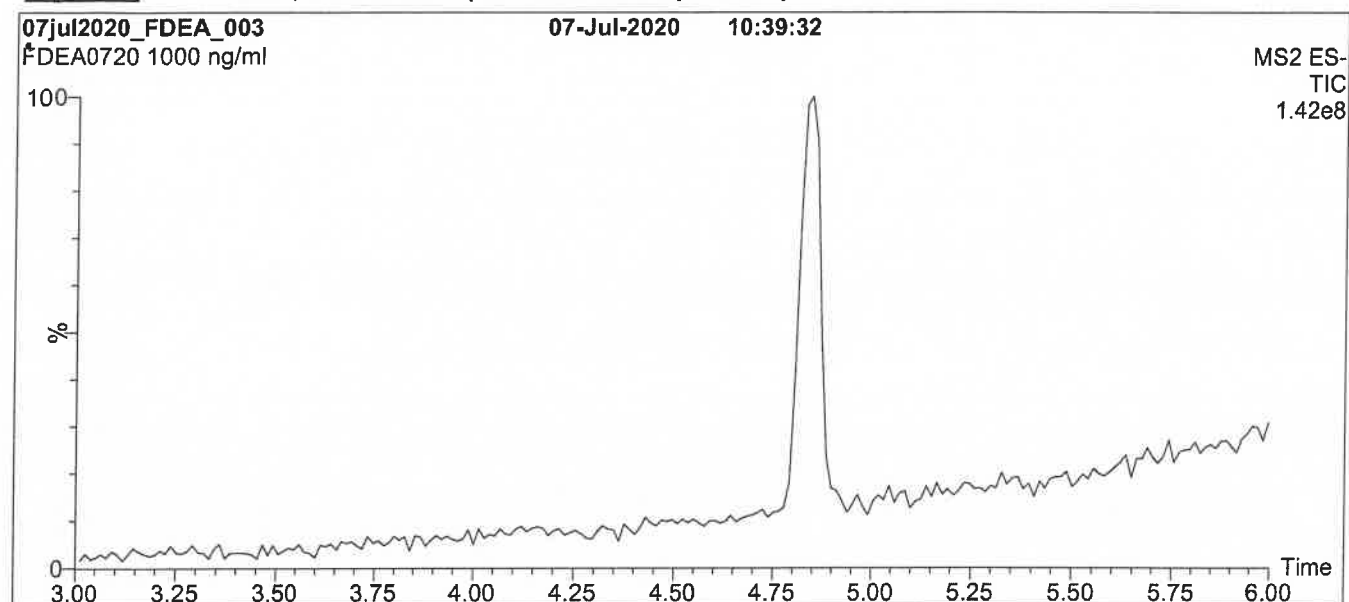
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Figure 1: FDEA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC

MS: Waters Xevo TQ-S micro MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% (80:20 MeOH:ACN) / 40% H₂O
(both with 10 mM NH₄OAc buffer)

Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (350 - 850 amu)

Source: Electrospray (negative)

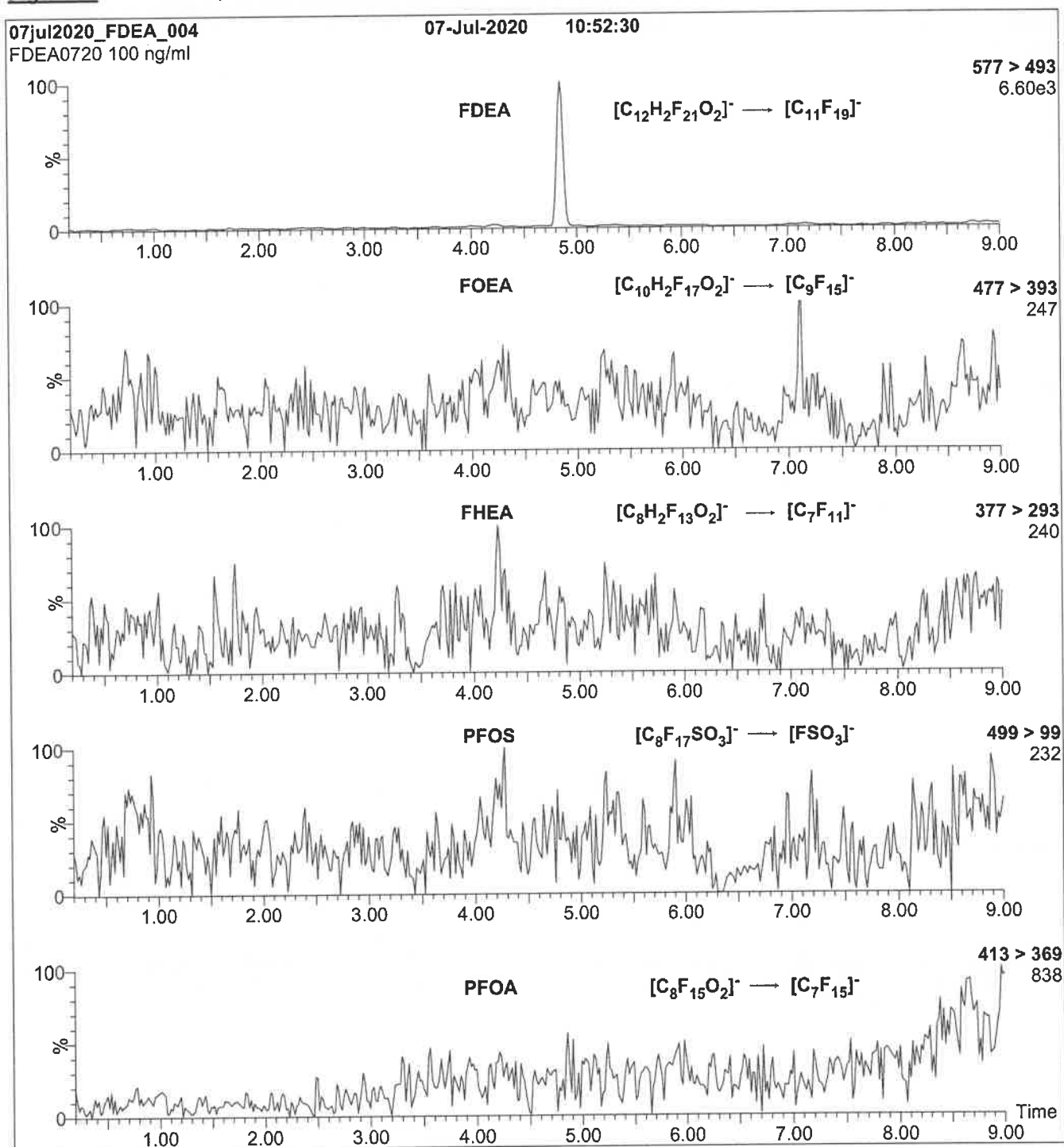
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 30.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (l/hr) = 1000

Figure 2: FDEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (FDEA)

Mobile phase: Same as Figure 1

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.47e-3

Collision Energy (eV) = 10

Reagent

LCFDEA_00009



2980179

ID: LCFDEA_00009

Exp: 09/28/24 Prod: PCY Opn: 04/19/22

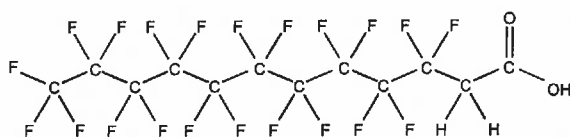
10:2 FTCA Stock 50 ug/mL

**WELLINGTON
LABORATORIES****CERTIFICATE OF ANALYSIS
DOCUMENTATION****PRODUCT CODE:**

FDEA

LOT NUMBER: FDEA0921**COMPOUND:**

2-Perfluorodecyl ethanoic acid

STRUCTURE:**CAS #:** 53826-13-4**MOLECULAR FORMULA:** $C_{12}H_3F_{21}O_2$ **MOLECULAR WEIGHT:** 578.12**CONCENTRATION:** 50.0 ± 2.5 µg/mL**SOLVENT(S):**

Isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

09/28/2021

EXPIRY DATE: (mm/dd/yyyy)

09/28/2024

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- This solution contains 3 molar equivalents of HCl to minimize degradation.
- The saturated telomer acid very slowly degrades to FDUEA in isopropanol. This degradation occurs at a much faster rate in MeOH, therefore any MeOH dilutions should be used on the same day that they are prepared and monitored for degradation. The rate of degradation can also increase significantly when handling the solution at ambient temperature or in the presence of base. Always store this solution at 4°C to minimize degradation.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:** 10/04/2021

(mm/dd/yyyy)

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

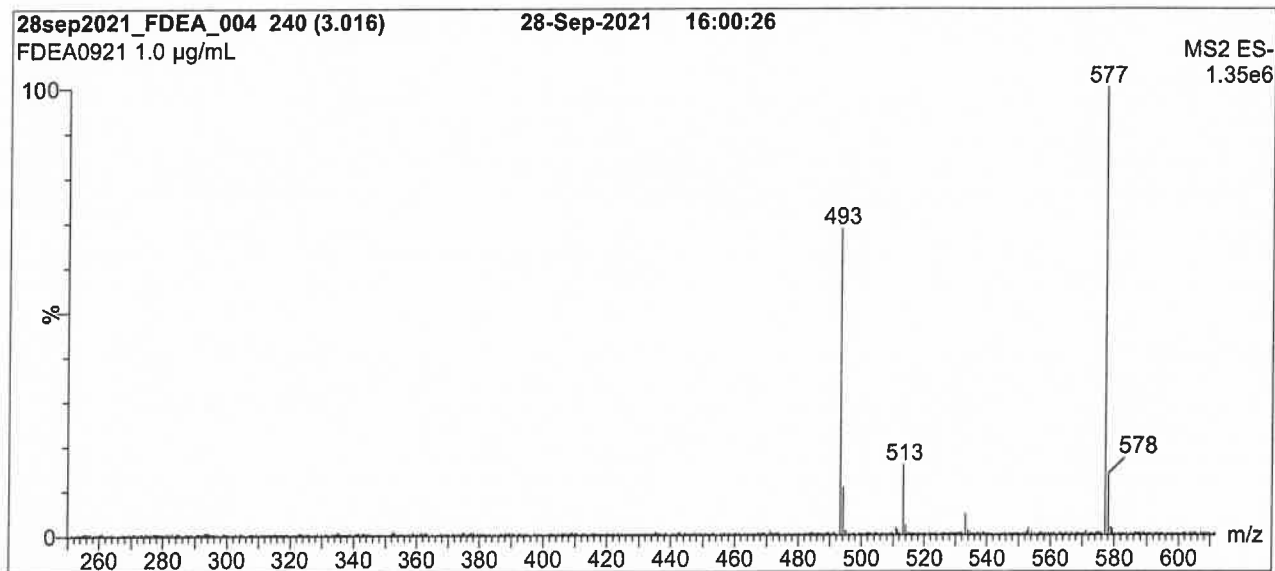
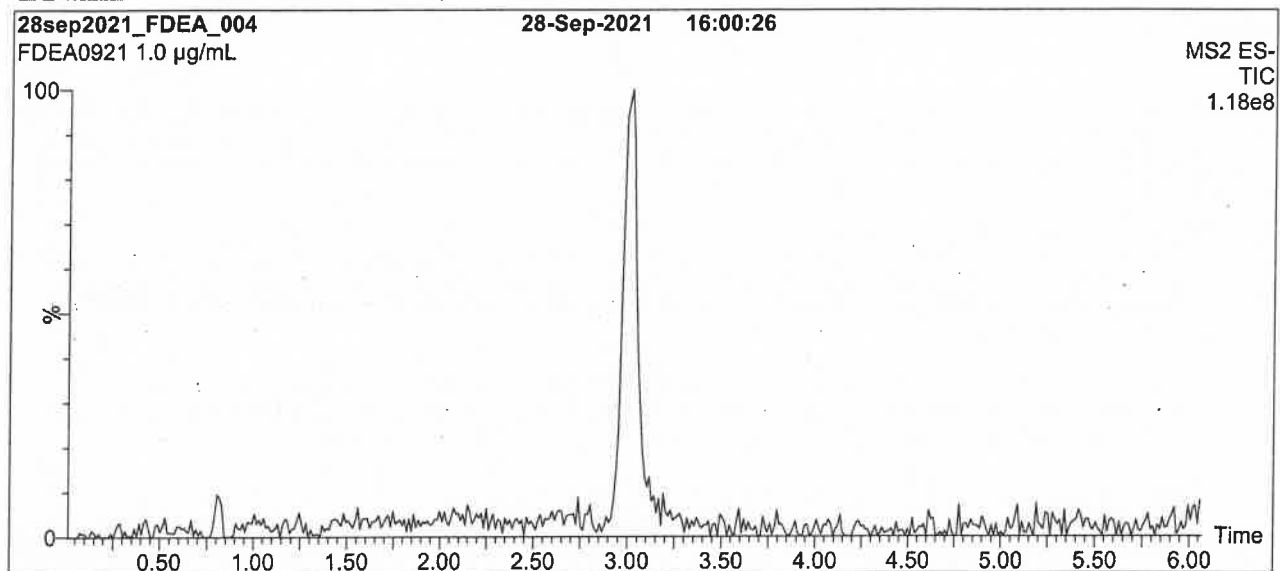
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: FDEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

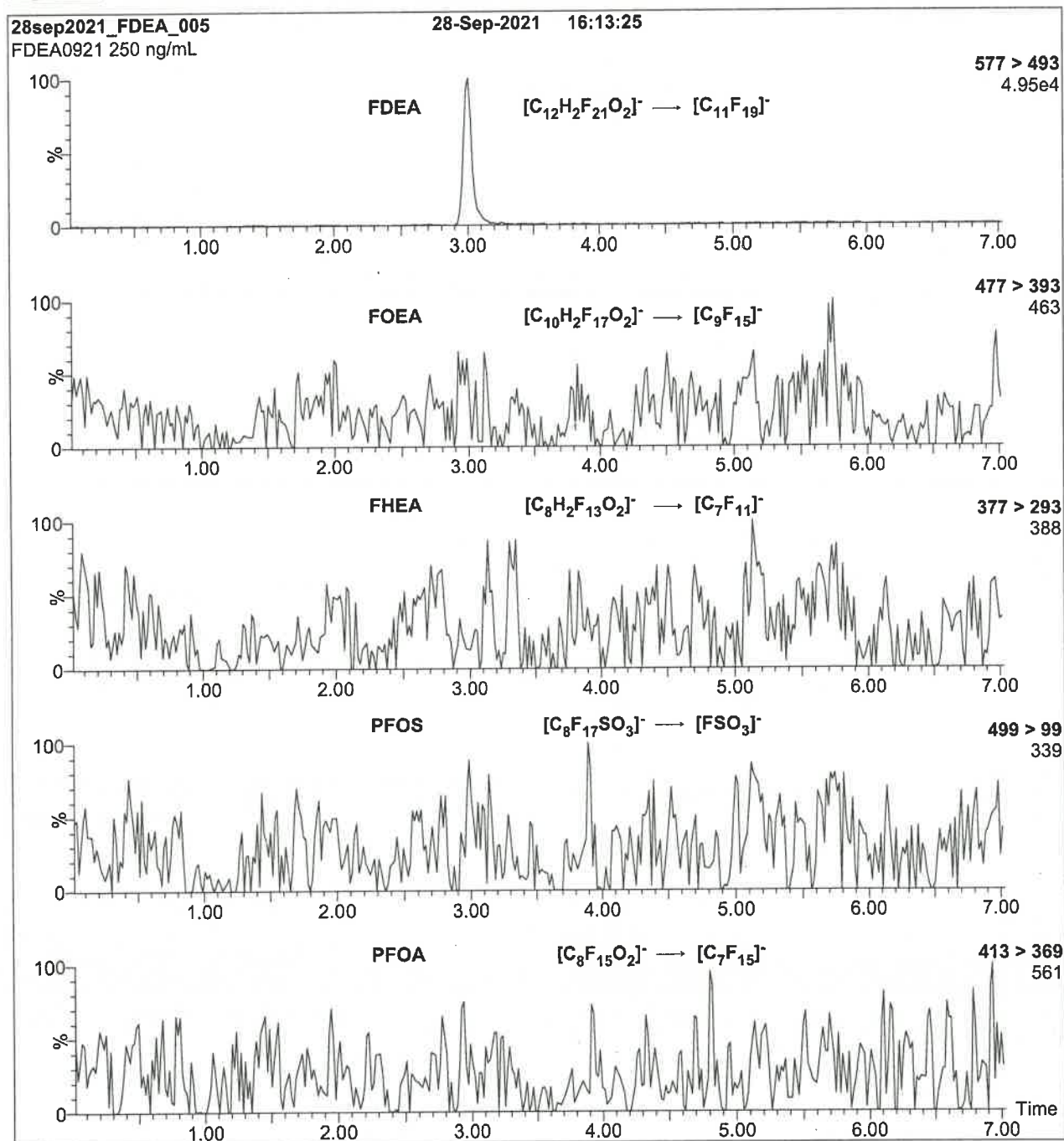
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 15.00
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

Figure 2: FDEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (FDEA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3

Collision Energy (eV) = 10

Reagent

LCFDUEA_00007



2955408

ID: LCFDUEA_00007

Exp: 10/29/23 Ppdt: CV Opm: 03/31/22
10:2 FTUCA/ FDUEA Stock 5

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FDUEA

LOT NUMBER:

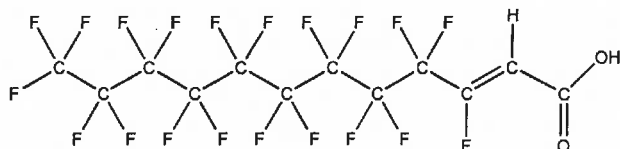
FDUEA1021

COMPOUND:

2H-Perfluoro-2-dodecenoic acid

STRUCTURE:**CAS #:**

70887-94-4

**MOLECULAR FORMULA:** $C_{12}H_2F_{20}O_2$ **MOLECULAR WEIGHT:**

558.11

CONCENTRATION:50.0 \pm 2.5 μ g/mL**SOLVENT(S):**Anhydrous
Isopropanol**CHEMICAL PURITY:**

>98%

LAST TESTED: (mm/dd/yyyy)

10/29/2021

EXPIRY DATE: (mm/dd/yyyy)

10/29/2023

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.4% of 2H-Perfluoro-2-decenoic acid (FOUEA).
- Dilution of this standard in methanol may lead to the formation of 2H-3-methoxy-perfluoro-2-dodecenoic acid. This reaction can be catalyzed by the presence of acid or base. All dilutions should be routinely checked for degradation.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

10/29/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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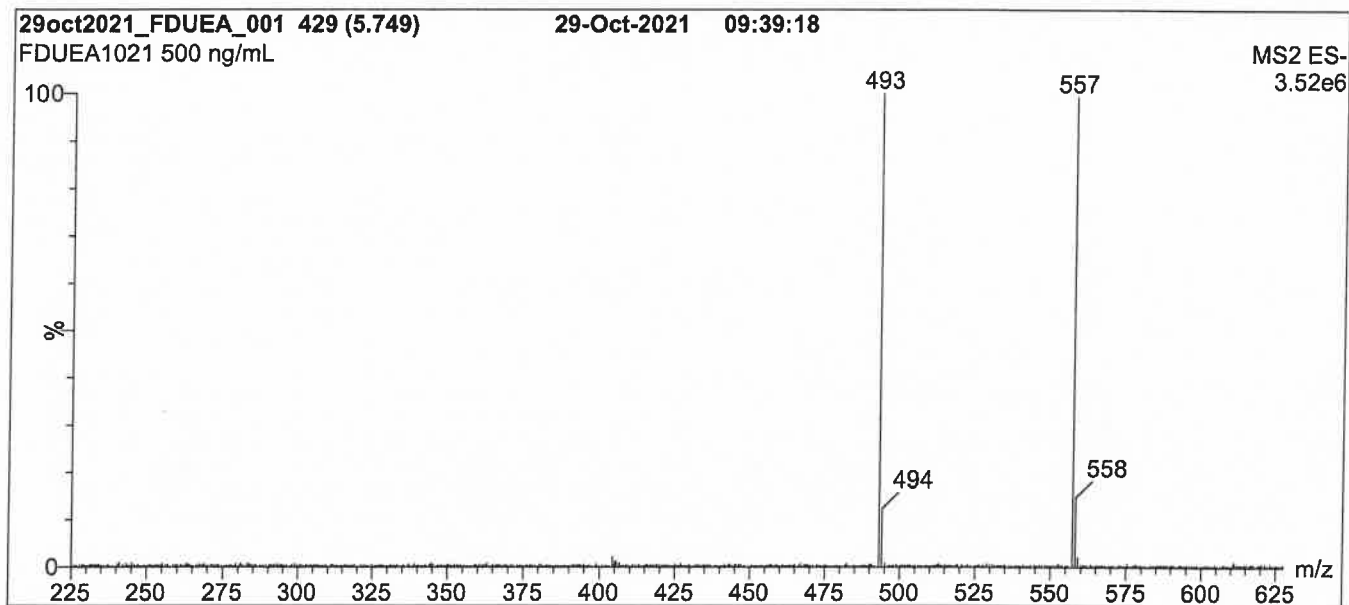
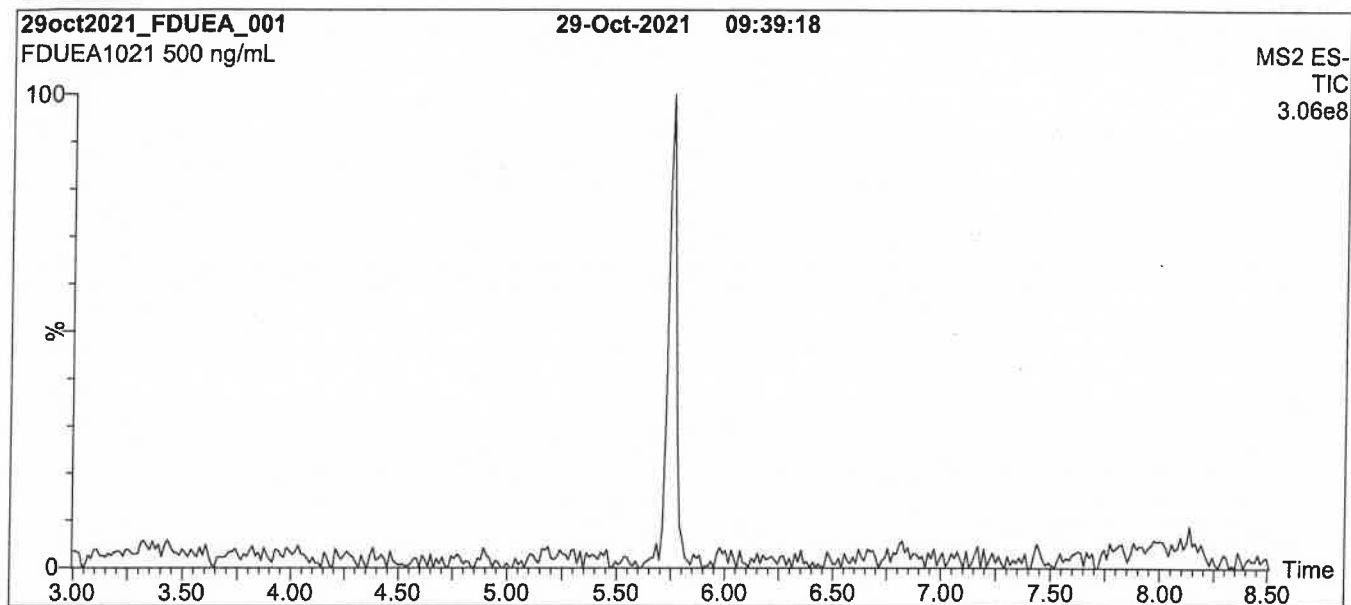
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: FDUEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

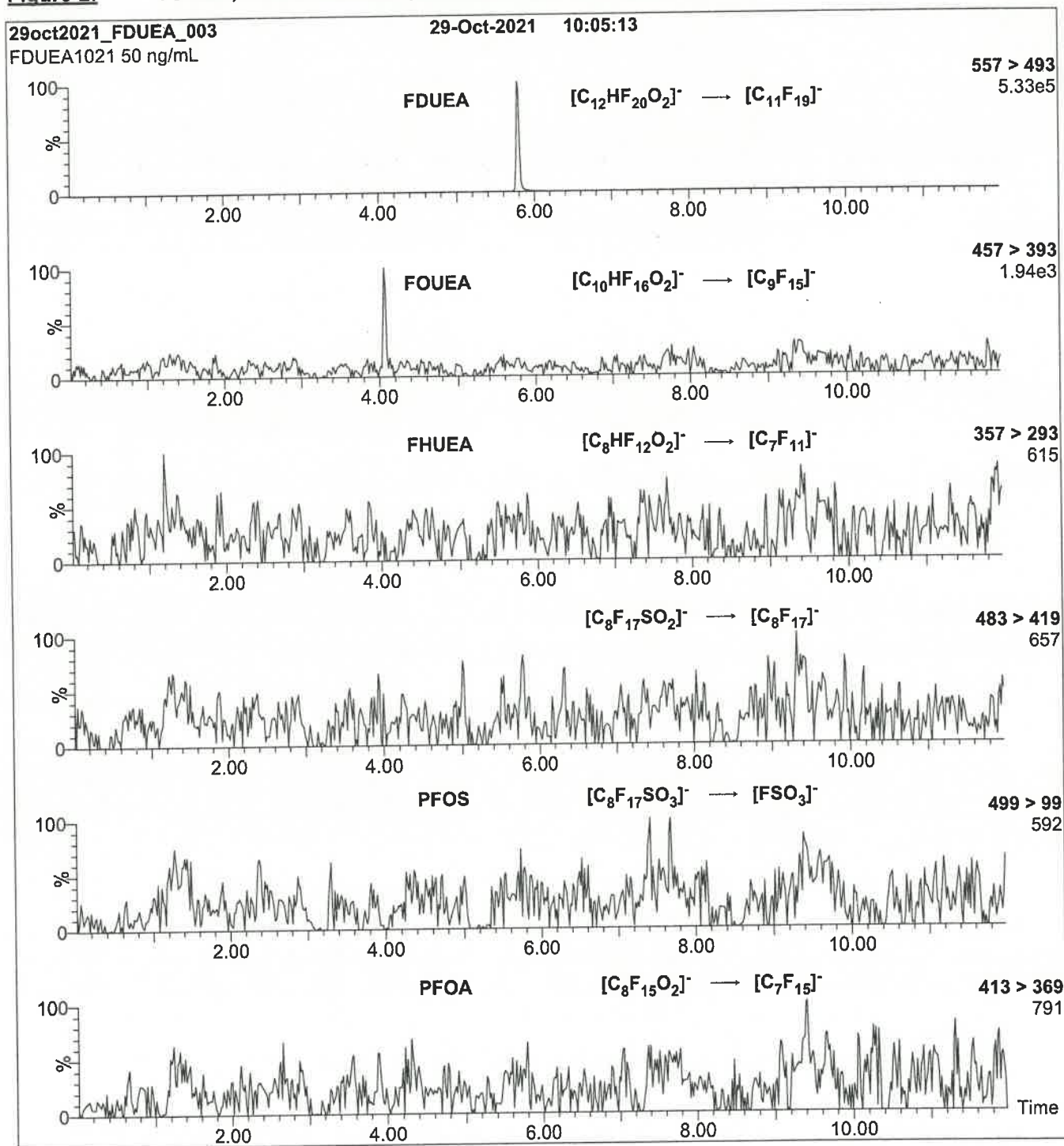
Capillary Voltage (kV) = 0.70

Cone Voltage (V) = 28.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: FDUEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (FDUEA)
Mobile phase: Same as Figure 1
Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.64e-3
Collision Energy (eV) = 14

Reagent

LCFHEA_00009



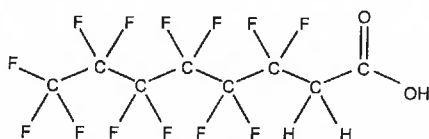
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FHEA
COMPOUND: 2-Perfluorohexyl ethanoic acid

LOT NUMBER: FHEA1221

STRUCTURE:



CAS #: 53826-12-3

MOLECULAR FORMULA: C₈H₃F₁₃O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/05/2022
EXPIRY DATE: (mm/dd/yyyy) 01/05/2025
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 378.09
SOLVENT(S): Isopropanol

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.3% of 2H-Perfluoro-2-octenoic acid (FHUEA).
- This solution contains 3 molar equivalents of HCl to minimize degradation.
- The saturated telomer acid very slowly degrades to FHUEA in isopropanol. This degradation occurs at a much faster rate in MeOH, therefore any MeOH dilutions should be used on the same day that they are prepared and monitored for degradation. The rate of degradation can also increase significantly when handling the solution at ambient temperature or in the presence of base. Always store this solution at 4°C to minimize degradation.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:
B.G. Chittim, General Manager

Date: 01/06/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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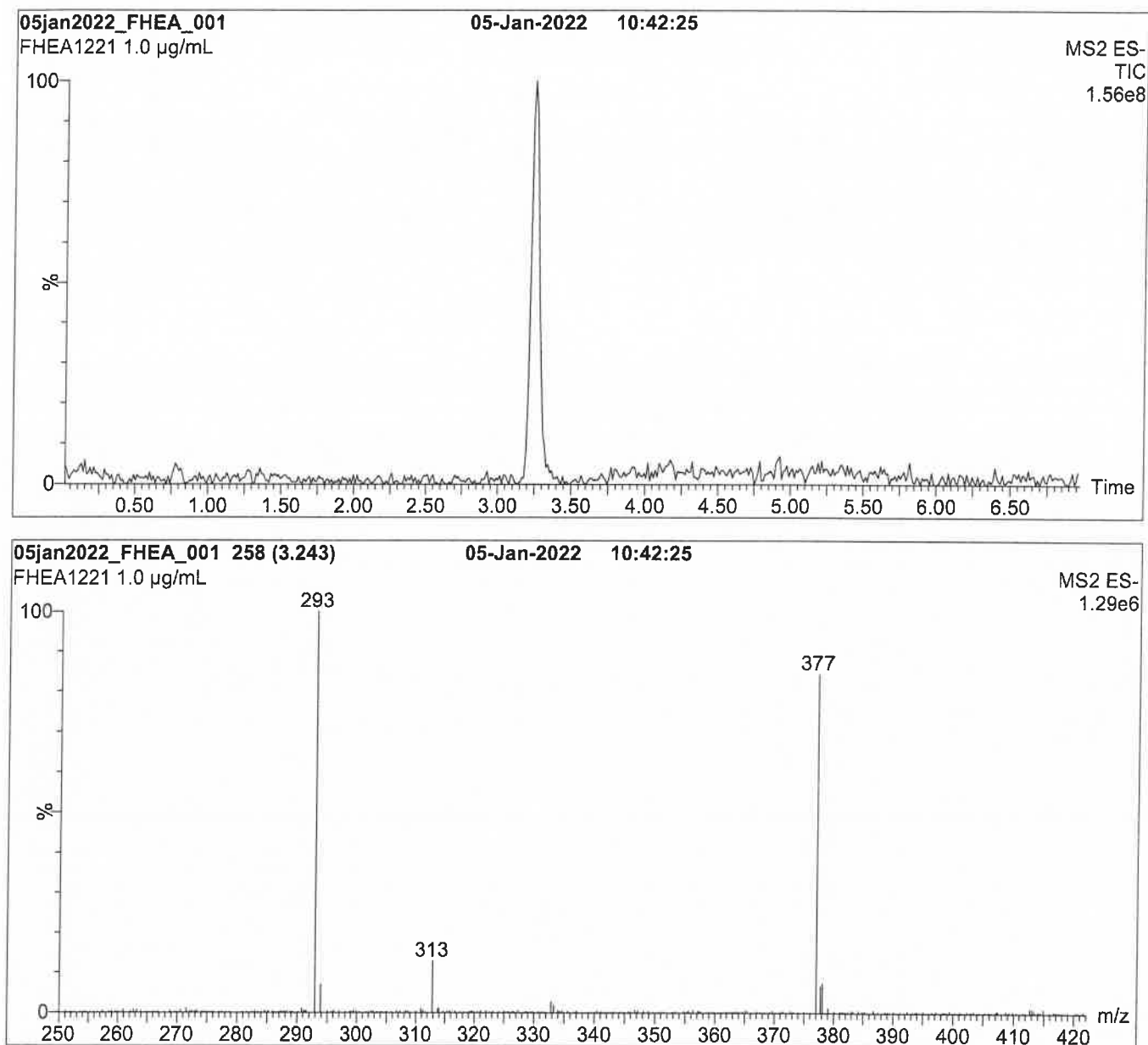
QUALITY MANAGEMENT:

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Figure 1: FHEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)

(both with 10 mM NH₄OAc buffer)

Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.

Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

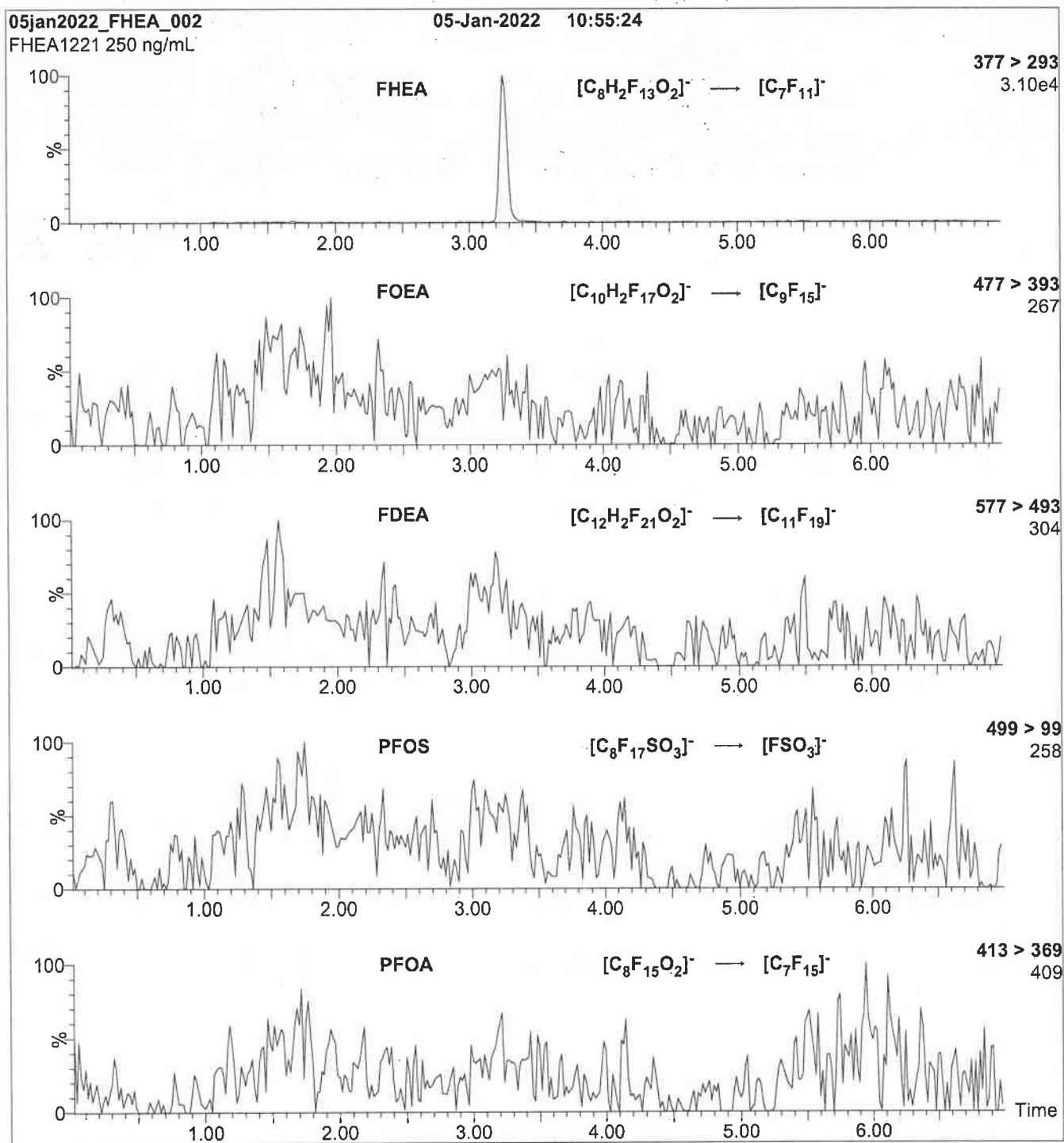
Capillary Voltage (kV) = 2.50

Cone Voltage (V) = 15.00

Desolvation Temperature (°C) = 350

Desolvation Gas Flow (L/hr) = 1000

Figure 2: FHEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (FHEA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.02e-3

Collision Energy (eV) = 10

Reagent

LCFHUEA_00009



3065166

ID: LCFHUEA_00009

Exp:09/03/23 Pp:PCY Opm:06/16/22

6:2 FTUCA/ FHUEA Stock 50



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

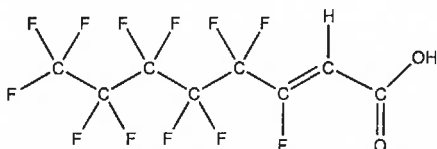
FHUEA

LOT NUMBER:

FHUEA0921

COMPOUND:

2H-Perfluoro-2-octenoic acid

STRUCTURE:**CAS #:**

70887-88-6

MOLECULAR FORMULA: $C_8H_2F_{12}O_2$ **MOLECULAR WEIGHT:**

358.08

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Anhydrous

CHEMICAL PURITY:

>98%

Isopropanol

LAST TESTED: (mm/dd/yyyy)

09/03/2021

EXPIRY DATE: (mm/dd/yyyy)

09/03/2023

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Dilution of this standard in methanol may lead to the formation of 2H-3-methoxy-perfluoro-2-octenoic acid. This reaction can be catalyzed by the presence of acid or base. All dilutions should be routinely checked for degradation.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:** 09/14/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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LIMITED WARRANTY:

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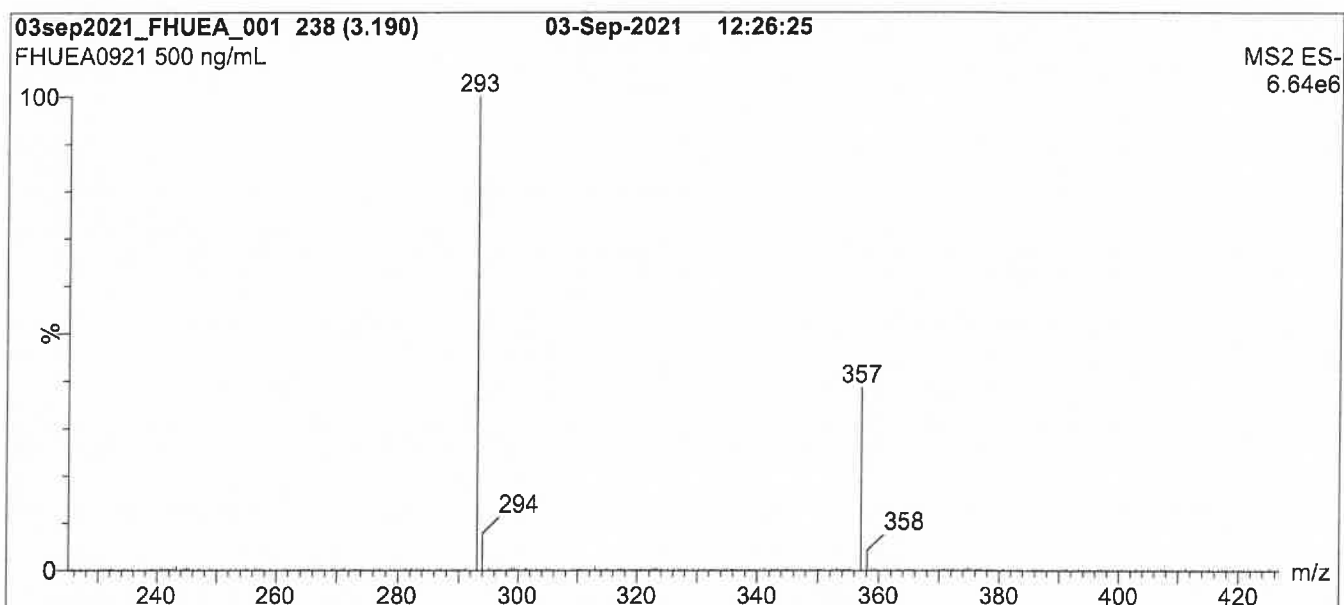
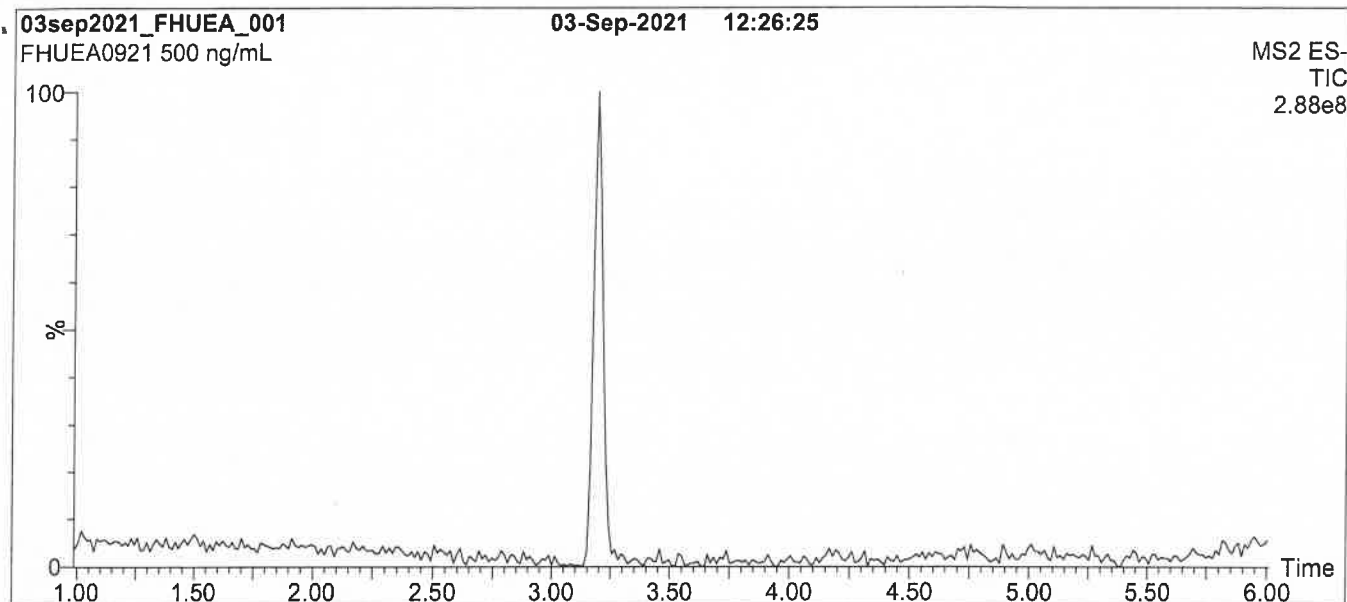
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226); and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: FHUEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 1 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

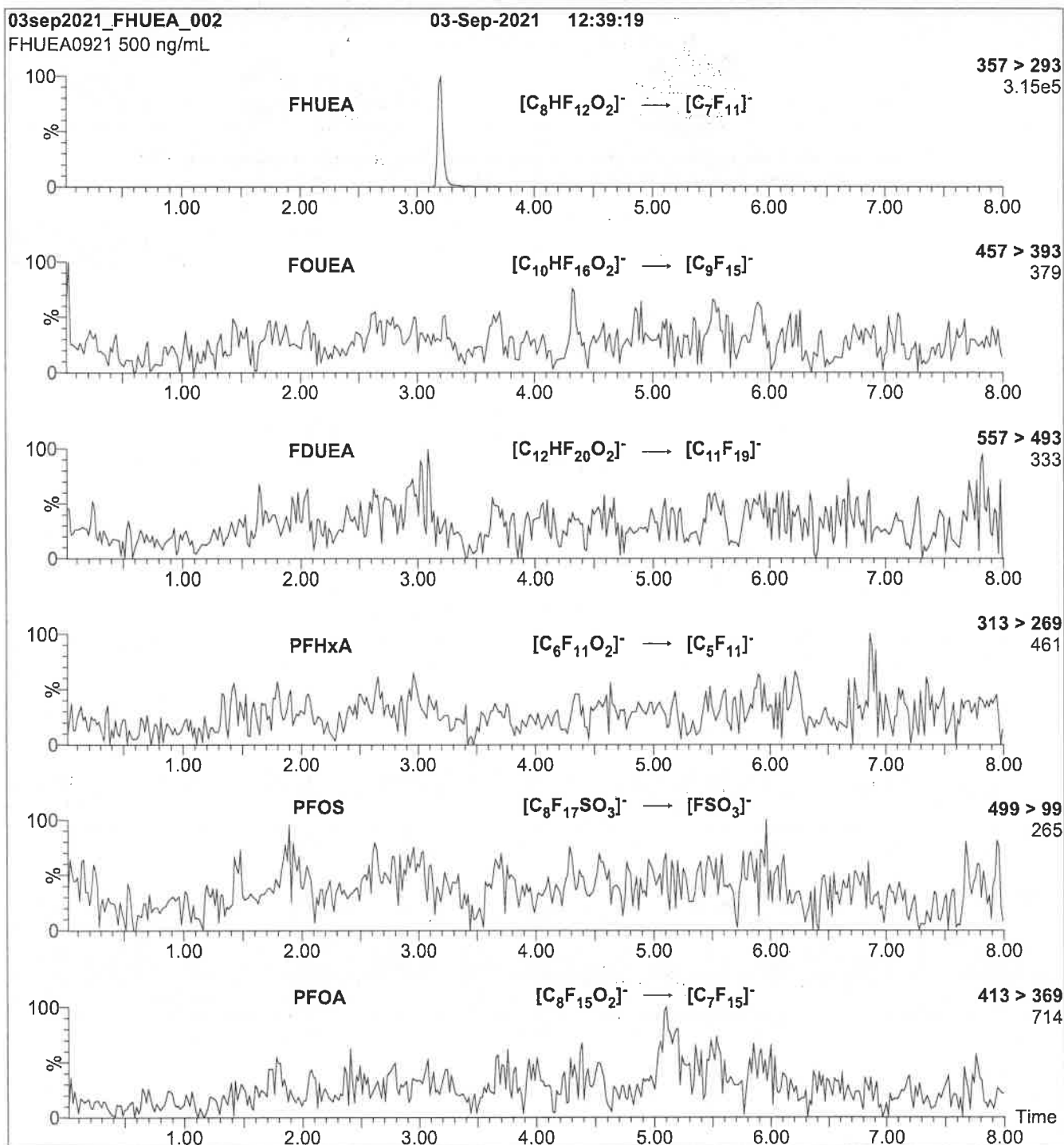
Capillary Voltage (kV) = 0.70

Cone Voltage (V) = 28.00

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: FHUEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (FHUEA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.35e-3

Collision Energy (eV) = 14

Reagent

LCFHxSA-I_00009



WELLINGTON LABORATORIES



2991942
ID: LCFHxSA-I_00009
Exp: 12/29/26 Prip: CV Opn: 04/27/22
Perfluoro-1-hexanesulfona

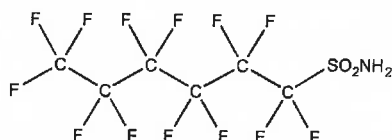
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FHxSA-I
COMPOUND: Perfluoro-1-hexanesulfonamide

LOT NUMBER: FHxSA1221I

STRUCTURE:

CAS #: 41997-13-1



MOLECULAR FORMULA: $C_6H_2F_{13}NO_2S$
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 12/29/2021
EXPIRY DATE: (mm/dd/yyyy) 12/29/2026
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 399.13
SOLVENT(S): Isopropanol

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 01/10/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

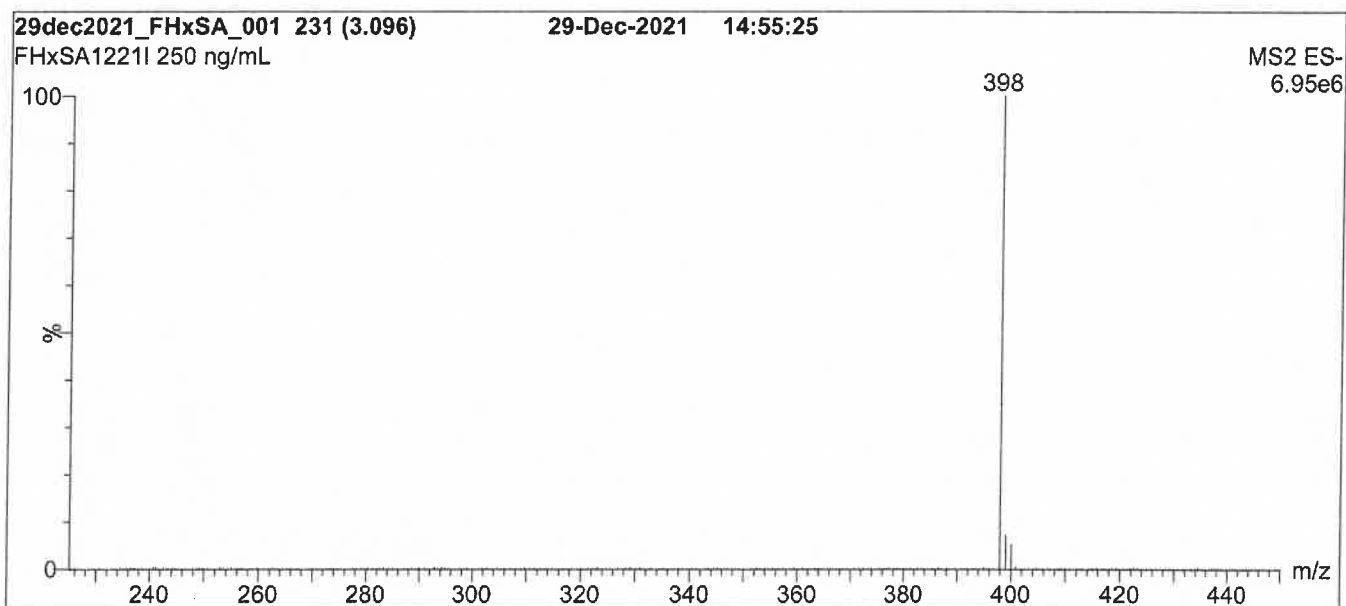
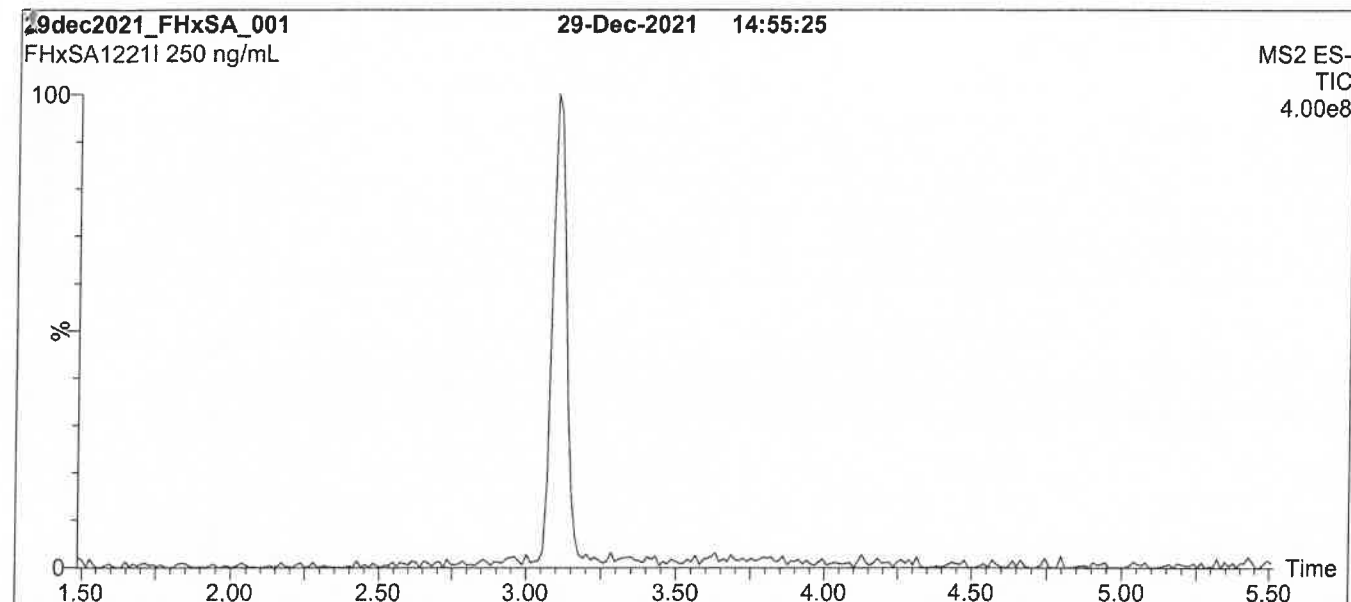
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: FHxSA-I; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

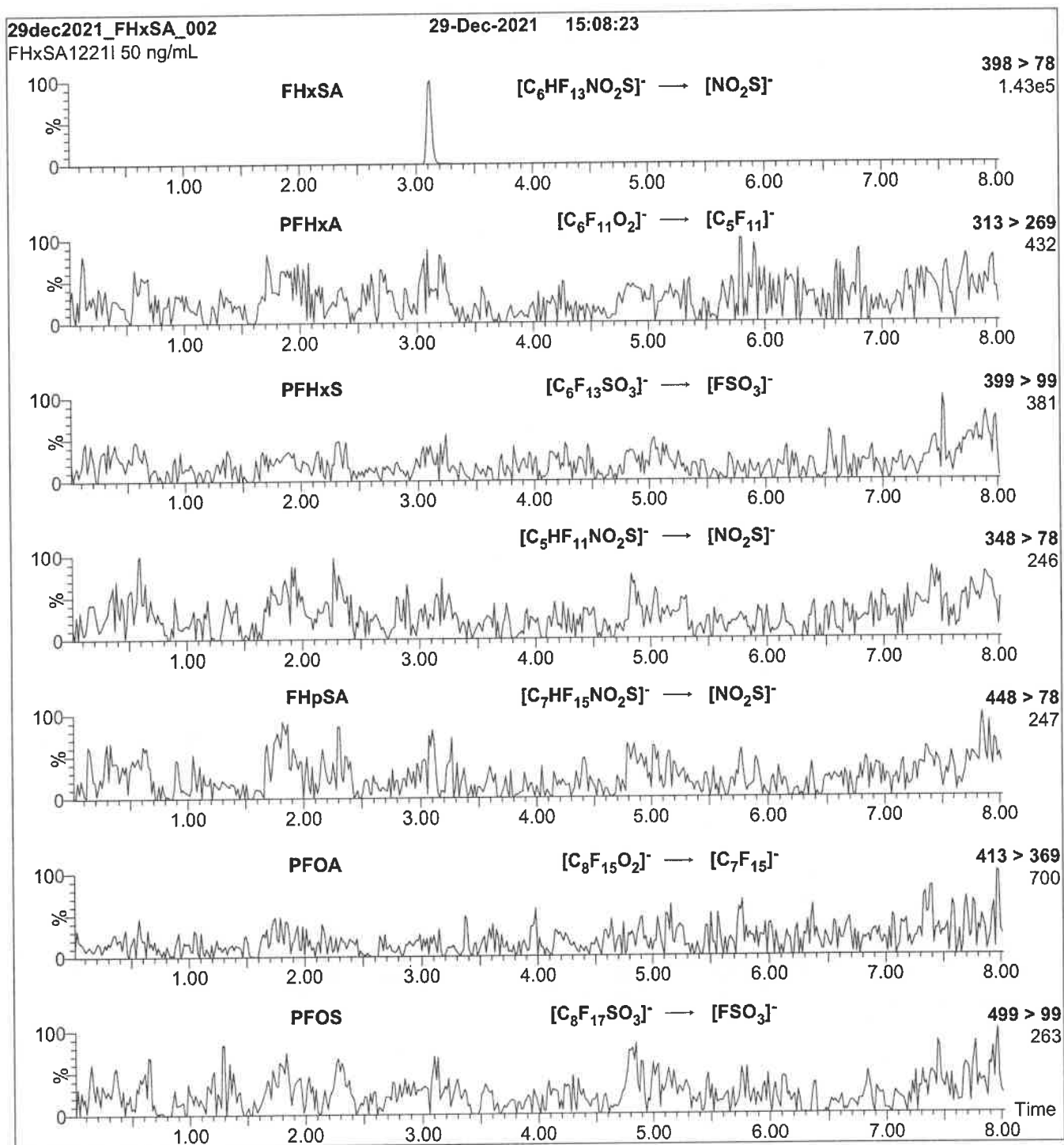
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 750

Figure 2: FHxSA-I; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (FHxSA-I)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 28

Reagent

LCFOEA_00004



2499157

ID: LCFOEA_00004

Exp:08/25/23 Pripd:BHT Opn:04/27/21

FOEA Stock 50 ug/mL



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

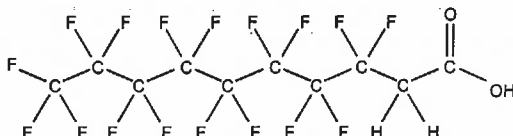
FOEA

LOT NUMBER:

FOEA0820

COMPOUND:

2-Perfluorooctyl ethanoic acid

STRUCTURE:**CAS #:**

27854-31-5

MOLECULAR FORMULA: $C_{10}H_3F_{17}O_2$ **MOLECULAR WEIGHT:**

478.10

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

08/25/2020

EXPIRY DATE: (mm/dd/yyyy)

08/25/2023

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The saturated telomer acid very slowly degrades to FOUEA in isopropanol. This degradation occurs at a much faster rate in MeOH, therefore any MeOH dilutions should be used on the same day that they are prepared and monitored for degradation. The rate of degradation can also increase significantly when handling the solution at ambient temperature or in the presence of base. Always store this solution at 4°C to minimize degradation.
- This solution contains 3 molar equivalents of HCl to minimize degradation.
- Contains < 0.2% 2H-Perfluoro-2-decenoic acid (FOUEA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:**08/25/2020
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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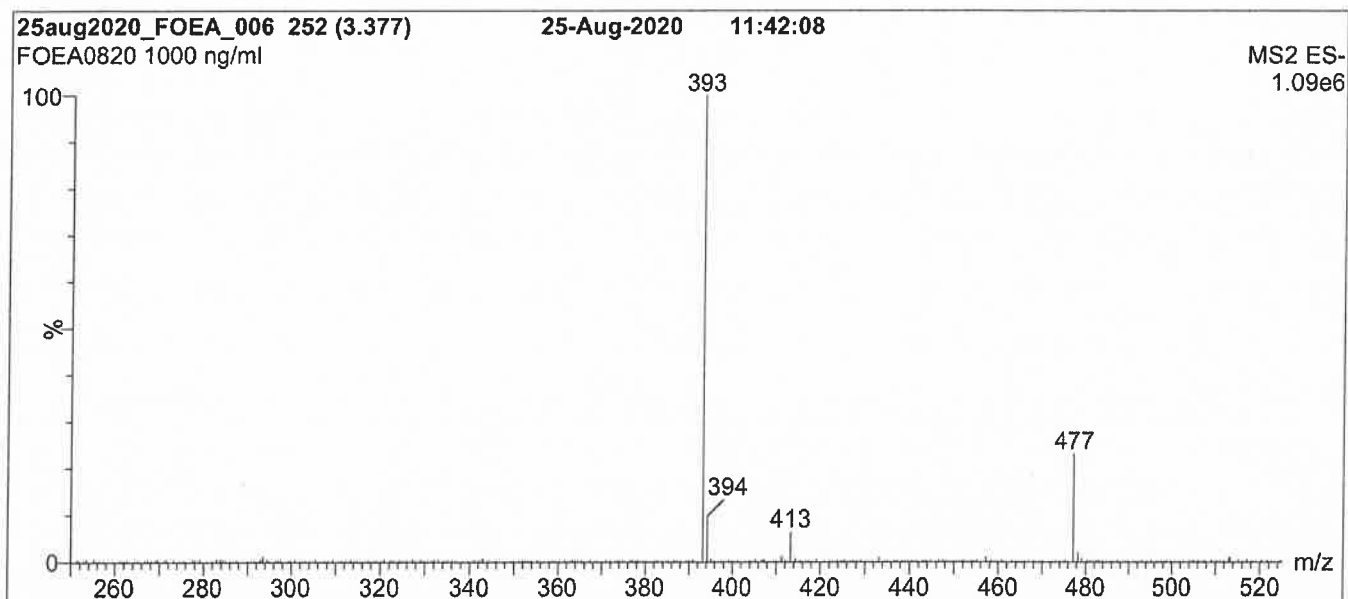
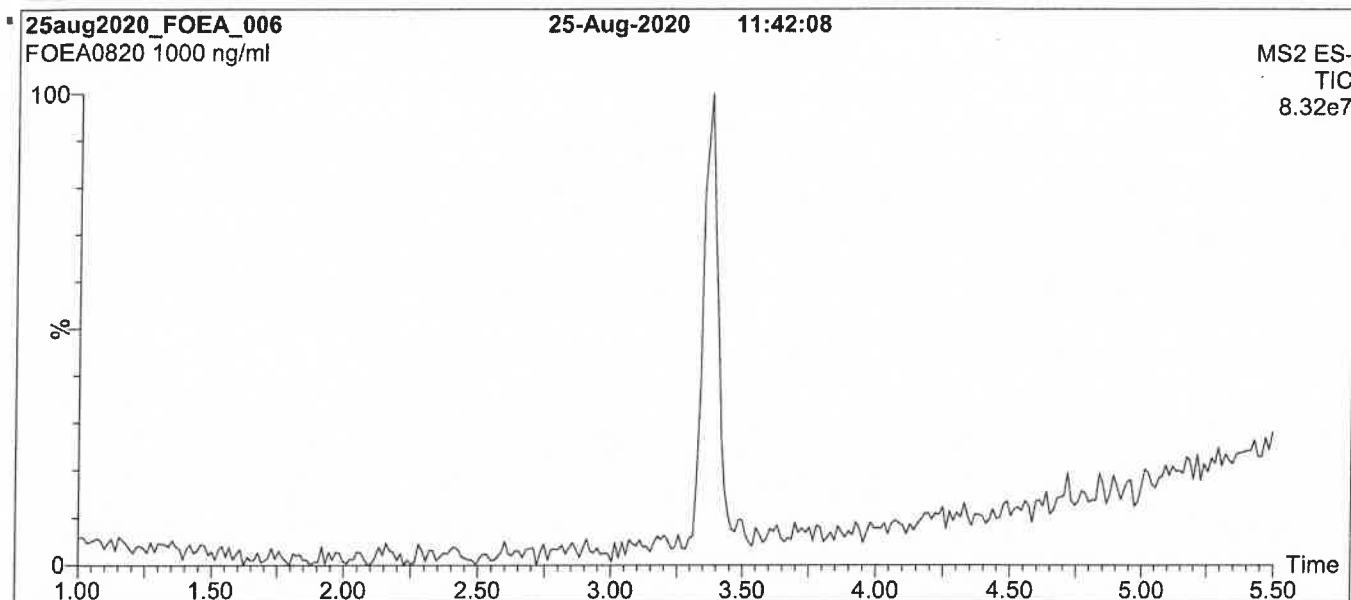
QUALITY MANAGEMENT:

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Figure 1: FOEA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Waters Xevo TQ-S micro MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

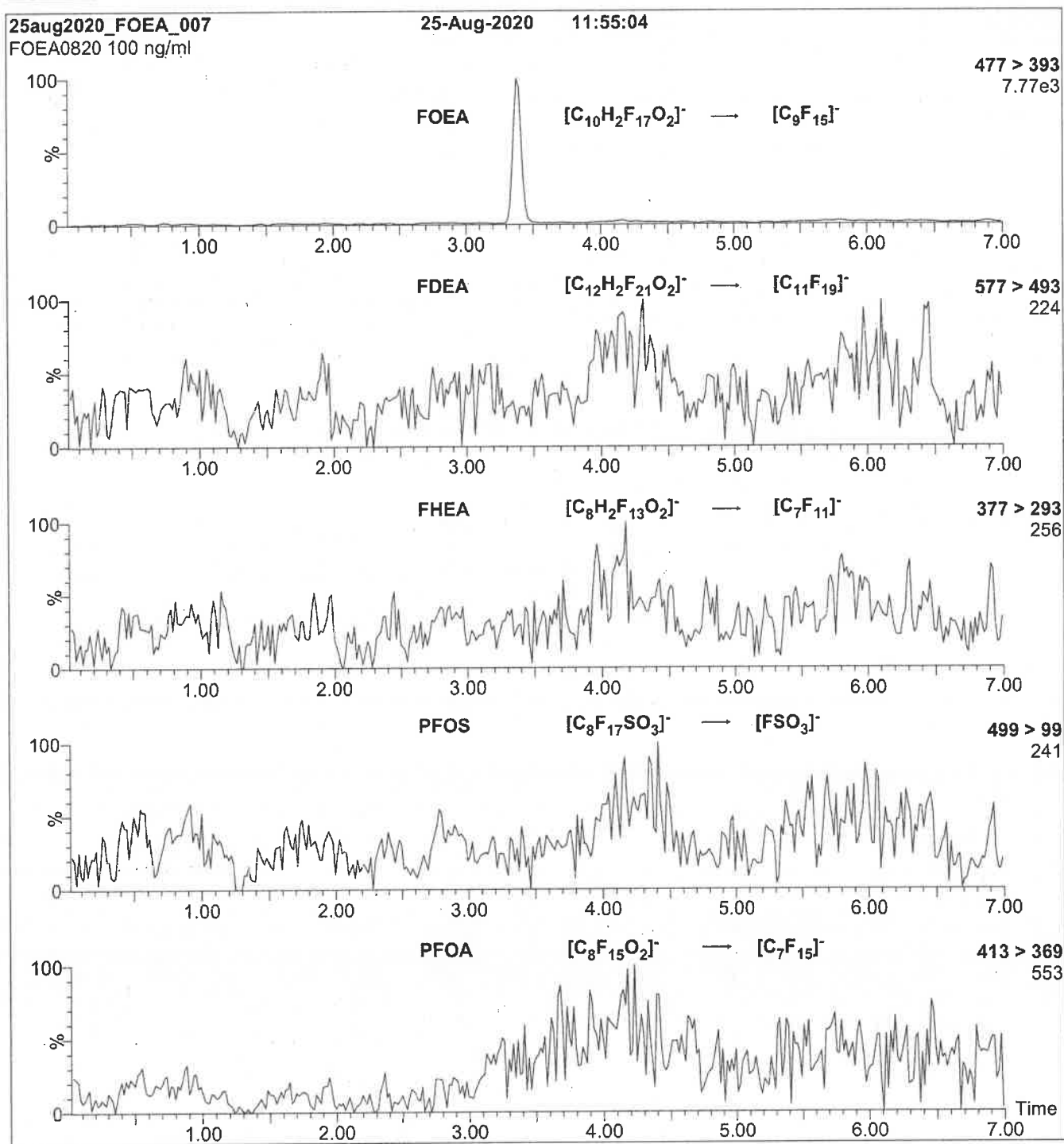
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 30.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Figure 2: FOEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (FOEA)
Mobile phase: Same as Figure 1
Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 10

Reagent

LCFOEA_00010



3065332

ID: LCFOEA_00010

Exp:08/18/24 Prod:M Opm:06/16/22

FOEA/8.2 FTCA Stock 50 ug



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FOEA

LOT NUMBER:

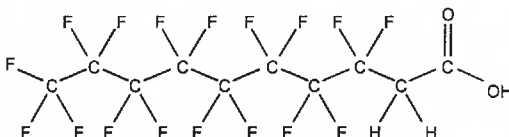
FOEA0821

COMPOUND:

2-Perfluorooctyl ethanoic acid

STRUCTURE:**CAS #:**

27854-31-5

**MOLECULAR FORMULA:** $C_{10}H_3F_{17}O_2$ **MOLECULAR WEIGHT:**

478.10

CONCENTRATION:50.0 \pm 2.5 μ g/mL**SOLVENT(S):**

Isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

08/18/2021

EXPIRY DATE: (mm/dd/yyyy)

08/18/2024

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The saturated telomer acid very slowly degrades to FOUEA in isopropanol. This degradation occurs at a much faster rate in MeOH, therefore any MeOH dilutions should be used on the same day that they are prepared and monitored for degradation. The rate of degradation can also increase significantly when handling the solution at ambient temperature or in the presence of base. Always store this solution at 4°C to minimize degradation.
- This solution contains 3 molar equivalents of HCl to minimize degradation.
- Contains <0.2% 2H-perfluoro-2-decenoic acid (FOUEA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 08/19/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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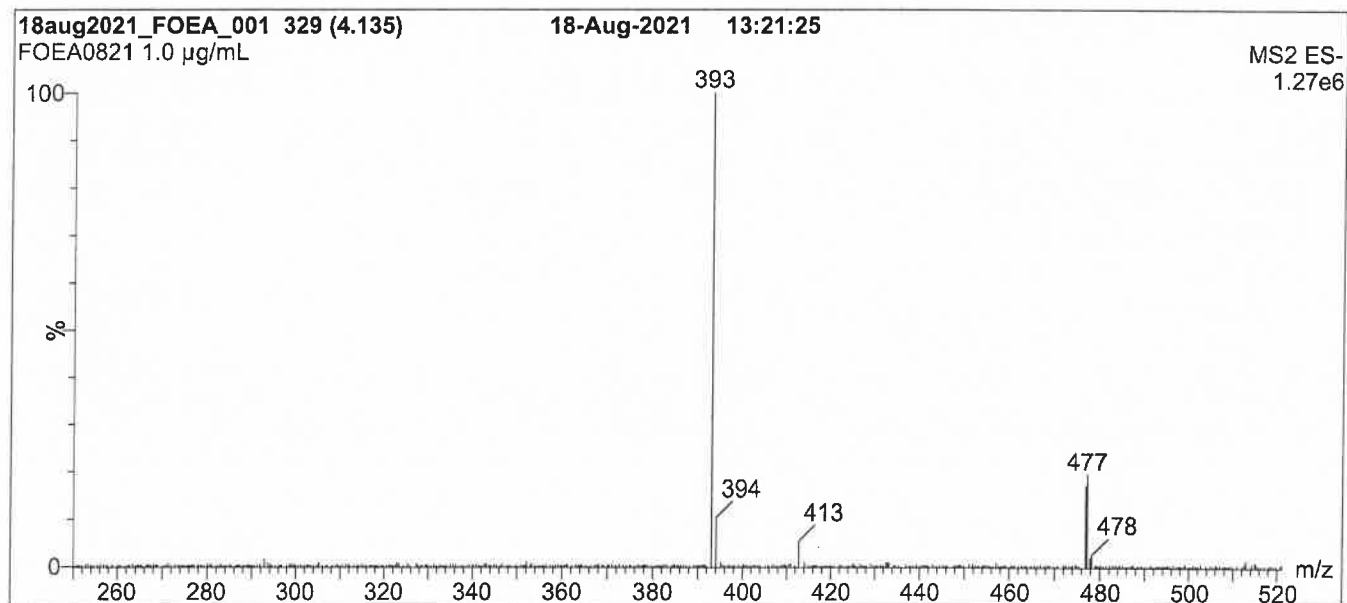
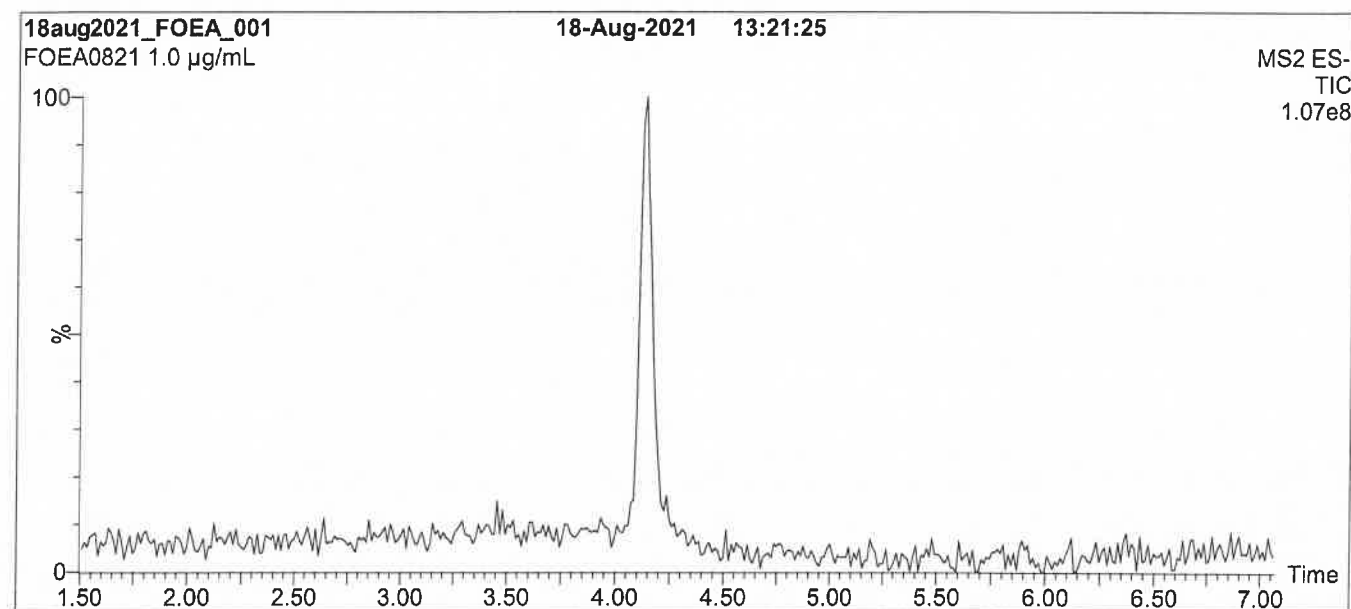
QUALITY MANAGEMENT:

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Figure 1: FOEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 80% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

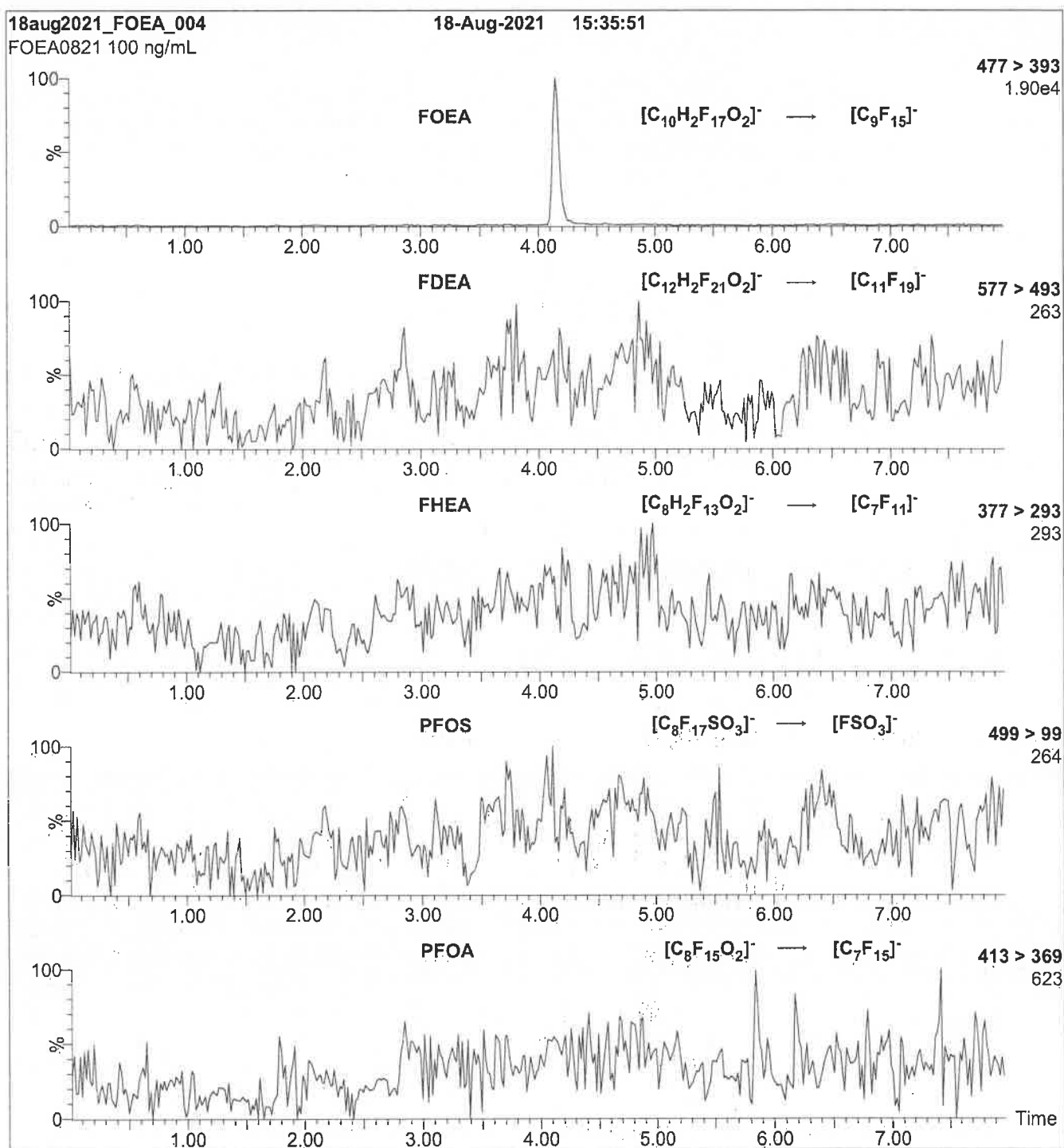
Capillary Voltage (kV) = 1.50

Cone Voltage (V) = 40.00

Desolvation Temperature (°C) = 350

Desolvation Gas Flow (L/hr) = 1000

Figure 2: FOEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (FOEA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.37e-3

Collision Energy (eV) = 10

Reagent

LCFOUEA_00007



2979892

ID: LCFOUEA_00007

Exp: 12/29/23 Prod PCY Opn: 04/19/22
FOUEA/8:2 FTUCA Stock 50

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FOUEA

LOT NUMBER:

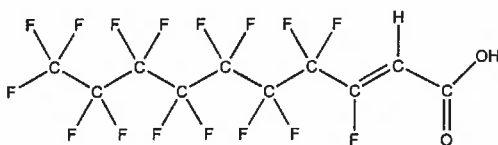
FOUEA1221

COMPOUND:

2H-Perfluoro-2-decenoic acid

STRUCTURE:**CAS #:**

70887-84-2

**MOLECULAR FORMULA:** $C_{10}H_2F_{18}O_2$ **MOLECULAR WEIGHT:**

458.10

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Anhydrous

CHEMICAL PURITY:

>98%

Isopropanol

LAST TESTED: (mm/dd/yyyy)

12/29/2021

EXPIRY DATE: (mm/dd/yyyy)

12/29/2023

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Dilution of this standard in methanol may lead to the formation of 2H-3-methoxy-perfluoro-2-decenoic acid. This reaction can be catalyzed by the presence of acid or base. All dilutions should be routinely checked for degradation.
- Contains ~0.1% of 2H-perfluoro-2-octenoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

01/05/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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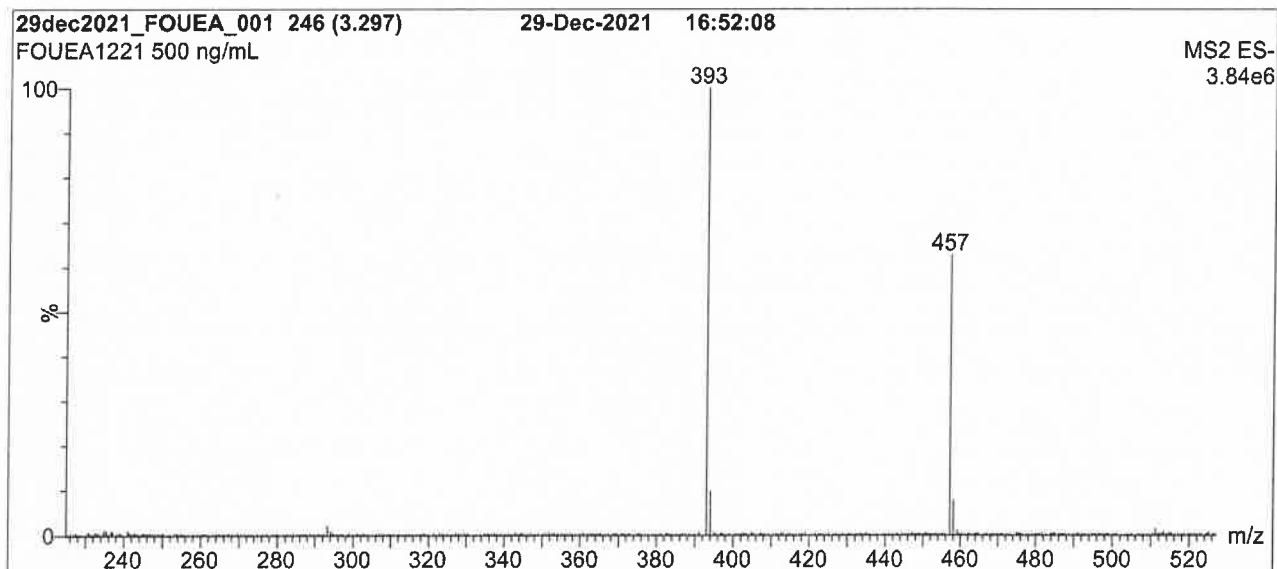
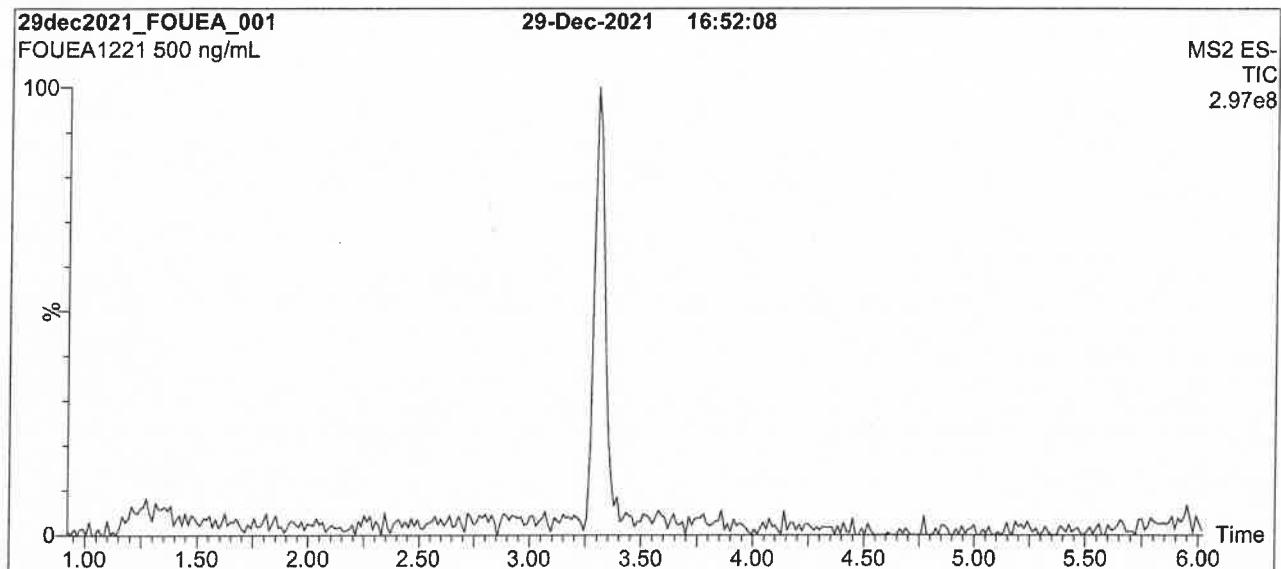
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: FOUEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

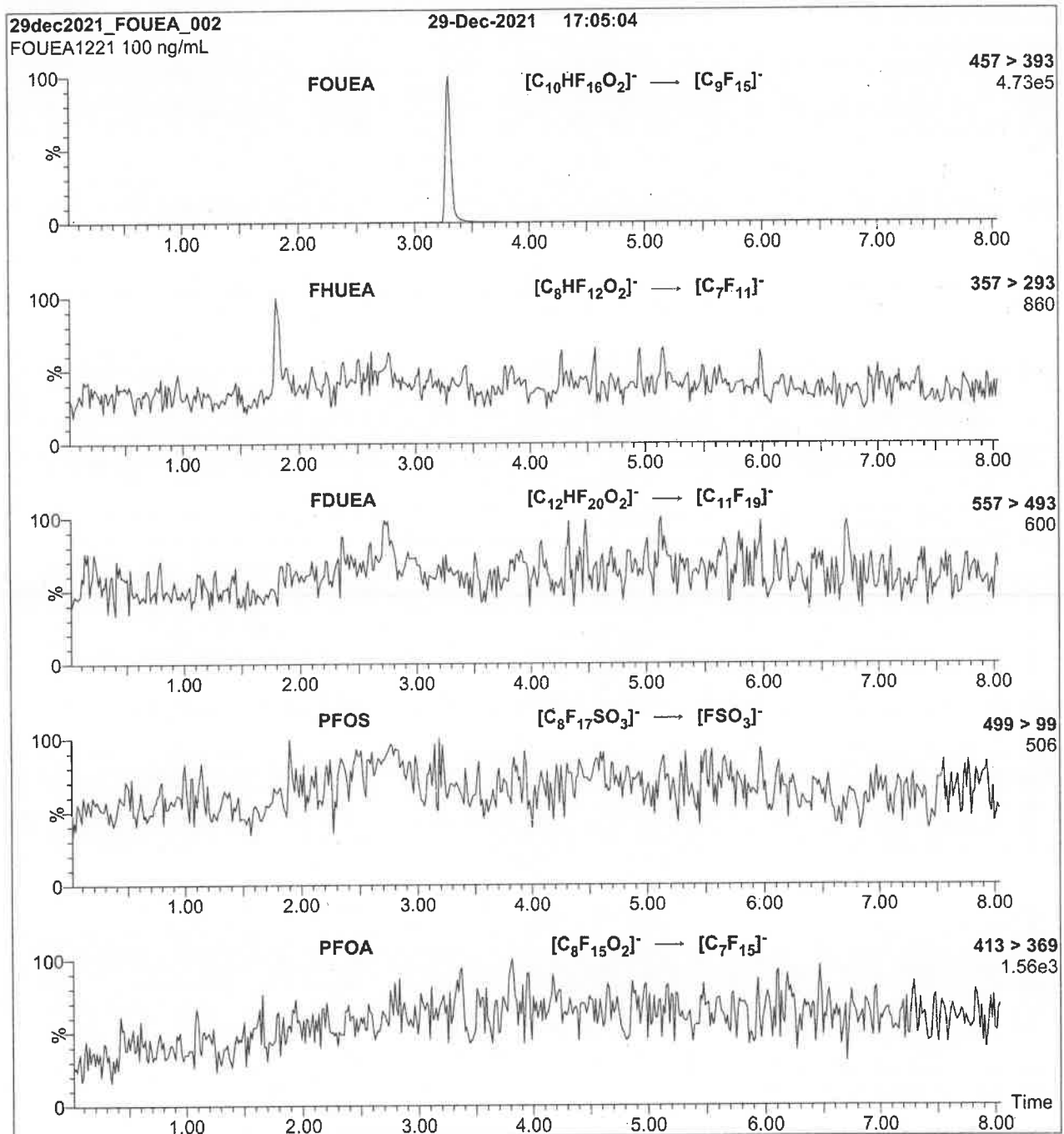
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.70
Cone Voltage (V) = 28.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: FOUEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (FOUEA)
Mobile phase: Same as Figure 1
Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.20e-3
Collision Energy (eV) = 10

Reagent

LCHFPO-DA_00027



3065211

ID: LCHFPO-DA_00027

Exp: 04/05/25 Prod: JM Optr: 06/16/22
HFPO-DA

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

HFPO-DA

LOT NUMBER:

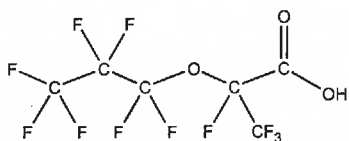
HFPODA0322

COMPOUND:

2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid

STRUCTURE:**CAS #:**

13252-13-6

**MOLECULAR FORMULA:** $C_8H_7F_{11}O_3$ **CONCENTRATION:** $50.0 \pm 2.5 \mu\text{g/mL}$ **CHEMICAL PURITY:**

>98%

LAST TESTED: (mm/dd/yyyy)

04/05/2022

EXPIRY DATE: (mm/dd/yyyy)

04/05/2025

RECOMMENDED STORAGE:

Refrigerate ampoule

MOLECULAR WEIGHT:

330.05

SOLVENT(S):

Methanol

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Product is commercially known as GenX.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:** 04/14/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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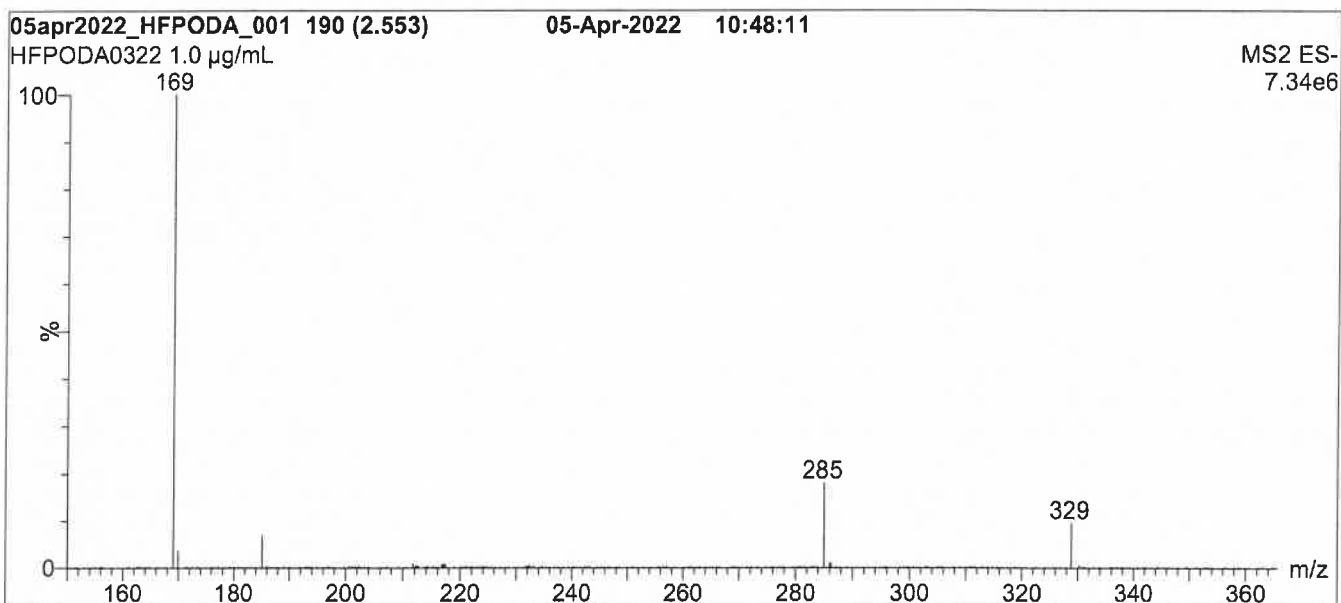
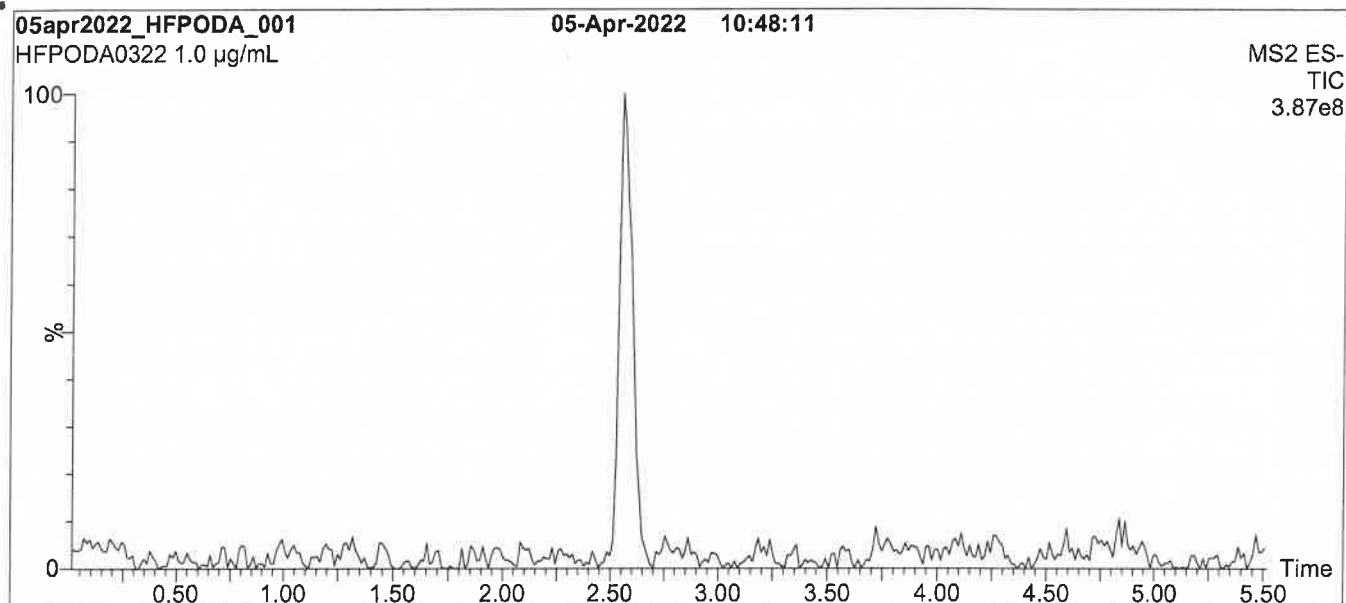
QUALITY MANAGEMENT:

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Figure 1: HFPO-DA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)

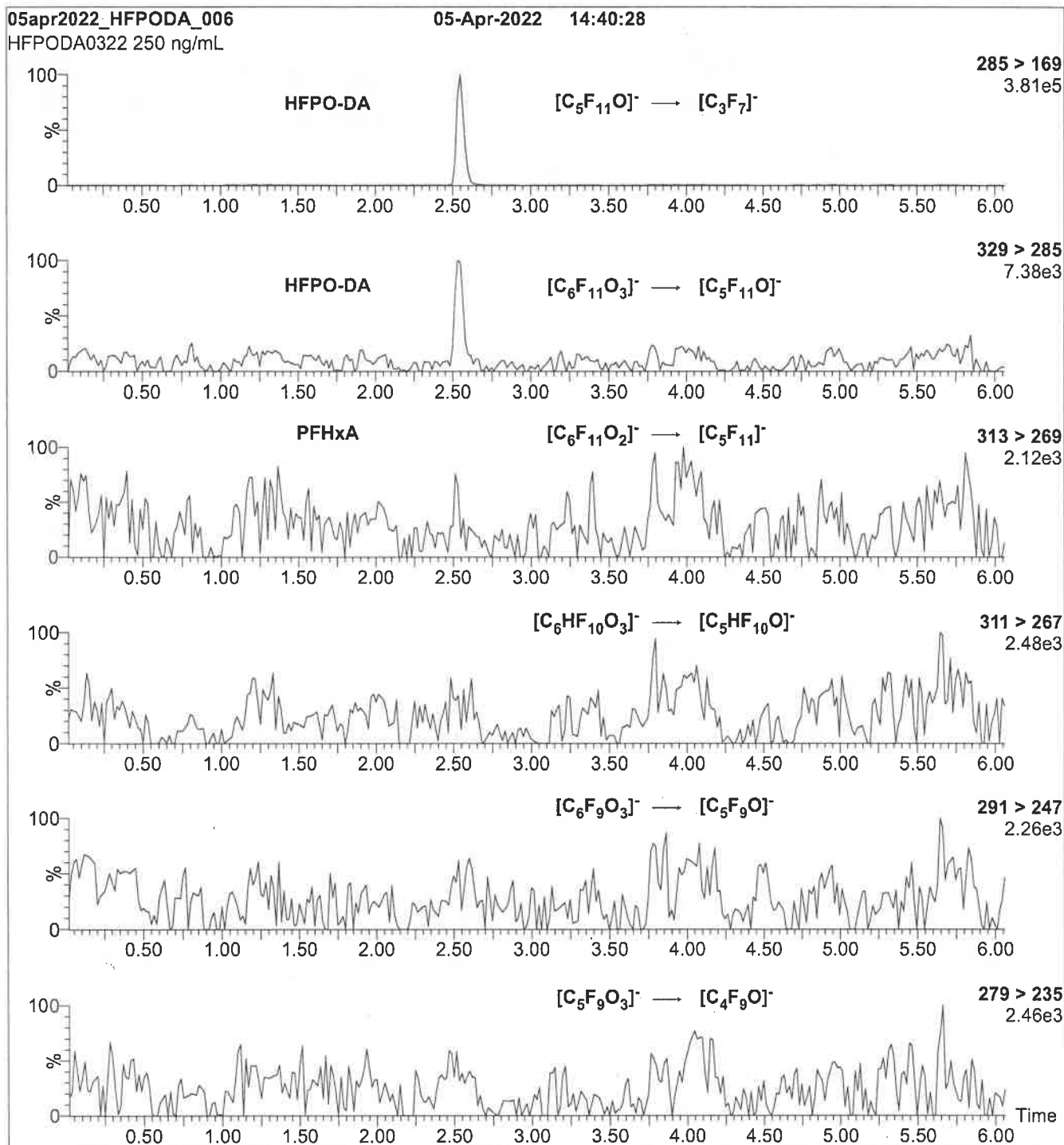
Capillary Voltage (kV) = 2.75

Cone Voltage (V) = 15.00

Desolvation Temperature (°C) = 325

Desolvation Gas Flow (L/hr) = 1000

Figure 2: HFPO-DA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (HFPO-DA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.18e-3

Collision Energy (eV) = 8

Reagent

LCLPFPrS_00007



2979937

ID: LCLPFPrS_00007

Exp: 07/12/26 Pp4PCY Opn: 04/19/22
LPFPrS Stock 46.0 ug/mL**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PRODUCT CODE:**

L-PFPrS

LOT NUMBER:

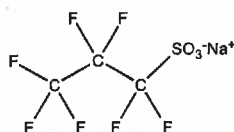
LPFPrS0721

COMPOUND:

Sodium perfluoro-1-propanesulfonate

STRUCTURE:**CAS #:**

Not available

**MOLECULAR FORMULA:** $C_3F_7SO_3Na$ **MOLECULAR WEIGHT:**

272.07

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ (Na salt)
 $46.0 \pm 2.3 \mu\text{g/mL}$ (PFPrS acid)
 $45.8 \pm 2.3 \mu\text{g/mL}$ (PFPrS anion)**SOLVENT(S):**

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

07/12/2021

EXPIRY DATE: (mm/dd/yyyy)

07/12/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

08/04/2021
(mm/dd/yyyy)**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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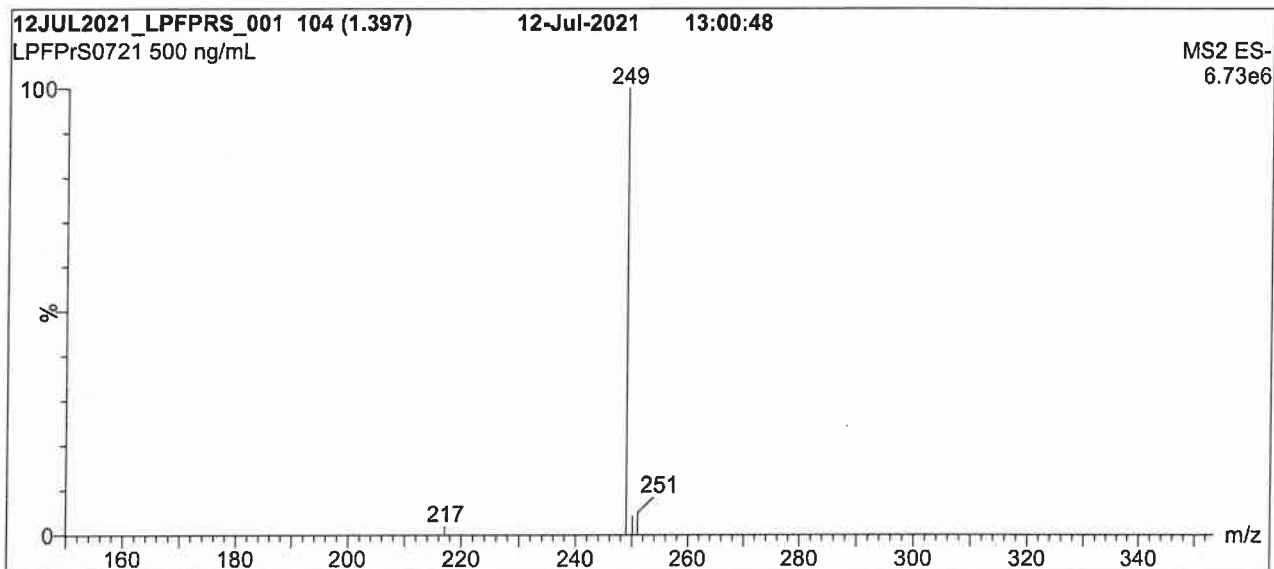
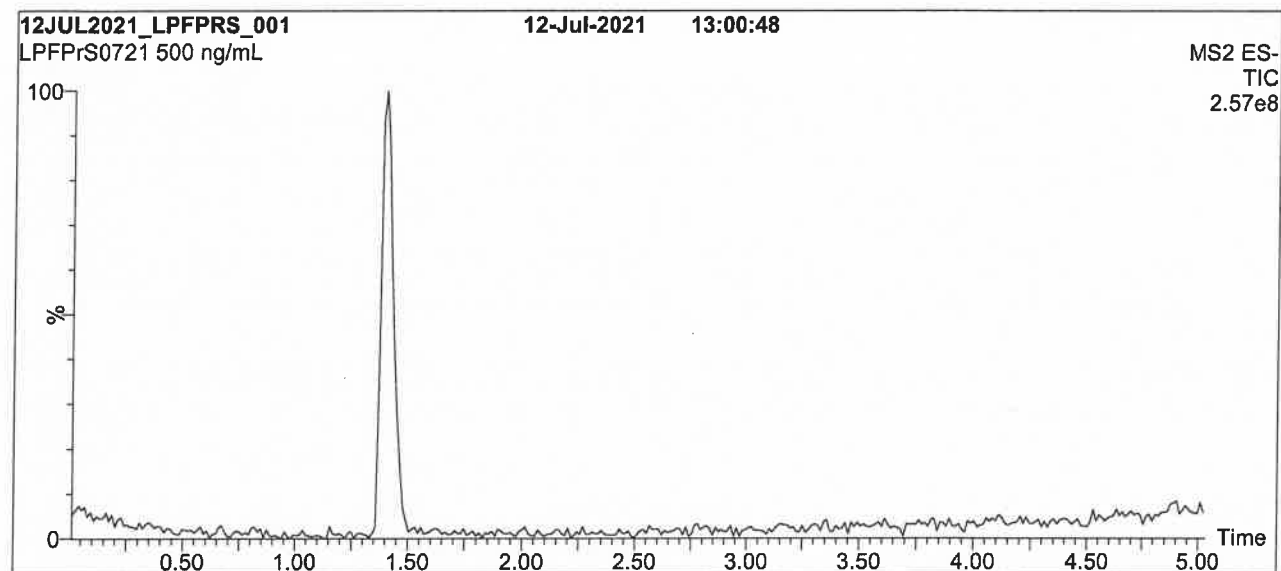
QUALITY MANAGEMENT:

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Figure 1: L-PFPrS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 55% H₂O / 45% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 80% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)

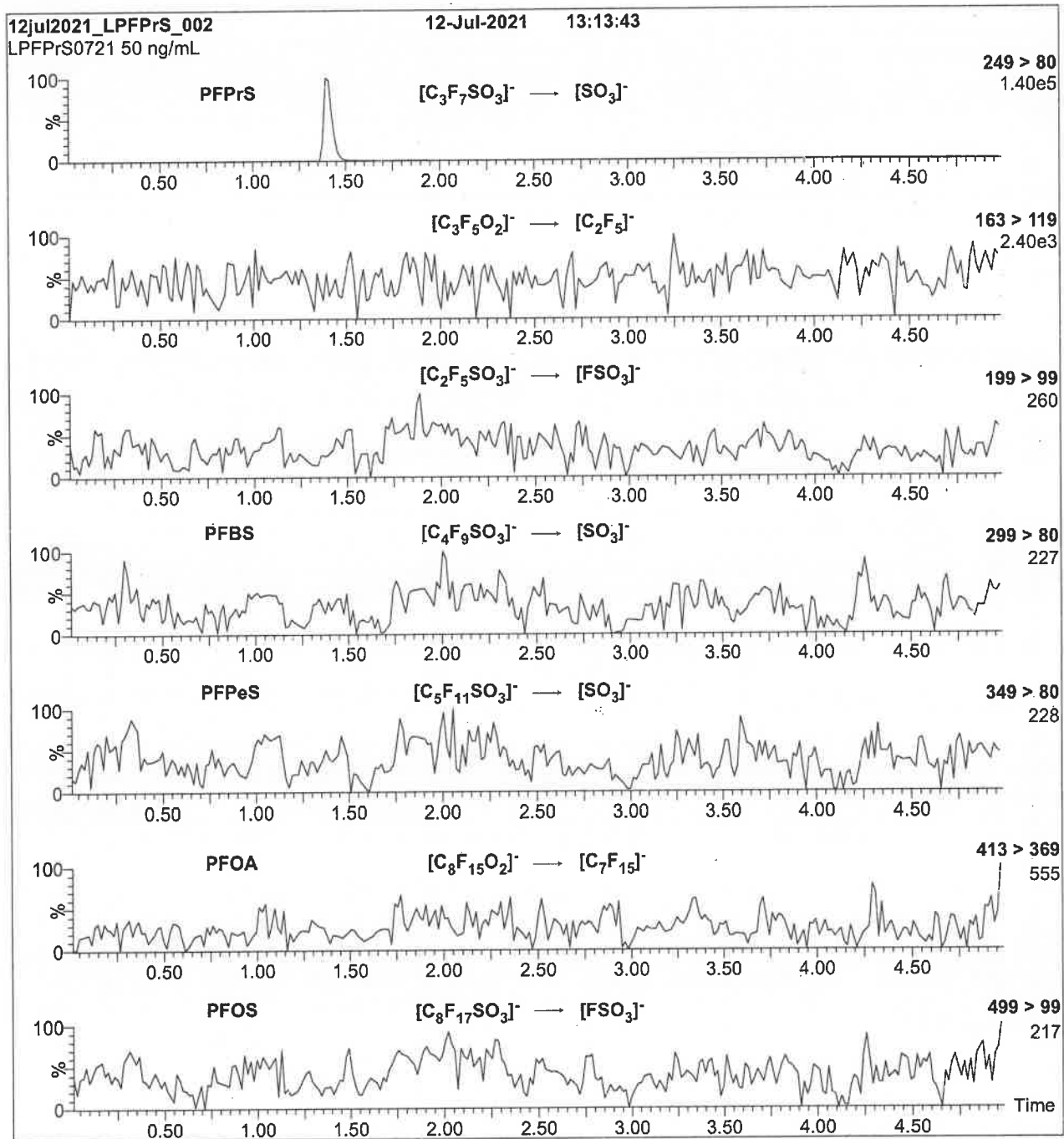
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: L-PFPrS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (L-PFPrS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.49e-3

Collision Energy (eV) = 30

Reagent

LCLPFPrS_00009



3182497

ID: LCLPFPrS_00009

Exp: 04/2027 Prod: J1R Oph: 09/15/22
LPFPrS Stock 46.0 ug/mL

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

L-PFPrS

COMPOUND:

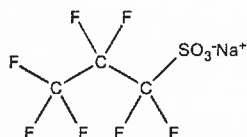
Sodium perfluoro-1-propanesulfonate

LOT NUMBER:

LPFPrS0422

STRUCTURE:**CAS #:**

359868-82-9

**MOLECULAR FORMULA:** $C_3F_7SO_3Na$ **CONCENTRATION:**

50.0 ± 2.5 µg/mL (Na salt)

46.0 ± 2.3 µg/mL (PFPrS acid)

45.8 ± 2.3 µg/mL (PFPrS anion)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

04/20/2022

EXPIRY DATE: (mm/dd/yyyy)

04/20/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

MOLECULAR WEIGHT:

272.07

SOLVENT(S):

Methanol

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 04/29/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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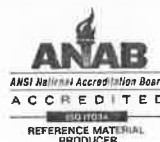
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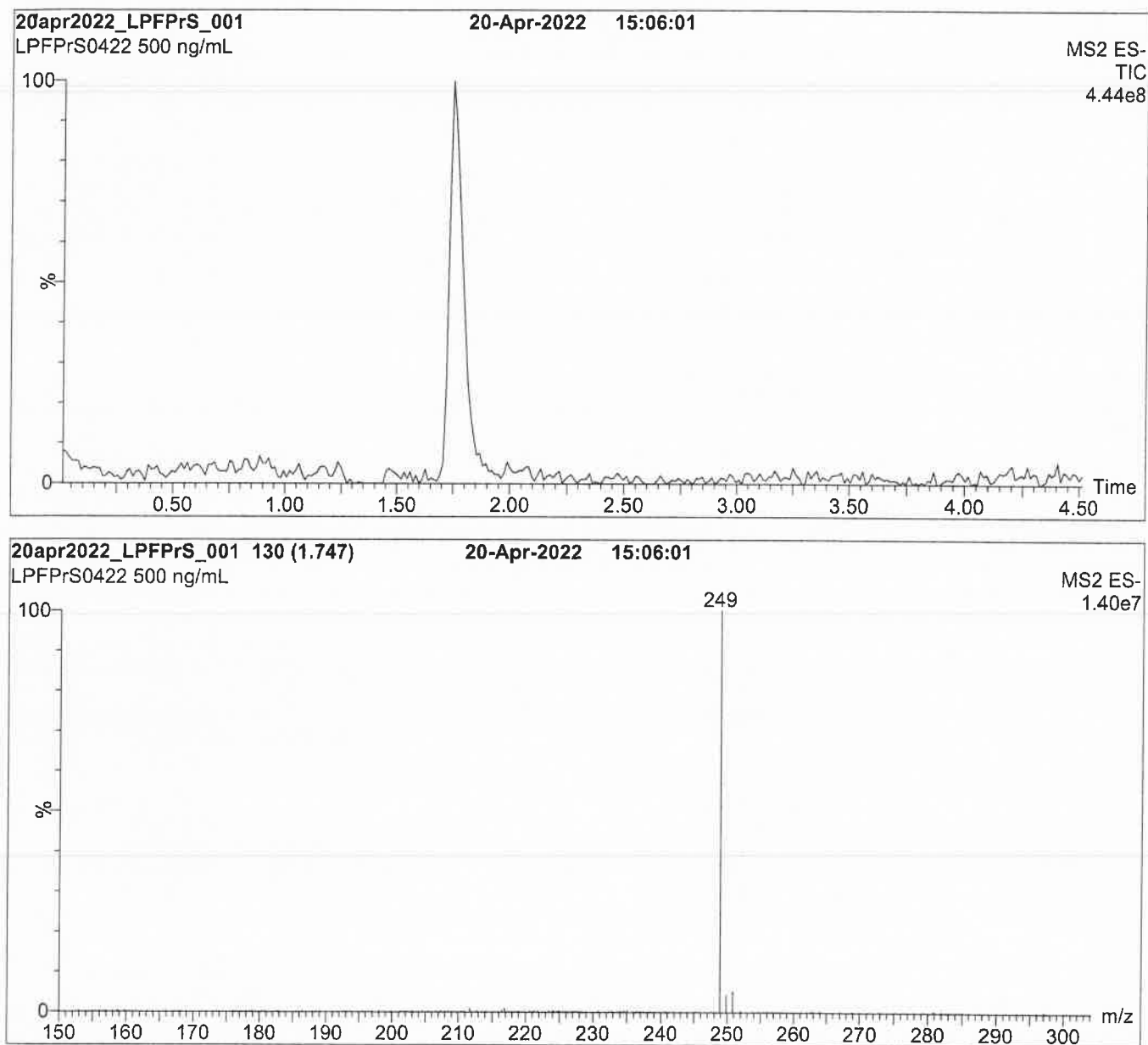
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Figure 1: L-PFPrS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)

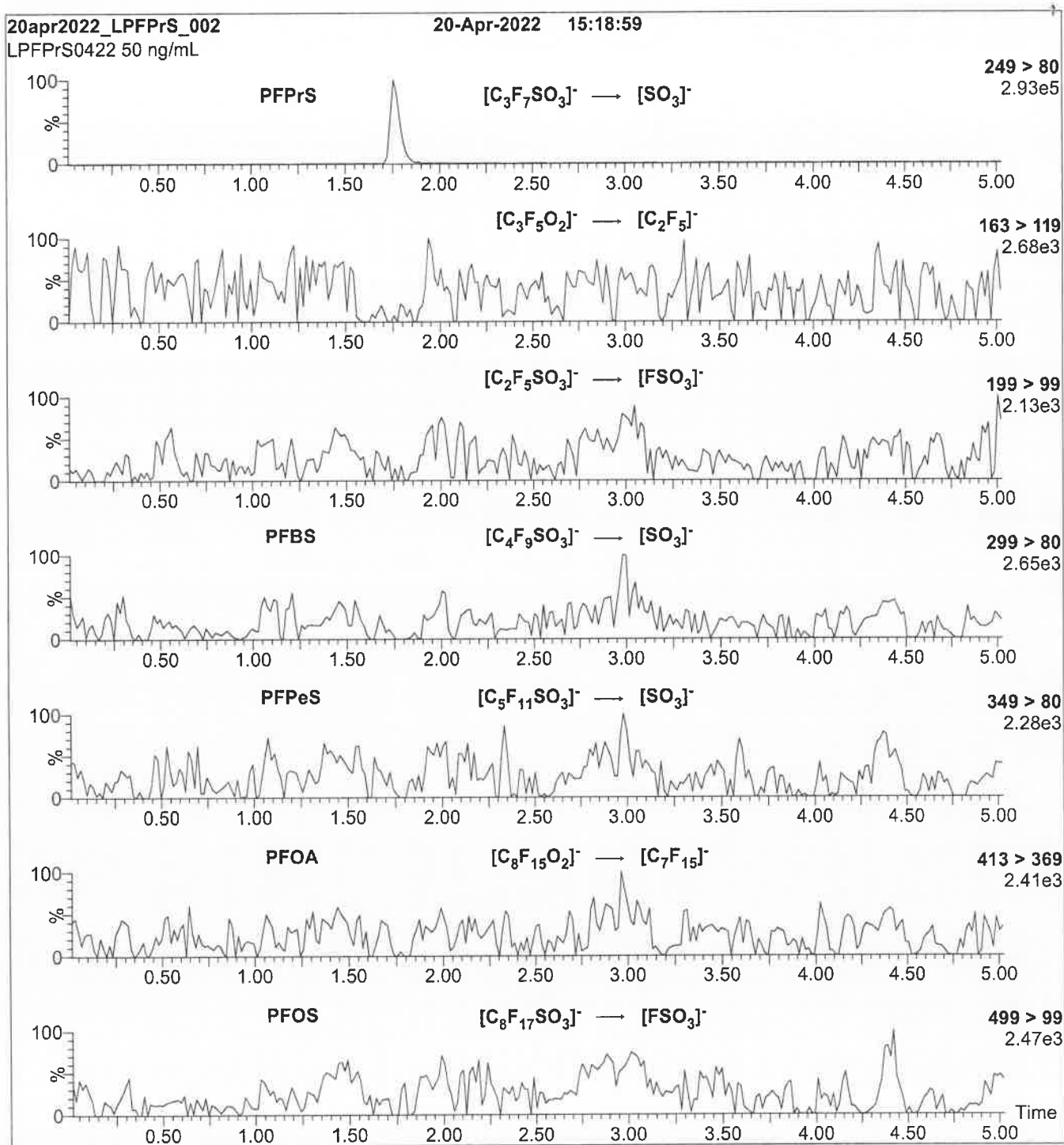
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: L-PFPrS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (L-PFPrS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.20e-3

Collision Energy (eV) = 30

Reagent

LCM10:2 FTS_00005



2785701

ID: LCM10:2 FTS_00005
Exp: 04/26/26 Prpd: JM Opn: 11/15/21
10:2 FTS Sodium Salt Stoc**Product Name:**
(Isotopic Label & Enrichment Specification)1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS),
SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH**Lot Number:**

SEBC-003

Catalog Number:

CDLM-10750-S

Product Information**Chemical Purity Specification:**

≥ 98%

MW*:

656.19

*For isotopically labeled compounds, MW listed is for the fully enriched product.**Labeled CAS Number:**

NA

Unlabeled CAS Number:

108026-35-3

Chemical Formula:

C10*C2D4F21NaO3S

Storage:

Store at room temperature away from light and moisture.

Stability:

See storage and expiration date.

Intended Use:

For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Sashi Sivendran-Basak

Sashi Sivendran-Basak, Ph.D., Quality Review

Quality Control Tests and Results

QC Release Date

4/26/2021

Expiration Date

4/26/2026

Concentration Based on Gravimetry (of the salt)

50.0 ± 0.5 µg/mL (k=2)

Chemical Purity of Neat Material(s)

100.0% (Area %)

(continued on next page)

CIL subscribes to the following standards for different products: ISO 17034, ISO/IEC 17025, ISO 13485, and cGMP as appropriate.



Product Name: 1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS),
(Isotopic Label & Enrichment Specification) SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN ME OH

Lot Number: SEBC-003

Catalog Number: CDLM-10750-S

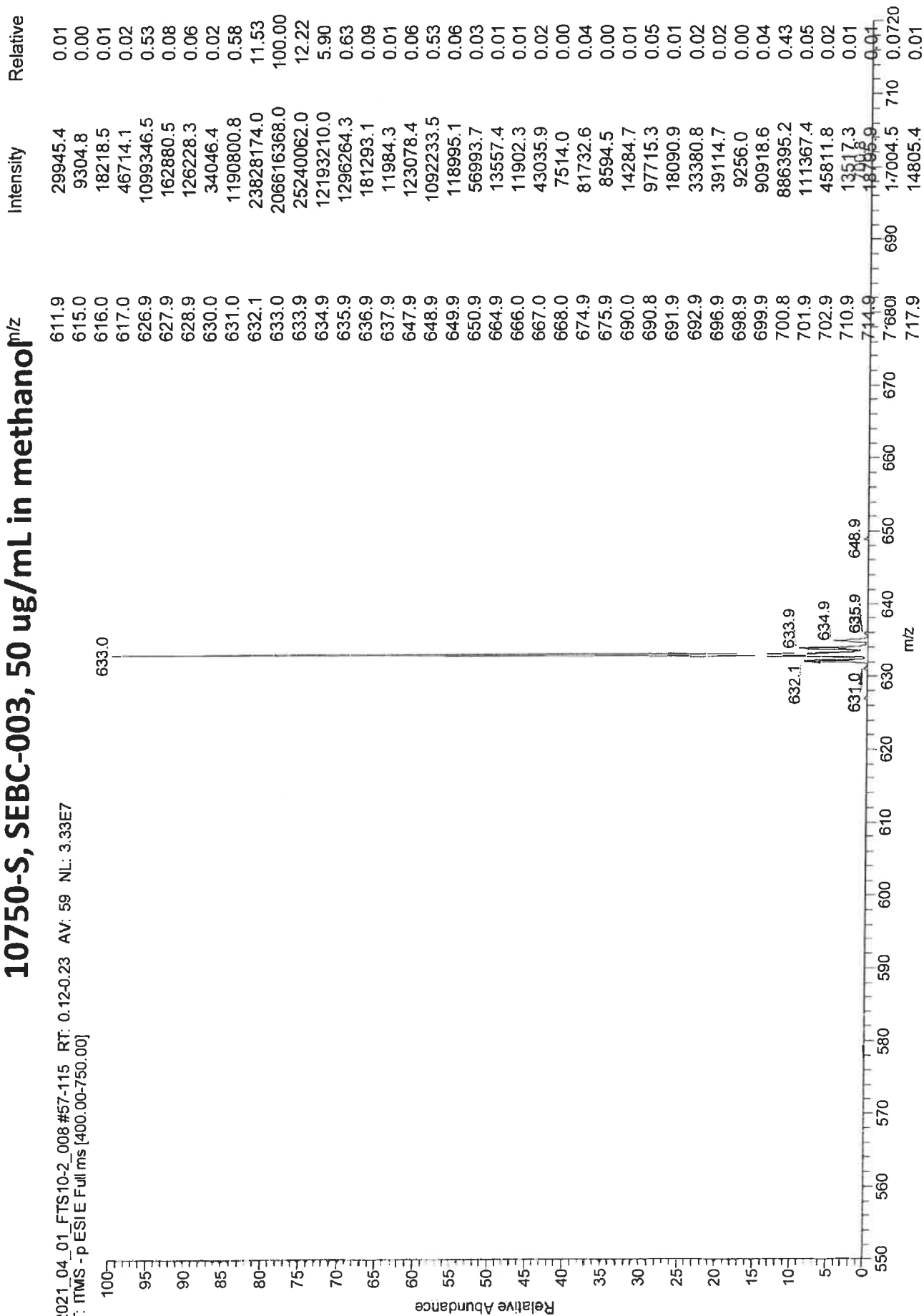
Quality Control Tests and Results (continued)

LC/MS for Concentration

46.6 ± 1.9 µg/mL (k=2)

1H,1H,2H,2H-Perfluorododecanesulfonate (10:2 FTS), sodium salt, 13C2, D4, CDLM-10750-S, SEBC-003, 50 ug/mL in methanol

2021_04_01_FTS10-2_008 #57-115 RT: 0.12-0.23 AV: 59 NL: 3.33E7
T: FTMS - p ESI E Full ms [400.00-750.00]



1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS), SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
CDLM-10750-S
Revision date: 01/04/2019
Supersedes: 13/03/2019
Version: 1.1



SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product form : Mixtures
Product name : 1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS), SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH
Product code : CDLM-10750-S

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses
Main use category : Professional use
Industrial/Professional use spec : For professional use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.
50 Front Street
Andover, MA 01810
USA

USA: 1-800-322-1174 Int: 1-978-749-6000
cisales@isoldps.com www.isotope.com

Emergency telephone number

Chemites: 1-800-424-9300 (24 hours)
International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 (CLP)

Fam. Liq. 2 H225
Acute Tox. 3 (Oral) H301
Acute Tox. 3 (Dermal) H311
Acute Tox. 3 (Inhalation/vapour) H331
Skin Irrit. 2 H315
Eye Irrit. 2 H319
STOT SE 1 H370
Full text of hazard classes and H-statements : see section 16

Classification according to Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

F+ R11
T+ R30/33/24/25
Xi, R36/38

Full text of R-phrases: see section 16

GHS-US classification

Fam. Liq. 2 H225
Acute Tox. 3 (Oral) H301
Acute Tox. 3 (Dermal) H311
Acute Tox. 3 (Inhalation/vapour) H331
Skin Irrit. 2 H315
Eye Irrit. 2A H319
STOT SE 1 H370
Full text of H-statements : see section 16

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1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS), SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH

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Adverse physicochemical, human health and environmental effects

Eyes, Kidney, Liver, Heart, Central nervous system, Highly flammable liquid and vapor. Causes damage to organs (eyes, kidneys, liver, heart, central nervous system) (if inhaled, if swallowed, in contact with skin). Toxic if inhaled, Toxic if swallowed. Causes skin irritation. Causes serious eye irritation.

2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 (CLP)

Hazard pictograms (CLP)



Signal word (CLP)

Hazard statements (CLP)

H225 - Highly flammable liquid and vapor
H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H370 - Causes damage to organs (eyes, heart, kidneys, liver, central nervous system) (in contact with skin, if inhaled, if swallowed)

Precautionary statements (CLP)

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P231 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical, lighting, ventilating equipment.
P260 - Do not breathe dust, mist, vapors, fumes, gas, spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.

GHS-US labeling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

Hazard statements (GHS-US)

H225 - Highly flammable liquid and vapor
H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H370 - Causes damage to organs (eyes, kidneys, liver, heart, central nervous system) (Dermal, Inhalation, oral)

Precautionary statements (GHS-US)

P210 - Keep away from heat, open flames, sparks. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical, lighting, ventilating equipment.
P242 - Use only non-sparking tools.
P260 - Do not breathe dust, mist, gas, spray, vapors, mist.
P261 - Avoid breathing dust, gas, spray, vapors, mist.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective clothing, protective gloves.
P301+P310 - If swallowed: Immediately call a doctor. a POISON CENTER or local poison center.
P302+P352 - If on skin (or hair): Wash with plenty of water.
P303+P361+P353 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P307+P311 - If exposed: Call a poison center/doctor.

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1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS),
SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH

CDLM-10750-S

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 28, 2012 / Rules and Regulations

Hygiene measures
: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures
: Ground/bond container and receiving equipment. Store in a well-ventilated place. Keep container tightly closed. Store locked up.
: Store at room temperature away from light and moisture.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS), SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH			
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	200,000/000000 ppm Basis: USA, ACGIH Threshold Limit Values (TLV)	
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	250 ppm Basis: USA, ACGIH Threshold Limit Values (TLV)	
Italy - Portugal - USA ACGIH	Remark (ACGIH)	Headache, Nausea, Dizziness. Eye damage Substances for which there is a Biological Exposure Index or indices (see BEI section). Danger of cutaneous absorption.	
USA NIOSH	NIOSH REL (TWa) (mg/m³)	280 mg/m³ Basis: NIOSH Recommended Exposure Limits	
USA NIOSH	NIOSH REL (TWa) (ppm)	200 ppm Basis: NIOSH Recommended Exposure Limits	
USA NIOSH	NIOSH REL (STEL) (mg/m³)	325 mg/m³ Basis: NIOSH Recommended Exposure Limits	
USA NIOSH	NIOSH REL (STEL) (ppm)	250 ppm Basis: NIOSH Recommended Exposure Limits	
USA NIOSH	Remark (NIOSH)	Potential for dermal absorption.	
USA OSHA	OSHA PEL (TWa) (mg/m³)	280 mg/m³ Basis: USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
USA OSHA	OSHA PEL (TWa) (ppm)	200 ppm Basis: USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
USA OSHA	OSHA PEL (STEL) (mg/m³)	325 mg/m³ Basis: USA, OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
USA OSHA	OSHA PEL (STEL) (ppm)	250 ppm Basis: USA, OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
USA OSHA	OSHA PEL (Ceiling) (ppm)	1000 ppm California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
USA OSHA	Remark (OSHA)	The value in mg/m³ is approximate. Skin notation.	
100% METHANOL UNLABELED (67-56-1)			
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	200,000/000000 ppm Basis: USA, ACGIH Threshold Limit Values (TLV)	
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	250 ppm Basis: USA, ACGIH Threshold Limit Values (TLV)	
Italy - Portugal - USA ACGIH	Remark (ACGIH)	Headache, Nausea, Dizziness. Eye damage. Substances for which there is a Biological Exposure Index or indices (see BEI section). Danger of cutaneous absorption.	
USA NIOSH	NIOSH REL (TWa) (mg/m³)	280 mg/m³ Basis: NIOSH Recommended Exposure Limits	

1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS),
SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH

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Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 28, 2012 / Rules and Regulations

100% METHANOL UNLABELED (67-56-1)			
USA NIOSH	NIOSH REL (TWa) (ppm)	200 ppm Basis: NIOSH Recommended Exposure Limits	
USA NIOSH	NIOSH REL (STEL) (mg/m³)	325 mg/m³ Basis: NIOSH Recommended Exposure Limits	
USA NIOSH	NIOSH REL (STEL) (ppm)	250 ppm Basis: NIOSH Recommended Exposure Limits	
USA NIOSH	Remark (NIOSH)	Potential for dermal absorption.	
USA OSHA	OSHA PEL (TWa) (mg/m³)	280 mg/m³ Basis: USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
USA OSHA	OSHA PEL (TWa) (ppm)	200 ppm Basis: USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
USA OSHA	OSHA PEL (STEL) (mg/m³)	325 mg/m³ Basis: USA, OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
USA OSHA	OSHA PEL (STEL) (ppm)	250 ppm Basis: USA, OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
USA OSHA	OSHA PEL (Ceiling) (ppm)	1000 ppm California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
USA OSHA	Remark (OSHA)	The value in mg/m³ is approximate. Skin notation.	

1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS), SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH			
DNEUJDMEL (Workers)			
Acute - systemic effects, dermal	40 mg/kg bodyweight/day		
Acute - systemic effects, inhalation	280 mg/m³		
Acute - local effects, dermal	280 mg/cm²		
Long-term - systemic effects, dermal	40 mg/kg bodyweight/day		
Long-term - local effects, dermal	280 mg/cm²		
Long-term - local effects, inhalation	280 mg/m³		
DNEUJDMEL (General population)			
Acute - systemic effects, dermal	8 mg/kg body weight		
Acute - systemic effects, inhalation	50 mg/m³		
Acute - systemic effects, oral	8 mg/kg body weight		
Acute - local effects, inhalation	50 mg/m³		
Long-term - systemic effects, oral	8 mg/kg bodyweight/day		
Long-term - systemic effects, inhalation	50 mg/m³		
Long-term - systemic effects, dermal	8 mg/kg bodyweight/day		
Long-term - local effects, inhalation	50 mg/m³		
PNEC (Water)	154 mg/l		
PNEC aqua (freshwater)	15.4 mg/l		
PNEC aqua (marine water)	15.4 mg/l		
PNEC (Sediment)	570.4 mg/kg dwt		
PNEC sediment (freshwater)	570.4 mg/kg dwt		
PNEC (Soil)	23.5 mg/kg dwt		
PNEC soil	23.5 mg/kg dwt		
PNEC (STP)	100 mg/kg		
PNEC sewage treatment plant	100 mg/kg		

8.2. Exposure controls

Appropriate engineering controls
: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

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1H,1H,2H,2H-PERFLUORODECANESULFONATE(10:2 FTS),
SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Personal protective equipment

: Gloves, Protective clothing, Protective goggles, Seal contained breathing apparatus.



Materials for protective clothing
Hand protection
Eye protection
Skin and body protection
Respiratory protection
Environmental exposure controls

: Wear suitable protective clothing and gloves.
: Wear suitable protective clothing and gloves.
: Wear eye protection. Chemical goggles or face shield with safety glasses.
: Wear suitable protective clothing, gloves and eyeface protection.
: In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator.
: Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

The properties listed below are for the solvent, the main component of this mixture.

Physical state
Appearance
Molecular mass
Color
Odor
Odor threshold
pH
Relative evaporation rate (vnd/ acetone=1)
Melting point
Freezing point
Boiling point
Flash point
Auto-ignition temperature
Decomposition temperature
Flammability (solid, gas)
Vapor pressure
Vapor pressure at 50 °C
Relative vapor density at 20 °C
Relative density
Specific gravity/ density
Solubility
Log Pow
Log Kow
Viscosity, kinematic
Viscosity, dynamic
Explosive properties
Oxidizing properties
Explosion limits

: Liquid
: Liquid
: 32.04 g/mol
: Colorless.
: Pungent.
: No data available
: No data available
: -88 °C (-144 °F)
: No data available
: 64.7 °C (148.5 °F)
: 9.7 °C (49.5 °F) - closed cup
: 455 °C (851 °F) at 1.013 hPa (760 mmHg)
: No data available
: No data available
: 130.3 hPa (97.7 mmHg) at 20 °C (68 °F), 169.27 hPa (126.96 mmHg) at 25 °C (77 °F)
: 546.6 hPa (410 mmHg) at 50 °C (122 °F)
: 1.11
: No data available
: 0.781 g/ml at 25 °C (77 °F)
: Water: Completely miscible
: -0.77
: No data available
: No data available
: No data available
: Product is not explosive.
: Non oxidizing material according to EC criteria.
: 6 - 35 % (V)

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
Vapors may form flammable mixture with air. Highly flammable liquid and vapor.

10.2. Chemical stability
Stable under normal conditions of use.

10.3. Storage and expiration date on CoA.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

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1H,1H,2H,2H-PERFLUORODECANESULFONATE(10:2 FTS),
SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH

CDLM-10750-S

Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

10.4. Conditions to avoid

Avoid contact with hot surfaces, heat, No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Acid anhydrides, Acid chlorides, Oxidizing agent, Alkali Metal Amides, Reducing agents, Acids.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO2).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

: Oral: Toxic if swallowed, Dermal: Toxic in contact with skin, Inhalation vapour: Toxic if inhaled.

1H,1H,2H,2H-PERFLUORODECANESULFONATE(10:2 FTS), SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH	LD50 oral rat	1187 - 2769 mg/kg
LD50 dermal rabbit	17100 mg/kg	
LC50 inhalation rat (mg/l)	128.2 mg/4h ; 87.9 mg/l - 6 h	
ATE CLP (oral)	100.000 mg/kg body weight	
ATE CLP (dermal)	300.000 mg/kg body weight	
ATE CLP (vapour)	3.000 mg/4h	
ATE CLP (dust, mist)	128.200 mg/4h	
LDLO, oral, human	143 mg/kg Remarks: Lungs, Throat, or Respiration: Dyspnea, Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.	

100% METHANOL (UNL ABLEDE (97-58-1)

LD50 dermal rabbit	1187 - 2769 mg/kg	
LD50 inhalation rat (mg/l)	17100 mg/kg	
ATE CLP (oral)	128.2 mg/4h ; 87.9 mg/l - 6 h	
ATE CLP (dermal)	100.000 mg/kg body weight	
ATE CLP (vapour)	300.000 mg/kg body weight	
ATE CLP (dust, mist)	3.000 mg/4h	
ATE CLP (dust, mist)	128.200 mg/4h	
LDLO, oral, human	143 mg/kg Remarks: Lungs, Throat, or Respiration: Dyspnea, Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.	

1H,1H,2H,2H-PERFLUORODECANESULFONATE(10:2 FTS), SODIUM SALT (1,1,2,2-D4, 98%) (108026-55-3)

ATE CLP (oral)	100.000 mg/kg body weight	
ATE CLP (gases)	4500.000 ppmv/4h	
ATE CLP (vapour)	11.000 mg/4h	
ATE CLP (dust, mist)	1.500 mg/4h	

Skin corrosion/irritation

Serious eye damage/irritation

Respiratory or skin sensitization

Genm cell mutagenicity

: Skin, rabbit. Result: No skin irritation
: Eyes, rabbit. Result: No eye irritation
: Maximisation Test, Guinea pig. Did not cause sensitization. (OECD 406 method)
: Ames test : S. typhimurium. Result: negative. Biotest. Result: Negative. Mutation in mammalian somatic cells. Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosome analysis) - Mouse - male and female. Result: negative. Mouse - male and female. Result: Negative
: Not classified

Reproductive toxicity

Specific target organ toxicity - single exposure

: Damage to fetus not classifiable. Fertility classification not possible from current data.
: Causes damage to organs through prolonged or repeated exposure
Causes damage to organs

Specific target organ toxicity - repeated exposure

: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
No data available

Aspiration hazard

Potential adverse human health effects and symptoms

: No aspiration toxicity classification.
: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements. It is not intended to be a substitute for the product label. The product label contains detailed information on the product, its use, and its hazards. Effects due to ingestion may include: Headache, Dizziness, Drowsiness, metabolic acidosis, Coma. May be fatal if swallowed and enters airways. If swallowed there is a risk of blindness. Effects on humans, stomach.

Symptoms/Effects after inhalation

: Toxic if inhaled

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1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS),
SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH

CDLM-10750-S

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 28, 2012 / Rules and Regulations

Symptoms/effects after skin contact : Toxic in contact with skin. Causes skin irritation.
Symptoms/effects after eye contact : Causes serious eye irritation.
Symptoms/effects after ingestion : Toxic if swallowed.

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS), SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH	
LC50 fish 1	15400 mg/l mortality LC50 - Lepomis macrochirus (Bluegill) - 96 h
EC50 Daphnia 1	> 10000 mg/l Daphnia magna (Water flea) - 48 h
EC50 Daphnia 2	22000 mg/l Growth inhibition EC50 - Scenedesmus capricornutum (fresh water algae) - 96 h
NOEC (acute)	7900 mg/l Oryzias latipes - 200 h
100% METHANOL UNLABELED (87-56-1)	
LC50 fish 1	15400 mg/l mortality LC50 - Lepomis macrochirus (Bluegill) - 96 h
EC50 Daphnia 1	> 10000 mg/l Daphnia magna (Water flea) - 48 h
EC50 Daphnia 2	22000 mg/l Growth inhibition EC50 - Scenedesmus capricornutum (fresh water algae) - 96 h
NOEC (acute)	7900 mg/l Oryzias latipes - 200 h

12.2. Persistence and degradability

1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS), SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH	
Biochemical oxygen demand (BOD)	600 - 1200 mg/g
Chemical oxygen demand (COD)	1420 mg/g
ThOD	1500 mg/g
Biodegradation	72 % - rapidly biodegradable aerobic - Exposure time 5 d
100% METHANOL UNLABELED (87-56-1)	
Biochemical oxygen demand (BOD)	600 - 1200 mg/g
Chemical oxygen demand (COD)	1420 mg/g
ThOD	1500 mg/g
Biodegradation	72 % - readily biodegradable aerobic - Exposure time 5 d

12.3. Bioaccumulative potential

1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS), SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH	
BCF fish 1	5 mg/l Cyprinus carpio (Carp) - 72 d at 20 °C
Bioconcentration factor (BCF REACH)	1
Log Pow	-0.77
100% METHANOL UNLABELED (87-56-1)	
BCF fish 1	5 mg/l Cyprinus carpio (Carp) - 72 d at 20 °C
Bioconcentration factor (BCF REACH)	1
Log Pow	-0.77

12.4. Mobility in soil

1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS), SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH	
Ecology - soil	Not degradable in the soil.
100% METHANOL UNLABELED (87-56-1)	
Ecology - soil	Not degradable in the soil.

12.5. Results of PBT and vPvB assessment

1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS), SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH	
PBT: not relevant - no registration required	
100% METHANOL UNLABELED (87-56-1)	
PBT: not relevant - no registration required	

12.6. Other adverse effects

Other adverse effects : Avoid release to the environment.
Other information : Stability in water, at 19 °C - (83 - 61%), 72 h. Remarks: Hydrolyses on contact with water. Hydrolyses readily.

51/04/2019

EN (English US)

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1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS),
SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH

CDLM-10750-S

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 28, 2012 / Rules and Regulations

SECTION 13: Disposal considerations

13.1. Waste treatment methods : Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.
Regional legislation (waste) : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Product/Packaging disposal recommendations : Dispose of as unused product.
Ecology - waste materials : Dispose of as unused product.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN
14.1. UN number : 1230
UN-No (DOT) : 1230
DOT NA no. : UN1230
14.2. UN proper shipping name : Methanol
Proper Shipping Name (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Class (DOT) : 3 - Flammable liquid
Hazard labels (DOT) : 6.1 - Poison



DOT Symbols : * - Flies (cannot be altered) proper shipping name, hazard class, and packing group). Proper shipping name appropriate for international and domestic transportation
Packing group (DOT) : II - Medium Danger
DOT Special Provisions (49 CFR 172.102) : 1B2 - Authorized (B.C. Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31H2); Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa (800 mm Hg) at 122 °F) or 130 kPa at 55 °C (133 °F) are authorized.

TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (Image) Where it is the maximum mean bulk temperature during transport, the temperature in degrees Celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (f) and the maximum mean bulk temperature during transport (tr) both in degrees Celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (Image) Where, d13 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 °C (59 °F) and 50 °C (122 °F), respectively.

DOT Packaging Exceptions (49 CFR 173.3xx) : 150
DOT Packaging Non Bulk (49 CFR 173.3xx) : 202
DOT Packaging Bulk (49 CFR 173.3xx) : 242
DOT RQ : 5000 lbs
Marine pollutant : No

14.3. Additional information

Emergency Response Guide (ERG) Number : 131
Other information : No supplementary information available.

Overland transport

Packing group (ADR) : II
Class (ADR) : 3 - Flammable liquid
Hazard identification number (Kamler No.) : 336
Classification code (ADR) : FT1

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1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS),
SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH CDLM-10750-5

Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 59 / Monday, March 26, 2012 / Rules and Regulations

Hazard labels (ADR)

3 - Flammable liquids
6.1 - Toxic substances



Orange plates

336
1230

Tunnel restriction code (ADR)

: D/E

Limited quantities (ADR)

: 11

Excepted quantities (ADR)

: E2

Transport by sea

DOT Vessel Stowage Location

: B - (i) The material may be stowed "on deck", or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 persons, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(v) of this section is exceeded.

DOT Vessel Stowage Other

: 40 - "Stow 'Clear of living quarters'"

MFAG-No

: 131

Air transport

DOT Quantity Limitations Passenger aircraft/cell : 1 L
(49 CFR 175.27)

DOT Quantity Limitations Cargo aircraft only (49 : 60 L
CFR 175.75)

CM/ Aeronautics Law

: Flammable liquids

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. Regulatory information

15.1. US Federal regulations

1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS), SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH

CERCLA RC

: 5000 lb

SARA Section 302 Threshold Planning

: Not subject to reporting requirements of the United States SARA Section 302.

Quantity (TPQ)

SARA Section 311/312 Hazard Classes

: Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA Section 313 - Emission Reporting

100% METHANOL UNLABELED (67-56-1)

: Listed on the United States TSCA (Toxic Substances Control Act) Inventory

CERCLA RC

: 5000 lb

SARA Section 302 Threshold Planning

: Not subject to reporting requirements of the United States SARA Section 302.

Quantity (TPQ)

SARA Section 311/312 Hazard Classes

: Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA Section 313 - Emission Reporting

1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS), SODIUM SALT (1,2-13C2, 99%; 1,1,2,2-D4, 98%) (108028-35-3)

(Unlabeled)

SARA Section 302 Threshold Planning

: Not subject to reporting requirements of the United States SARA Section 302.

Quantity (TPQ)

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1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS),
SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH CDLM-10750-5

Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 59 / Monday, March 26, 2012 / Rules and Regulations

Hazard labels (ADR)

3 - Flammable liquids
6.1 - Toxic substances



Orange plates

336
1230

Tunnel restriction code (ADR)

: D/E

Limited quantities (ADR)

: 11

Excepted quantities (ADR)

: E2

Transport by sea

DOT Vessel Stowage Location

: B - (i) The material may be stowed "on deck", or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 persons, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(v) of this section is exceeded.

DOT Vessel Stowage Other

: 40 - "Stow 'Clear of living quarters'"

MFAG-No

: 131

Air transport

DOT Quantity Limitations Passenger aircraft/cell : 1 L
(49 CFR 175.27)

DOT Quantity Limitations Cargo aircraft only (49 : 60 L
CFR 175.75)

CM/ Aeronautics Law

: Flammable liquids

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. Regulatory information

15.1. US State regulations

1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS), SODIUM SALT (1,2-13C2, 99%; 1,1,2,2-D4, 98%) (108028-35-3) (Unlabeled)

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

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U.S. - California - Proposition 65 - Carcinogens List

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U.S. - California - Proposition 65 - Carcinogens List

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U.S. - California - Proposition 65 - Carcinogens List

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U.S. - California - Proposition 65 - Carcinogens List

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U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

U.S. - California - Proposition 65 - Carcinogens List

: Yes

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12/13

1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS),
SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH

CDLM-10750-S

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 16: Other information

Other information

: This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of R-, H- and EUH-phrases:

Acute Tox. 3 (Dermal)	Acute toxicity (dermal) Category 3
Acute Tox. 3 (Inhalation/vapour)	Acute toxicity (inhalation/vapour) Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Eye Irrit. 2	Serious eye damage/eye irritation Category 2
Flam. Liq. 2	Flammable liquids Category 2
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 1	Specific target organ toxicity (single exposure) Category 1
H225	Highly flammable liquid and vapor
H301	Toxic if swallowed
H311	Toxic in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H331	Toxic if inhaled
H332	Harmful if inhaled
H370	Causes damage to organs
H411	Toxic to aquatic life with long lasting effects
R11	Highly flammable
R20	Harmful by inhalation
R25	Toxic if swallowed
R36/38	Irritating to eyes and skin
R39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
F	Highly flammable
N	Dangerous for the environment
T	Toxic
Xi	Irritant
Xn	Harmful

NFPA health hazard

NFPA fire hazard

NFPA reactivity

Hazard Rating

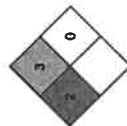
Health

Flammability

Physical

CL Mixtures SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental compliance only. It should not be taken as confirmed as guaranteeing any specific property of the product.



: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
: 3 - Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.
0 - Material that in themselves are normally stable, even under fire conditions.

: 2 Moderate Hazard - Temporary or minor injury may occur
: 3 Serious Hazard
: 0 Minimal Hazard

01/04/2019

EN (English US)

13/13

Reagent

LCM10:2 FTS_00006



2955951

ID: LCM10:2 FTS_00006

Exp:04/26/26 Prpd:CV Opi:03/30/22

13C2 10:2 FTS Stock

Product Name:
(Isotopic Label & Enrichment Specification)1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS),
SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH**Lot Number:**

SEBC-003

Catalog Number:

CDLM-10750-S

Product Information**Chemical Purity Specification:**

≥ 98%

MW*:

656.19

* For isotopically labeled compounds, MW listed is for the fully enriched product.**Labeled CAS Number:**

NA

Unlabeled CAS Number:

108026-35-3

Chemical Formula:

C10*C2D4F21NaO3S

Storage:

Store at room temperature away from light and moisture.

Stability:

See storage and expiration date.

Intended Use:

For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Sashi Sivendran-Basak

Sashi Sivendran-Basak, Ph.D., Quality Review

Quality Control Tests and Results

QC Release Date

4/26/2021

Expiration Date

4/26/2026

Concentration Based on Gravimetry (of the salt)

50.0 ± 0.5 µg/mL (k=2)

Chemical Purity of Neat Material(s)

100.0% (Area %)

(continued on next page)

CIL subscribes to the following standards for different products: ISO 17034, ISO/IEC 17025, ISO 13485, and cGMP as appropriate.



Product Name: 1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS),
(Isotopic Label & Enrichment Specification) SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH

Lot Number: SEBC-003

Catalog Number: CDLM-10750-S

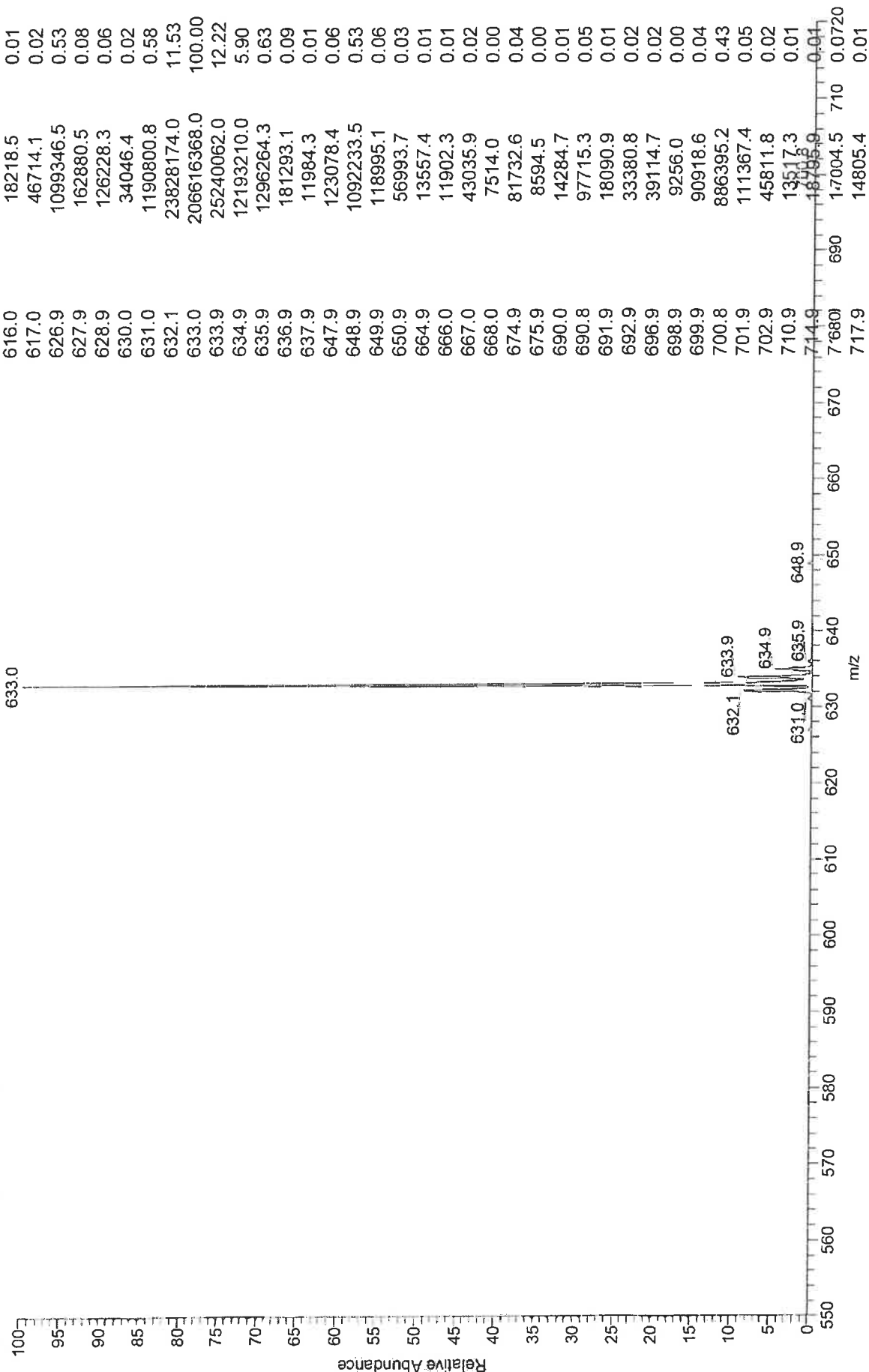
Quality Control Tests and Results (continued)

LC/MS for Concentration

 $46.6 \pm 1.9 \mu\text{g/mL (k=2)}$

1H,1H,2H,2H-Perfluorodecanesulfonate (10:2 FTS), sodium salt, 13C2, D4, CDLM-10750-S, SEBC-003, 50 ug/mL in methanol

2021_04_01_FTS10-2_008#57-115 RT: 0.12-0.23 AV: 59 NL: 3.33E7
T: ITMS - p ESIE Full ms [400.00-750.00]



Reagent

LCM10:2 FTS_00007



3235408

ID: LCM10:2 FTS_00007

Exp:04/26/26 Prod:01M Opn:10/17/22

13C2, D4 10:2 FTS Stock

Product Name: 1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS),
(Isotopic Label & Enrichment Specification) SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH

Lot Number: SEBC-003

Catalog Number: CDLM-10750-S

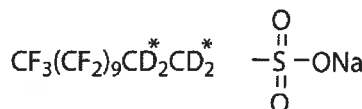
Product Information

Chemical Purity Specification: $\geq 98\%$

MW*: 656.19

* For isotopically labeled compounds, MW listed is for the fully enriched product.

Labeled CAS Number: NA



Unlabeled CAS Number: 108026-35-3

Chemical Formula: C10*C2D4F21NaO3S

Storage: Store at room temperature away from light and moisture.

Stability: See storage and expiration date.

Intended Use: For Research Use Only. Not for use in diagnostic procedures.

$$\begin{array}{r} 656.19 \\ - 22.99 (\text{Na}^+) \\ + 1.01 (\text{H}^+) \\ \hline 634.21 \end{array} \quad \begin{array}{r} 634.21 \\ \cdot 50 \mu\text{g}/\text{ml} = \\ 31710.5 \\ \hline 31710.5 \mu\text{g}/\text{ml} \end{array}$$

= 48.33 mg/ml
DM 10/21/22

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Sashi Sivendran-Basak

Sashi Sivendran-Basak, Ph.D., Quality Review

Quality Control Tests and Results

QC Release Date	4/26/2021
Expiration Date	4/26/2026
Concentration Based on Gravimetry (of the salt)	50.0 \pm 0.5 $\mu\text{g}/\text{mL}$ (k=2)
Chemical Purity of Neat Material(s)	100.0% (Area %)

(continued on next page)



Product Name: 1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS),
(Isotopic Label & Enrichment Specification) SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH

Lot Number: SEBC-003

Catalog Number: CDLM-10750-S

Quality Control Tests and Results (continued)

LC/MS for Concentration

46.6 ± 1.9 µg/mL (k=2)

Reagent

LCM2-4 : FTS_00034



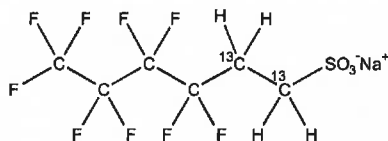
2856176

ID: LCM2-4:FTS_00034

Exp: 10/13/26 Prod: 10/1/22
M2-4:2FTS 46.7 ug/mL**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION

PRODUCT CODE: M2-4:2FTS **LOT NUMBER:** M242FTS1021
COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-(1,2-¹³C₂)hexanesulfonate

STRUCTURE: **CAS #:** 2708218-88-4



MOLECULAR FORMULA: ¹³C₂¹²C₄H₄F₉SO₃Na **MOLECULAR WEIGHT:** 352.12
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
46.9 ± 2.3 µg/mL (M2-4:2FTS acid)
46.7 ± 2.3 µg/mL (M2-4:2FTS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 10/13/2021 (1,2-¹³C₂)
EXPIRY DATE: (mm/dd/yyyy) 10/13/2026
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 4:2FTS contains 4.22% of ³⁴S (due to natural isotopic abundance) therefore both native 4:2FTS and M2-4:2FTS will produce signals in the m/z 329 to m/z 309 channel during SRM analysis. We recommend using the m/z 329 to m/z 81 transition to monitor for M2-4:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:** 10/29/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

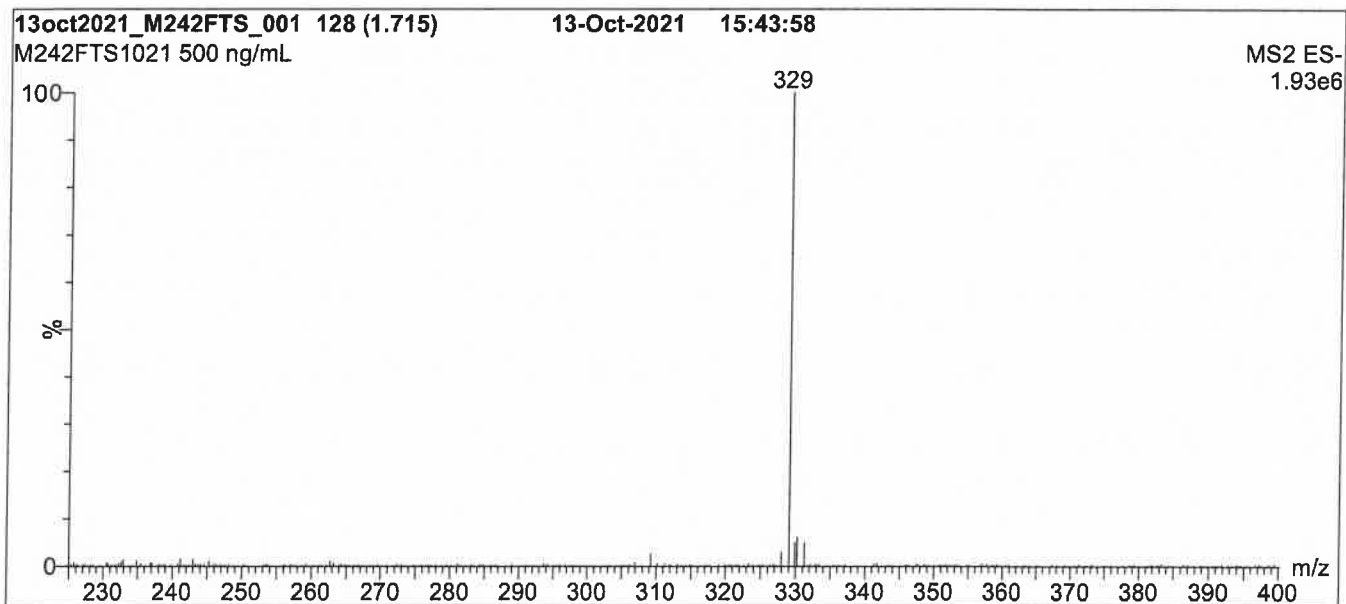
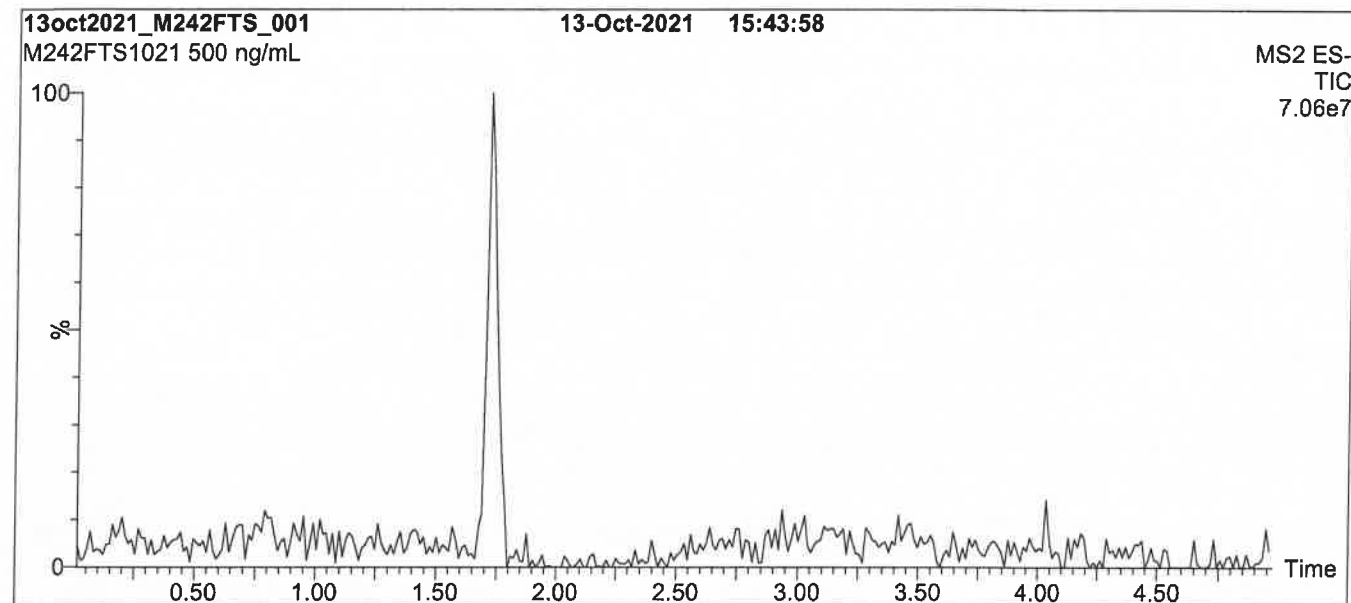
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: M2-4:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

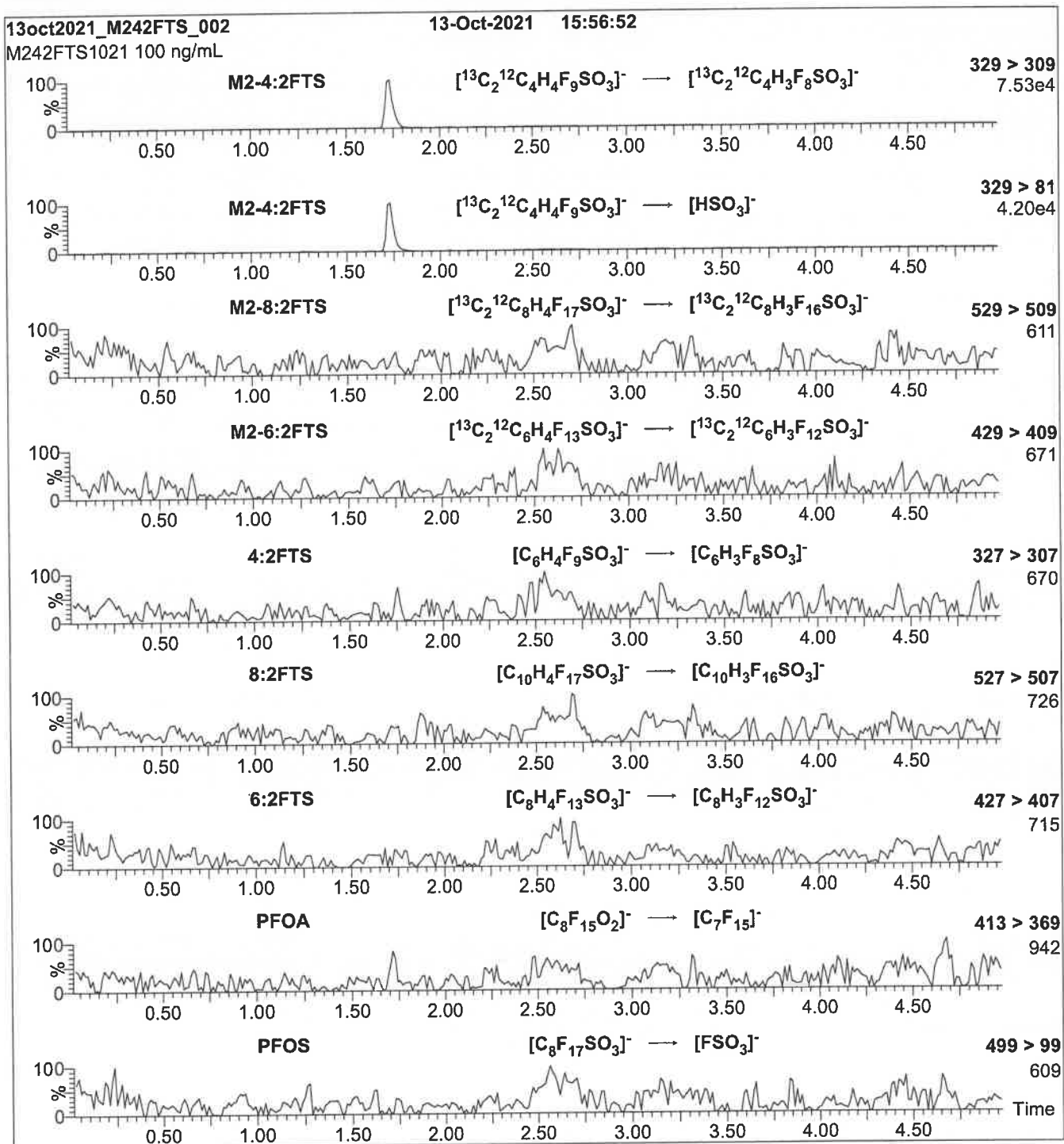
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: M2-4:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M2-4:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = $3.25\text{e-}3$

Collision Energy (eV) = 18

Reagent

LCM2-4 : FTS_00036



2979467

ID: LCM2-4:FTS_00036

Exp: 10/13/26 Pripd: M Opn: 04/19/22

M2-4:2FTS 46.7 ug/mL



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

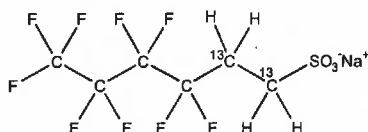
M2-4:2FTS

LOT NUMBER:

M242FTS1021

COMPOUND:Sodium 1H,1H,2H,2H-perfluoro-(1,2-¹³C₂)hexanesulfonate**STRUCTURE:****CAS #:**

2708218-88-4

**MOLECULAR FORMULA:**¹³C₂¹²C₄H₄F₉SO₃Na**MOLECULAR WEIGHT:**

352.12

CONCENTRATION:

50.0 ± 2.5 µg/mL (Na salt)

SOLVENT(S):

Methanol

46.9 ± 2.3 µg/mL (M2-4:2FTS acid)

46.7 ± 2.3 µg/mL (M2-4:2FTS anion)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

10/13/2021

(1,2-¹³C₂)**EXPIRY DATE:** (mm/dd/yyyy)

10/13/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 4:2FTS contains 4.22% of ³⁴S (due to natural isotopic abundance) therefore both native 4:2FTS and M2-4:2FTS will produce signals in the m/z 329 to m/z 309 channel during SRM analysis. We recommend using the m/z 329 to m/z 81 transition to monitor for M2-4:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

10/29/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

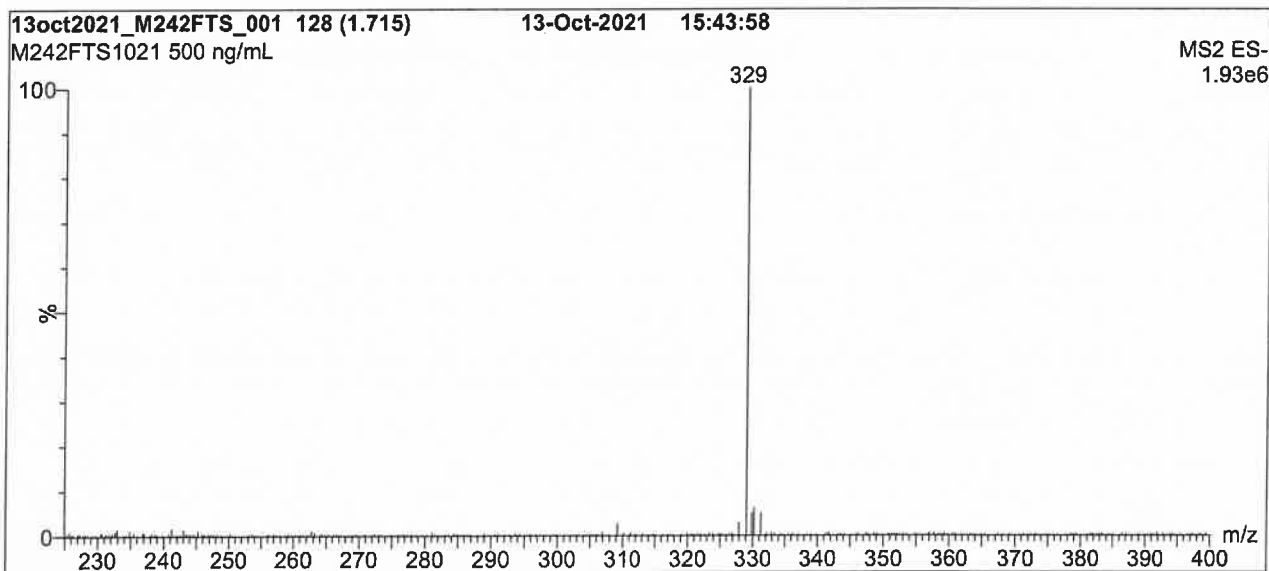
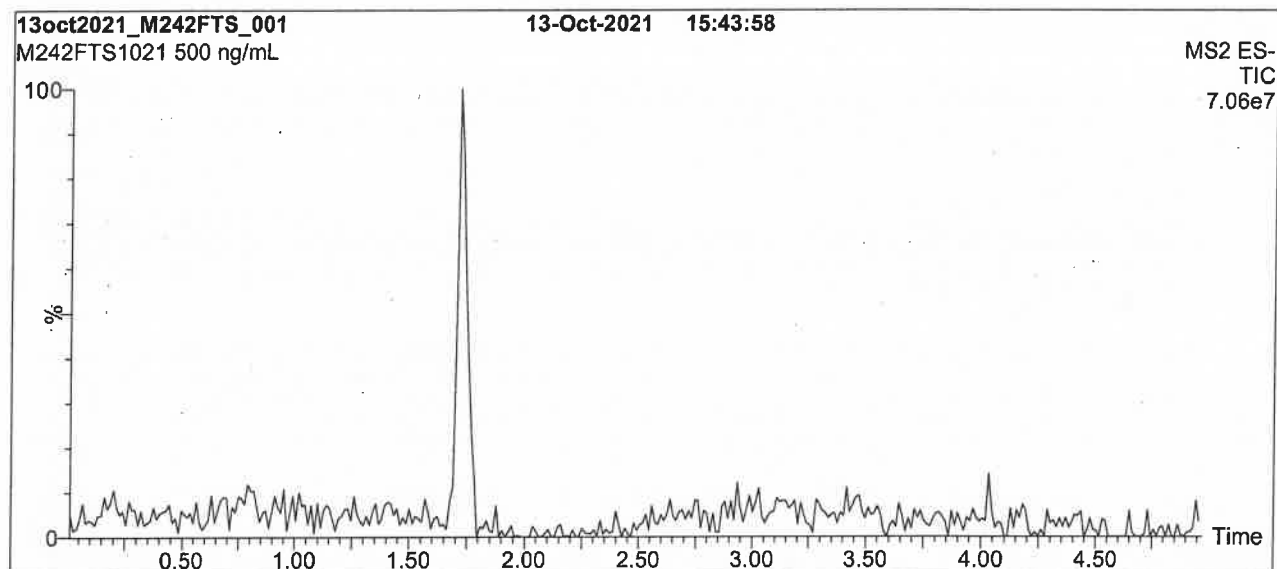
QUALITY MANAGEMENT:

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Figure 1: M2-4:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

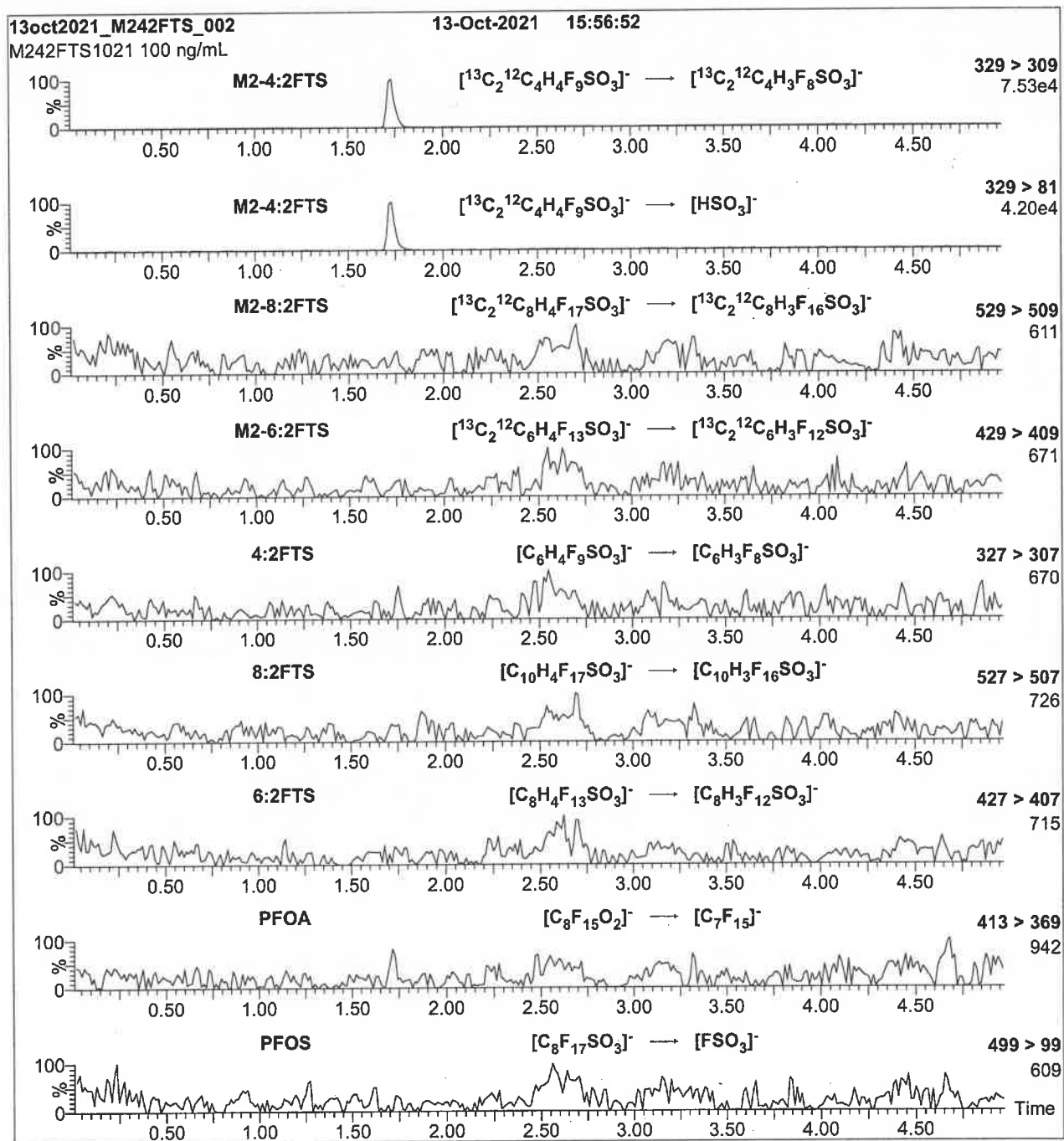
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 25.00

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: M2-4:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M2-4:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.25e-3

Collision Energy (eV) = 18

Reagent

LCM2-4 : FTS_00037



3185235

ID: LCM2-4:FTS_00037

Exp:04/22/27 Prod:PCY Opn:09/14/22

M2-4:2FTS 46.7 ug/mL



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

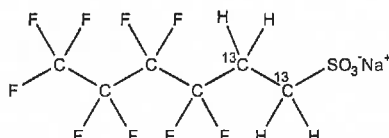
M2-4:2FTS

LOT NUMBER:

M242FTS0422

COMPOUND:Sodium 1H,1H,2H,2H-perfluoro-(1,2-¹³C₂)hexanesulfonate**STRUCTURE:****CAS #:**

2708218-88-4

**MOLECULAR FORMULA:**¹³C₂¹²C₄H₄F₈SO₃Na**CONCENTRATION:**

50.0 ± 2.5 µg/mL (Na salt)

46.9 ± 2.3 µg/mL (M2-4:2FTS acid)

46.7 ± 2.3 µg/mL (M2-4:2FTS anion)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

04/22/2022

EXPIRY DATE: (mm/dd/yyyy)

04/22/2027

RECOMMENDED STORAGE:

Refrigerate ampoule

MOLECULAR WEIGHT:

352.12

SOLVENT(S):

Methanol

ISOTOPIC PURITY:≥99% ¹³C(1,2-¹³C₂)**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 4:2FTS contains 4.22% of ³⁴S (due to natural isotopic abundance) therefore both native 4:2FTS and M2-4:2FTS will produce signals in the m/z 329 to m/z 309 channel during SRM analysis. We recommend using the m/z 329 to m/z 81 transition to monitor for M2-4:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**

B.G. Chittim, General Manager
Date:04/29/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

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TRACEABILITY:

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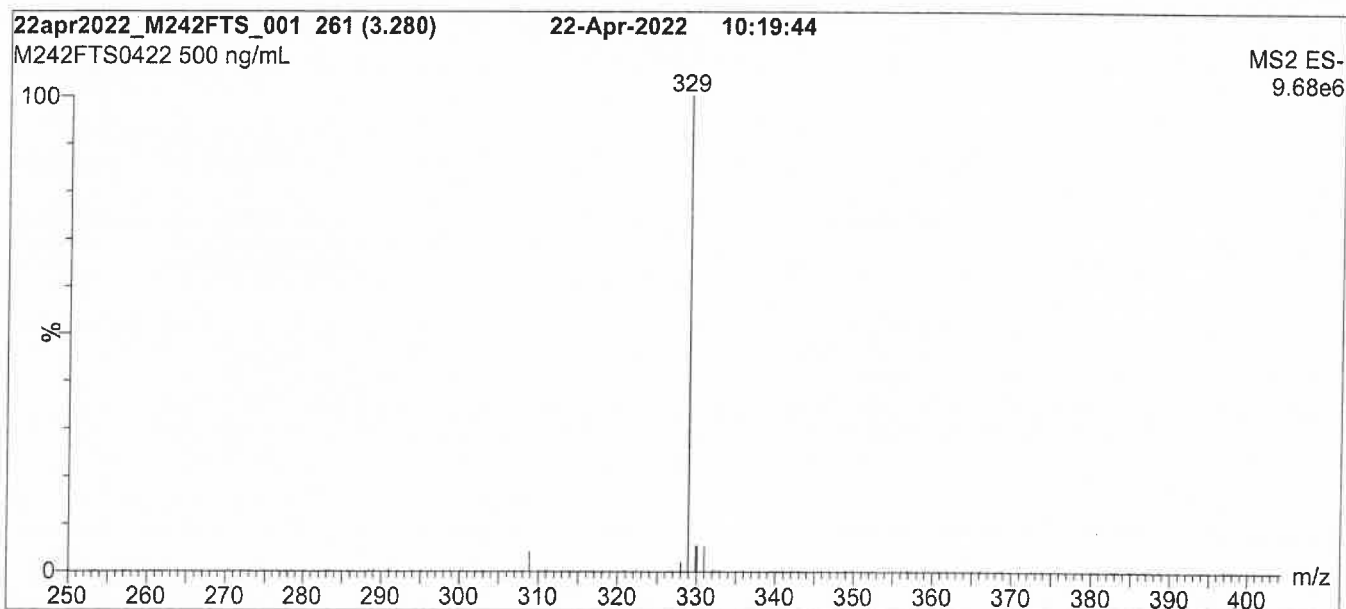
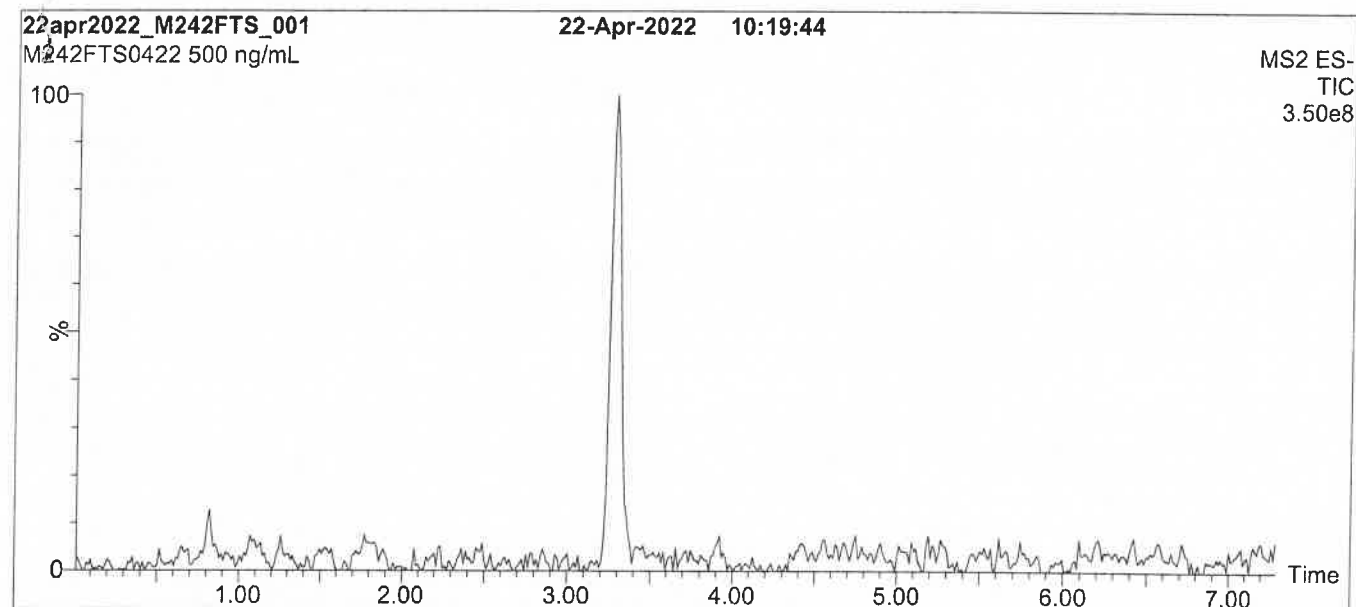
QUALITY MANAGEMENT:

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Figure 1: M2-4:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

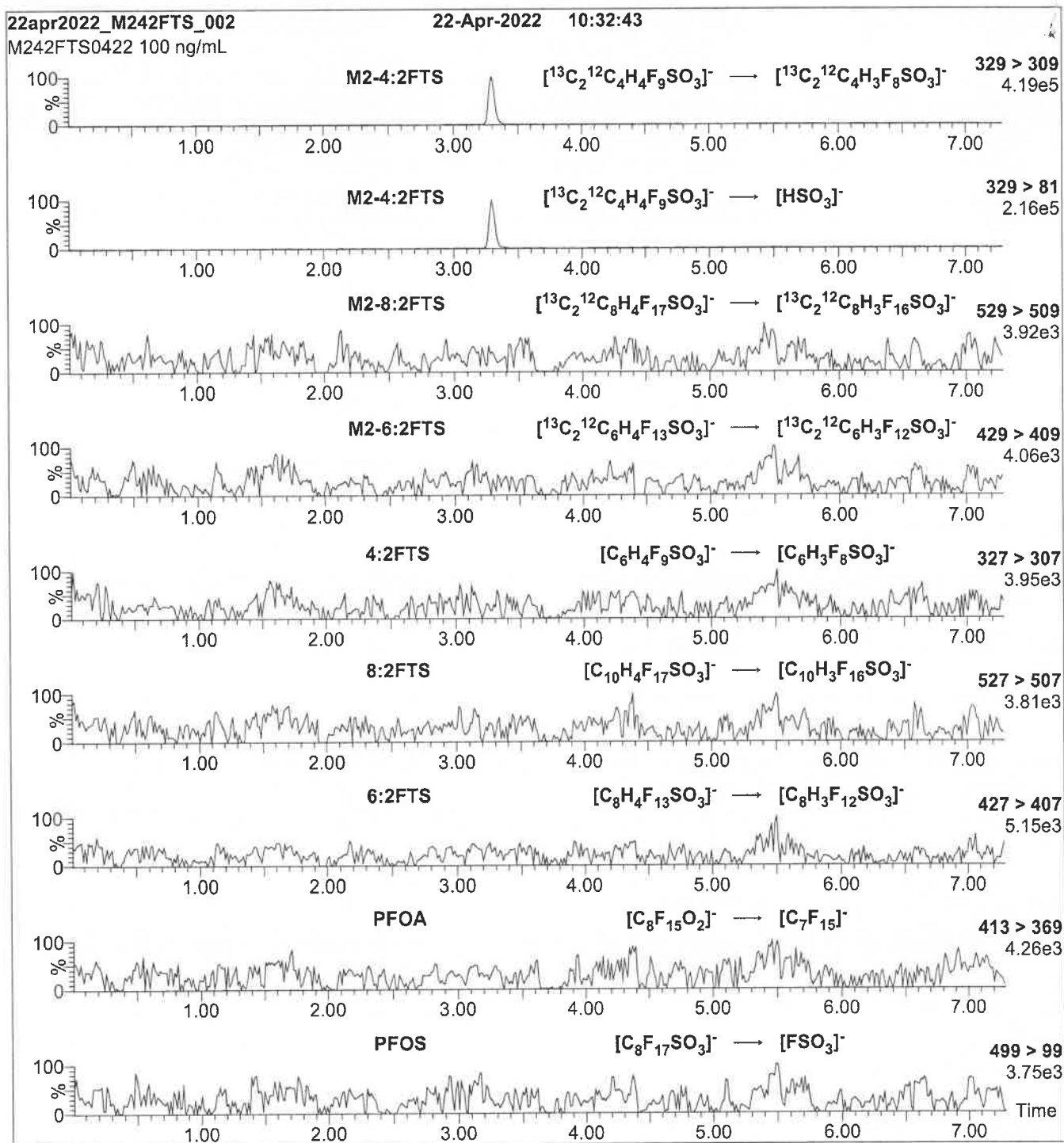
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 25.00

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: M2-4:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M2-4:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 18

Reagent

LCM2-6:FTS_00040



2856179

ID: LCM2-6:FTS_00040

Exp: 10/13/26 Ppds: M Opn: 01/12/22

M2-6:2FTS



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

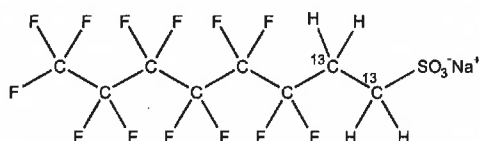
M2-6:2FTS

LOT NUMBER:

M262FTS1021

COMPOUND:Sodium 1H,1H,2H,2H-perfluoro-(1,2-¹³C₂)octanesulfonate**STRUCTURE:****CAS #:**

2708218-89-5

**MOLECULAR FORMULA:**¹³C₂¹²C₆H₄F₁₃SO₃Na**CONCENTRATION:**

50.0 ± 2.5 µg/mL (Na salt)

47.6 ± 2.4 µg/mL (M2-6:2FTS acid)

47.5 ± 2.4 µg/mL (M2-6:2FTS anion)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

10/13/2021

EXPIRY DATE: (mm/dd/yyyy)

10/13/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

MOLECULAR WEIGHT:

452.13

SOLVENT(S):

Methanol

ISOTOPIC PURITY:≥99% ¹³C(1,2-¹³C₂)**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 6:2FTS contains 4.22% of ³⁴S (due to natural isotopic abundance) therefore both native 6:2FTS and M2-6:2FTS will produce signals in the m/z 429 to m/z 409 channel during SRM analysis. We recommend using the m/z 429 to m/z 81 transition to monitor for M2-6:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 10/29/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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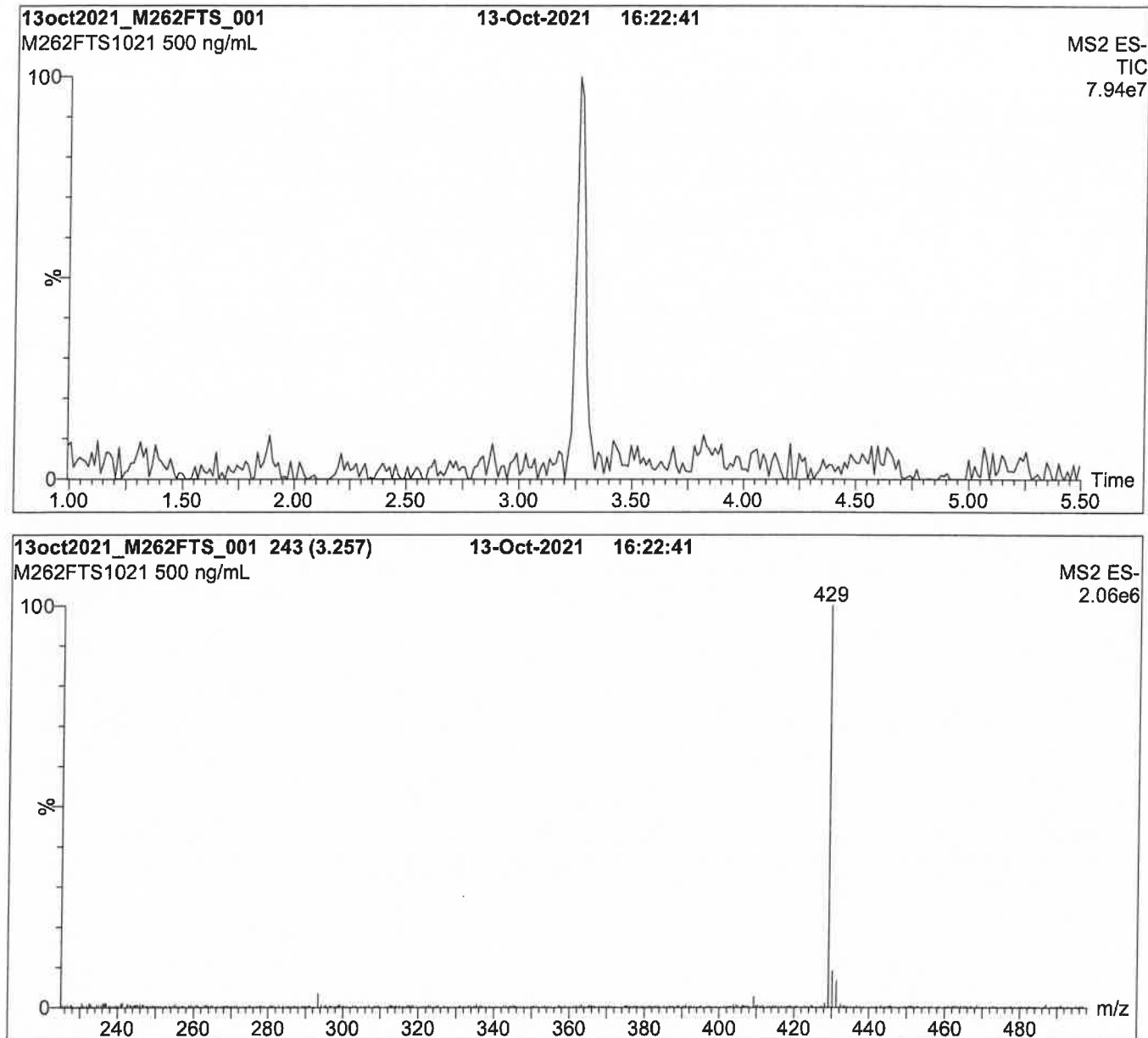
QUALITY MANAGEMENT:

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Figure 1: M2-6:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

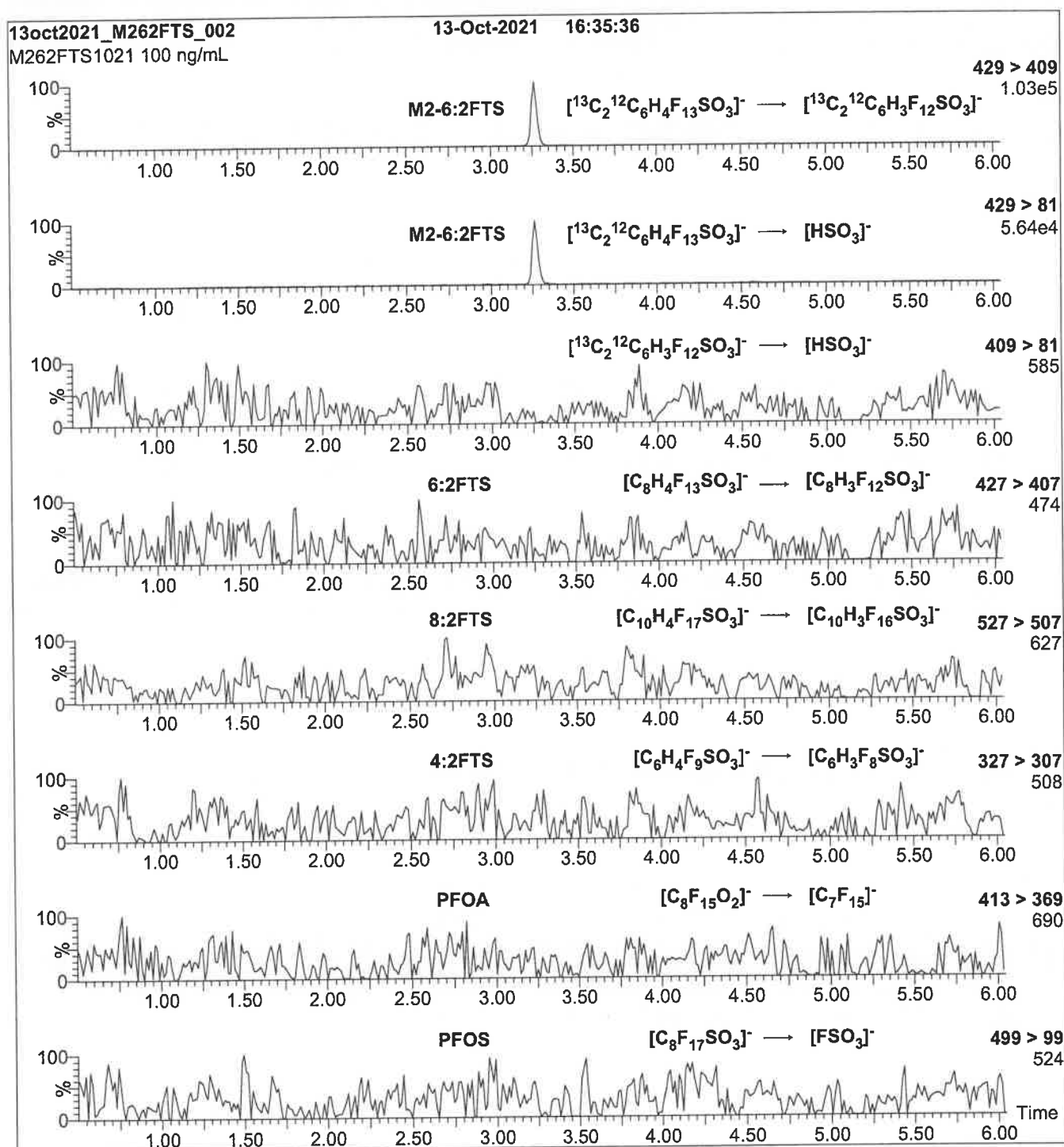
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: M2-6:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M2-6:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.25e-3

Collision Energy (eV) = 20

Reagent

LCM2-6:FTS_00042



2979485

ID: LCM2-6:FTS_00042

Exp:02/22/27 Prod:M Opi:04/19/22

M2-6:2FTS



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

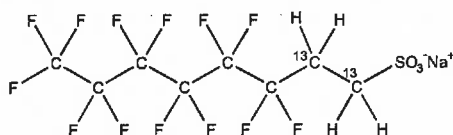
M2-6:2FTS

LOT NUMBER:

M262FTS0222

COMPOUND:Sodium 1H,1H,2H,2H-perfluoro-(1,2-¹³C₂)octanesulfonate**STRUCTURE:****CAS #:**

2708218-89-5

**MOLECULAR FORMULA:**¹³C₂¹²C₆H₄F₁₃SO₃Na**MOLECULAR WEIGHT:**

452.13

CONCENTRATION:

50.0 ± 2.5 µg/mL (Na salt)

SOLVENT(S):

Methanol

47.6 ± 2.4 µg/mL (M2-6:2FTS acid)

47.5 ± 2.4 µg/mL (M2-6:2FTS anion)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

02/22/2022

(1,2-¹³C₂)**EXPIRY DATE:** (mm/dd/yyyy)

02/22/2027

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 6:2FTS contains 4.22% of ³⁴S (due to natural isotopic abundance) therefore both native 6:2FTS and M2-6:2FTS will produce signals in the m/z 429 to m/z 409 channel during SRM analysis. We recommend using the m/z 429 to m/z 81 transition to monitor for M2-6:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

03/15/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

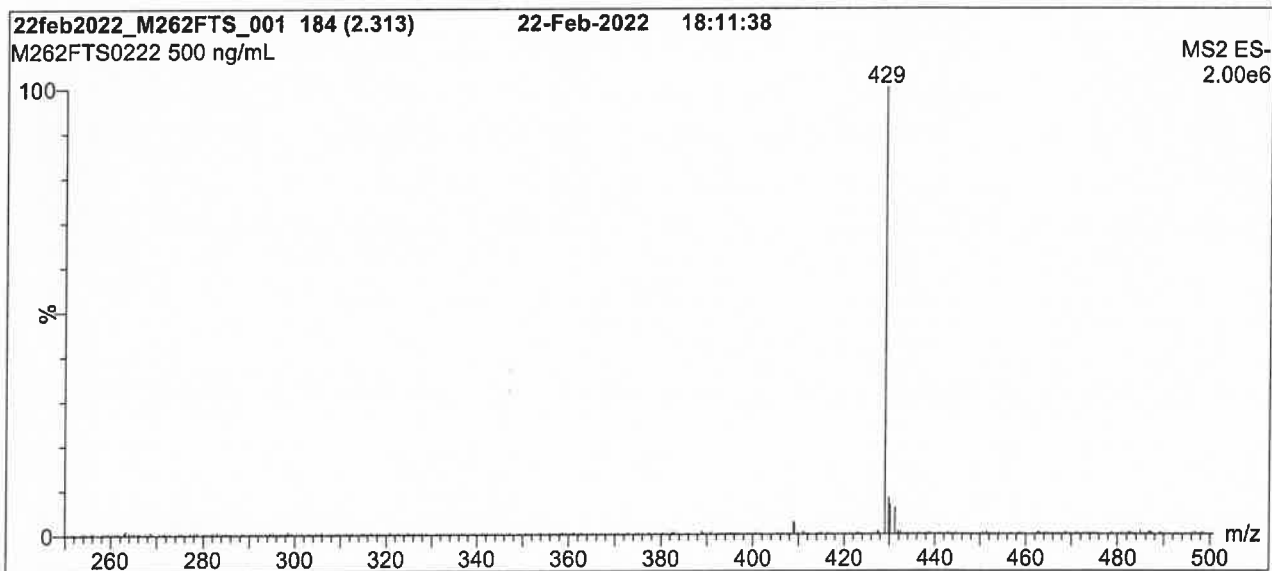
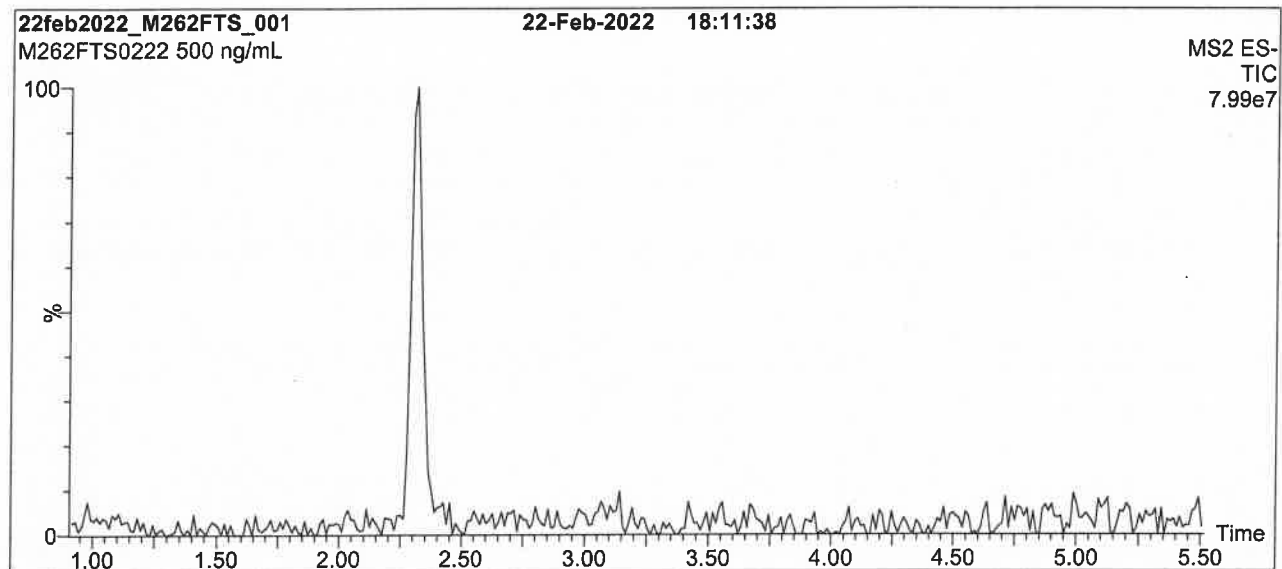
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: M2-6:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

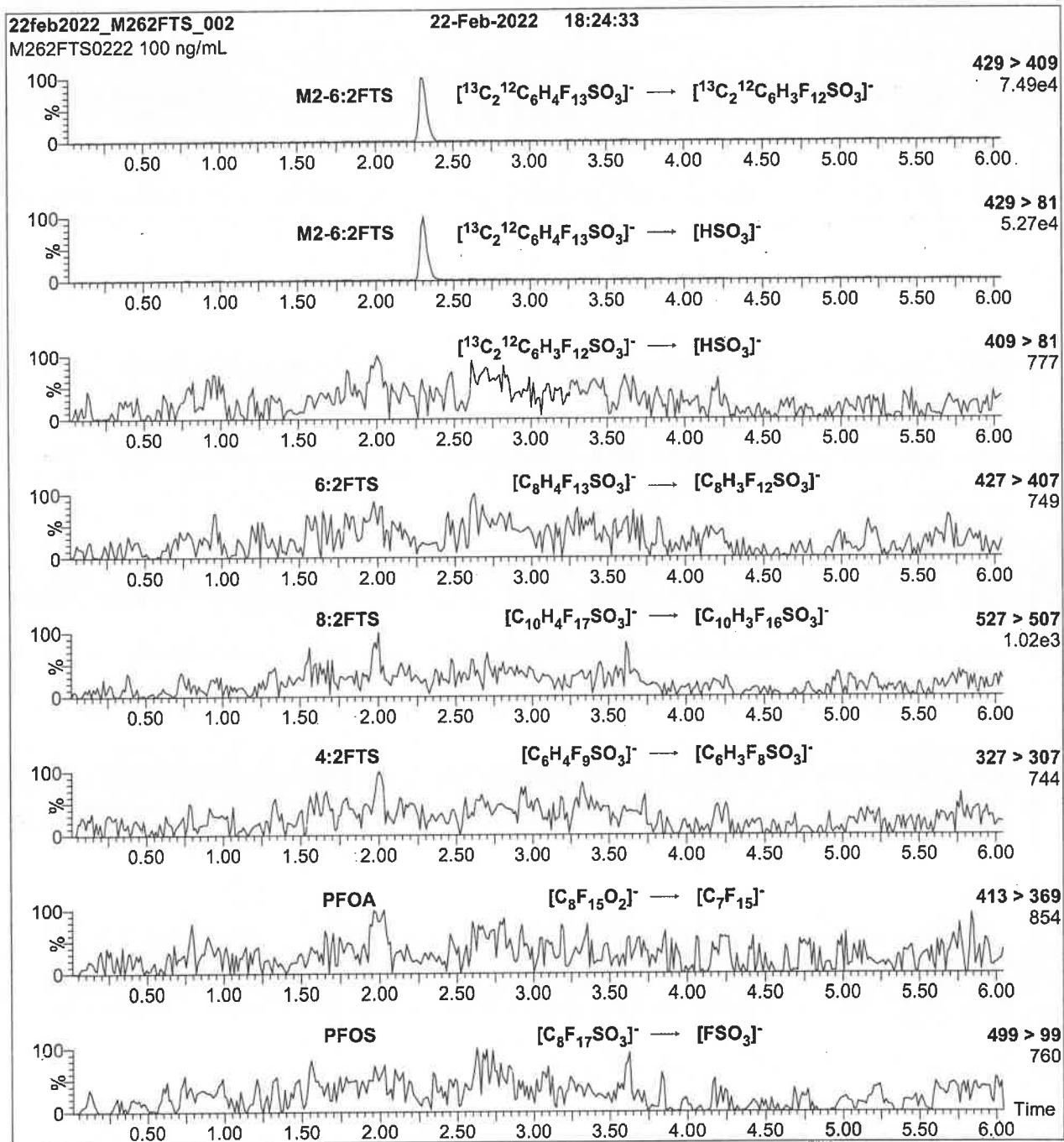
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: M2-6:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M2-6:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 20

Reagent

LCM2-6:FTS_00043

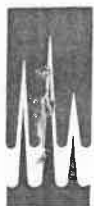


3185249

ID: LCM2-6:FTS_00043

Exp:08/04/22 Prod:PCY Opm:09/14/22

M2-6:2FTS

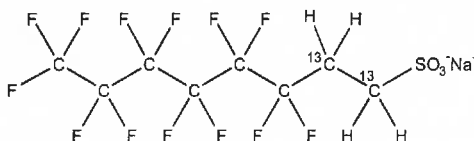


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-6:2FTS **LOT NUMBER:** M262FTS0722
COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-(1,2-¹³C₂)octanesulfonate

STRUCTURE: **CAS #:** 2708218-89-5



MOLECULAR FORMULA: ¹³C₂¹²C₆H₄F₁₃SO₃Na
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt)
47.6 ± 2.4 µg/mL (M2-6:2FTS acid)
47.5 ± 2.4 µg/mL (M2-6:2FTS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 08/04/2022
EXPIRY DATE: (mm/dd/yyyy) 08/04/2027
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 452.13
SOLVENT(S): Methanol
ISOTOPIC PURITY: ≥99% ¹³C
(1,2-¹³C₂)

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 6:2FTS contains 4.22% of ³⁴S (due to natural isotopic abundance) therefore both native 6:2FTS and M2-6:2FTS will produce signals in the m/z 429 to m/z 409 channel during SRM analysis. We recommend using the m/z 429 to m/z 81 transition to monitor for M2-6:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

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Certified By:

B.G. Chittim, General Manager

Date: 08/05/2022
(mm/dd/yyyy)

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LIMITED WARRANTY:

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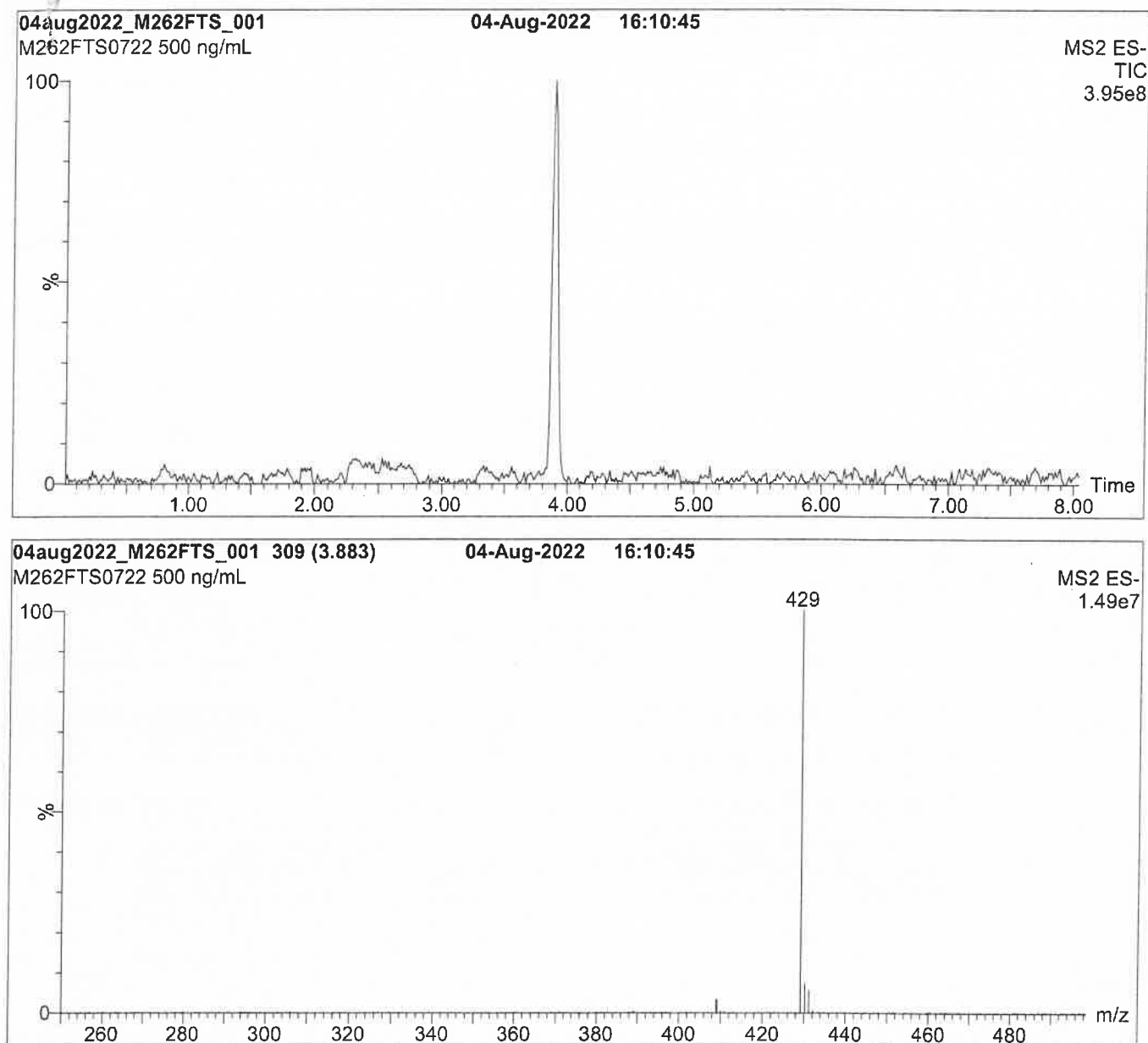
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: M2-6:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

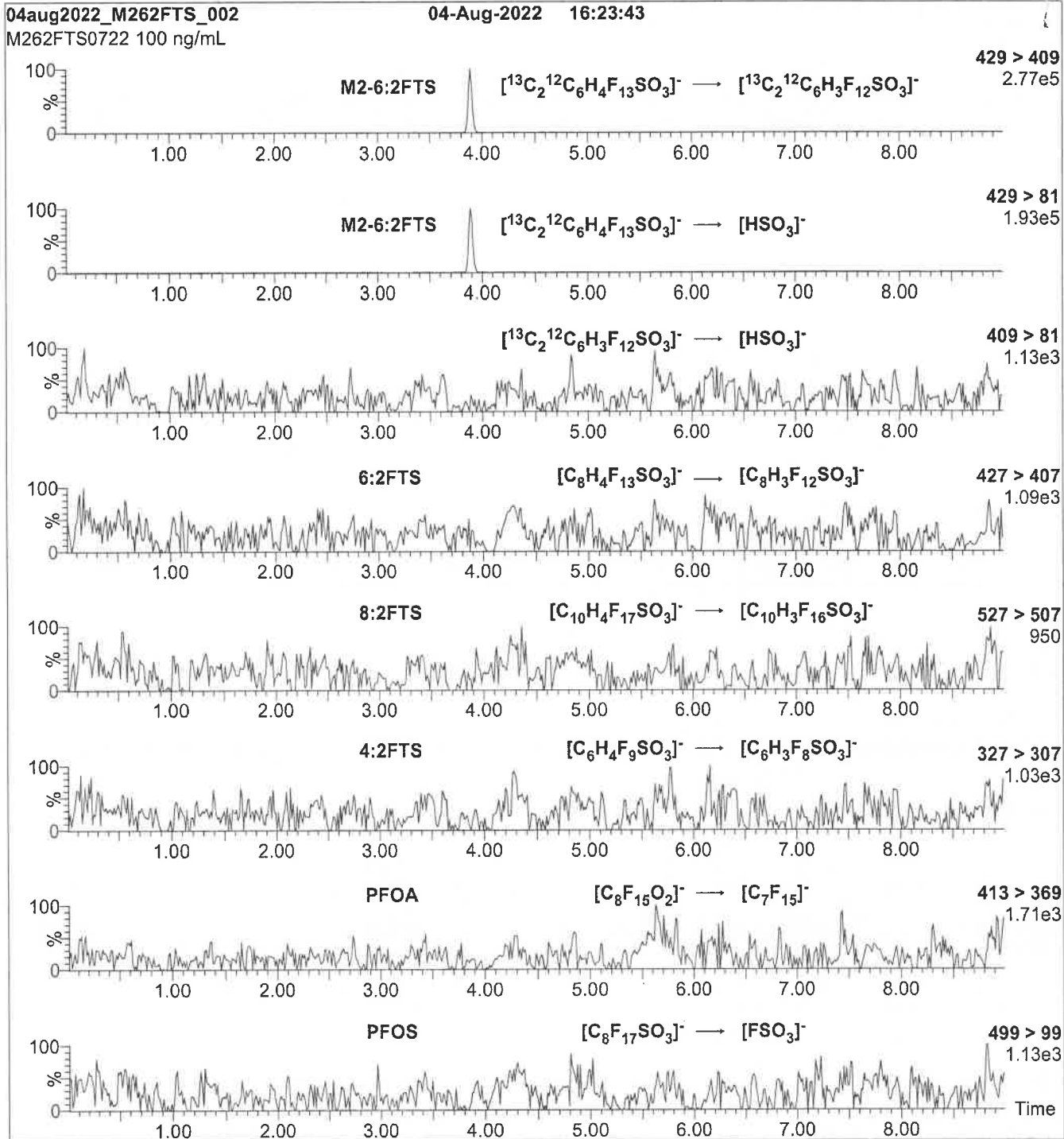
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 25.00

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: M2-6:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M2-6:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.27e-3

Collision Energy (eV) = 20

Reagent

LCM2-8 : 2FTS_00045



2979664

ID: LCM2-8:2FTS_00045

Exp: 11/23/26 Prp: 3M Opn: 04/19/22

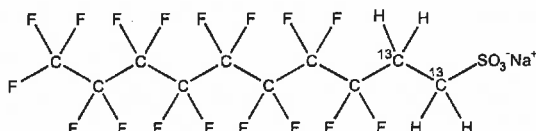
M2-8:2FTS



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-8:2FTS **LOT NUMBER:** M282FTS1121
COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-(1,2-¹³C₂)decanesulfonate
STRUCTURE: **CAS #:** 2708218-90-8



MOLECULAR FORMULA: ¹³C₂¹²C₈H₄F₁₇SO₃Na **MOLECULAR WEIGHT:** 552.15
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
 48.0 ± 2.4 µg/mL (M2-8:2FTS acid)
 47.9 ± 2.4 µg/mL (M2-8:2FTS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 11/23/2021 (1,2-¹³C₂)
EXPIRY DATE: (mm/dd/yyyy) 11/23/2026
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 8:2FTS contains 4.22% of ³⁴S (due to natural isotopic abundance) therefore both native 8:2FTS and M2-8:2FTS will produce signals in the m/z 529 to m/z 509 channel during SRM analysis. We recommend using the m/z 529 to m/z 81 transition to monitor for M2-8:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 12/03/2021
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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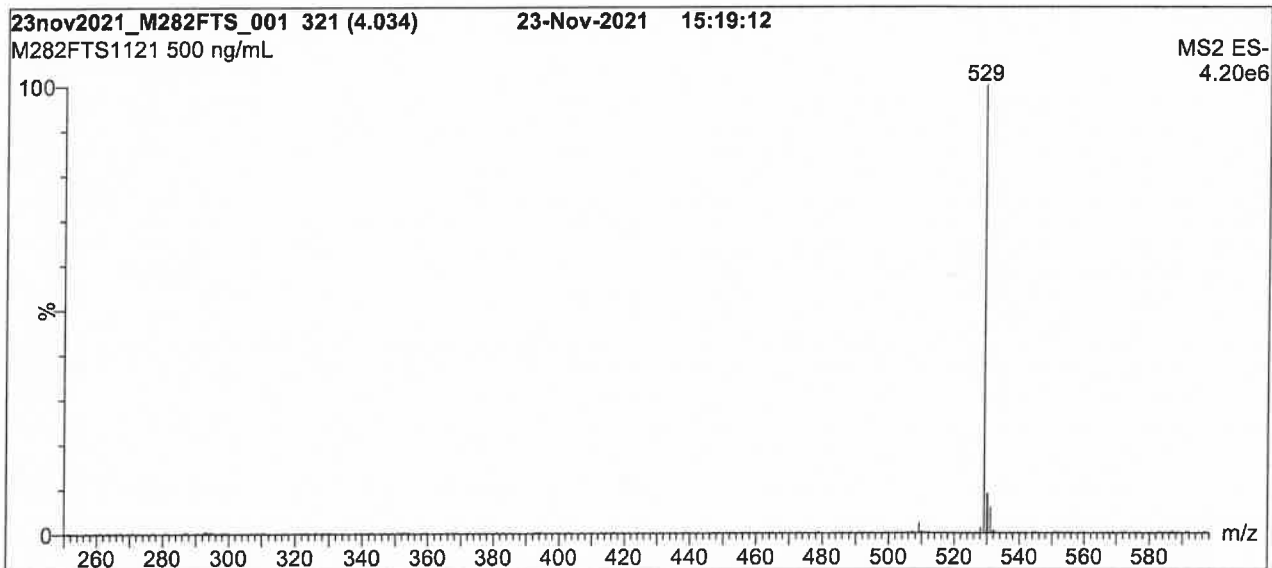
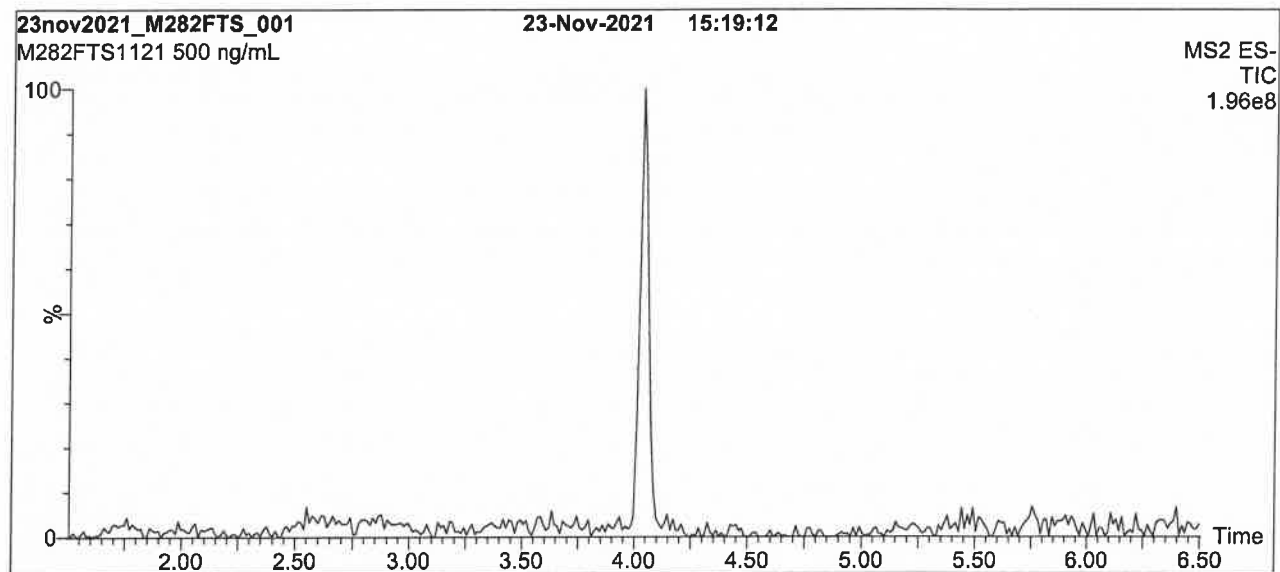
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Figure 1: M2-8:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

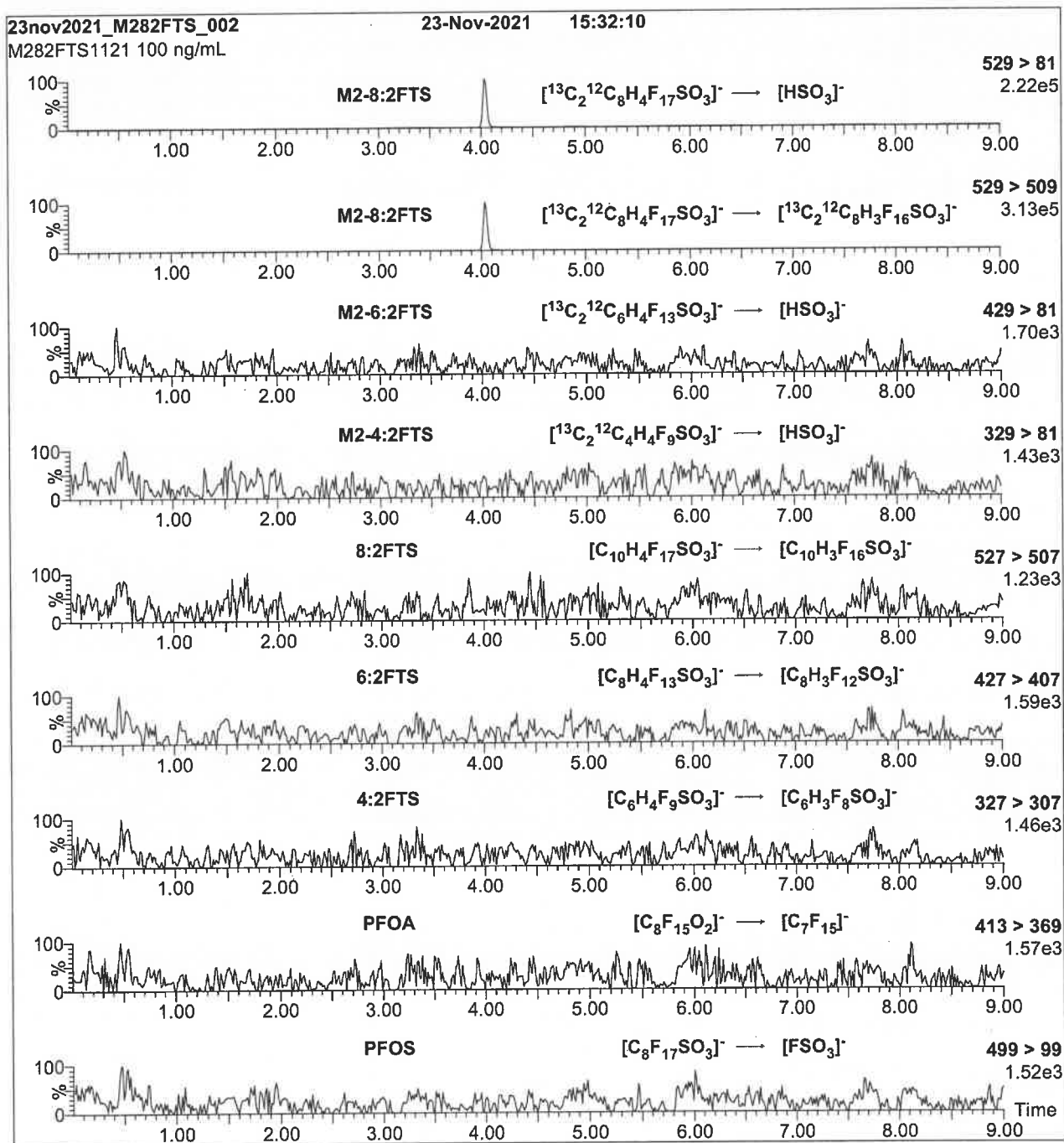
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 25.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: M2-8:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M2-8:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 35

Reagent

LCM2-8 : 2FTS_00046



3185205

ID: LCM2-8:2FTS_00046

Exp: 02/22/27 Prod: PCY Opn: 09/14/22
M2-8:2FTS

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

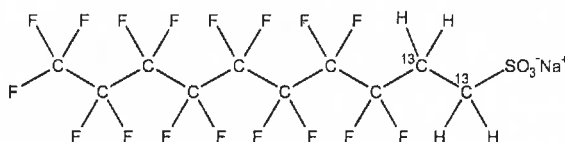
M2-8:2FTS

LOT NUMBER:

M282FTS0222

COMPOUND:Sodium 1H,1H,2H,2H-perfluoro-(1,2-¹³C₂)decanesulfonate**STRUCTURE:****CAS #:**

2708218-90-8

**MOLECULAR FORMULA:**¹³C₂¹²C₈H₄F₁₇SO₃Na**CONCENTRATION:**

50.0 ± 2.5 µg/mL (Na salt)
 48.0 ± 2.4 µg/mL (M2-8:2FTS acid)
 47.9 ± 2.4 µg/mL (M2-8:2FTS anion)

MOLECULAR WEIGHT:

552.15

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:

≥99% ¹³C
 (1,2-¹³C₂)

LAST TESTED: (mm/dd/yyyy)

02/22/2022

EXPIRY DATE: (mm/dd/yyyy)

02/22/2027

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 8:2FTS contains 4.22% of ³⁴S (due to natural isotopic abundance) therefore both native 8:2FTS and M2-8:2FTS will produce signals in the m/z 529 to m/z 509 channel during SRM analysis. We recommend using the m/z 529 to m/z 81 transition to monitor for M2-8:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

03/15/2022
 (mm/dd/yyyy)

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UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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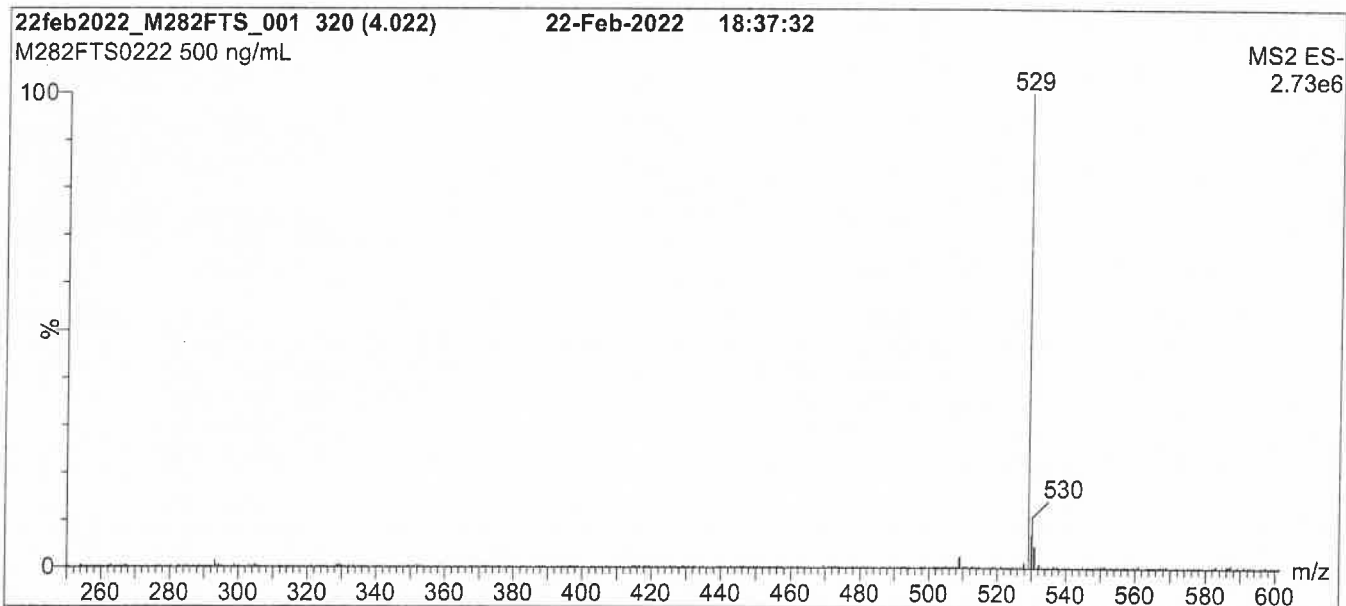
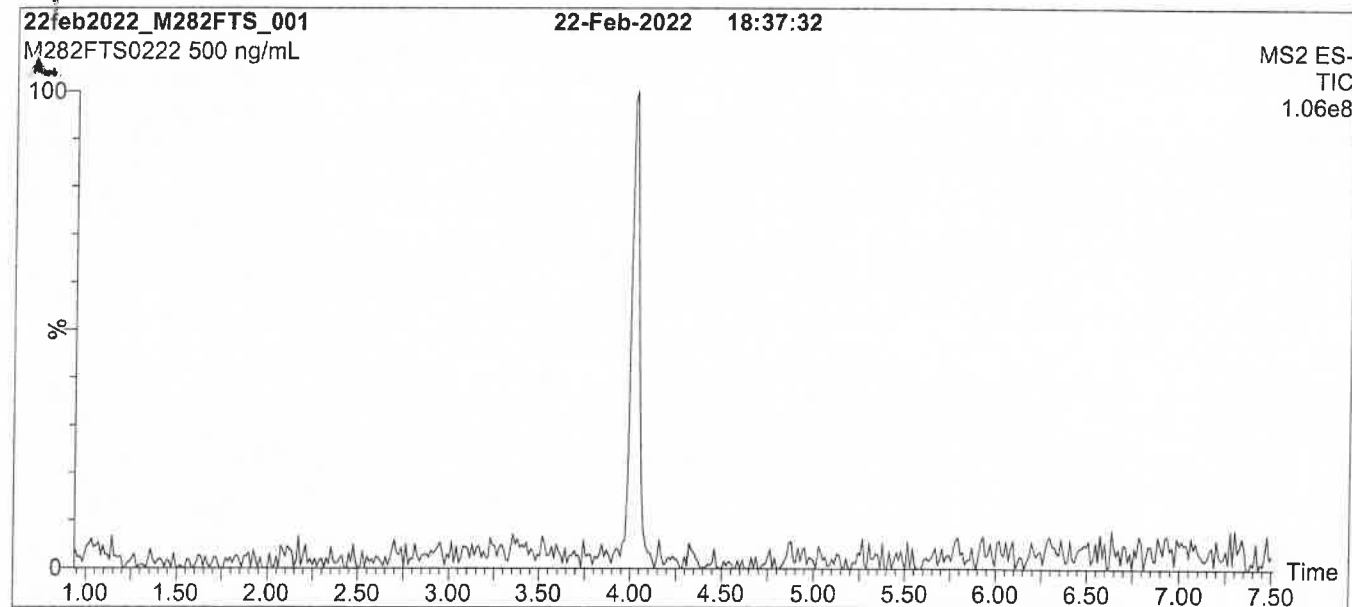
QUALITY MANAGEMENT:

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Figure 1: M2-8:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

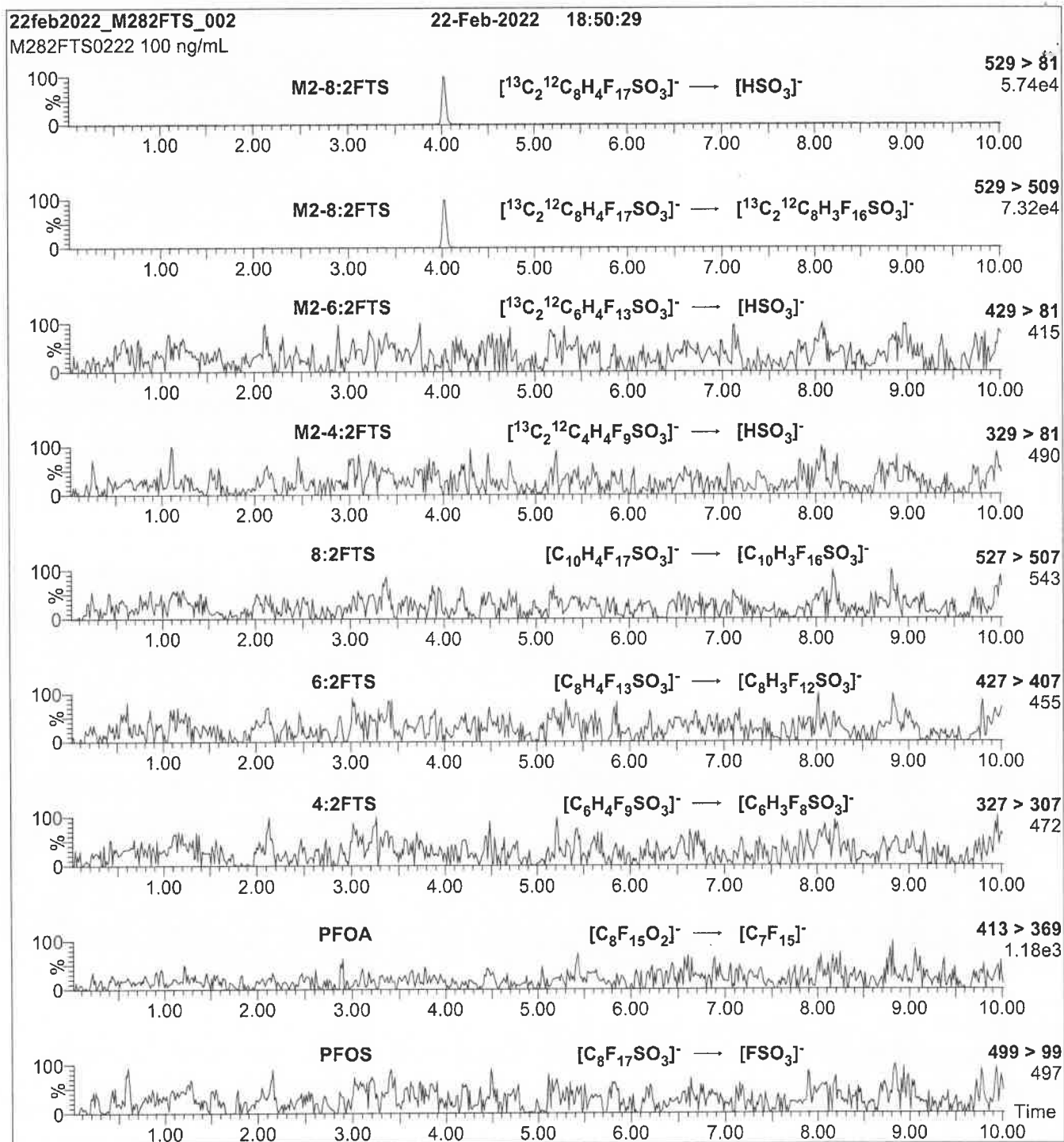
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: M2-8:2FTS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M2-8:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.24×10^{-3}

Collision Energy (eV) = 35

Reagent

LCM2PFHxDA_00050



2979235

ID: LCM2PFHxDA_00050
 Exp: 11/23/26 Pripd: M. Ogn: 04/19/22
 13C2-PFHxDA at 50ug/mL

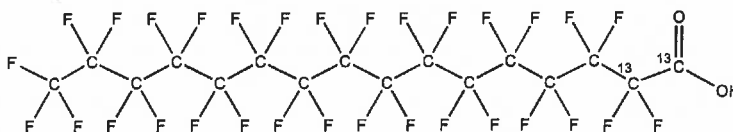


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFHxDA **LOT NUMBER:** M2PFHxDA1121
COMPOUND: Perfluoro-n-(1,2-¹³C₂)hexadecanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₁₄HF₃₁O₂ **MOLECULAR WEIGHT:** 816.11
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 11/23/2021
EXPIRY DATE: (mm/dd/yyyy) 11/23/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~0.5% of native perfluoro-n-hexadecanoic acid (PFHxDA) and ~0.4% of perfluoro-n-(¹³C₁)pentadecanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 12/10/2021
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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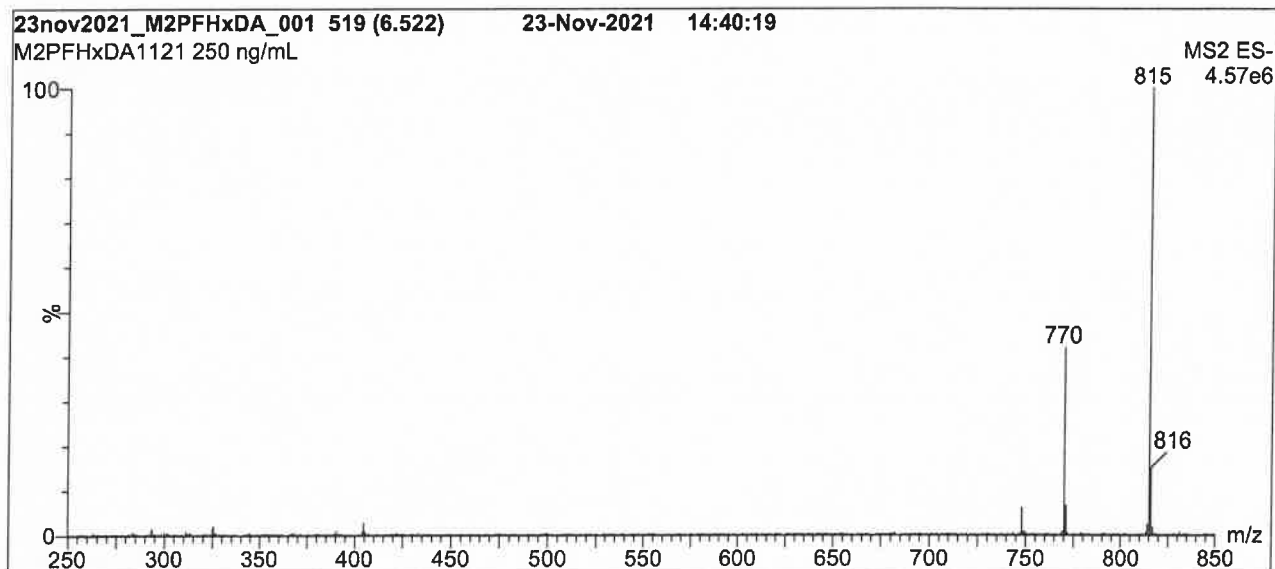
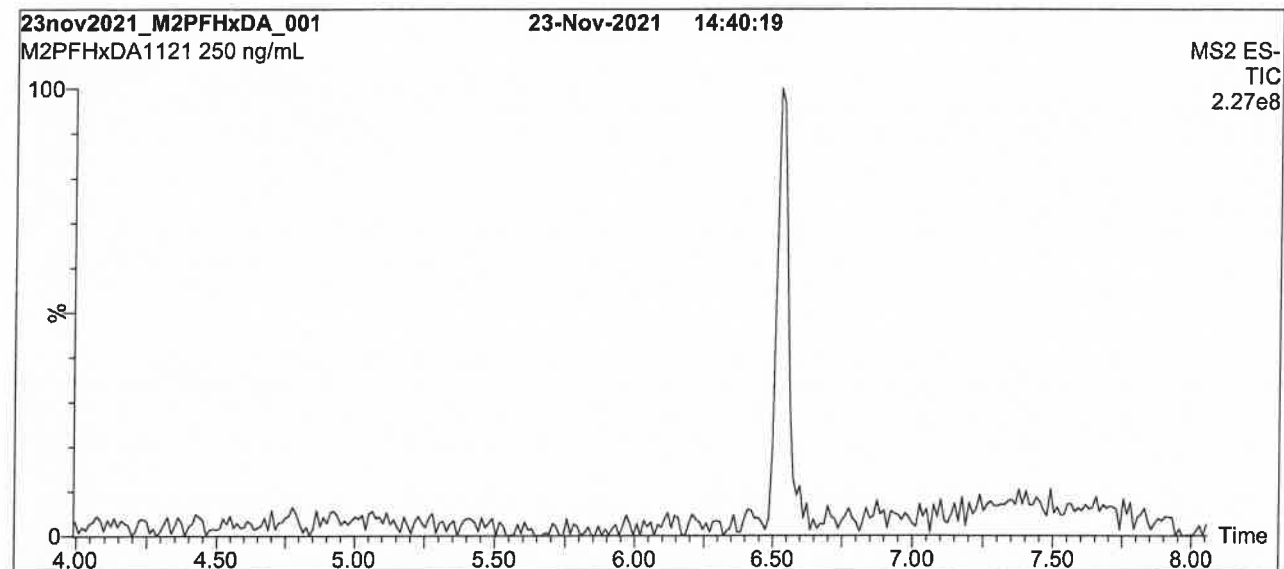
QUALITY MANAGEMENT:

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Figure 1: M2PFHxDA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

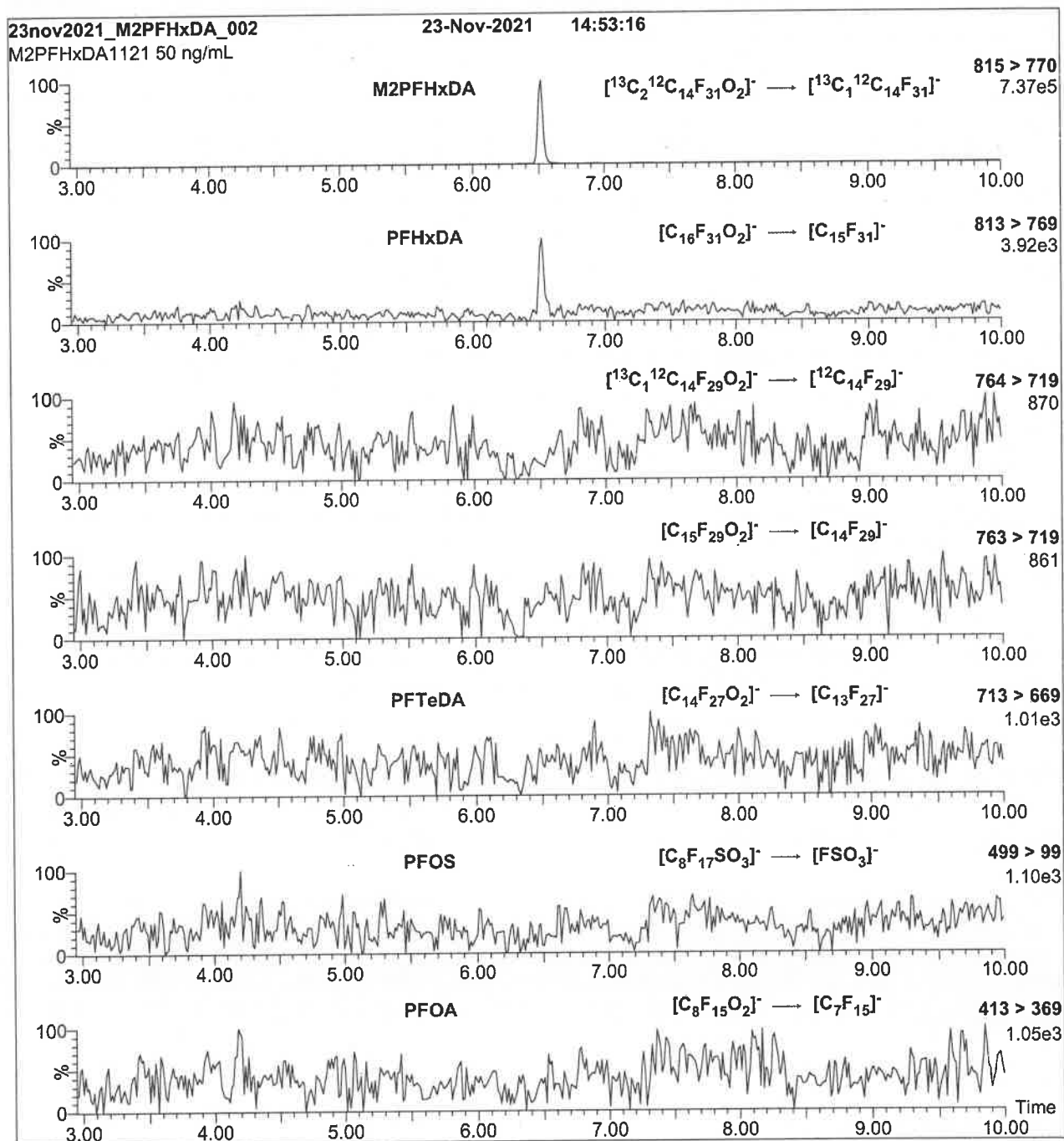
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: M2PFHxDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M2PFHxDA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 15

Reagent

LCM2PFHxDA_00051



3180564
ID: LCM2PFHxDA_00051
Exp: 11/23/26 Pripd 9M Ogn 09/14/22
13C2-PFHxDA at 50ug/mL

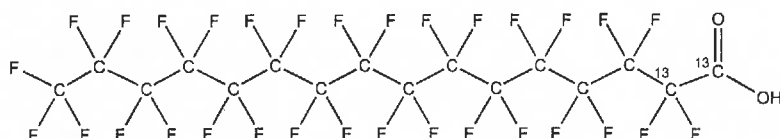


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFHxDA **LOT NUMBER:** M2PFHxDA1121
COMPOUND: Perfluoro-n-(1,2-¹³C₂)hexadecanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: $^{13}\text{C}_2^{12}\text{C}_{14}\text{HF}_{31}\text{O}_2$ **MOLECULAR WEIGHT:** 816.11
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 11/23/2021 (1,2-¹³C₂)
EXPIRY DATE: (mm/dd/yyyy) 11/23/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~0.5% of native perfluoro-n-hexadecanoic acid (PFHxDA) and ~0.4% of perfluoro-n-(¹³C₁)pentadecanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 12/10/2021
(mm/dd/yyyy)

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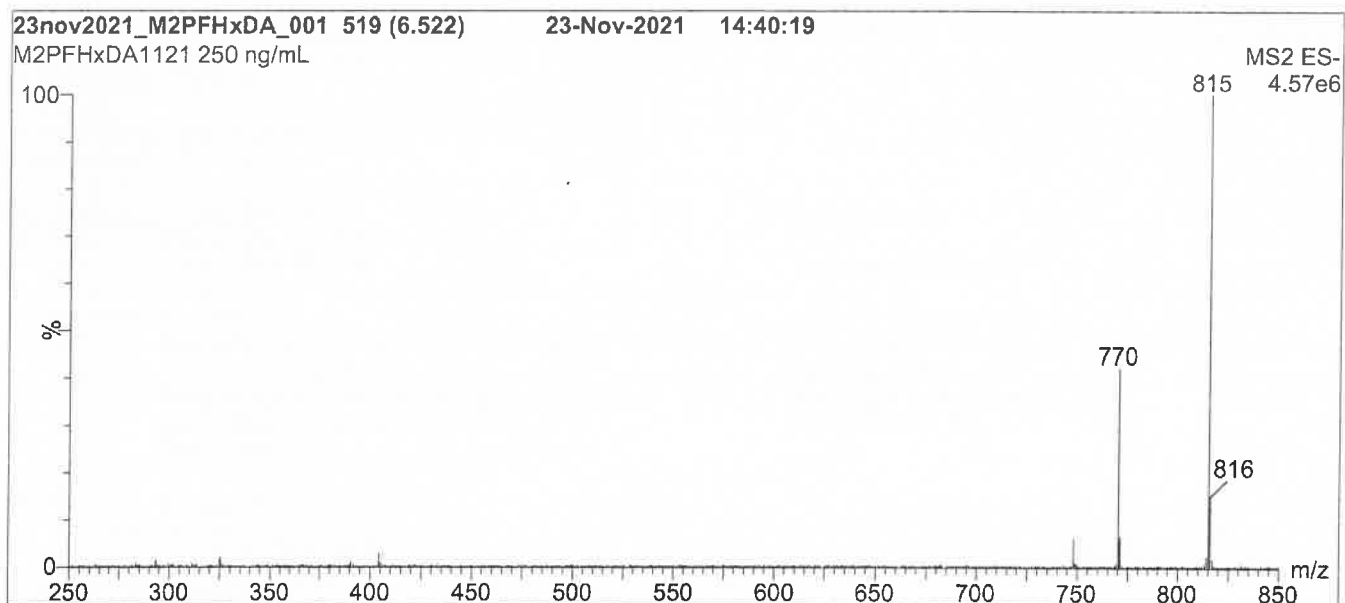
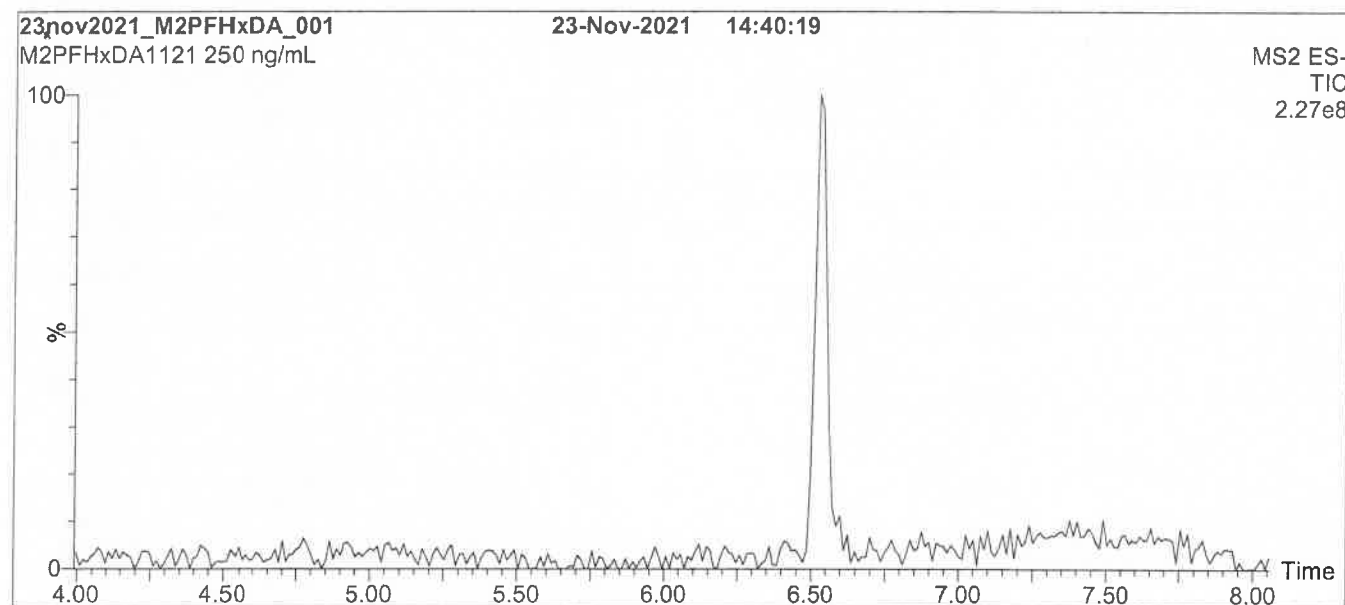
QUALITY MANAGEMENT:

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Figure 1: M2PFHxDA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

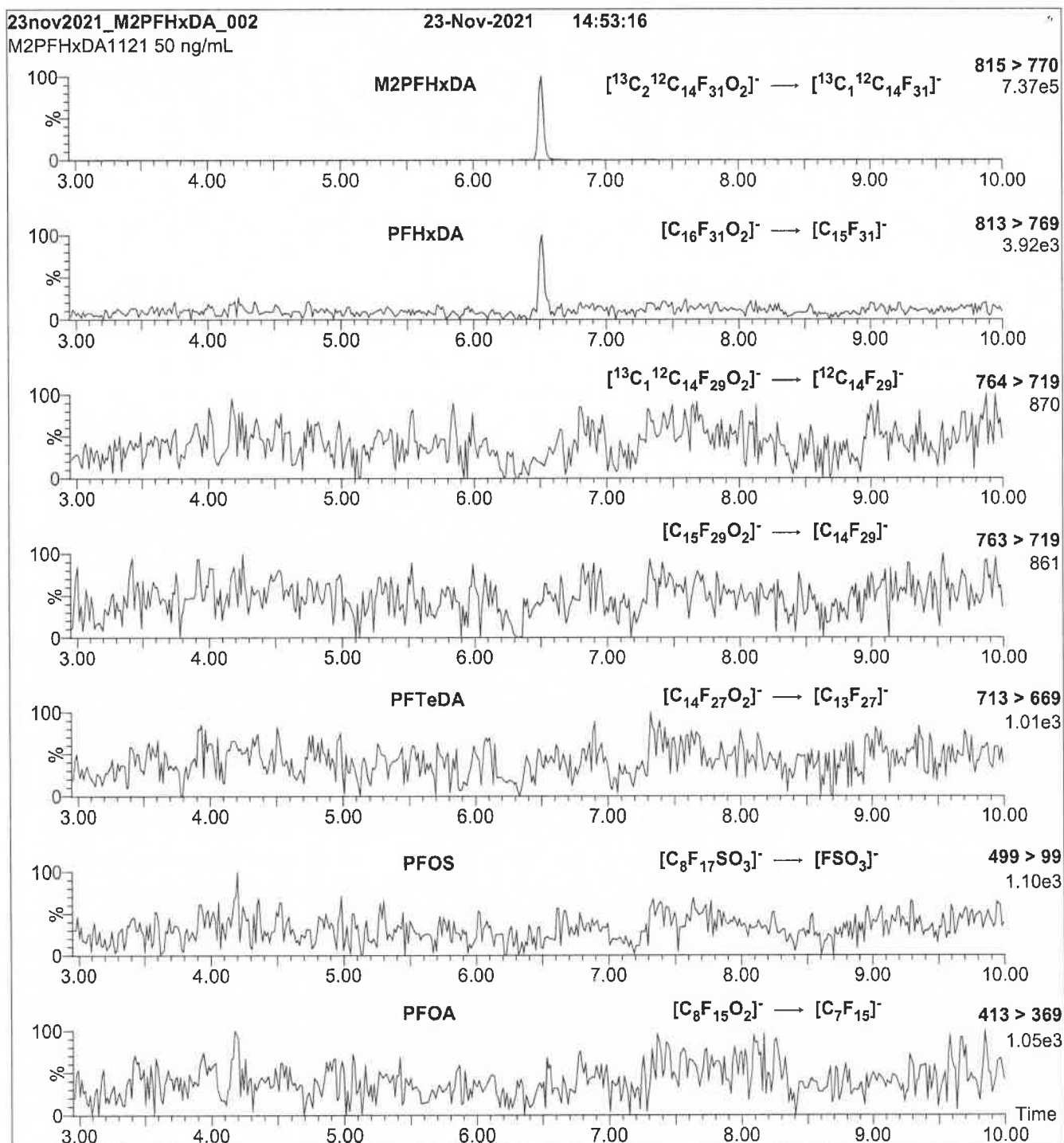
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: M2PFHxDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M2PFHxDA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 15

Reagent

LCM2PFOA_00037



2979816

ID: LCM2PFOA_00037

Exp: 12/09/26 Prod: M Opn: 04/19/22

13C2-PFOA Stock 50ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

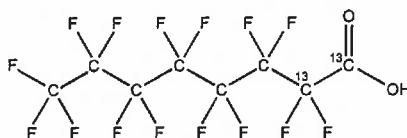
M2PFOA

LOT NUMBER:

M2PFOA0122

COMPOUND:Perfluoro-n-(1,2-¹³C₂)octanoic acid**STRUCTURE:****CAS #:**

864071-08-9

**MOLECULAR FORMULA:**¹³C₂¹²C₆HF₁₅O₂**CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

416.05

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C(1,2-¹³C₂)**LAST TESTED:** (mm/dd/yyyy)

12/09/2021

EXPIRY DATE: (mm/dd/yyyy)

12/09/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

12/23/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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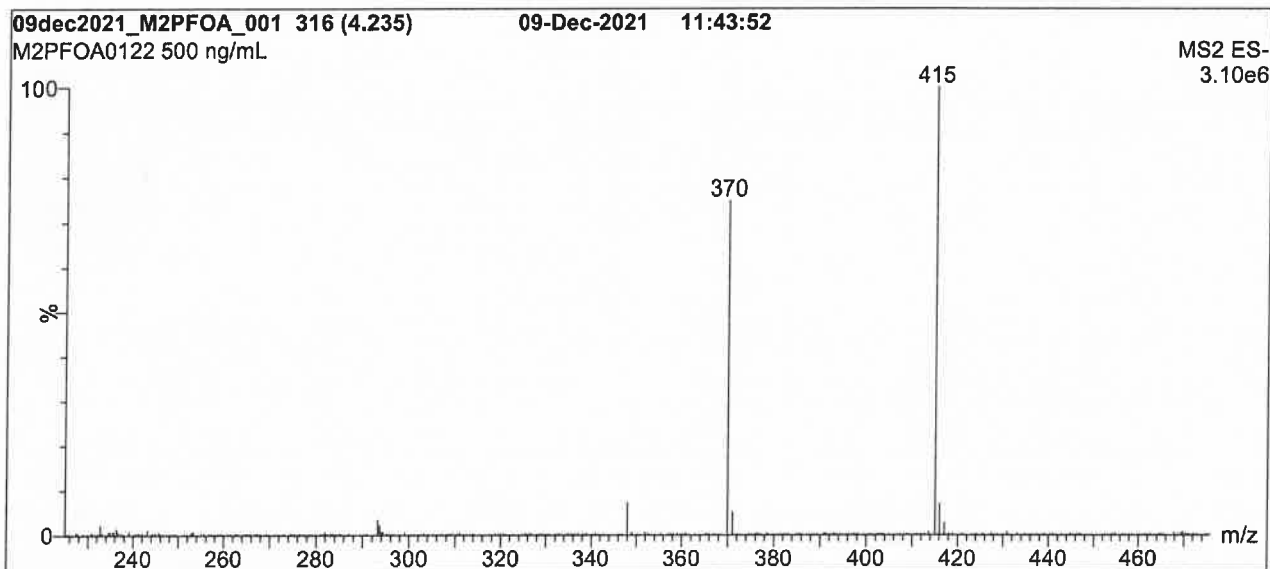
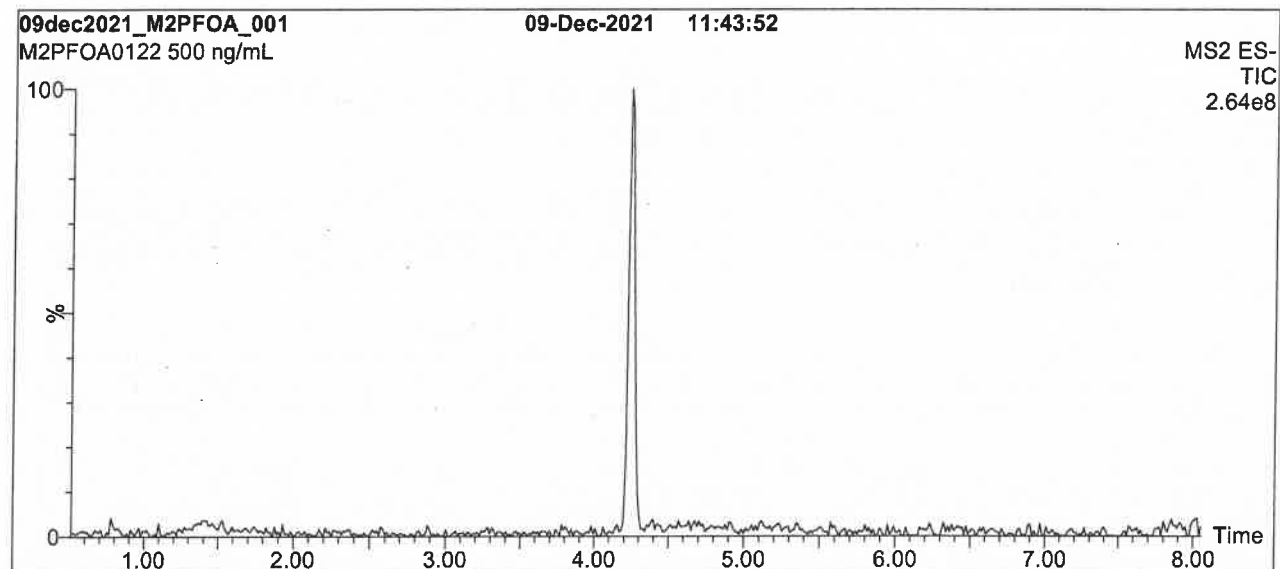
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Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

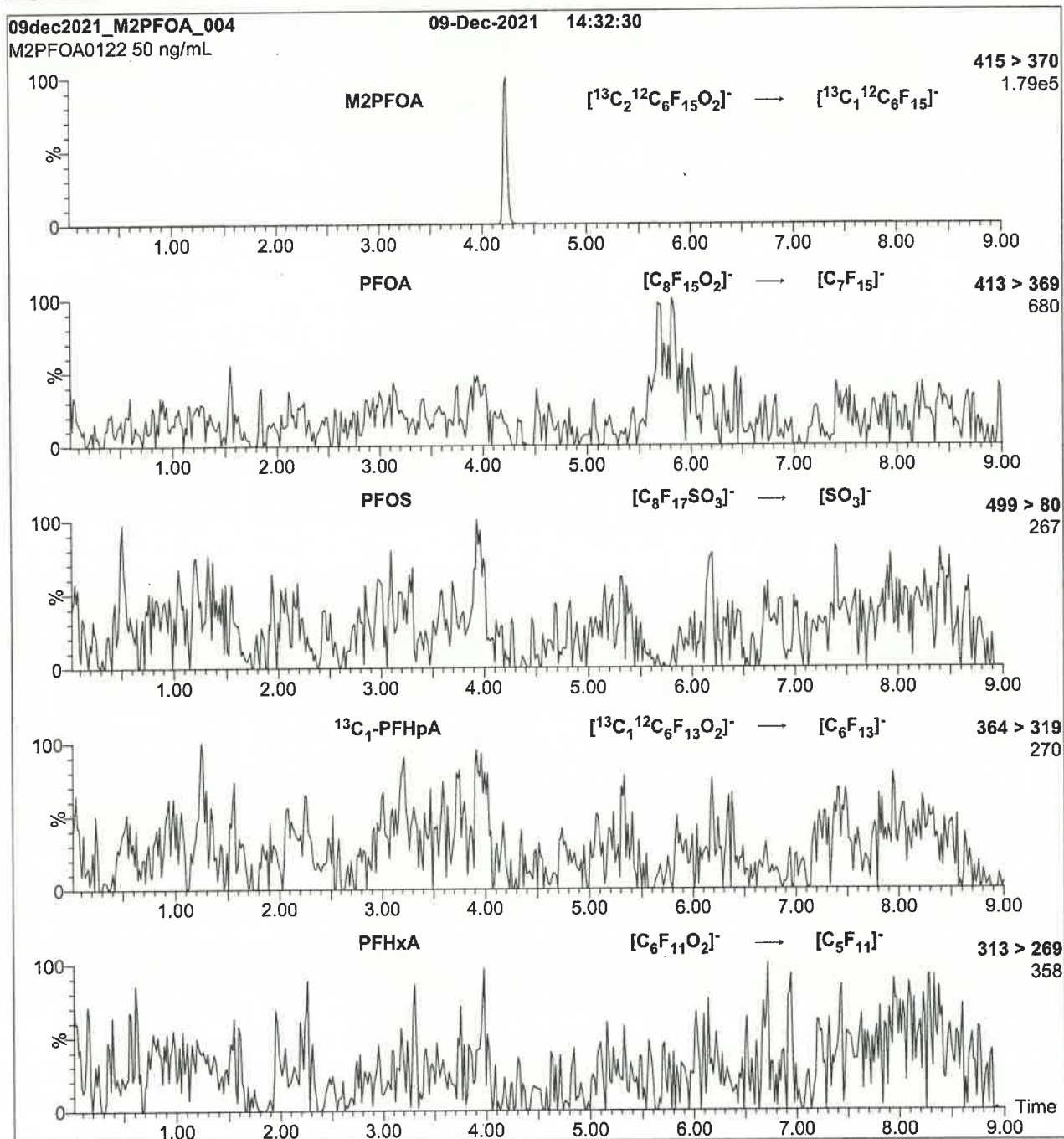
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: M2PFOA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M2PFOA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.28e-3

Collision Energy (eV) = 8

Reagent

LCM2PFOA_00038



3185284
ID: LCM2PFOA_00038
Exp: 08/29/27 Prp: 3M Opn: 09/14/22
13C2-PFOA Stock 50ug/mL



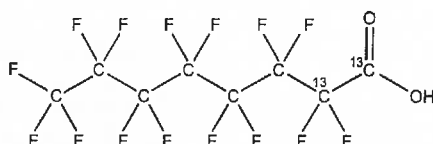
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFOA
COMPOUND: Perfluoro-n-(1,2-¹³C₂)octanoic acid

LOT NUMBER: M2PFOA0822

STRUCTURE:
CAS #: 864071-08-9



MOLECULAR FORMULA: ¹³C₂¹²C₆HF₁₅O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 416.05
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%

ISOTOPIC PURITY: ≥99% ¹³C
(1,2-¹³C₂)

LAST TESTED: (mm/dd/yyyy) 08/29/2022

EXPIRY DATE: (mm/dd/yyyy) 08/29/2027

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:
B.G. Chittim, General Manager

Date: 09/01/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

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Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

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Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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LIMITED WARRANTY:

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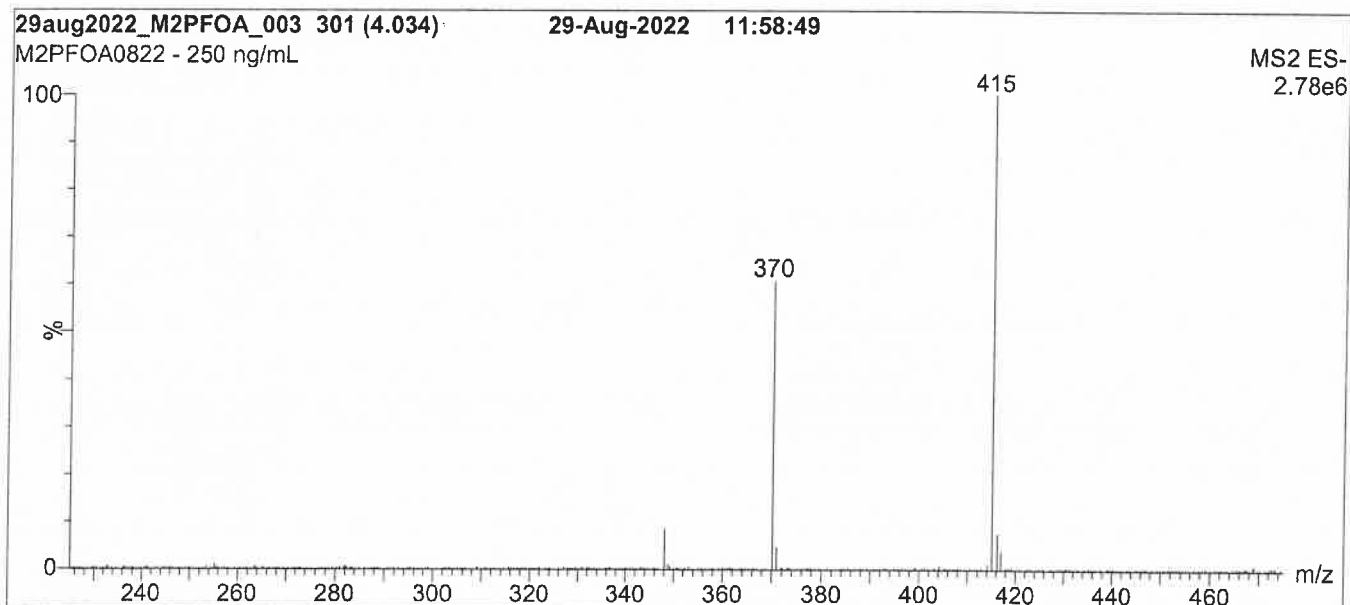
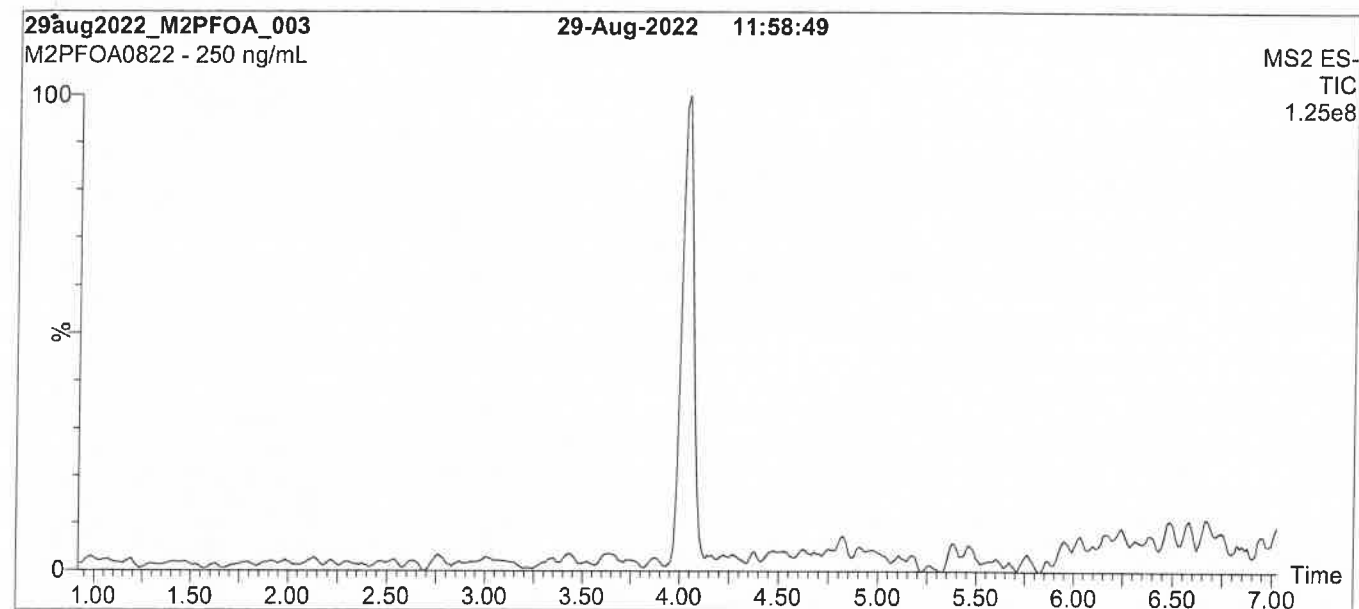
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: M2PFOA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.5 min.
Time: 12 min

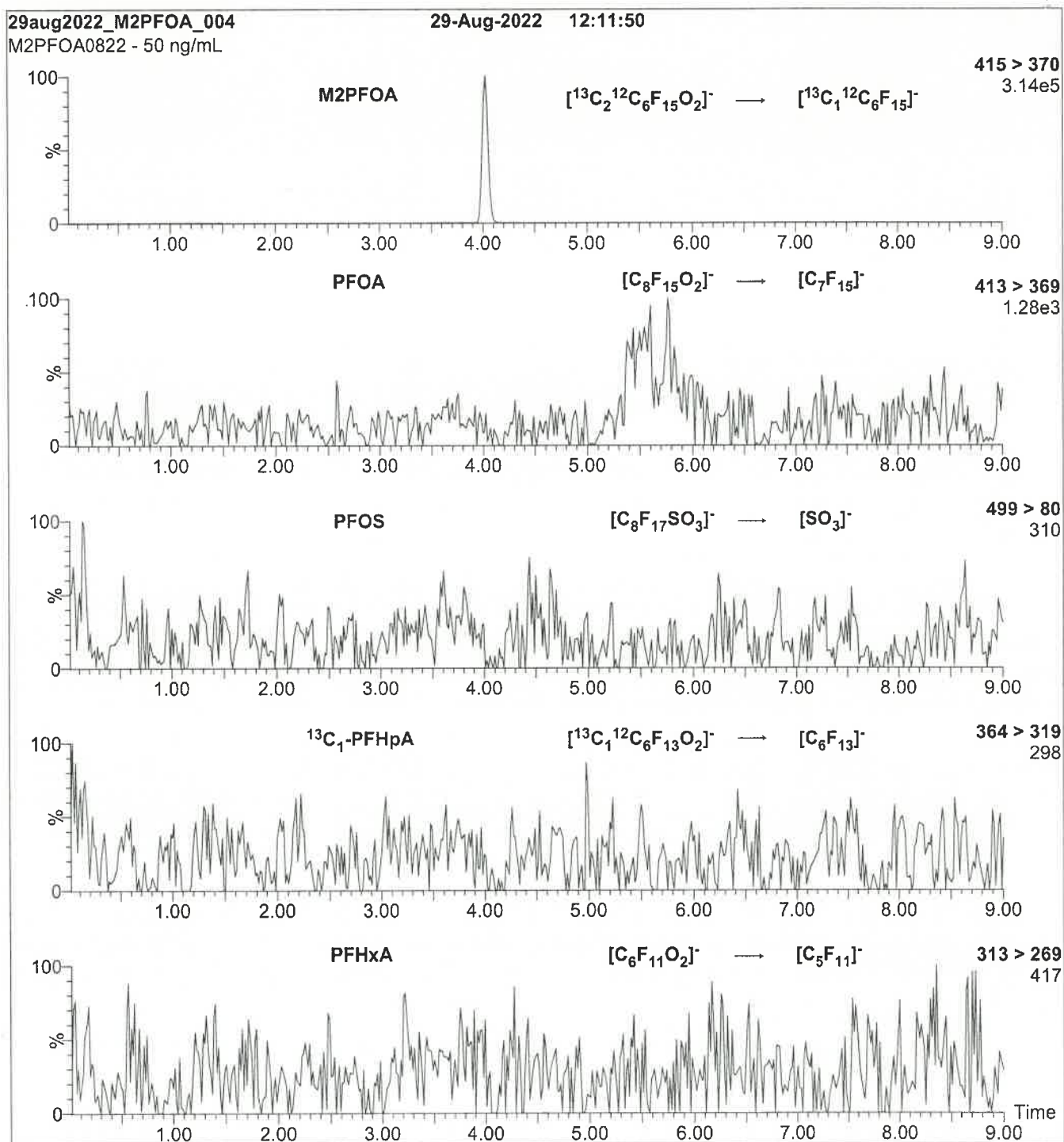
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: M2PFOA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M2PFOA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.22e-3

Collision Energy (eV) = 8

Reagent

LCM2PFTeDA_00048



2979202

ID: LCM2PFTeDA_00048

Exp: 11/22/26 Prpd: M Opn: 04/19/22

13C2-PFTeDA at 50ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

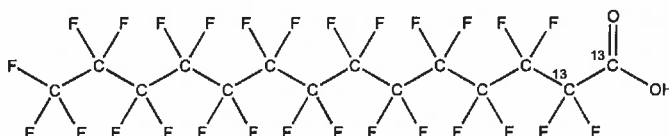
M2PFTeDA

LOT NUMBER:

M2PFTeDA1121

COMPOUND:Perfluoro-n-(1,2-¹³C₂)tetradecanoic acid**STRUCTURE:****CAS #:**

Not available

**MOLECULAR FORMULA:**¹³C₂¹²C₁₂HF₂₇O₂**CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

716.10

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

11/22/2021

(1,2-¹³C₂)**EXPIRY DATE:** (mm/dd/yyyy)

11/22/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

12/08/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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UNCERTAINTY:

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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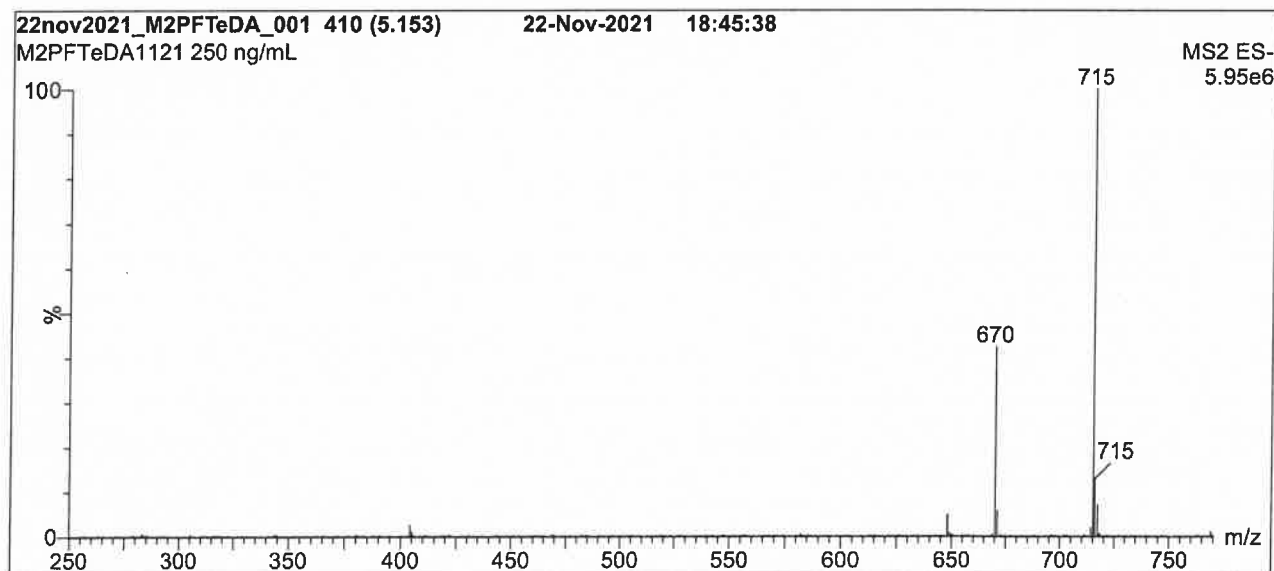
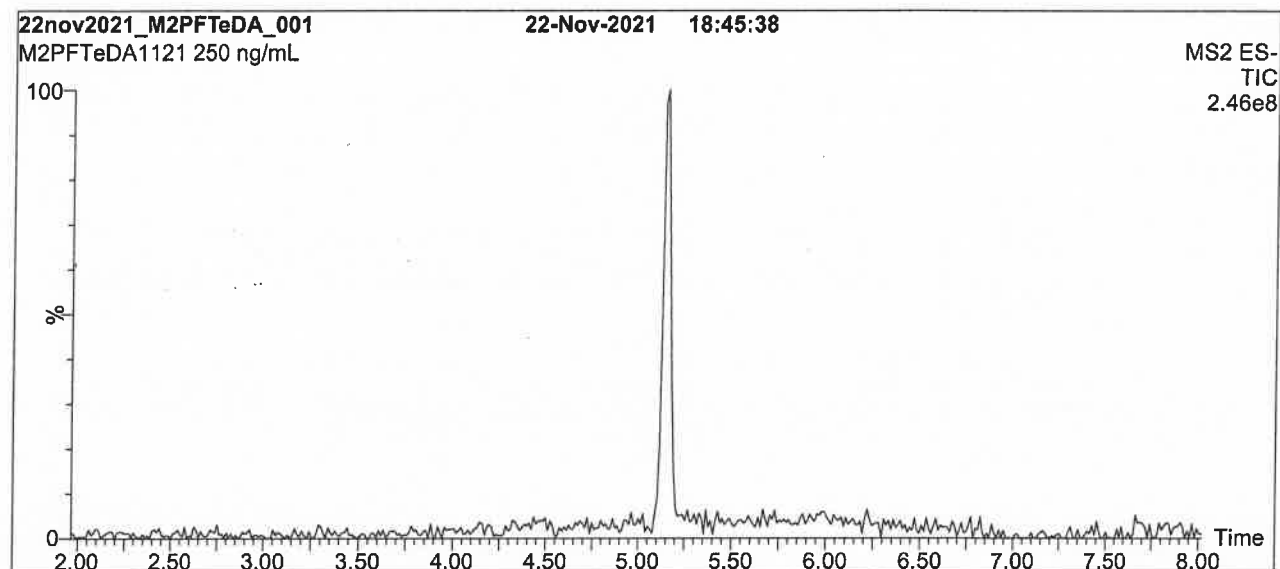
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: M2PFTeDA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

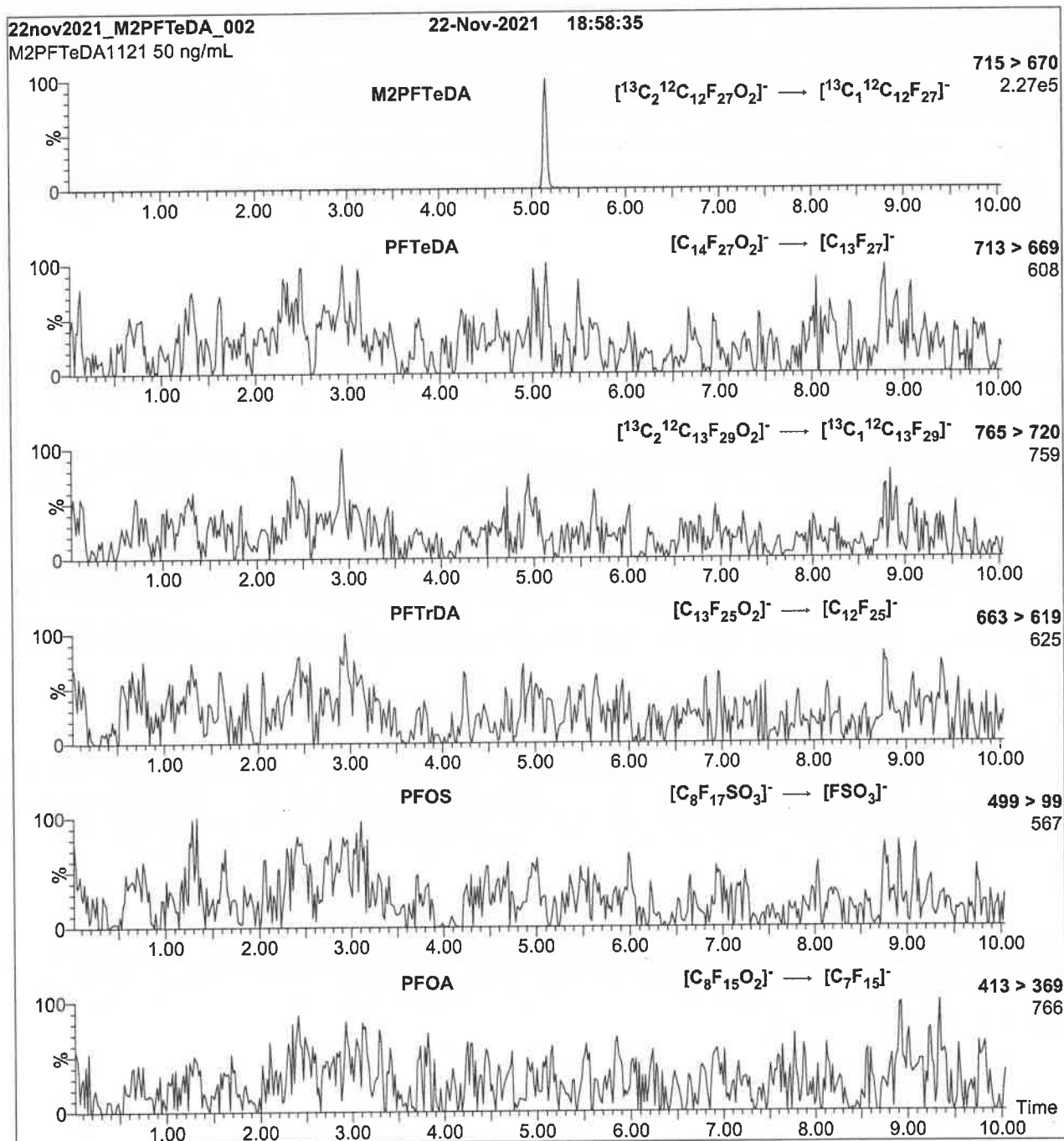
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: M2PFTeDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M2PFTeDA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 14

Reagent

LCM2PFTeDA_00049



3179848

ID: LCM2PFTeDA_00049

Exp: 05/11/27 Prod: 04/09/14/22

13C2-PFTeDA at 50ug/mL



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

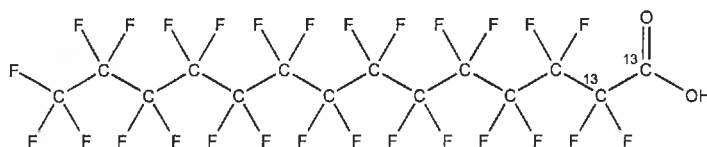
M2PFTeDA

LOT NUMBER:

M2PFTeDA0522

COMPOUND:Perfluoro-n-(1,2-¹³C₂)tetradecanoic acid**STRUCTURE:****CAS #:**

Not available

**MOLECULAR FORMULA:** $^{13}\text{C}_2\text{ }^{12}\text{C}_{12}\text{HF}_{27}\text{O}_2$ **MOLECULAR WEIGHT:**

716.10

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

05/11/2022

(1,2-¹³C₂)**EXPIRY DATE:** (mm/dd/yyyy)

05/11/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

05/25/2022
(mm/dd/yyyy)

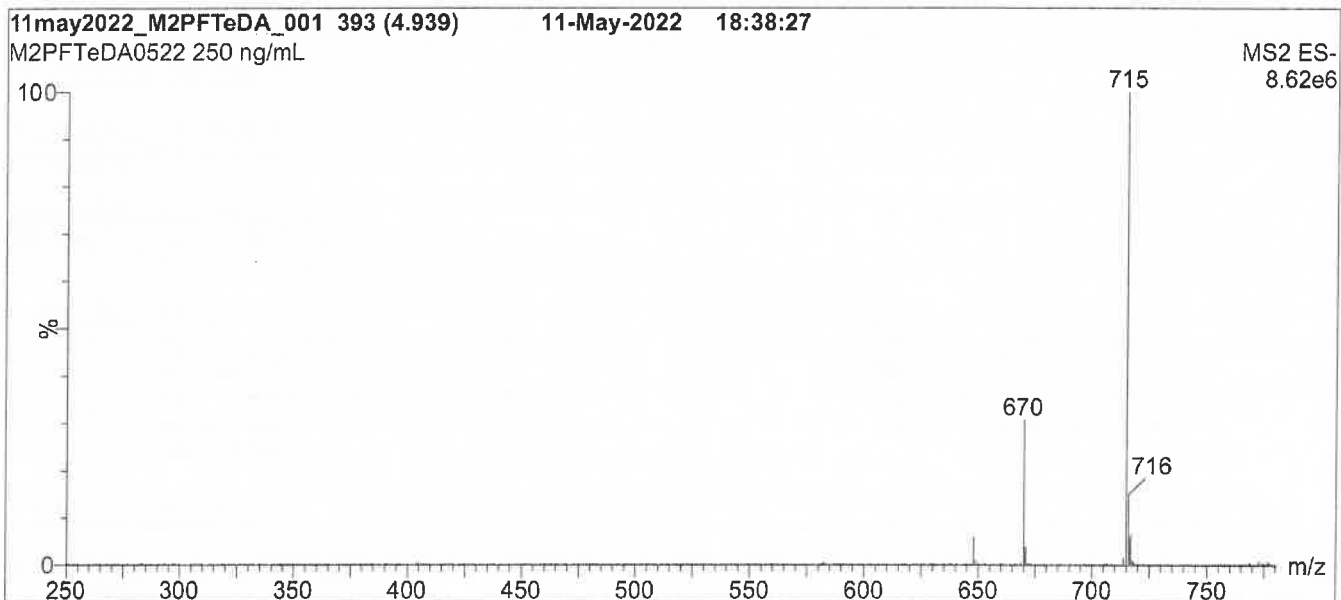
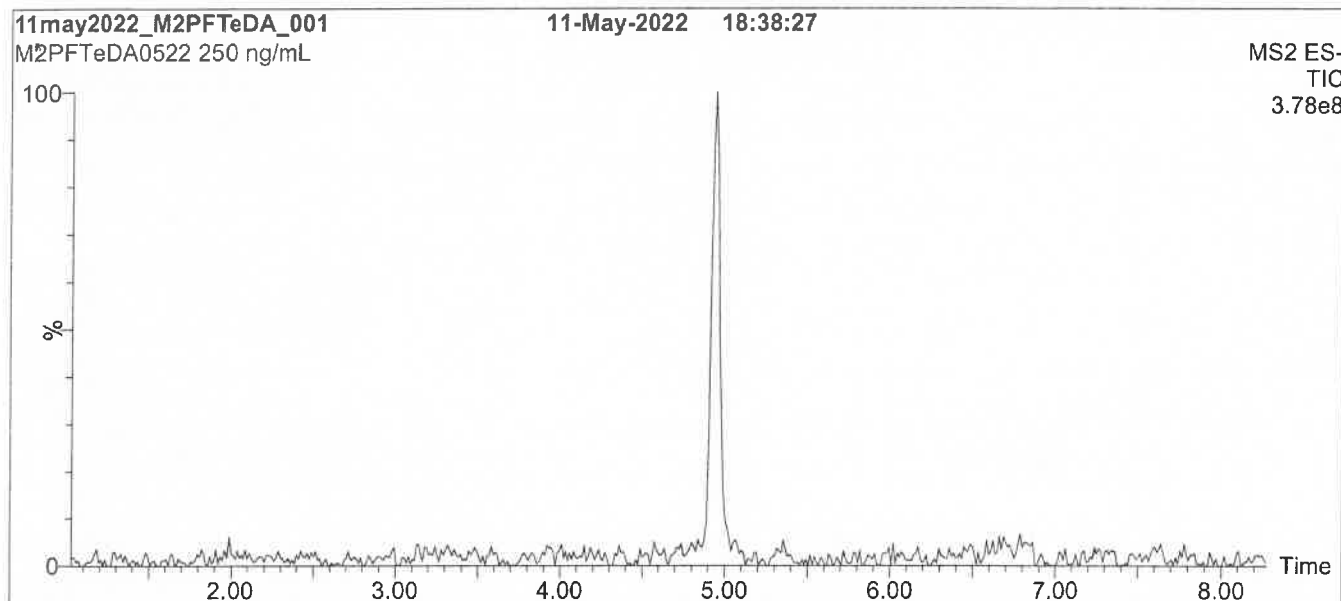
Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

4

5



Figure 1: M2PFTeDA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

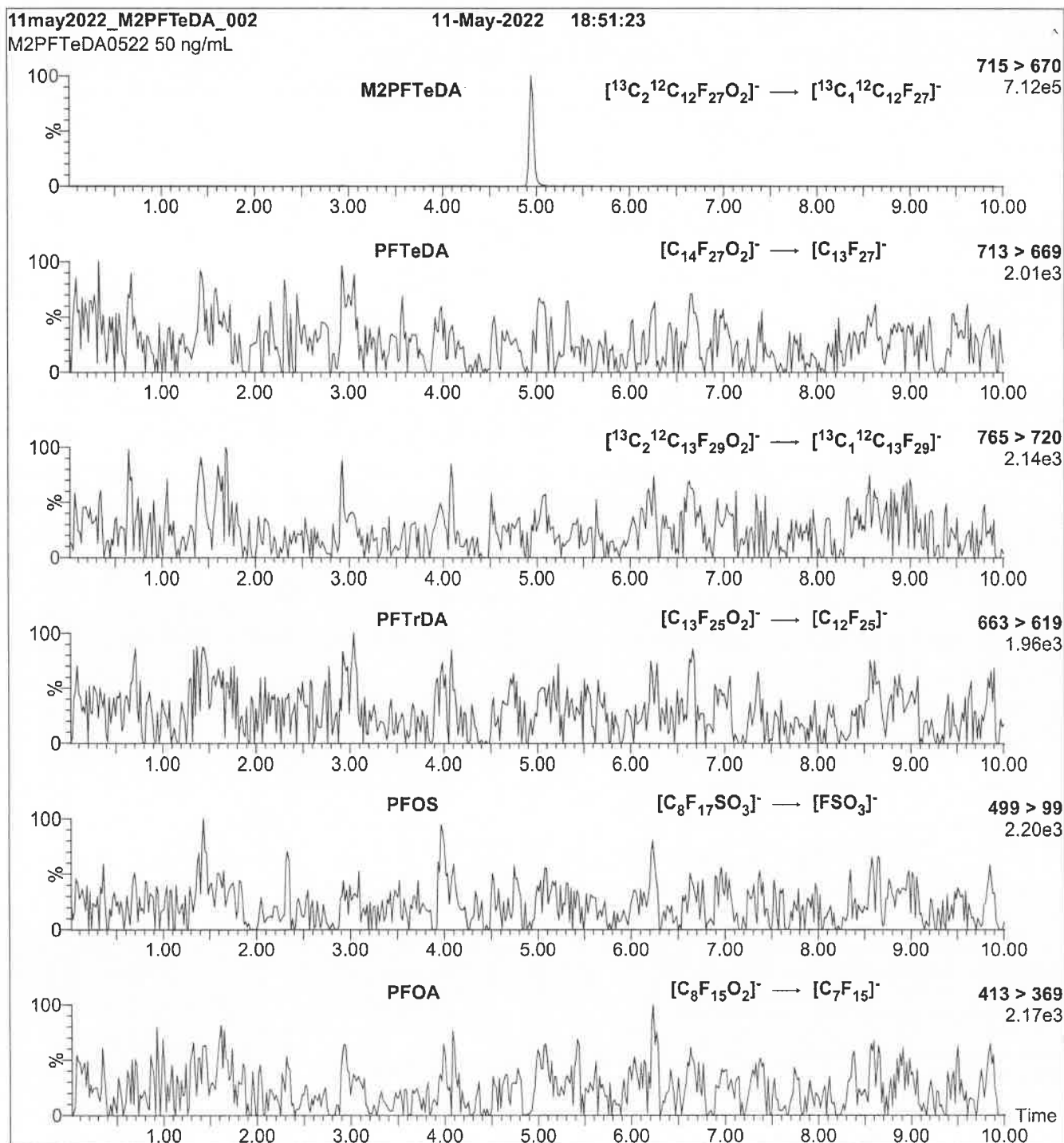
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: M2PFTeDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M2PFTeDA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.22e-3

Collision Energy (eV) = 14

Reagent

LCM3HFPO-DA_00040



2979458

ID: LCM3HFPO-DA_00040

Exp: 11/11/24 Prod: JM Opn: 04/19/22

M3HFPO-DA



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

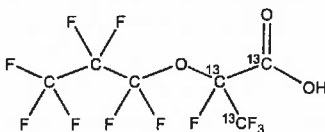
M3HFPO-DA

LOT NUMBER:

M3HFPODA1121

COMPOUND:2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³C₃)propanoic acid**STRUCTURE:****CAS #:**

Not available

**MOLECULAR FORMULA:**¹³C₃¹²C₃H₁F₁₁O₃**CONCENTRATION:**

50.0 ± 2.5 µg/mL

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/11/2021

EXPIRY DATE: (mm/dd/yyyy)

11/11/2024

RECOMMENDED STORAGE:

Refrigerate ampoule

MOLECULAR WEIGHT:

333.03

SOLVENT(S):

Methanol

ISOTOPIC PURITY:≥99% ¹³C
(¹³C₃)**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Product is commercially known as GenX.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

11/16/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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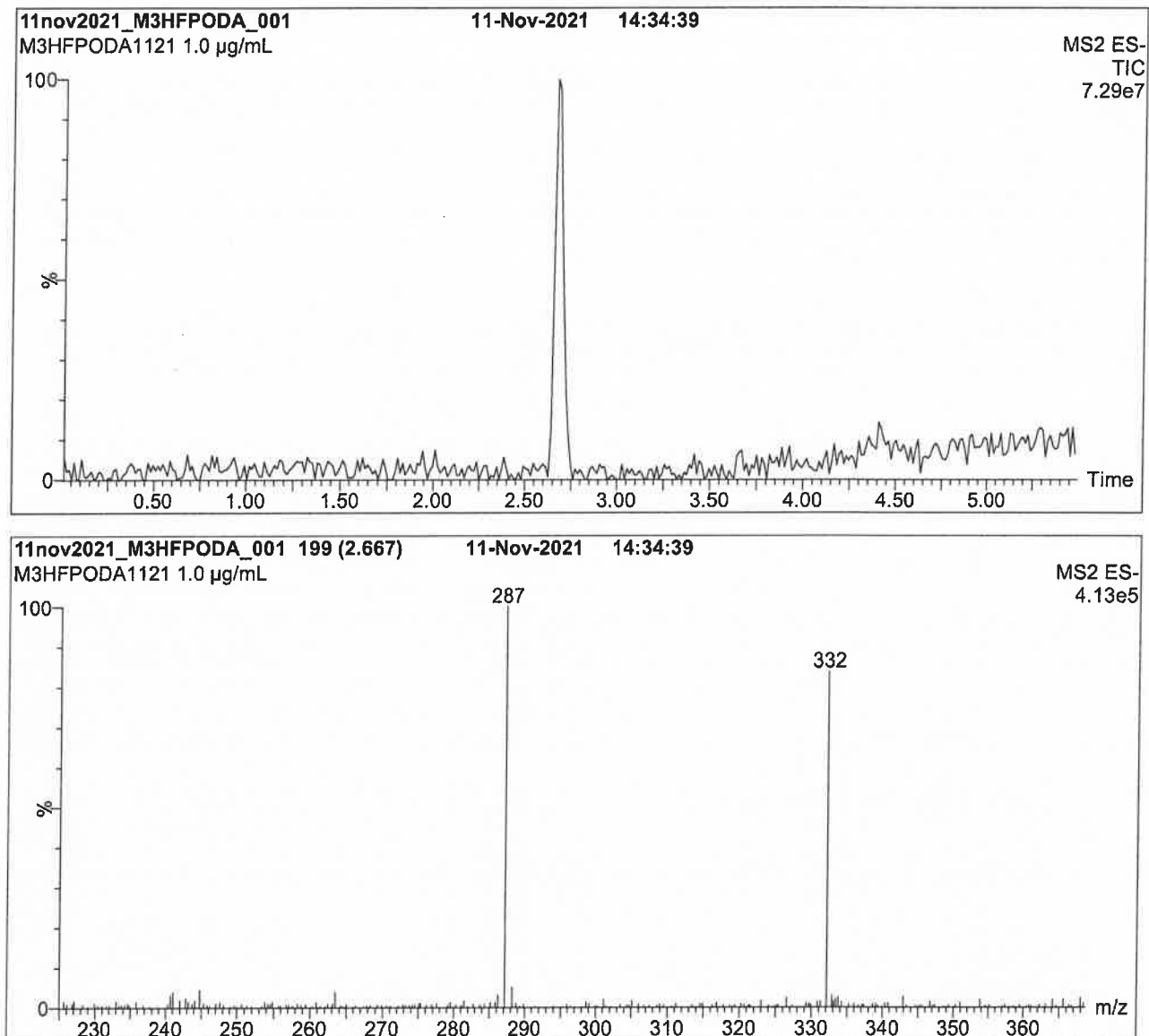
QUALITY MANAGEMENT:

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Figure 1: M3HFPO-DA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

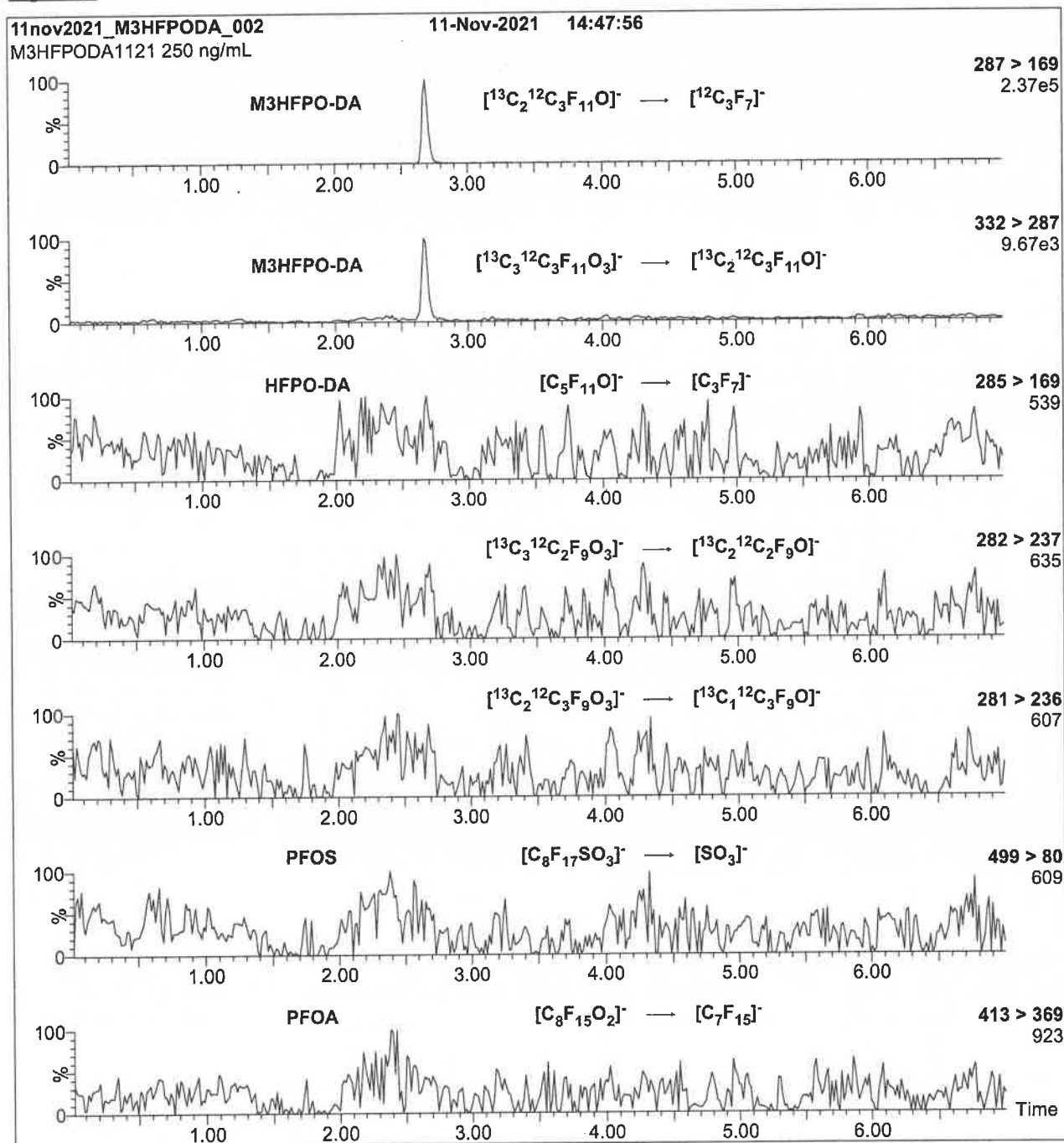
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.75
Cone Voltage (V) = 15.00
Desolvation Temperature (°C) = 325
Desolvation Gas Flow (L/hr) = 1000

Figure 2: M3HFPO-DA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M3HFPO-DA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.37e-3

Collision Energy (eV) = 8

Reagent

LCM3HFPO-DA_00041

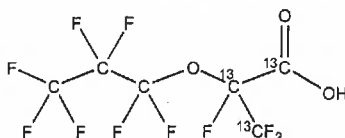


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3HFPO-DA **LOT NUMBER:** M3HFPODA0522
COMPOUND: 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³C₃)propanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₃¹²C₃HF₁₁O₃ **MOLECULAR WEIGHT:** 333.03
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 05/12/2022 (¹³C₃)
EXPIRY DATE: (mm/dd/yyyy) 05/12/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Product is commercially known as GenX.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 05/19/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

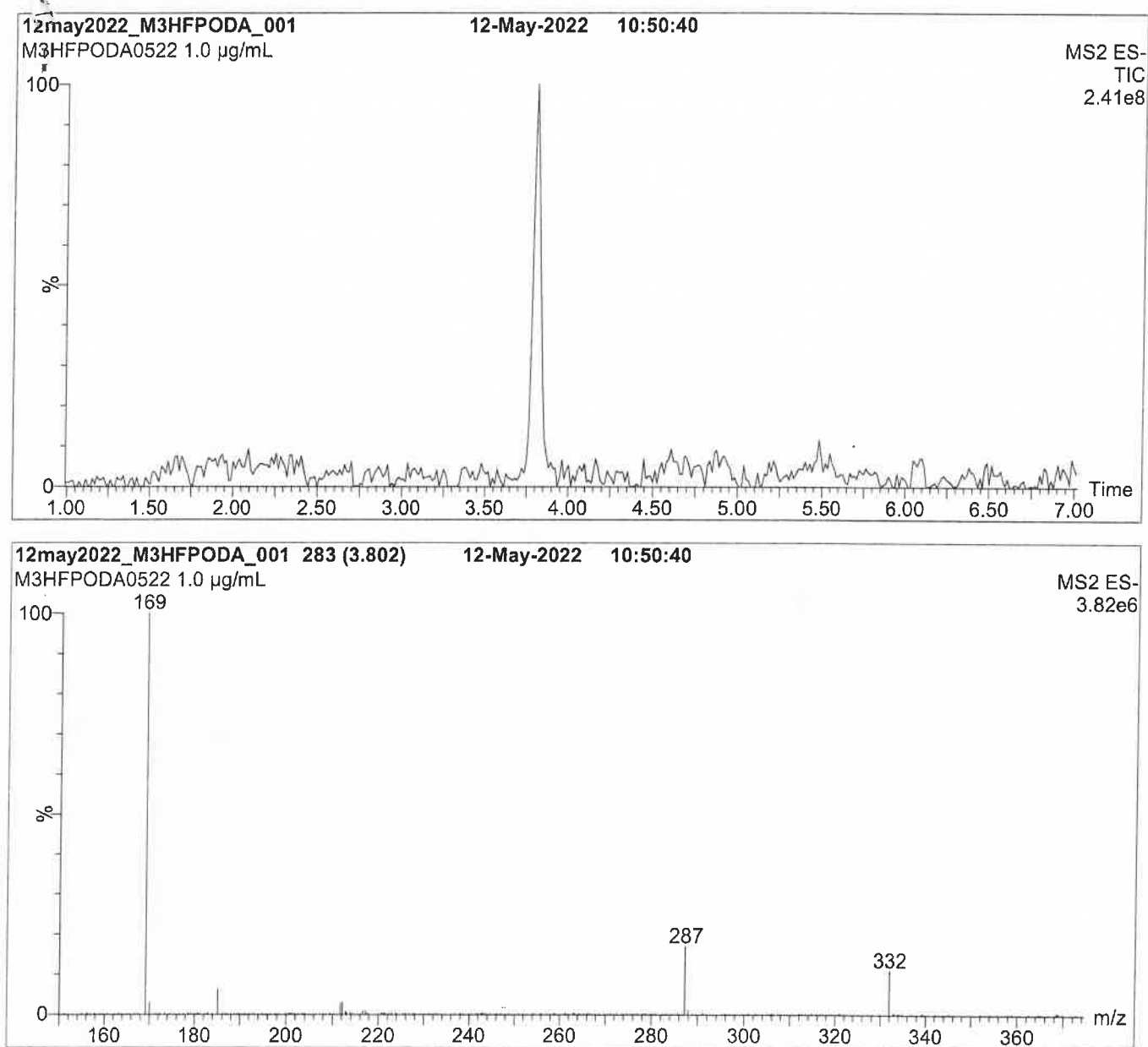
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: M3HFPO-DA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)

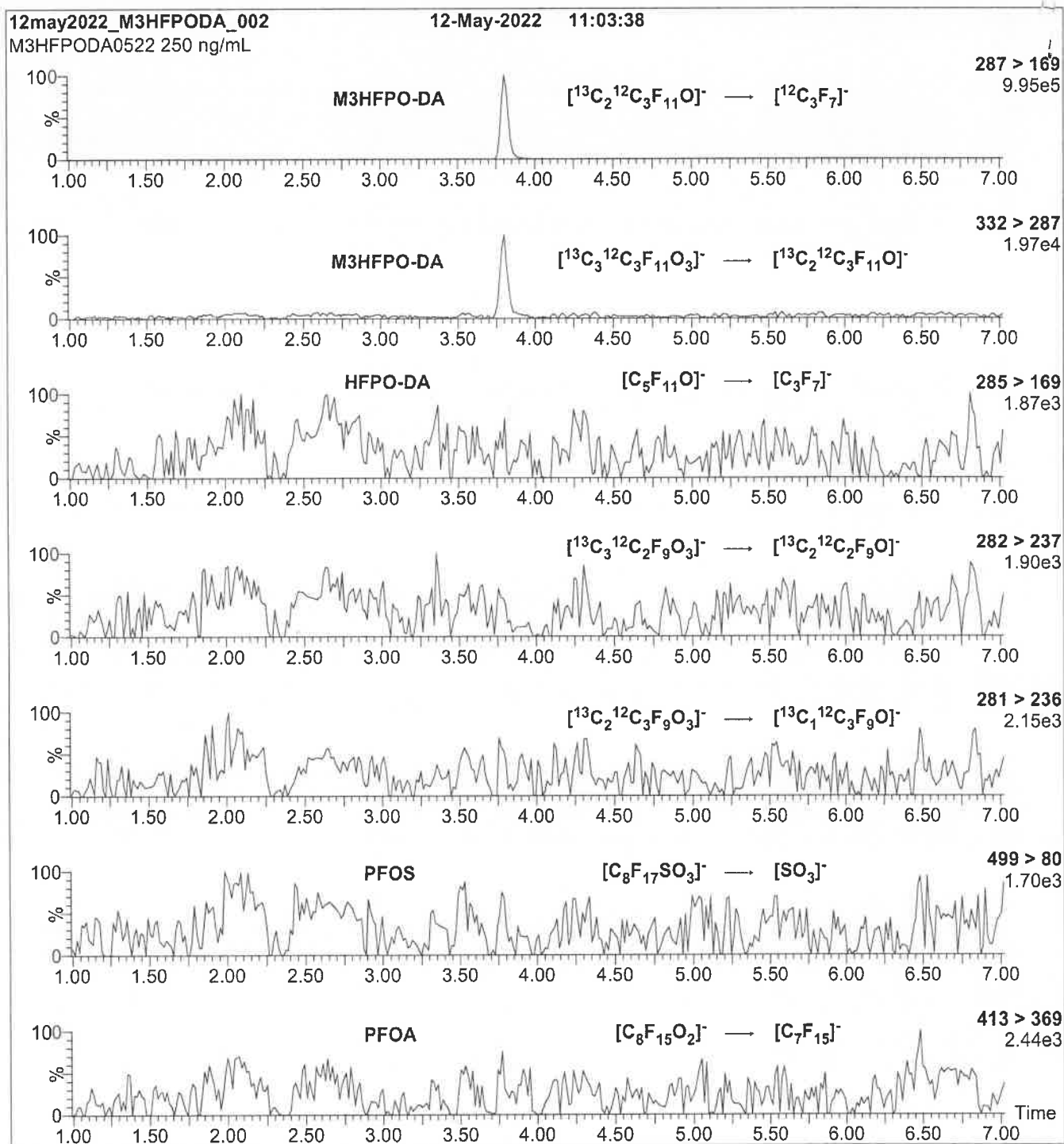
Capillary Voltage (kV) = 2.75

Cone Voltage (V) = 15.00

Desolvation Temperature (°C) = 325

Desolvation Gas Flow (L/hr) = 1000

Figure 2: M3HFPO-DA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M3HFPO-DA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.20e-3

Collision Energy (eV) = 8

Reagent

LCM4-6:2diPAP_00008



2983696

ID: LCM4-6:2diPAP_00008

Exp: 08/05/26 Prod: PCY Opa: 04/21/22

Labeled 6:2diPAP 48,5915



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

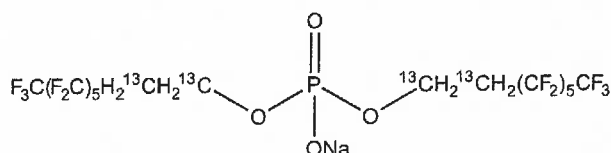
M4-6:2diPAP

LOT NUMBER:

M462diPAP0721

COMPOUND:Sodium bis[1H,1H,2H,2H-(1,2-¹³C₂)perfluorooctyl] phosphate**STRUCTURE:****CAS #:**

Not available

**MOLECULAR FORMULA:** $\text{C}_4^{13}\text{C}_{12}^{12}\text{H}_8\text{F}_{28}\text{O}_4\text{PNa}$ **CONCENTRATION:**

50.0 ± 2.5 µg/mL

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

08/05/2021

EXPIRY DATE: (mm/dd/yyyy)

08/05/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

MOLECULAR WEIGHT:

816.12

SOLVENT(S):

Methanol

ISOTOPIC PURITY:≥99% ¹³Cbis(1,2-¹³C₂)**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

$$\begin{array}{r} 816.12 \\ - 28.99 \\ \hline 793.13 \\ + 1.01 (H) \\ \hline 794.14 \end{array} \quad \begin{array}{r} 793.13 \\ \times 50 \frac{\mu\text{g}}{\text{mL}} \\ \hline 48.5915 \frac{\mu\text{g}}{\text{mL}} \end{array} \quad \begin{array}{l} \text{PCY 4/21/22} \\ \text{PCY 4/21/22} \end{array}$$

$$\begin{array}{r} 794.14 \\ \times 50 \frac{\mu\text{g}}{\text{mL}} \\ \hline 48.6534 \frac{\mu\text{g}}{\text{mL}} \end{array} \quad \begin{array}{l} \text{PCY 4/21/22} \end{array}$$

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:

B.G. Chittim, General Manager

Date: 08/06/2021

(mm/dd/yyyy)

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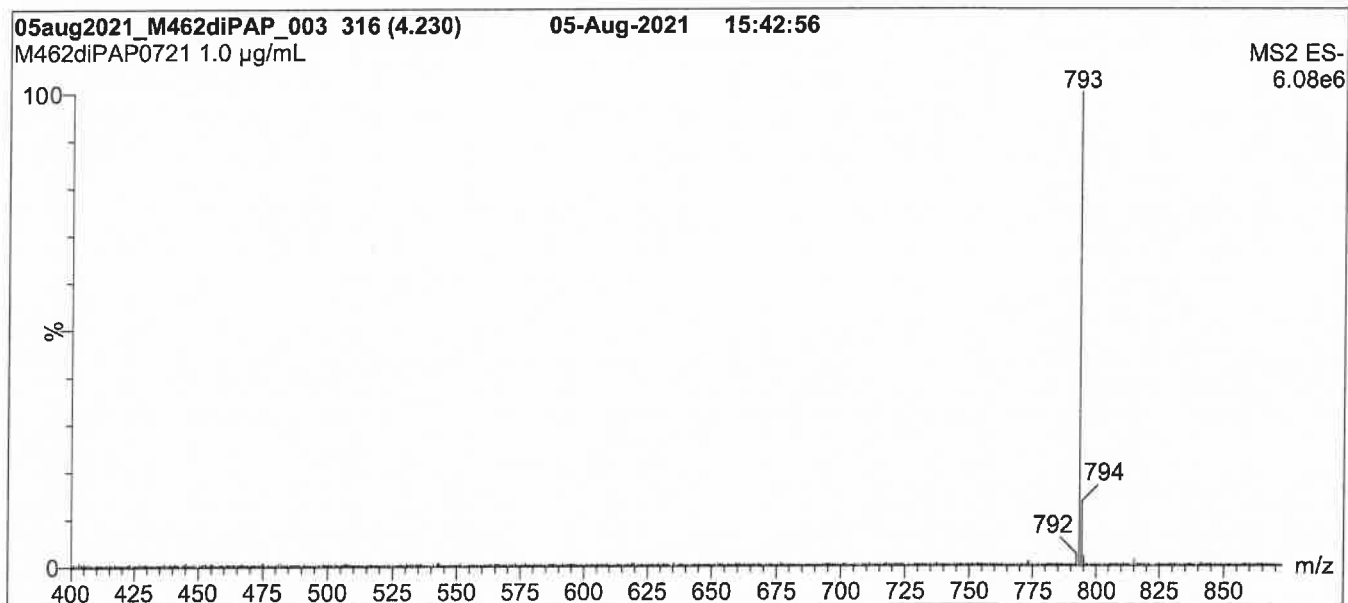
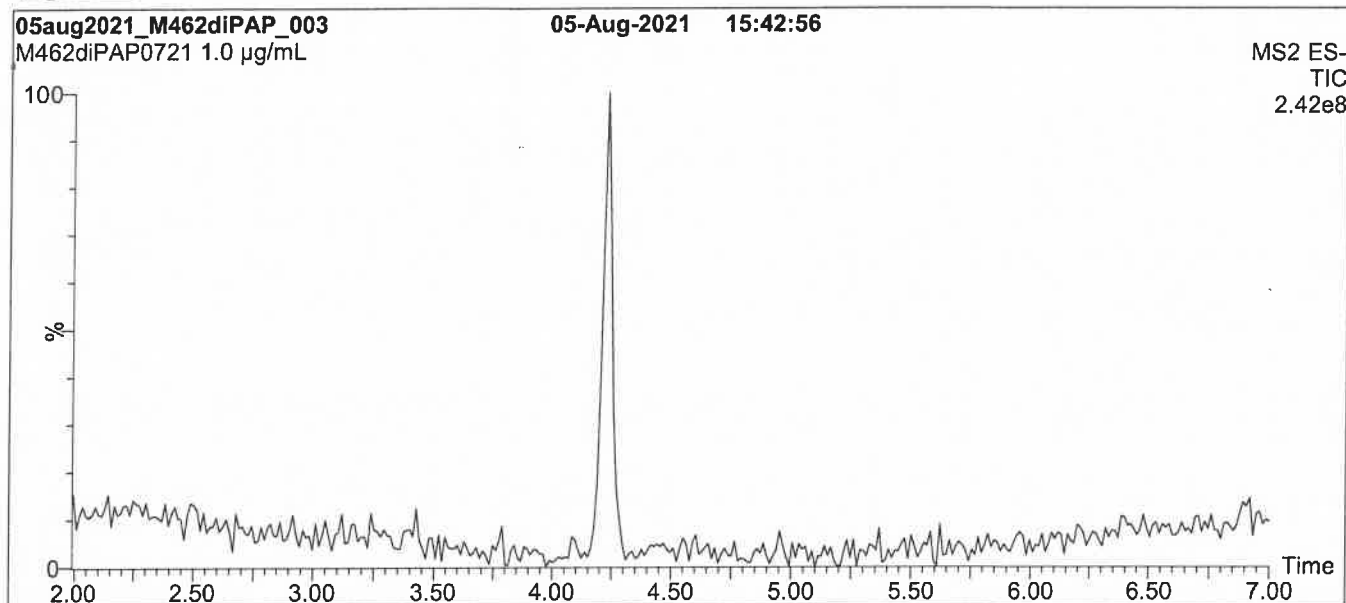
QUALITY MANAGEMENT:

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Figure 1: M4-6:2diPAP; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Zorbax Extend C₁₈
1.8 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 35% H₂O (pH 9, adjusted with NH₄OH) / 65% MeOH
Ramp to 85% organic over 7 min and hold for
2.5 min before returning to initial conditions over 1 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (400 - 1200 amu)

Source: Electrospray (negative)

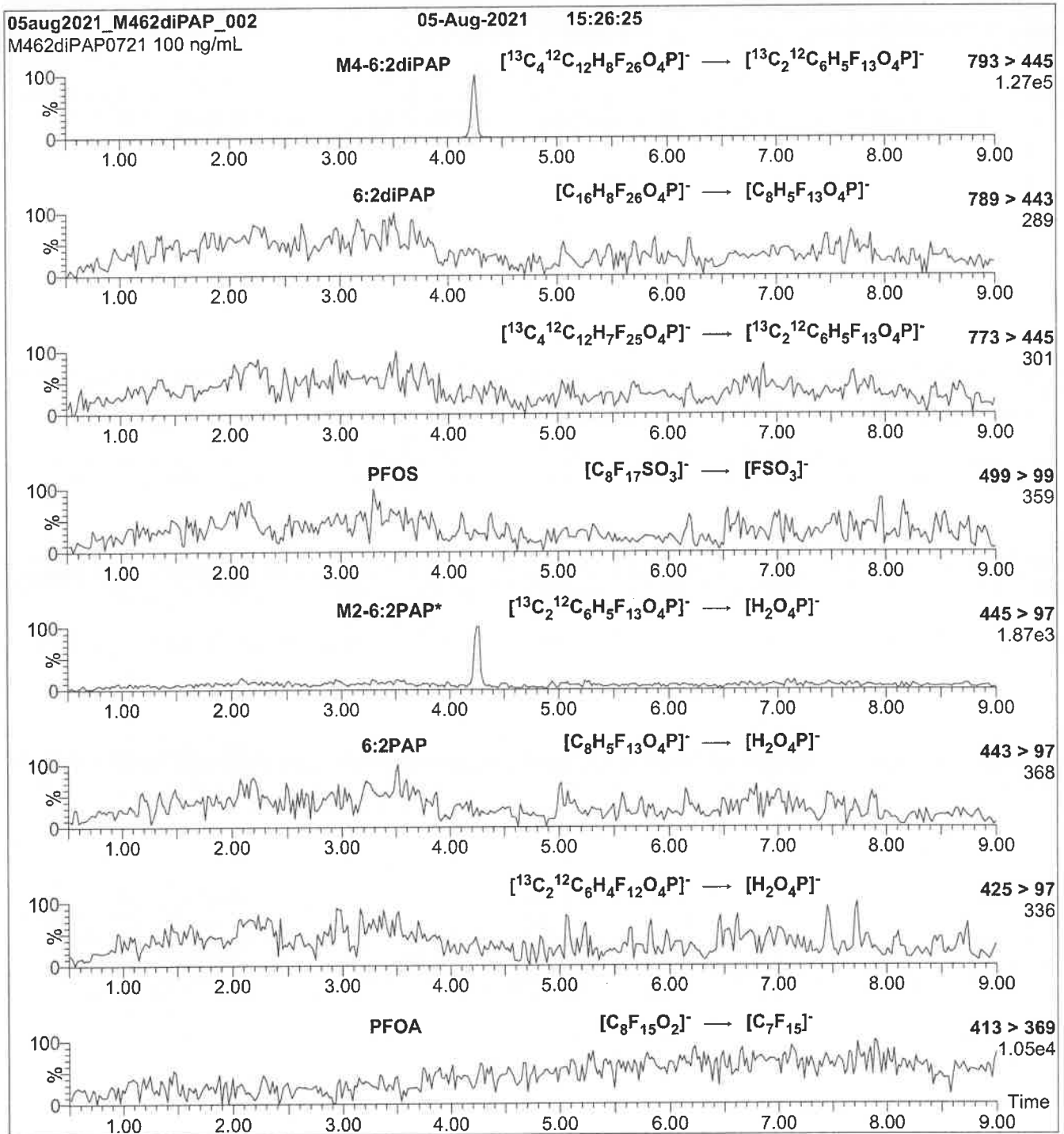
Capillary Voltage (kV) = 2.75

Cone Voltage (V) = 38.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: M4-6:2diPAP; LC/MS/MS Data (Selected MRM Transitions)



*Note: M2-6:2PAP is formed by in-source fragmentation.

Conditions for Figure 2:

Injection: On-column (M4-6:2diPAP)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 16

Reagent

LCM4-8 : 2diPAP_00008



2983770

ID: LCM4-8:2diPAP_00008

Exp:12/01/26 Pdp:PCY Opm:04/21/22

Labeled 8:2diPAP 48.9185

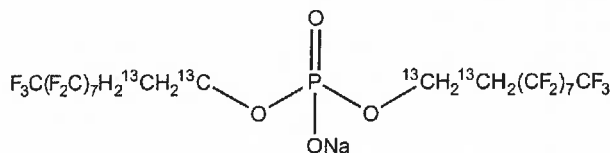


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M4-8:2diPAP **LOT NUMBER:** M482diPAP1121
COMPOUND: Sodium bis[1H,1H,2H,2H-(1,2-¹³C₂)perfluorodecyl] phosphate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₄¹²C₁₆H₈F₃₄O₄PNa **MOLECULAR WEIGHT:** 1016.15
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
LAST TESTED: (mm/dd/yyyy) 12/01/2021 bis(1,2-¹³C₂)
EXPIRY DATE: (mm/dd/yyyy) 12/01/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

$$\begin{array}{r} 1016.15 \\ - 22.99 \\ \hline 993.16 \\ + 1.0(17) \\ \hline 994.17 \end{array} \quad \frac{994.17}{1016.15} \times 50 \frac{\mu\text{g}}{\text{mL}} = 48.9185 \frac{\mu\text{g}}{\text{mL}}$$

pcy 4121122

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 12/03/2021
 (mm/dd/yyyy)

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 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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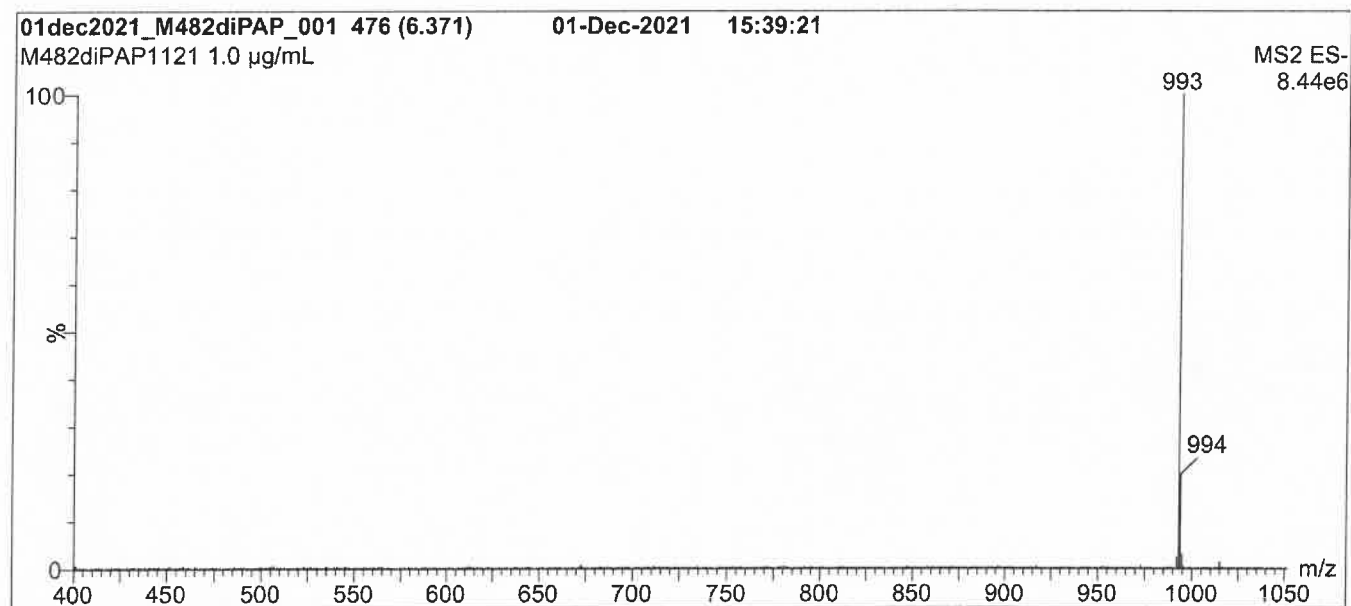
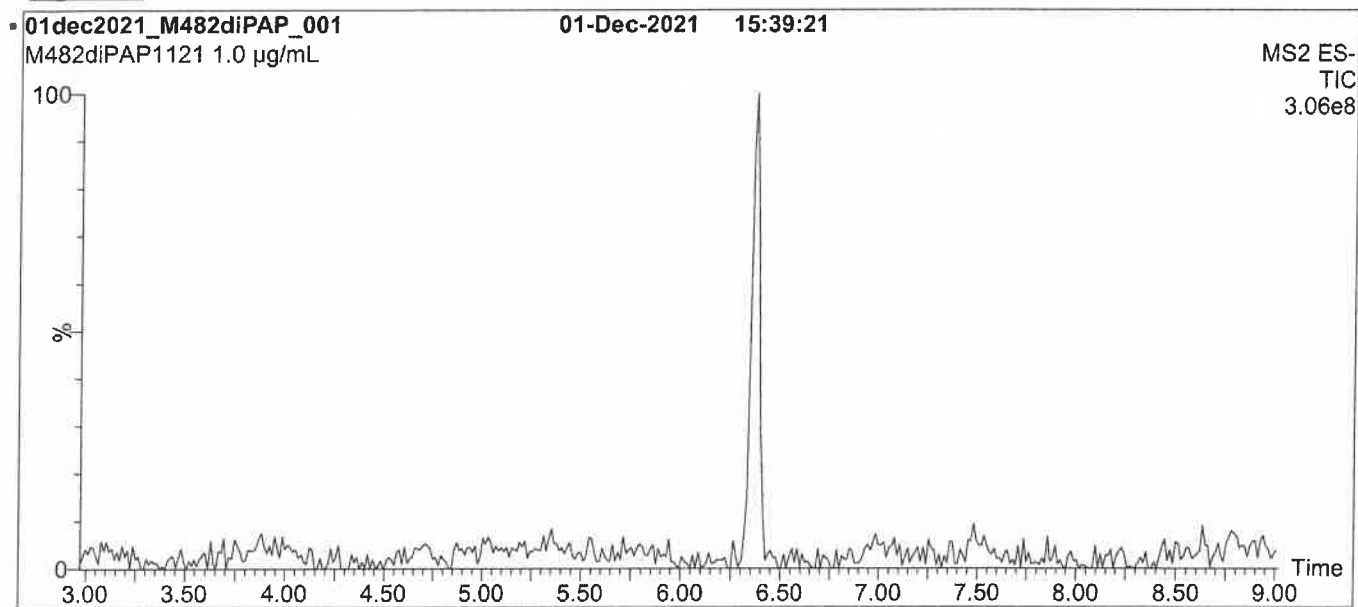
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Figure 1: M4-8:2diPAP; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Zorbax Extend C₁₈
1.8 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 35% H₂O (pH 9, adjusted with NH₄OH)
65% MeOH

Ramp to 85% organic over 7 min and hold for
2.5 min before returning to initial conditions in 1 min.

Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (400 - 1200 amu)

Source: Electrospray (negative)

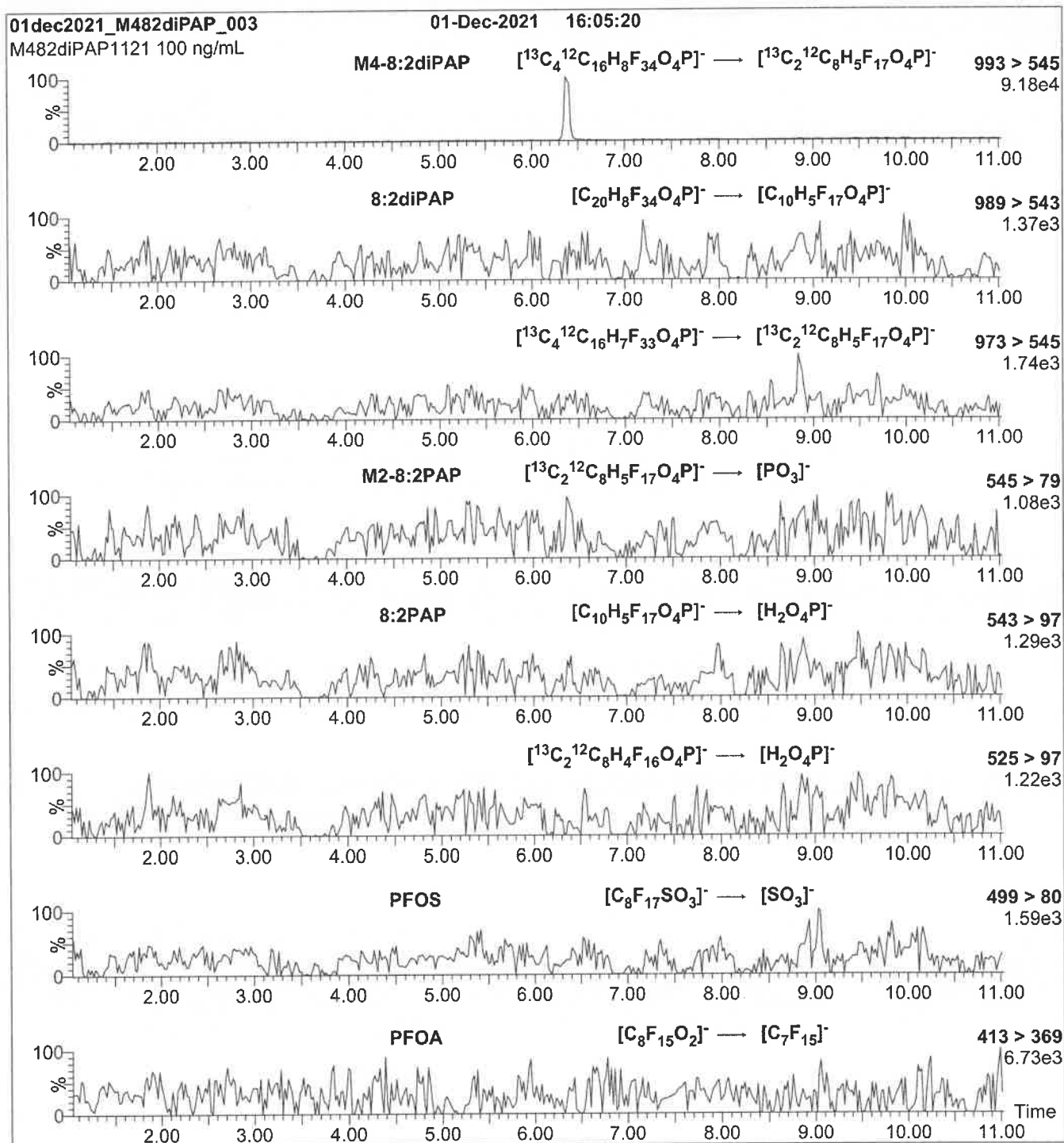
Capillary Voltage (kV) = 2.75

Cone Voltage (V) = 38.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: M4-8:2diPAP; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M4-8:2diPAP)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.33e-3

Collision Energy (eV) = 16

Reagent

LCM4-8 : 2diPAP_00009



3185319

ID: LCM4-8:2diPAP_00009

Exp: 12/01/26 Ppd: 3M Opn: 09/14/22

Labeled 8:2diPAP 48.9185



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

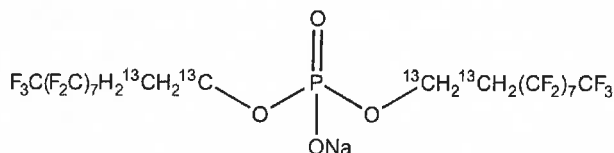
M4-8:2diPAP

LOT NUMBER:

M482diPAP1121

COMPOUND:Sodium bis[1H,1H,2H,2H-(1,2-¹³C₂)perfluorodecyl] phosphate**STRUCTURE:****CAS #:**

Not available

**MOLECULAR FORMULA:**¹³C₄¹²C₁₆H₈F₃₄O₄PNa**CONCENTRATION:**

50.0 ± 2.5 µg/mL

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

12/01/2021

EXPIRY DATE: (mm/dd/yyyy)

12/01/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

MOLECULAR WEIGHT:

1016.15

SOLVENT(S):

Methanol

ISOTOPIC PURITY:≥99%¹³Cbis(1,2-¹³C₂)**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

$$\begin{array}{r} 1016.15 \\ - 22.99(\text{Na}^+) \\ \hline 993.16 \\ + 1.01(\text{H}^+) \\ \hline 994.17 \end{array}$$

IM 9/16/22

$$\frac{994.17}{1016.15} \cdot 50.0 = 48.9185 \mu\text{g/mL}$$

48.9185 µg/mL

IM 9/16/22

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Certified By:

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

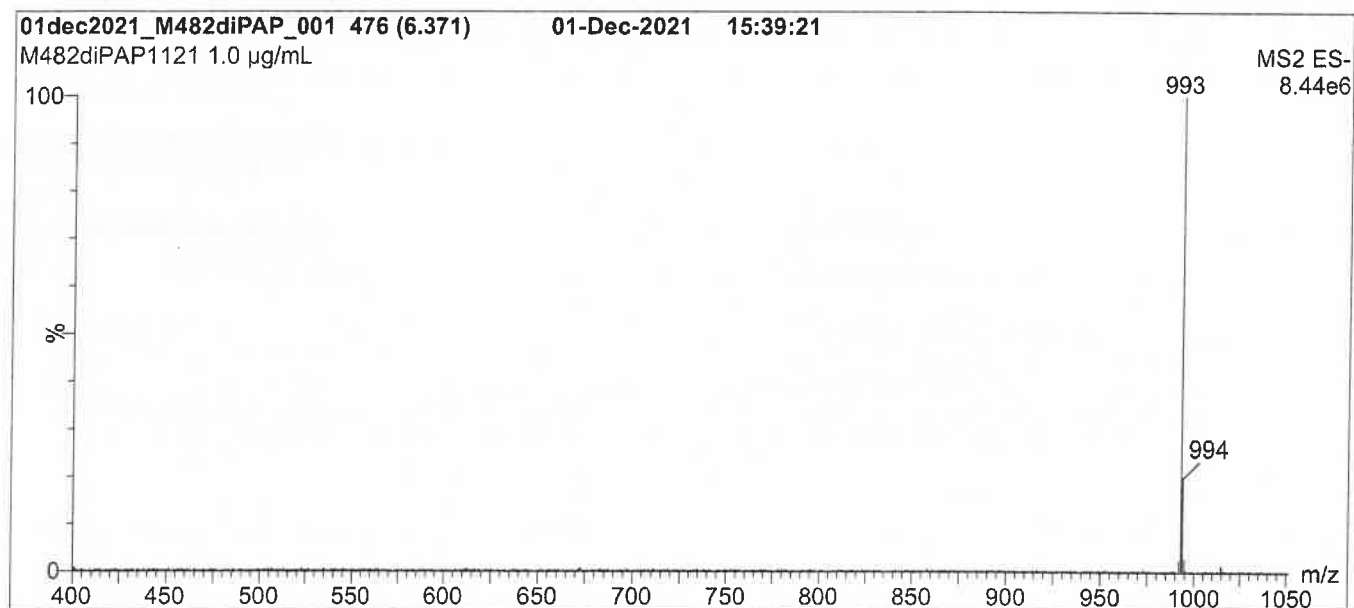
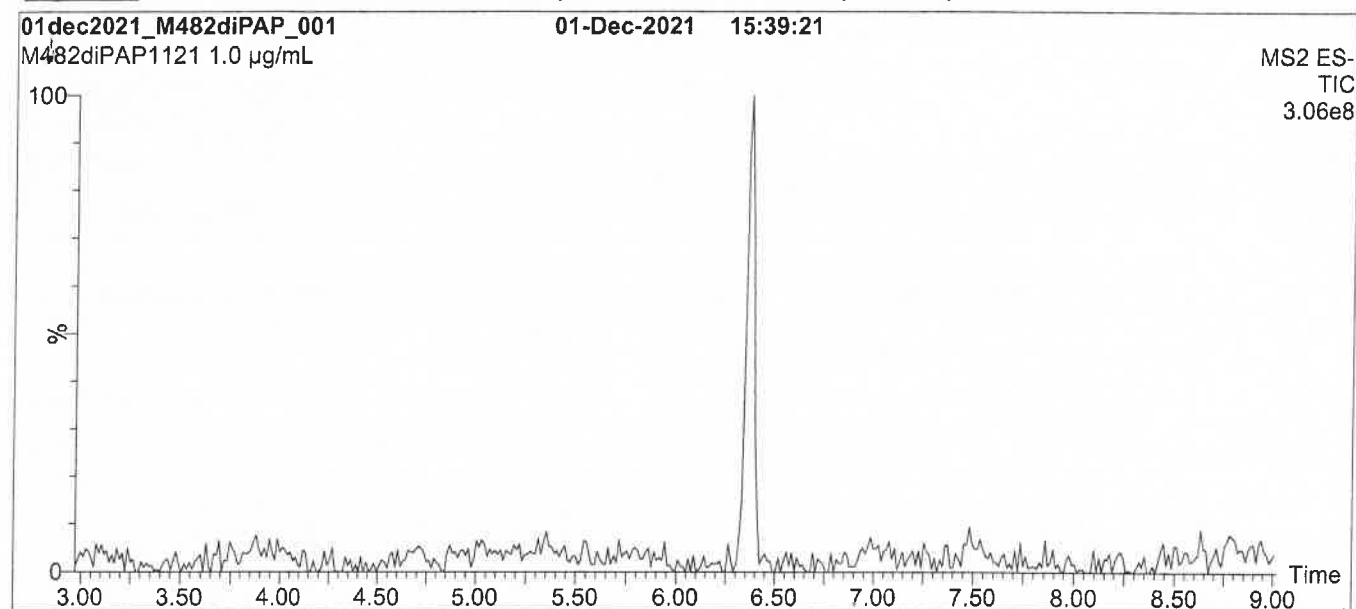
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: M4-8:2diPAP; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Zorbax Extend C₁₈
1.8 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 35% H₂O (pH 9, adjusted with NH₄OH)
65% MeOH

Ramp to 85% organic over 7 min and hold for
2.5 min before returning to initial conditions in 1 min.

Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (400 - 1200 amu)

Source: Electrospray (negative)

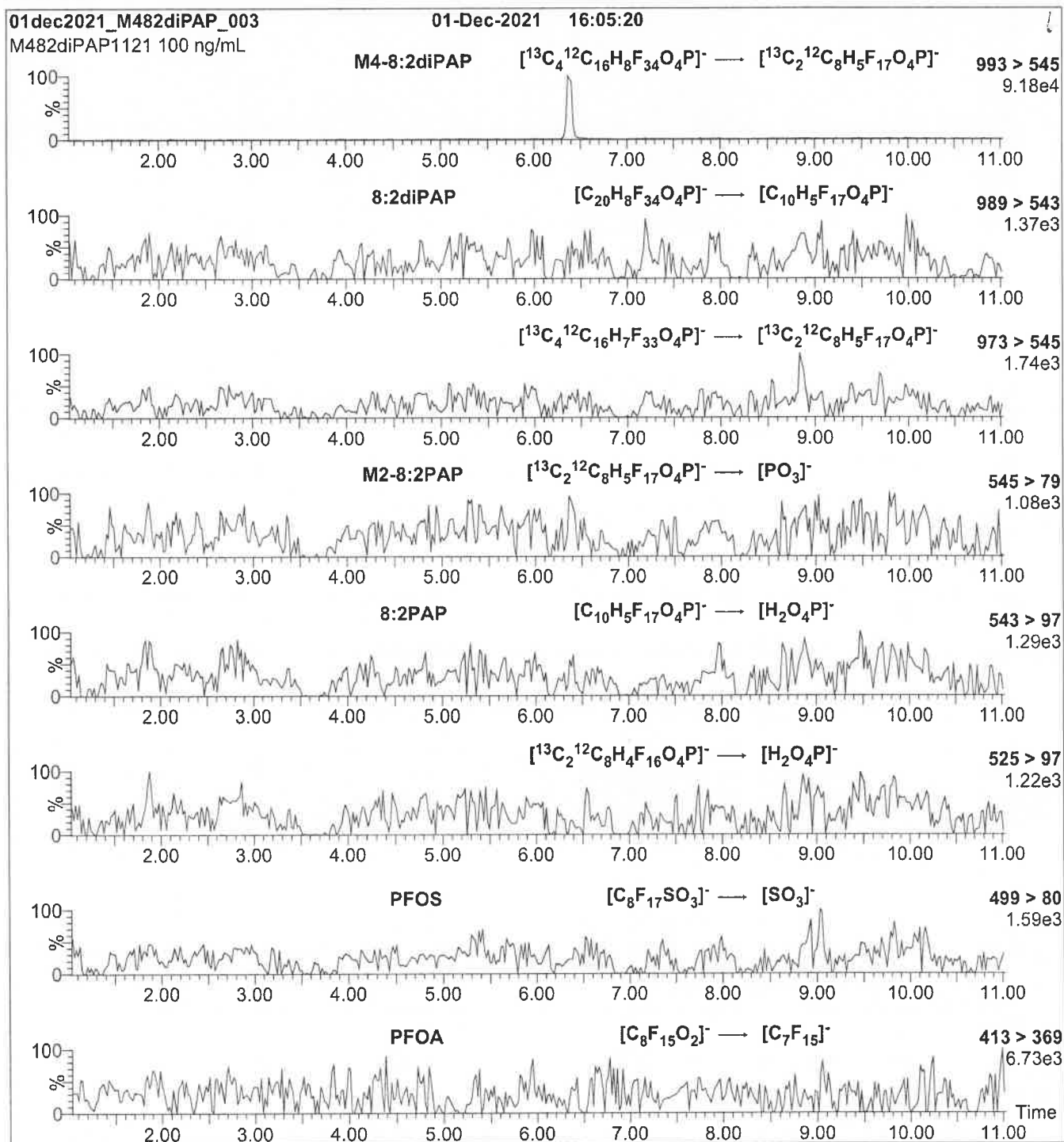
Capillary Voltage (kV) = 2.75

Cone Voltage (V) = 38.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: M4-8:2diPAP; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M4-8:2diPAP)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.33e-3

Collision Energy (eV) = 16

Reagent

LCM4PFHPA_00045



2855990

ID: LCM4PFHPA_00045

Exp: 12/07/26 Pypd: M Open: 01/12/22

13C4-Perfluoroheptanoic a



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

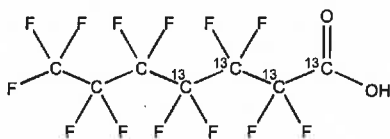
M4PFHpA

LOT NUMBER:

M4PFHpA1121

COMPOUND:Perfluoro-n-(1,2,3,4-¹³C₄)heptanoic acid**STRUCTURE:****CAS #:**

2328024-55-9

**MOLECULAR FORMULA:**¹³C₄¹²C₃HF₁₃O₂**CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

368.03

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

12/07/2021

(1,2,3,4-¹³C₄)**EXPIRY DATE:** (mm/dd/yyyy)

12/07/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~0.03% of perfluoro-n-heptanoic acid (PFHpA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

12/22/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

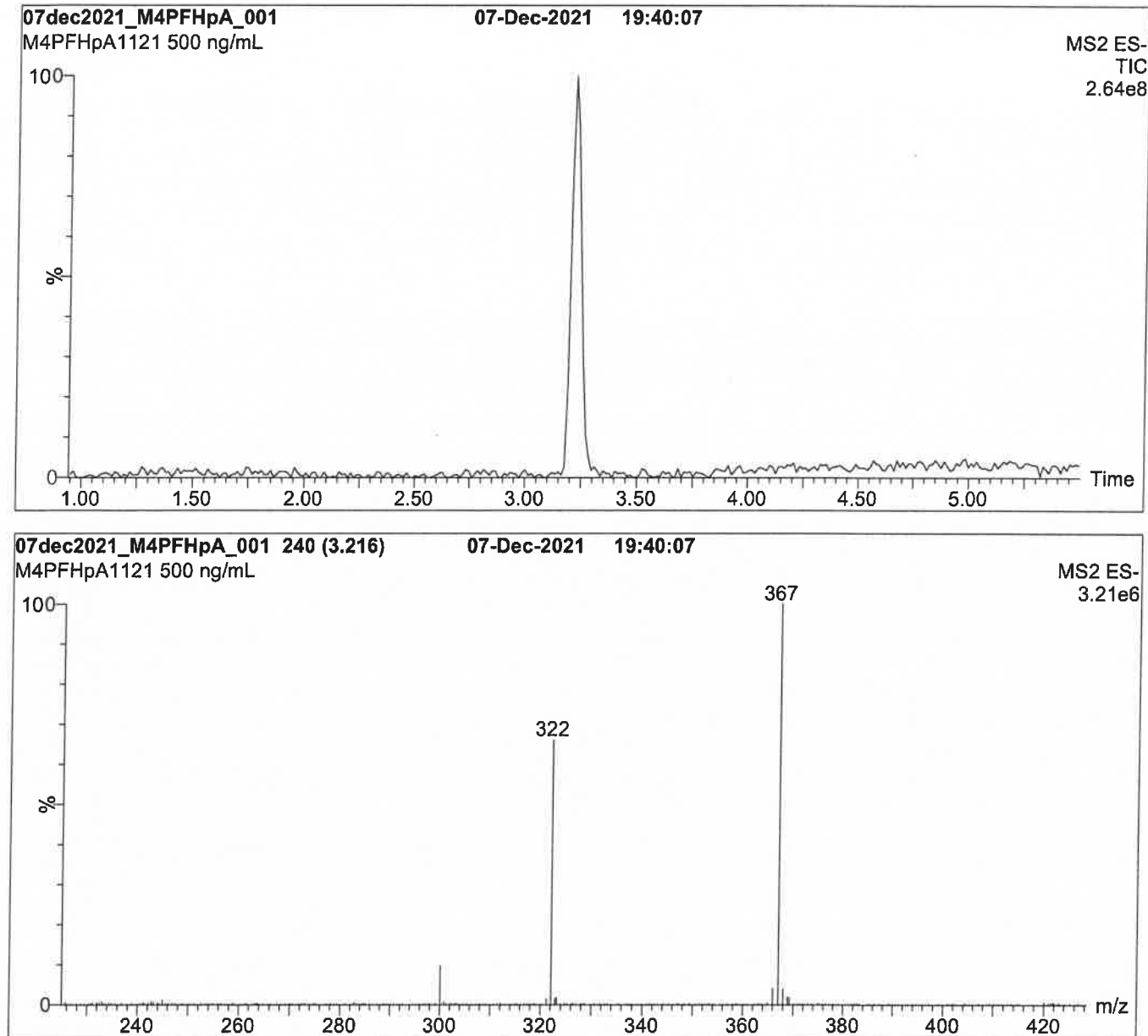
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: M4PFHpA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)

(both with 10 mM NH₄OAc buffer)

Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.

Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

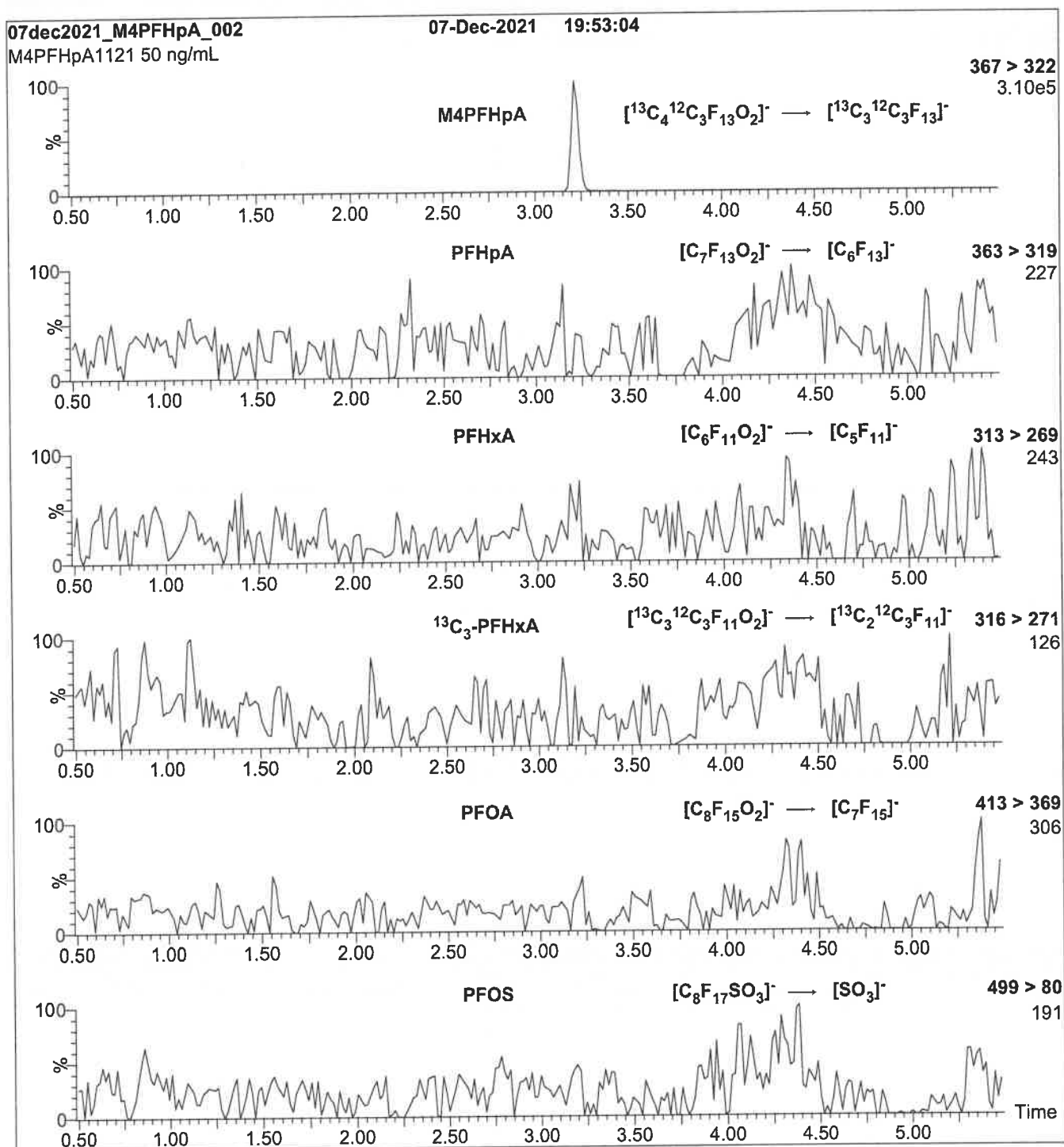
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: M4PFHpA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M4PFHpA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 8

Reagent

LCM4PFHPA_00046



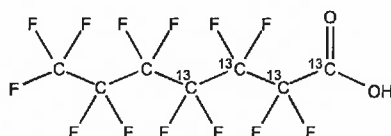
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M4PFHpA
COMPOUND: Perfluoro-n-(1,2,3,4-¹³C₄)heptanoic acid

LOT NUMBER: M4PFHpA1121

STRUCTURE:
CAS #: 2328024-55-9



MOLECULAR FORMULA: ¹³C₄¹²C₃HF₁₀O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 368.03
SOLVENT(S): Methanol
Water (<1%)
ISOTOPIC PURITY: ≥99% ¹³C
(1,2,3,4-¹³C₄)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 12/07/2021
EXPIRY DATE: (mm/dd/yyyy) 12/07/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~0.03% of perfluoro-n-heptanoic acid (PFHpA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 12/22/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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LIMITED WARRANTY:

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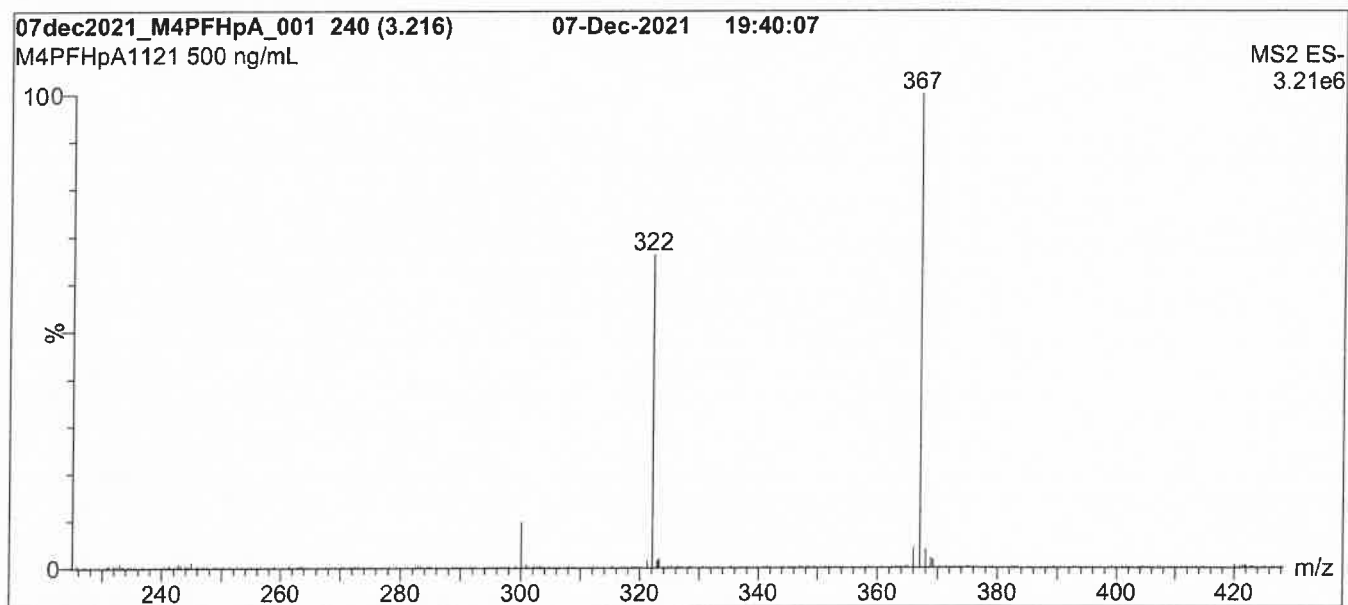
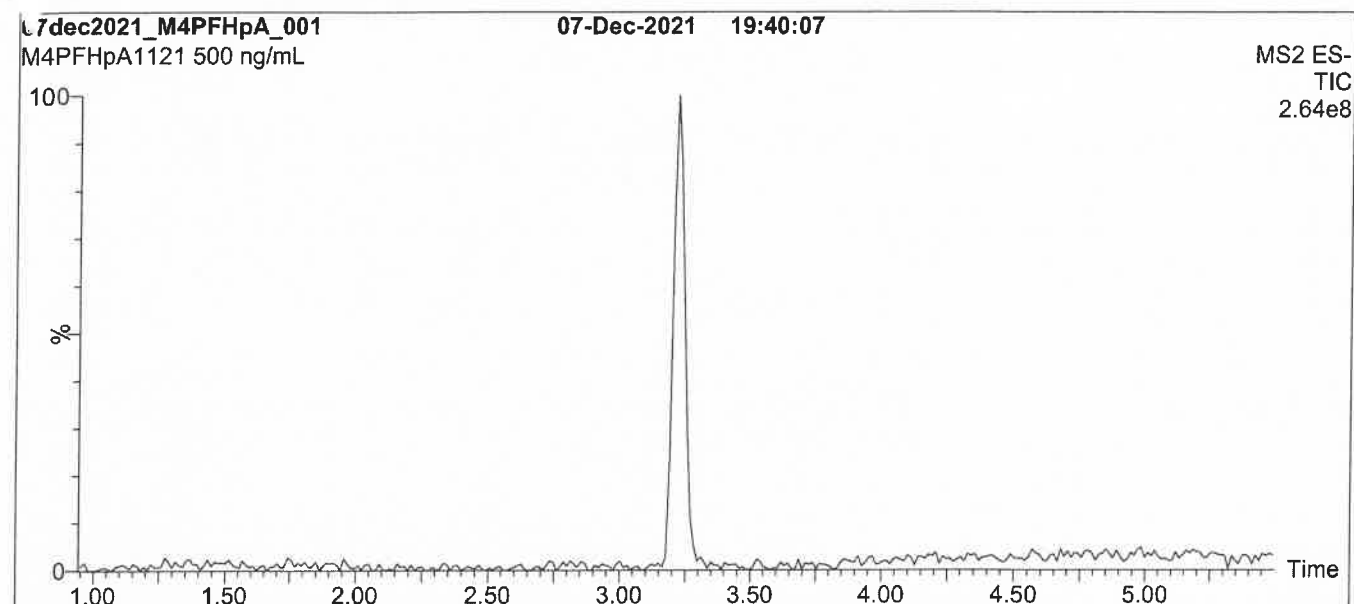
QUALITY MANAGEMENT:

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Figure 1: M4PFHpA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

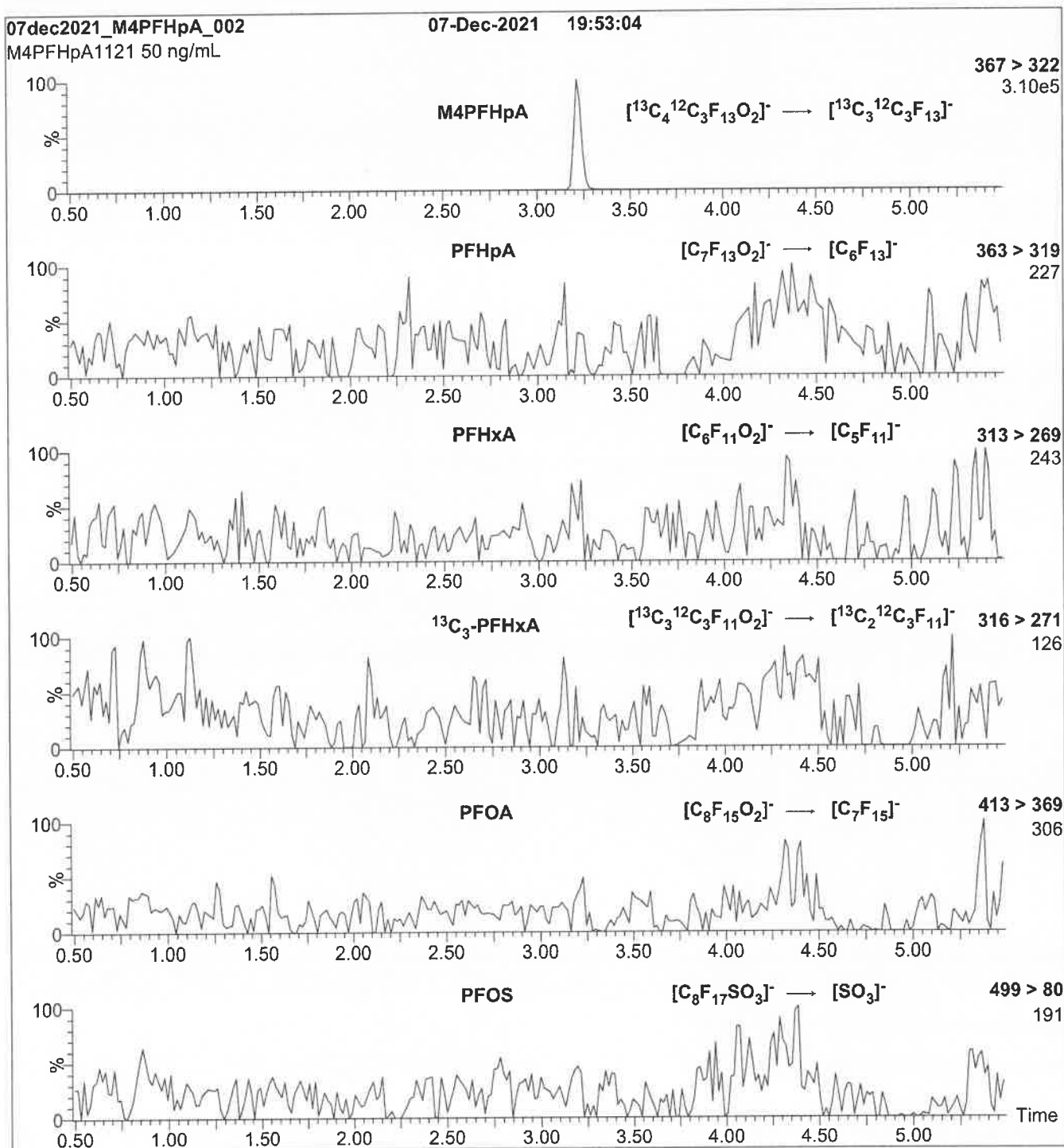
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: M4PFHpA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M4PFHpA)
Mobile phase: Same as Figure 1
Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 8

Reagent

LCM4PFHPA_00047



2979046

ID: LCM4PFHPA_00047

Exp: 12/07/26 Prd: 3M Opi: 04/19/22

13C4-Perfluoroheptanoic a



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

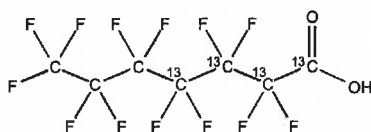
M4PFHPA

LOT NUMBER:

M4PFHPA1121

COMPOUND:Perfluoro-n-(1,2,3,4-¹³C₄)heptanoic acid**STRUCTURE:****CAS #:**

2328024-55-9

**MOLECULAR FORMULA:**¹³C₄¹²C₃HF₁₃O₂**CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

368.03

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

12/07/2021

(1,2,3,4-¹³C₄)**EXPIRY DATE:** (mm/dd/yyyy)

12/07/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~0.03% of perfluoro-n-heptanoic acid (PFHPA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

12/22/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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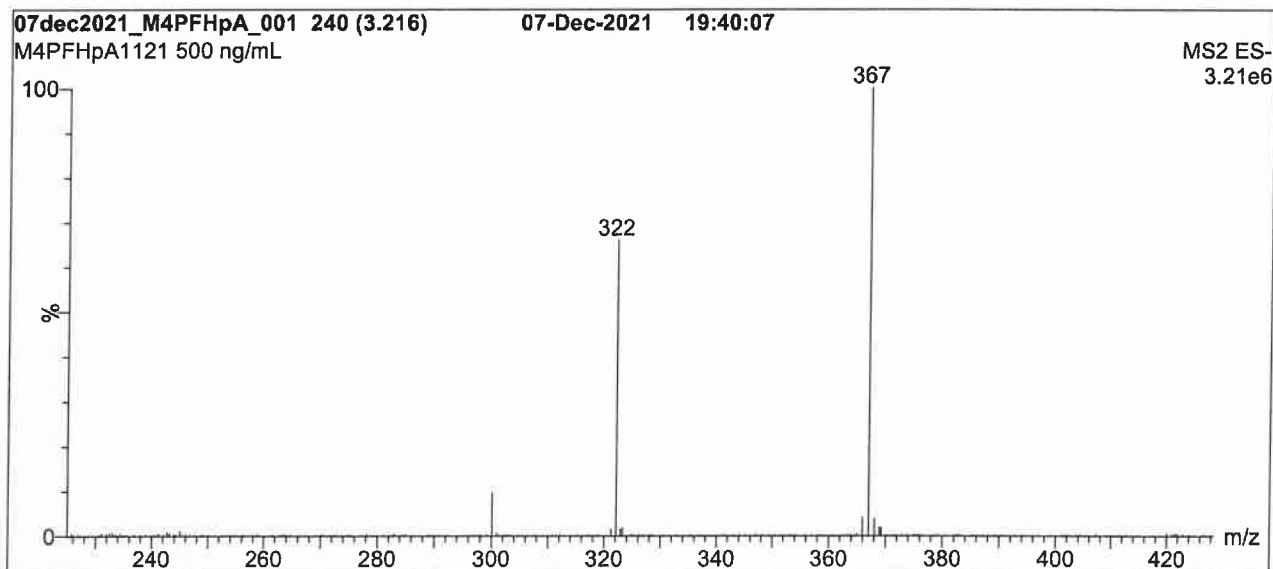
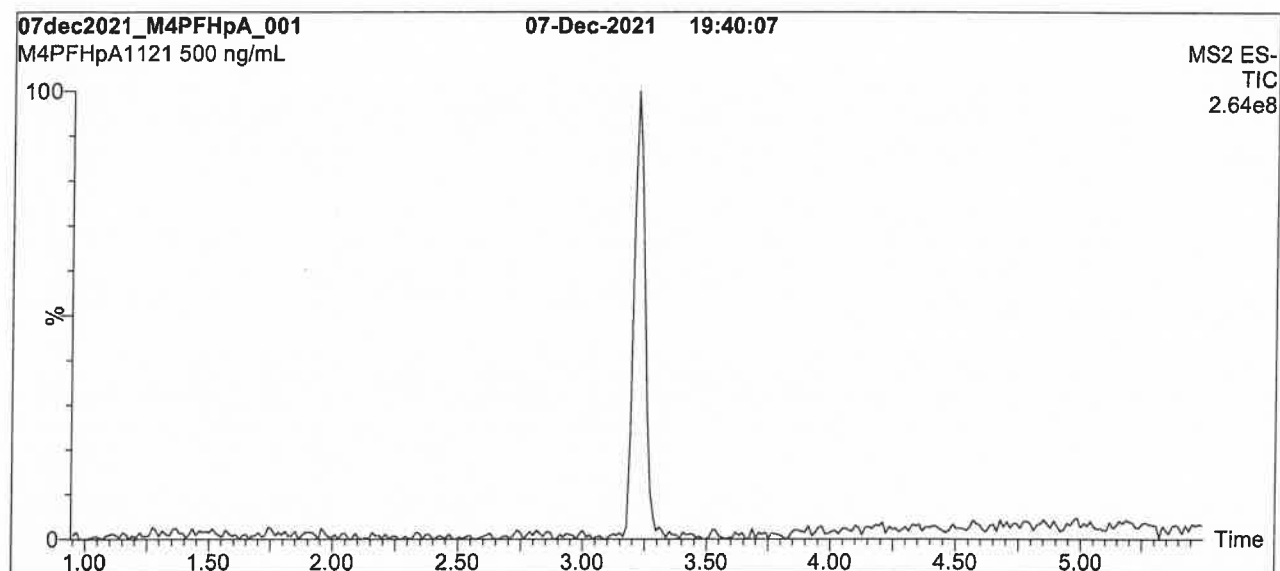
QUALITY MANAGEMENT:

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Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

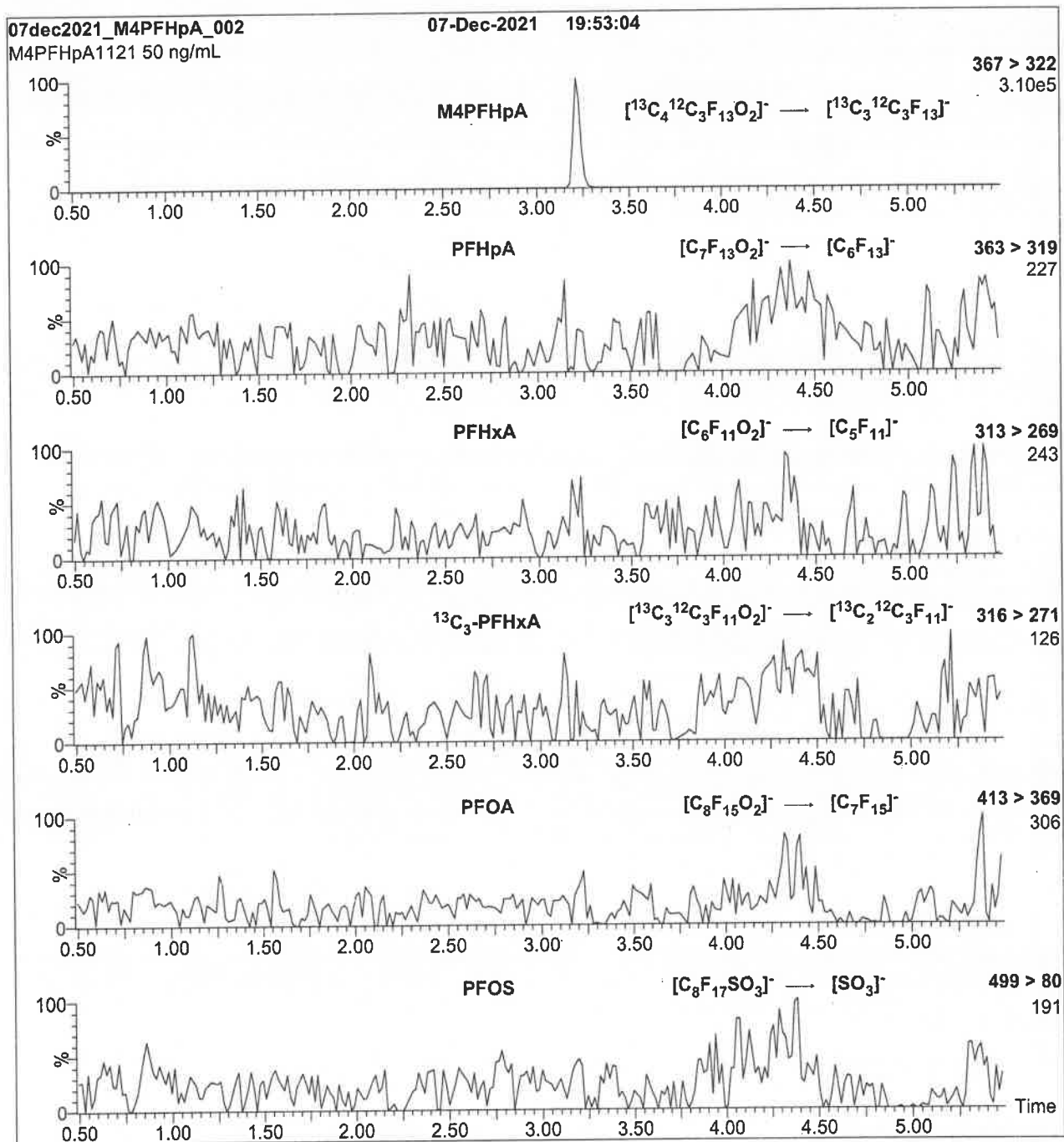
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: M4PFHpA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M4PFHpA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 8

Reagent

LCM4PFHPA_00048

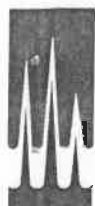


3179693

ID: LCM4PFHPA_00048

Exp: 07/21/27 Ppd: 09/14/22

13C4-Perfluoroheptanoic a



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

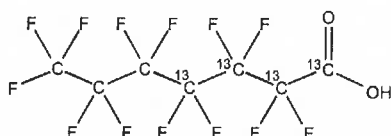
M4PFHpA

LOT NUMBER:

M4PFHpA0722

COMPOUND:Perfluoro-n-(1,2,3,4-¹³C₄)heptanoic acid**STRUCTURE:****CAS #:**

2328024-55-9

**MOLECULAR FORMULA:**¹³C₄¹²C₃HF₁₃O₂**CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

368.03

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

07/21/2022

EXPIRY DATE: (mm/dd/yyyy)

07/21/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

(1,2,3,4-¹³C₄)**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~0.03% of perfluoro-n-heptanoic acid (PFHpA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 08/04/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA

519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response-factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

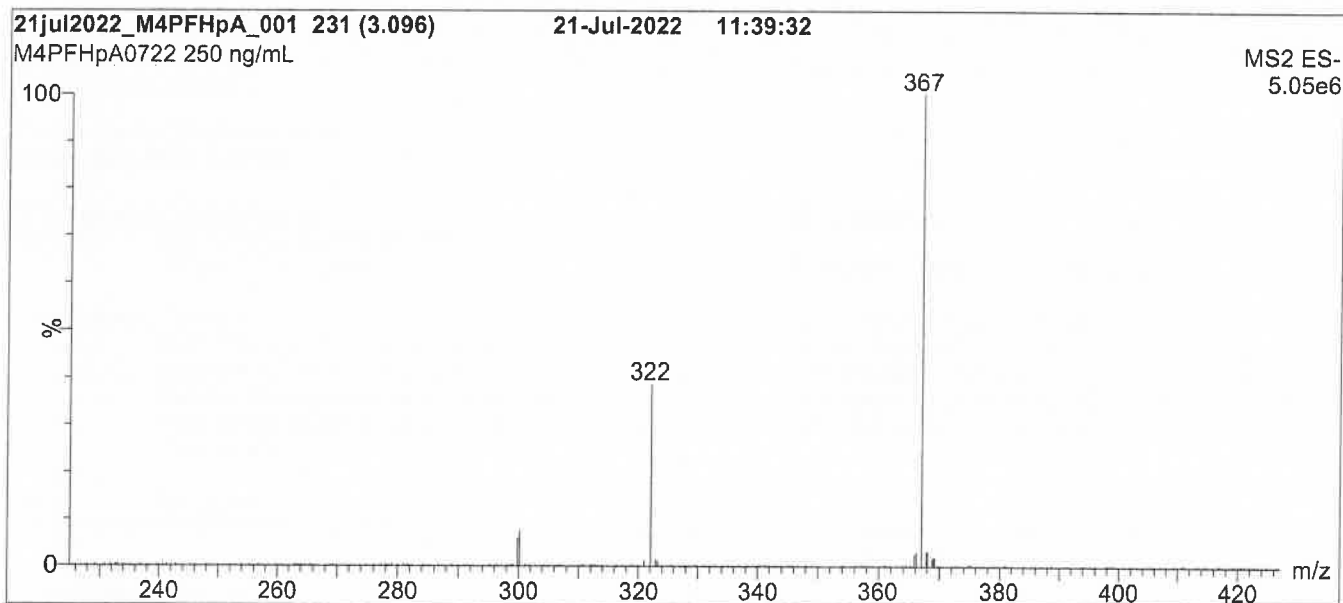
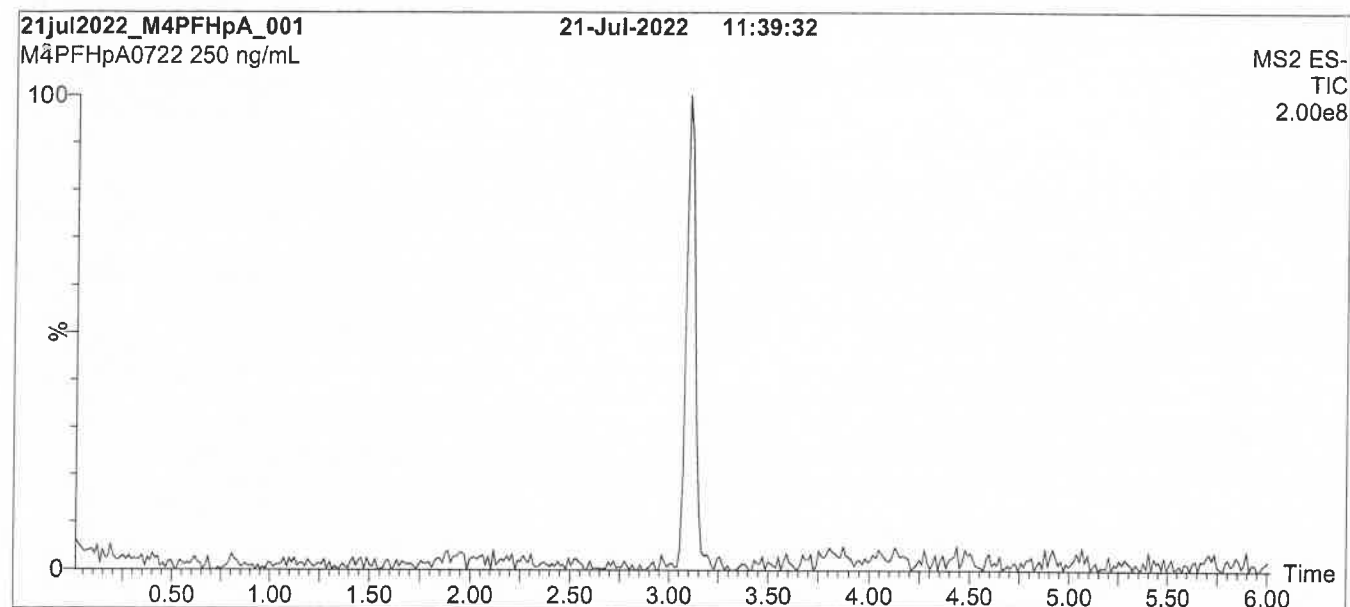
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: M4PFHpA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

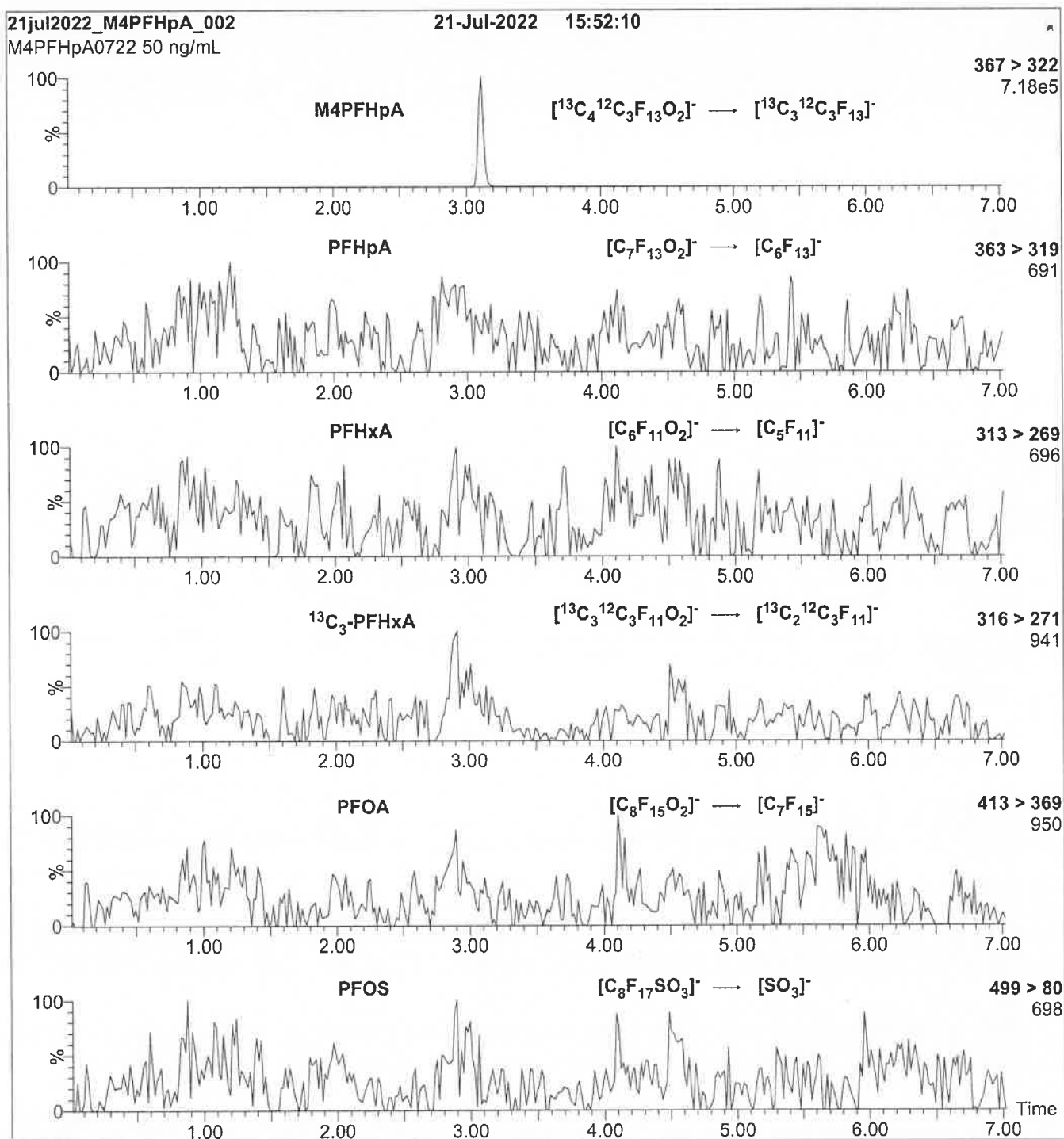
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: M4PFHpA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M4PFHpA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.22e-3

Collision Energy (eV) = 8

Reagent

LCM5PFPEA_00048



2978919

ID: LCM5PFPEA_00048
Exp:08/10/26 Prod:3M Opr:04/19/22
13C5-Perfluoropentanoic a**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PRODUCT CODE:**

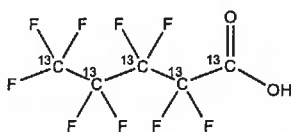
M5PFPeA

LOT NUMBER:

M5PFPeA0821

COMPOUND:Perfluoro-n-(¹³C₅)pentanoic acid**STRUCTURE:****CAS #:**

2283397-79-3

**MOLECULAR FORMULA:**¹³C₅HF₉O₂**MOLECULAR WEIGHT:**

269.01

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

08/10/2021

(¹³C₅)**EXPIRY DATE:** (mm/dd/yyyy)

08/10/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

08/19/2021
(mm/dd/yyyy)Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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LIMITED WARRANTY:

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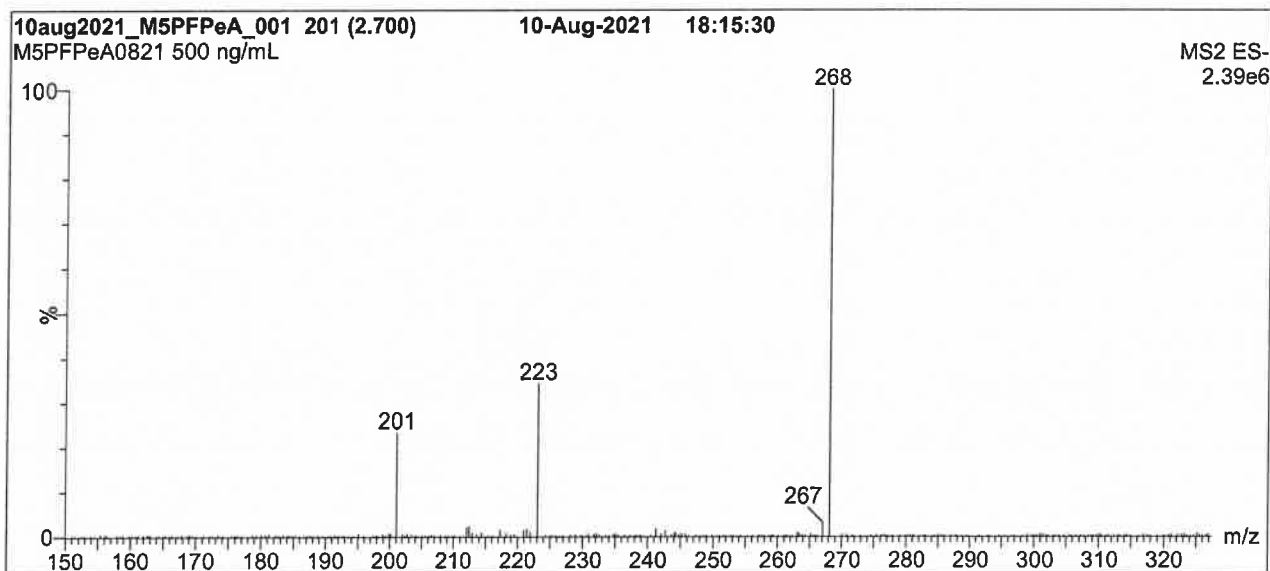
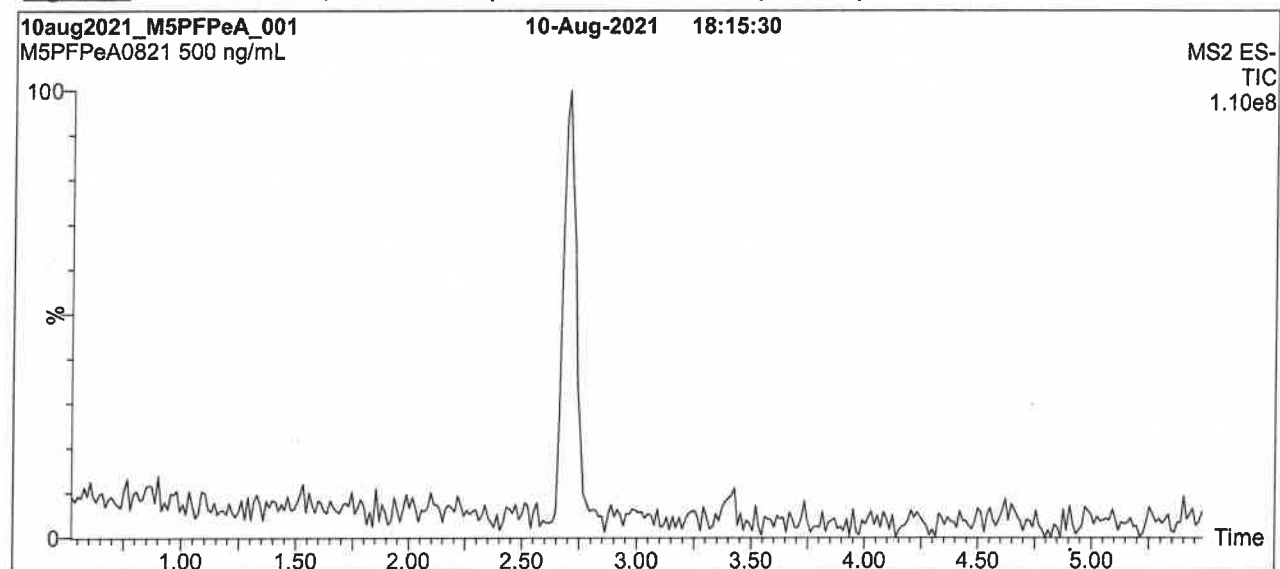
QUALITY MANAGEMENT:

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Figure 1: M5PFPeA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

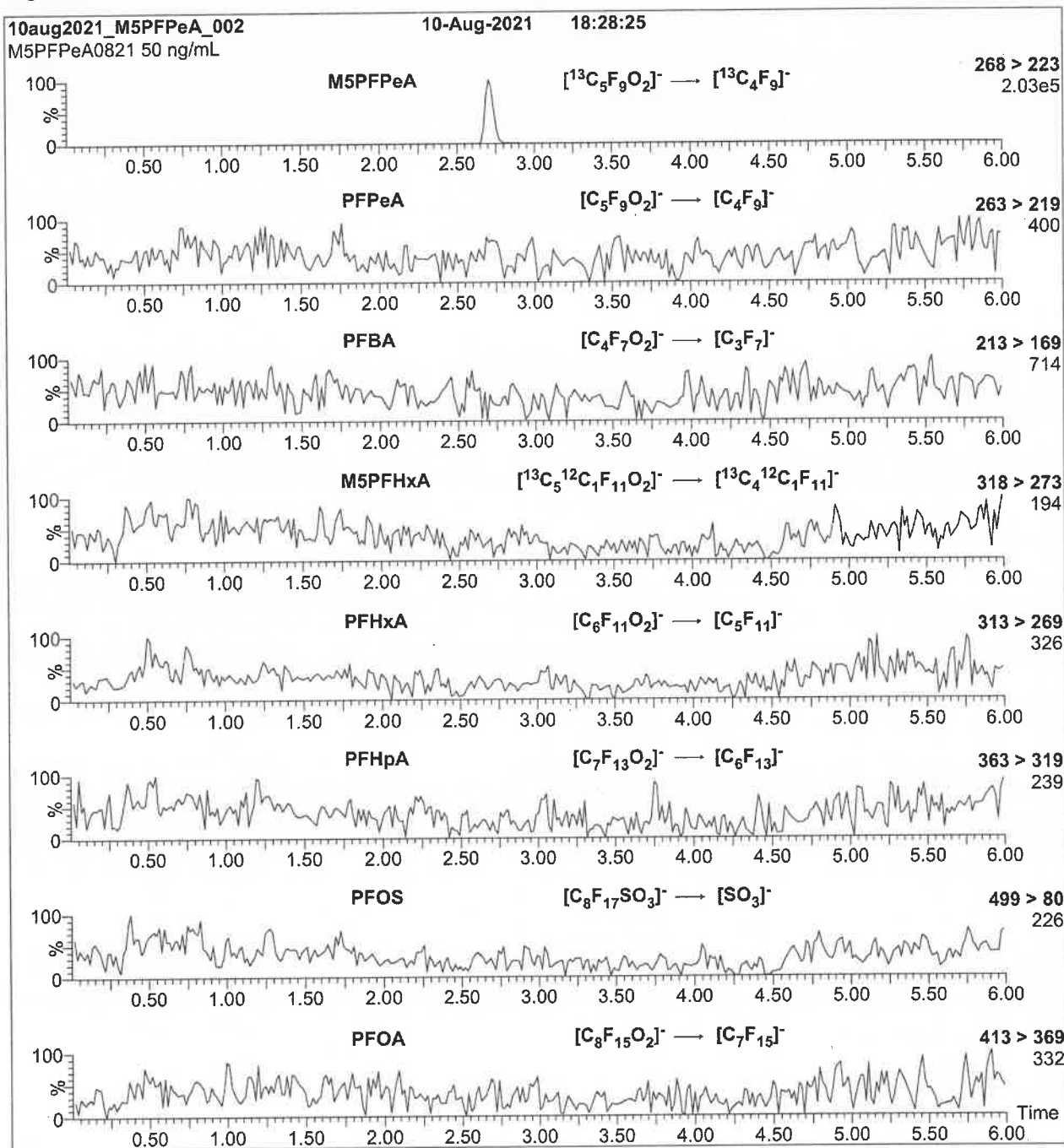
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: M5PFPeA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M5PFPeA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 8

Reagent

LCM5PFPEA_00049



3179672

ID: LCM5PFPEA_00049
Exp:08/10/26 Pp:01/01 Opn:09/14/22
13C5-Perfluoropentanoic a

WELLINGTON LABORATORIES

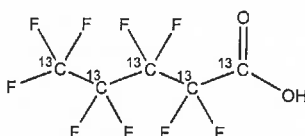
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M5PFPeA
COMPOUND: Perfluoro-n-(¹³C₅)pentanoic acid

LOT NUMBER: M5PFPeA0821

STRUCTURE:

CAS #: 2283397-79-3



MOLECULAR FORMULA: ¹³C₅HF₉O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 269.01
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%

ISOTOPIC PURITY: ≥99% ¹³C
(¹³C₅)

LAST TESTED: (mm/dd/yyyy) 08/10/2021

EXPIRY DATE: (mm/dd/yyyy) 08/10/2026

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 08/19/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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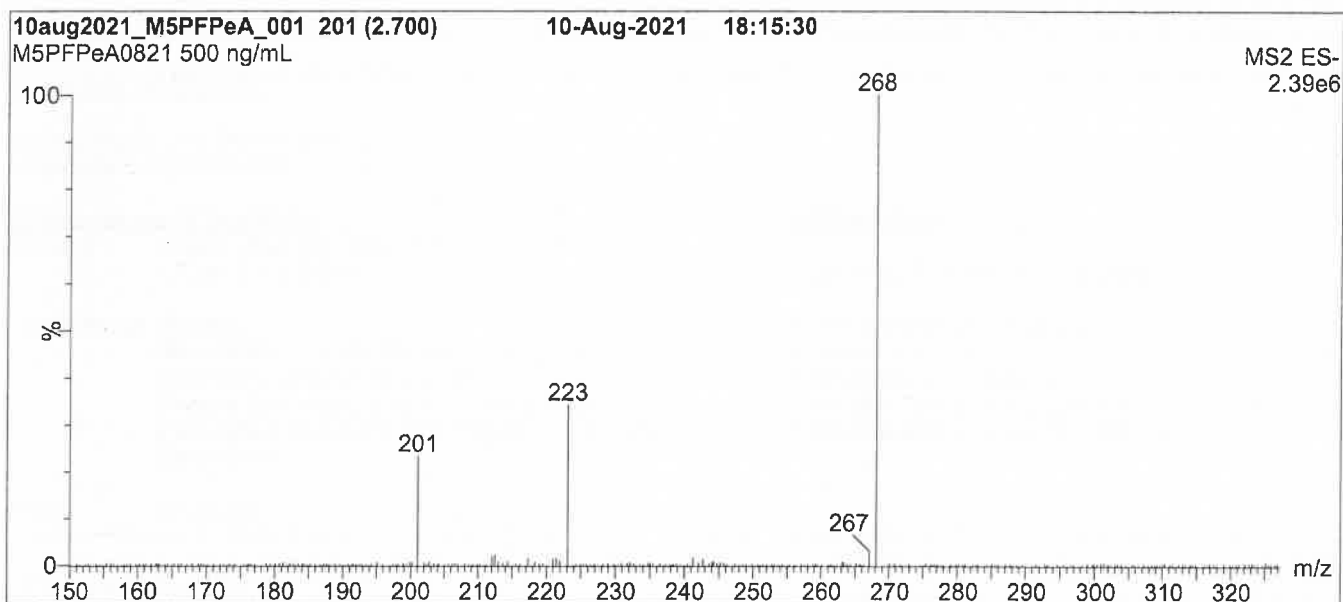
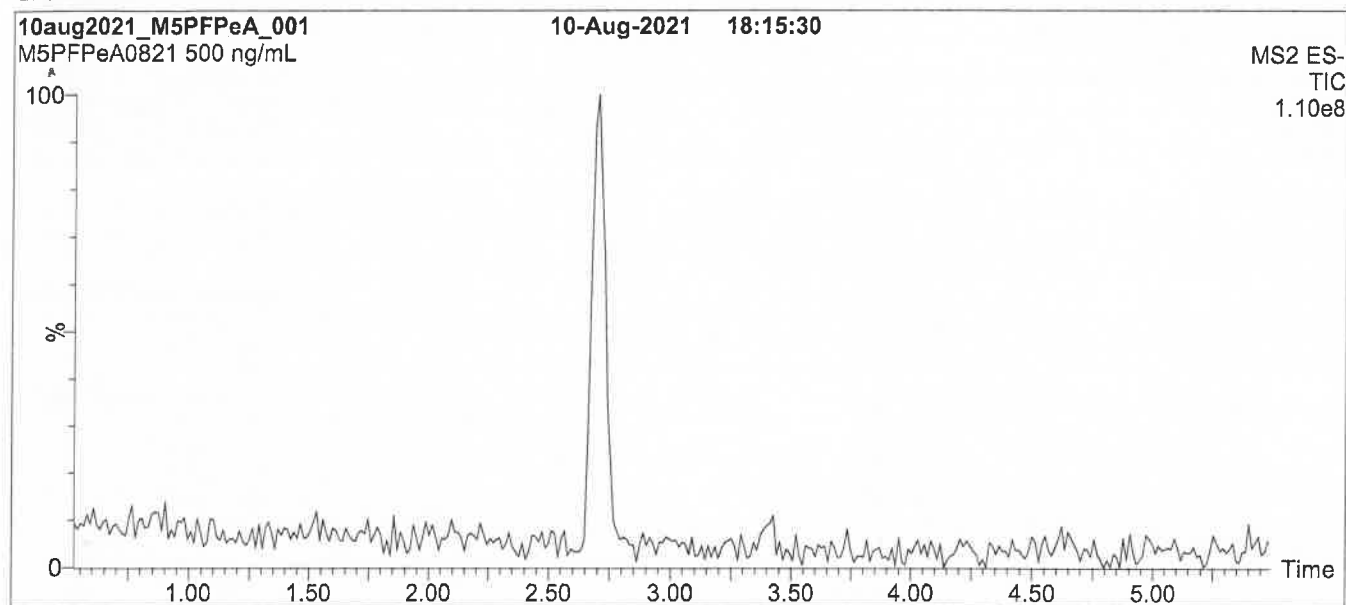
QUALITY MANAGEMENT:

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Figure 1: M5PFPeA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

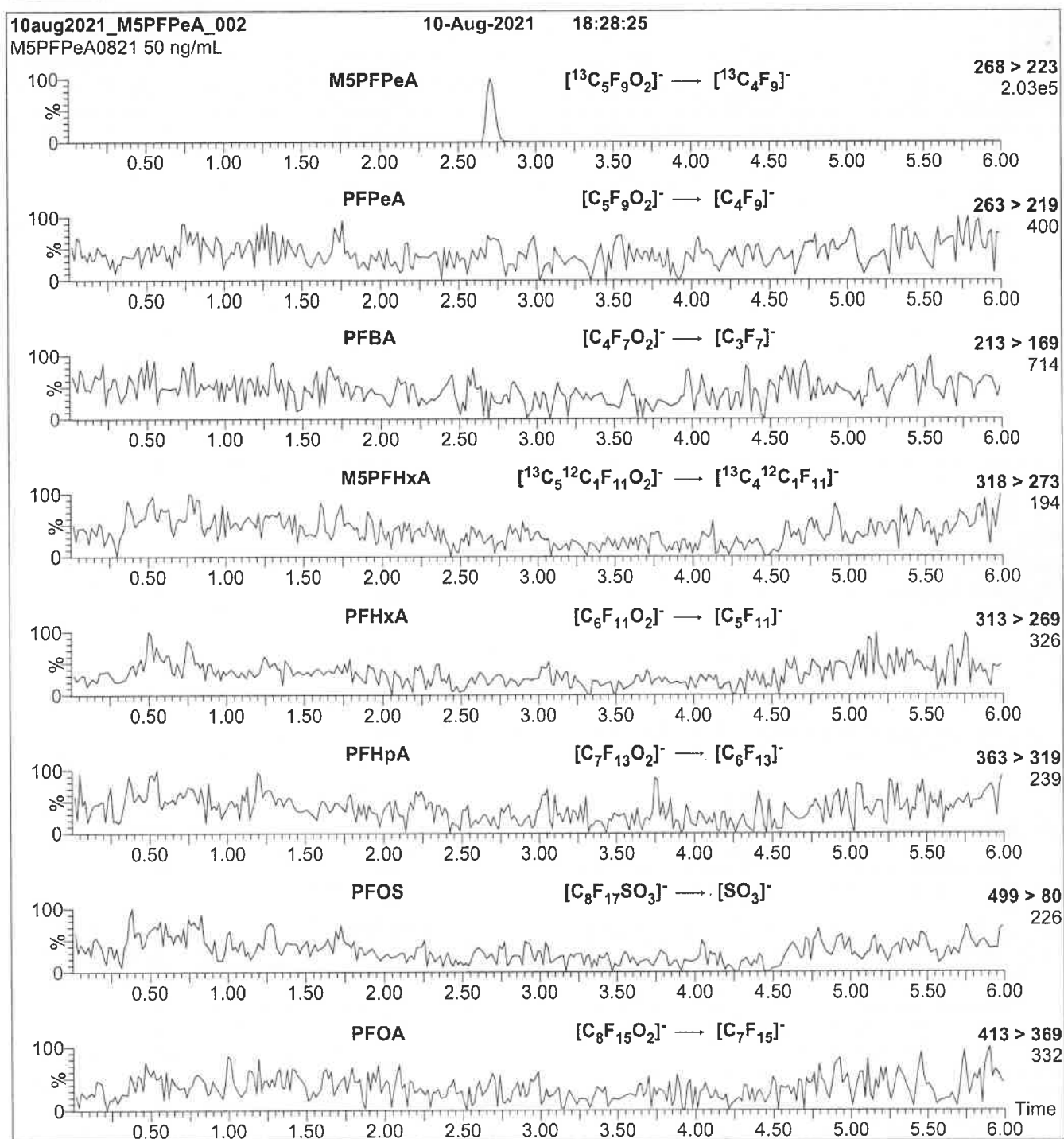
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: M5PFPeA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M5PFPeA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 8

Reagent

LCM8FOSA_00051



2856124

ID: LCM8FOSA_00051

Exp: 10/12/26 PrpdMM Opa: 01/12/22
13C8-Perfluorooctanesulfo**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PRODUCT CODE:**

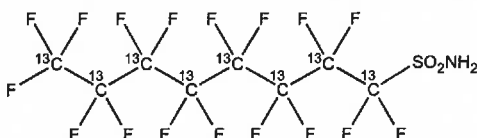
M8FOSA-I

LOT NUMBER:

M8FOSA0921I

COMPOUND:Perfluoro-1-(¹³C₈)octanesulfonamide**STRUCTURE:****CAS #:**

1365803-60-6

**MOLECULAR FORMULA:**¹³C₈H₂F₁₇NO₂S**MOLECULAR WEIGHT:**

507.09

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Isopropanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% (¹³C₈)**LAST TESTED:** (mm/dd/yyyy)

10/12/2021

EXPIRY DATE: (mm/dd/yyyy)

10/12/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~1.0% of perfluoro-1-(¹³C₈)octanesulfonamide and ~0.2% of perfluoro-1-(¹³C₇)heptanesulfonamide.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**

B.G. Chittim, General Manager
Date:10/14/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

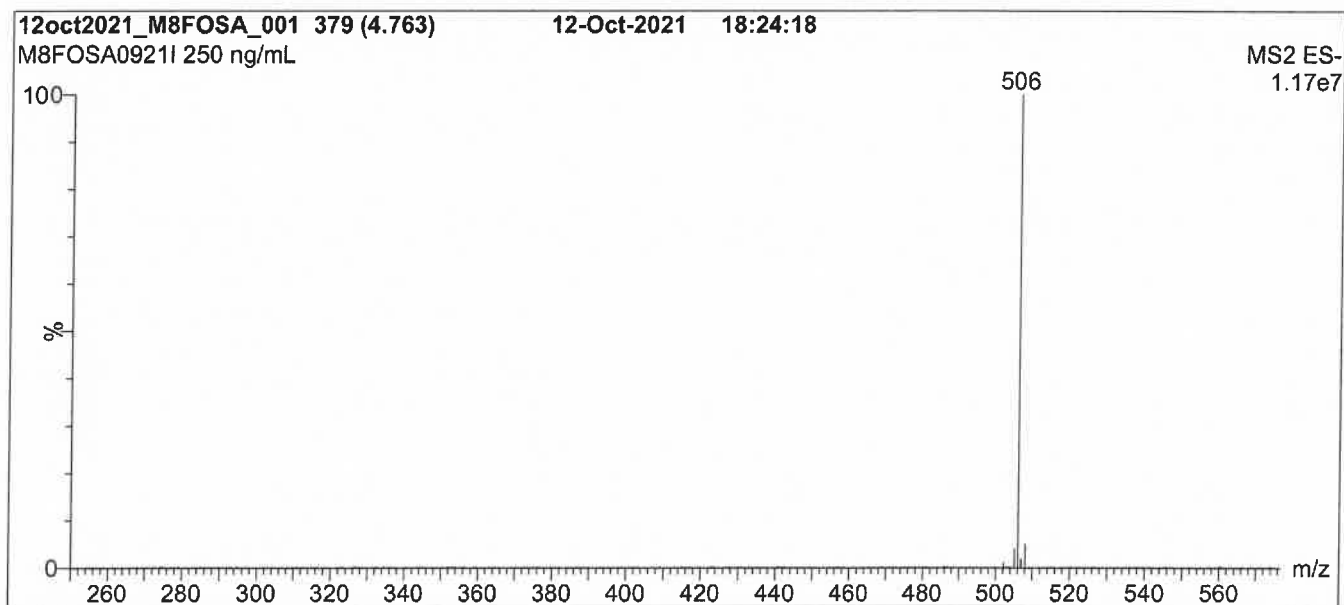
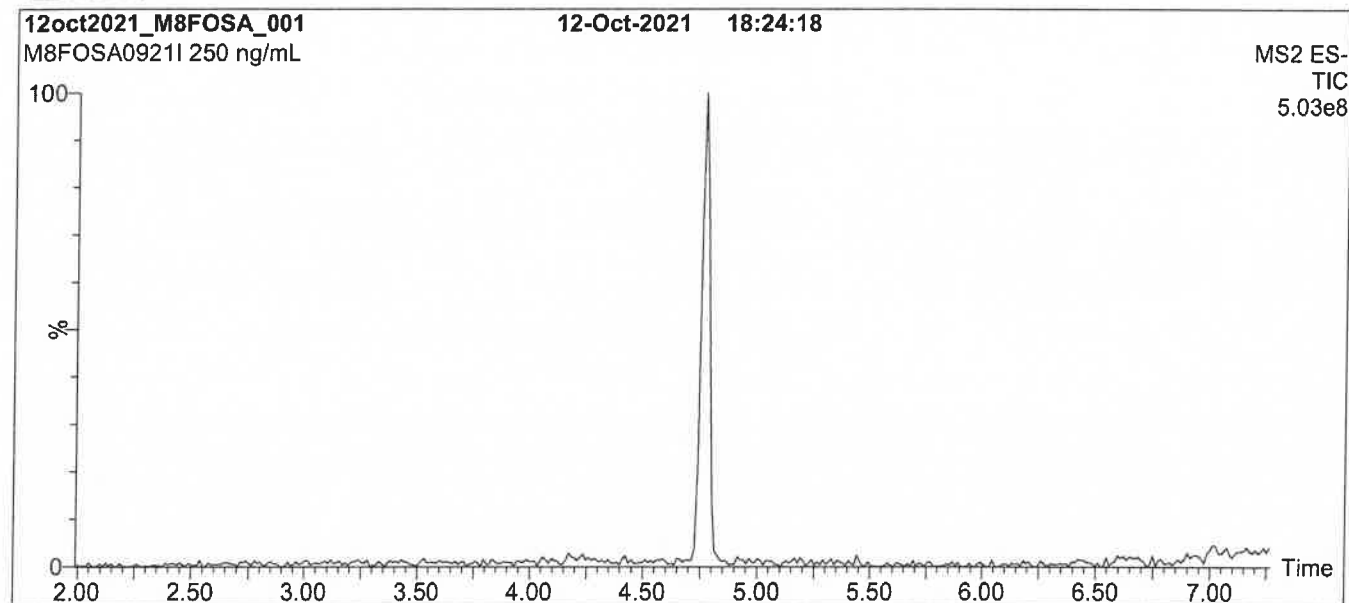
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: M8FOSA-I; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

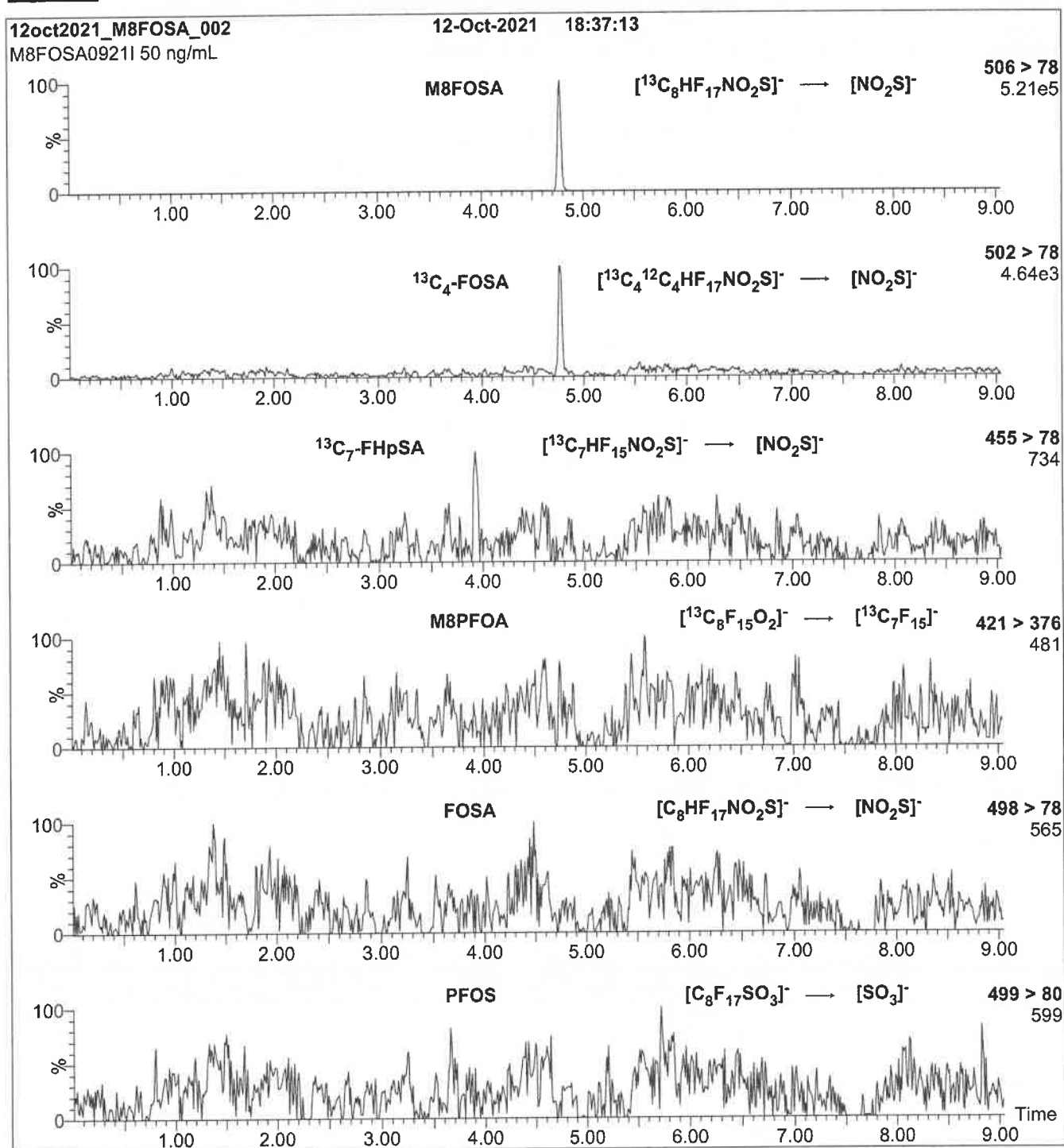
Capillary Voltage (kV) = 1.50

Cone Voltage (V) = 20.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: M8FOSA-I; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M8FOSA-I)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.35e-3

Collision Energy (eV) = 30

Reagent

LCM8FOSA_00053



2979336

ID: LCM8FOSA_00053

Exp: 03/17/27 Prod: 04/19/22
13C8-Perfluorooctanesulfo

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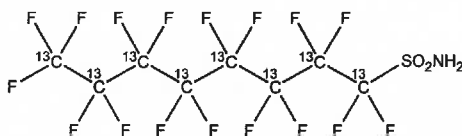
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M8FOSA-I
COMPOUND: Perfluoro-1-(¹³C₈)octanesulfonamide

LOT NUMBER: M8FOSA0322I

STRUCTURE:

CAS #: 1365803-60-6



MOLECULAR FORMULA: ¹³C₈H₂F₁₇NO₂S
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/17/2022
EXPIRY DATE: (mm/dd/yyyy) 03/17/2027
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 507.09
SOLVENT(S): Isopropanol
ISOTOPIC PURITY: ≥99% (¹³C₈)

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~1.0% of perfluoro-1-(¹³C₄)octanesulfonamide.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 04/01/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

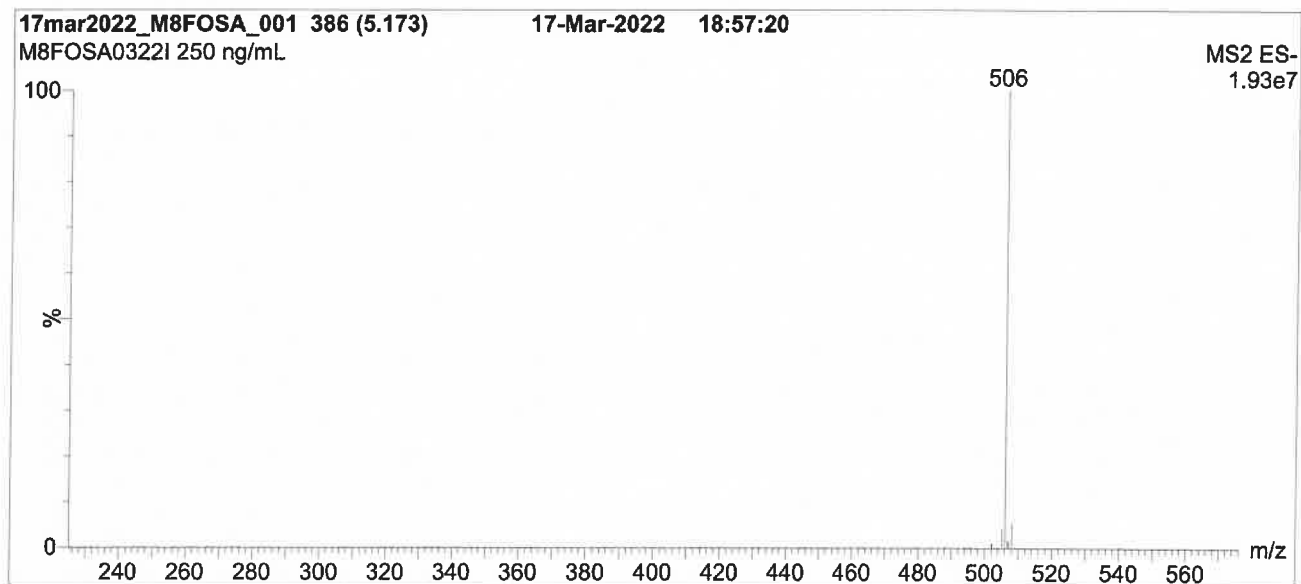
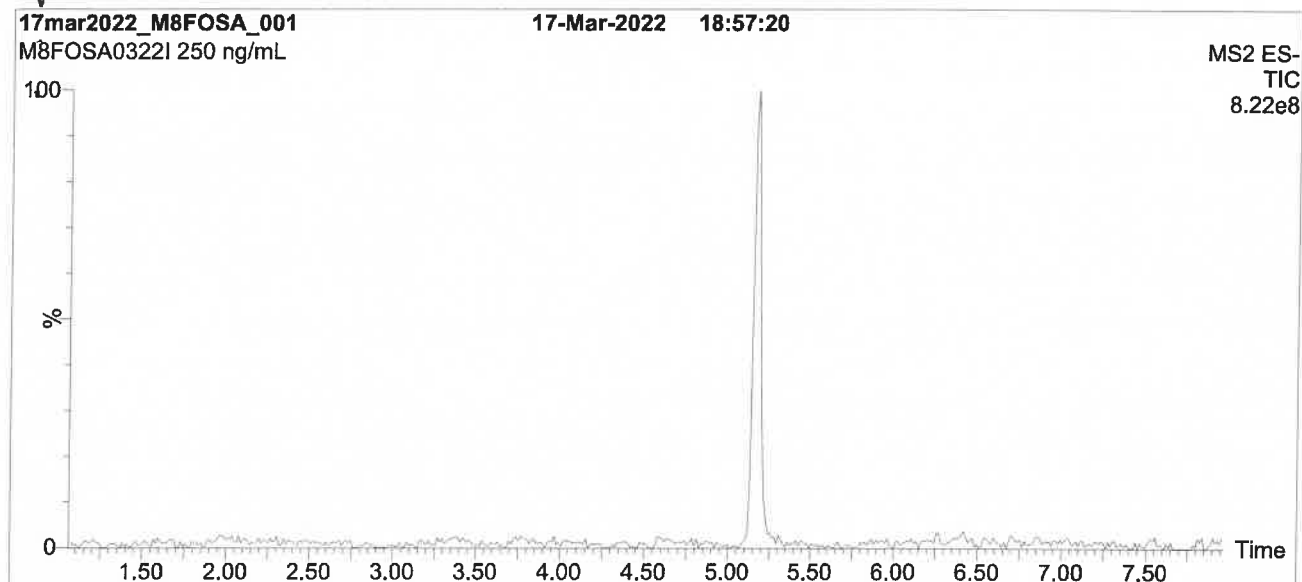
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: M8FOSA-I; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

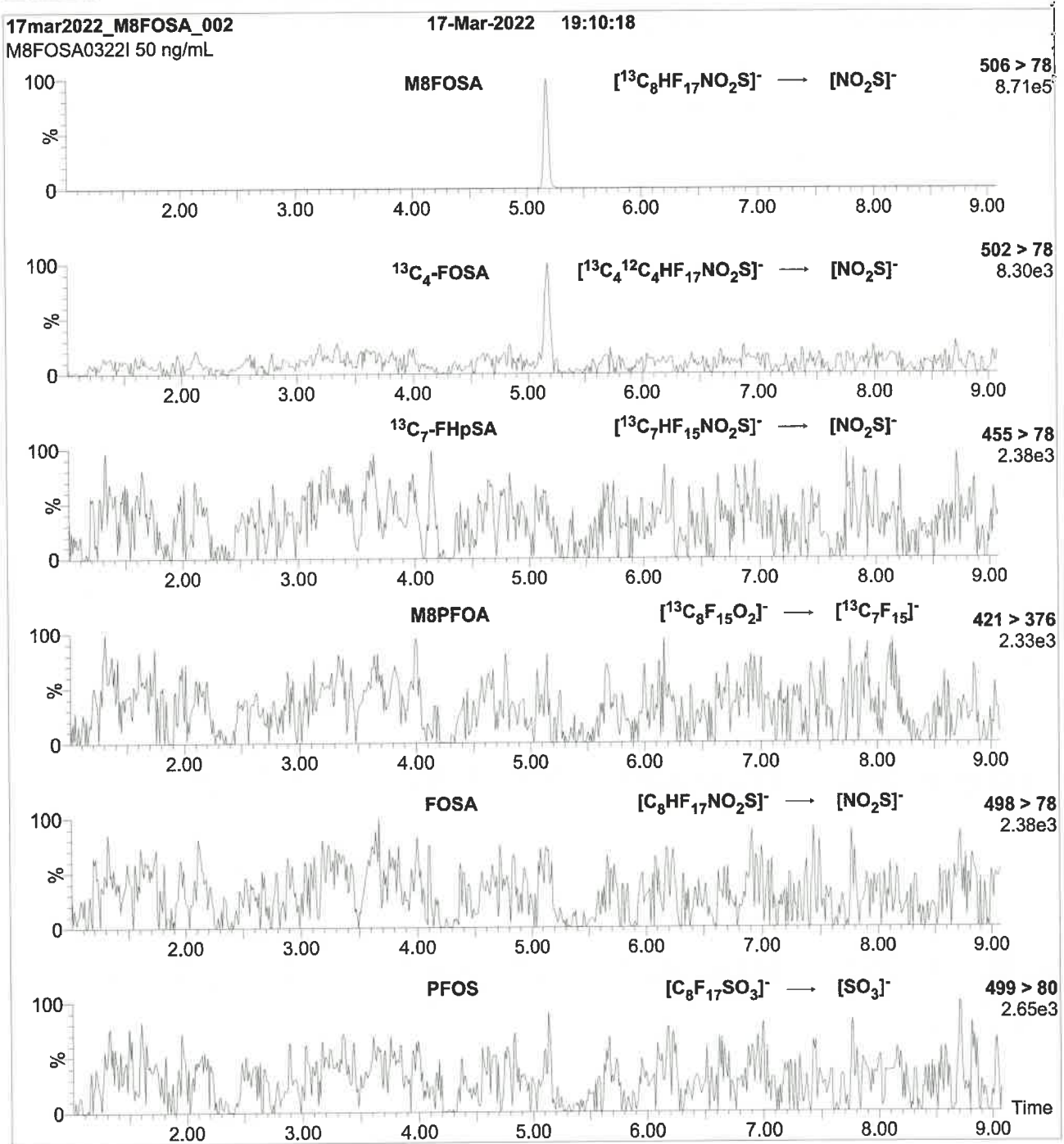
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.50
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: M8FOSA-I; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M8FOSA-I)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.27e-3
Collision Energy (eV) = 30

Reagent

LCM8FOSA_00054



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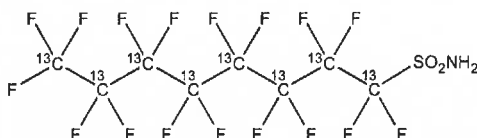
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M8FOSA-I
COMPOUND: Perfluoro-1-(¹³C₈)octanesulfonamide

LOT NUMBER: M8FOSA08221

STRUCTURE:

CAS #: 1365803-60-6



MOLECULAR FORMULA: ¹³C₈H₂F₁₇NO₂S
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 08/16/2022
EXPIRY DATE: (mm/dd/yyyy) 08/16/2027
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 507.09
SOLVENT(S): Isopropanol
ISOTOPIC PURITY: ≥99% (¹³C₈)

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.9% of perfluoro-1-(¹³C₈)octanesulfonamide and ~0.2% of perfluoro-1-(¹³C₇)heptanesulfonamide.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 08/25/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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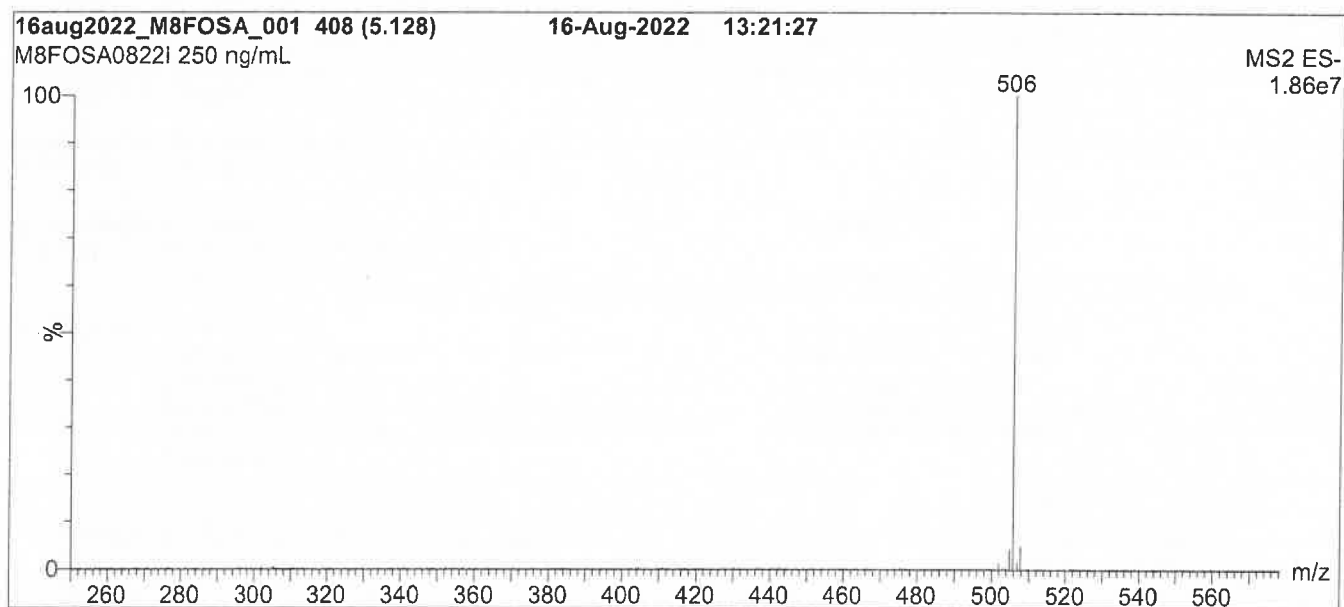
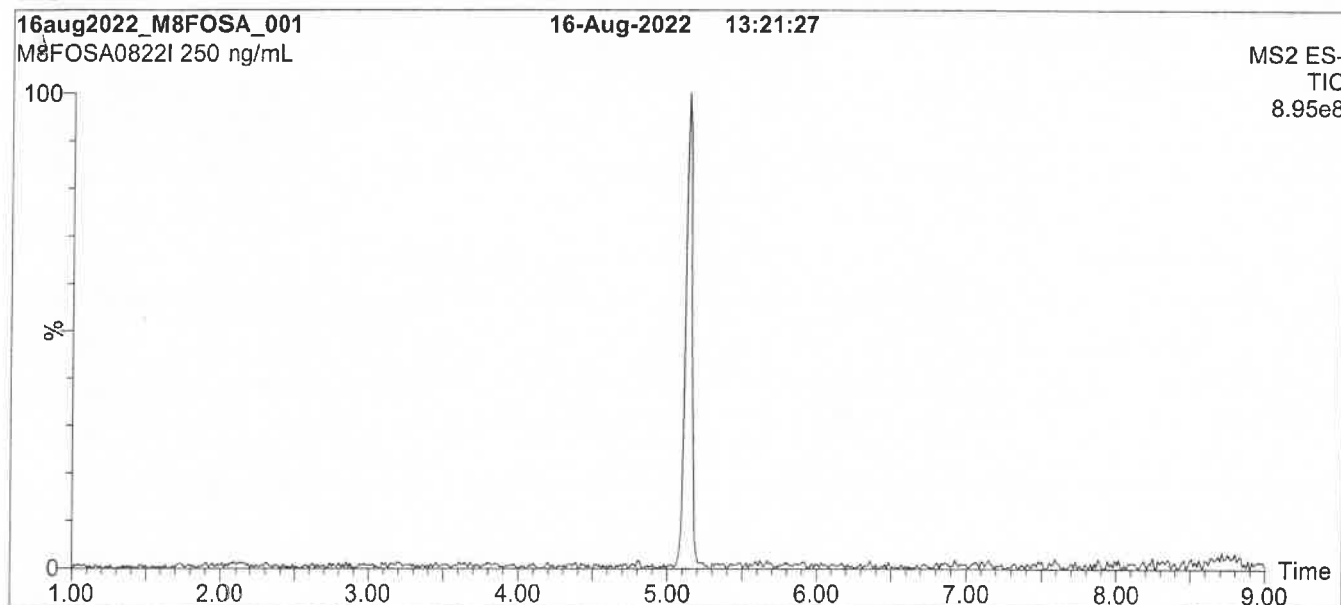
QUALITY MANAGEMENT:

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Figure 1: M8FOSA-I; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

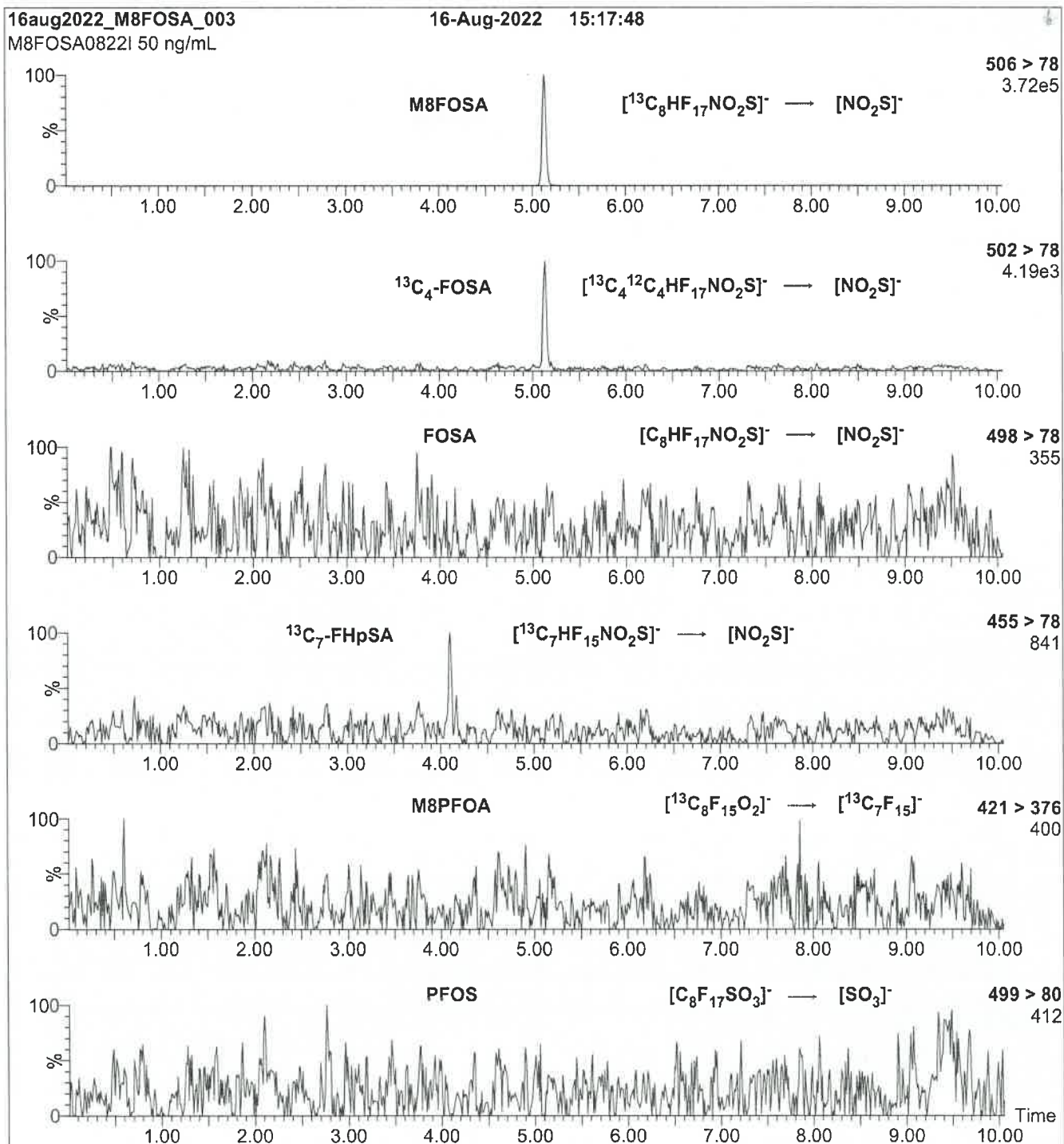
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.50
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: M8FOSA-I; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M8FOSA-I)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 30

Reagent

LCM8PFOA_00003



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

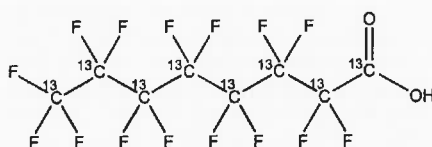
M8PFOA

LOT NUMBER:

M8PFOA0720

COMPOUND:Perfluoro-n-[¹³C₈]octanoic acid**STRUCTURE:****CAS #:**

Not available

**MOLECULAR FORMULA:**¹³C₈HF₁₅O₂**MOLECULAR WEIGHT:**

422.01

CONCENTRATION:

50.0 ± 2.5 µg/ml

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C(¹³C₈)**LAST TESTED:** (mm/dd/yyyy)

07/22/2020

EXPIRY DATE: (mm/dd/yyyy)

07/22/2025

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 1.0% of [M+4] perfluoro-n-octanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

07/23/2020
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

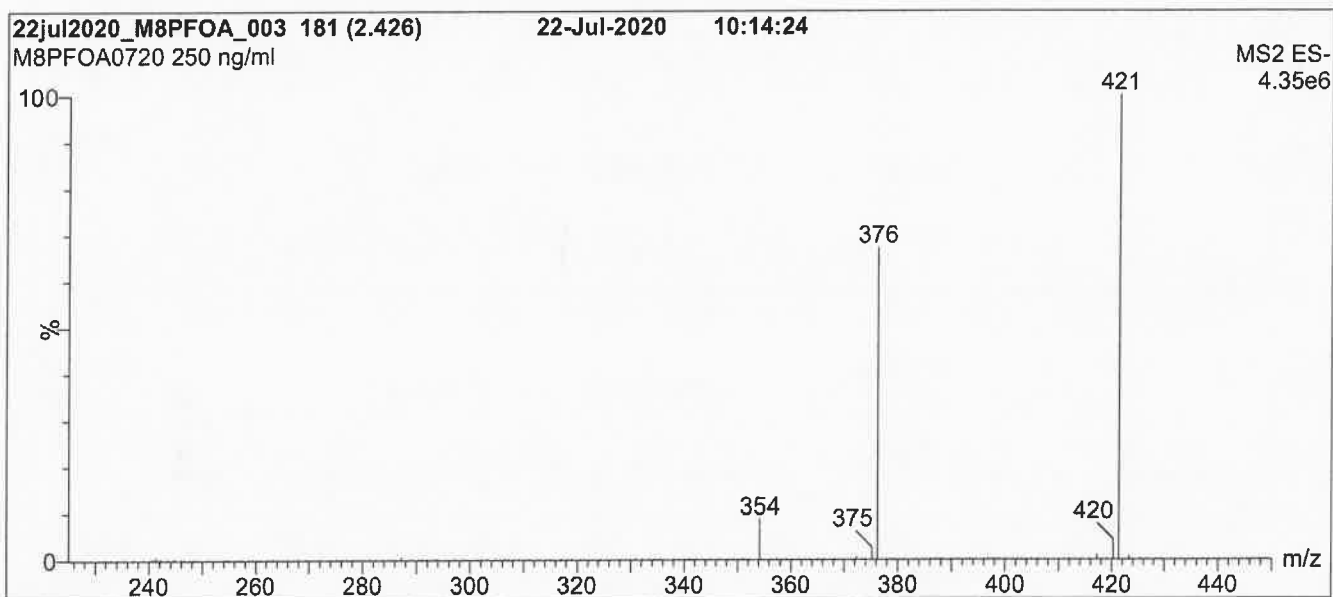
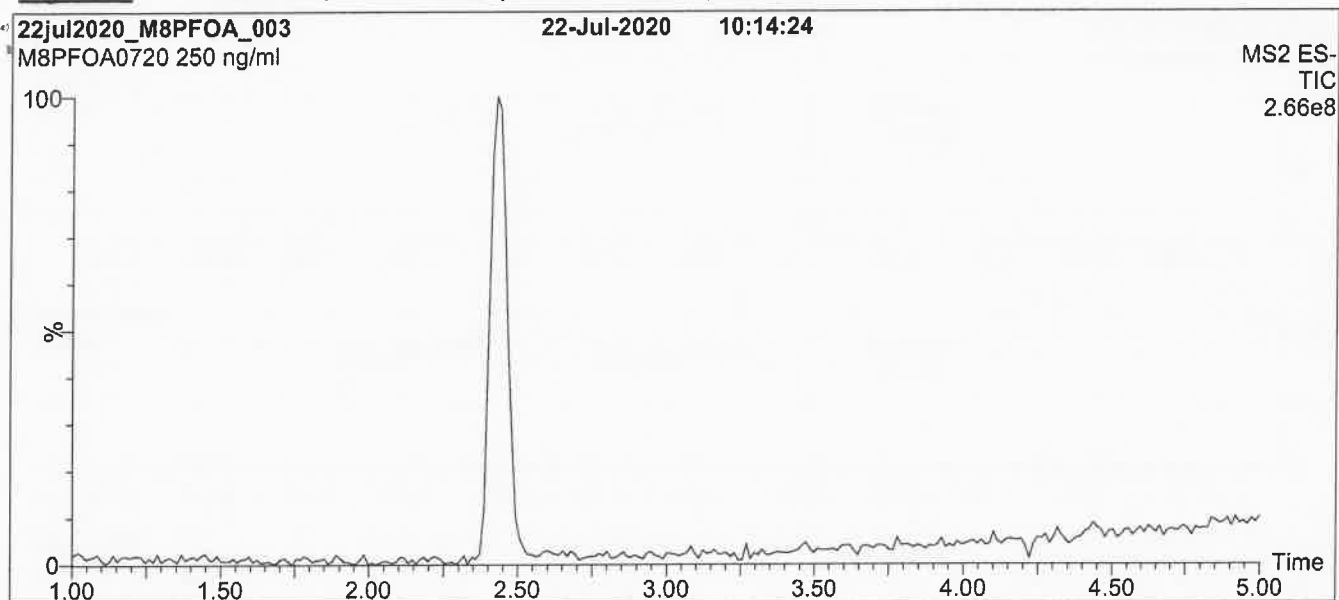
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: M8PFOA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Waters Xevo TQ-S micro MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

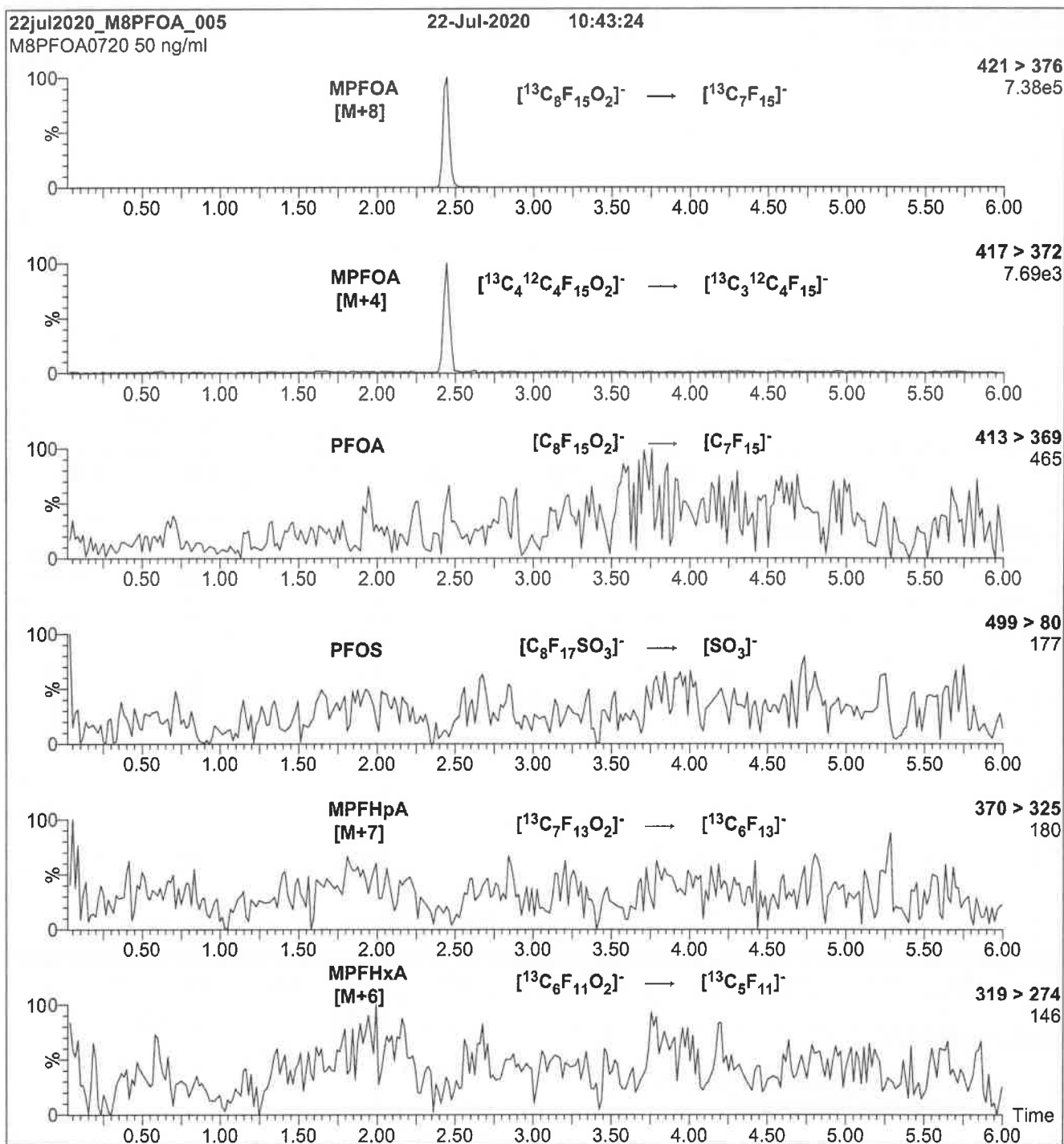
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Figure 2: M8PFOA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M8PFOA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{l}/\text{min}$

MS Parameters

Collision Gas (mbar) = 3.43e-3

Collision Energy (eV) = 8

Reagent

LCM8PFOS_00005



WELLINGTON LABORATORIES

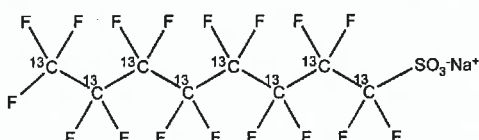
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M8PFOS
COMPOUND: Sodium perfluoro-1-(¹³C₈)octanesulfonate

LOT NUMBER: M8PFOS0121

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: ¹³C₈F₁₇SO₃Na
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt)
47.9 ± 2.4 µg/mL (M8PFOS acid)
47.8 ± 2.4 µg/mL (M8PFOS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/14/2021
EXPIRY DATE: (mm/dd/yyyy) 01/14/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 530.05
SOLVENT(S): Methanol
ISOTOPIC PURITY: >99% ¹³C
(¹³C₈)

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.2% of sodium perfluoro-1-(¹³C₇)heptanesulfonate (¹³C₇-PFHpS) and ~0.9% of sodium perfluoro-1-(¹³C₄)octanesulfonate (MPFOS).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 02/03/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

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UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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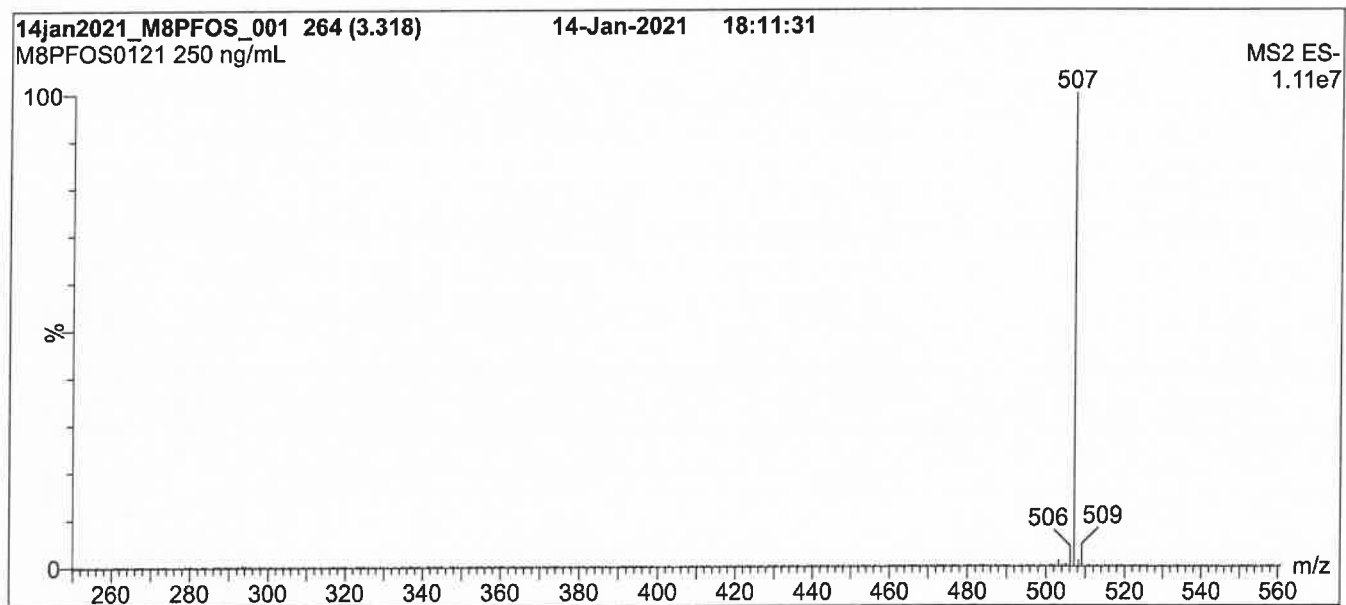
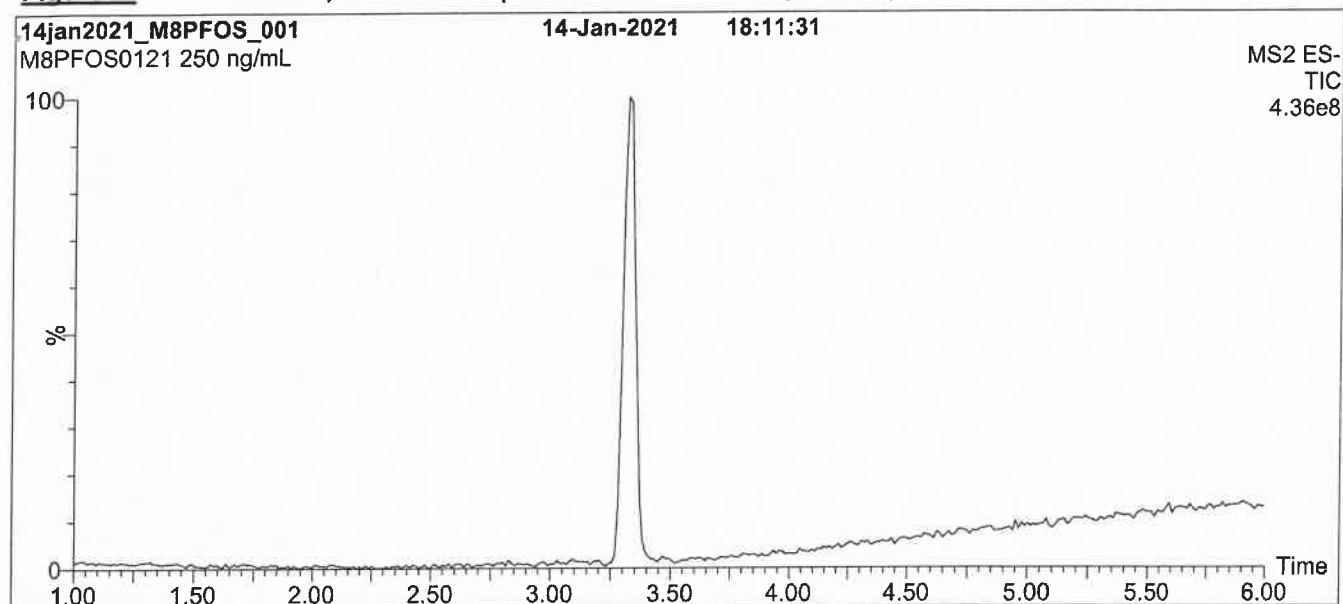
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: M8PFOS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

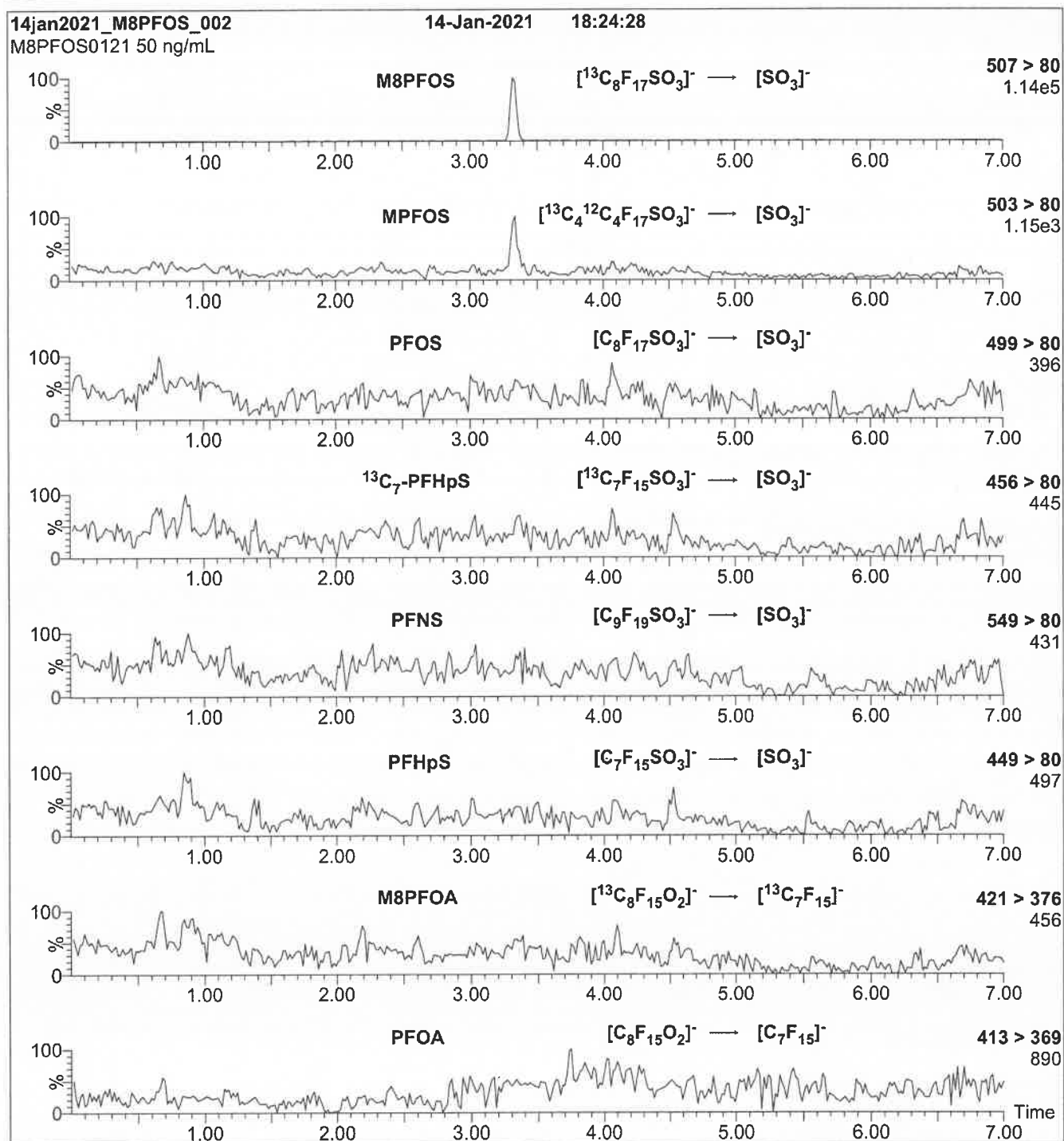
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: M8PFOS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M8PFOS)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.41e-3

Collision Energy (eV) = 42

Reagent

LCMFDEA_00012



2856210

ID: LCMFDEA_00012

Exp: 09/27/24 Prod: 01/12/22

13C-10:2FTCA Stock 50 ug/



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

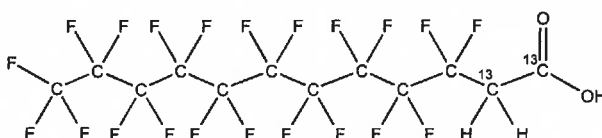
MFDEA

LOT NUMBER:

MFDEA0921

COMPOUND:2-Perfluorodecyl (1,2-¹³C₂)ethanoic acid**STRUCTURE:****CAS #:**

872398-77-1

**MOLECULAR FORMULA:**¹³C₂¹²C₁₀H₃F₂₁O₂**MOLECULAR WEIGHT:**

580.10

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Isopropanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C
(1,2-¹³C₂)**LAST TESTED:** (mm/dd/yyyy)

09/27/2021

EXPIRY DATE: (mm/dd/yyyy)

09/27/2024

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1.0% 2H-Perfluoro-(1,2-¹³C₂)-2-dodecenoic acid (MFDUEA).
- The saturated telomer acid very slowly degrades to MFDUEA in isopropanol. This solution contains 3 molar equivalents of HCl to minimize this degradation. This degradation occurs at a much faster rate in MeOH, therefore any MeOH dilutions should be used on the same day that they are prepared and monitored for degradation. The rate of degradation can also increase significantly when handling the solution at ambient temperature or in the presence of base. Always store this solution at 4°C to minimize degradation.

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Certified By:

B.G. Chittim, General Manager

Date:

09/28/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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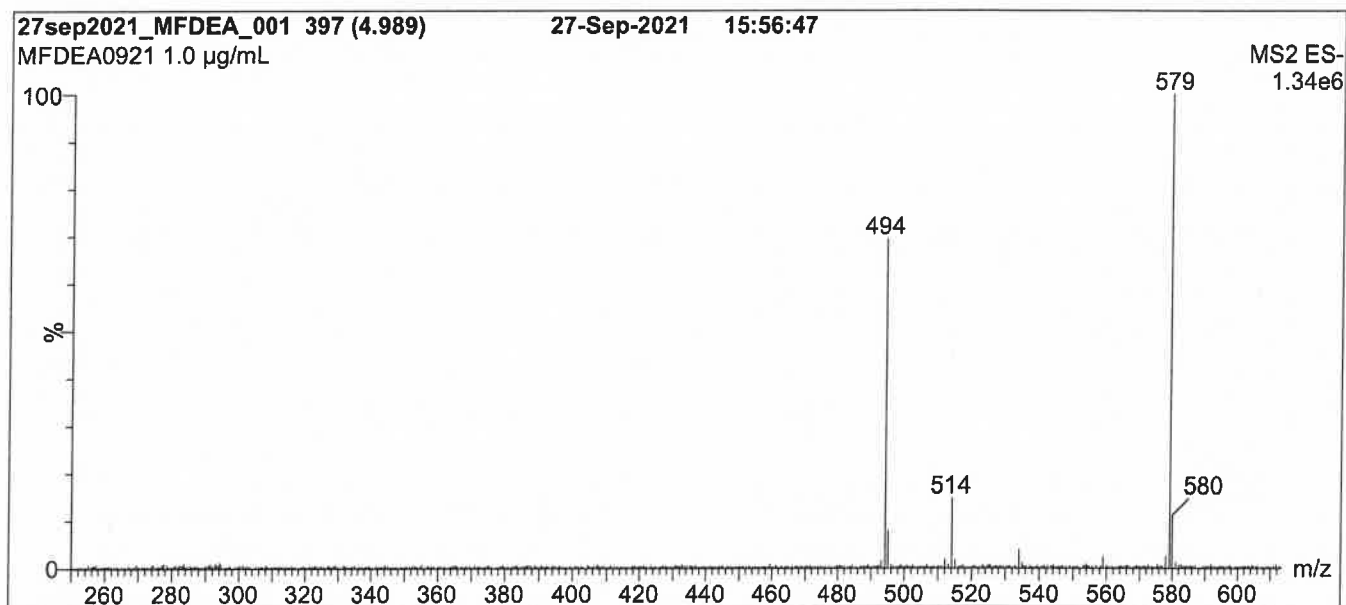
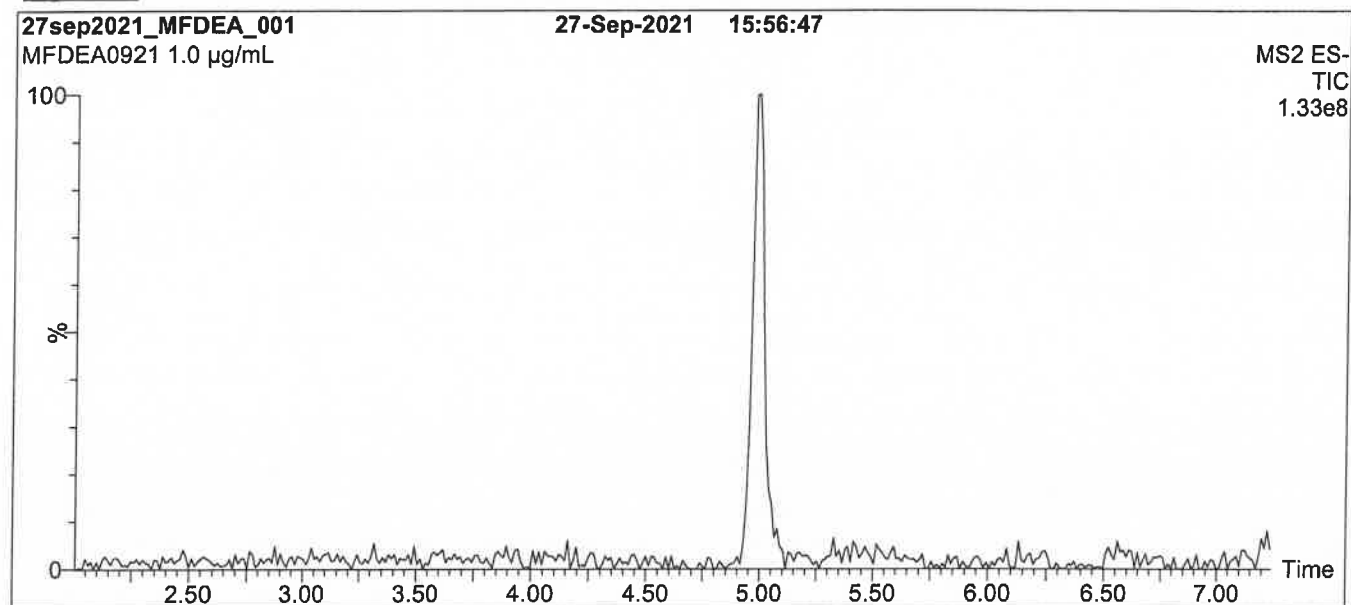
QUALITY MANAGEMENT:

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Figure 1: MFDEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

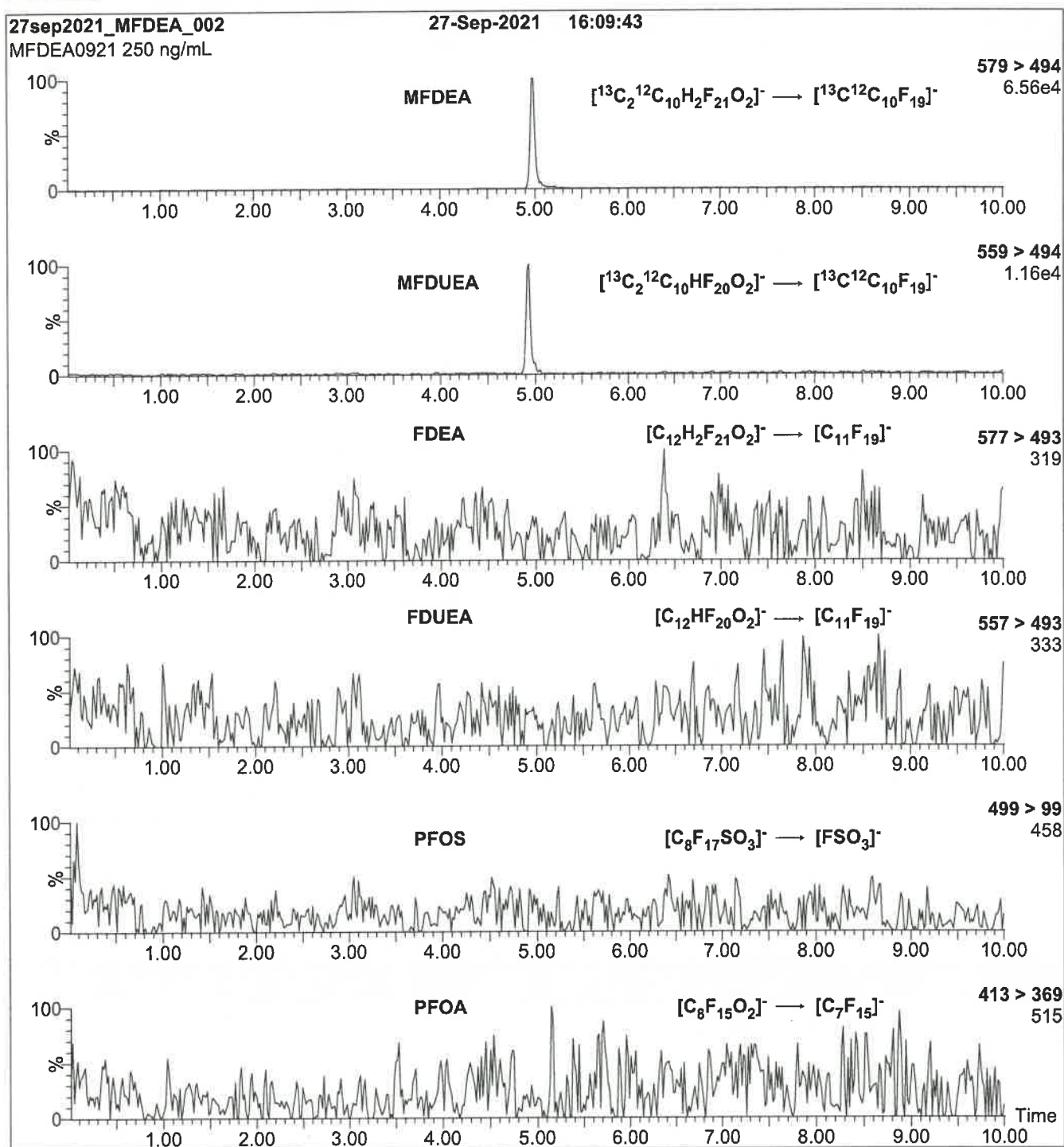
Capillary Voltage (kV) = 2.50

Cone Voltage (V) = 15.00

Desolvation Temperature (°C) = 350

Desolvation Gas Flow (L/hr) = 1000

Figure 2: MFDEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MFDEA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.06e-3

Collision Energy (eV) = 10

Reagent

LCMFDEA_00014



2979805

ID: LCMFDEA_00014

Exp: 09/27/24 Ppd: 3M Opr: 04/19/22

13C-10:2FTCA Stock 50 ug/



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

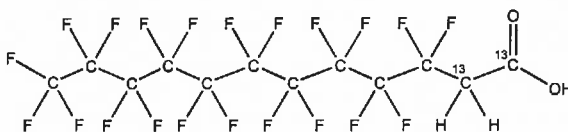
MFDEA

LOT NUMBER:

MFDEA0921

COMPOUND:2-Perfluorodecyl (1,2-¹³C₂)ethanoic acid**STRUCTURE:****CAS #:**

872398-77-1

**MOLECULAR FORMULA:** $^{13}\text{C}_2^{12}\text{C}_{10}\text{H}_3\text{F}_{21}\text{O}_2$ **CONCENTRATION:**

50.0 ± 2.5 µg/mL

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

09/27/2021

EXPIRY DATE: (mm/dd/yyyy)

09/27/2024

RECOMMENDED STORAGE:

Refrigerate ampoule

MOLECULAR WEIGHT:

580.10

SOLVENT(S):

Isopropanol

ISOTOPIC PURITY:≥99% ¹³C
(1,2-¹³C₂)**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1.0% 2H-Perfluoro-(1,2-¹³C₂)-2-dodecenoic acid (MFDUEA).
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Certified By:

B.G. Chittim, General Manager

Date:

09/28/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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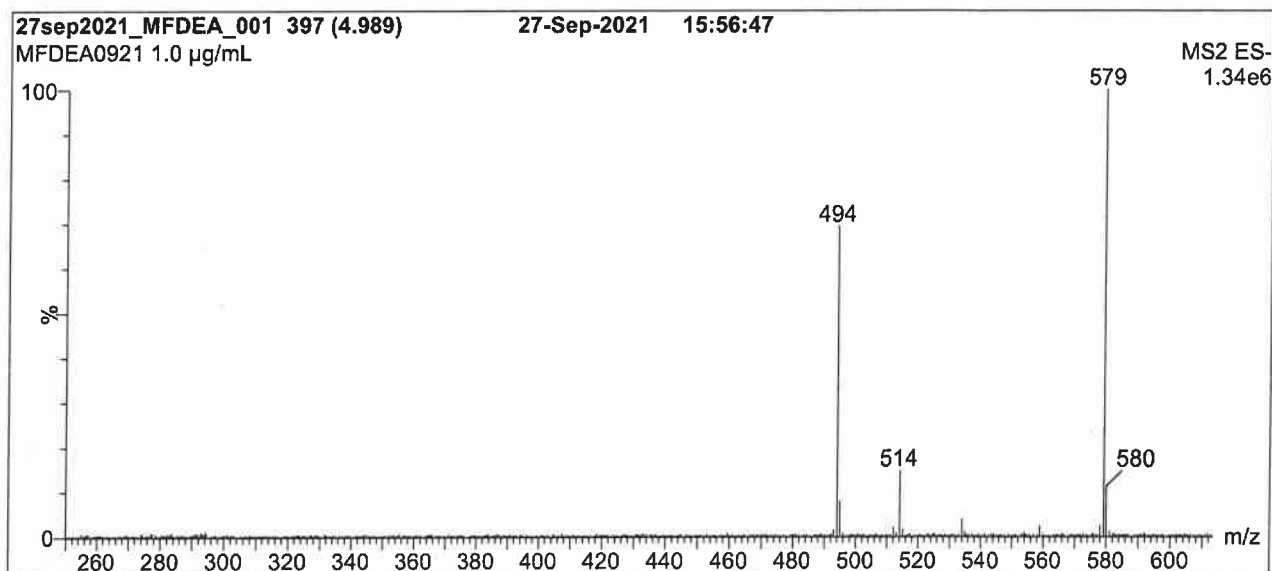
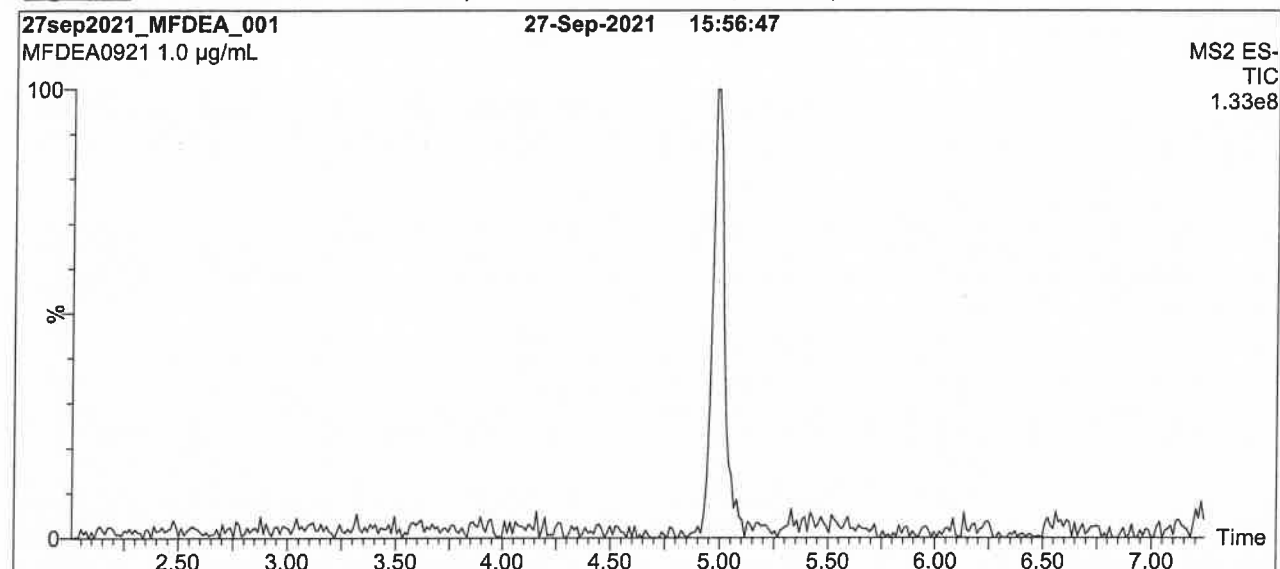
QUALITY MANAGEMENT:

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Figure 1: MFDEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

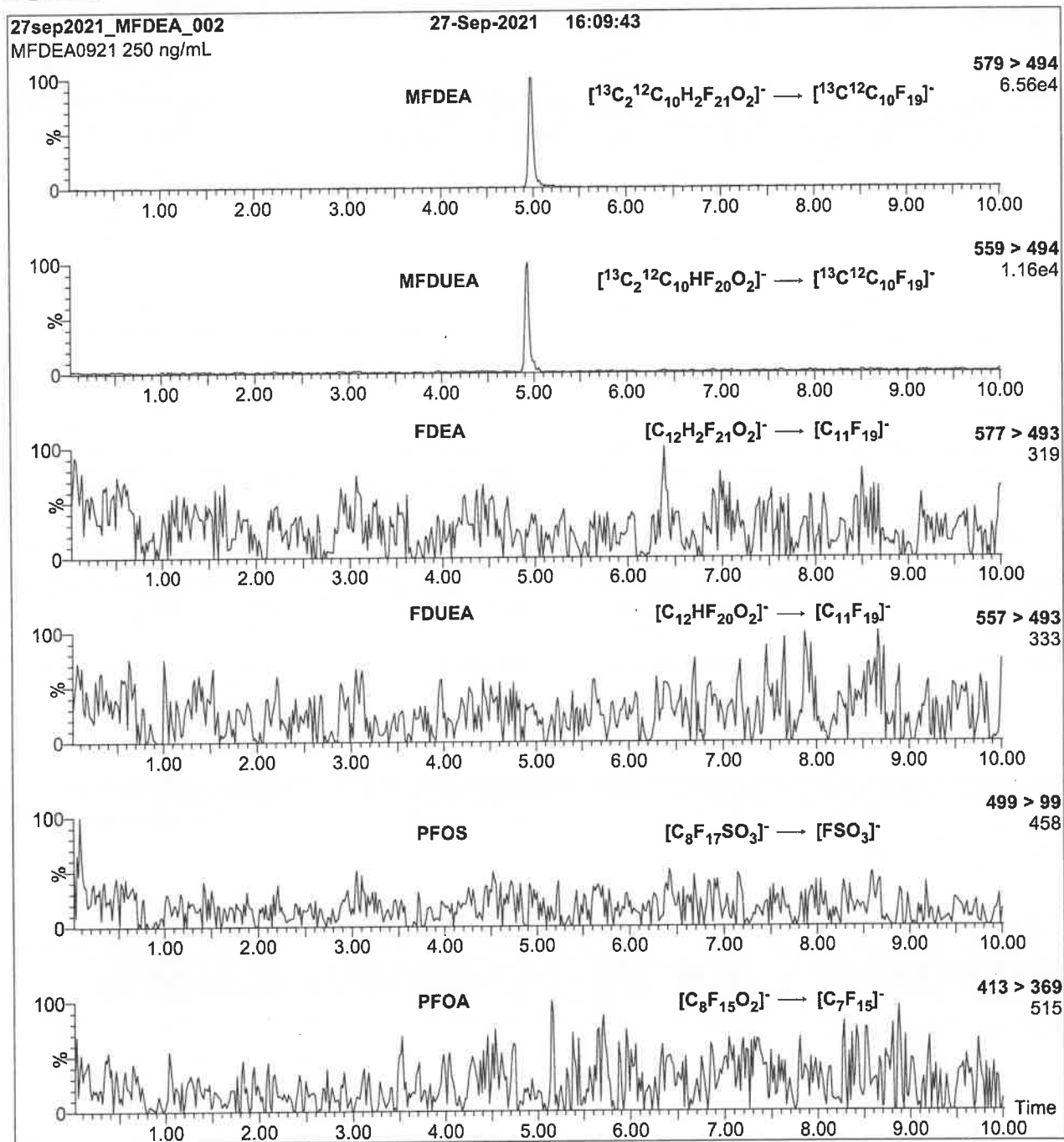
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 15.00
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MFDEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MFDEA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.06e-3

Collision Energy (eV) = 10

Reagent

LCMFDEA_00015



3185258

ID: LCMFDEA_00015

Exp: 06/08/25 Prpd: 1M Ogn: 03/14/22

13C-10:2FTCA Stock 50 ug/



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

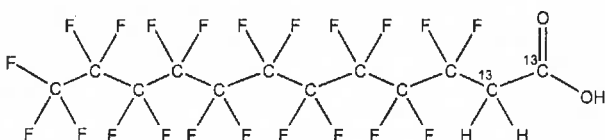
MFDEA

LOT NUMBER:

MFDEA0622

COMPOUND:2-Perfluorodecyl (1,2-¹³C₂)ethanoic acid**STRUCTURE:****CAS #:**

872398-77-1

**MOLECULAR FORMULA:** $^{13}\text{C}_2^{12}\text{C}_{10}\text{H}_3\text{F}_{21}\text{O}_2$ **MOLECULAR WEIGHT:**

580.10

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Isopropanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

06/08/2022

(1,2-¹³C₂)**EXPIRY DATE:** (mm/dd/yyyy)

06/08/2025

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
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B.G. Chittim, General Manager**Date:**06/21/2022
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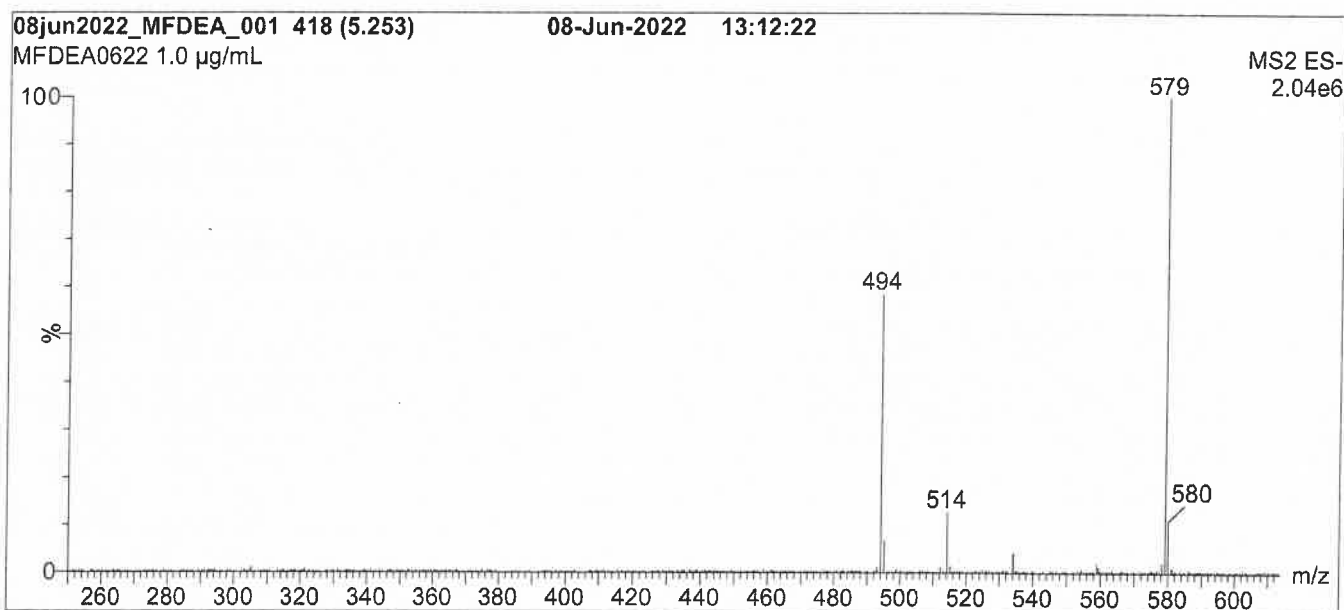
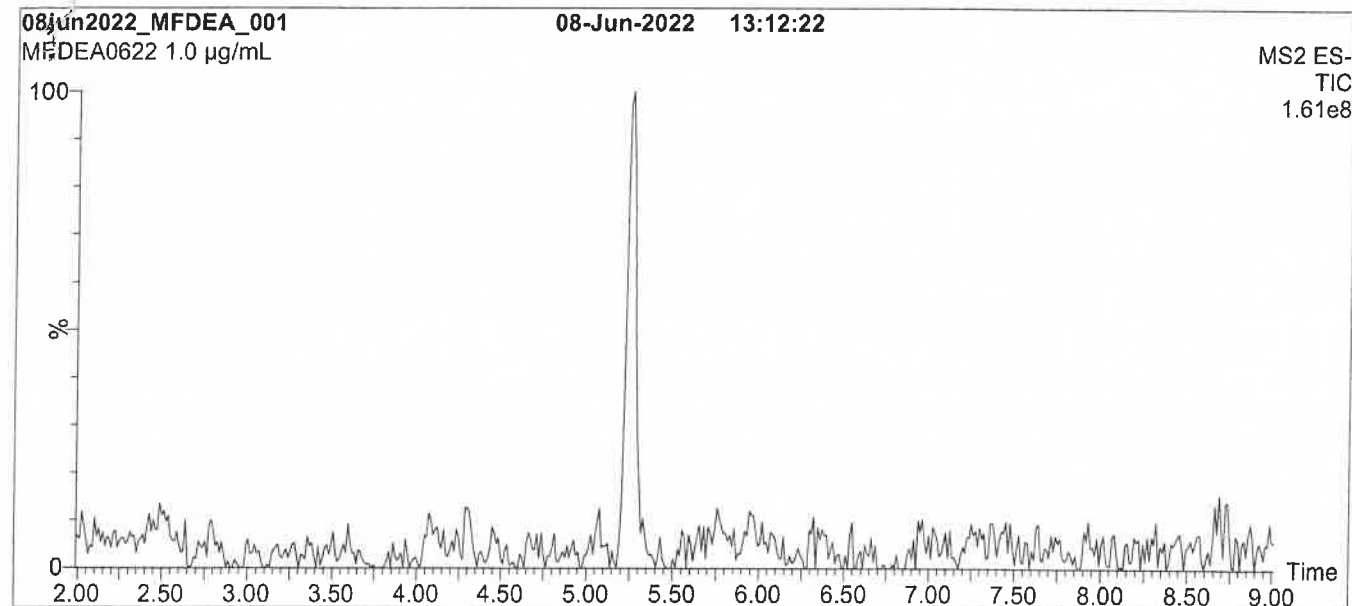
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For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: MFDEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

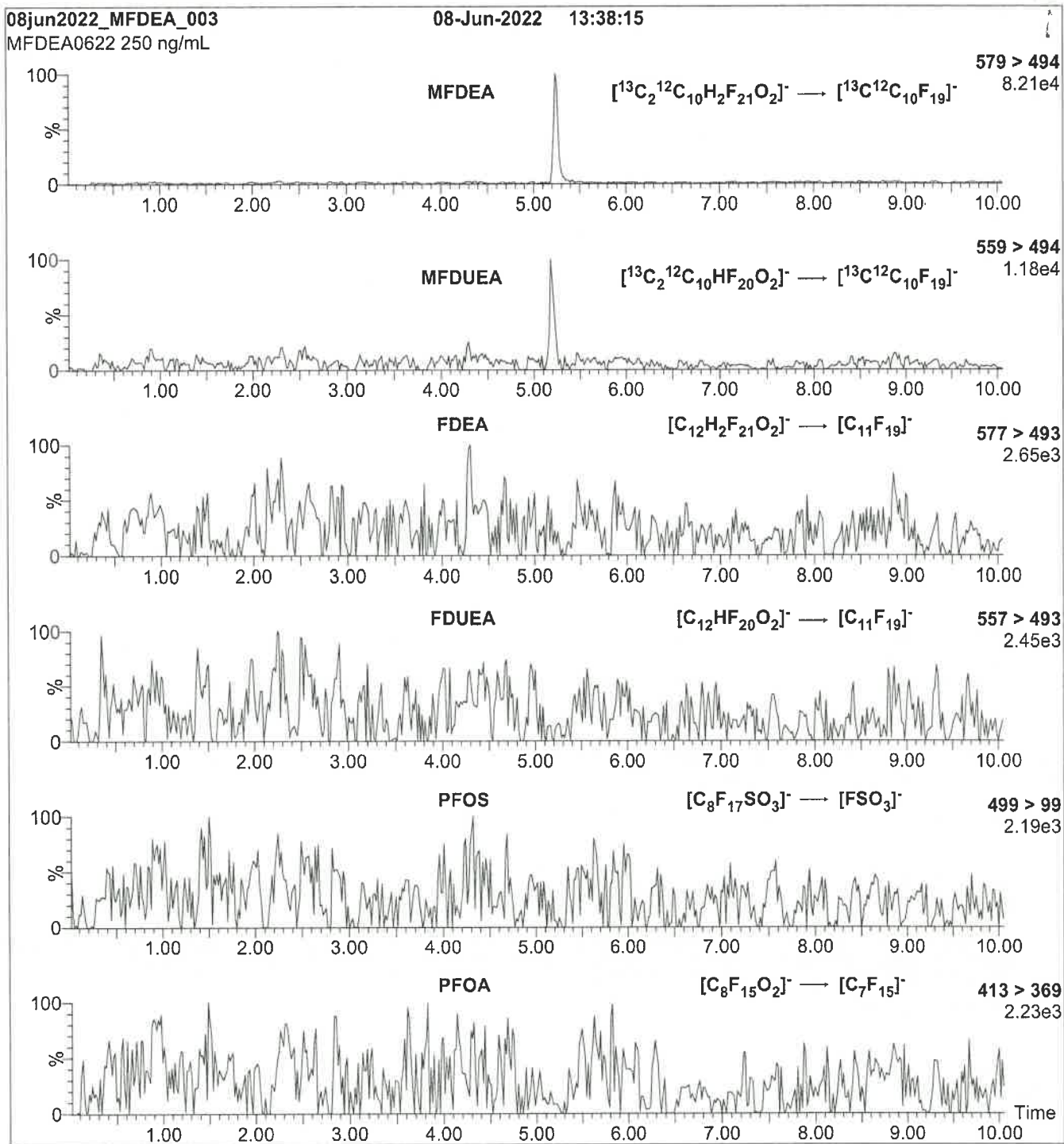
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 15.00
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MFDEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MFDEA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.14e-3

Collision Energy (eV) = 10

Reagent

LCMFDUEA_00012

2887441
ID: LCMFDUEA_00012
Exp: 11/22/23 Prod: PCY Opn: 02/07/22
13C-10:2 FTUCA Stock 50 u



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

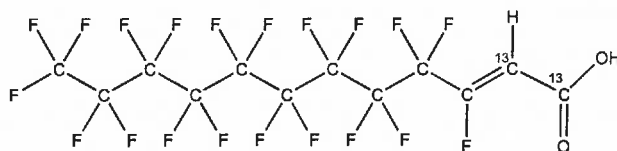
MFDUEA

LOT NUMBER:

MFDUEA1221

COMPOUND:2H-Perfluoro-2-(1,2-¹³C₂)dodecenoic acid**STRUCTURE:****CAS #:**

872398-80-6

**MOLECULAR FORMULA:** $^{13}\text{C}_2\text{C}_{10}\text{H}_2\text{F}_{20}\text{O}_2$ **CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

560.10

SOLVENT(S):

Anhydrous

Isopropanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

11/22/2021

EXPIRY DATE: (mm/dd/yyyy)

11/22/2023

RECOMMENDED STORAGE:

Refrigerate ampoule

(1,2-¹³C₂)**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Dilution of this standard in methanol may lead to the formation of 2H-3-methoxy-perfluoro-2-(1,2-¹³C₂)dodecenoic acid. This reaction can be catalyzed by the presence of acid or base. All dilutions should be routinely checked for degradation.
- Contains ~0.1% of 2H-Perfluoro-2-dodecenoic acid (FDUEA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

12/22/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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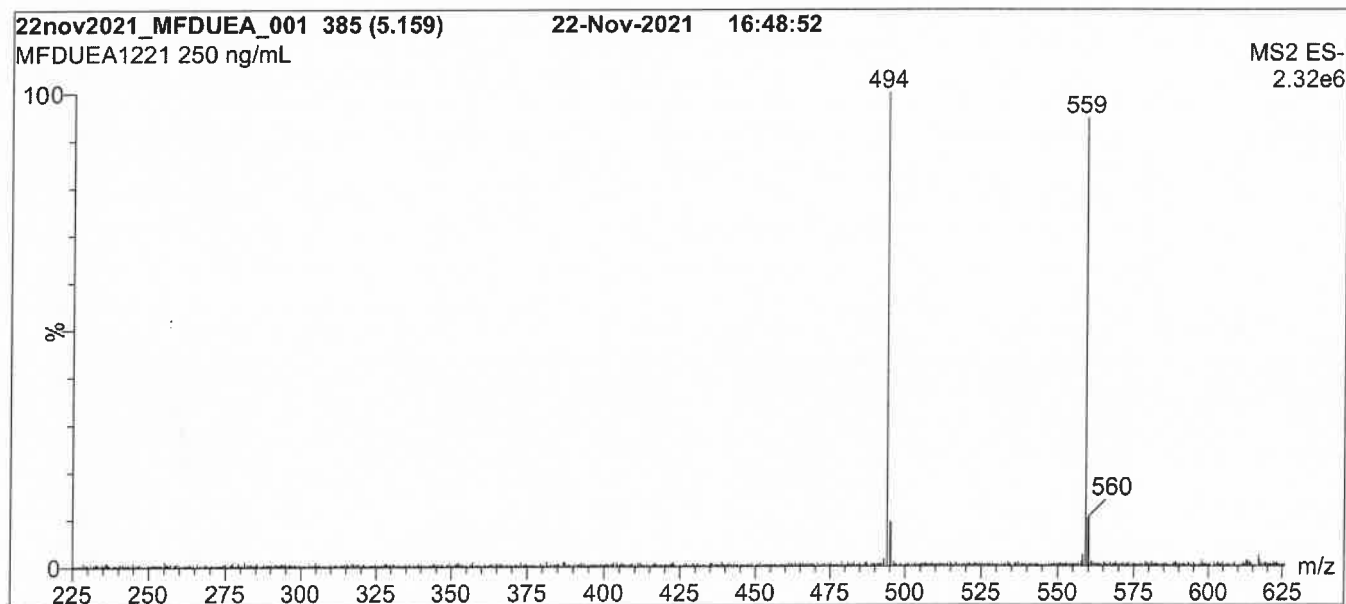
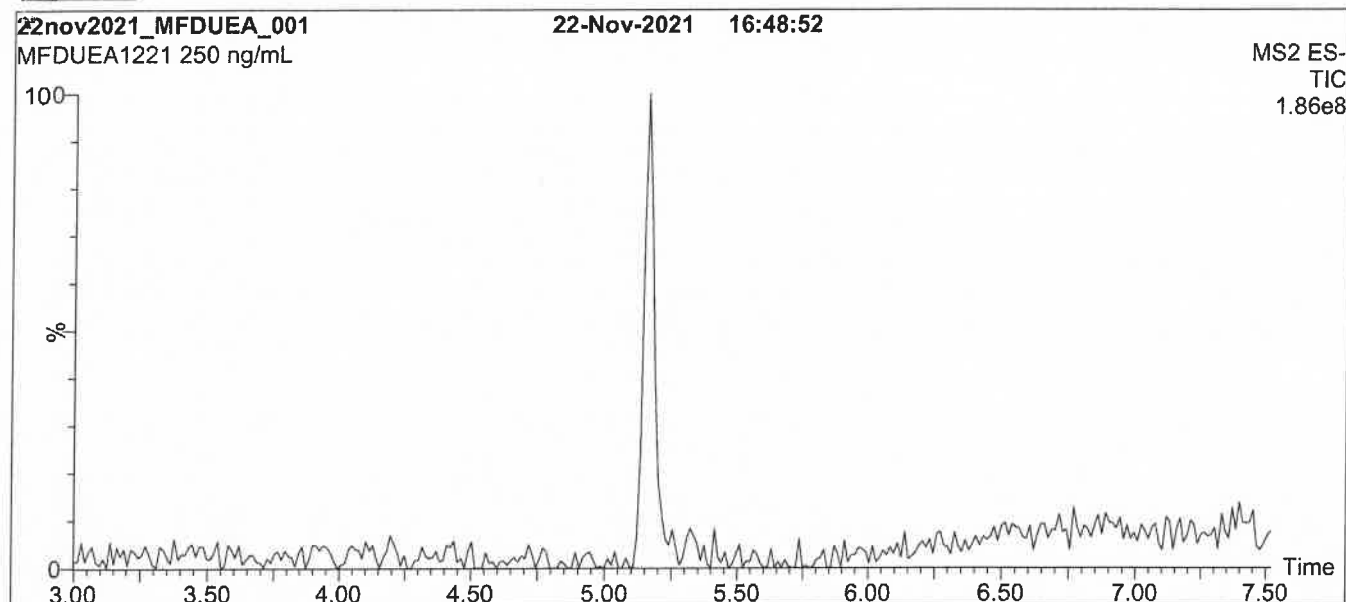
QUALITY MANAGEMENT:

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Figure 1: MFDUEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

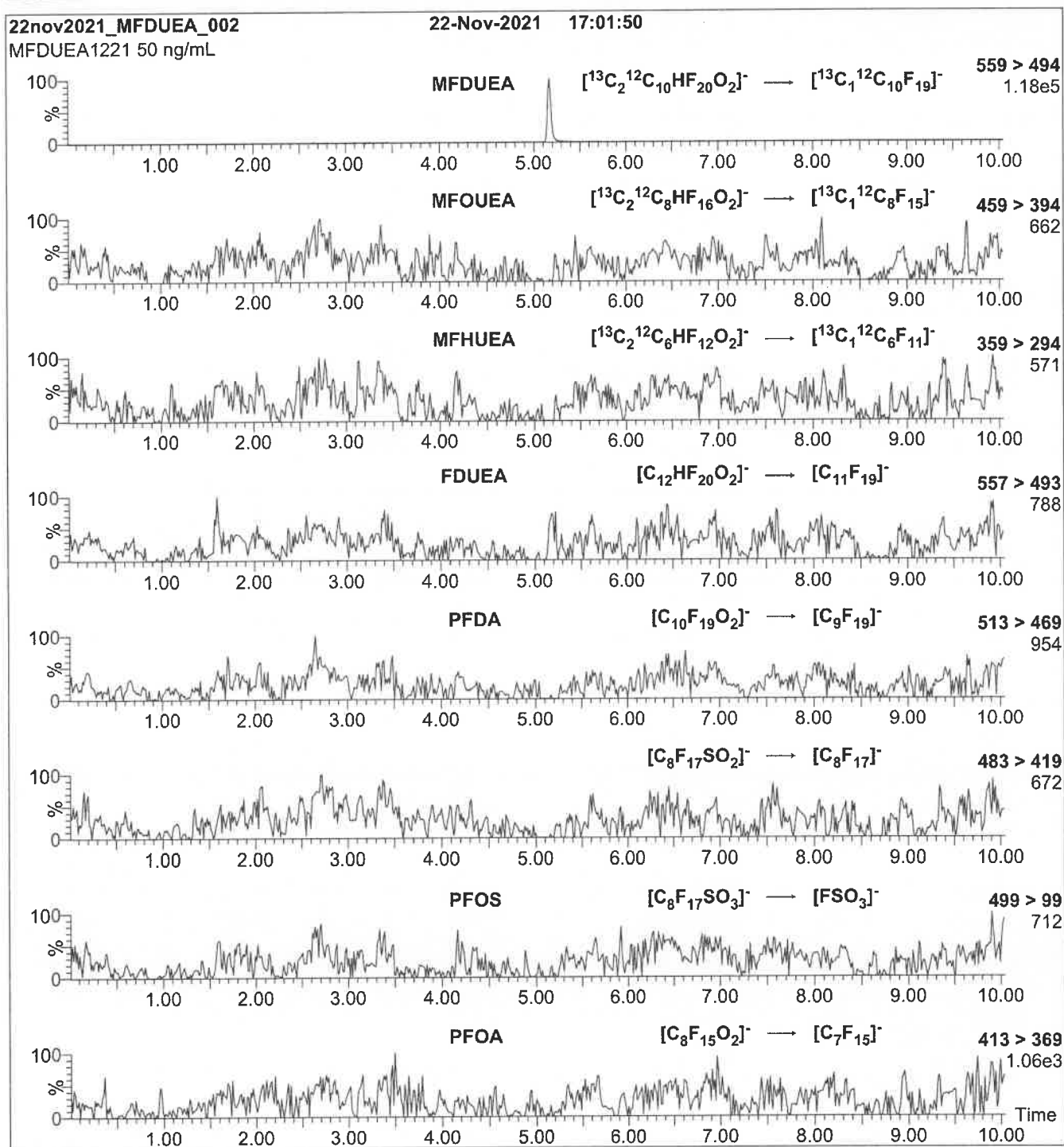
Capillary Voltage (kV) = 0.70

Cone Voltage (V) = 28.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: MFDUEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MFDUEA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 14

Reagent

LCMFDUEA_00013

2979771
ID: LCMFDUEA_00013
Exp: 11/22/23 Prod: M Opn: 04/19/22
13C-10:2 FTUCA Stock 50 u



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

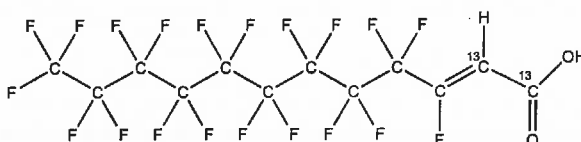
MFDUEA

LOT NUMBER:

MFDUEA1221

COMPOUND:2H-Perfluoro-2-(1,2-¹³C₂)dodecenoic acid**STRUCTURE:****CAS #:**

872398-80-6

**MOLECULAR FORMULA:** $^{13}\text{C}_2^{12}\text{C}_{10}\text{H}_2^{18}\text{O}_2$ **CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

560.10

SOLVENT(S):Anhydrous
Isopropanol**CHEMICAL PURITY:**

>98%

ISOTOPIC PURITY:≥99% ¹³C
(1,2-¹³C₂)**LAST TESTED:** (mm/dd/yyyy)

11/22/2021

EXPIRY DATE: (mm/dd/yyyy)

11/22/2023

RECOMMENDED STORAGE:

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DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
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- Contains ~0.1% of 2H-Perfluoro-2-dodecenoic acid (FDUEA).

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Certified By:

B.G. Chittim, General Manager

Date:

12/22/2021
(mm/dd/yyyy)

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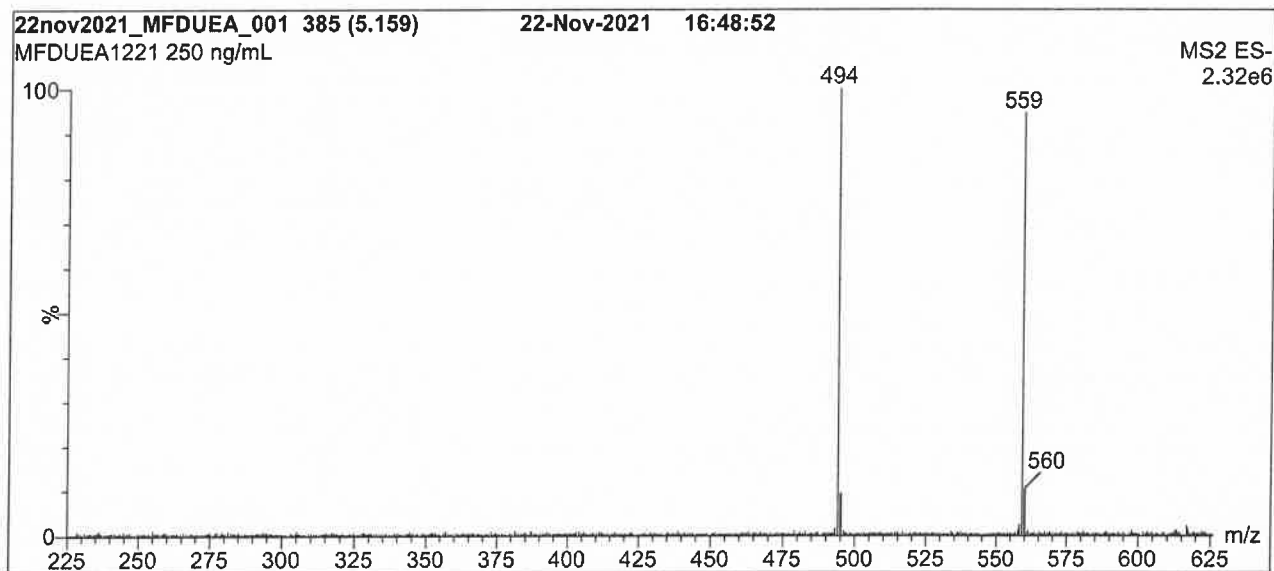
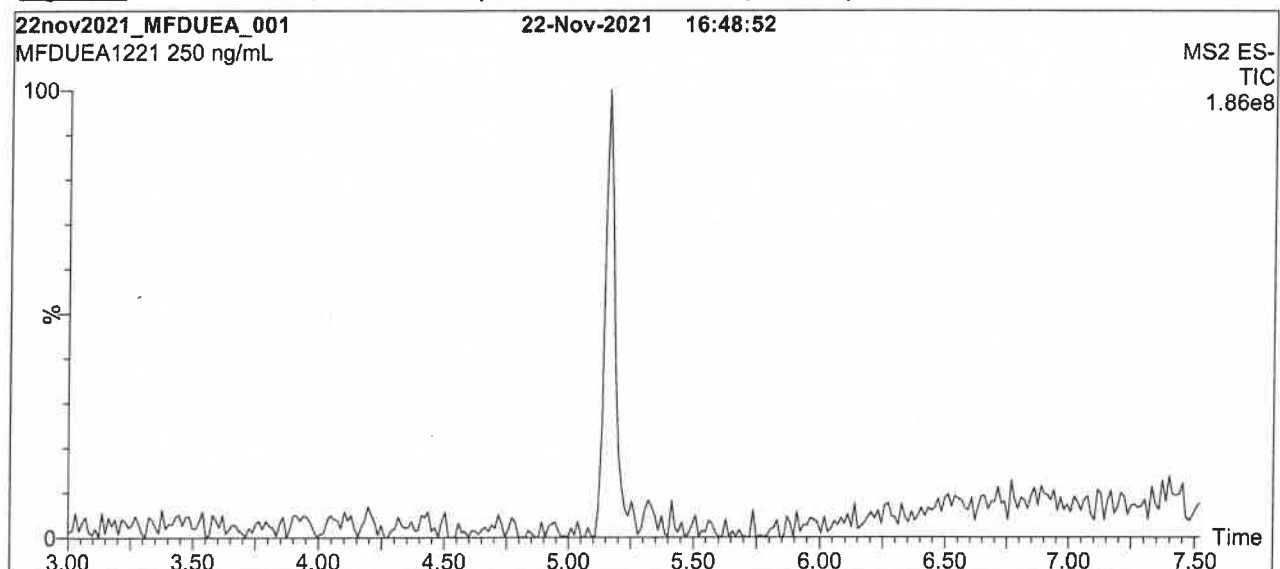
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Figure 1: MFDUEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

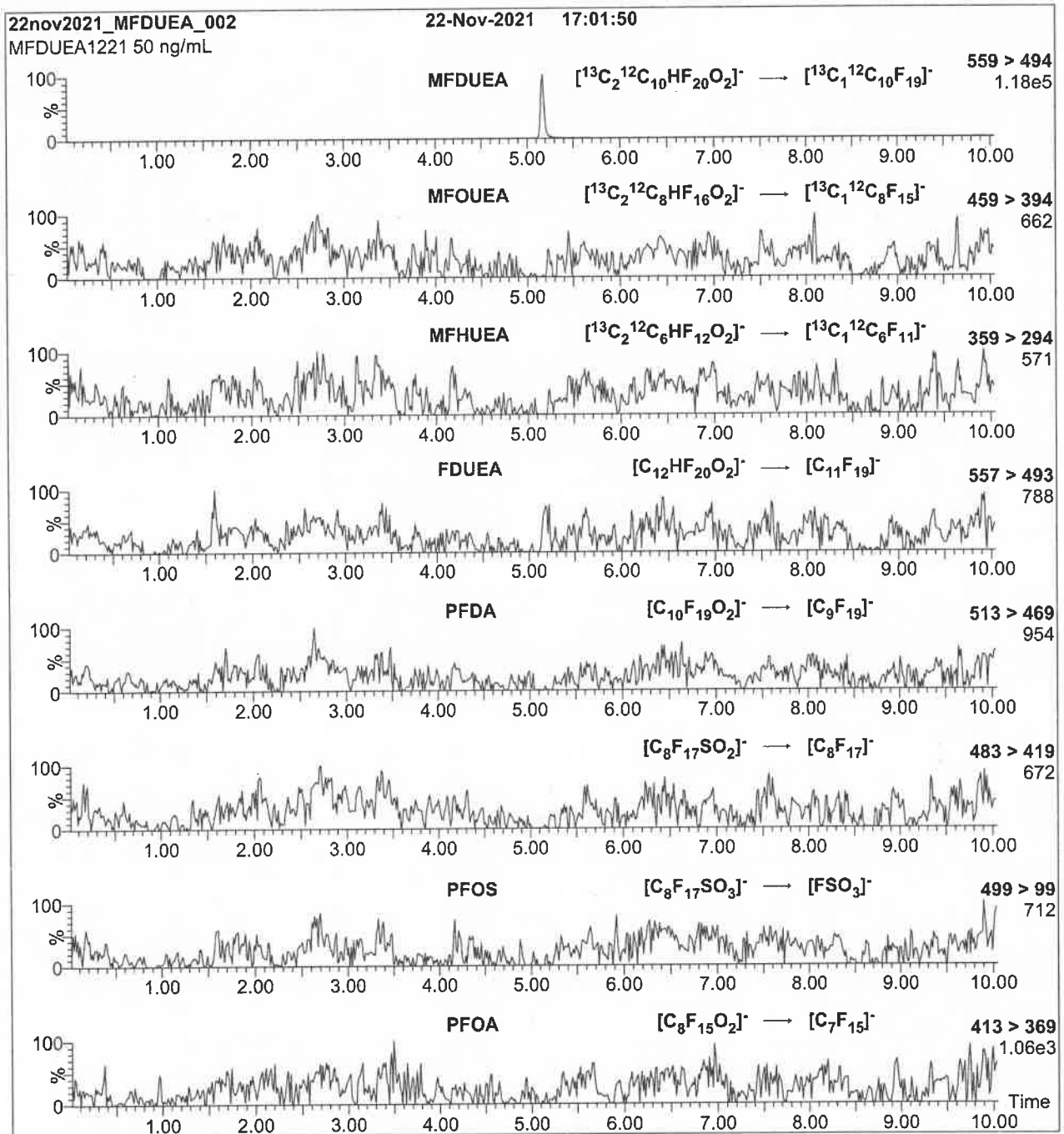
Capillary Voltage (kV) = 0.70

Cone Voltage (V) = 28.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: MFDUEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MFDUEA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 14

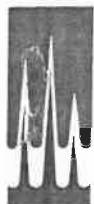
Reagent

LCMFDUEA_00014



3185268

ID: LCMFDUEA_00014

Exp: 11/22/23 Prid: PCY Opm: 09/14/22
13C-10:2 FTUCA Stock 50 u

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

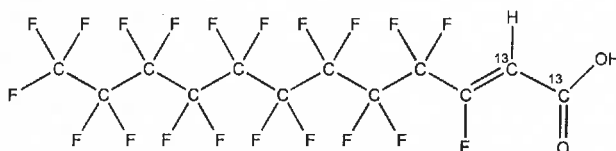
MFDUEA

LOT NUMBER:

MFDUEA1221

COMPOUND:2H-Perfluoro-2-(1,2-¹³C₂)dodecenoic acid**STRUCTURE:****CAS #:**

872398-80-6

**MOLECULAR FORMULA:** $^{13}\text{C}_2\text{ }^{12}\text{C}_{10}\text{H}_2\text{F}_{20}\text{O}_2$ **CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

560.10

SOLVENT(S):

Anhydrous

Isopropanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

11/22/2021

(1,2-¹³C₂)**EXPIRY DATE:** (mm/dd/yyyy)

11/22/2023

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
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- Contains ~0.1% of 2H-Perfluoro-2-dodecenoic acid (FDUEA).

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B.G. Chittim, General Manager**Date:**12/22/2021
(mm/dd/yyyy)

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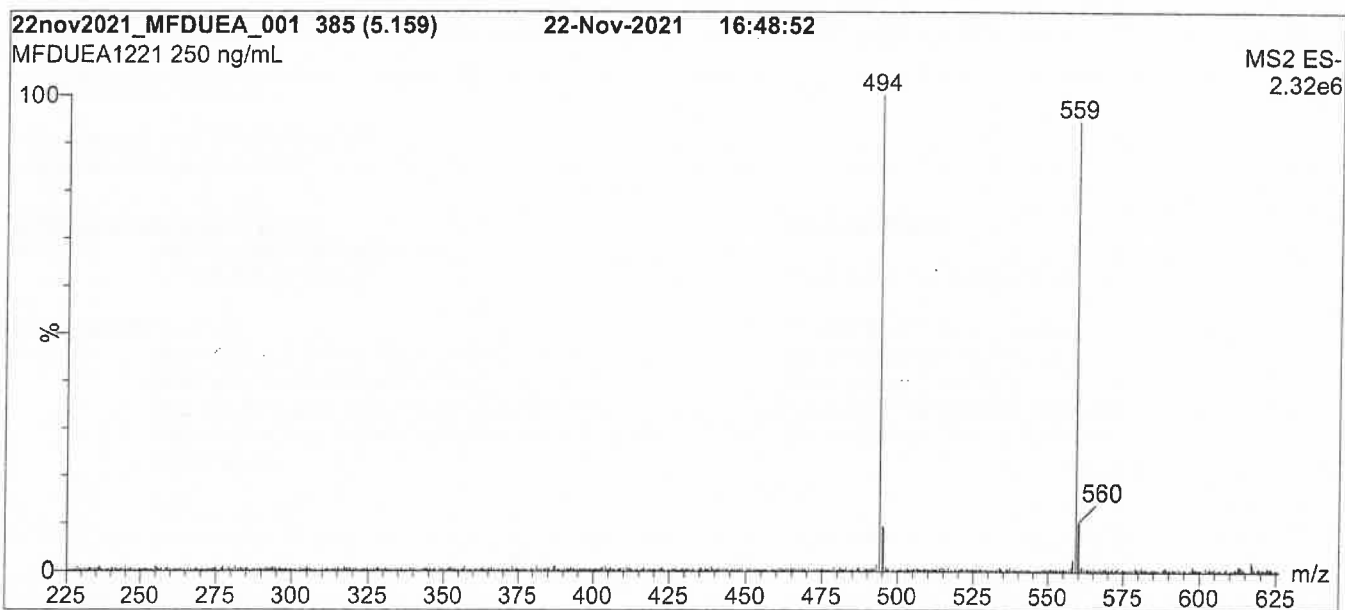
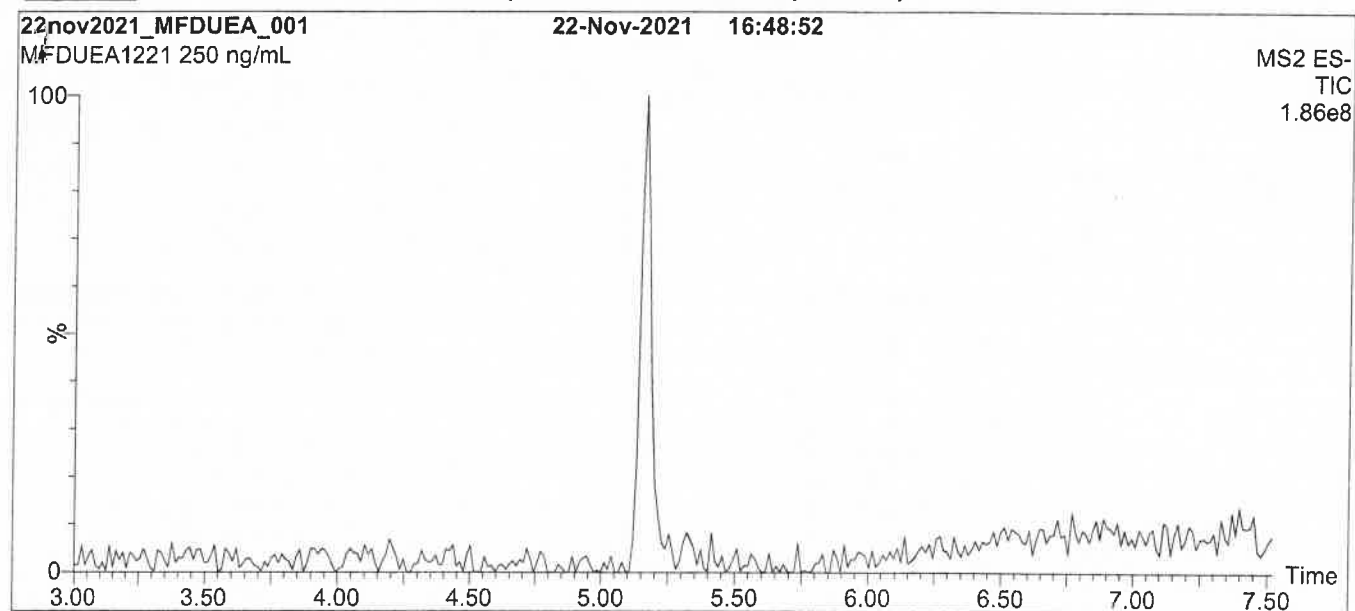
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Figure 1: MFDUEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

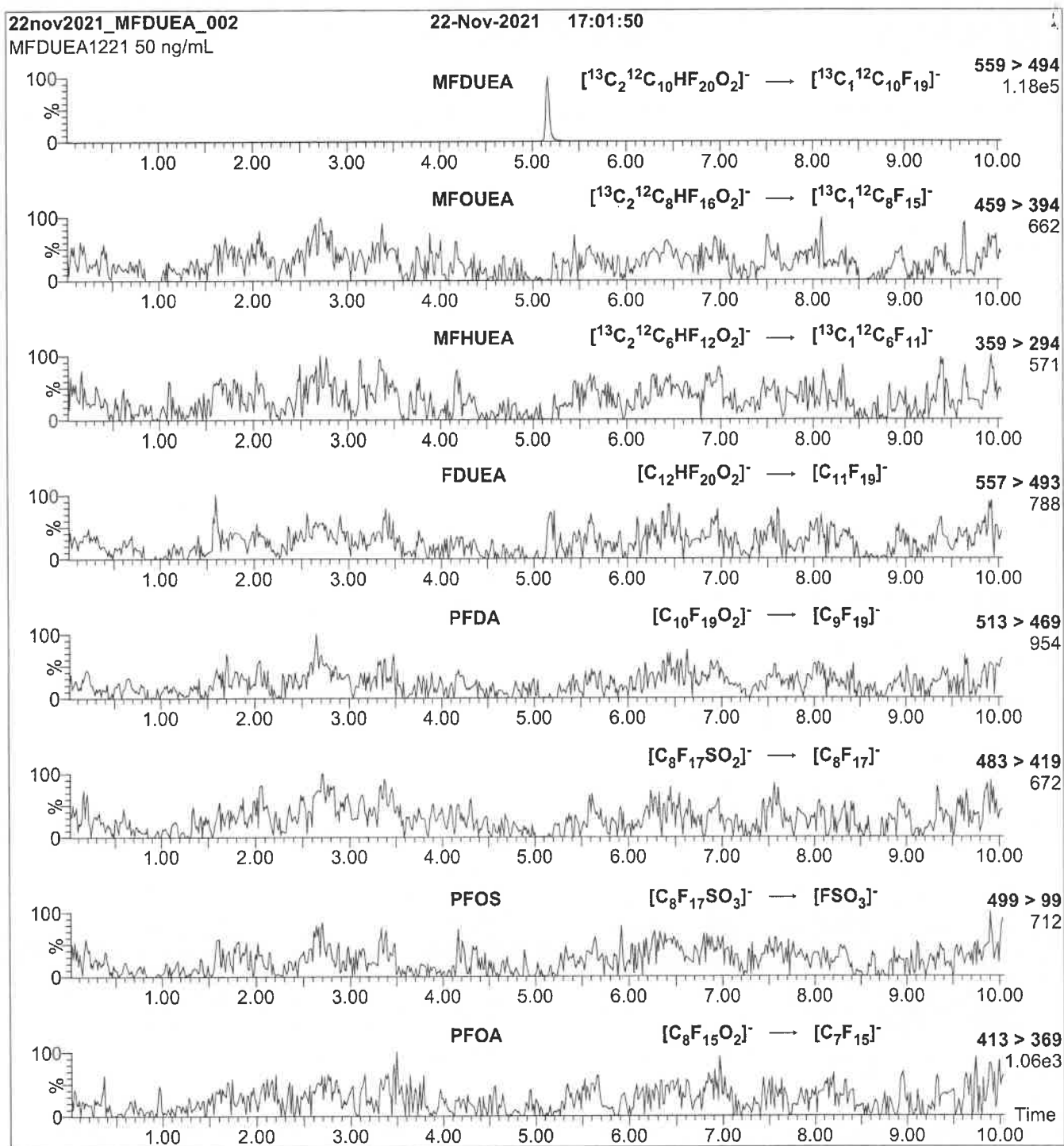
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.70
Cone Voltage (V) = 28.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MFDUEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MFDUEA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 14

Reagent

LCMFHEA_00012



2979790

ID: LCMFHEA_00012

Exp: 09/23/24 Prod: 04/19/22

MFHEA Stock 50 ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

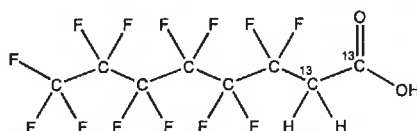
MFHEA

LOT NUMBER:

MFHEA0921

COMPOUND:2-Perfluorohexyl (1,2-¹³C₂)ethanoic acid**STRUCTURE:****CAS #:**

872398-75-9

**MOLECULAR FORMULA:**¹³C₂¹²C₆H₃F₁₃O₂**MOLECULAR WEIGHT:**

380.07

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Isopropanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

09/29/2021

(1,2-¹³C₂)**EXPIRY DATE:** (mm/dd/yyyy)

09/29/2024

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <0.1% 2H-Perfluoro-(1,2-¹³C₂)-2-octenoic acid (MFHUEA).
- The saturated telomer acid very slowly degrades to MFHUEA in isopropanol. This solution contains 3 molar equivalents of HCl to minimize this degradation. This degradation occurs at a much faster rate in MeOH, therefore any MeOH dilutions should be used on the same day that they are prepared and monitored for degradation. The rate of degradation can also increase significantly when handling the solution at ambient temperature or in the presence of base. Always store this solution at 4°C to minimize degradation.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 10/14/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

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UNCERTAINTY:

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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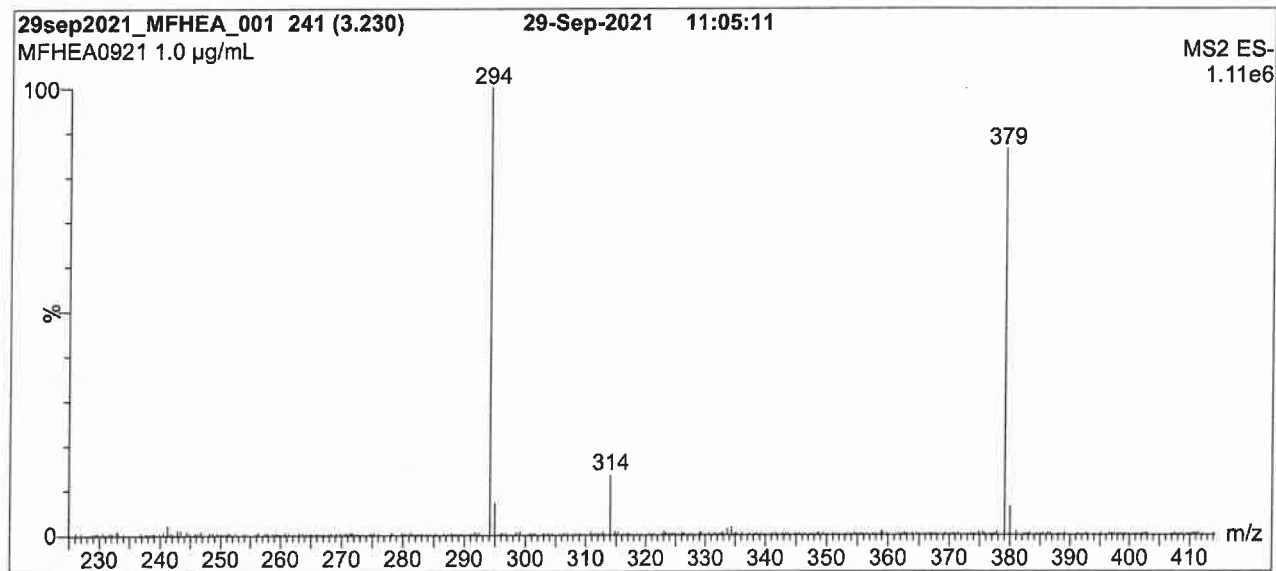
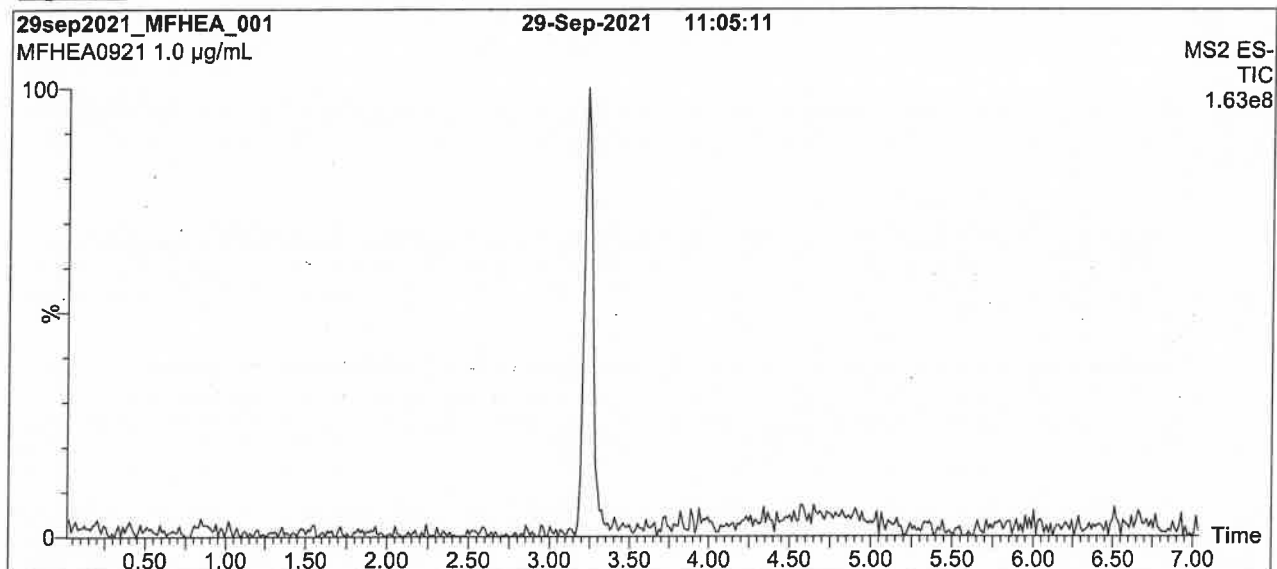
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: MFHEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 1 min.
Time: 12 min

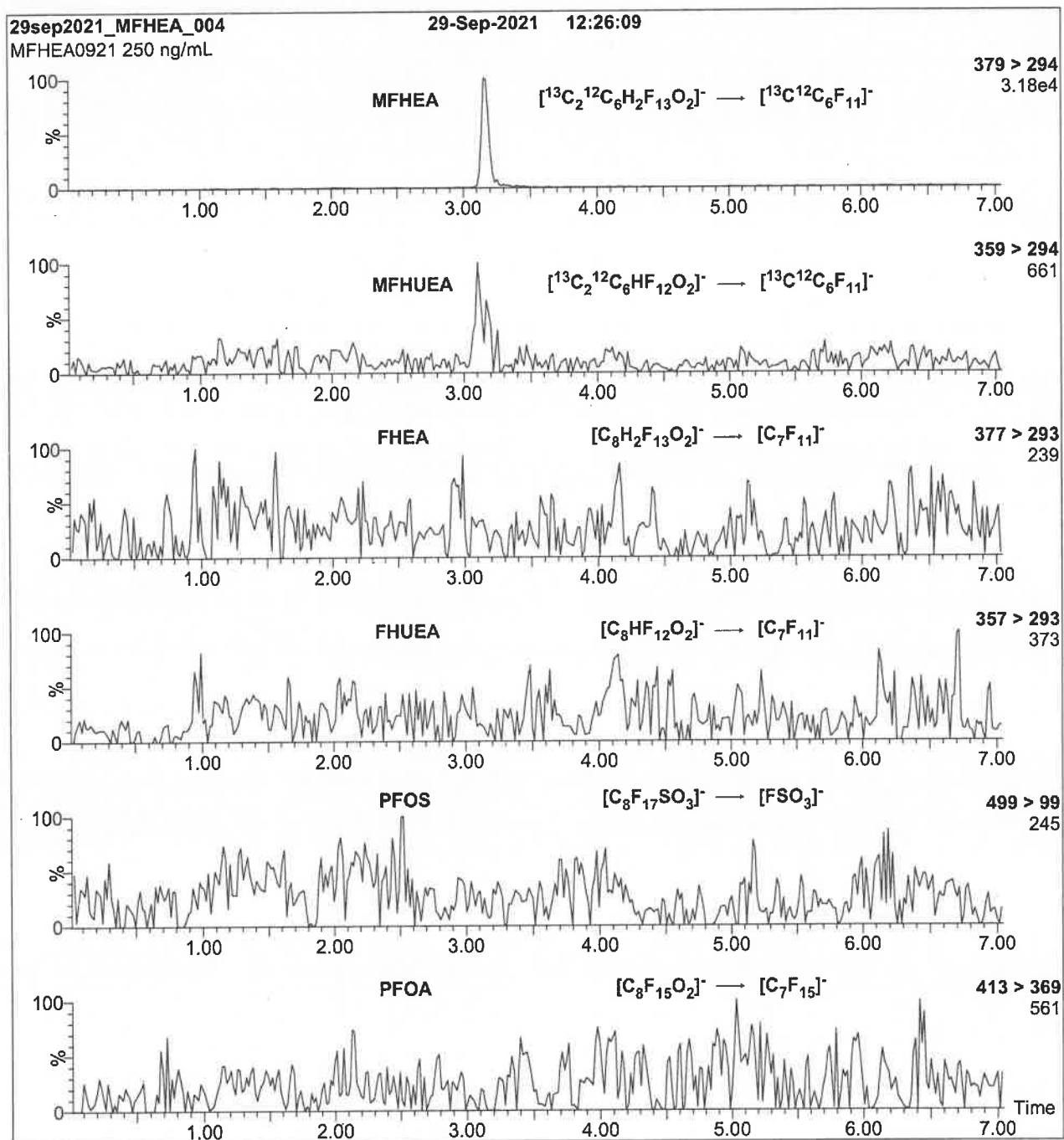
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 15.00
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MFHEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MFHEA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.29e-3

Collision Energy (eV) = 10

Reagent

LCMFHEA_00013



3185195

ID: LCMFHEA_00013

Exp:06/23/25 Prep:SM Opn:03/14/22
13C-6:2 FTCA Stock 50 ug/

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

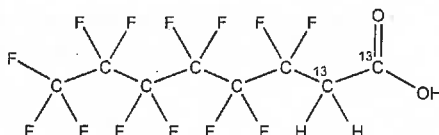
MFHEA

LOT NUMBER:

MFHEA0622

COMPOUND:2-Perfluorohexyl (1,2-¹³C₂)ethanoic acid**STRUCTURE:****CAS #:**

872398-75-9

**MOLECULAR FORMULA:**¹³C₂¹²C₆H₃F₁₃O₂**CONCENTRATION:**

50.0 ± 2.5 µg/mL

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

06/23/2022

EXPIRY DATE: (mm/dd/yyyy)

06/23/2025

RECOMMENDED STORAGE:

Refrigerate ampoule

MOLECULAR WEIGHT:

380.07

SOLVENT(S):

Isopropanol

ISOTOPIC PURITY:≥99% ¹³C(1,2-¹³C₂)**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <0.1% 2H-Perfluoro-2-(1,2-¹³C₂)octenoic acid (MFHUEA).
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Certified By:

B.G. Chittim, General Manager

Date: 07/04/2022

(mm/dd/yyyy)

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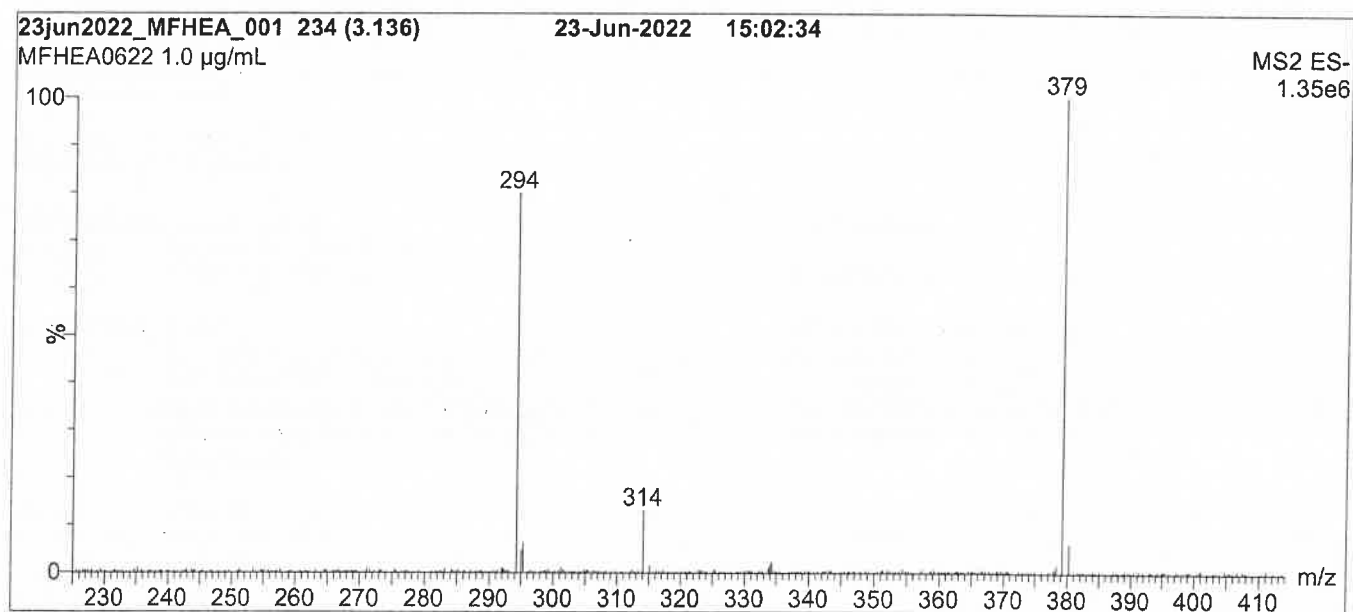
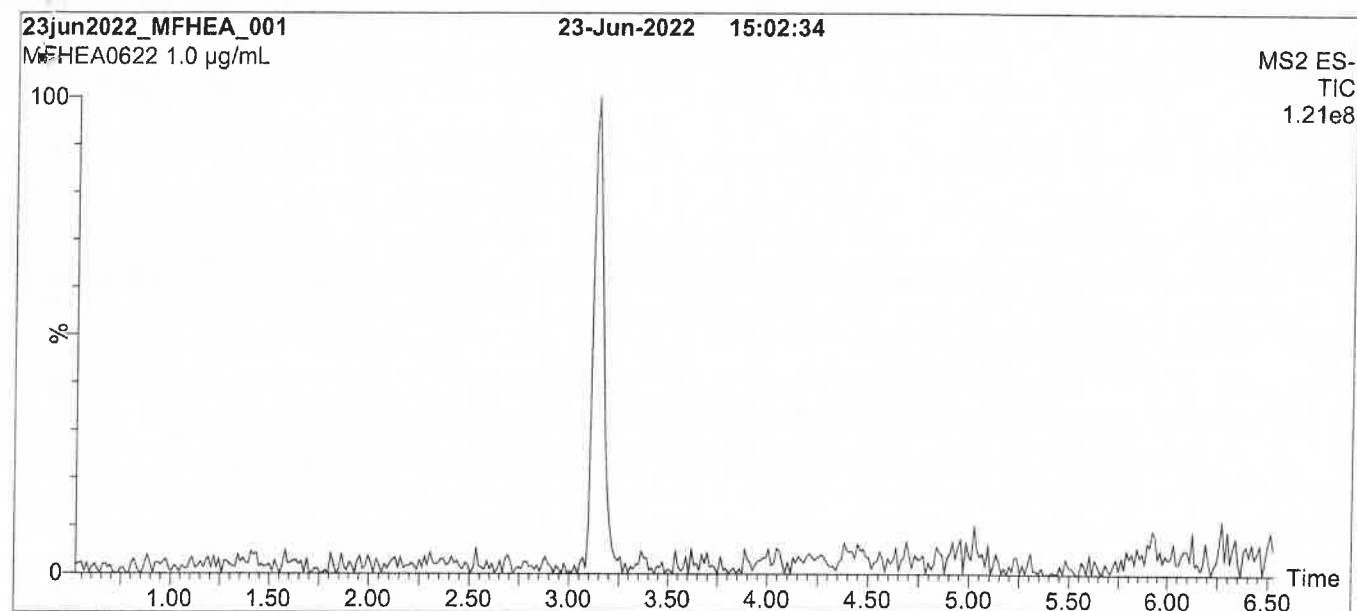
QUALITY MANAGEMENT:

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Figure 1: MFHEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

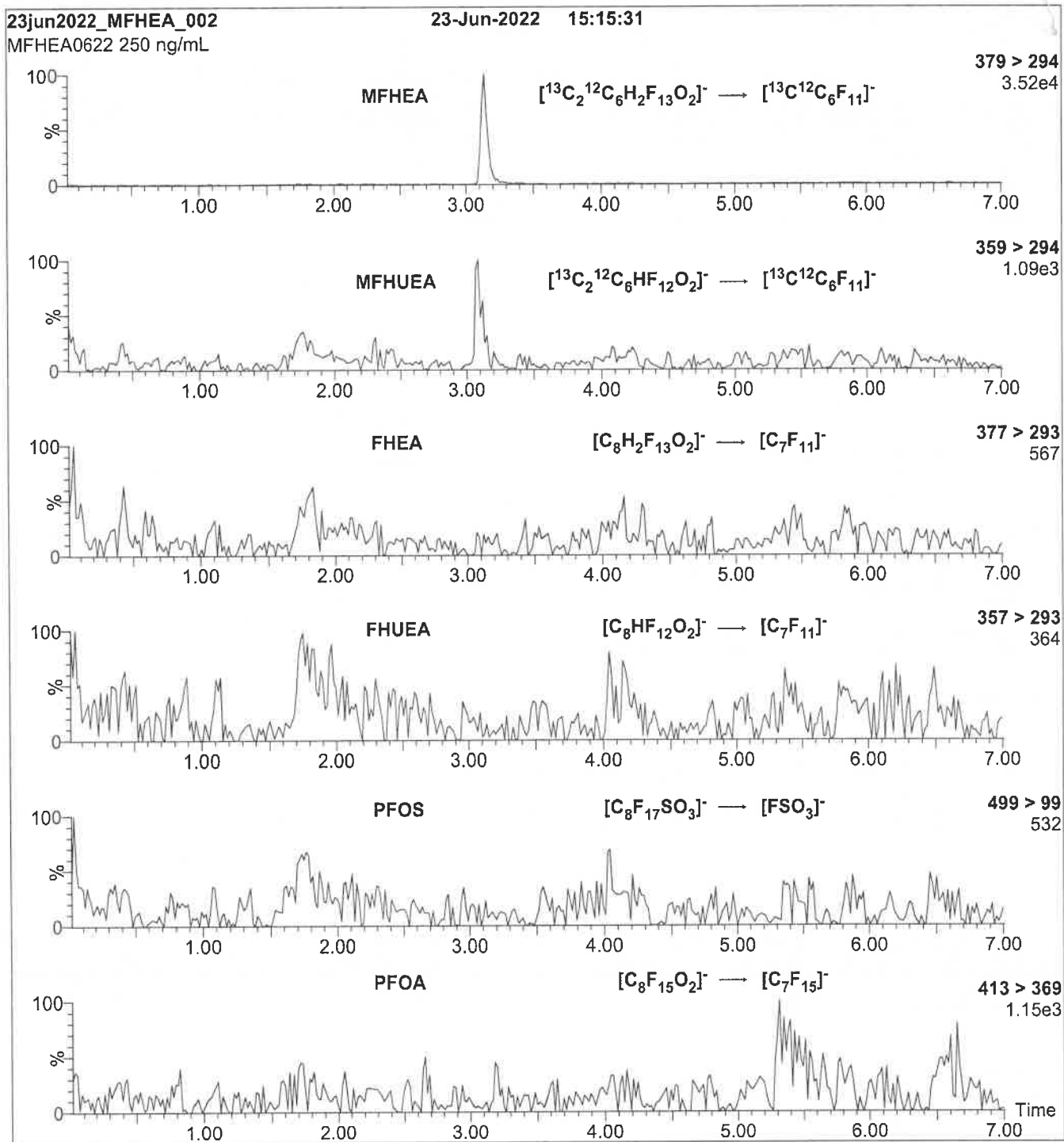
Capillary Voltage (kV) = 2.50

Cone Voltage (V) = 15.00

Desolvation Temperature (°C) = 350

Desolvation Gas Flow (L/hr) = 1000

Figure 2: MFHEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MFHEA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.20e-3

Collision Energy (eV) = 10

Reagent

LCMFHUEA_00014



2979677

ID: LCMFHUEA_00014
 Exp: 02/18/24 Prp: MM Opi: 04/19/22
 MFHUEA Stock 50 ug/mL



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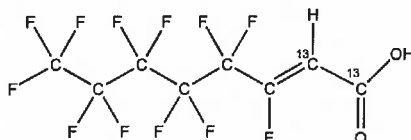
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MFHUEA
COMPOUND: 2H-Perfluoro-2-(1,2-¹³C₂)octenoic acid

LOT NUMBER: MFHUEA0322

STRUCTURE:

CAS #: 872398-78-2



MOLECULAR FORMULA: ¹³C₂¹²C₆H₂F₁₂O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 360.07
SOLVENT(S): Anhydrous
 Isopropanol

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/18/2022
EXPIRY DATE: (mm/dd/yyyy) 02/18/2024
RECOMMENDED STORAGE: Refrigerate ampoule

ISOTOPIC PURITY: ≥99% ¹³C
 (1,2-¹³C₂)

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.5% of 2H-perfluoro-2-(1,2-¹³C₂)decanoic acid (MFOUEA).
- Dilution of this standard in methanol may lead to the formation of 2H-3-methoxy-perfluoro-2-(1,2-¹³C₂)octenoic acid. This reaction can be catalyzed by the presence of acid or base. All dilutions should be routinely checked for degradation.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:
 B.G. Chittim, General Manager

Date: 02/18/2022
 (mm/dd/yyyy)

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 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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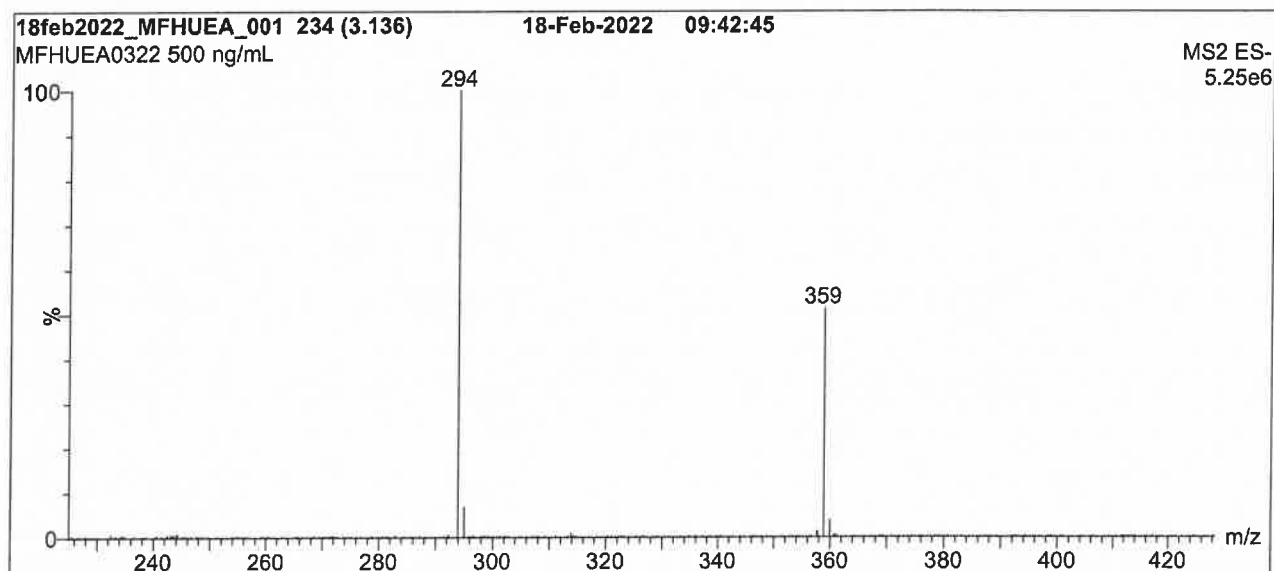
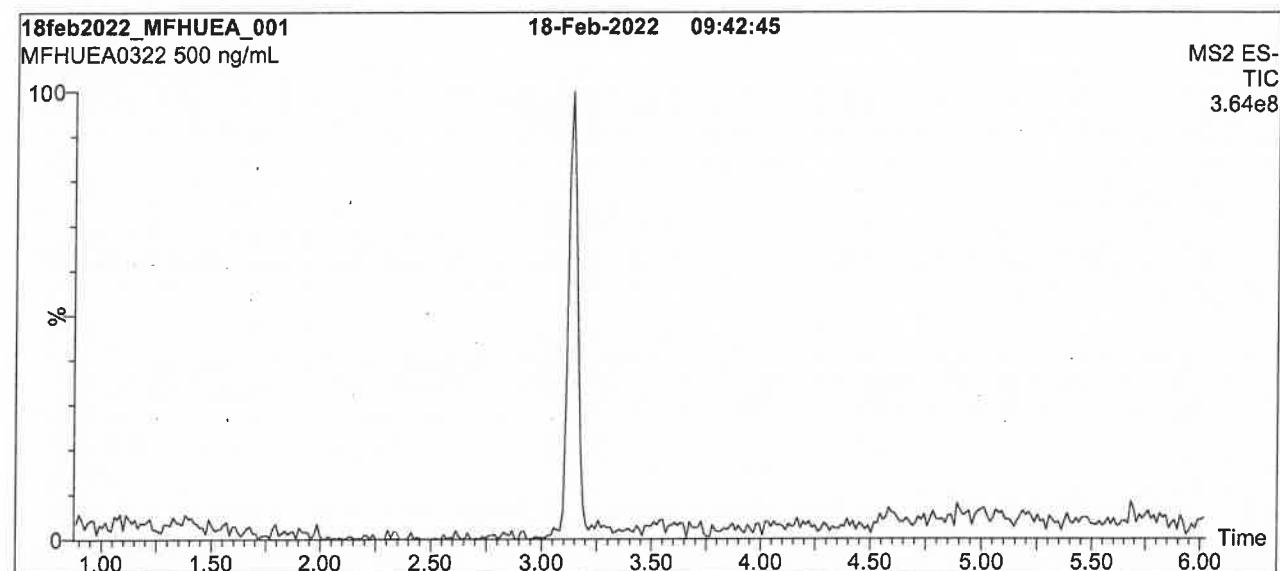
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Figure 1: MFHUEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

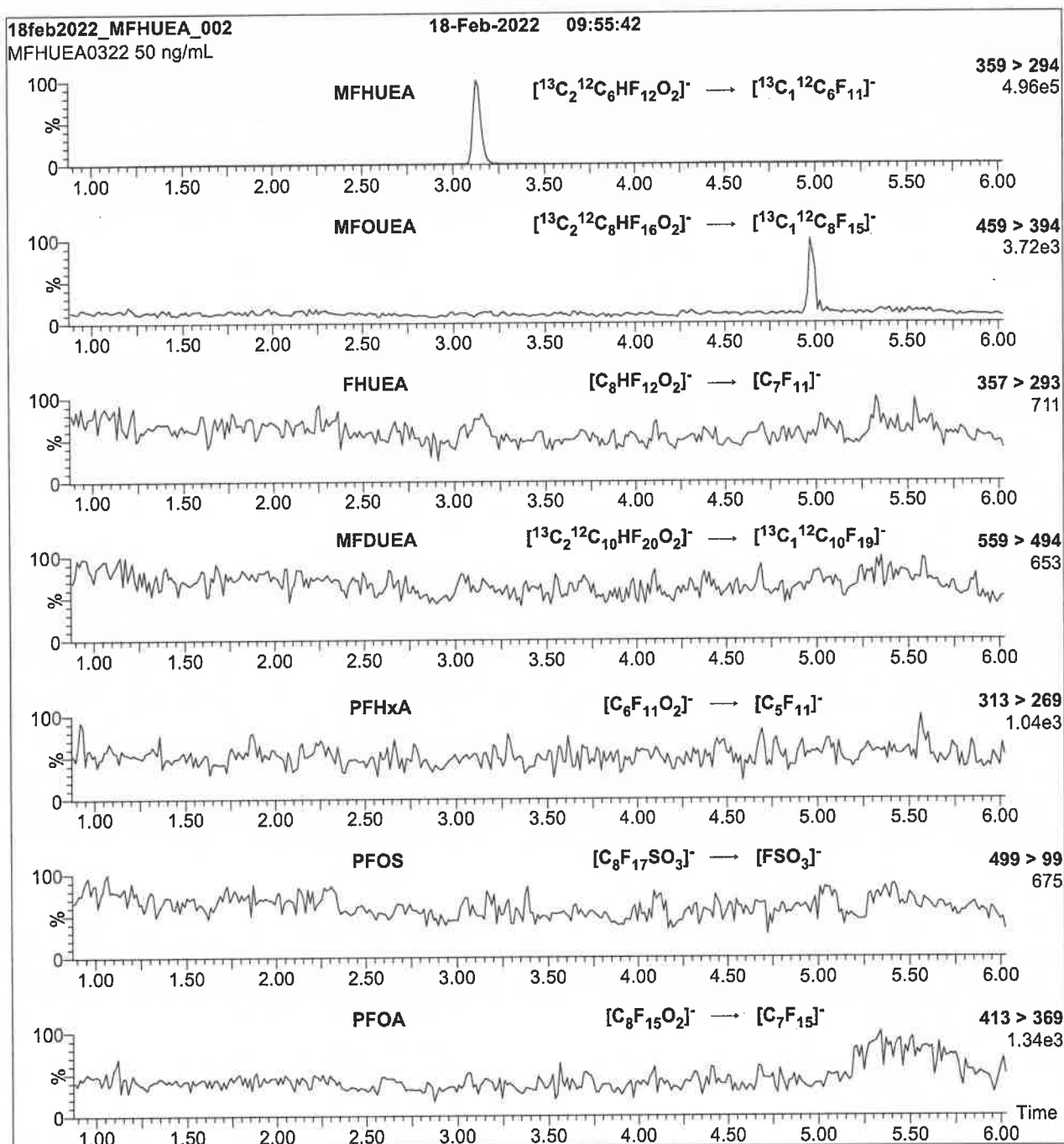
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.70
Cone Voltage (V) = 28.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MFHUEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MFHUEA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.22e-3

Collision Energy (eV) = 14

Reagent

LCMFHUEA_00015



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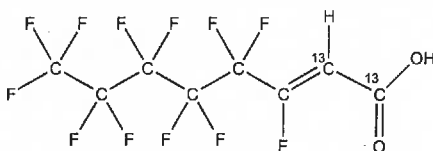
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MFHUEA
COMPOUND: 2H-Perfluoro-2-(1,2-¹³C₂)octenoic acid

LOT NUMBER: MFHUEA0322

STRUCTURE:

CAS #: 872398-78-2



MOLECULAR FORMULA: ¹³C₂¹²C₆H₂F₁₂O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 360.07
SOLVENT(S): Anhydrous
Isopropanol

CHEMICAL PURITY: >98%

ISOTOPIC PURITY: ≥99% ¹³C
(1,2-¹³C₂)

LAST TESTED: (mm/dd/yyyy) 02/18/2022

EXPIRY DATE: (mm/dd/yyyy) 02/18/2024

RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

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Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
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Certified By:

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Date:

02/18/2022
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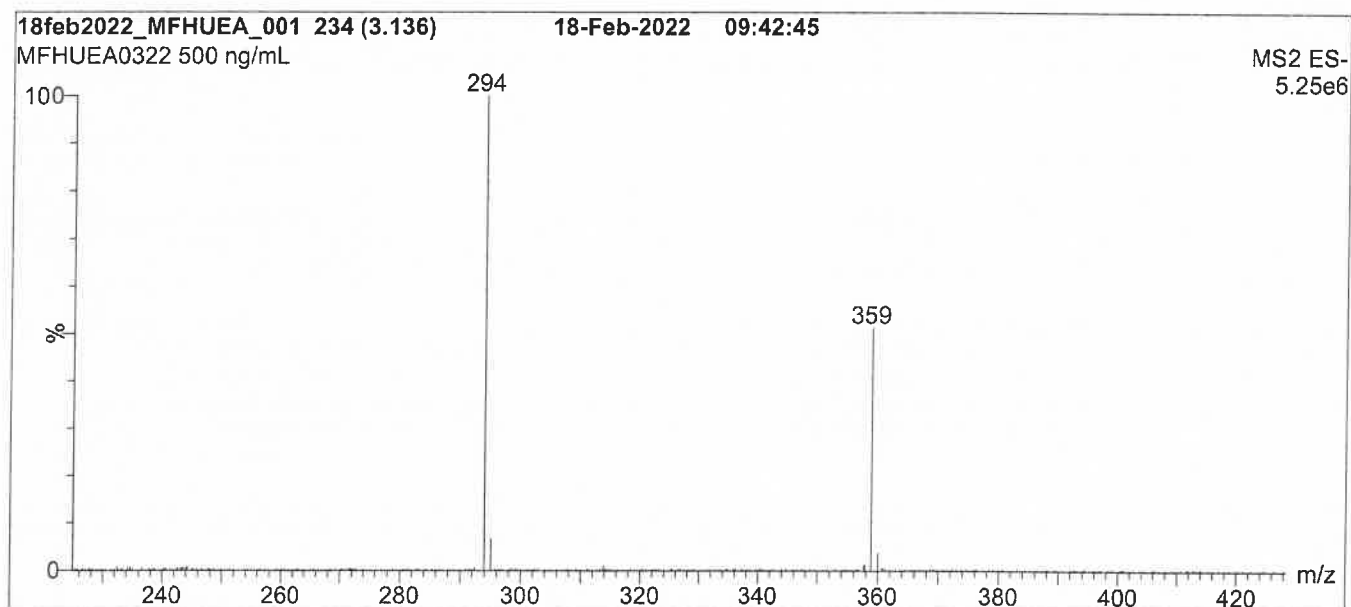
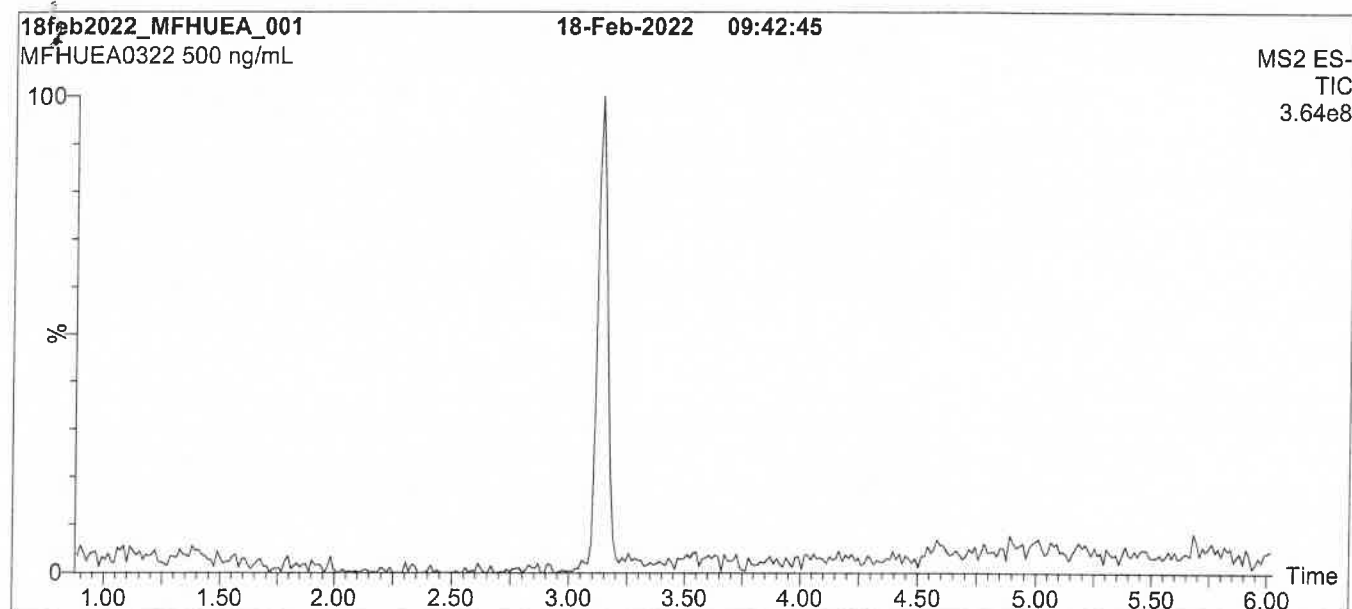
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: MFHUEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)

Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.

Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

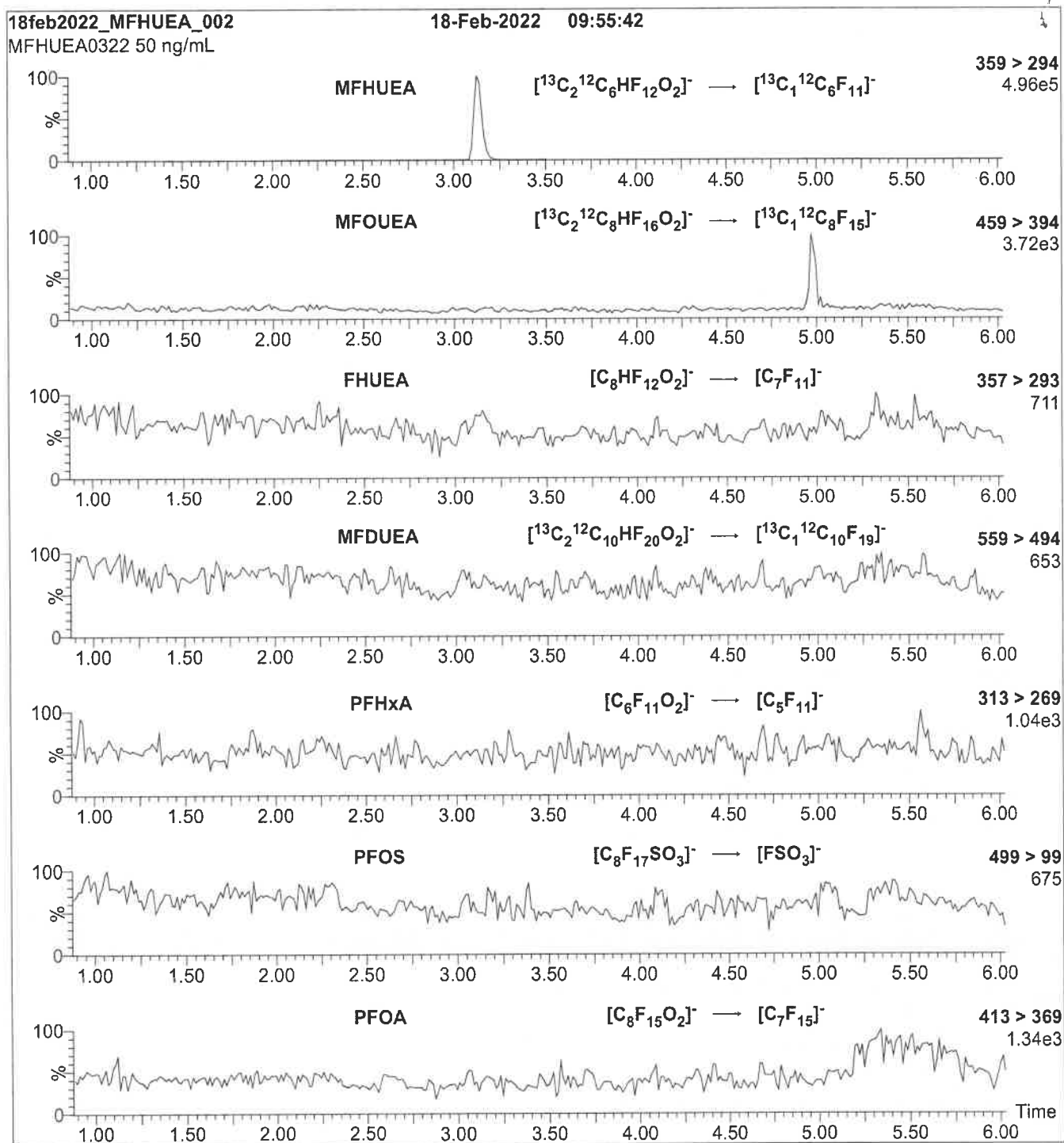
Capillary Voltage (kV) = 0.70

Cone Voltage (V) = 28.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: MFHUEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MFHUEA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.22e-3

Collision Energy (eV) = 14

Reagent

LCMFOEA_00011



2856194

ID: LCMFOEA_00011

Exp: 11/22/24 Ppd: 3M Opm: 01/12/22

MFOEA Stock 50 ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

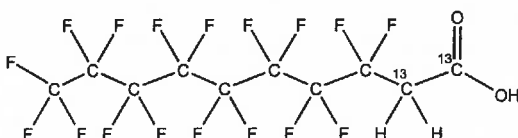
MFOEA

LOT NUMBER:

MFOEA1121

COMPOUND:2-Perfluorooctyl (1,2-¹³C₂)ethanoic acid**STRUCTURE:****CAS #:**

872398-76-0

**MOLECULAR FORMULA:**¹³C₂¹²C₈H₃F₁₇O₂**MOLECULAR WEIGHT:**

480.09

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Isopropanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C
(1,2-¹³C₂)**LAST TESTED:** (mm/dd/yyyy)

11/22/2021

EXPIRY DATE: (mm/dd/yyyy)

11/22/2024

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The saturated telomer acid very slowly degrades to MFOUEA in isopropanol. This solution contains 3 molar equivalents of HCl to minimize this degradation. This degradation occurs at a much faster rate in MeOH, therefore any MeOH dilutions should be used on the same day that they are prepared and monitored for degradation. The rate of degradation can also increase significantly when handling the solution at ambient temperature or in the presence of base. Always store this solution at 4°C to minimize degradation.
- Contains ~1.4% 2H-Perfluoro-2-(1,2-¹³C₂)decanoic acid (MFOUEA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**

B.G. Chittim, General Manager
Date: 11/26/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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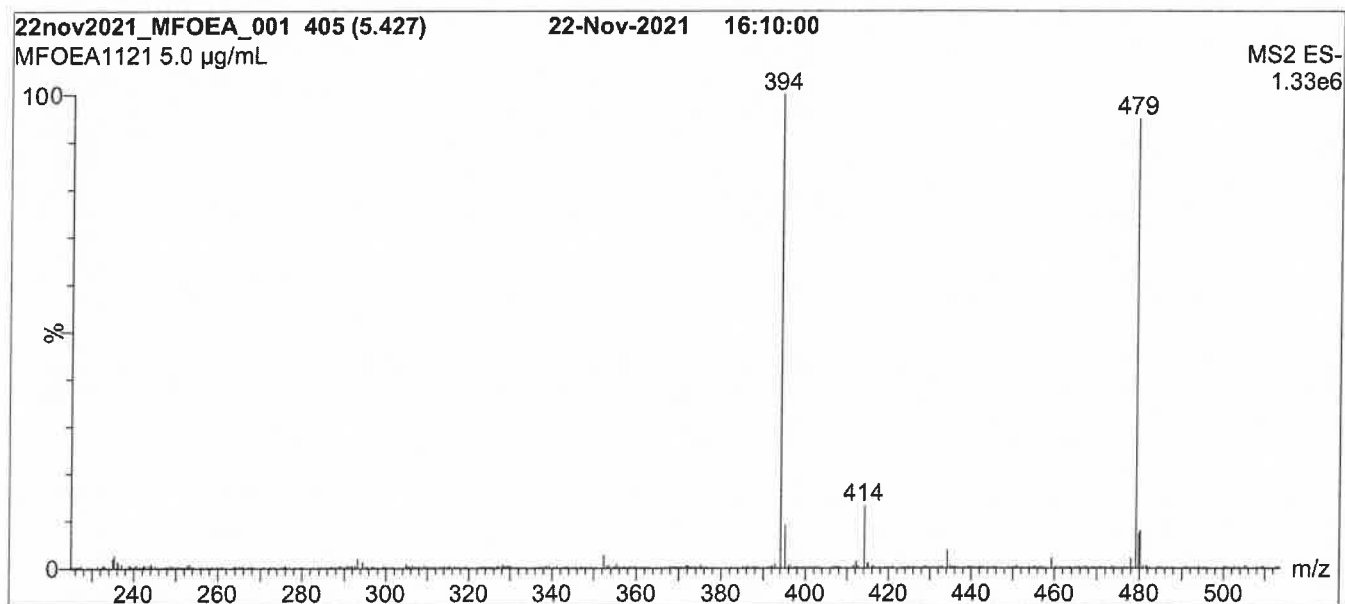
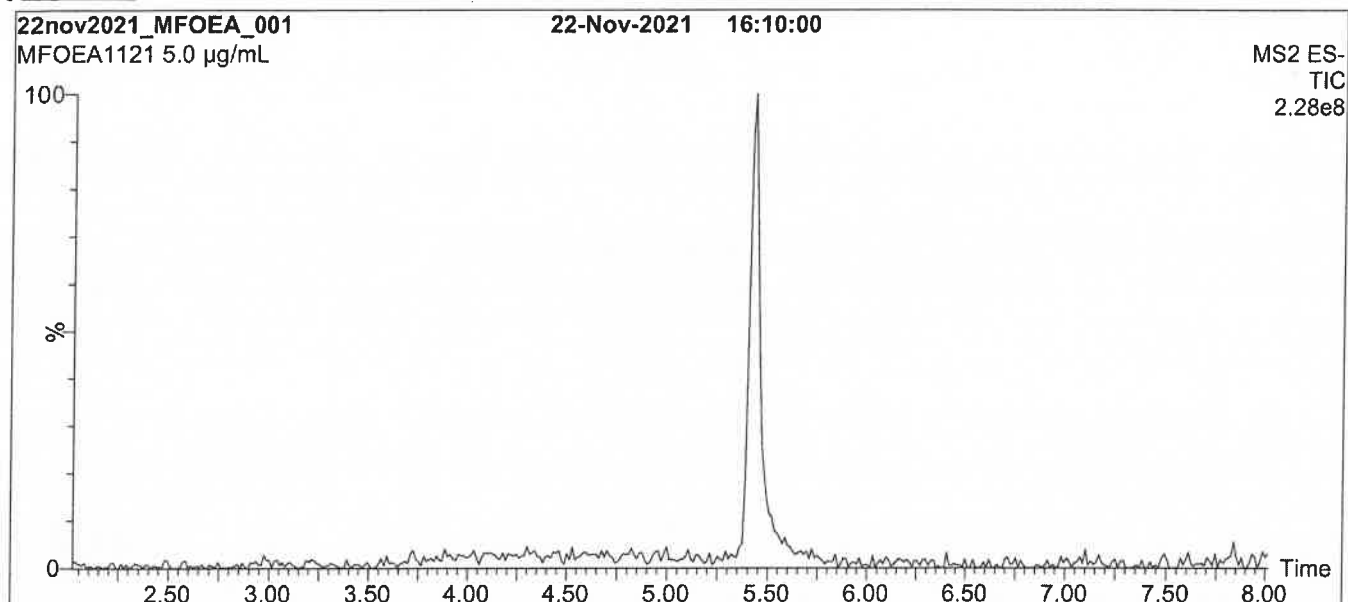
QUALITY MANAGEMENT:

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Figure 1: MFOEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

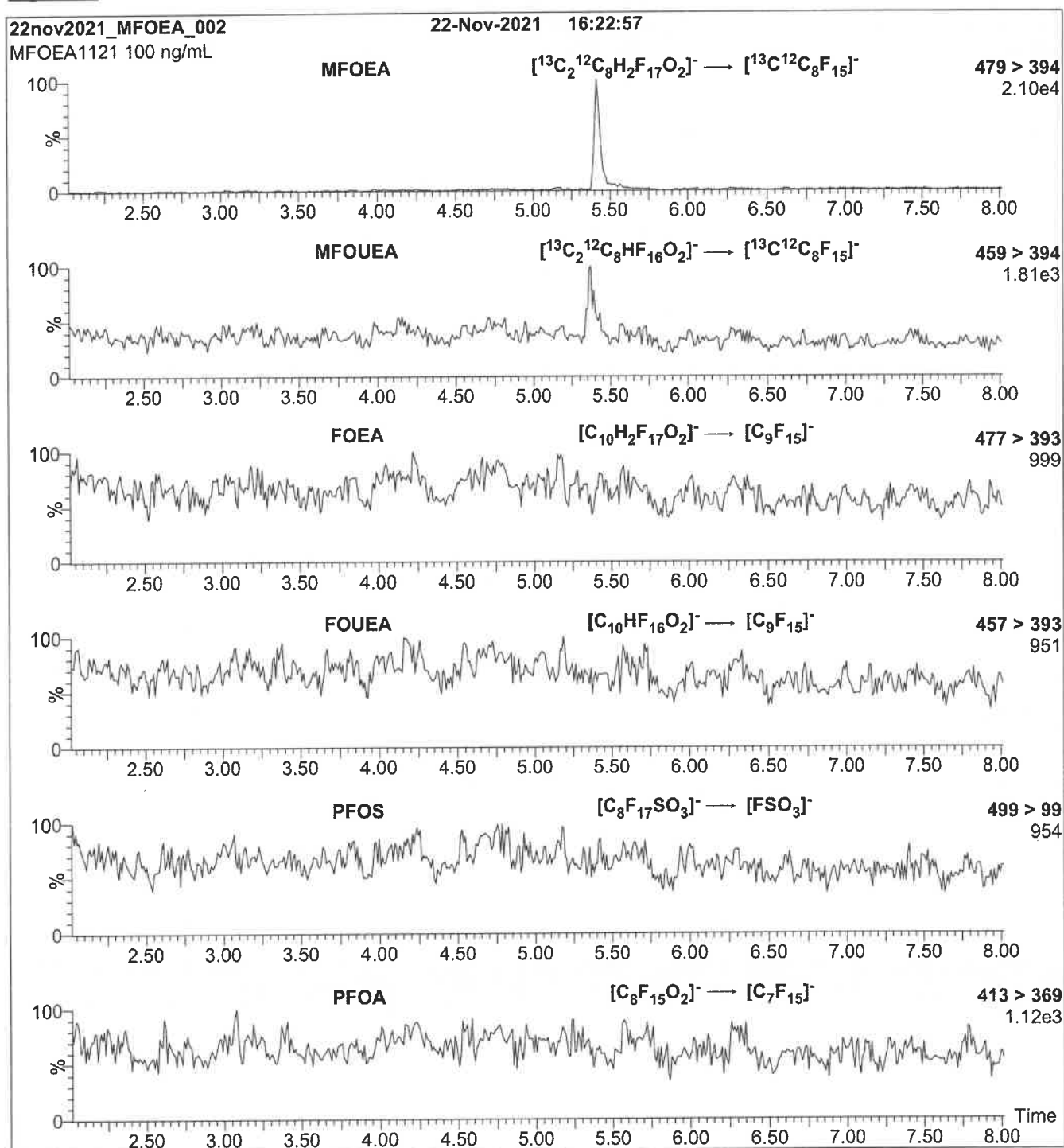
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 15.00
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MFOEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MFOEA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.29e-3

Collision Energy (eV) = 12

Reagent

LCMFOEA_00014



3185230

ID: LCMFOEA_00014

Exp: 11/22/24 Ppd: 3M Opm: 09/14/22
13C-8:2 FTCA Stock 50 ug/

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

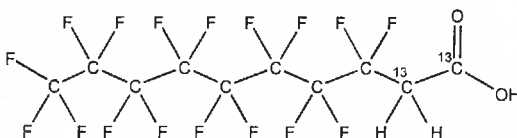
MFOEA

LOT NUMBER:

MFOEA1121

COMPOUND:2-Perfluorooctyl (1,2-¹³C₂)ethanoic acid**STRUCTURE:****CAS #:**

872398-76-0

**MOLECULAR FORMULA:**¹³C₂¹²C₈H₃F₁₇O₂**CONCENTRATION:**

50.0 ± 2.5 µg/mL

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/22/2021

EXPIRY DATE: (mm/dd/yyyy)

11/22/2024

RECOMMENDED STORAGE:

Refrigerate ampoule

MOLECULAR WEIGHT:

480.09

SOLVENT(S):

Isopropanol

ISOTOPIC PURITY:≥99% ¹³C
(1,2-¹³C₂)**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The saturated telomer acid very slowly degrades to MFOUEA in isopropanol. This solution contains 3 molar equivalents of HCl to minimize this degradation. This degradation occurs at a much faster rate in MeOH, therefore any MeOH dilutions should be used on the same day that they are prepared and monitored for degradation. The rate of degradation can also increase significantly when handling the solution at ambient temperature or in the presence of base. Always store this solution at 4°C to minimize degradation.
- Contains ~1.4% 2H-Perfluoro-2-(1,2-¹³C₂)decenoic acid (MFOUEA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:** 11/26/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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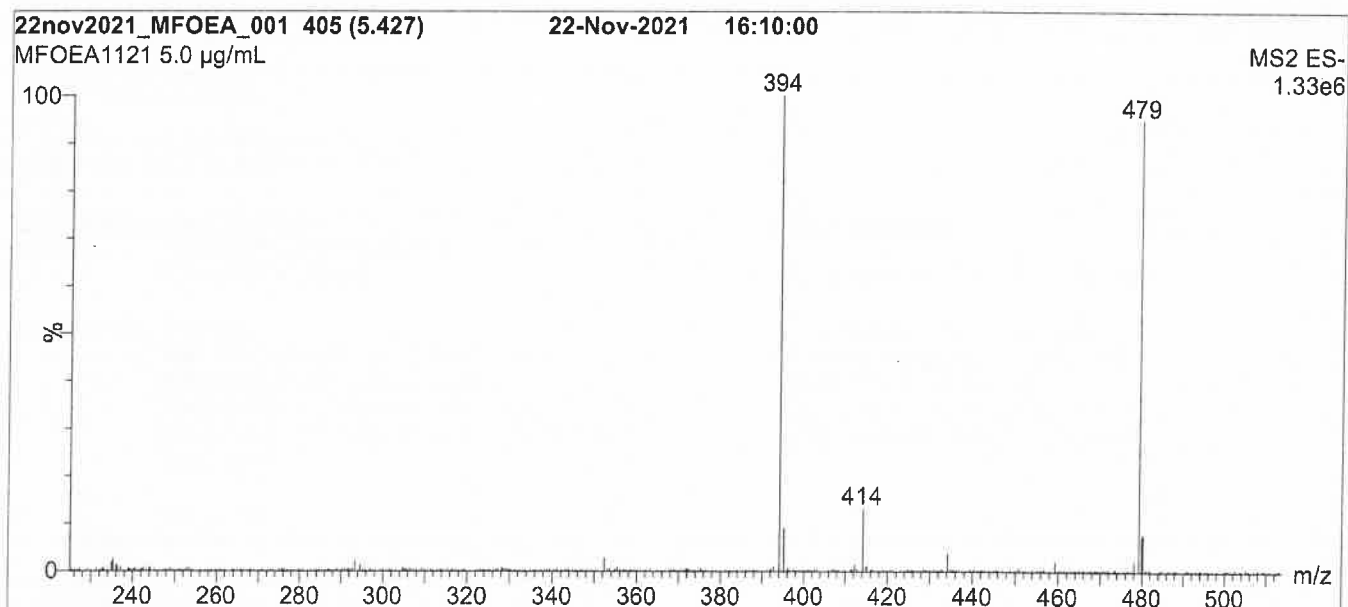
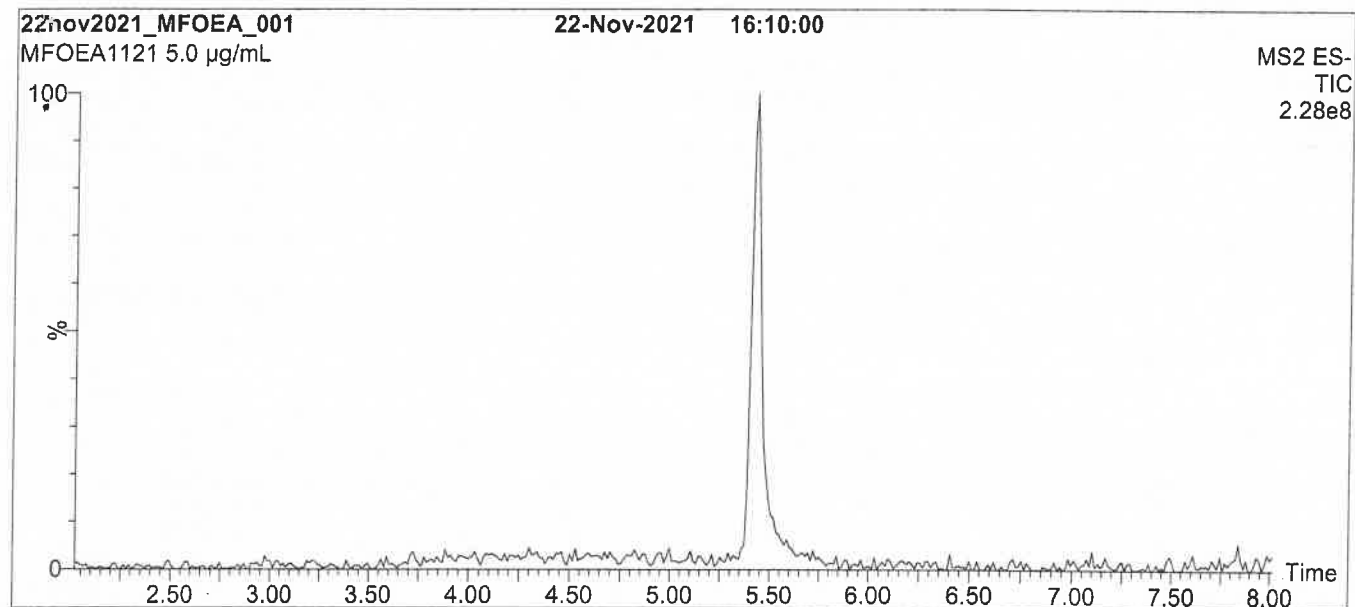
QUALITY MANAGEMENT:

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Figure 1: MFOEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

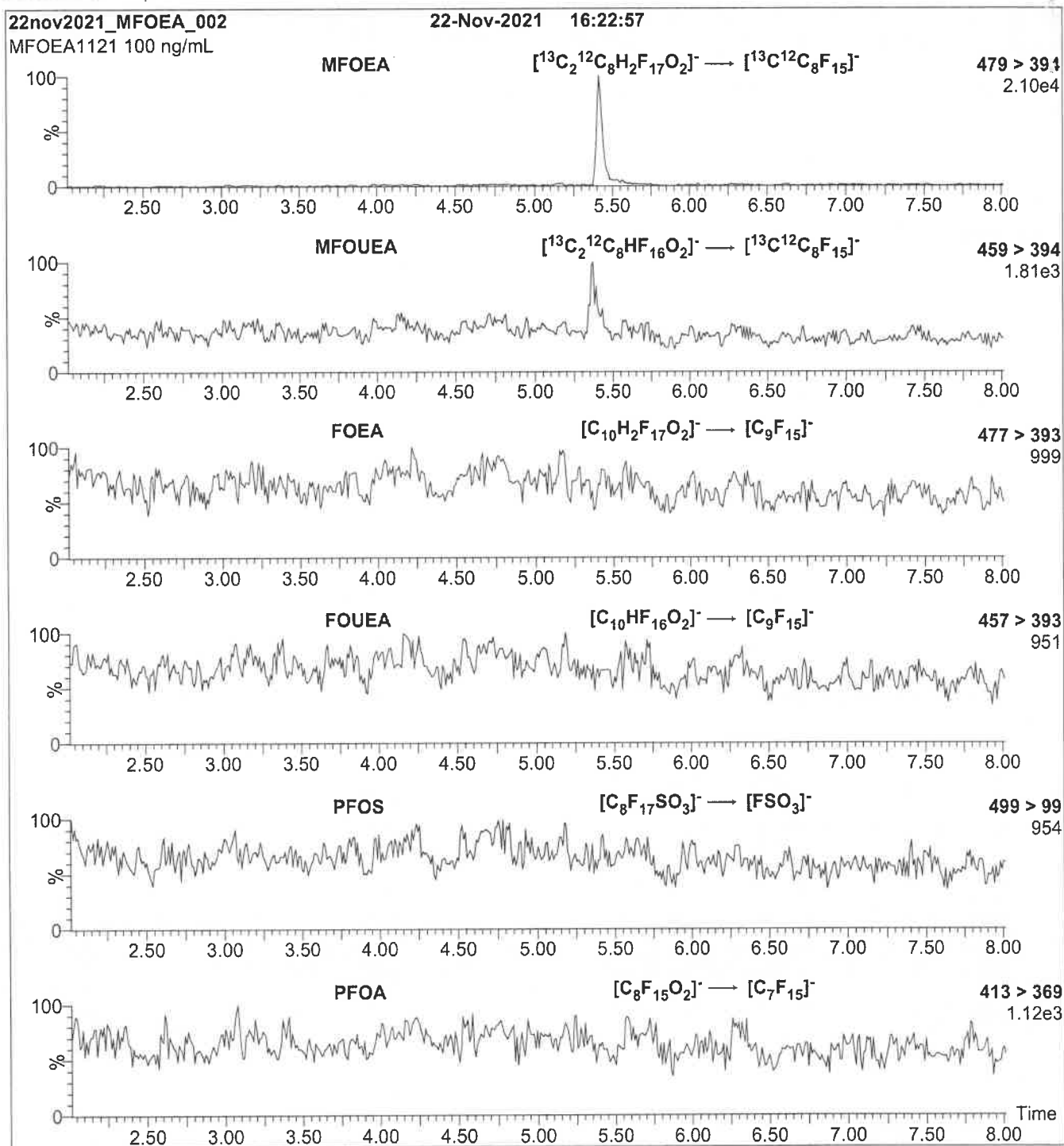
Capillary Voltage (kV) = 2.50

Cone Voltage (V) = 15.00

Desolvation Temperature (°C) = 350

Desolvation Gas Flow (L/hr) = 1000

Figure 2: MFOEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MFOEA)
Mobile phase: Same as Figure 1
Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 12

Reagent

LCMFOUEA_00012



2887424

ID: LCMFOUEA_00012

Exp: 12/07/23 Prep: PCY Opn: 02/07/22

MFOUEA Stock 50 ug/ml

**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PRODUCT CODE:**

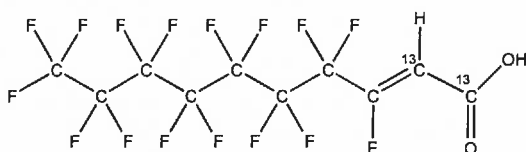
MFOUEA

LOT NUMBER:

MFOUEA1121

COMPOUND:2H-Perfluoro-2-(1,2-¹³C₂)decanoic acid**STRUCTURE:****CAS #:**

872398-79-3

**MOLECULAR FORMULA:**¹³C₂¹²C₈H₂F₁₆O₂**CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

460.08

SOLVENT(S):Anhydrous
Isopropanol**CHEMICAL PURITY:**

>98%

ISOTOPIC PURITY:≥99% ¹³C
(1,2-¹³C₂)**LAST TESTED:** (mm/dd/yyyy)

12/07/2021

EXPIRY DATE: (mm/dd/yyyy)

12/07/2023

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Dilution of this standard in methanol may lead to the formation of 2H-3-methoxy-perfluoro-2-(1,2-¹³C₂)decanoic acid. This reaction can be catalyzed by the presence of acid or base. All dilutions should be routinely checked for degradation.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

12/07/2021
(mm/dd/yyyy)**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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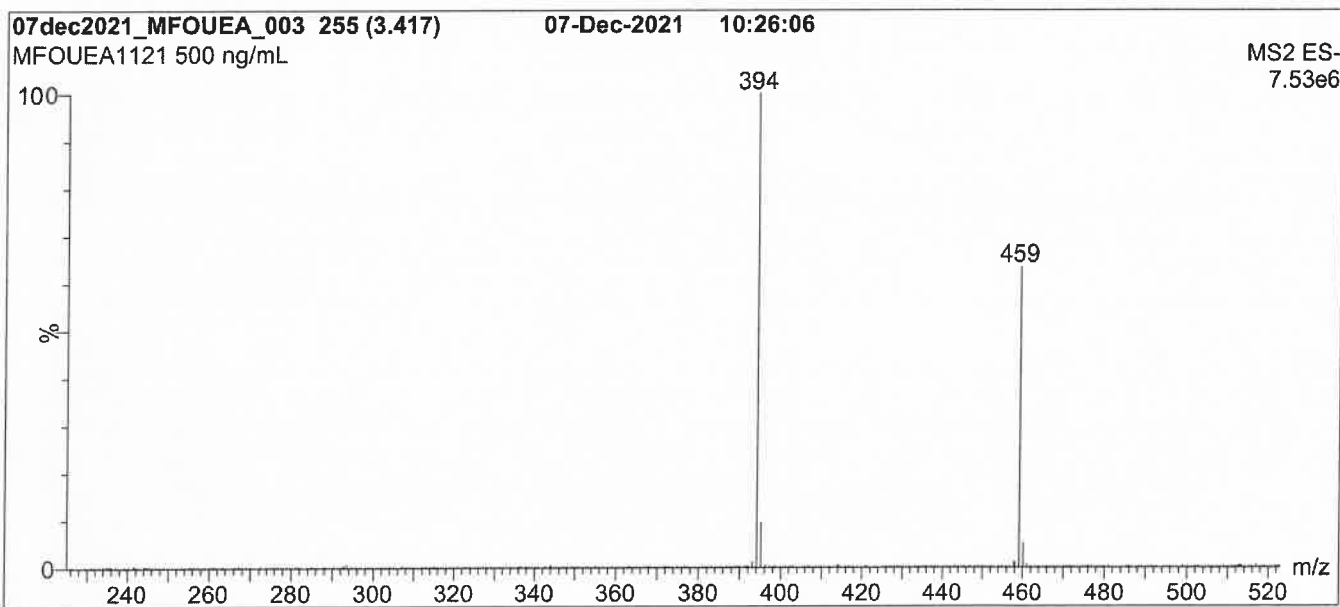
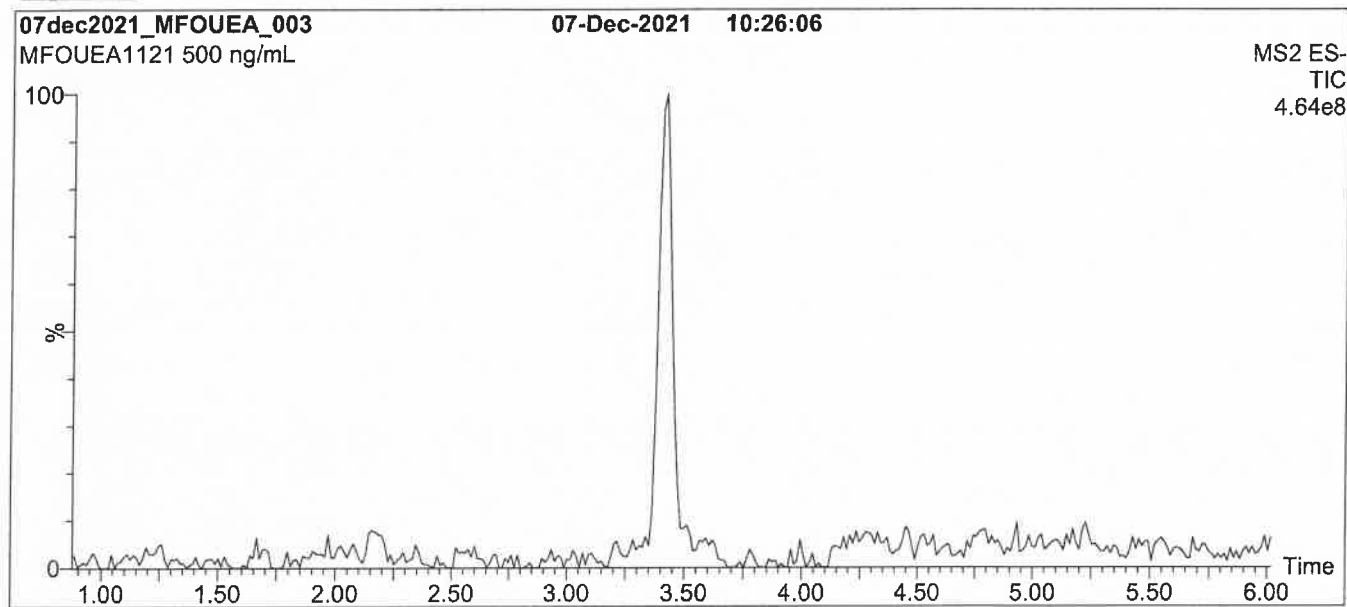
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Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

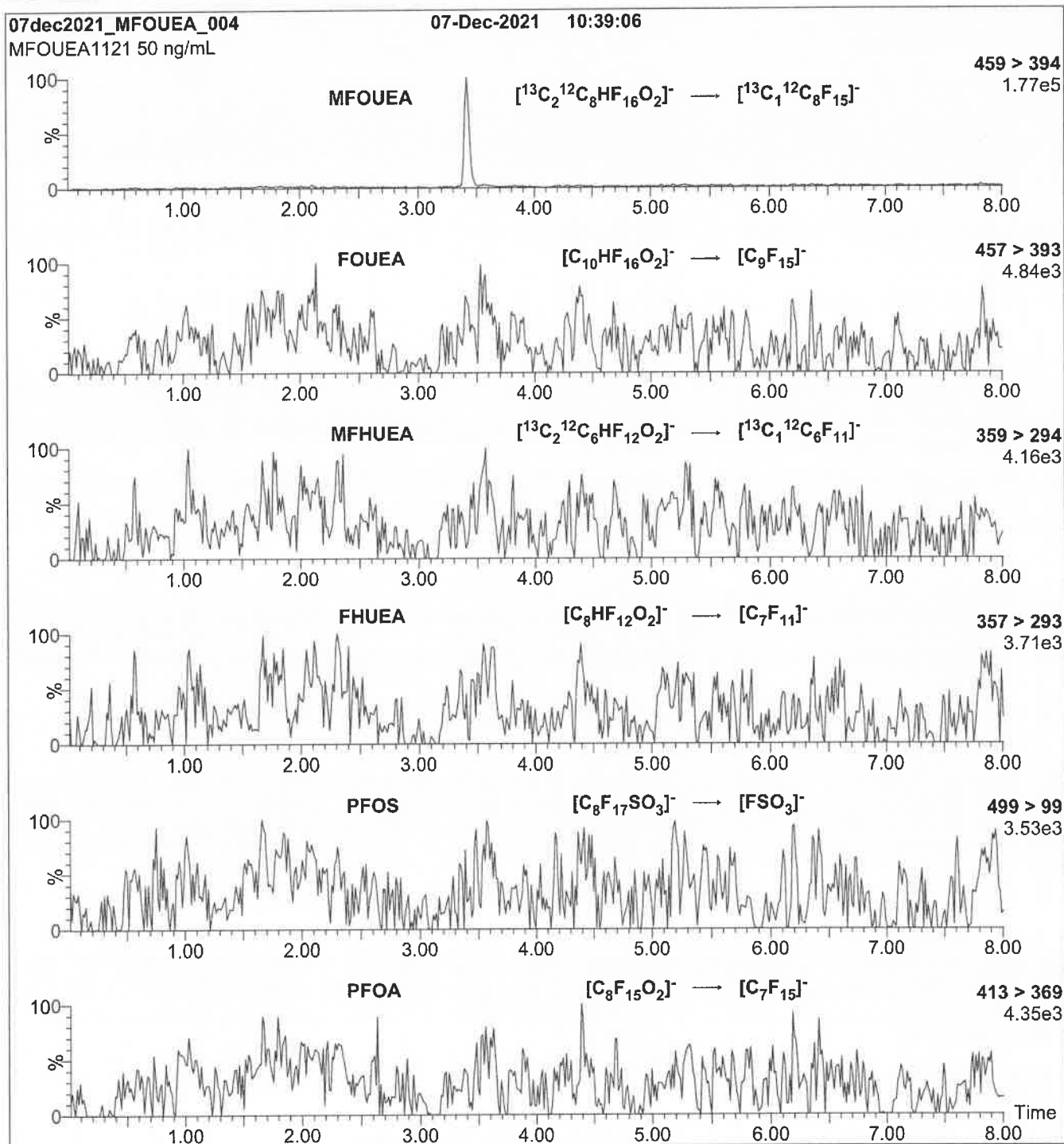
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.70
Cone Voltage (V) = 28.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MFOUEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MFOUEA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.33e-3

Collision Energy (eV) = 10

Reagent

LCMFOUEA_00013



2979749

ID: LCMFOUEA_00013

Exp: 12/07/23 Prpd: M Opm: 04/19/22

MFOUEA Stock 50 ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

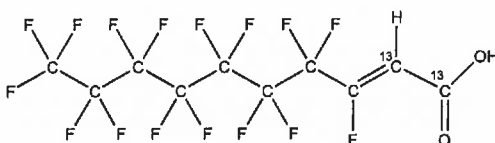
MFOUEA

LOT NUMBER:

MFOUEA1121

COMPOUND:2H-Perfluoro-2-(1,2-¹³C₂)decenoic acid**STRUCTURE:****CAS #:**

872398-79-3

**MOLECULAR FORMULA:**¹³C₂¹²C₈H₂F₁₆O₂**CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

460.08

SOLVENT(S):Anhydrous
Isopropanol**CHEMICAL PURITY:**

>98%

ISOTOPIC PURITY:≥99% ¹³C
(1,2-¹³C₂)**LAST TESTED:** (mm/dd/yyyy)

12/07/2021

EXPIRY DATE: (mm/dd/yyyy)

12/07/2023

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Dilution of this standard in methanol may lead to the formation of 2H-3-methoxy-perfluoro-2-(1,2-¹³C₂)decenoic acid. This reaction can be catalyzed by the presence of acid or base. All dilutions should be routinely checked for degradation.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

12/07/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

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UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

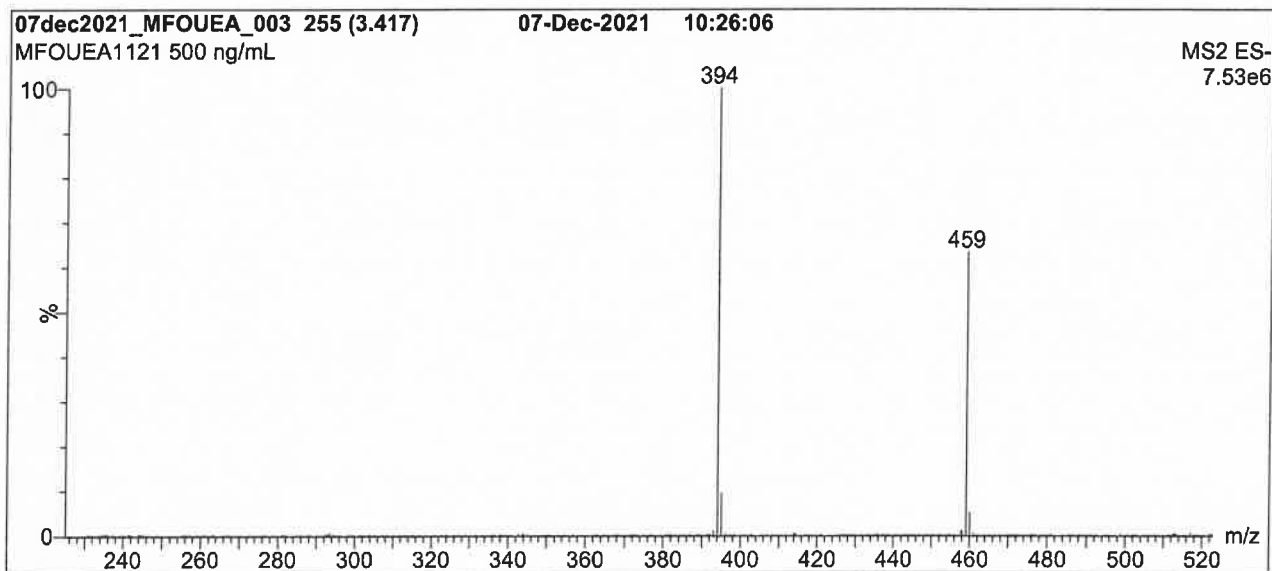
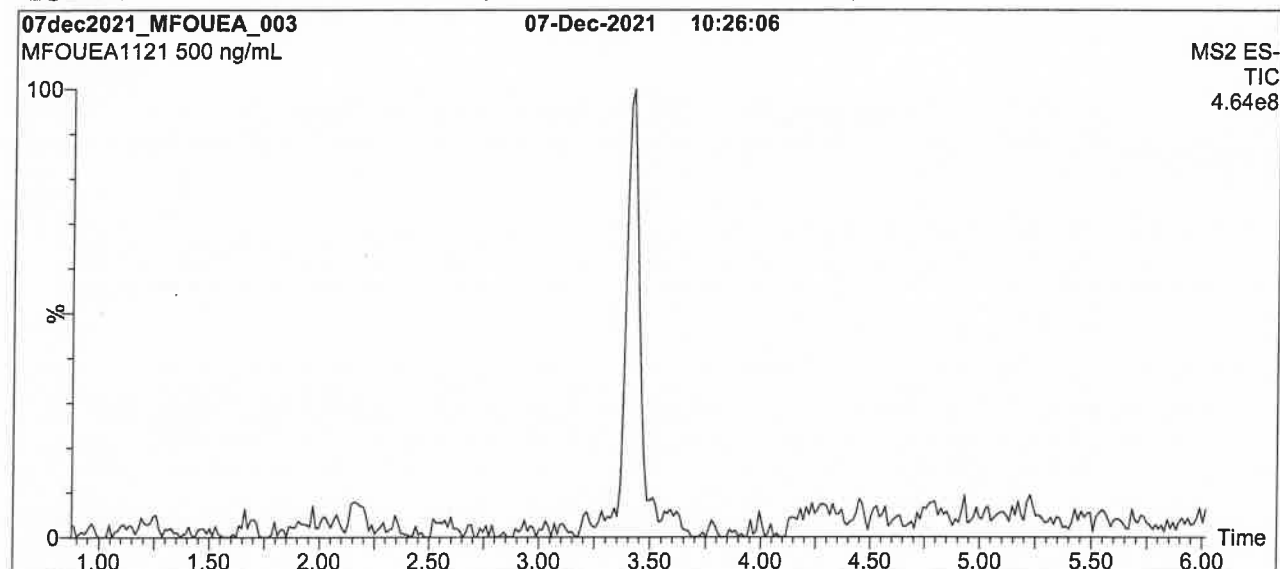
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: MFOUEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

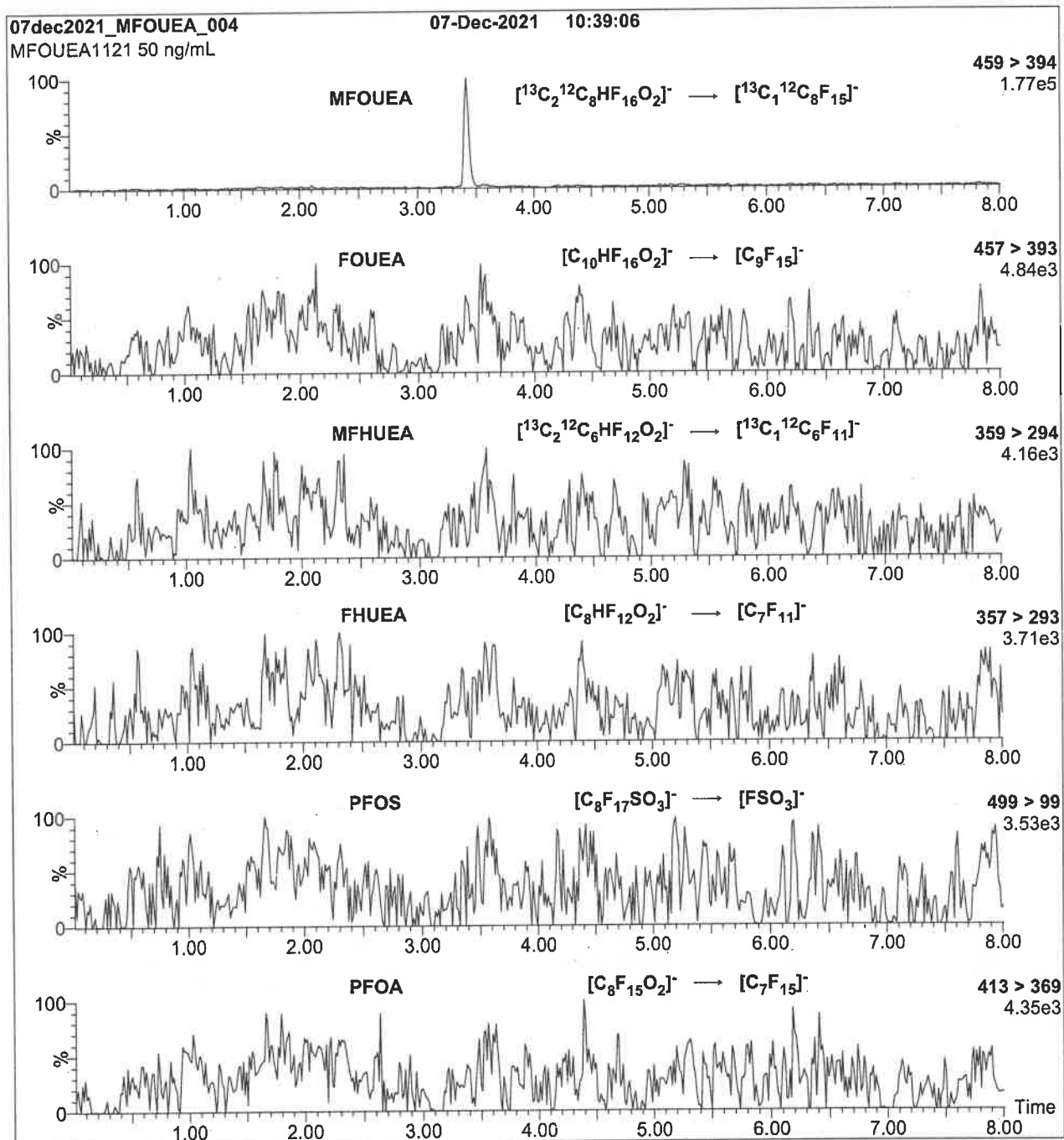
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.70
Cone Voltage (V) = 28.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MFOUEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MFOUEA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.33e-3

Collision Energy (eV) = 10

Reagent

LCMFOUEA_00014



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3185289

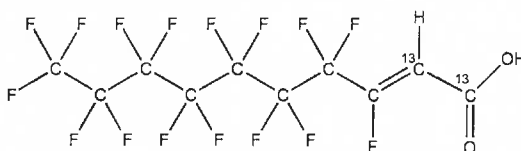
ID: LCMFOUEA_00014
Exp: 09/12/24 Prod/PCY Opn: 09/14/22
13C-8.2 FTUCA Stock 50 ug

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MFOUEA
COMPOUND: 2H-Perfluoro-2-(1,2-¹³C₂)decenoic acid

LOT NUMBER: MFOUEA0922

STRUCTURE: **CAS #:** 872398-79-3



MOLECULAR FORMULA: ¹³C₂¹²C₈H₂F₁₆O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 460.08
SOLVENT(S): Anhydrous
Isopropanol

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/12/2022
EXPIRY DATE: (mm/dd/yyyy) 09/12/2024
RECOMMENDED STORAGE: Refrigerate ampoule

ISOTOPIC PURITY: ≥99% ¹³C
(1,2-¹³C₂)

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
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Certified By: 
B.G. Chittim, General Manager

Date: 09/12/2022
(mm/dd/yyyy)

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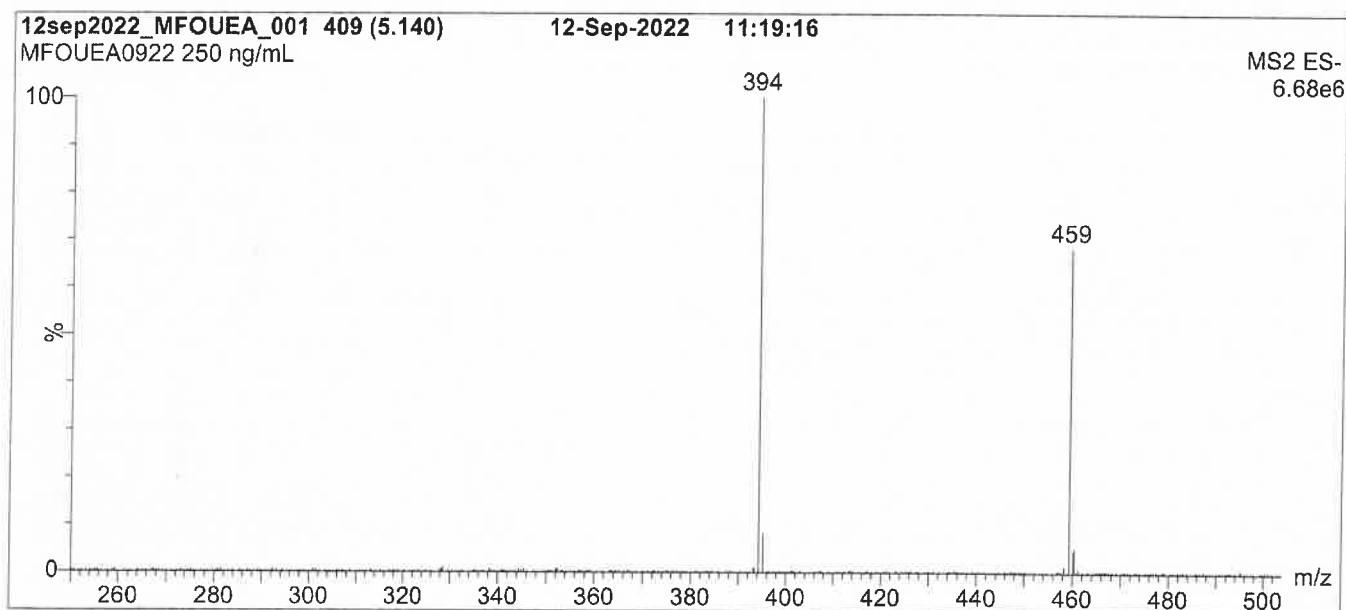
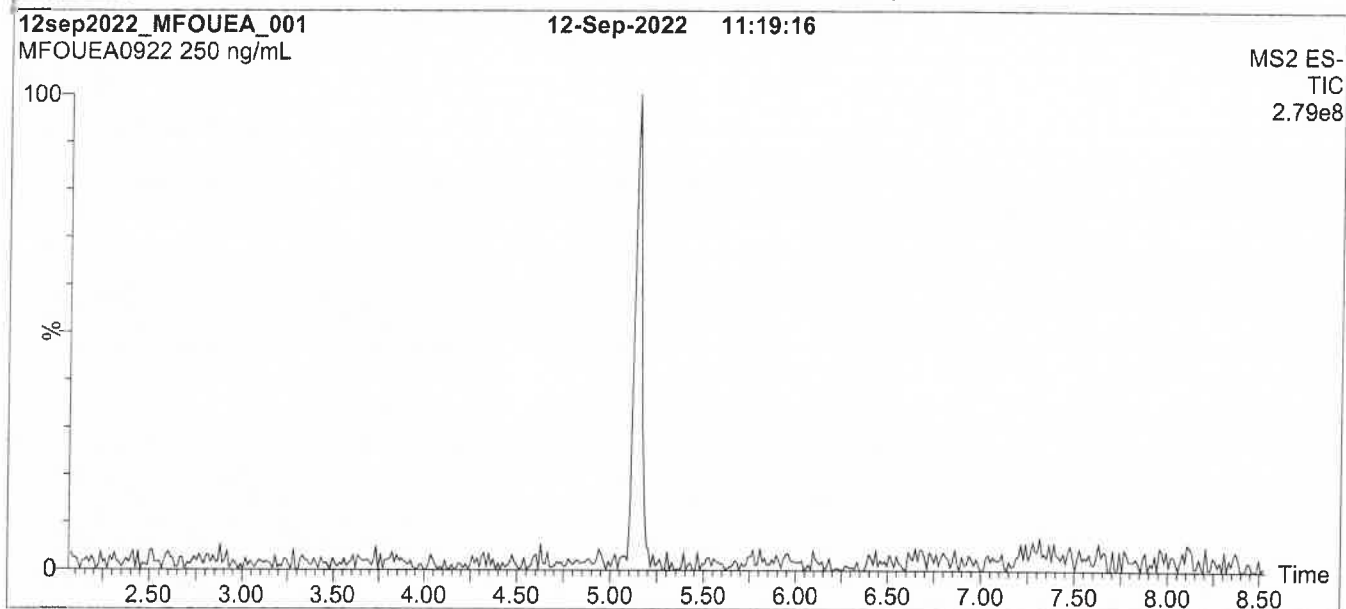
QUALITY MANAGEMENT:

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Figure 1: MFOUEA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.50 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

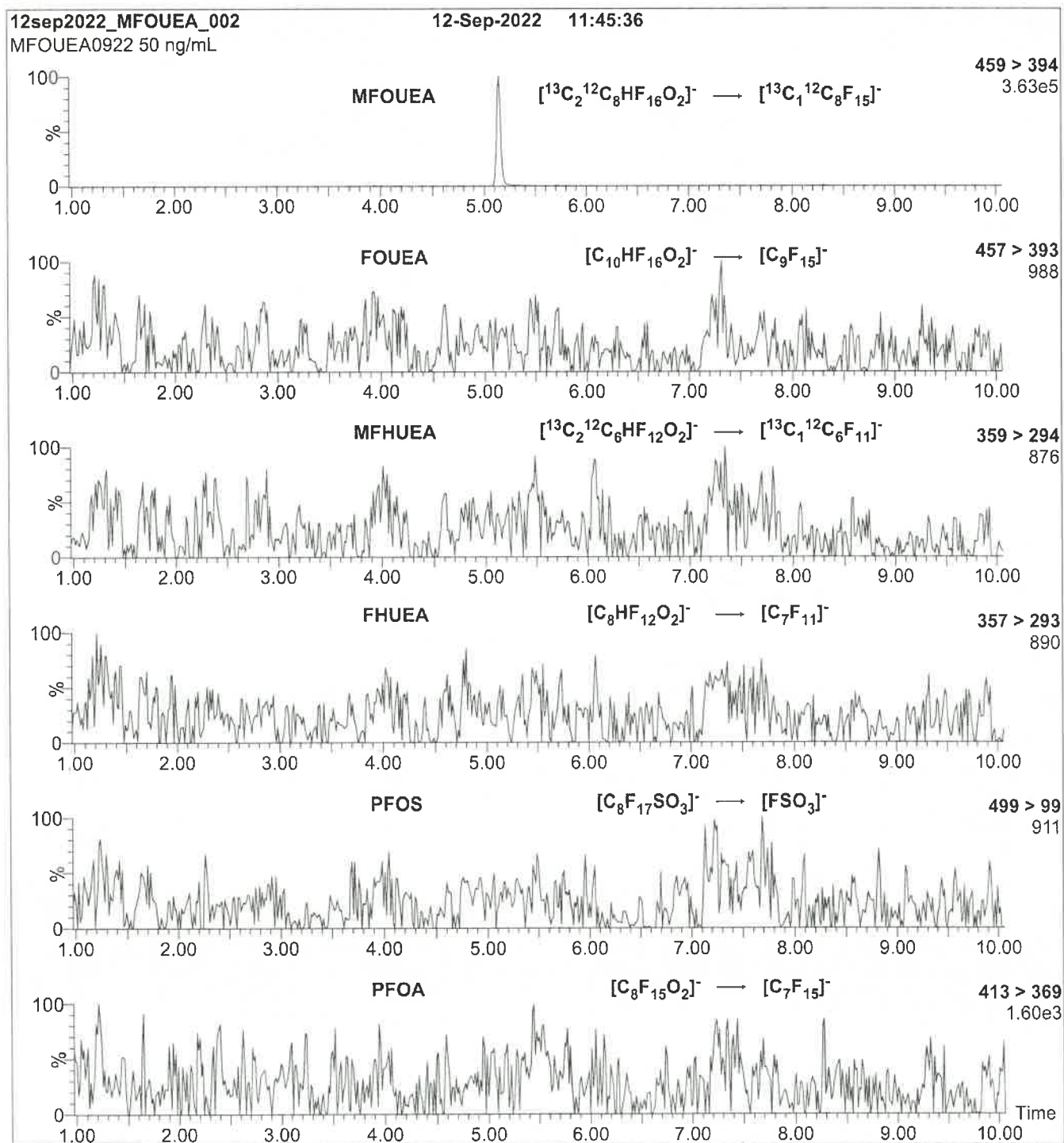
Capillary Voltage (kV) = 0.70

Cone Voltage (V) = 28.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: MFOUEA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MFOUEA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.16e-3

Collision Energy (eV) = 10

Reagent

LCMPFBA_00049



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CERTIFICATE OF ANALYSIS DOCUMENTATION

2955348
ID: LCMPFBA_00049
Exp: 07/12/26 Prpd: CV Opm: 03/11/22
13C4-Perfluorobutanoic ac

PRODUCT CODE:

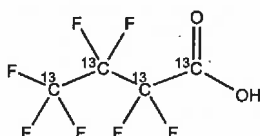
MPFBA

LOT NUMBER:

MPFBA0621

COMPOUND:Perfluoro-n-(1,2,3,4-¹³C₄)butanoic acid**STRUCTURE:****CAS #:**

Not available

**MOLECULAR FORMULA:**¹³C₄HF₇O₂**CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

218.01

SOLVENT(S):Methanol
Water (<1%)**CHEMICAL PURITY:**

>98%

ISOTOPIC PURITY:≥99% ¹³C
(1,2,3,4-¹³C₄)**LAST TESTED:** (mm/dd/yyyy)

07/12/2021

EXPIRY DATE: (mm/dd/yyyy)

07/12/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:** 07/26/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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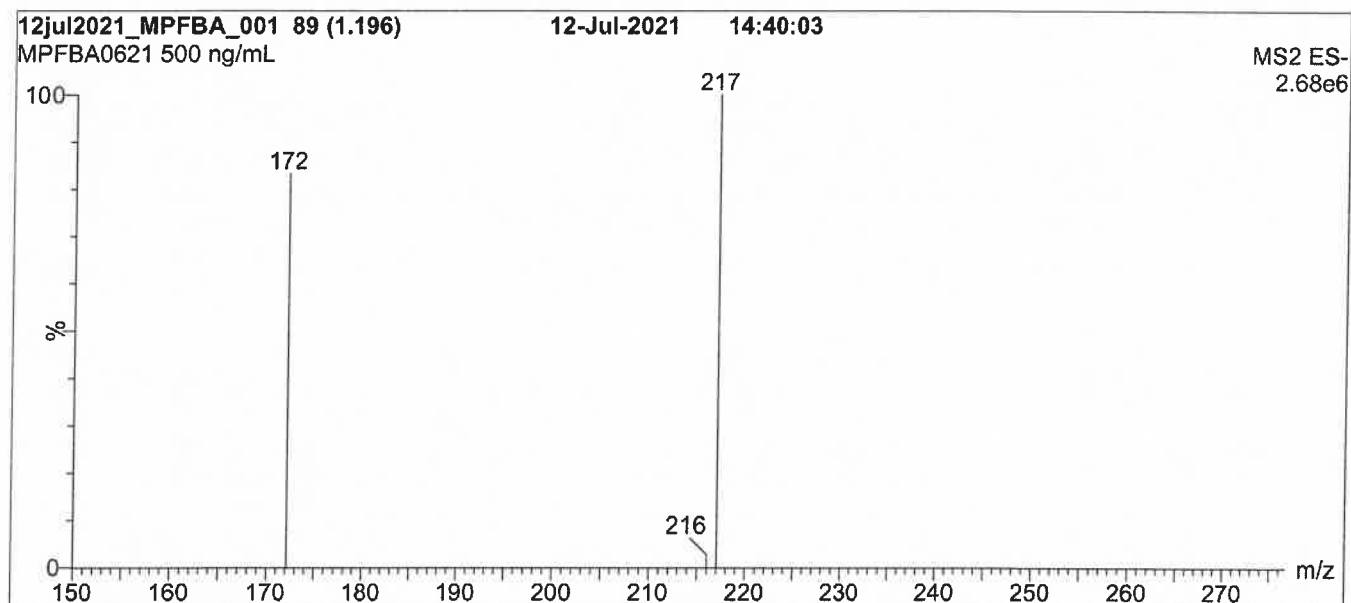
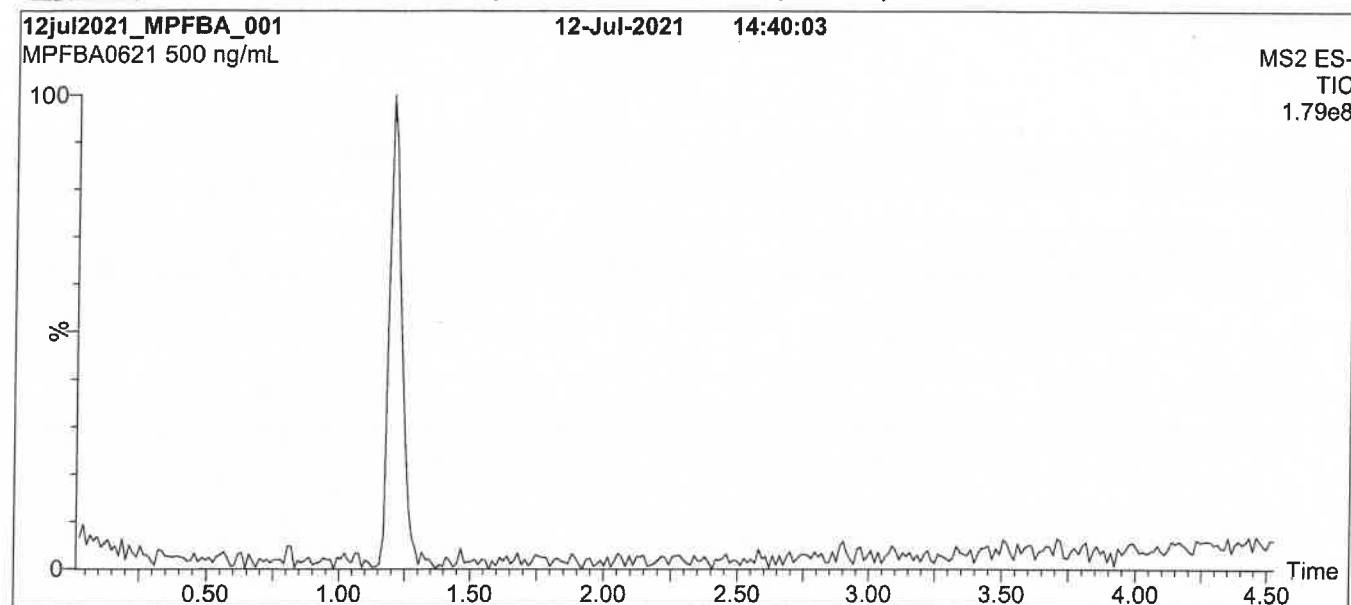
QUALITY MANAGEMENT:

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Figure 1: MPFBA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 55% H₂O / 45% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 80% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

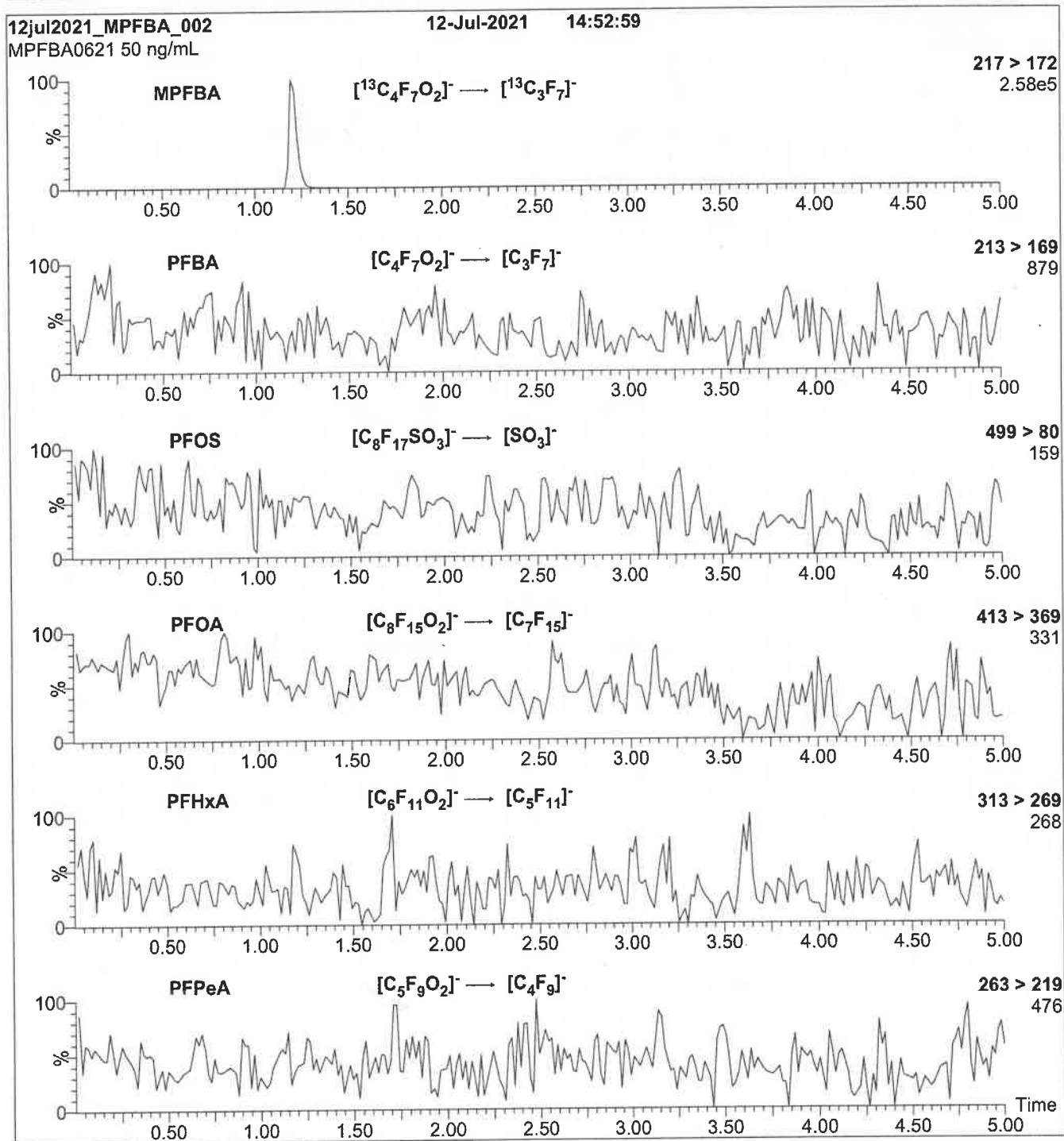
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFBA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFBA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.49e-3

Collision Energy (eV) = 8

Reagent

LCMPFBA_00050



2978910

ID: LCMPFBA_00050

Exp: 07/12/26 Prod: 3M Opn: 04/19/22

13C4-Perfluorobutanoic ac



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

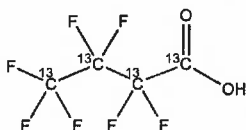
MPFBA

LOT NUMBER:

MPFBA0621

COMPOUND:Perfluoro-n-(1,2,3,4-¹³C₄)butanoic acid**STRUCTURE:****CAS #:**

Not available

**MOLECULAR FORMULA:**¹³C₄HF₇O₂**CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

218.01

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C(1,2,3,4-¹³C₄)**LAST TESTED:** (mm/dd/yyyy)

07/12/2021

EXPIRY DATE: (mm/dd/yyyy)

07/12/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By:

B.G. Chittim, General Manager

Date:

07/26/2021
(mm/dd/yyyy)

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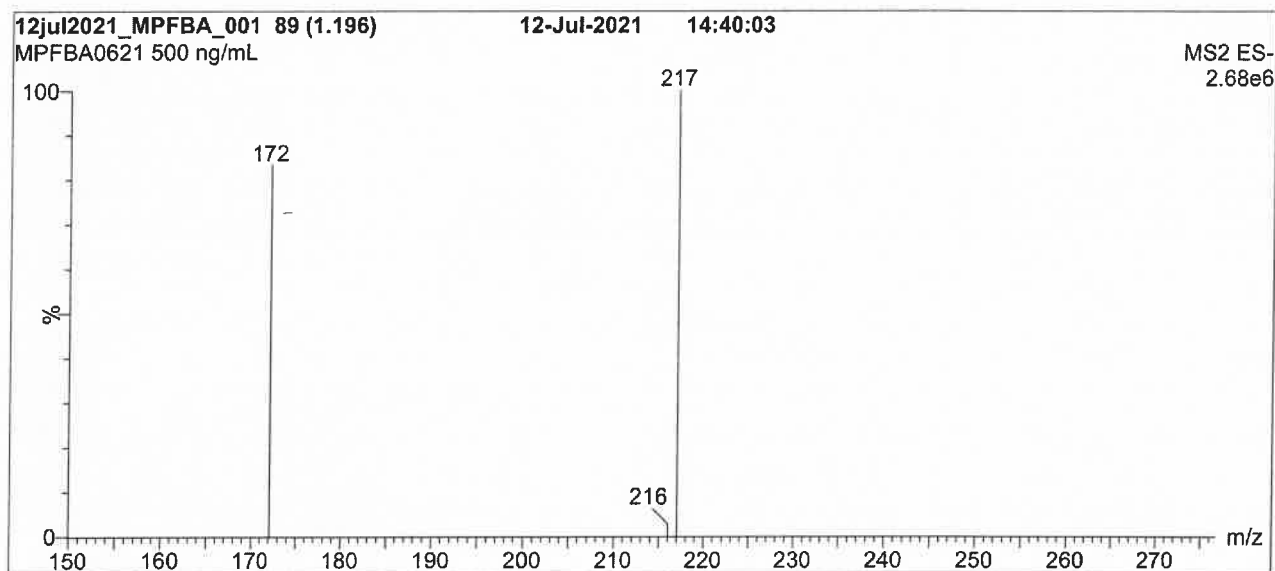
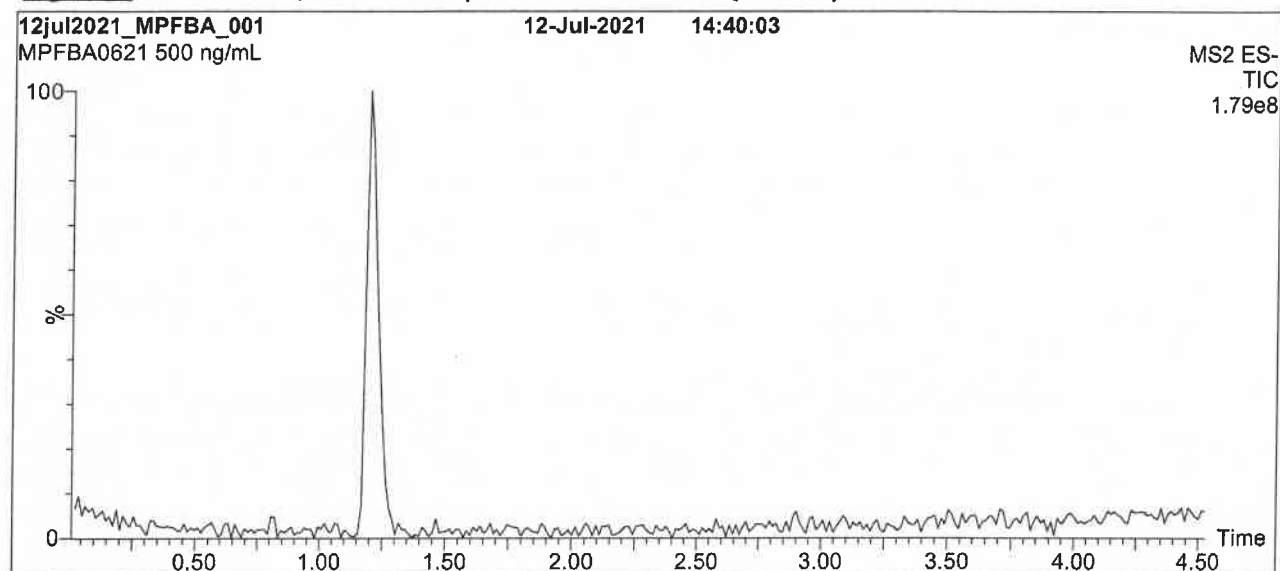
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Figure 1: MPFBA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 55% H₂O / 45% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 80% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

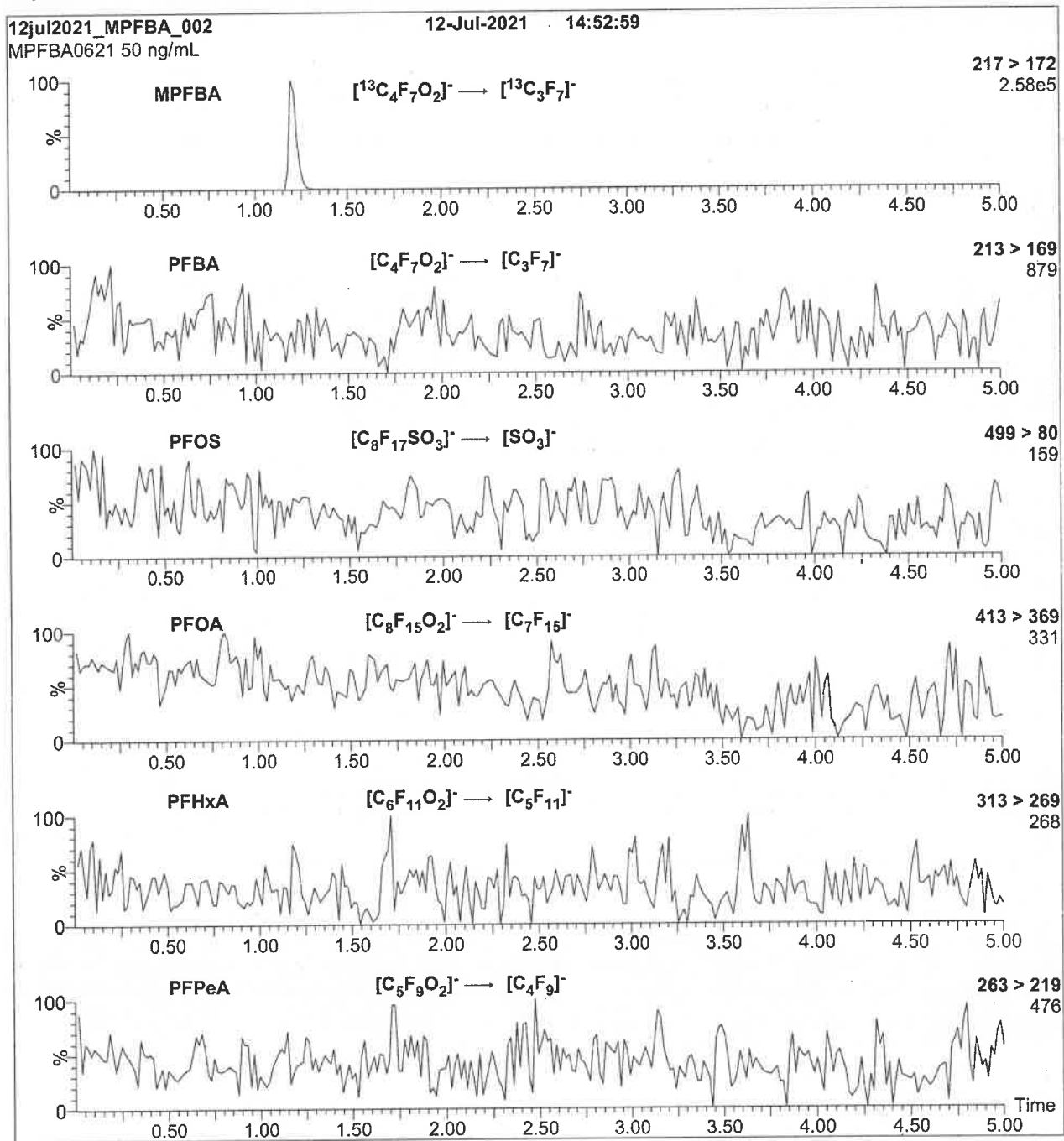
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFBA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFBA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.49e-3

Collision Energy (eV) = 8

Reagent

LCMPFBS_00035



2978886

ID: LCMFBS_00035

Exp:02/07/27 Ppd:IM Opn:04/19/22

13C3-Perfluorobutanesulfo



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

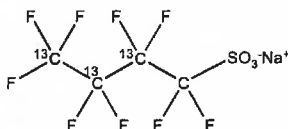
M3PFBS

LOT NUMBER:

M3PFBS0222

COMPOUND:Sodium perfluoro-1-(2,3,4-¹³C₃)butanesulfonate**STRUCTURE:****CAS #:**

2708218-84-0

**MOLECULAR FORMULA:**¹³C₃¹²CF₉SO₃Na**CONCENTRATION:**

50.0 ± 2.5 µg/mL (Na salt)

46.6 ± 2.3 µg/mL (M3PFBS acid)

46.5 ± 2.3 µg/mL (M3PFBS anion)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

02/07/2022

EXPIRY DATE: (mm/dd/yyyy)

02/07/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

MOLECULAR WEIGHT:

325.06

SOLVENT(S):

Methanol

ISOTOPIC PURITY:≥99% ¹³C
(2,3,4-¹³C₃)**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

02/08/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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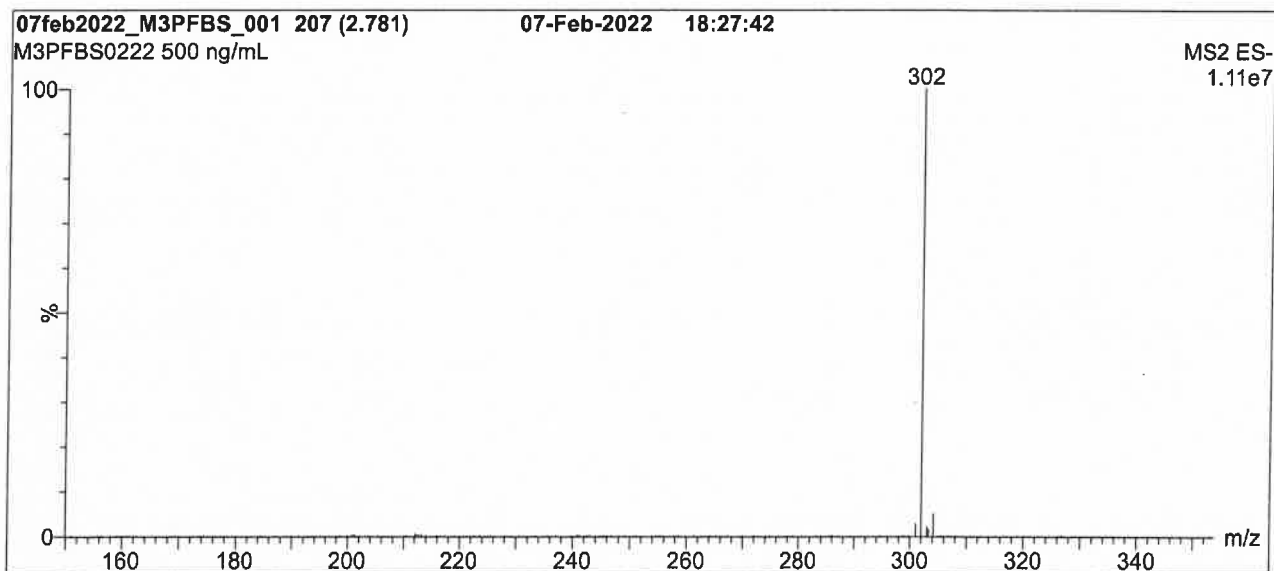
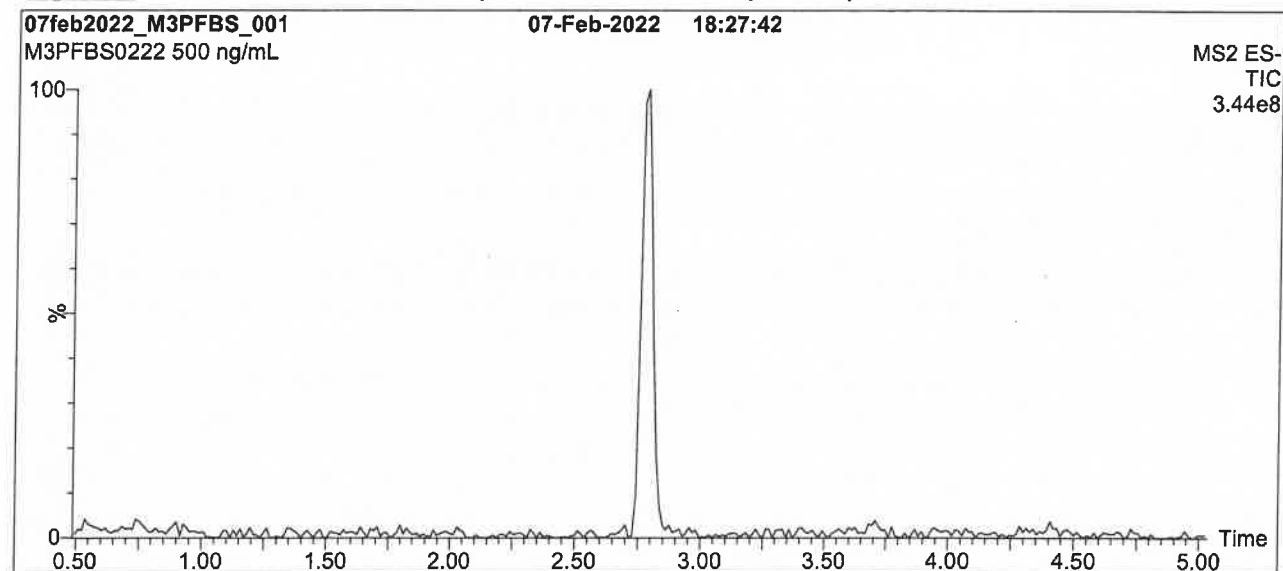
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: M3PFBS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

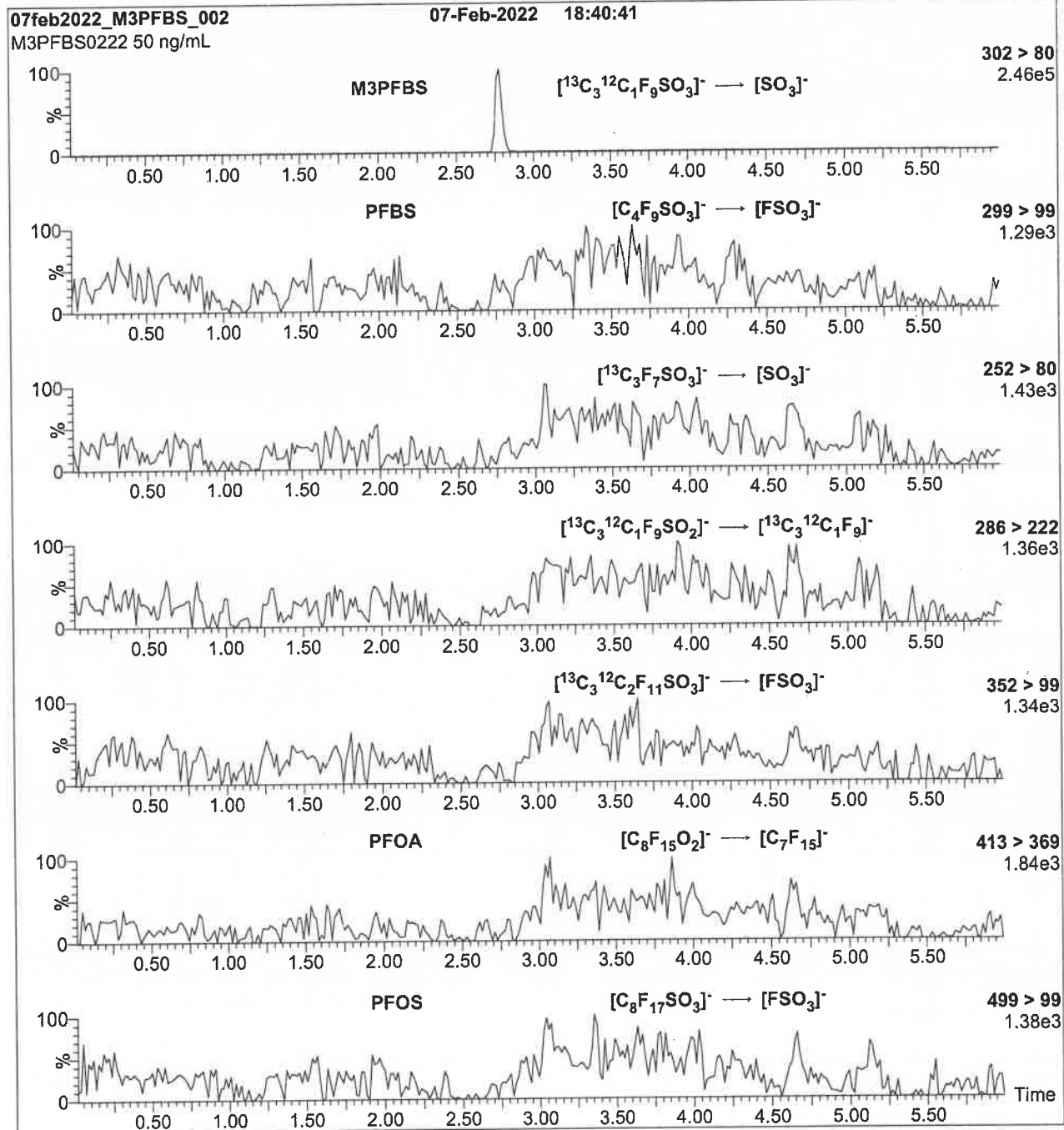
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: M3PFBS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (M3PFBS)
Mobile phase: Same as Figure 1
Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.37e-3
Collision Energy (eV) = 30

Reagent

LCMPFBS_00036

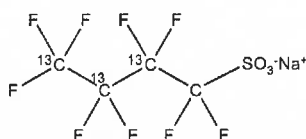


3179606

ID: LCMFBS_00036
Exp: 07/12/27 Prod: JM Opn: 09/14/22
13C3-Perfluorobutanesulfo**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION

PRODUCT CODE: M3PFBS **LOT NUMBER:** M3PFBS0722
COMPOUND: Sodium perfluoro-1-(2,3,4-¹³C₃)butanesulfonate

STRUCTURE: **CAS #:** 2708218-84-0



MOLECULAR FORMULA: ¹³C₃¹²CF₉SO₃Na **MOLECULAR WEIGHT:** 325.06
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
46.6 ± 2.3 µg/mL (M3PFBS acid)
46.5 ± 2.3 µg/mL (M3PFBS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 07/12/2022 (2,3,4-¹³C₃)
EXPIRY DATE: (mm/dd/yyyy) 07/12/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

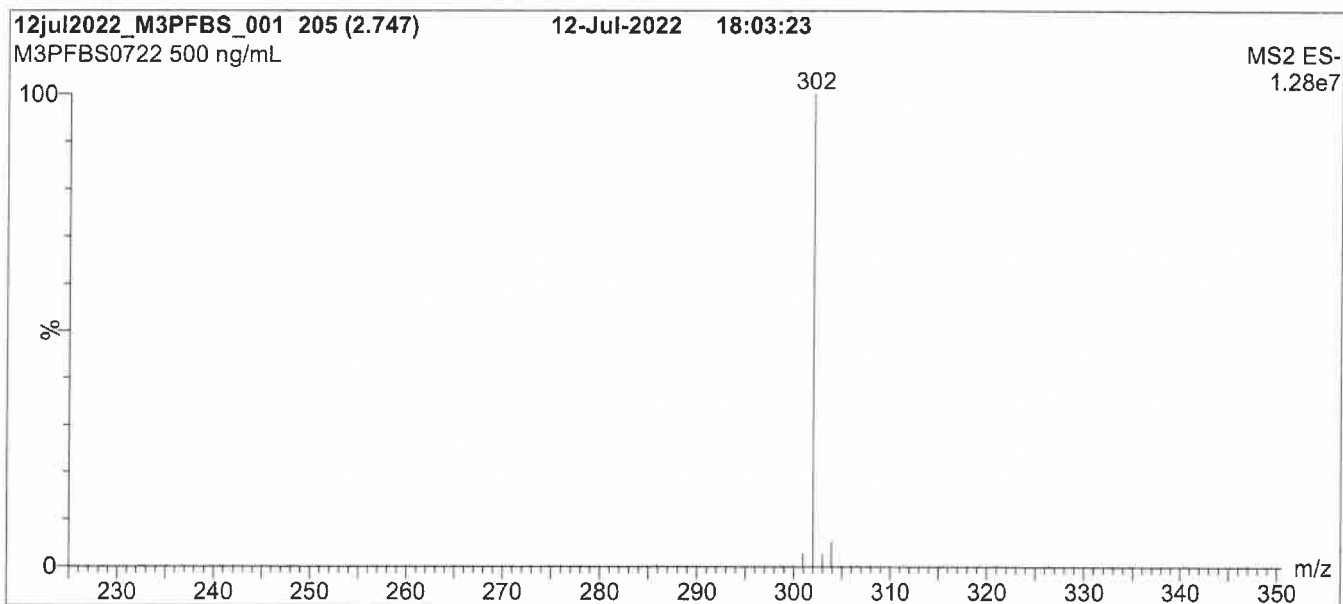
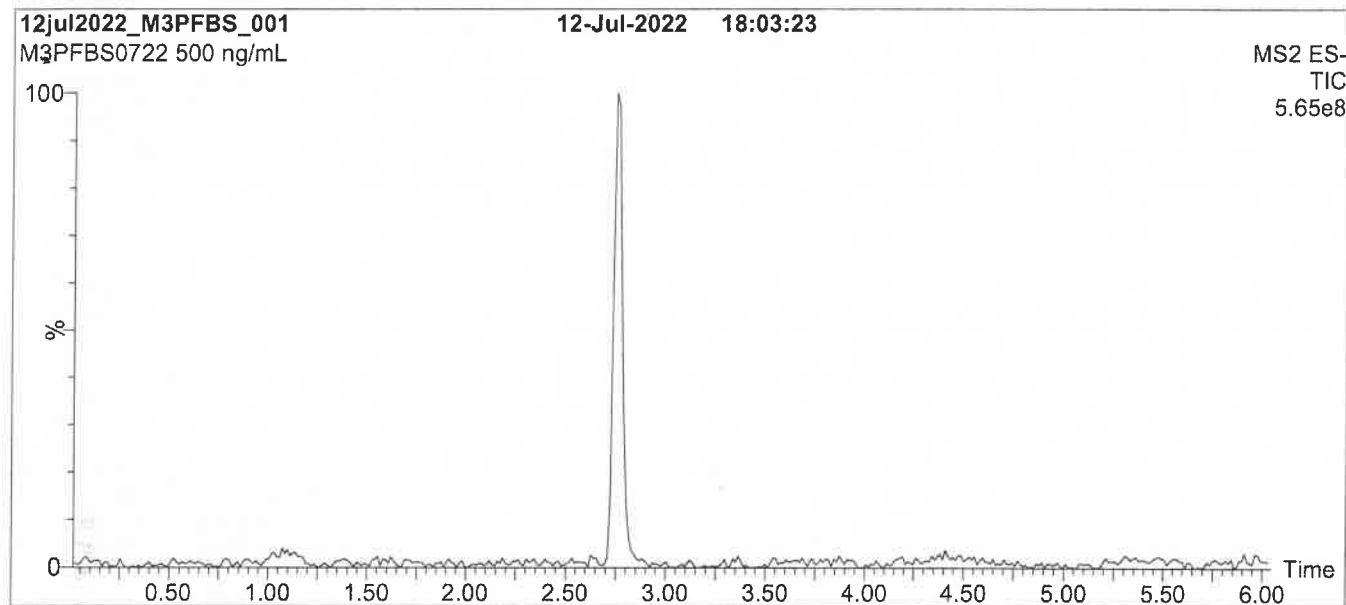
ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:** 07/14/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Figure 1: M3PFBS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Reagent

LCMPFDA_00055



2886734

ID: LCMFDA_00055

Exp: 12/08/26 Prpd: IM Opm: 02/07/22

13C2-Perfluorodecanoic a



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

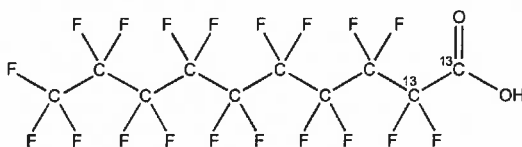
MPFDA

LOT NUMBER:

MPFDA1221

COMPOUND:Perfluoro-n-(1,2-¹³C₂)decanoic acid**STRUCTURE:****CAS #:**

960315-50-8

**MOLECULAR FORMULA:**¹³C₂¹²C₈H₁₉O₂**CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

516.07

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

12/08/2021

EXPIRY DATE: (mm/dd/yyyy)

12/08/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

(1,2-¹³C₂)**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:**12/13/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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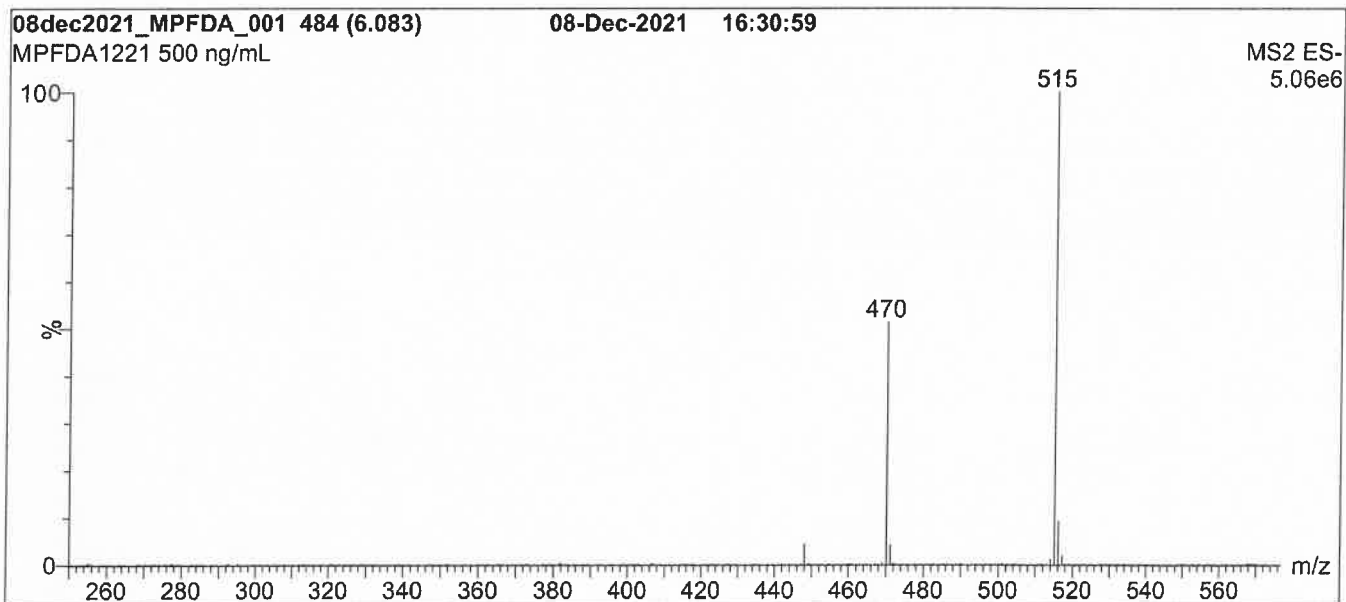
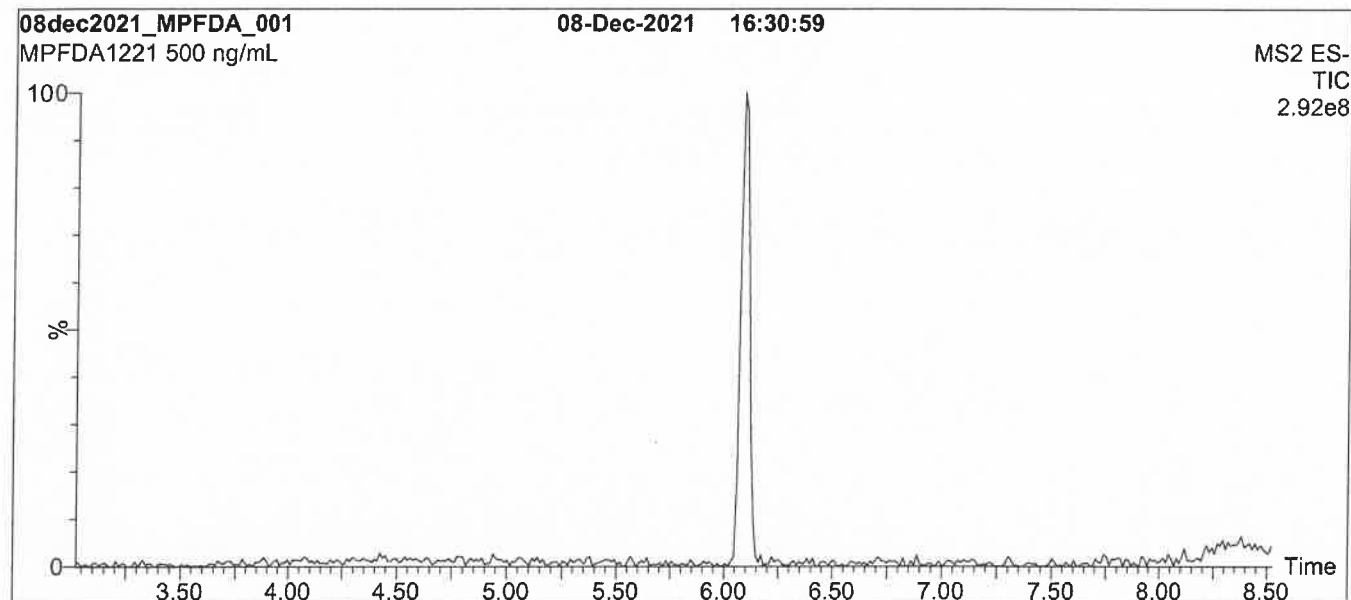
QUALITY MANAGEMENT:

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Figure 1: MPFDA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

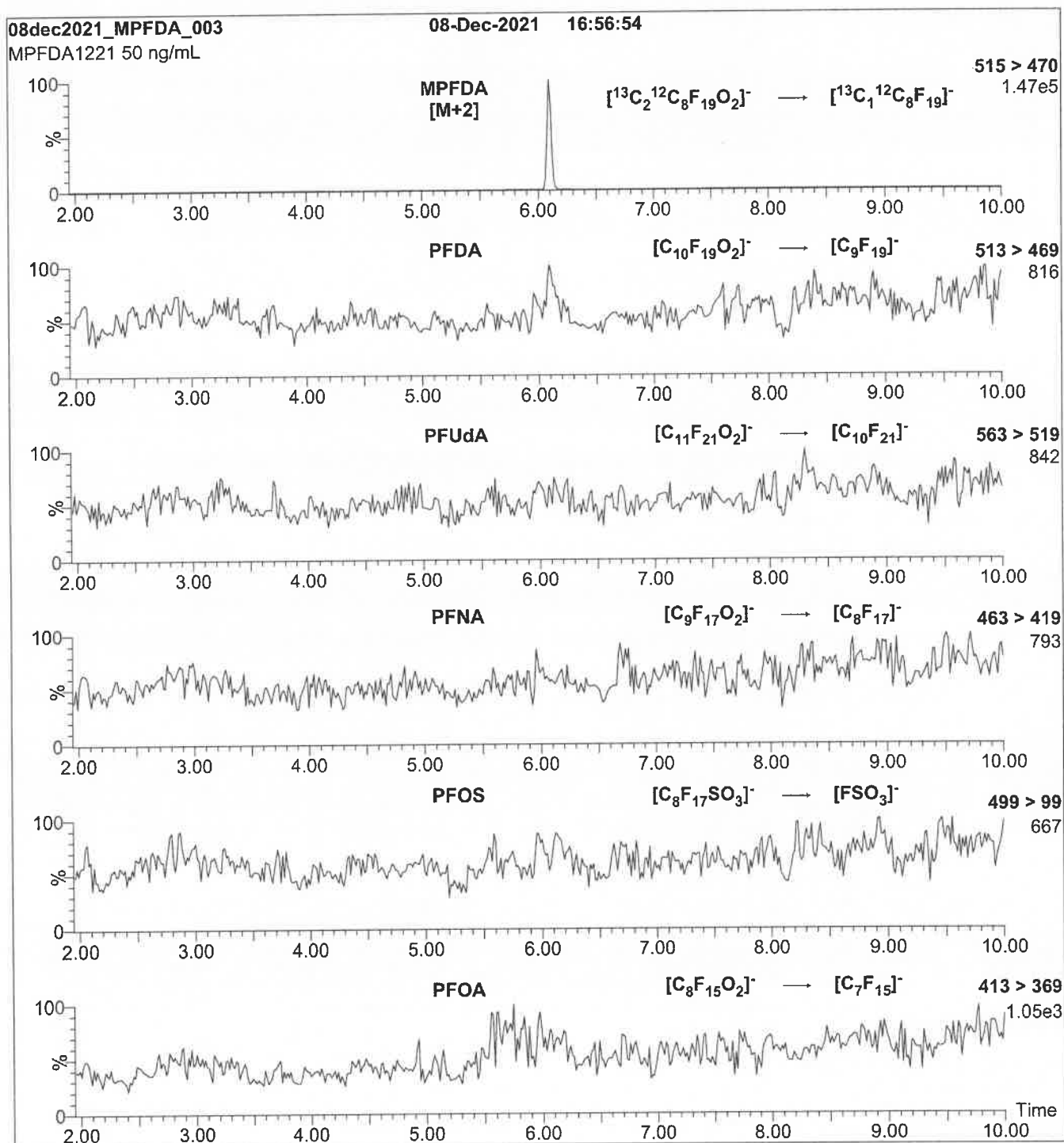
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFDA)
Mobile phase: Same as Figure 1
Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 10

Reagent

LCMPFDA_00056



2979077

ID: LCMFDA_00056

Exp: 12/09/26 Prpd: 04/19/22

13C2-Perfluorodecanoic acid



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

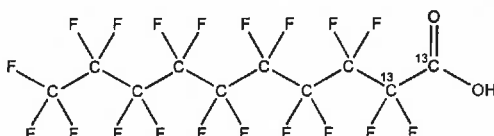
MPFDA

LOT NUMBER:

MPFDA1221

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960315-50-8

**MOLECULAR FORMULA:**¹³C₂¹²C₈HF₁₈O₂**CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

516.07

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

12/08/2021

(1,2-¹³C₂)**EXPIRY DATE:** (mm/dd/yyyy)

12/08/2026

RECOMMENDED STORAGE:

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DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

12/13/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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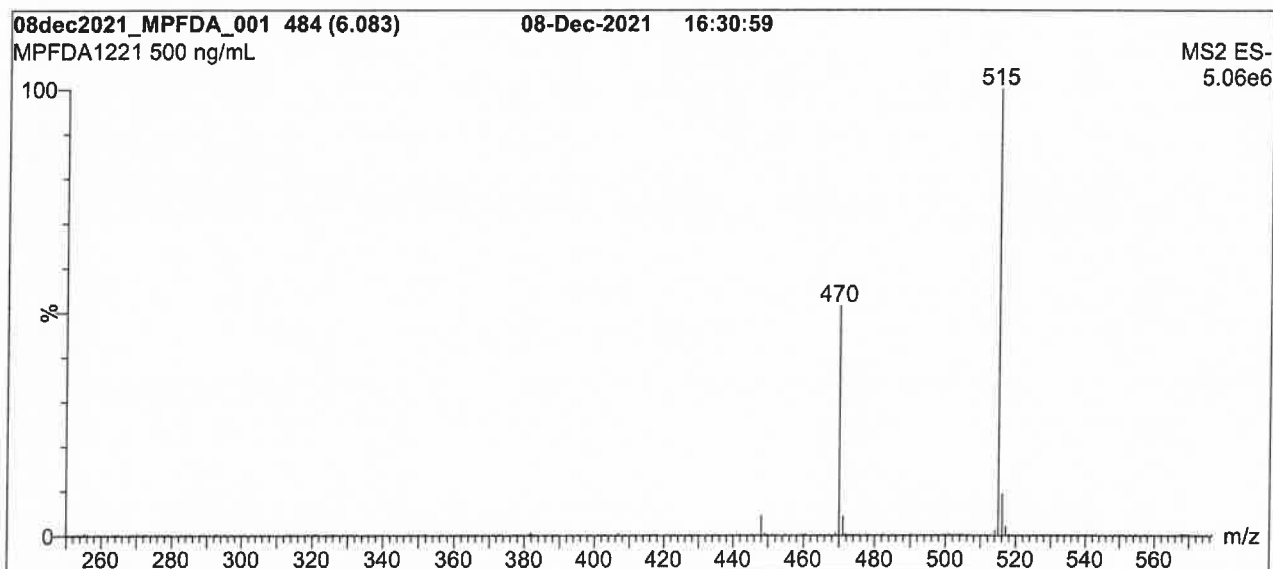
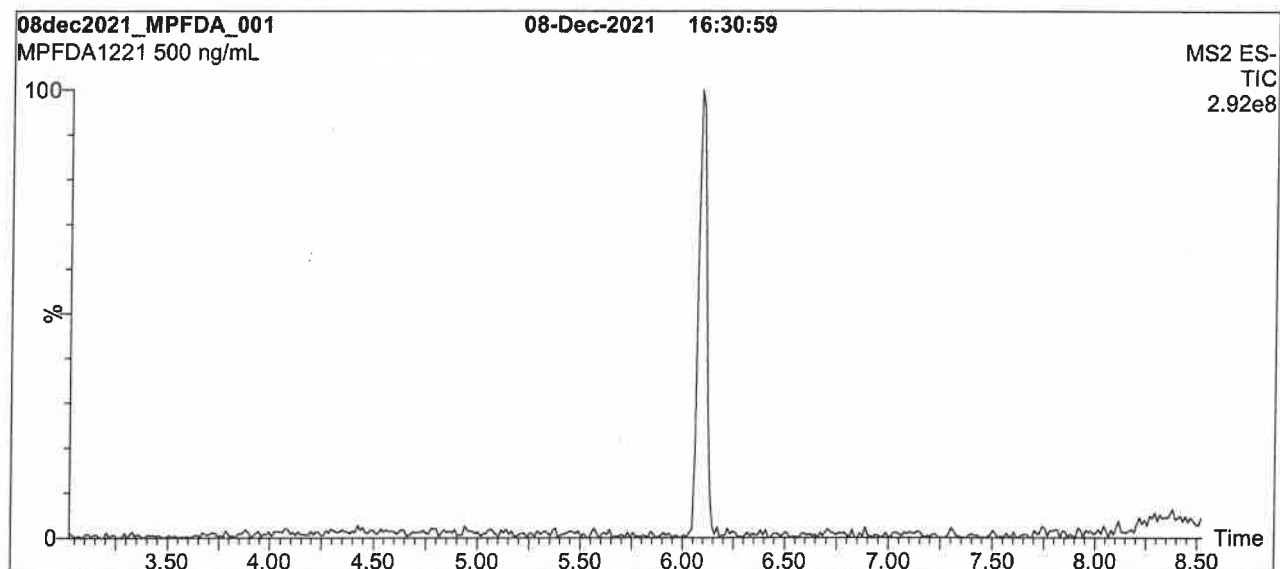
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Waters Xevo TQ-S micro MS

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Mobile phase: Gradient

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(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

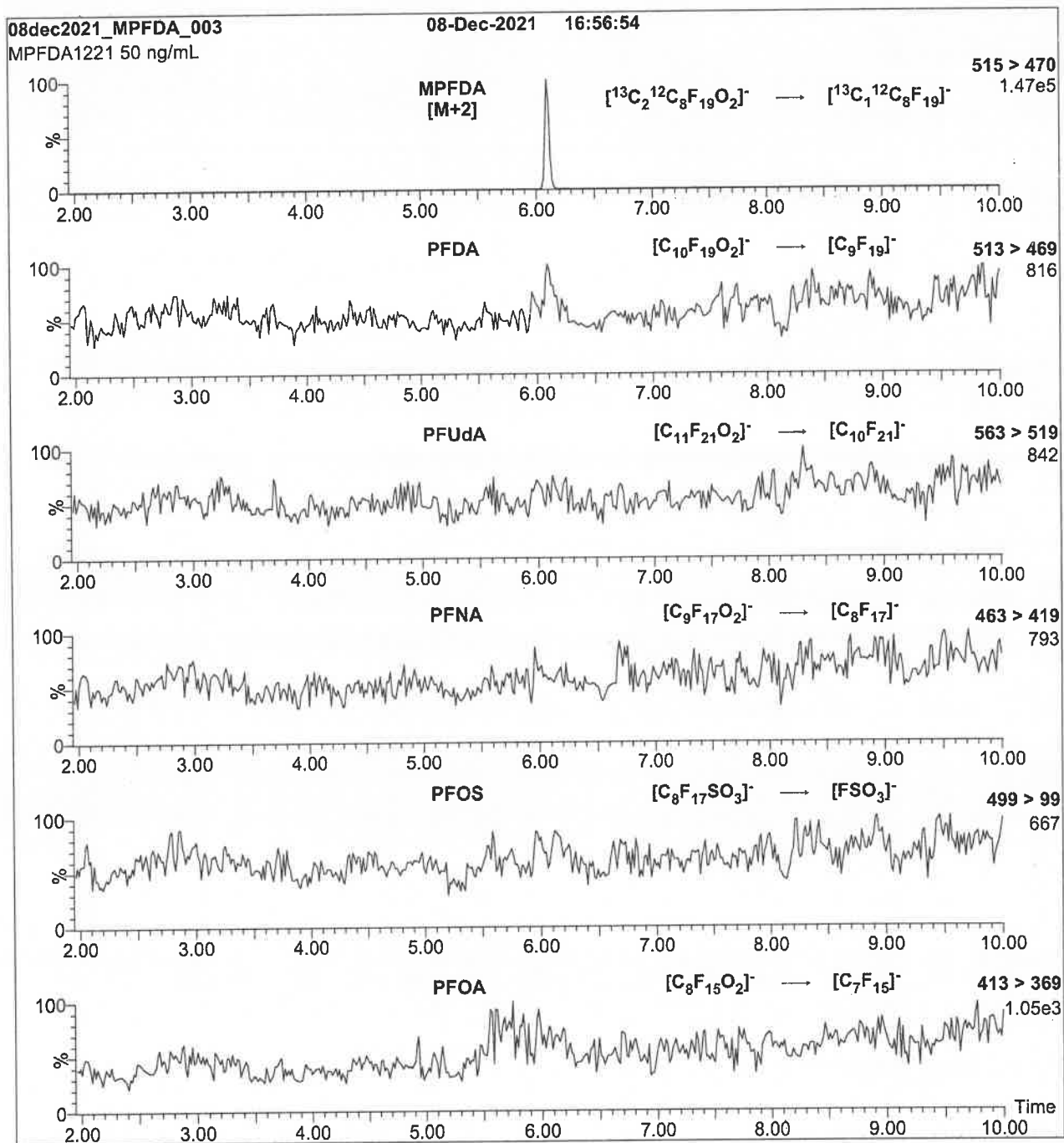
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFDA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 10

Reagent

LCMPFDA_00057



3179791

ID: LCMFDA_00057

Exp:06/08/27 Ppd:31st Apr:09/14/22

13C2-Perfluorodecanoic acid



WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:

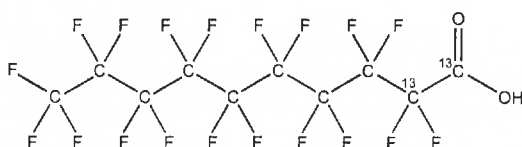
MPFDA

LOT NUMBER:

MPFDA0522

COMPOUND:Perfluoro-n-(1,2-¹³C₂)decanoic acid**STRUCTURE:****CAS #:**

960315-50-8

**MOLECULAR FORMULA:**¹³C₂¹²C₈H₁₉O₂**MOLECULAR WEIGHT:**

516.07

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C(1,2-¹³C₂)**LAST TESTED:** (mm/dd/yyyy)

06/08/2022

EXPIRY DATE: (mm/dd/yyyy)

06/08/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 06/20/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

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UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

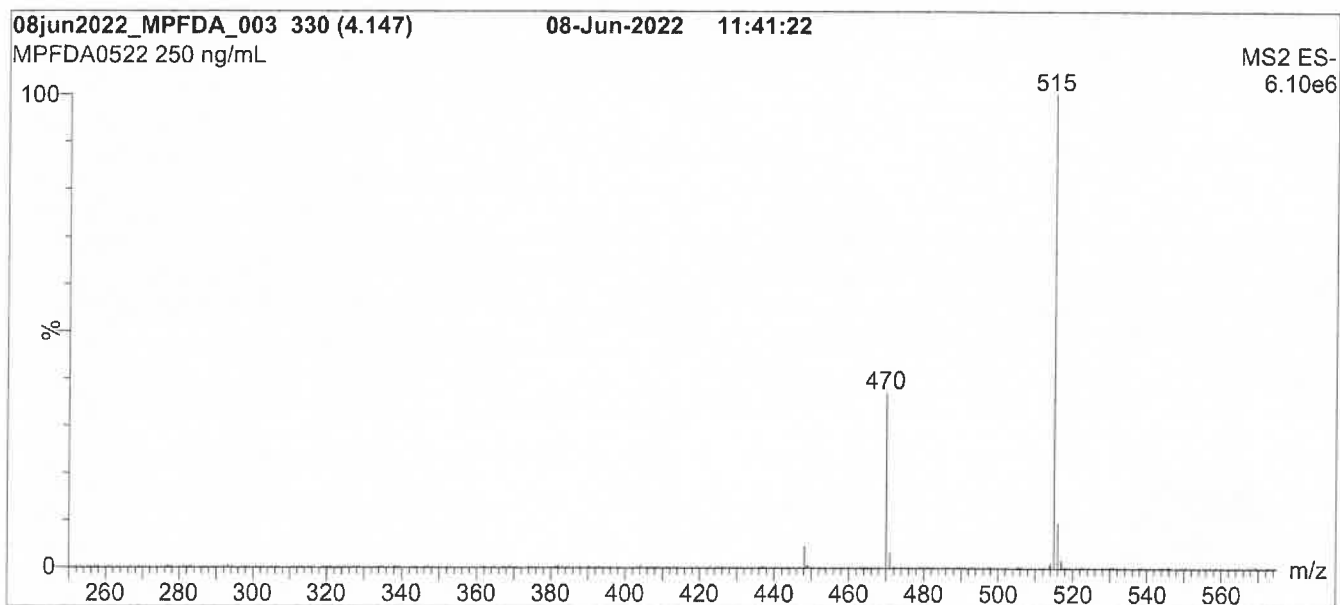
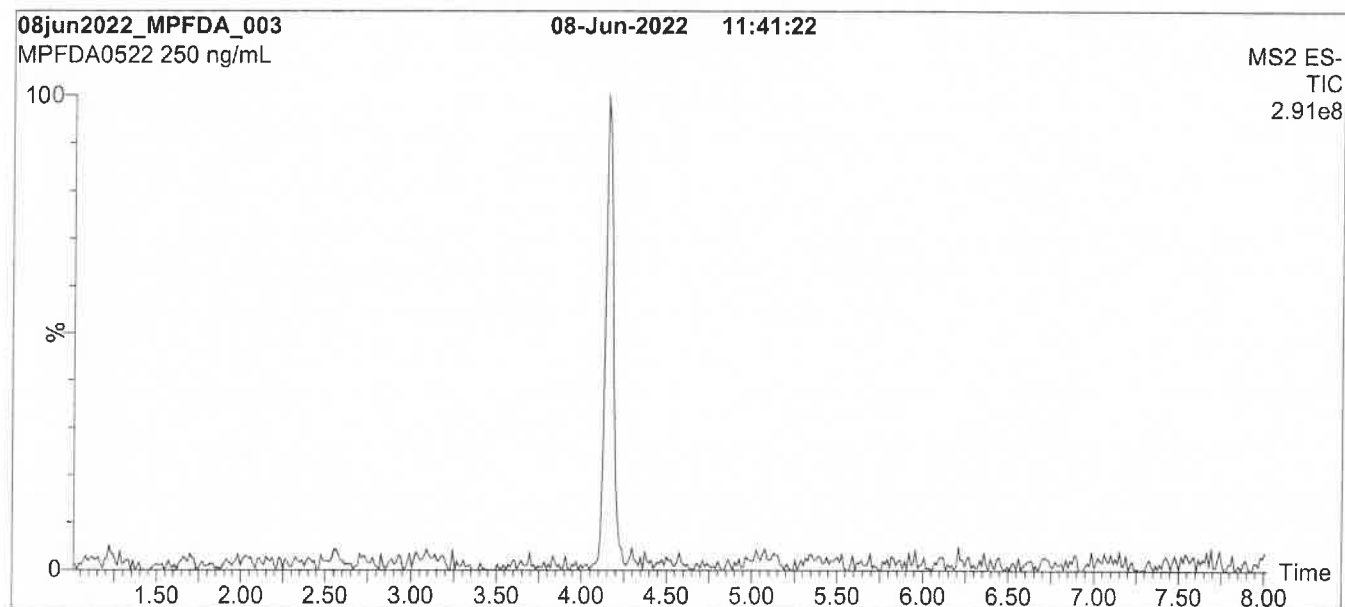
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: MPFDA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

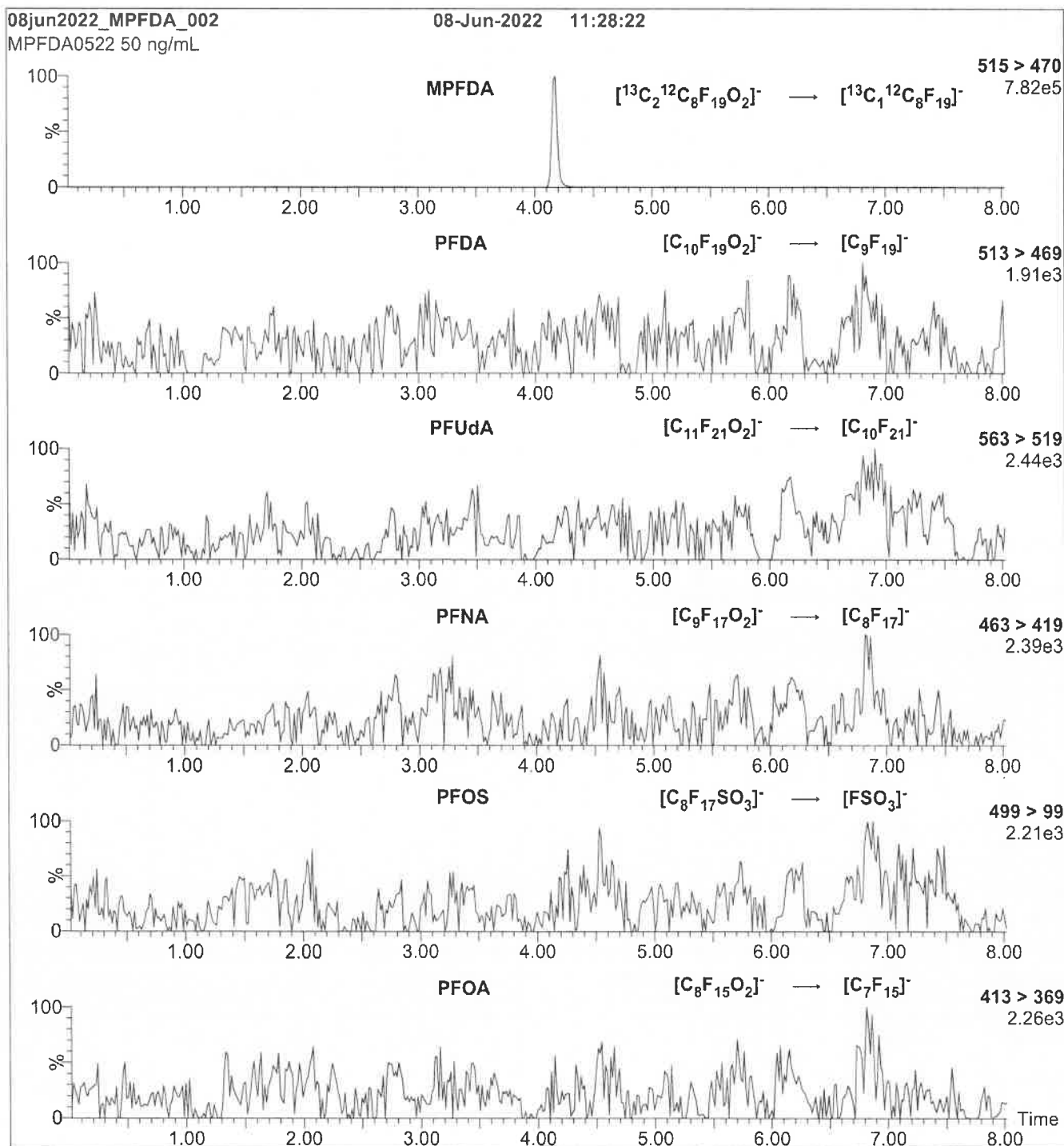
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFDA)
Mobile phase: Same as Figure 1
Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.14e-3
Collision Energy (eV) = 10

Reagent

LCMPFD_oA_00049



2979188

ID: LCMFDoA_00049

Exp:03/17/27 Prpd:MM Opm:04/19/22

13C2-Perfluorododecanoic



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

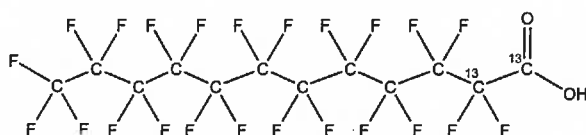
MPFDoA

LOT NUMBER:

MPFDoA0322

COMPOUND:Perfluoro-n-(1,2-¹³C₂)dodecanoic acid**STRUCTURE:****CAS #:**

960315-52-0

**MOLECULAR FORMULA:** $^{13}\text{C}_2\text{ }^{12}\text{C}_{10}\text{HF}_{23}\text{O}_2$ **MOLECULAR WEIGHT:**

616.08

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

03/17/2022

(1,2-¹³C₂)**EXPIRY DATE:** (mm/dd/yyyy)

03/17/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

 B.G. Chittim, General Manager

Date: 04/11/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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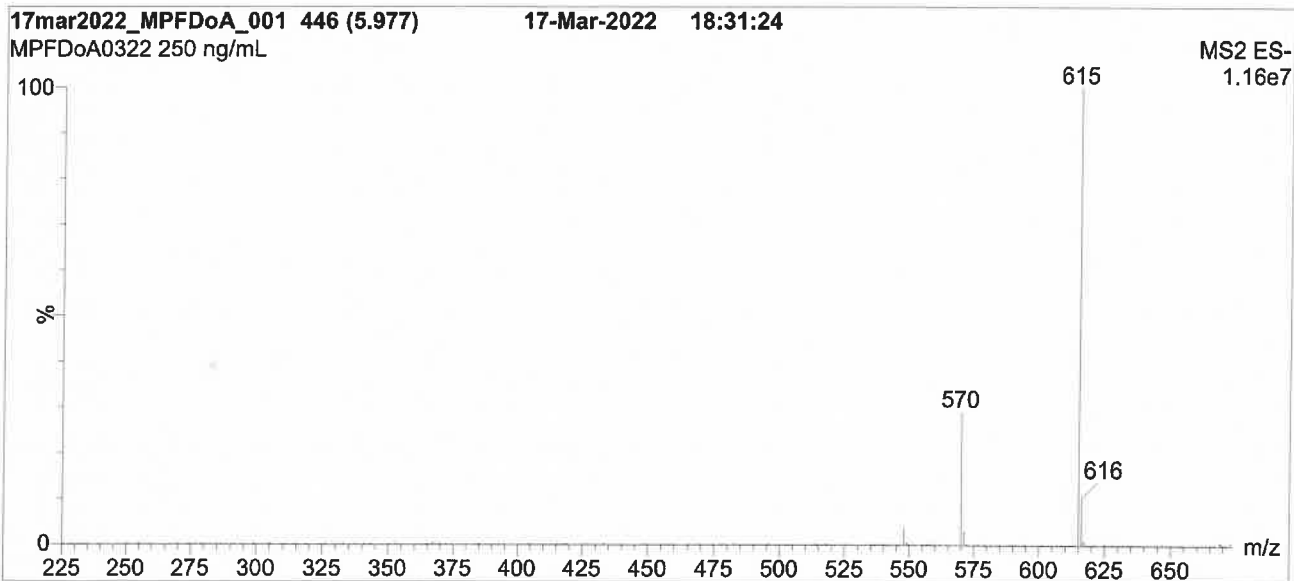
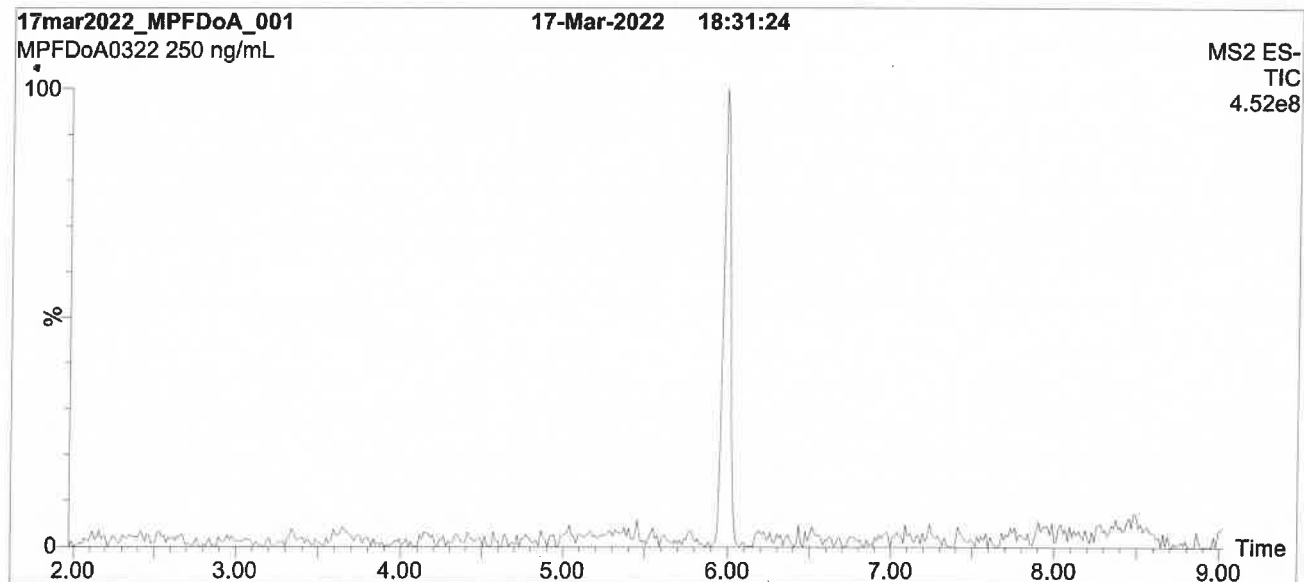
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: MPFDoA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

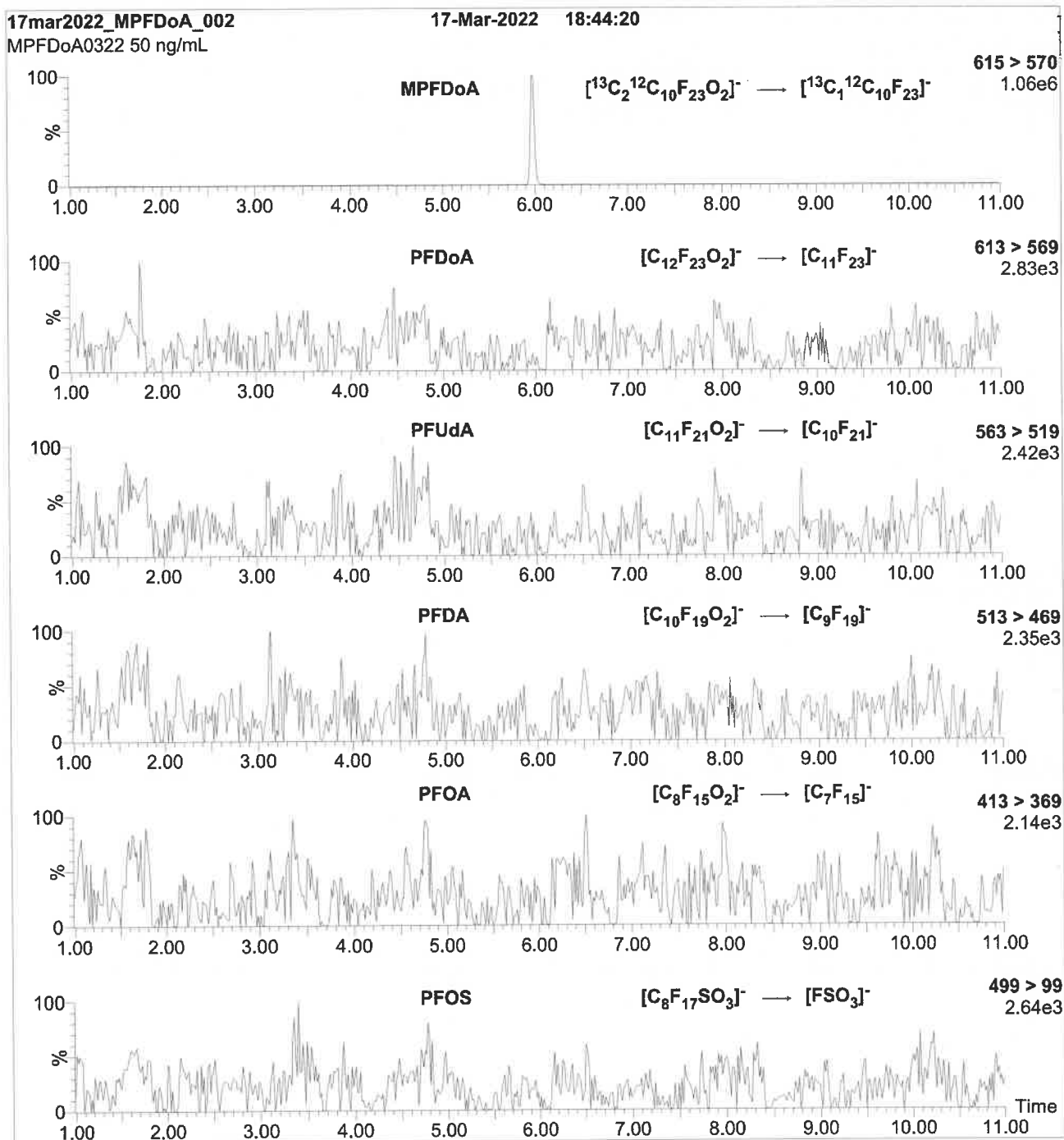
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFDoA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFDoA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

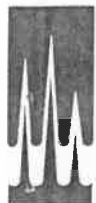
MS Parameters:

Collision Gas (mbar) = 3.27e-3

Collision Energy (eV) = 12

Reagent

LCMPFD_oA_00050



WELLINGTON LABORATORIES

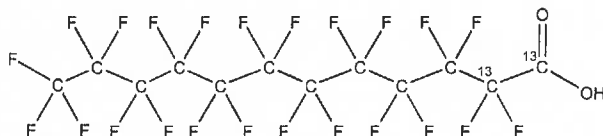
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFDoA
COMPOUND: Perfluoro-n-(1,2-¹³C₂)dodecanoic acid

LOT NUMBER: MPFDoA0822

STRUCTURE:

CAS #: 960315-52-0



MOLECULAR FORMULA: ¹³C₂¹²C₁₀HF₂₃O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 616.08
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%

ISOTOPIC PURITY: ≥99% ¹³C
(1,2-¹³C₂)

LAST TESTED: (mm/dd/yyyy) 08/05/2022

EXPIRY DATE: (mm/dd/yyyy) 08/05/2027

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:
B.G. Chittim, General Manager

Date: 08/17/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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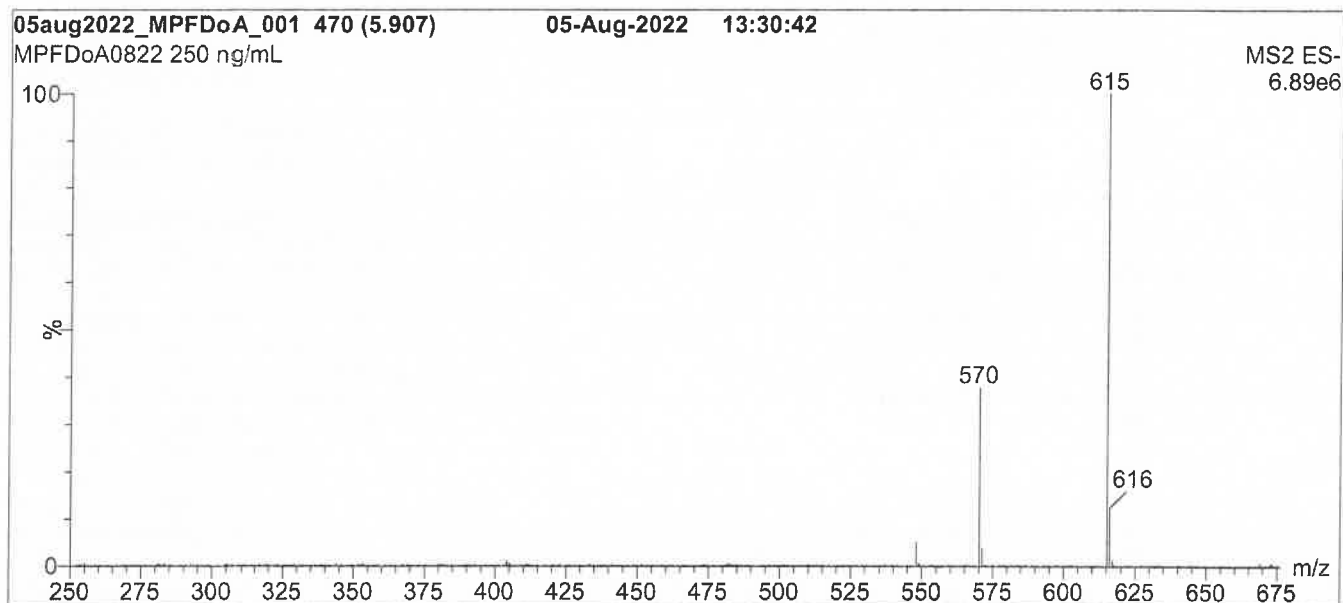
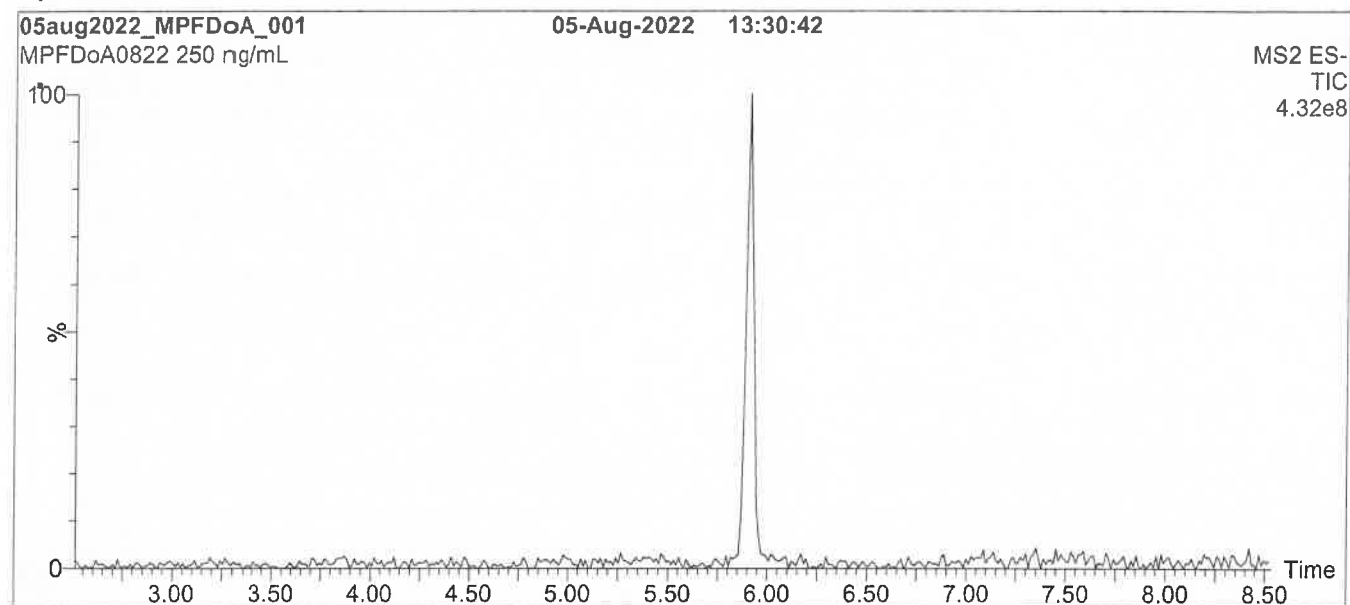
QUALITY MANAGEMENT:

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Figure 1: MPFDoA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

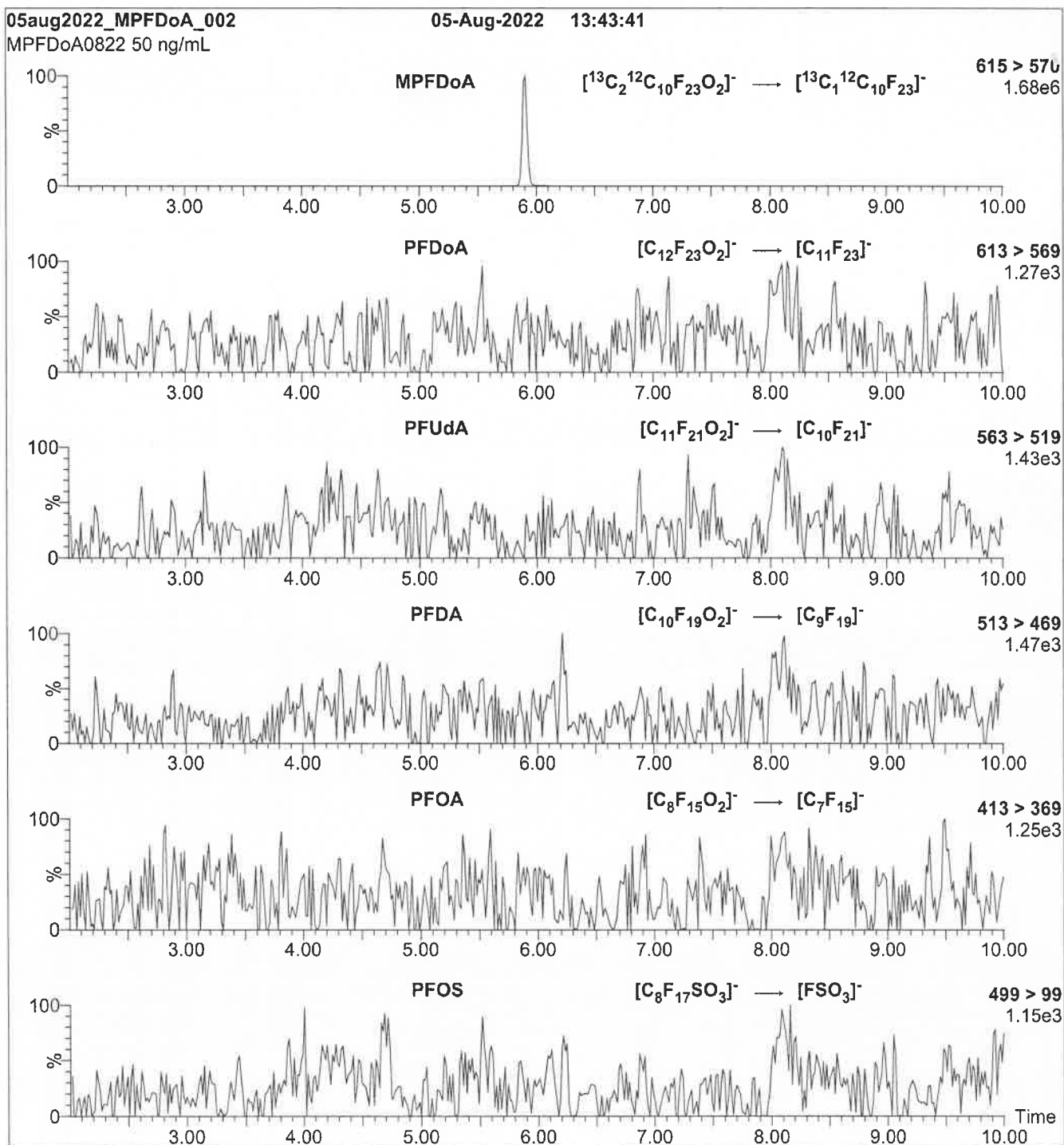
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFDoA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFDoA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.27e-3

Collision Energy (eV) = 12

Reagent

LCMPFHxA_00055

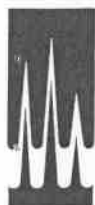


2781654

ID: LCMPFHxA_00055

Exp: 10/04/26 Ppda: M Ogn: 11/12/21

13C2-Perfluorohexanoic ac



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

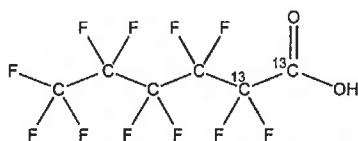
MPFHxA

LOT NUMBER:

MPFHxA0921

COMPOUND:Perfluoro-n-(1,2-¹³C₂)hexanoic acid**STRUCTURE:****CAS #:**

960315-47-3

**MOLECULAR FORMULA:**¹³C₂¹²C₄HF₁₁O₂**MOLECULAR WEIGHT:**

316.04

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

10/04/2021

(1,2-¹³C₂)**EXPIRY DATE:** (mm/dd/yyyy)

10/04/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**

B.G. Chittim, General Manager
Date: 10/22/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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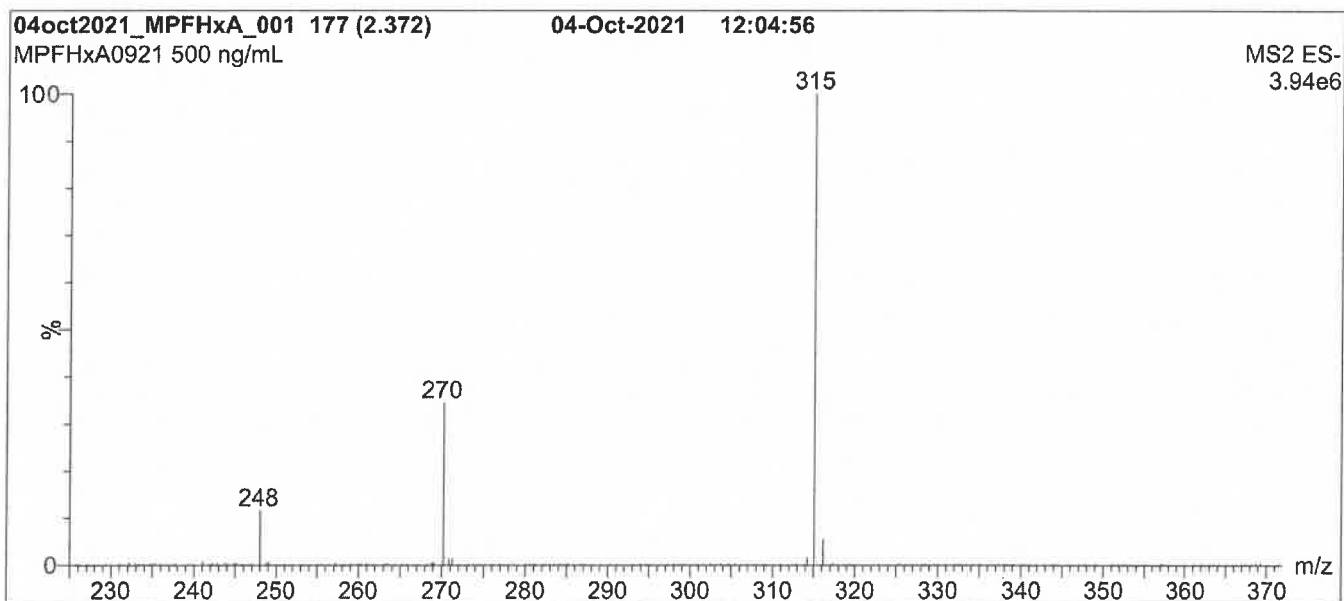
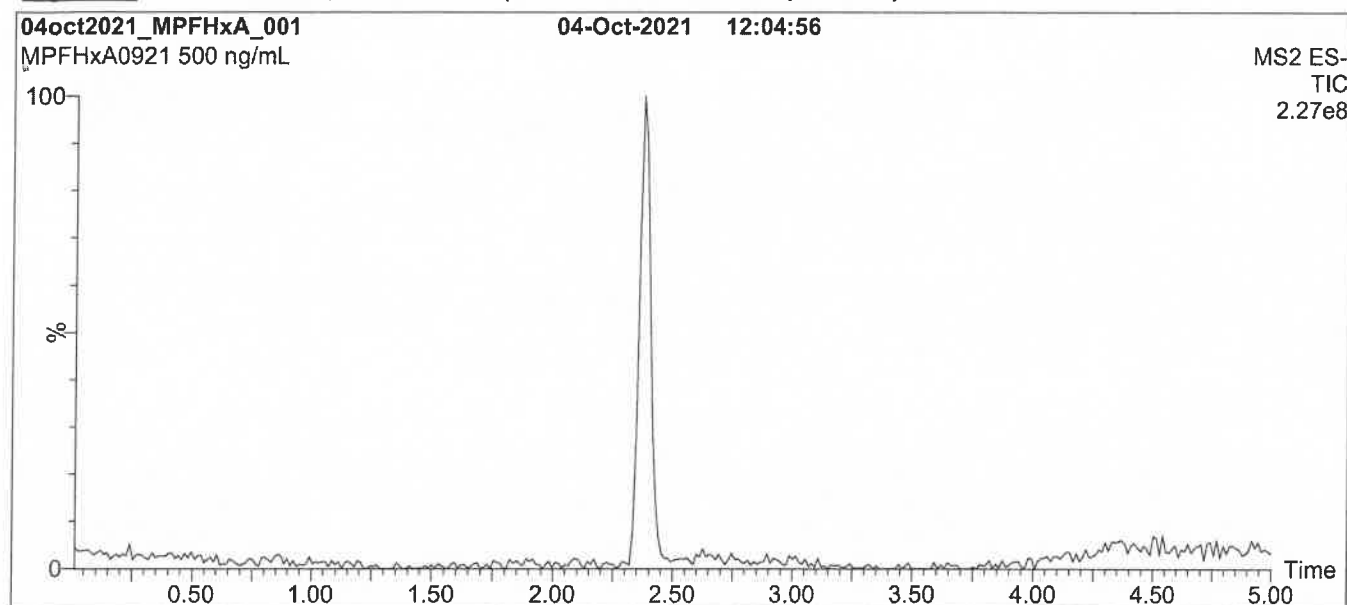
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: MPFHxA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 12 min

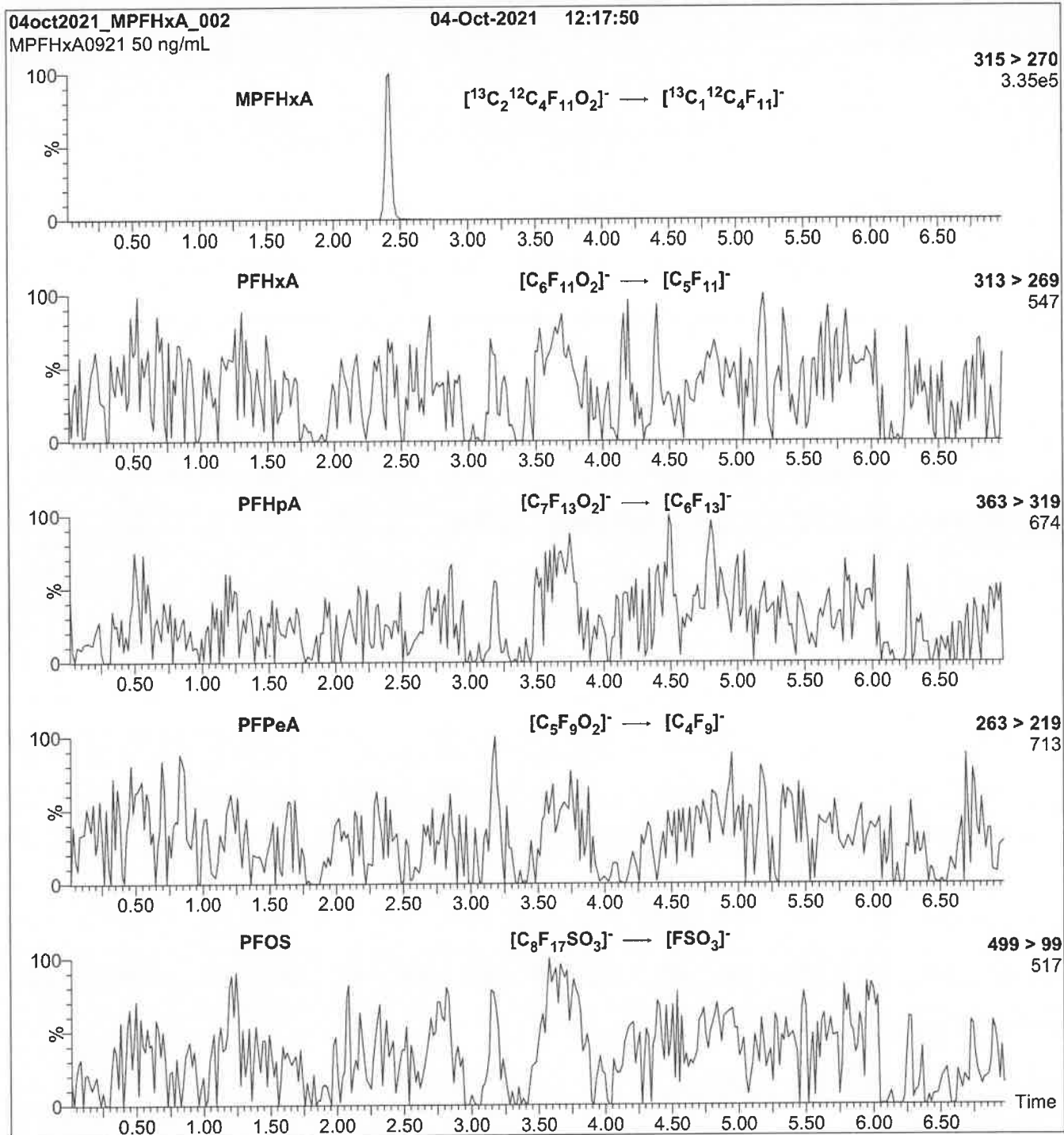
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFHxA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFHxA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

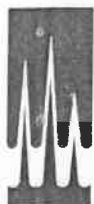
MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 8

Reagent

LCMPFHxA_00060



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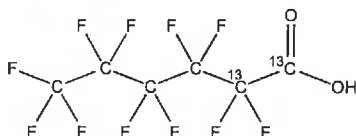
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFHxA
COMPOUND: Perfluoro-n-(1,2-¹³C₂)hexanoic acid

LOT NUMBER: MPFHxA0921

STRUCTURE:

CAS #: 960315-47-3



MOLECULAR FORMULA: ¹³C₂¹²C₄HF₁₁O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 316.04
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%

ISOTOPIC PURITY: ≥99% ¹³C
(1,2-¹³C₂)

LAST TESTED: (mm/dd/yyyy) 10/04/2021

EXPIRY DATE: (mm/dd/yyyy) 10/04/2026

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

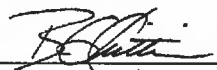
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 10/22/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HOMOGENEITY:

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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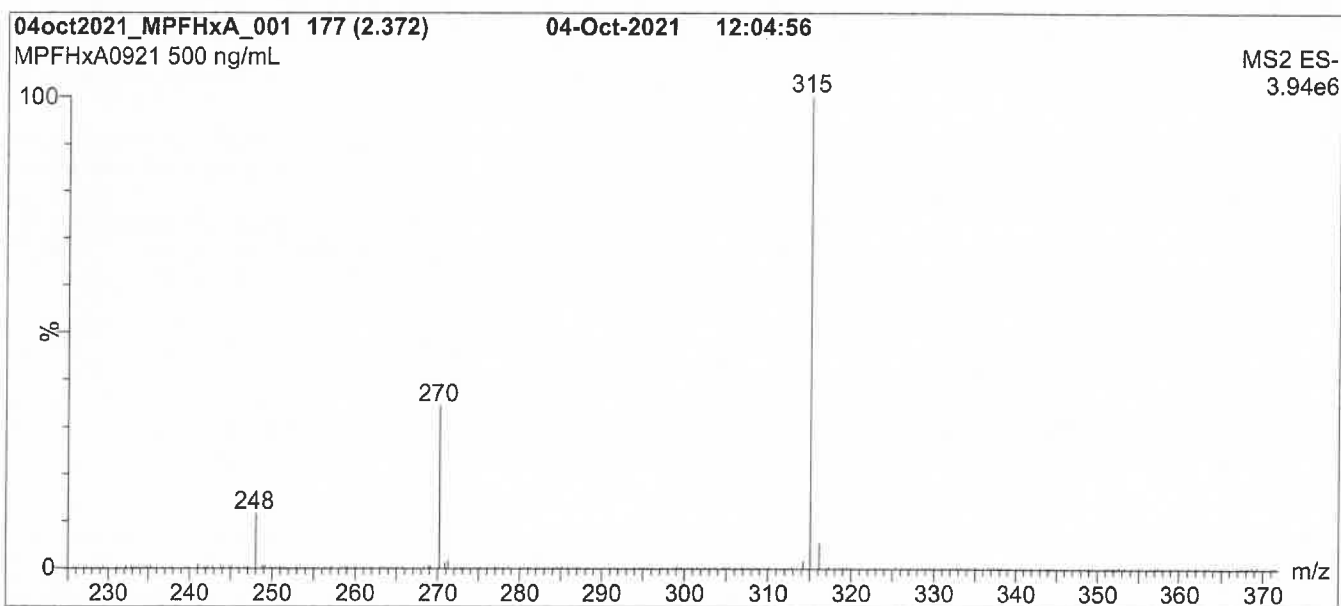
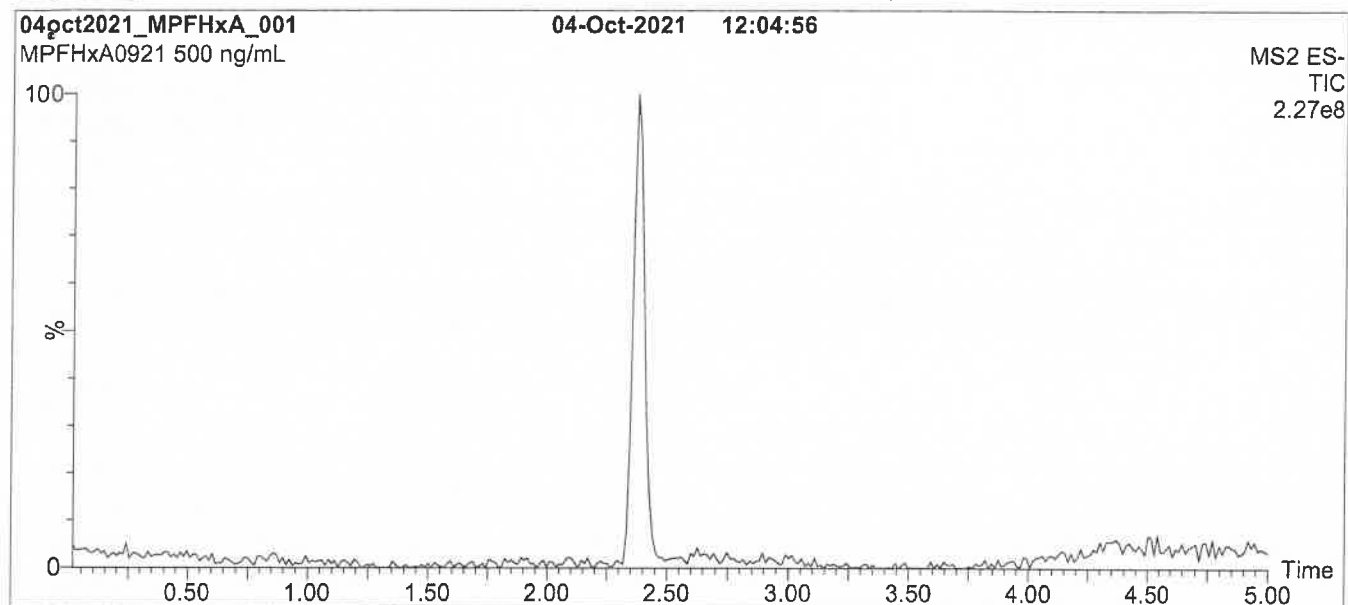
QUALITY MANAGEMENT:

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Figure 1: MPFHxA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 12 min

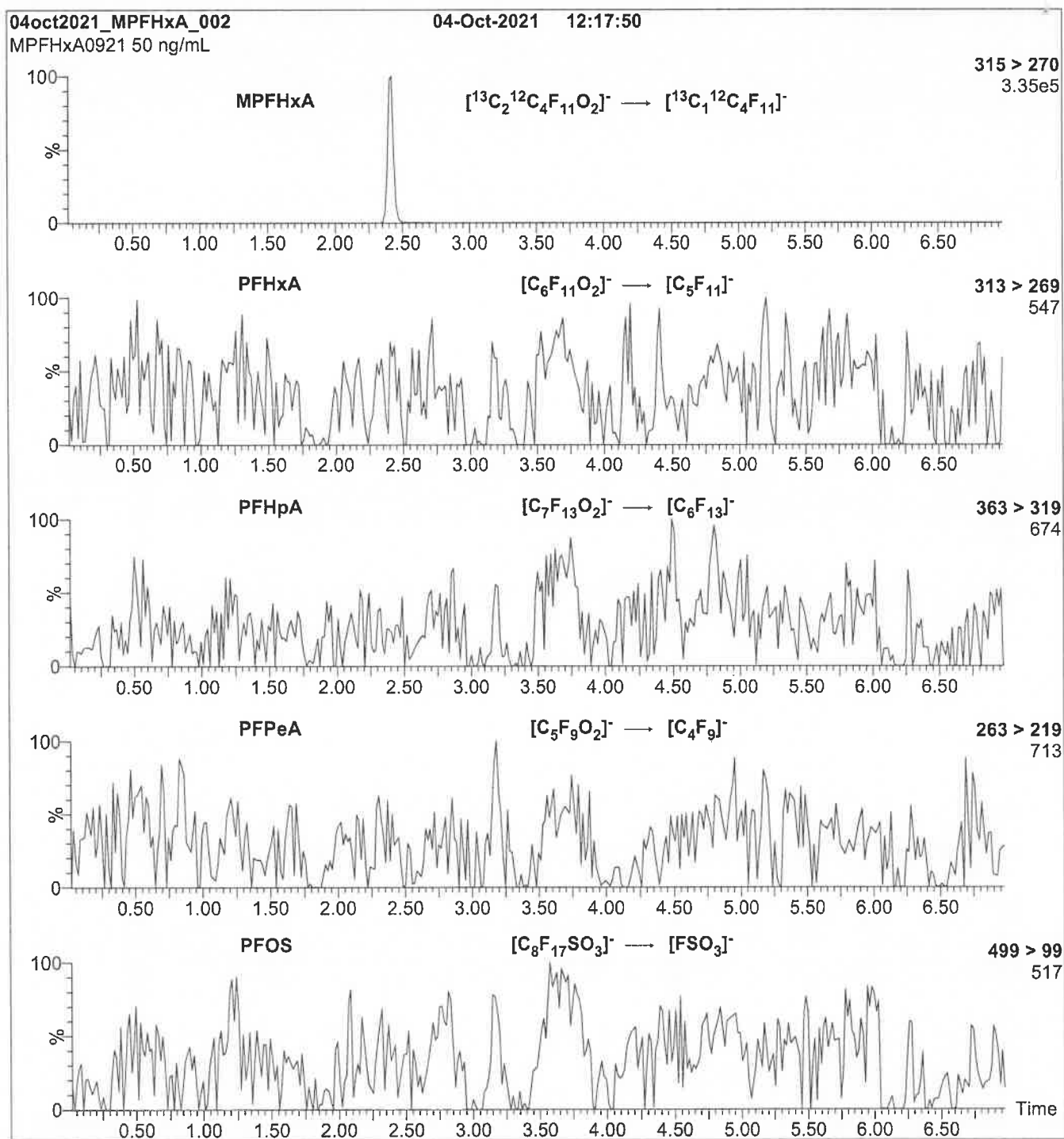
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFHxA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFHxA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 8

Reagent

LCMPFHxS_00048



2886692

ID: LCMPFHxS_00048

Exp: 10/29/26 Prpd: IM Opn: 02/07/22

18O2-Perfluorohexanesulfo



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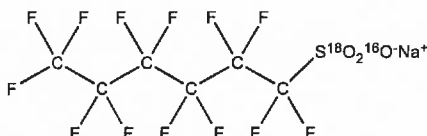
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

MPFHxS

LOT NUMBER:

MPFHxS1021

COMPOUND:Sodium perfluoro-1-hexane(¹⁸O₂)sulfonate**STRUCTURE:****CAS #:**

1585941-14-5

MOLECULAR FORMULA:C₆F₁₃S¹⁸O₂¹⁶ONa**MOLECULAR WEIGHT:**

426.10

CONCENTRATION:

50.0 ± 2.5 µg/mL (Na salt)

SOLVENT(S):

Methanol

47.4 ± 2.4 µg/mL (MPFHxS acid)

47.3 ± 2.4 µg/mL (MPFHxS anion)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:>94% (¹⁸O₂)**LAST TESTED:** (mm/dd/yyyy)

10/29/2021

EXPIRY DATE: (mm/dd/yyyy)

10/29/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The response factor for MPFHxS (C₆F₁₃S¹⁸O₂¹⁶O⁻) has been observed to be up to 10% lower than for PFHxS (C₆F₁₃S¹⁶O₃⁻) when both compounds are injected together. This difference may vary between instruments.
- Contains ~0.6% of sodium perfluoro-1-octane(¹⁸O₂)sulfonate (¹⁸O₂-PFOS) and ~0.3% of sodium perfluoro-1-heptane(¹⁸O₂)sulfonate (¹⁸O₂-PFHpS).
- Due to the isotopic purity of the starting material (¹⁸O₂ >94%), MPFHxS contains ~0.3% of PFHxS. This value agrees with the theoretical percent relative abundance that is expected based on the stated isotopic purity.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 11/05/2021

(mm/dd/yyyy)

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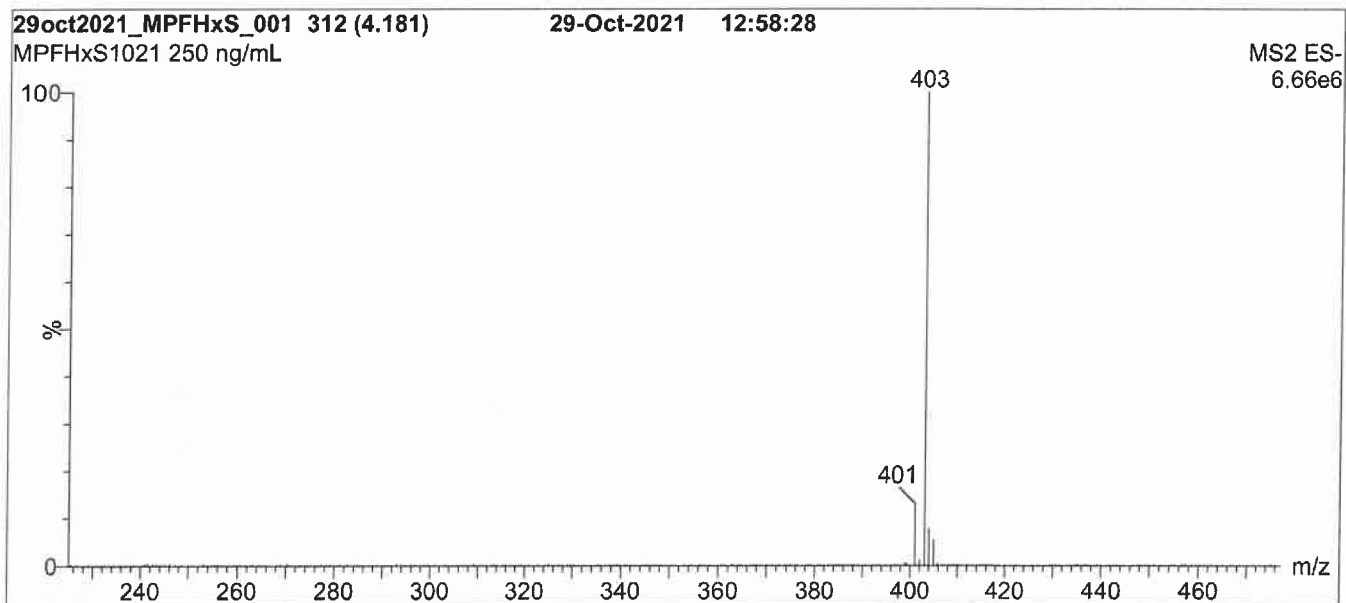
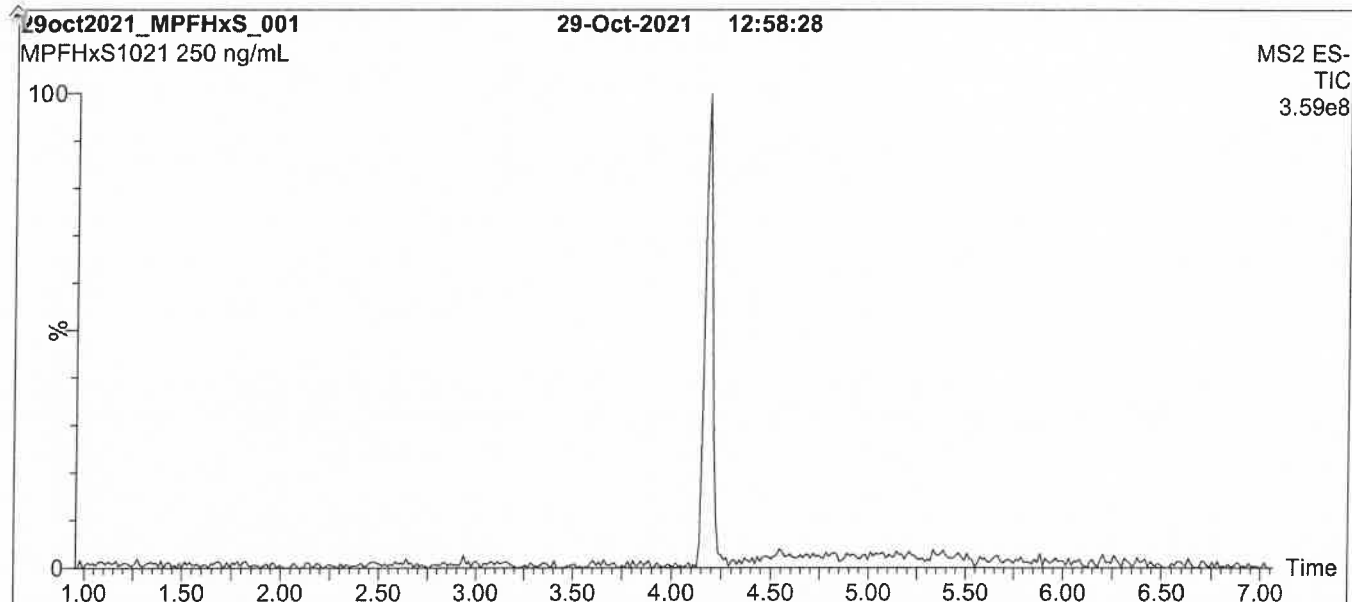
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Figure 1: MPFHxS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

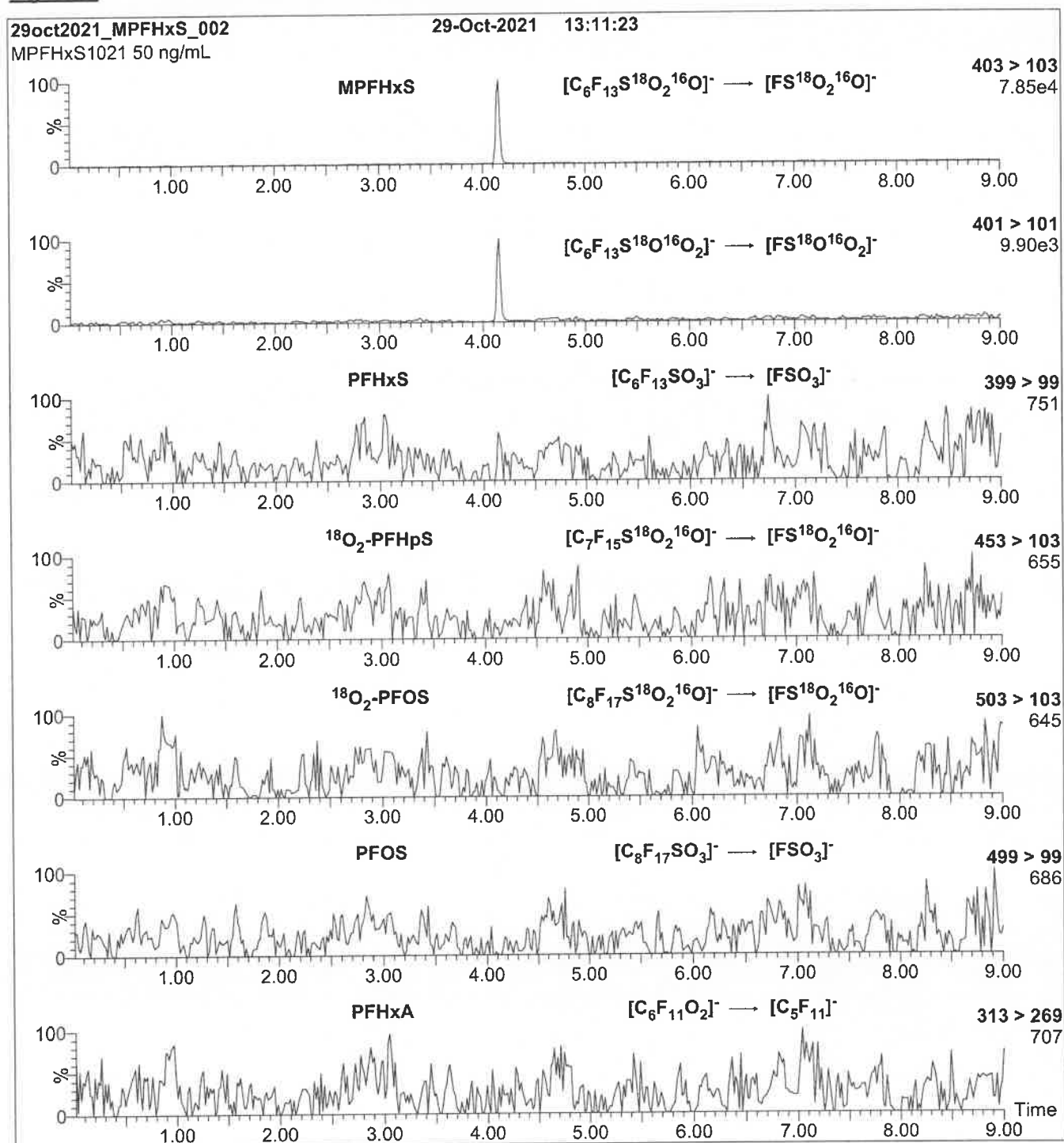
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFHxS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFHxS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.16e-3

Collision Energy (eV) = 32

Reagent

LCMPFHxS_00049



2978890

ID: LCMFHXs_00049

Exp: 10/29/26 Prpd: M Opi: 04/19/22

18O2-Perfluorohexanesulfo



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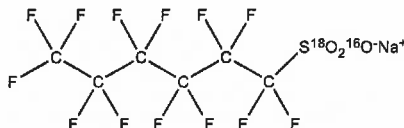
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

MPFHxS

LOT NUMBER:

MPFHxS1021

COMPOUND:Sodium perfluoro-1-hexane(¹⁸O₂)sulfonate**STRUCTURE:****CAS #:**

1585941-14-5

MOLECULAR FORMULA:C₆F₁₃S¹⁸O₂¹⁶ONa**MOLECULAR WEIGHT:**

426.10

CONCENTRATION:

50.0 ± 2.5 µg/mL (Na salt)

SOLVENT(S):

Methanol

47.4 ± 2.4 µg/mL (MPFHxS acid)

47.3 ± 2.4 µg/mL (MPFHxS anion)

CHEMICAL PURITY:

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ISOTOPIC PURITY:>94% (¹⁸O₂)**LAST TESTED:** (mm/dd/yyyy)

10/29/2021

EXPIRY DATE: (mm/dd/yyyy)

10/29/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The response factor for MPFHxS (C₆F₁₃S¹⁸O₂¹⁶O⁻) has been observed to be up to 10% lower than for PFHxS (C₆F₁₃S¹⁸O₃⁻) when both compounds are injected together. This difference may vary between instruments.
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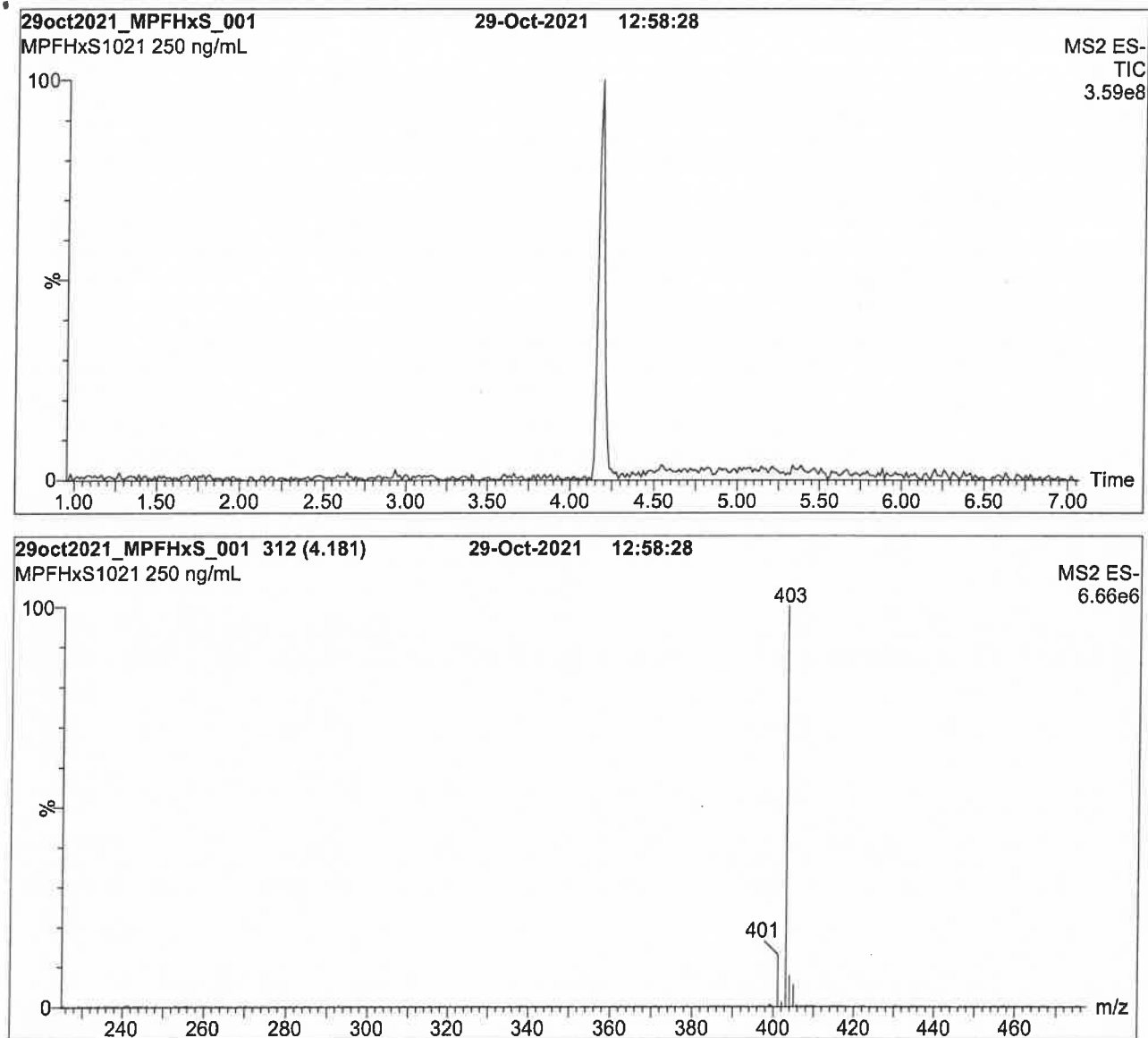
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Figure 1: MPFHxS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

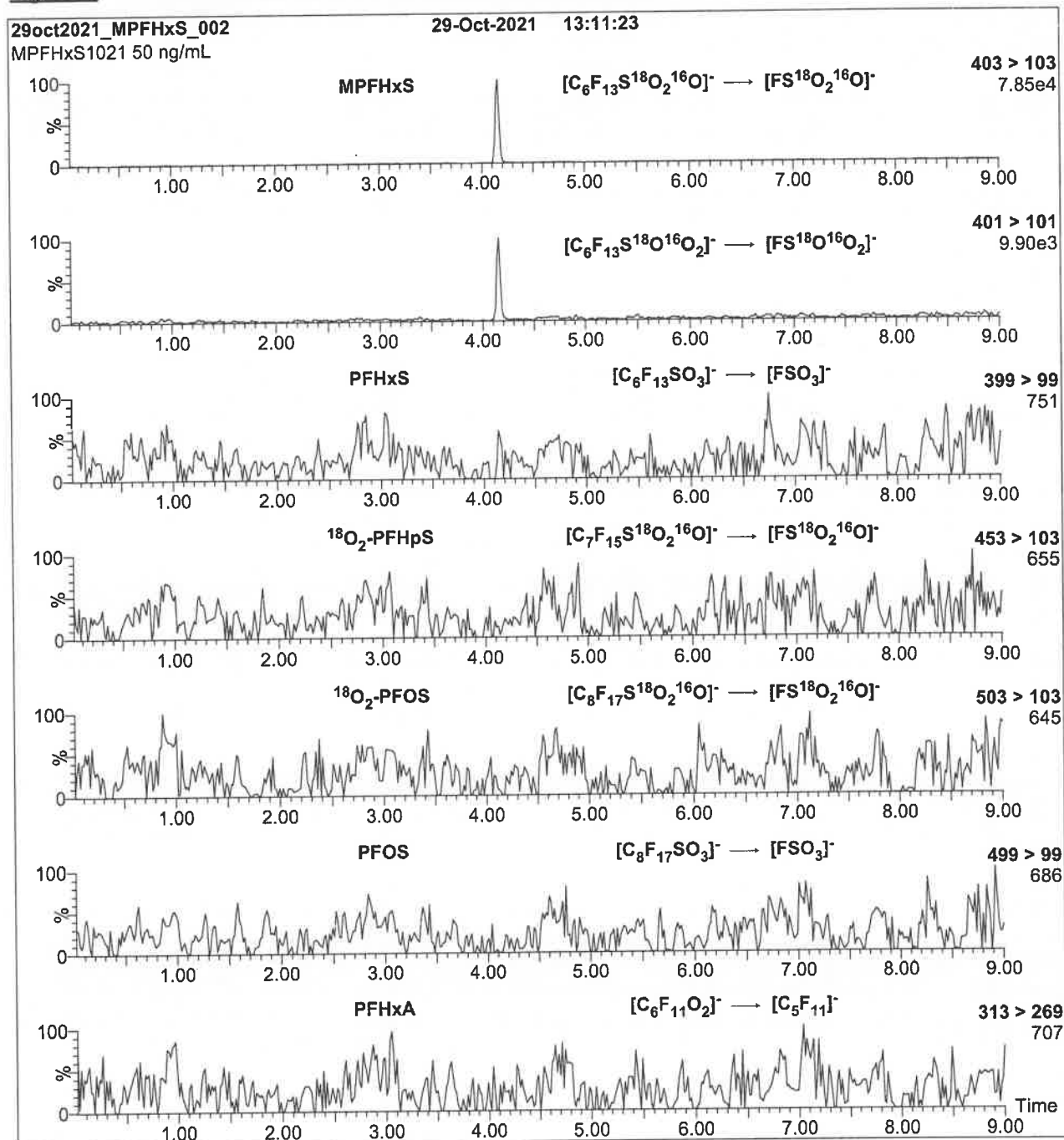
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFHxS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFHxS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.16e-3

Collision Energy (eV) = 32

Reagent

LCMPFHxS_00050



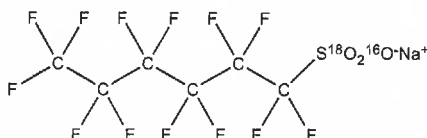
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFHxS
COMPOUND: Sodium perfluoro-1-hexane(¹⁸O₂)sulfonate

LOT NUMBER: MPFHxS0522

STRUCTURE:



CAS #: 1585941-14-5

MOLECULAR FORMULA: C₆F₁₃S¹⁸O₂¹⁶ONa
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt)
47.4 ± 2.4 µg/mL (MPFHxS acid)
47.3 ± 2.4 µg/mL (MPFHxS anion)

MOLECULAR WEIGHT: 426.10
SOLVENT(S): Methanol

CHEMICAL PURITY: >98%

ISOTOPIC PURITY: >94% (¹⁸O₂)

LAST TESTED: (mm/dd/yyyy) 06/08/2022

EXPIRY DATE: (mm/dd/yyyy) 06/08/2027

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The response factor for MPFHxS (C₆F₁₃S¹⁸O₂¹⁶O⁻) has been observed to be up to 10% lower than for PFHxS (C₆F₁₃S¹⁶O₃⁻) when both compounds are injected together. This difference may vary between instruments.
- Contains ~0.6% of sodium perfluoro-1-octane(¹⁸O₂)sulfonate (¹⁸O₂-PFOS) and ~0.3% of sodium perfluoro-1-heptane(¹⁸O₂)sulfonate (¹⁸O₂-PFHpS).
- Due to the isotopic purity of the starting material (¹⁸O₂ >94%), MPFHxS contains ~0.3% of PFHxS. This value agrees with the theoretical percent relative abundance that is expected based on the stated isotopic purity.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

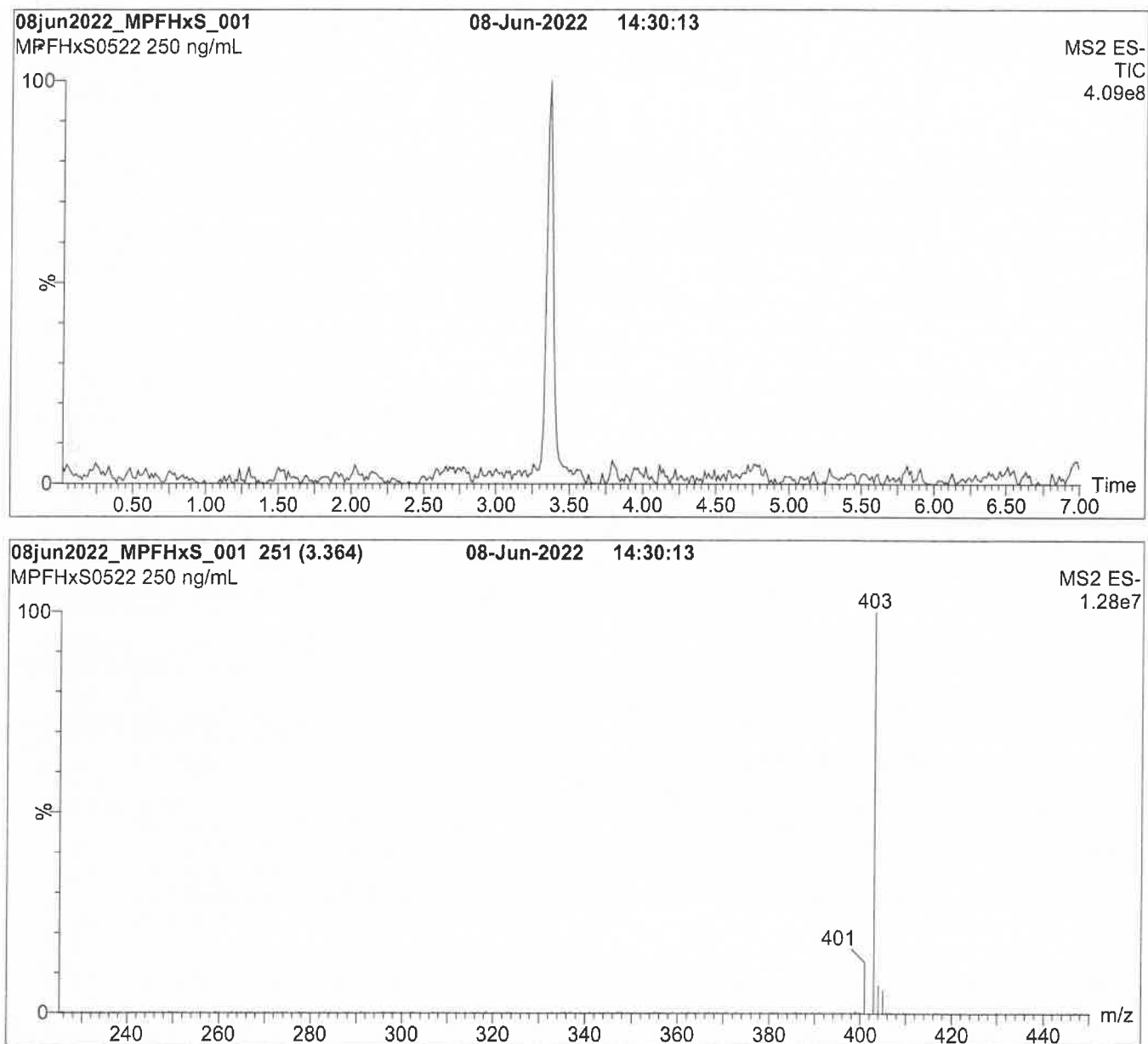
Certified By:

B.G. Chittim, General Manager

Date: 06/27/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Figure 1: MPFHxS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Reagent

LCMPFNA_00045



2820249

ID: LCMPFNA_00045

Exp: 10/29/26 Ppd: 3M Opn: 12/10/21
13C5-Perfluorononanoic aci**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PRODUCT CODE:**

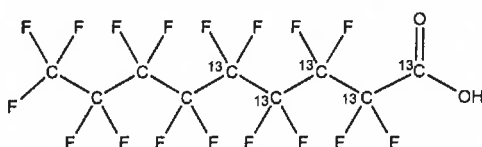
MPFNA

LOT NUMBER:

MPFNA1021

COMPOUND:Perfluoro-n-(1,2,3,4,5-¹³C₅)nonanoic acid**STRUCTURE:****CAS #:**

960315-49-5

**MOLECULAR FORMULA:**¹³C₅¹²C₄HF₁₇O₂**CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

469.04

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

10/29/2021

EXPIRY DATE: (mm/dd/yyyy)

10/29/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

(1,2,3,4,5-¹³C₅)**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**

B.G. Chittim, General Manager
Date:11/01/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

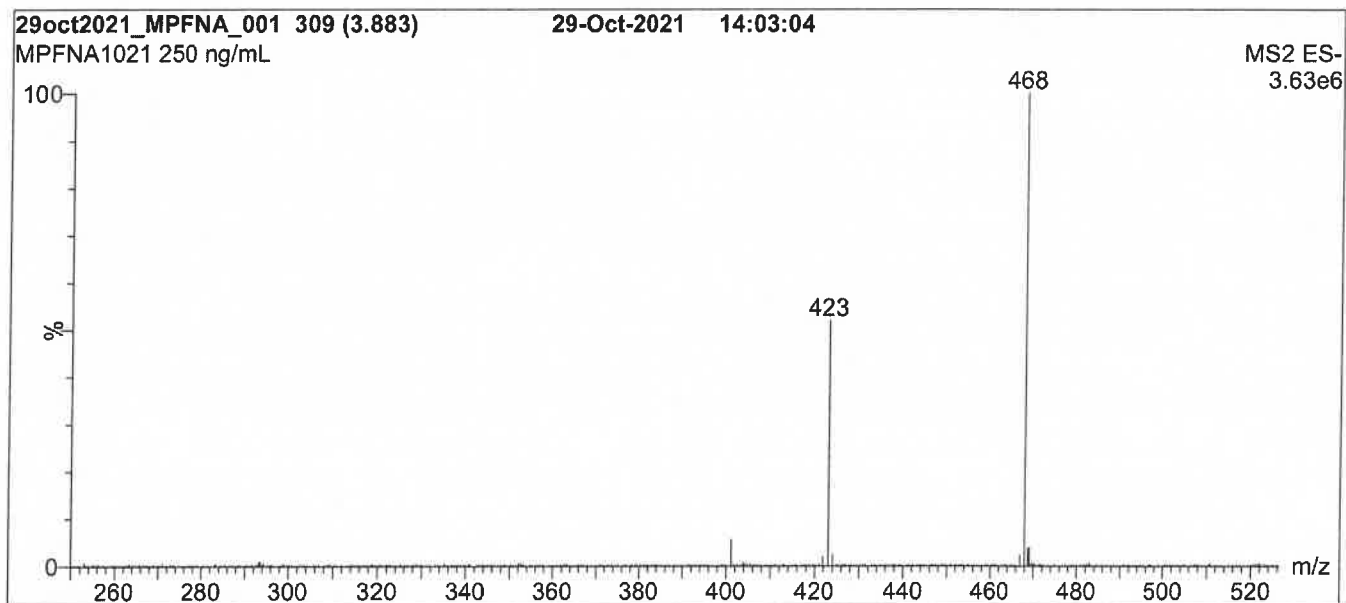
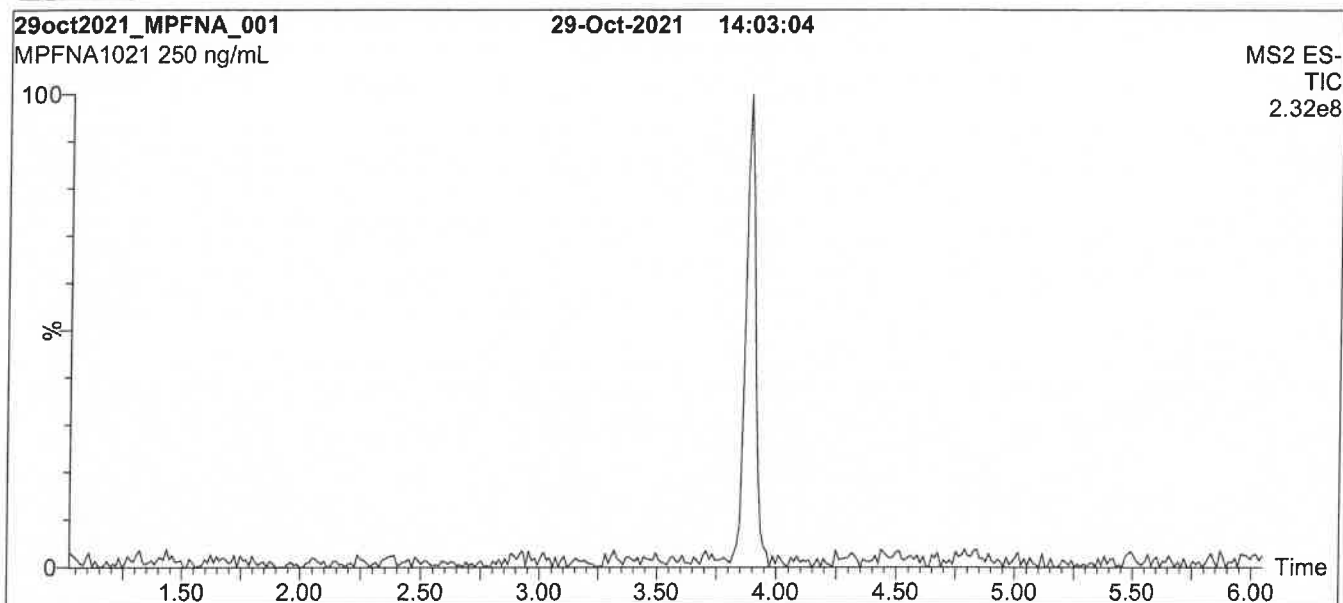
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: MPFNA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

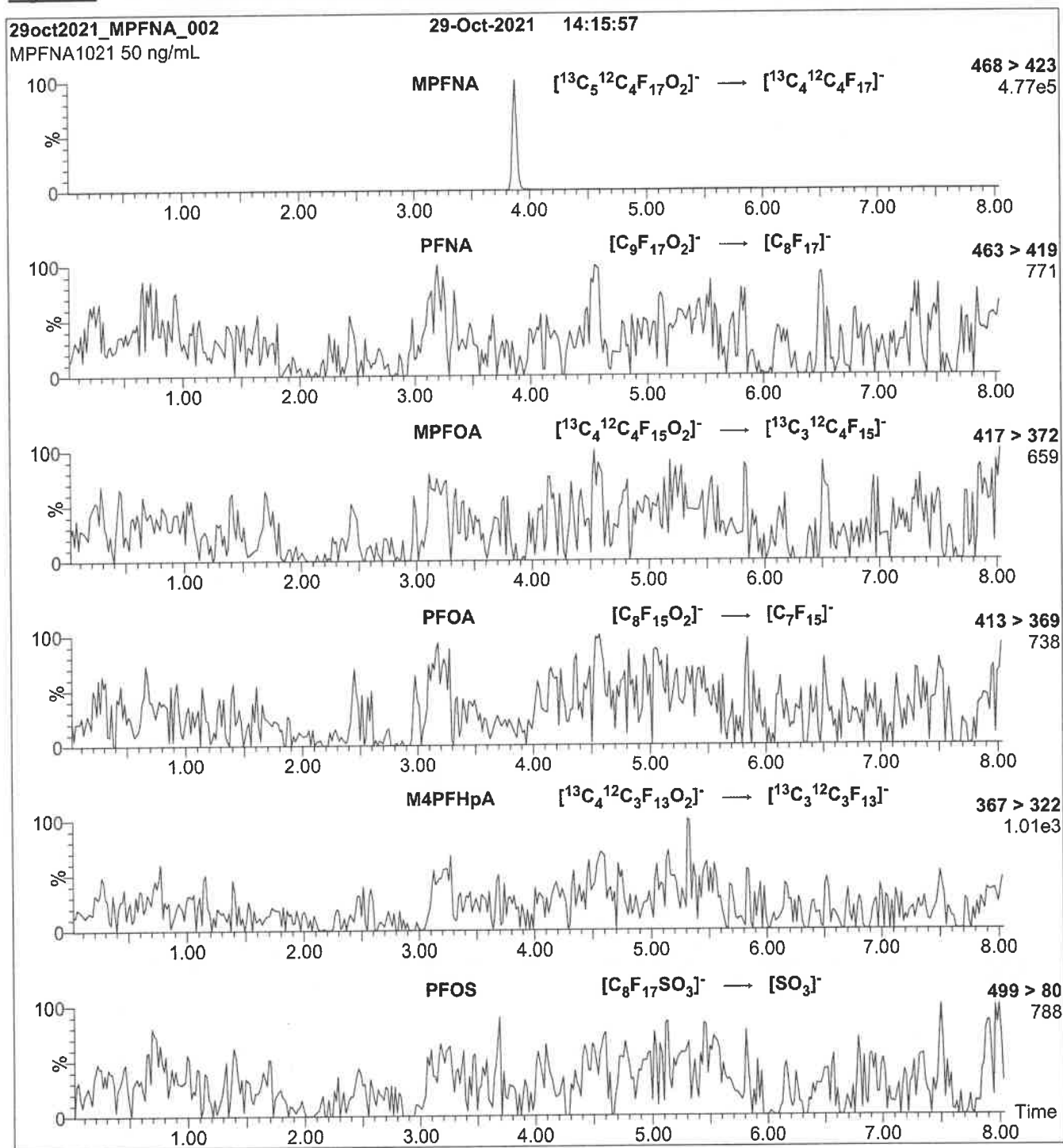
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFNA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFNA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.16e-3

Collision Energy (eV) = 10

Reagent

LCMPFNA_00048



2979075
ID: LCMFNA_00048
Exp: 10/29/26 Prod.M Opn: 04/19/22
13C5-Perfluoronanoic aci



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

MPFNA

LOT NUMBER:

MPFNA1021

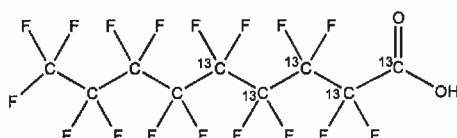
COMPOUND:

Perfluoro-n-(1,2,3,4,5-¹³C₅)nonanoic acid

STRUCTURE:

CAS #:

960315-49-5



MOLECULAR FORMULA:

¹³C₅¹²C₄HF₁₇O₂

MOLECULAR WEIGHT:

469.04

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:

≥99% ¹³C

LAST TESTED: (mm/dd/yyyy)

10/29/2021

(1,2,3,4,5-¹³C₅)

EXPIRY DATE: (mm/dd/yyyy)

10/29/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

11/01/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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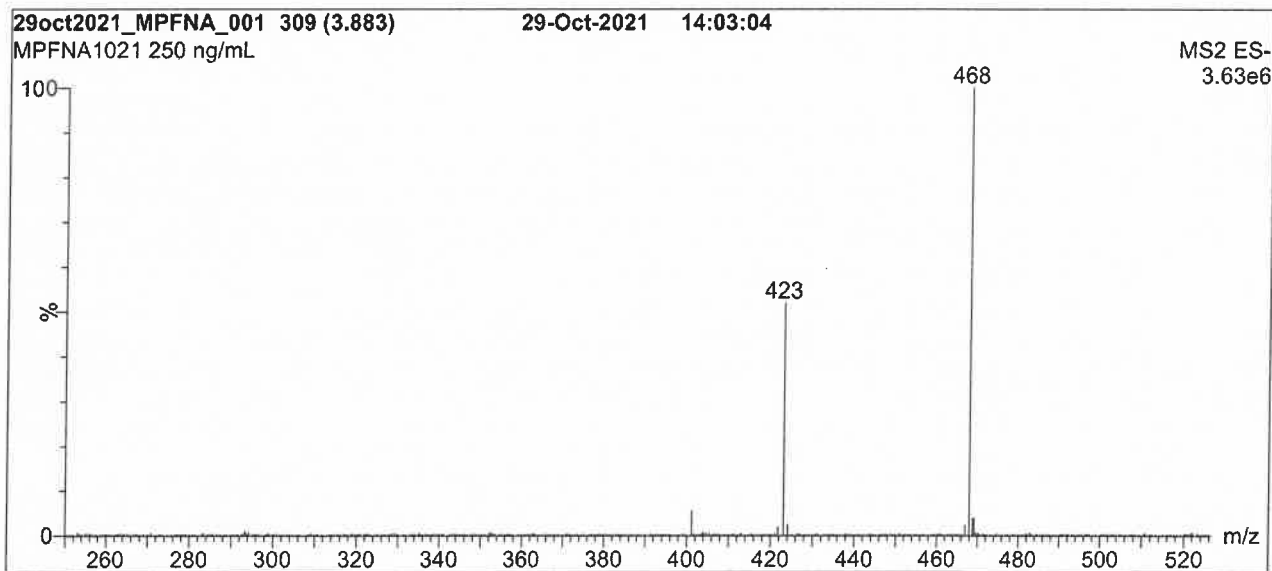
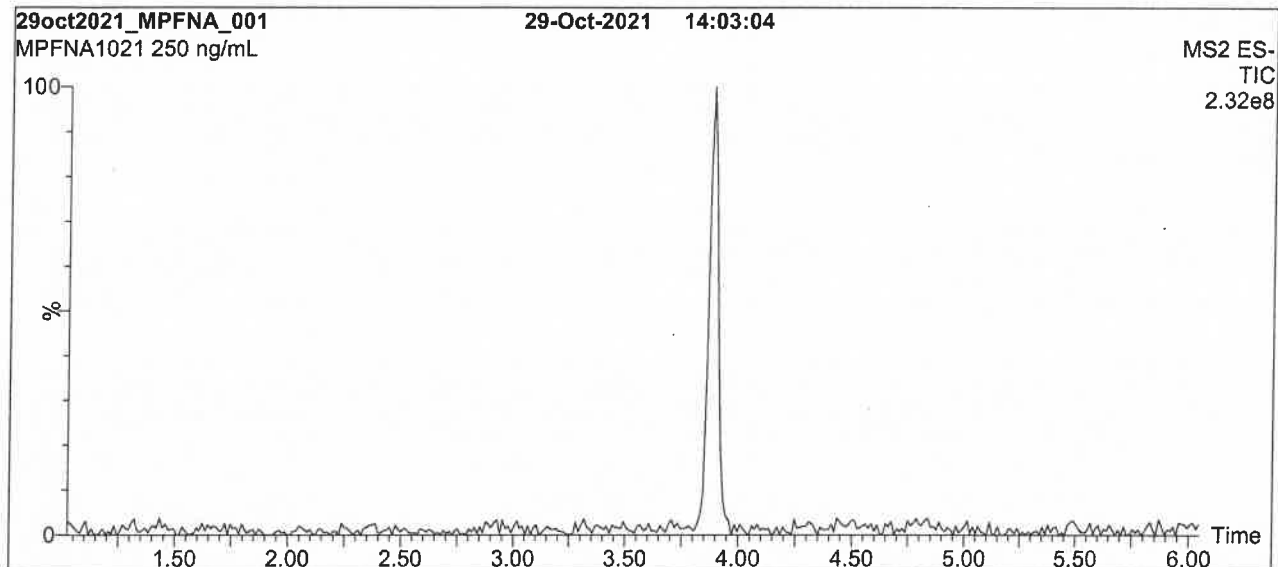
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: MPFNA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

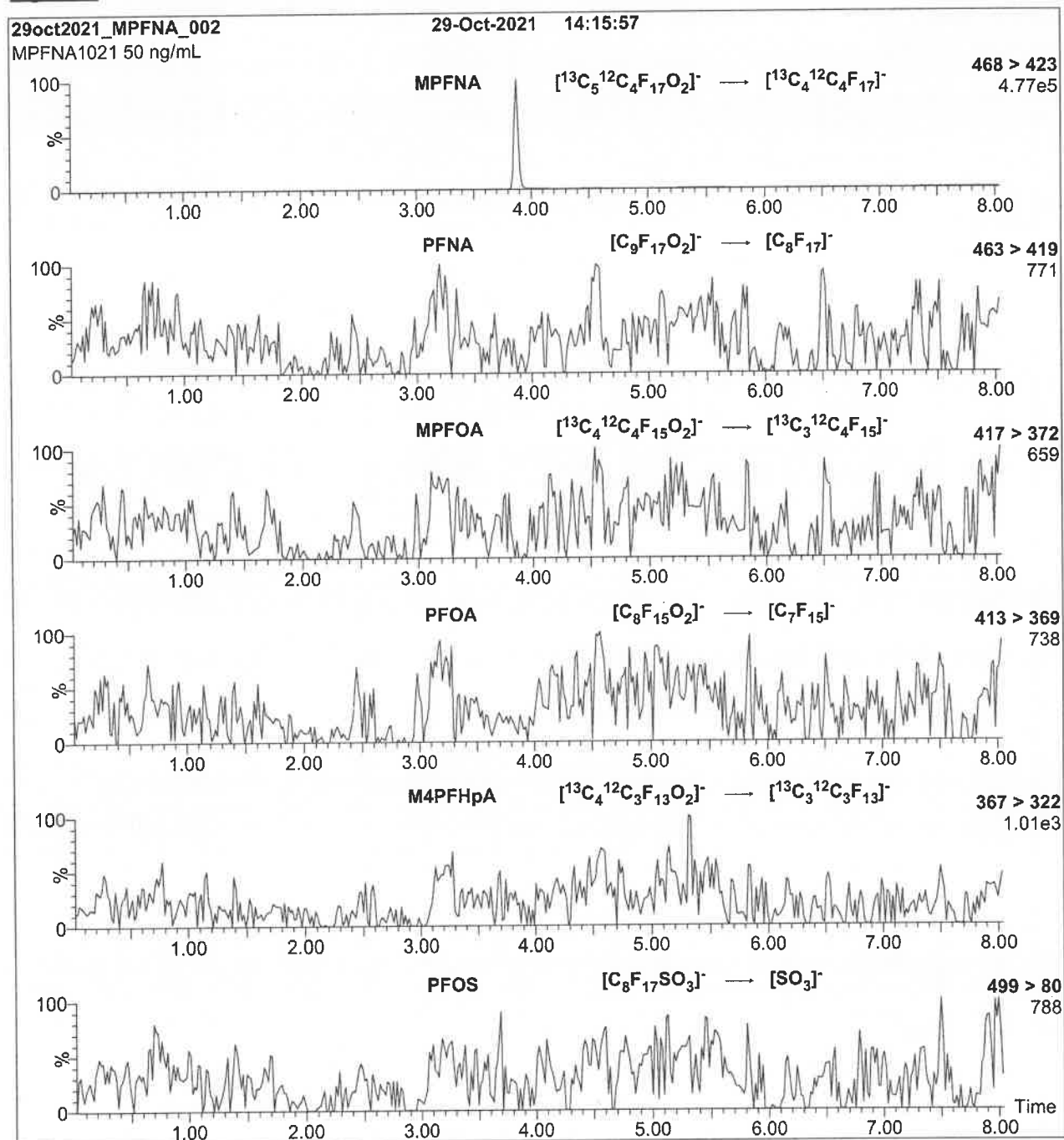
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFNA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFNA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.16e-3

Collision Energy (eV) = 10

Reagent

LCMPFNA_00049



3179772

ID: LCMFNA_00049

Exp: 08/04/27 Ppds: M Opn: 09/14/22

13C5-Perfluorononanoic aci



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

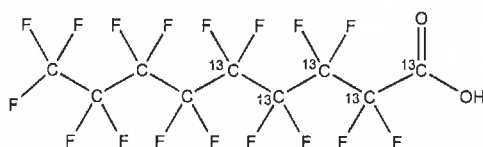
MPFNA

LOT NUMBER:

MPFNA0722

COMPOUND:Perfluoro-n-(1,2,3,4,5-¹³C₅)nonanoic acid**STRUCTURE:****CAS #:**

960315-49-5

**MOLECULAR FORMULA:**¹³C₅¹²C₄HF₁₇O₂**CONCENTRATION:**

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

469.04

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C**LAST TESTED:** (mm/dd/yyyy)

08/04/2022

EXPIRY DATE: (mm/dd/yyyy)

08/04/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

(1,2,3,4,5-¹³C₅)**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

 B.G. Chittim, General Manager

Date: 08/18/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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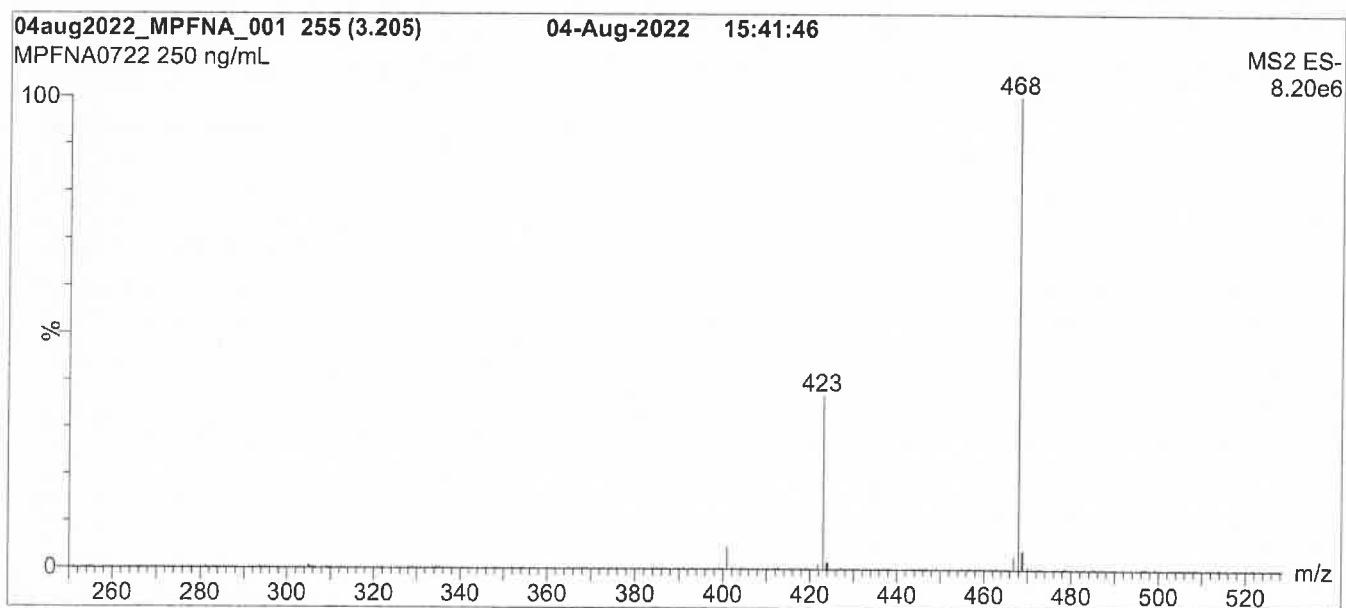
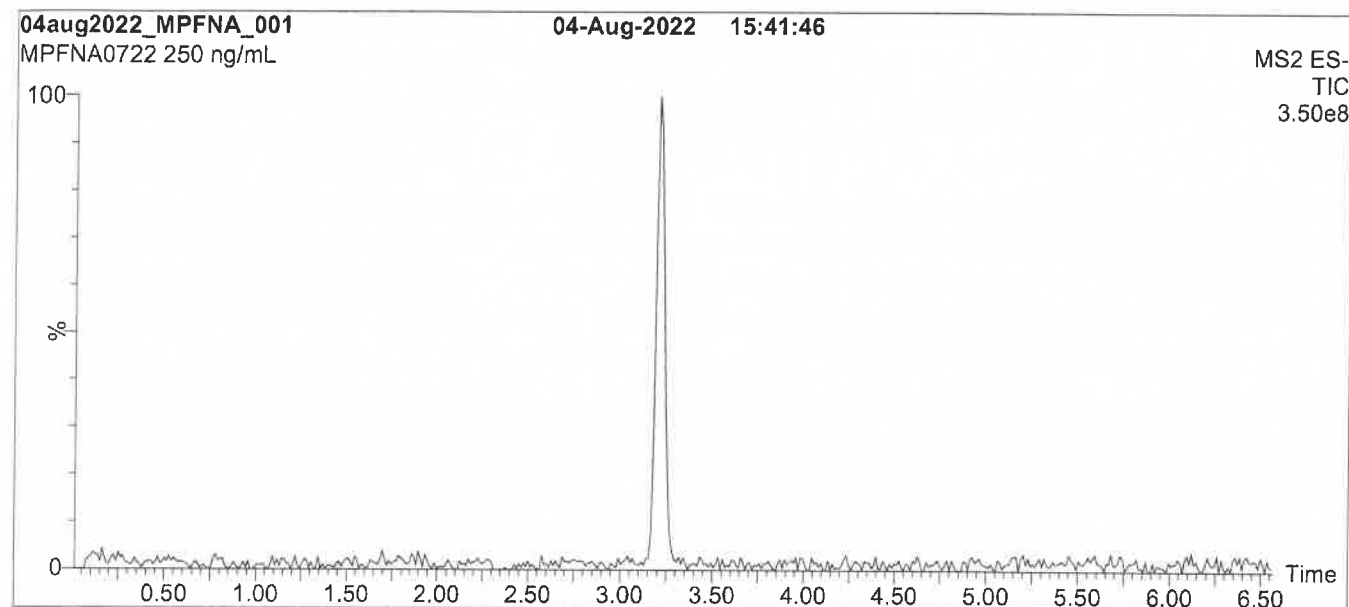
QUALITY MANAGEMENT:

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Figure 1: MPFNA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

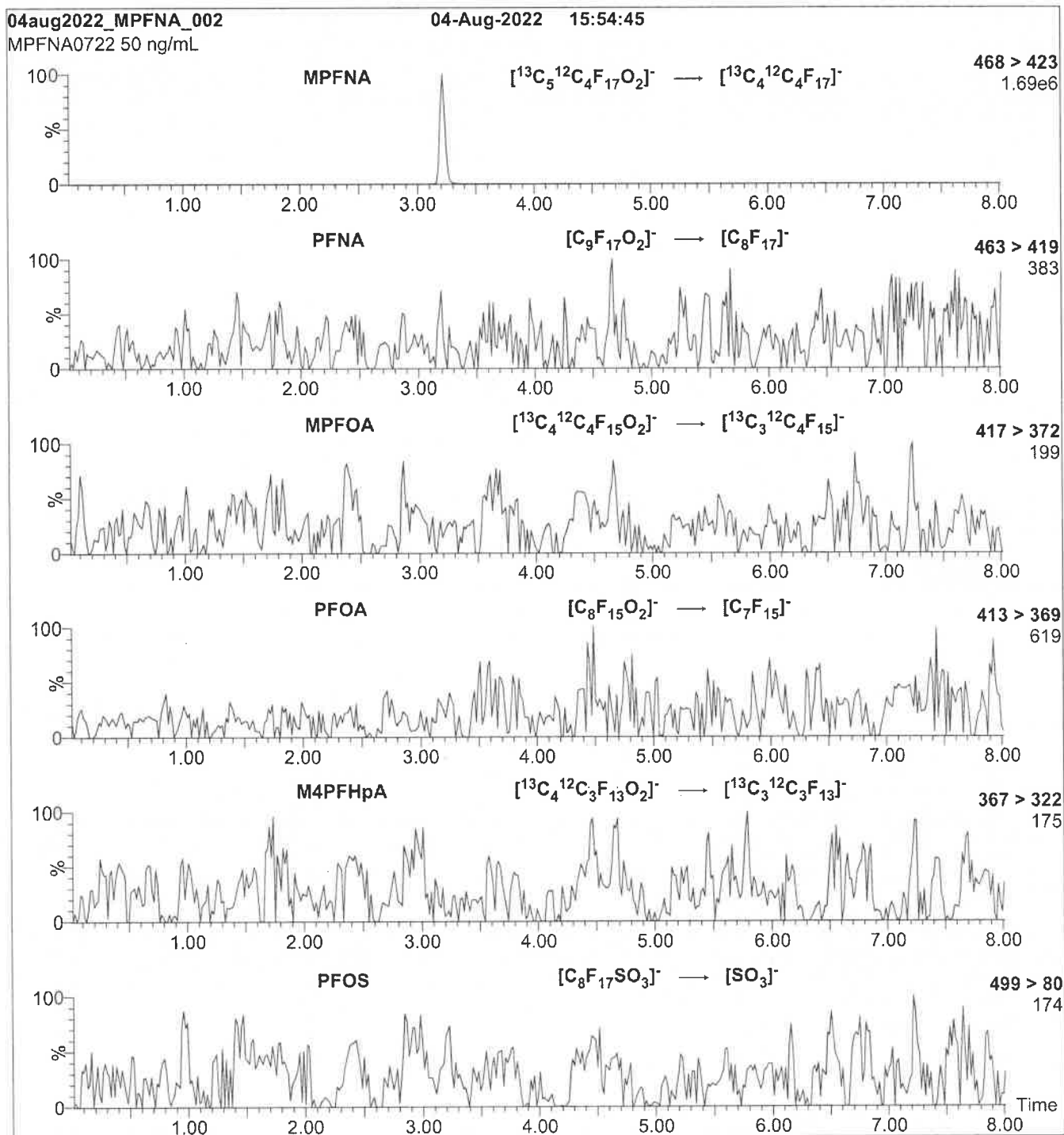
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFNA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFNA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.27e-3

Collision Energy (eV) = 10

Reagent

LCMPFOA_00052



WELLINGTON LABORATORIES

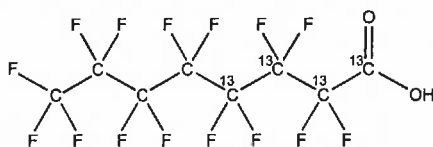
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFOA
COMPOUND: Perfluoro-n-(1,2,3,4-¹³C₄)octanoic acid

LOT NUMBER: MPFOA1121

STRUCTURE:

CAS #: 960315-48-4



MOLECULAR FORMULA: ¹³C₄¹²C₄HF₁₅O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 418.04
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%

ISOTOPIC PURITY: ≥99% ¹³C
(1,2,3,4-¹³C₄)

LAST TESTED: (mm/dd/yyyy) 12/07/2021

EXPIRY DATE: (mm/dd/yyyy) 12/07/2026

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

12/20/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

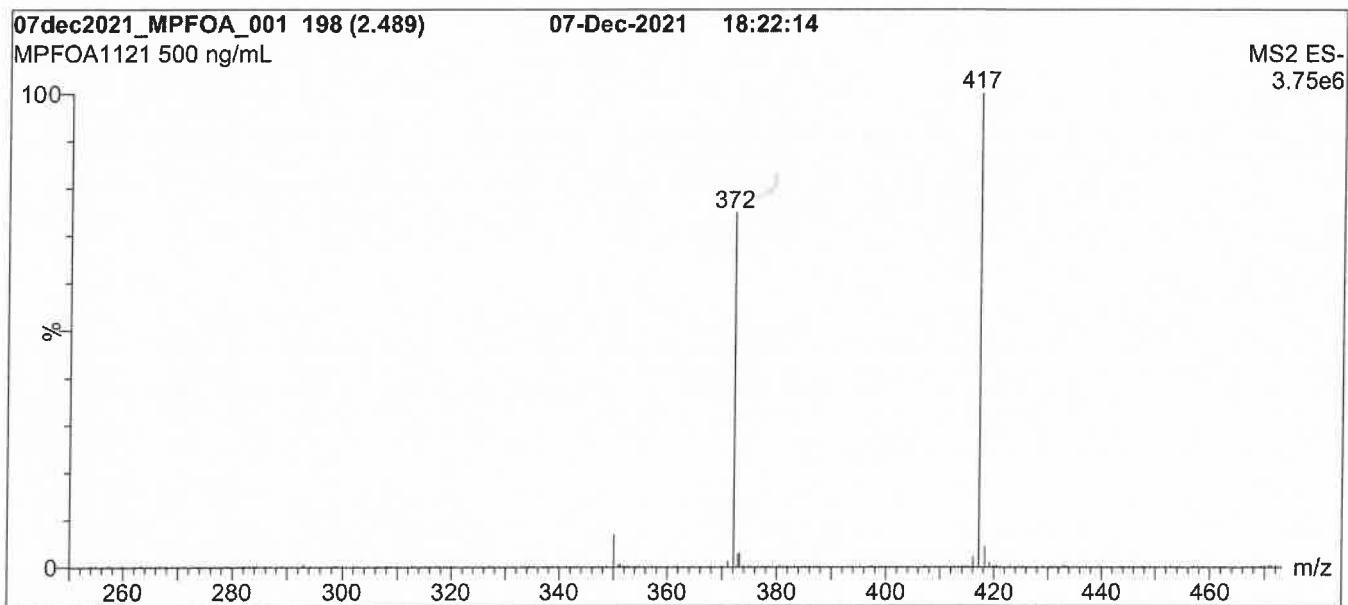
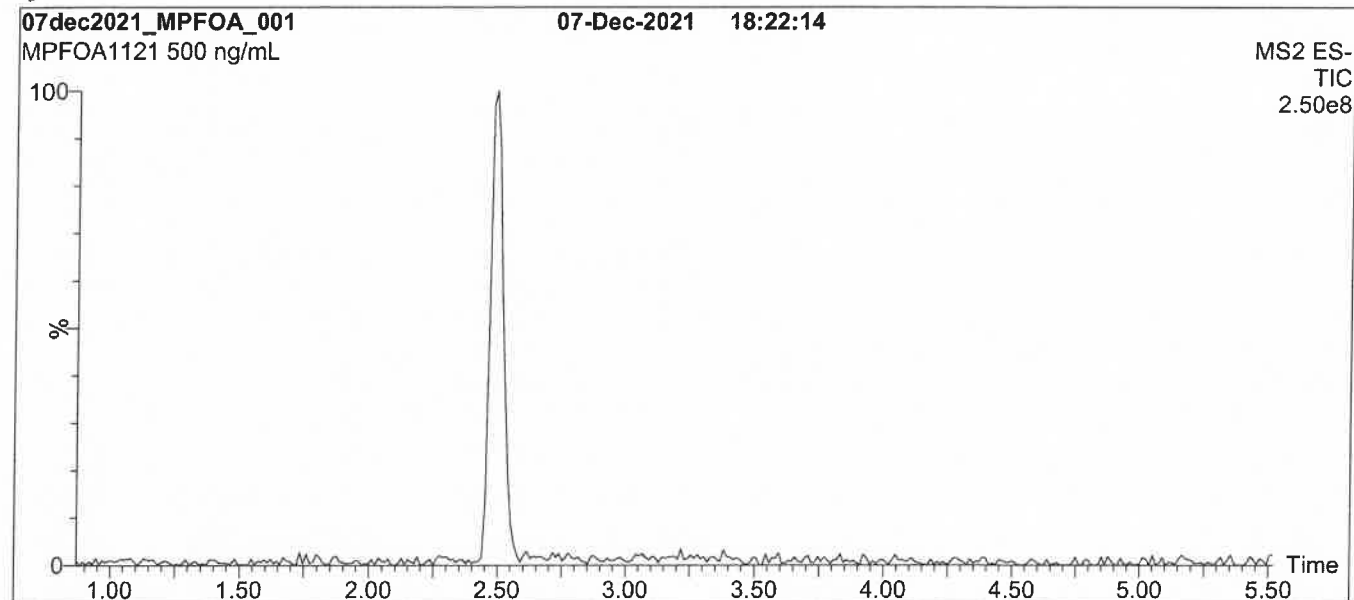
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: MPFOA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

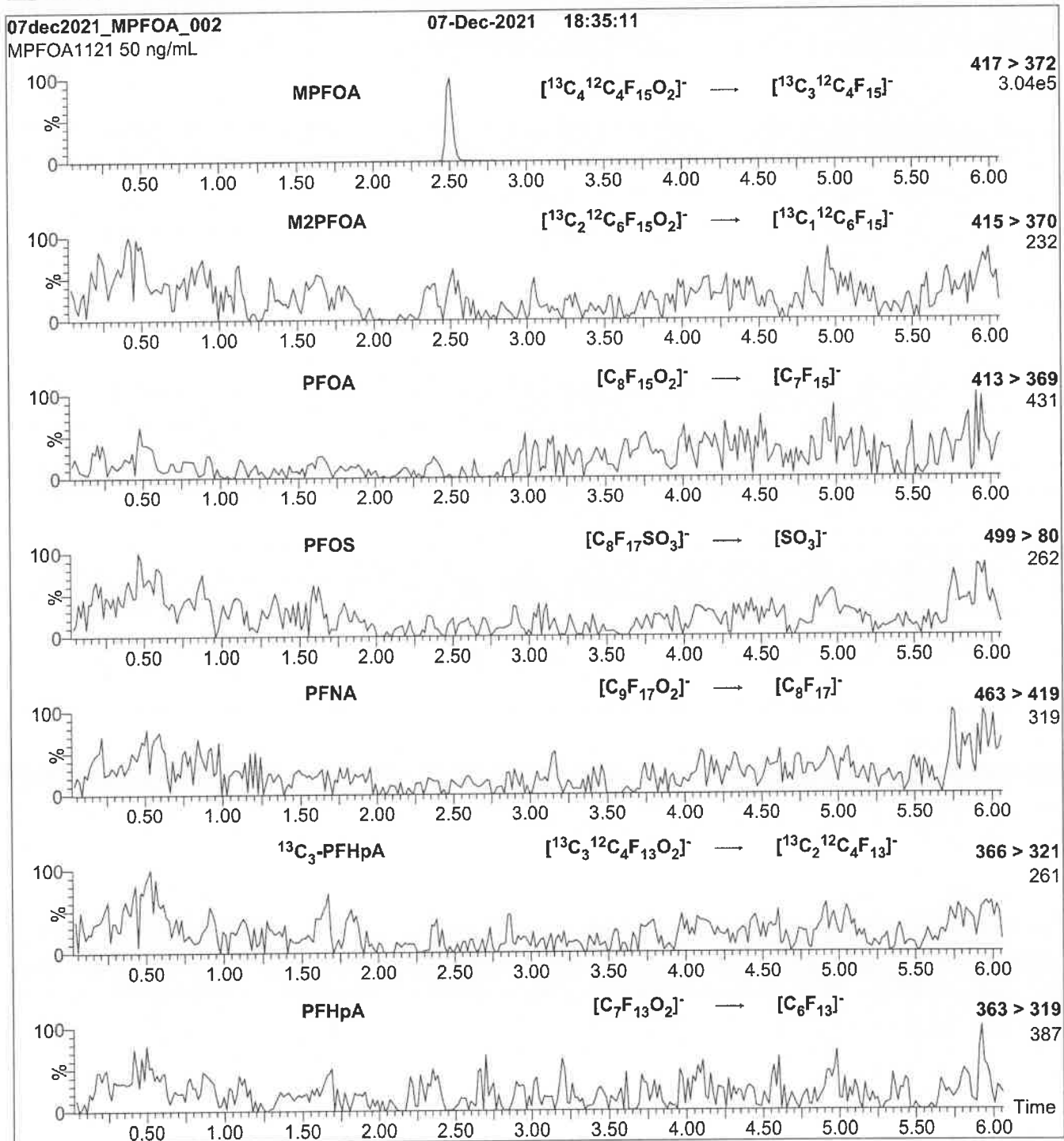
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFOA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFOA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 8

Reagent

LCMPFOA_00054

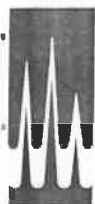


3179759

ID: LCMFPOA_00054

Exp: 07/21/27 Ppt: 3M Opi: 09/14/22

13C4-Perfluorooctanoic ac



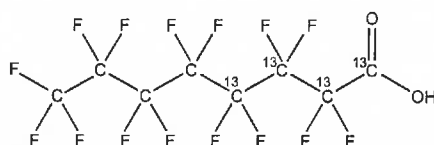
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFOA
COMPOUND: Perfluoro-n-(1,2,3,4-¹³C₄)octanoic acid

LOT NUMBER: MPFOA0722

STRUCTURE: **CAS #:** 960315-48-4



MOLECULAR FORMULA: ¹³C₄¹²C₄H₁₅O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 418.04
SOLVENT(S): Methanol
Water (<1%)
ISOTOPIC PURITY: ≥99% ¹³C
(1,2,3,4-¹³C₄)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/21/2022
EXPIRY DATE: (mm/dd/yyyy) 07/21/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 08/04/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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LIMITED WARRANTY:

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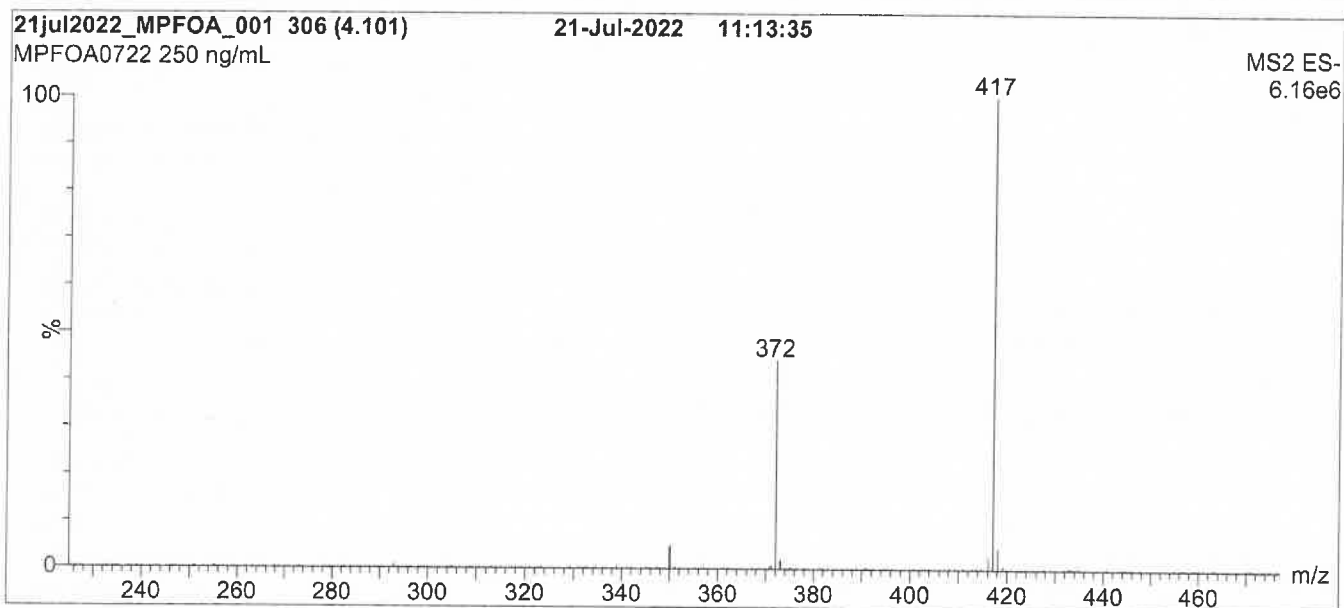
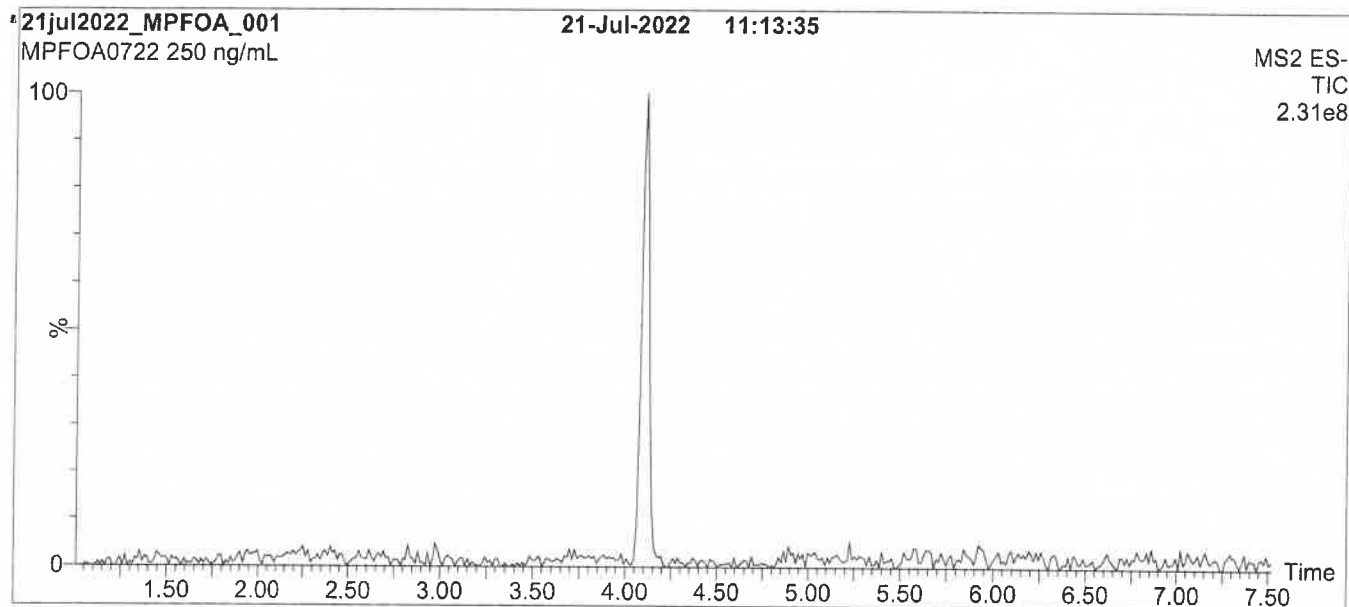
QUALITY MANAGEMENT:

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Figure 1: MPFOA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

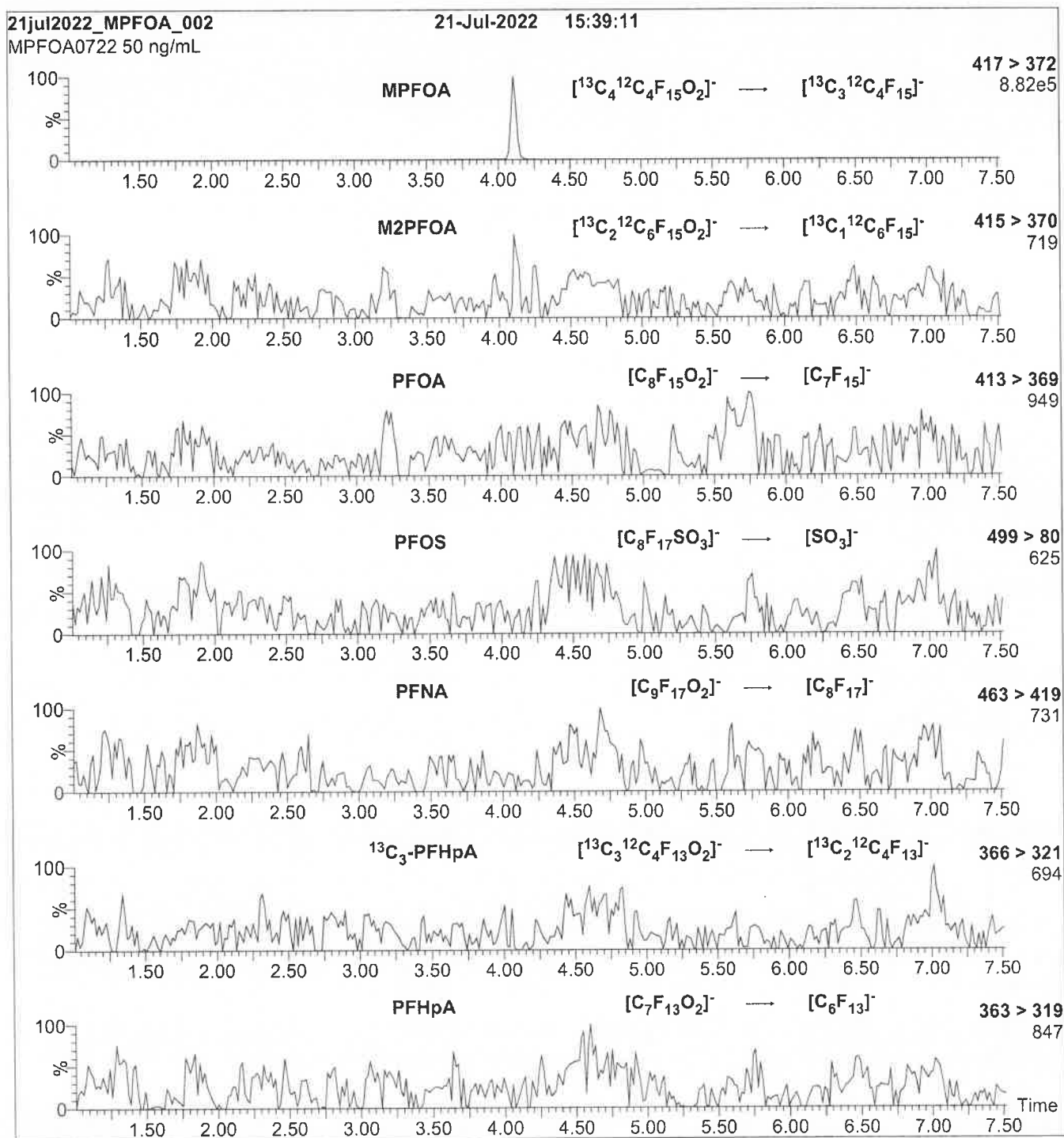
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFOA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFOA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.22e-3

Collision Energy (eV) = 8

Reagent

LCMPFOS_00064



2978900

ID: LCMPFOS_00064

Exp: 01/27/27 Prod: 1M Opn: 04/19/22

13C4-Perfluorooctanesulfo



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

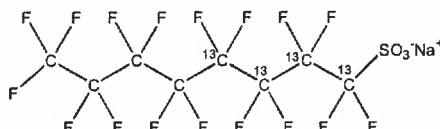
MPFOS

LOT NUMBER:

MPFOS0122

COMPOUND:Sodium perfluoro-1-(1,2,3,4-¹³C₄)octanesulfonate**STRUCTURE:****CAS #:**

960315-53-1

**MOLECULAR FORMULA:**¹³C₄¹²C₄F₁₇SO₃Na**CONCENTRATION:**

50.0 ± 2.5 µg/mL (Na salt)
47.9 ± 2.4 µg/mL (MPFOS acid)
47.8 ± 2.4 µg/mL (MPFOS anion)

MOLECULAR WEIGHT:

526.08

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:

≥99% ¹³C
(1,2,3,4-¹³C₄)

LAST TESTED: (mm/dd/yyyy)

01/27/2022

EXPIRY DATE: (mm/dd/yyyy)

01/27/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.3% sodium perfluoro-1-(¹³C₃)heptanesulfonate and ~0.5% perfluoro-n-(¹³C₄)octanoic acid (MPFOA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 01/28/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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LIMITED WARRANTY:

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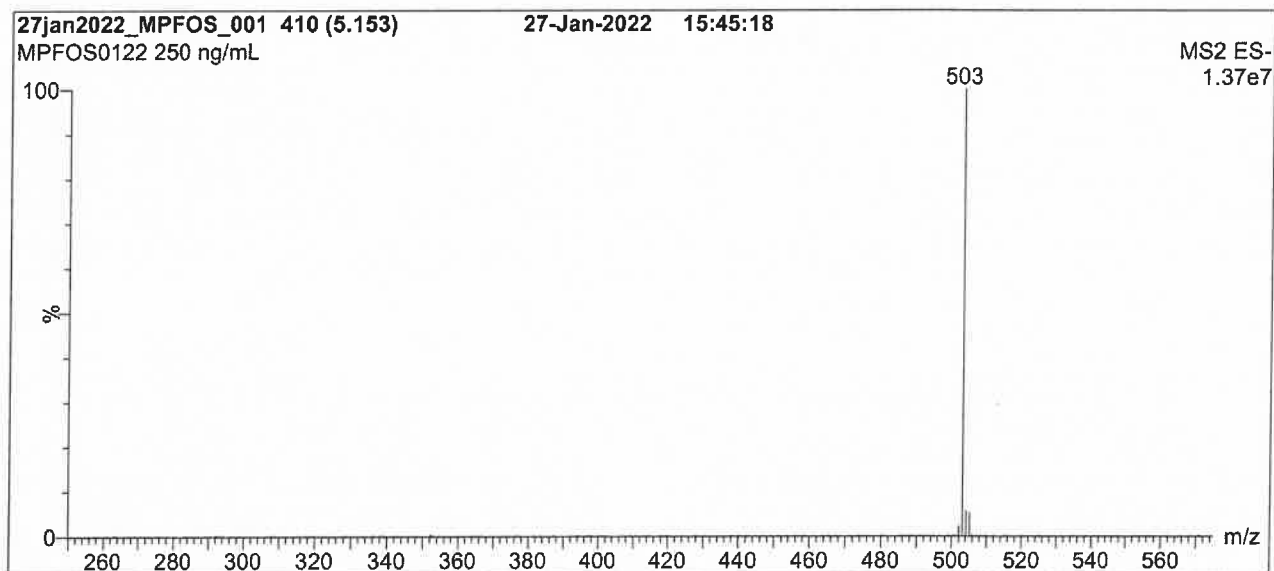
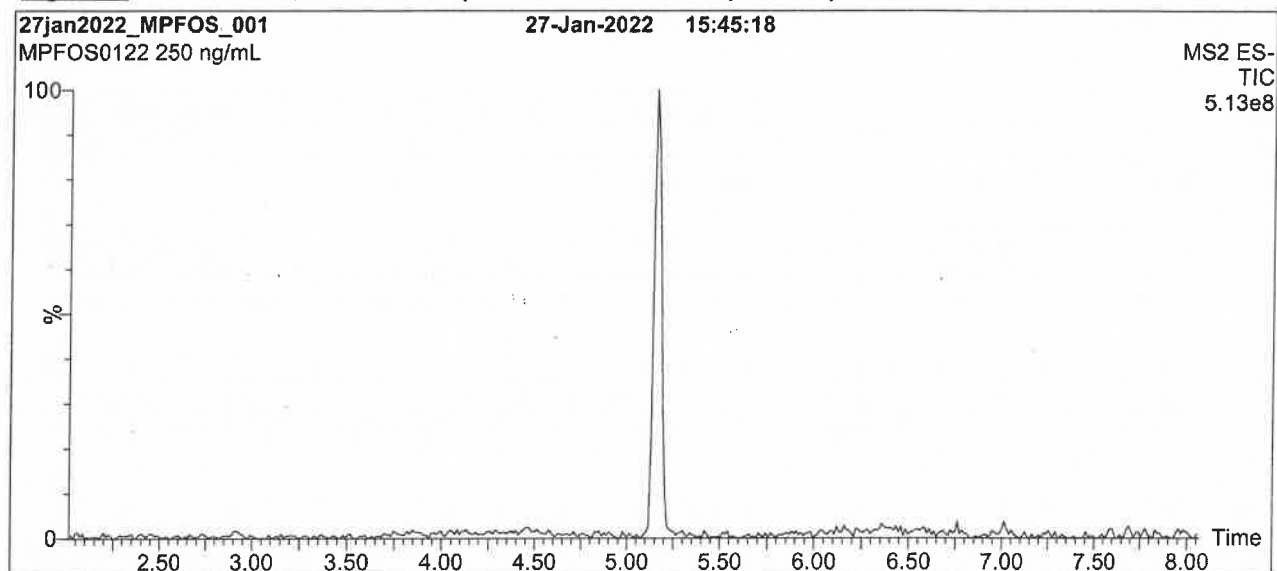
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Figure 1: MPFOS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

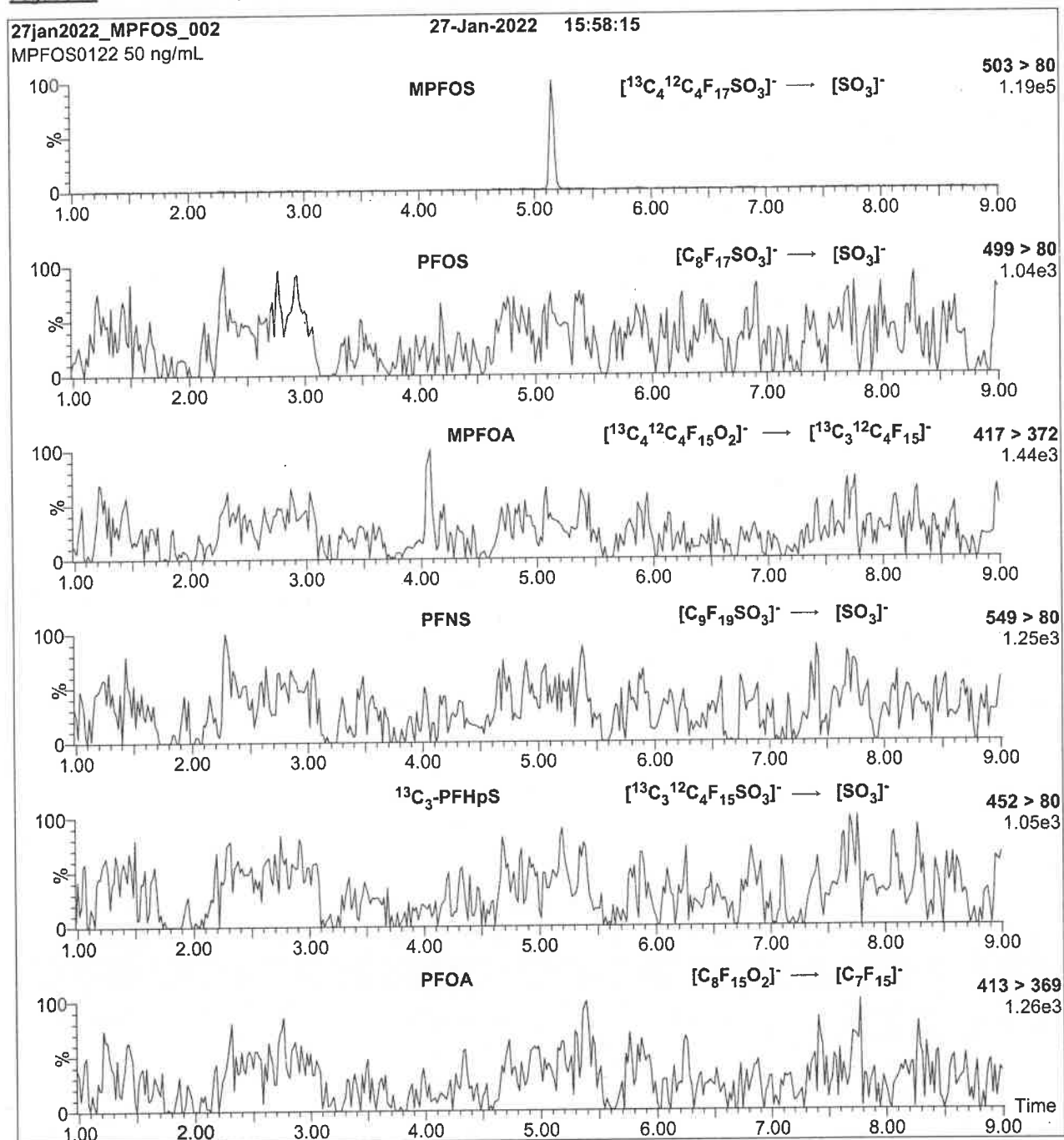
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFOS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFOS)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.27e-3

Collision Energy (eV) = 42

Reagent

LCMPFOS_00066

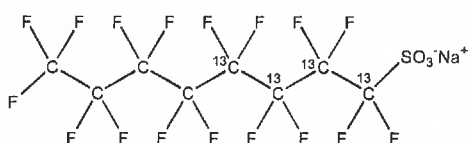


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFOS **LOT NUMBER:** MPFOS0622
COMPOUND: Sodium perfluoro-1-(1,2,3,4-¹³C₄)octanesulfonate

STRUCTURE: **CAS #:** 960315-53-1



MOLECULAR FORMULA:	¹³ C ₄ ¹² C ₄ F ₁₇ SO ₃ Na	MOLECULAR WEIGHT:	526.08
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt) 47.9 ± 2.4 µg/mL (MPFOS acid) 47.8 ± 2.4 µg/mL (MPFOS anion)	SOLVENT(S):	Methanol
CHEMICAL PURITY:	>98%	ISOTOPIC PURITY:	≥99% ¹³ C (1,2,3,4- ¹³ C ₄)
LAST TESTED: (mm/dd/yyyy)	07/05/2022		
EXPIRY DATE: (mm/dd/yyyy)	07/05/2027		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.9% of perfluoro-n-(¹³C₄)octanoic acid (MPFOA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 07/05/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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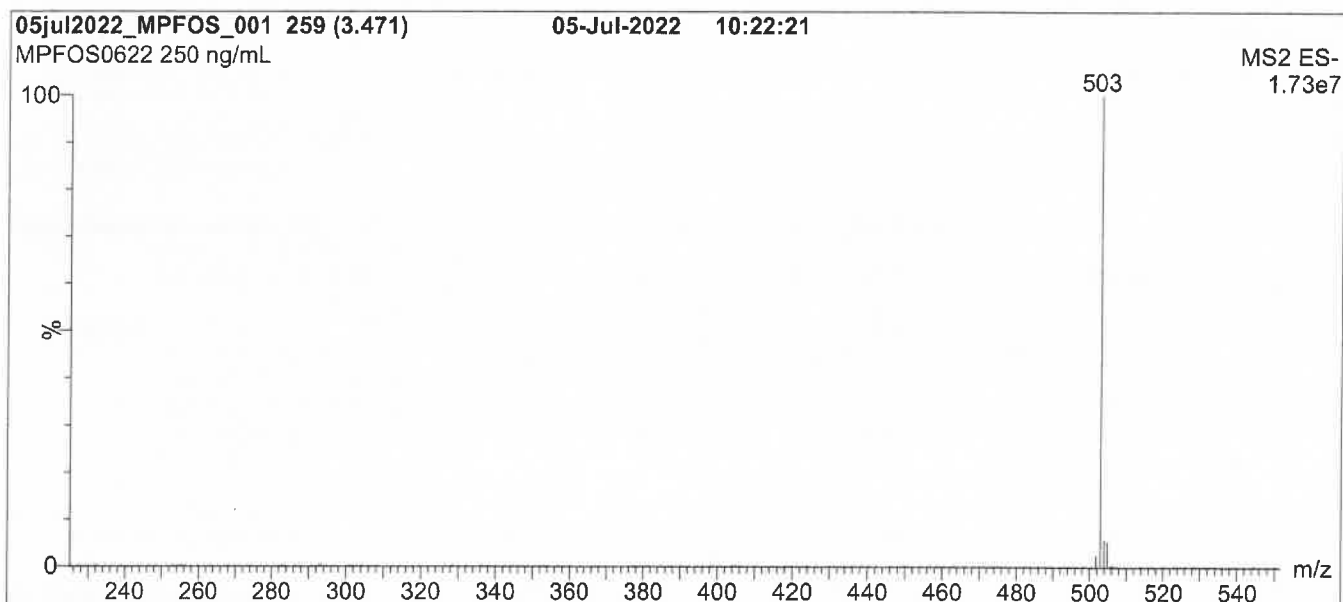
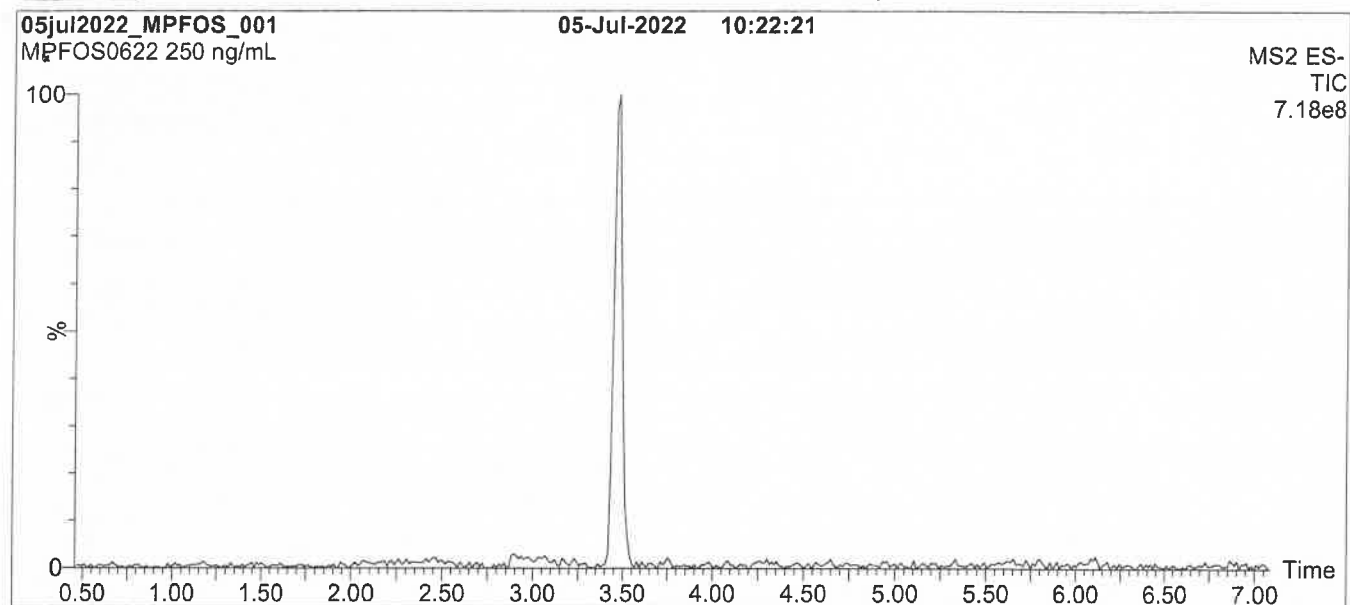
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: MPFOS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

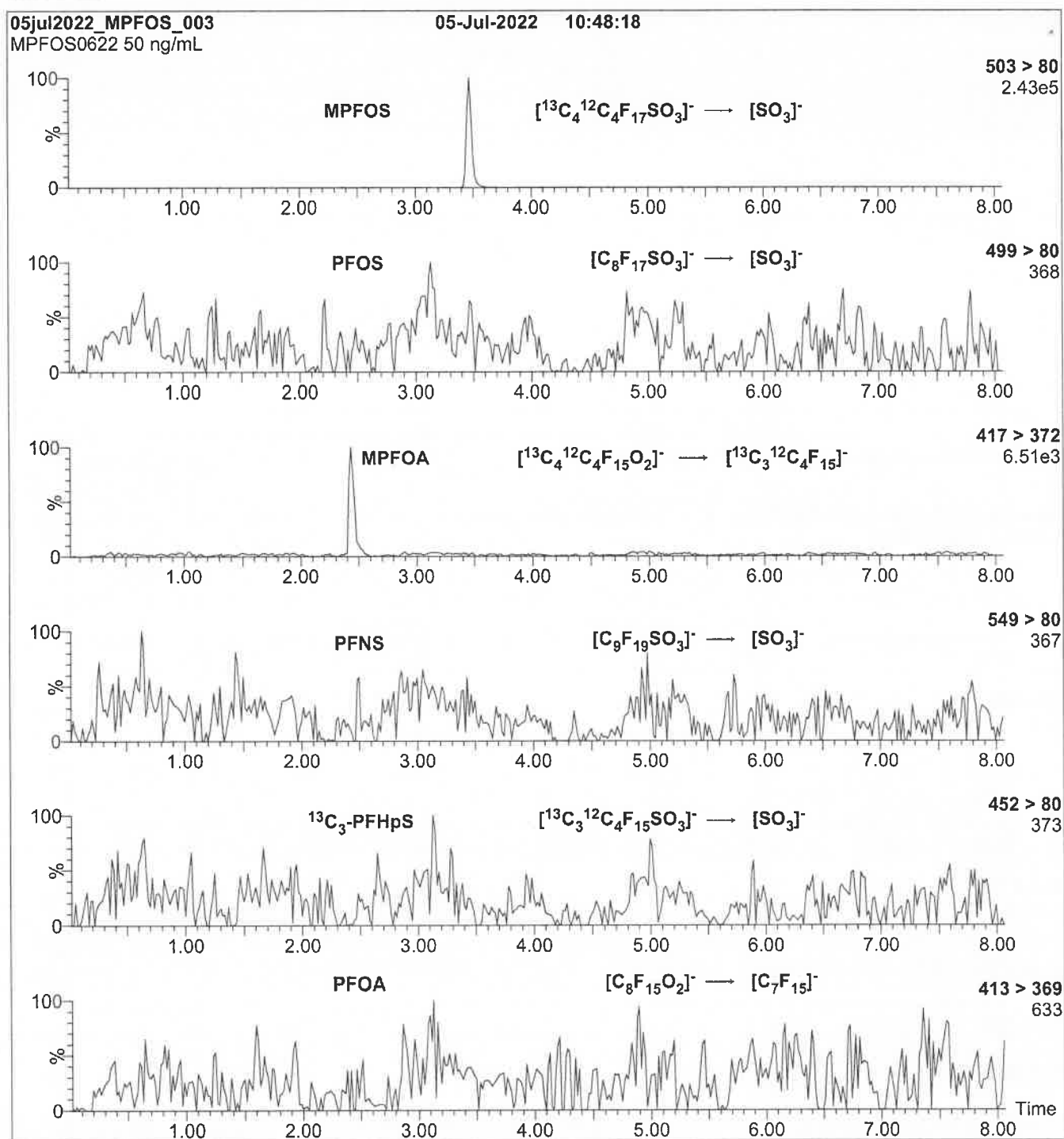
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFOS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFOS)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = $3.18\text{e-}3$

Collision Energy (eV) = 42

Reagent

LCMPFUdA_00051

2979089
ID: LCMFUD_A_00051
Exp: 12/09/26 Prod: 04/19/22
13C2-Perfluoroundecanoic



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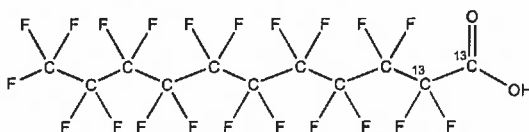
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFUD_A
COMPOUND: Perfluoro-n-(1,2-¹³C₂)undecanoic acid

LOT NUMBER: MPFUD_A1221

STRUCTURE:

CAS #: 960315-51-9



MOLECULAR FORMULA: ¹³C₂¹²C₉HF₂₁O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 566.08
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 12/09/2021
EXPIRY DATE: (mm/dd/yyyy) 12/09/2026

ISOTOPIC PURITY: ≥99% ¹³C
(1,2-¹³C₂)

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Presence of 1-¹³C₁-PFUD_A and 2-¹³C₁-PFUD_A (~0.5% total; see Figure 2) are due to the isotopic purity of the ¹³C-precursor.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 12/20/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

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UNCERTAINTY:

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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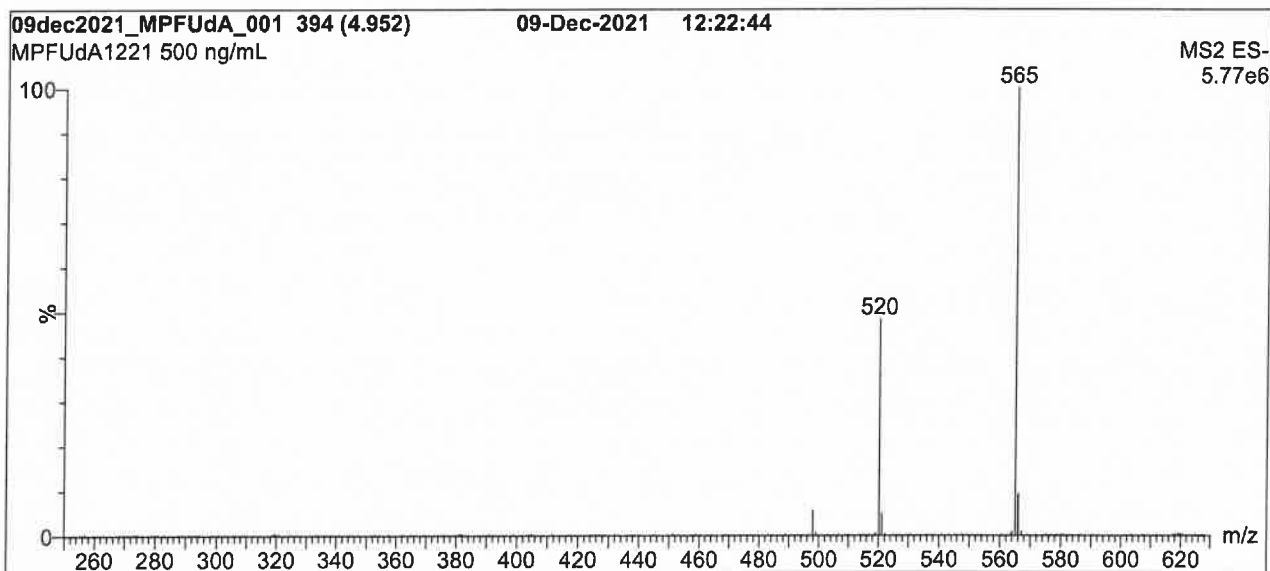
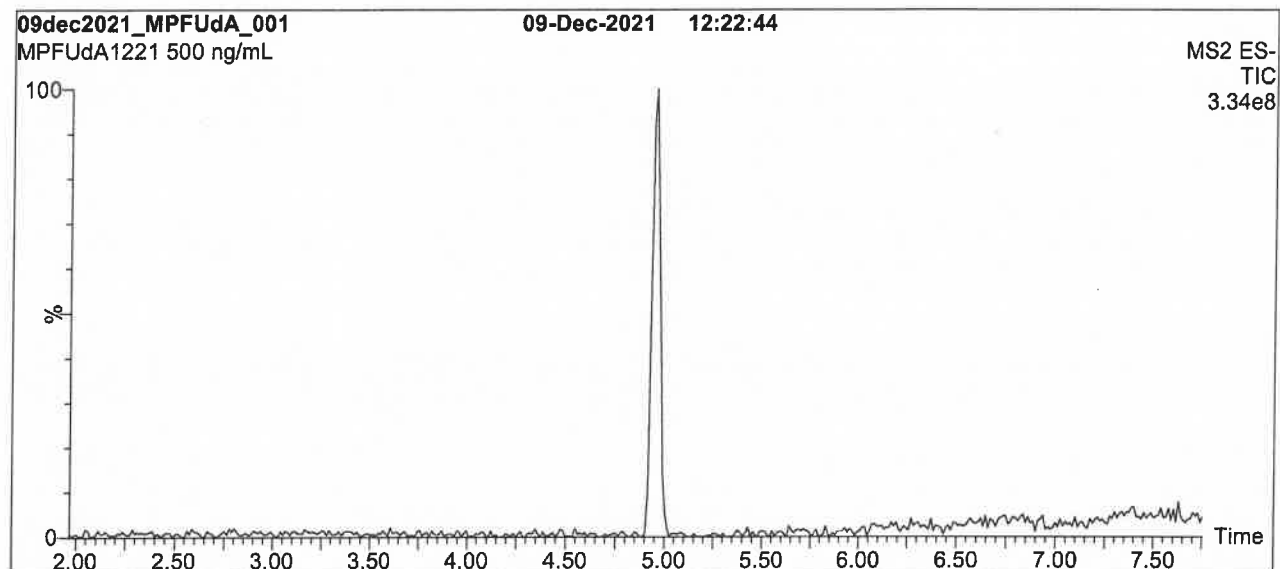
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: MPFUdA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

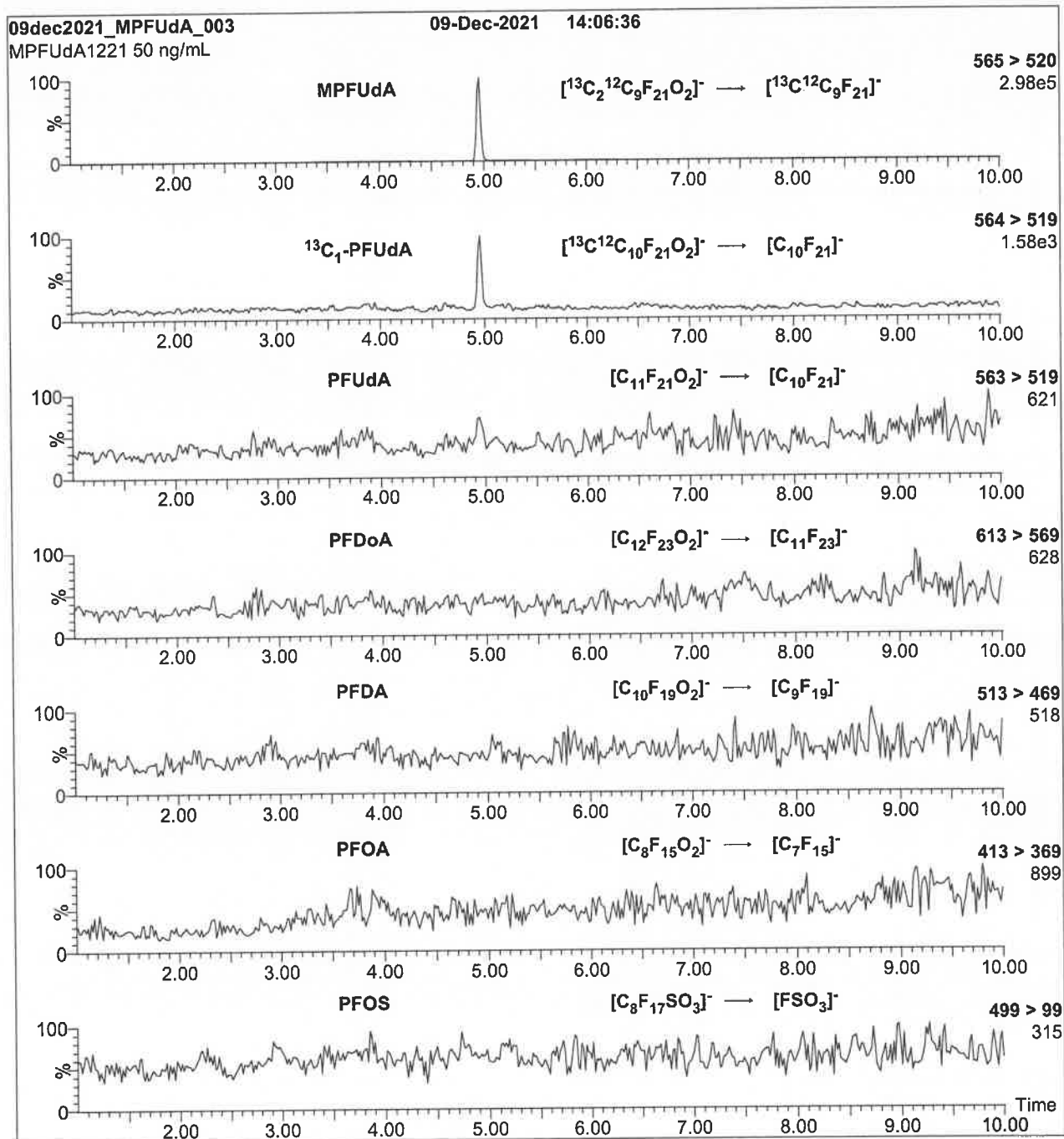
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFudA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFudA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.28e-3

Collision Energy (eV) = 12

Reagent

LCMPFUdA_00052



3179820

ID: LCMPFUdA_00052

Exp: 12/09/26 Prd 3M Opn: 09/14/22

13C2-Perfluoroundecanoic



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

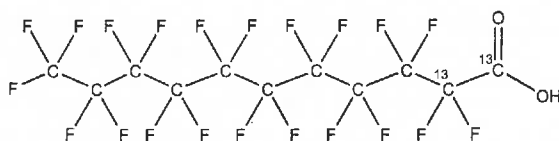
MPFUdA

LOT NUMBER:

MPFUdA0822

COMPOUND:Perfluoro-n-(1,2-¹³C₂)undecanoic acid**STRUCTURE:****CAS #:**

960315-51-9

**MOLECULAR FORMULA:**¹³C₂¹²C₉HF₂₁O₂**MOLECULAR WEIGHT:**

566.08

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:≥99% ¹³C(1,2-¹³C₂)**LAST TESTED:** (mm/dd/yyyy)

08/16/2022

EXPIRY DATE: (mm/dd/yyyy)

08/16/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

08/16/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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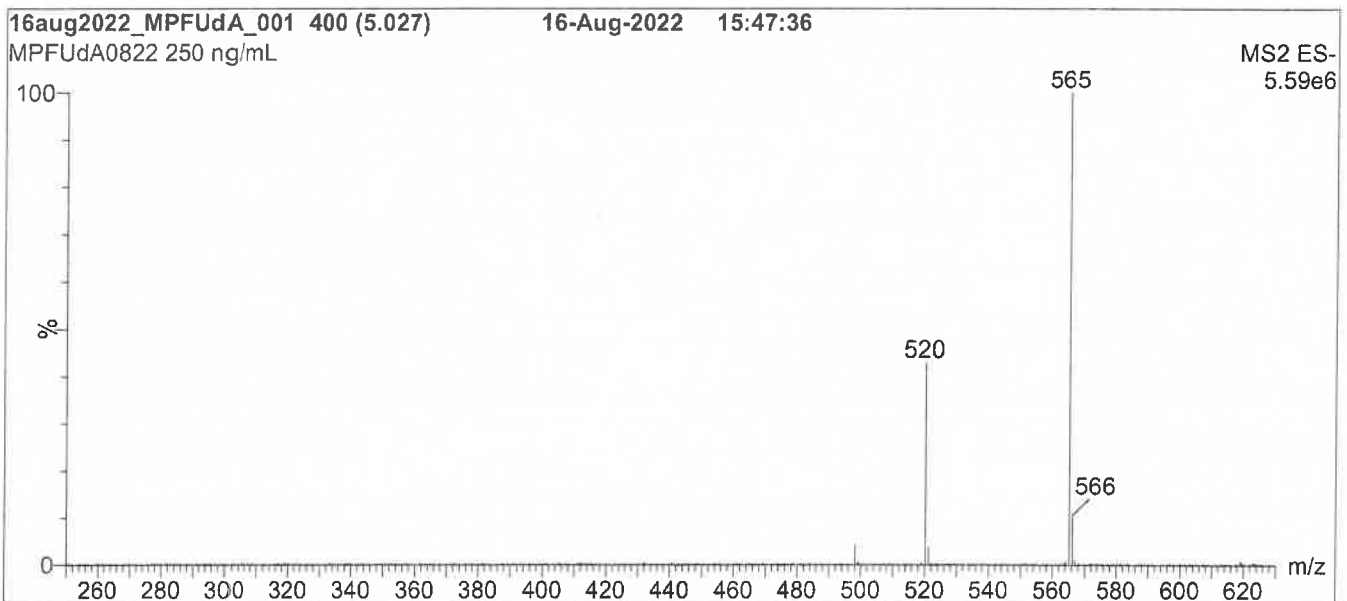
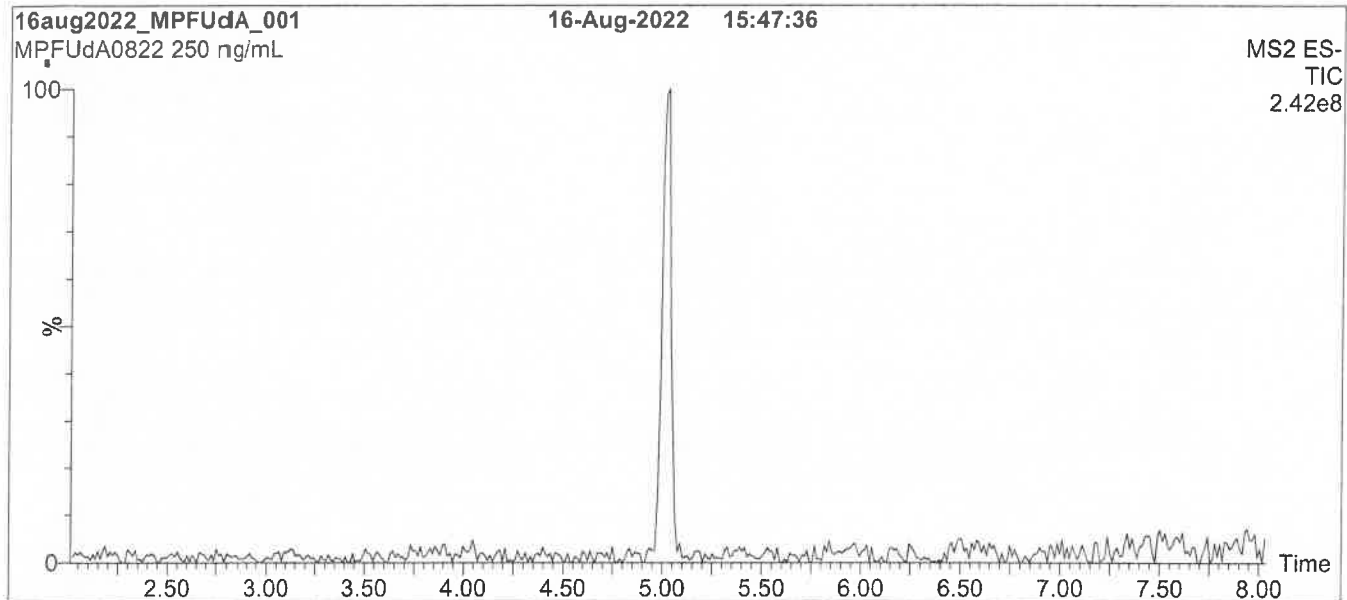
QUALITY MANAGEMENT:

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Figure 1: MPFUdA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

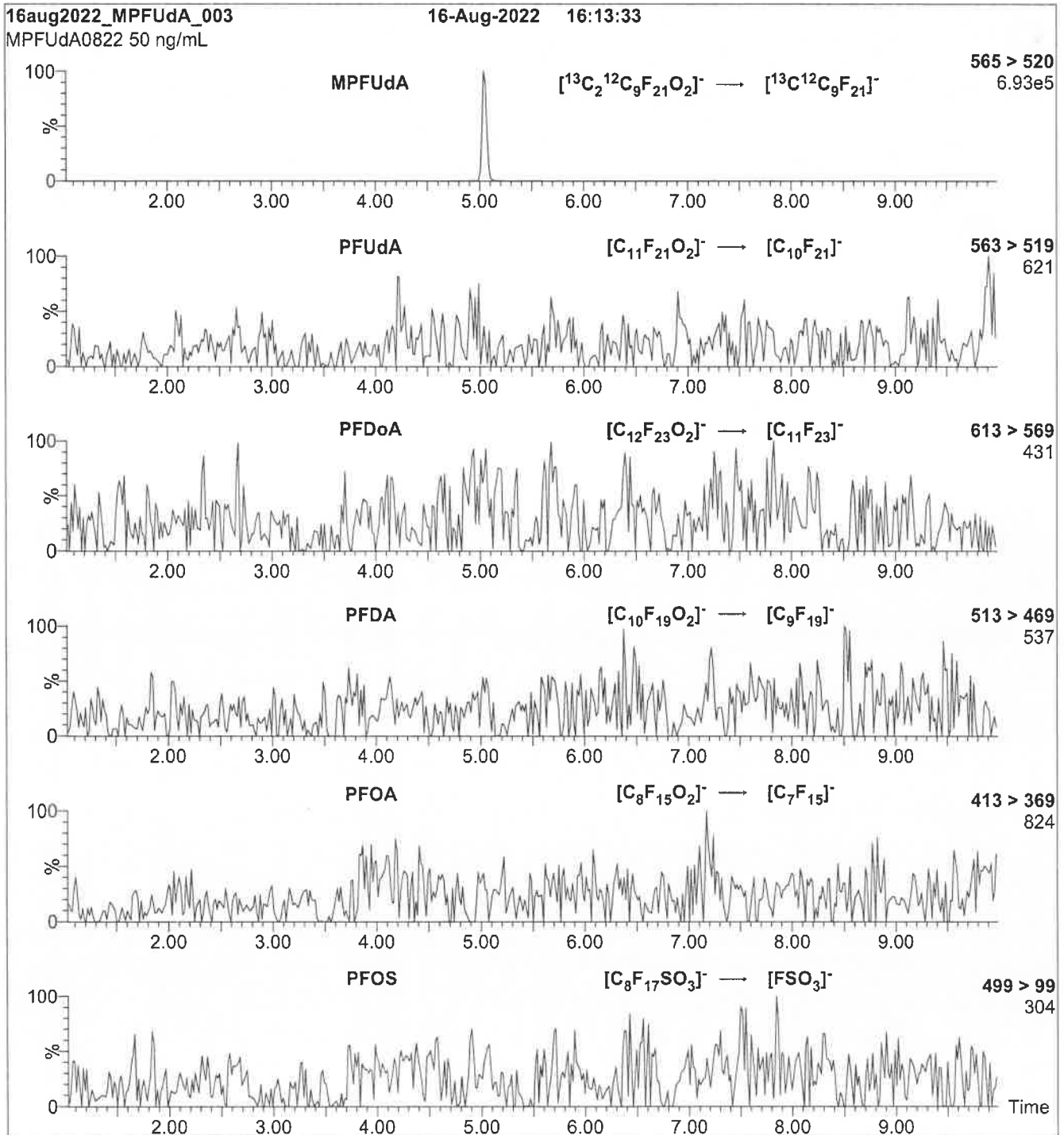
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFUDa; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFUDa)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 12

Reagent

LCN-EtFOSA-M_00025



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CERTIFICATE OF ANALYSIS
DOCUMENTATION

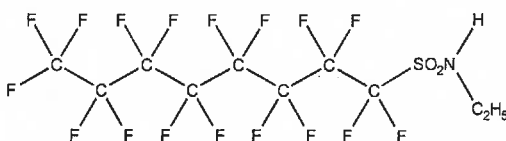
3065126
ID: LCN-EtFOSA-M_00025
Exp: 04/20/27 Pripd: M Opr: 36/16/22
N-EtFOSA-M

PRODUCT CODE: N-EtFOSA-M
COMPOUND: N-ethylperfluoro-1-octanesulfonamide

LOT NUMBER: NEtFOSA0422M

STRUCTURE:

CAS #: 4151-50-2



MOLECULAR FORMULA: $C_{10}H_6F_{17}NO_2S$
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 04/20/2022
EXPIRY DATE: (mm/dd/yyyy) 04/20/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 527.20
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 04/29/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

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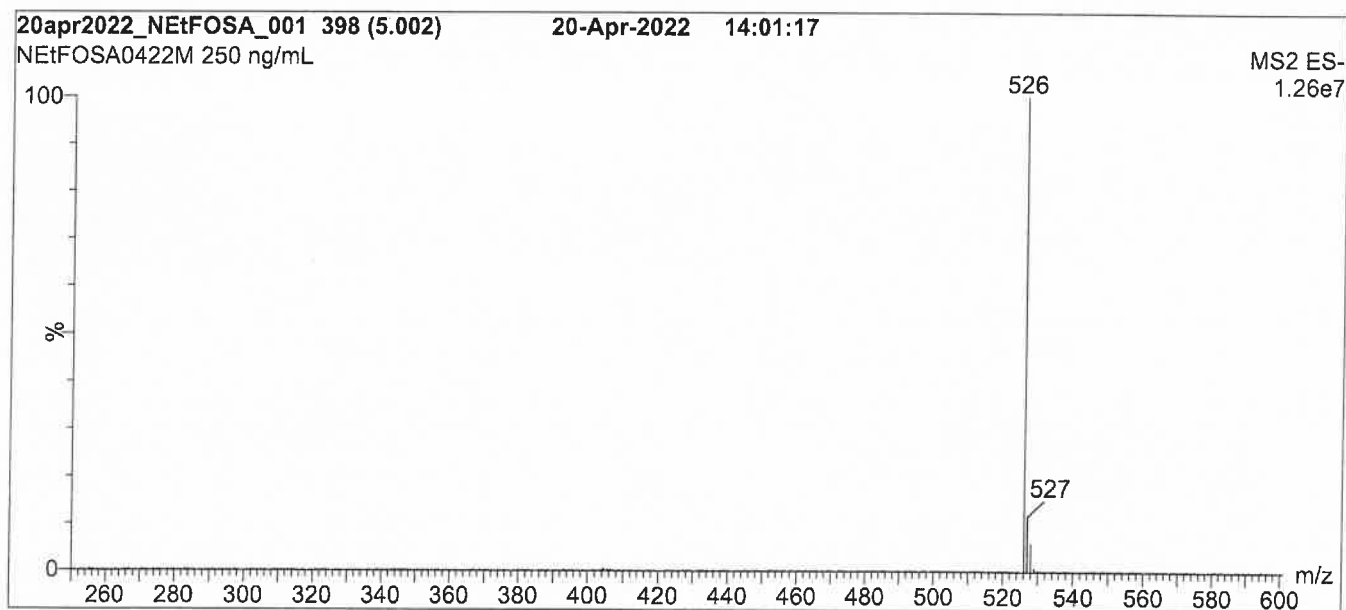
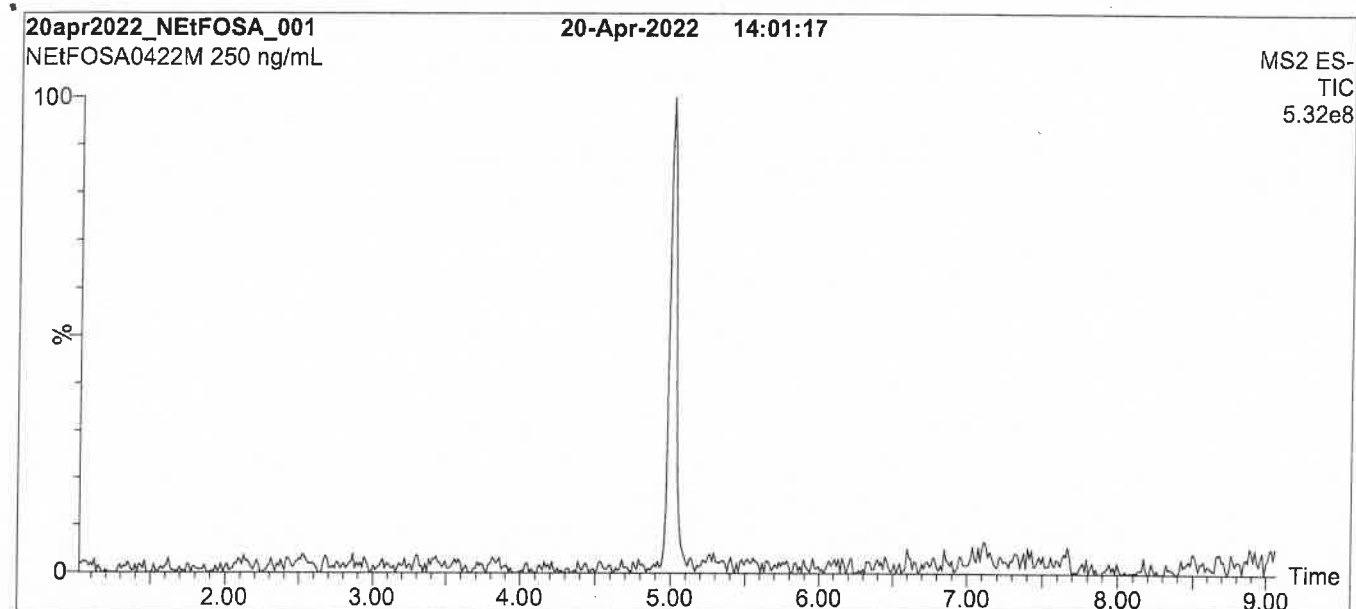
QUALITY MANAGEMENT:

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Figure 1: N-EtFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

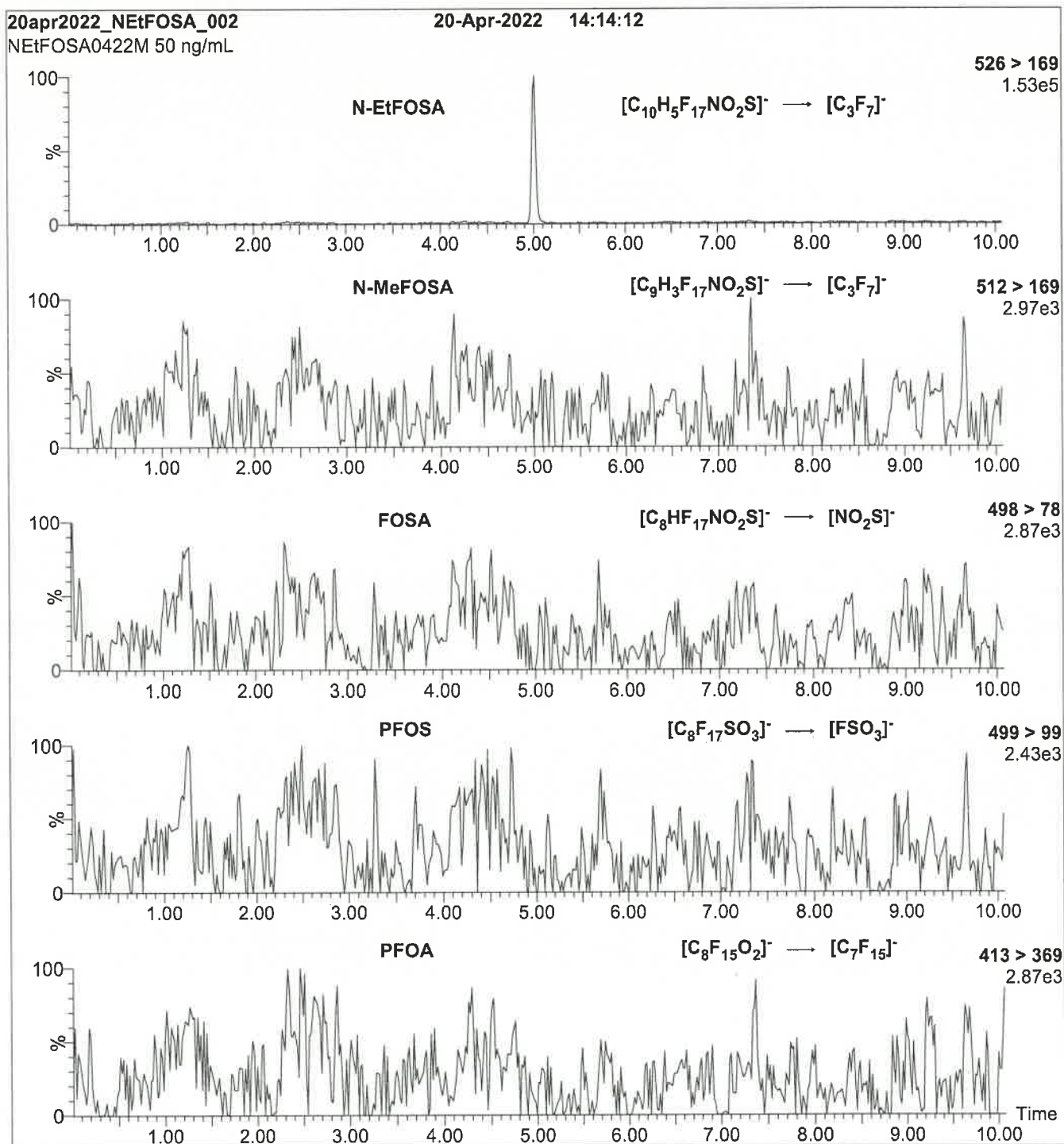
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (N-EtFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.20e-3

Collision Energy (eV) = 24

Reagent

LCN-EtFOSA-M2_00002



Product Name: N-ETHYLPERFLUOROOCTANESULFONAMIDE (90% CP)
(Isotopic Label & Enrichment Specification) UNLABELED 100 UG/ML IN METHANOL

Lot Number: SDIL-031

Catalog Number: ULM-10780-S

Product Information

Chemical Purity Specification: $\geq 90\%$

MW*: 527.2
* For isotopically labeled compounds, MW listed is for the fully enriched product.

Labeled CAS Number: NA

Unlabeled CAS Number: 4151-50-2

Chemical Formula: C₁₀H₆F₁₇NO₂S

Storage: Store at room temperature away from light and moisture.
Stability: See storage and expiration date.

Intended Use: For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Marina Klionsky

Marina Klionsky, Quality Review

Quality Control Tests and Results

QC Release Date	1/17/2020
Expiration Date	1/17/2025
Concentration Based on Gravimetry	100.0 \pm 1.2 μ g/mL (k=2)
Chemical Purity of Neat Material(s)	94%

Reagent

LCN-EtFOSE-M_00018



3064919

ID: LCN-EtFOSE-M_00018

Exp:09/23/26 Prip:PCY Opm:06/16/22

N-EtFOSE-M

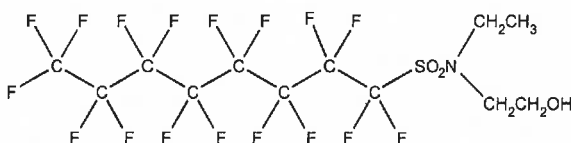


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSE-M **LOT NUMBER:** NEtFOSE0921M
COMPOUND: 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol

STRUCTURE: **CAS #:** 1691-99-2



MOLECULAR FORMULA: $C_{12}H_{10}F_{17}NO_3S$ **MOLECULAR WEIGHT:** 571.25
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/22/2021 (HRGC/LRMS)
09/23/2021 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 09/23/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 10/20/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

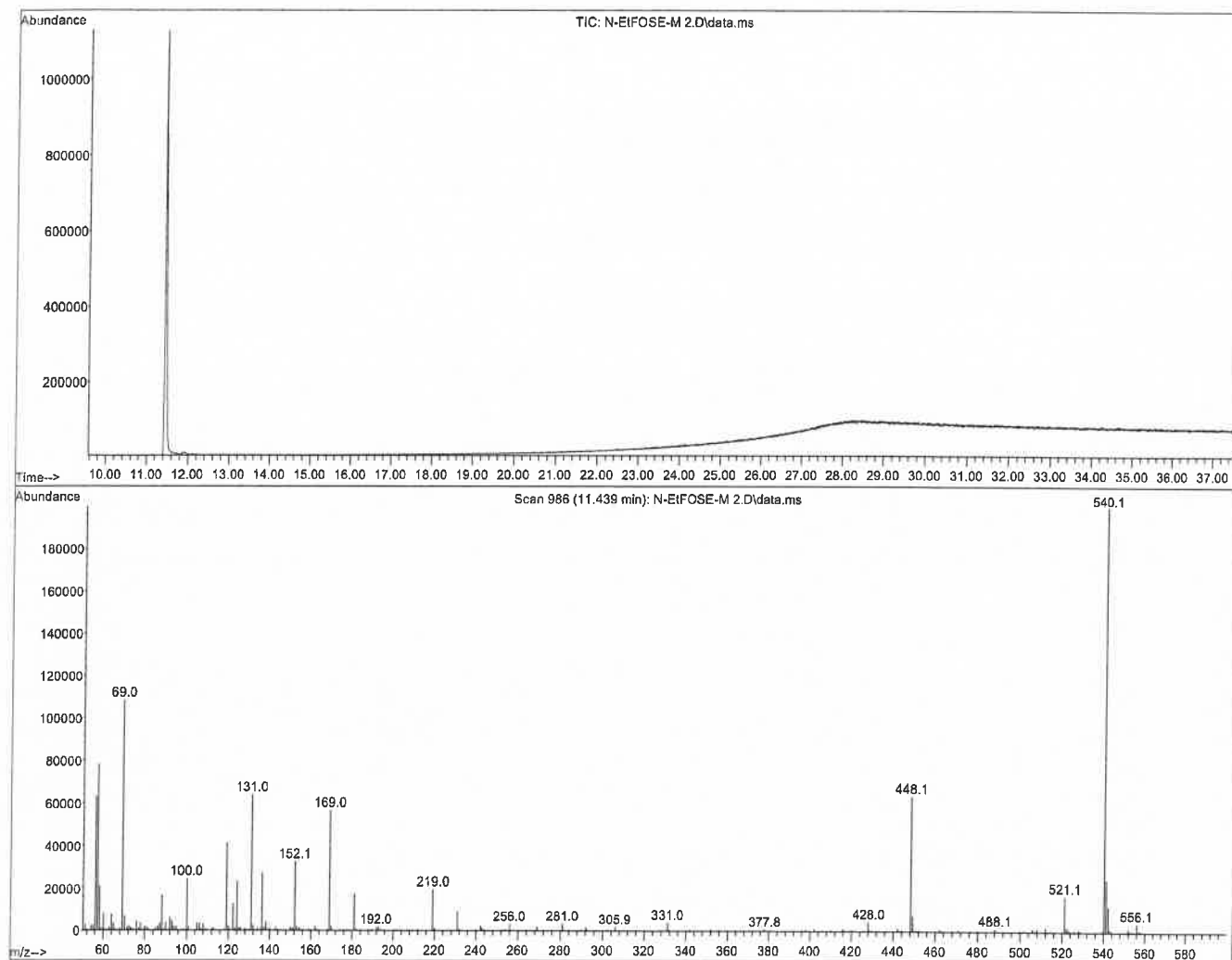
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: N-EtFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)



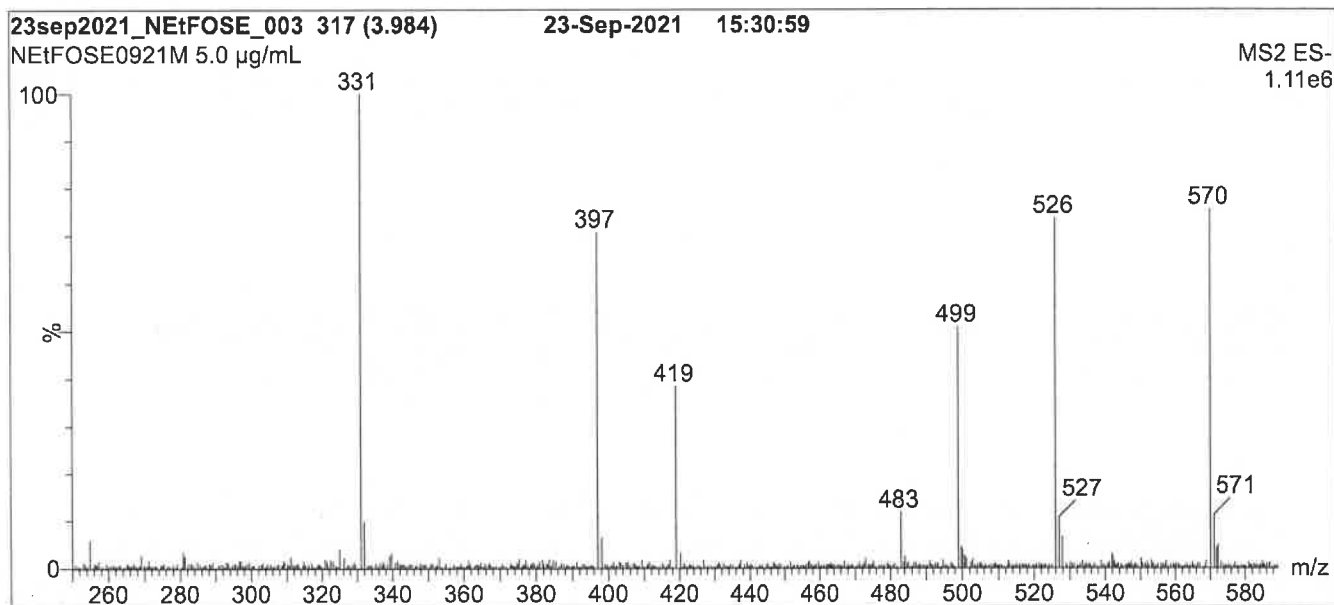
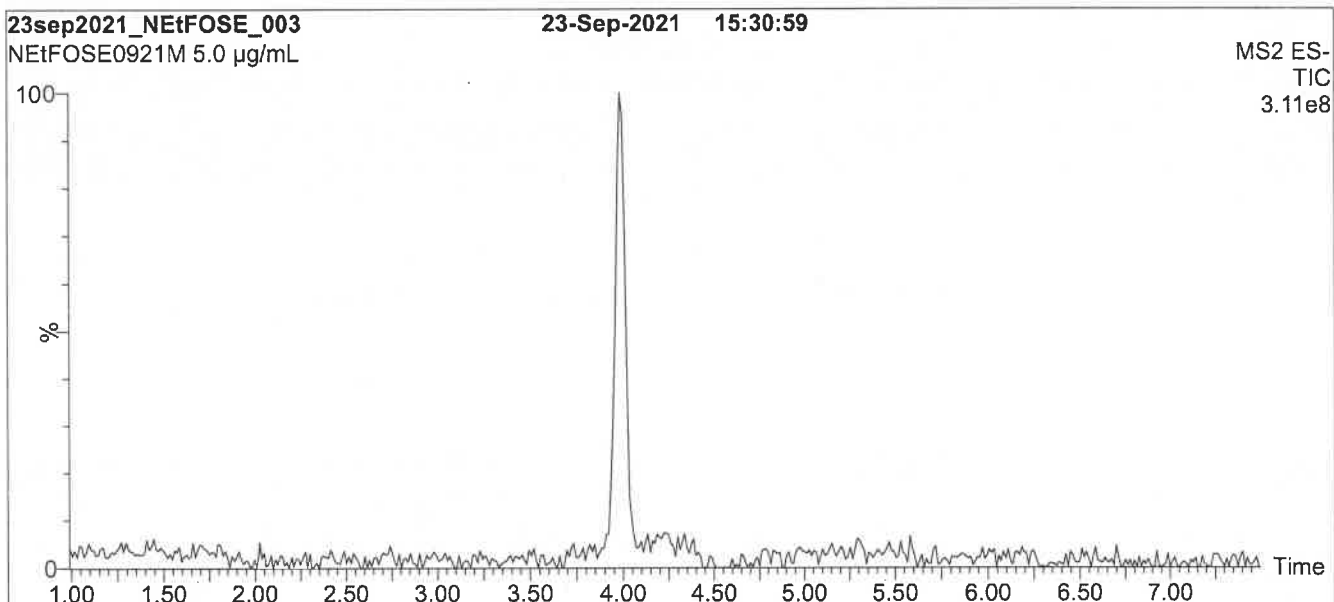
Conditions for Figure 1:

Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column: 30 m DB-5 (0.25 mm id, 0.25 μ m film thickness) Agilent J&W
Flow: Constant at 1 mL/min
Injector: 250°C (Splitless Injection)
Oven: 100°C (5 min)
10°C/min to 325°C
325°C (10 min)
Ionization: EI+
Detector: 230°C
Full Scan (50-1000 amu)

Figure 2: N-EtFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 70% MeOH

Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

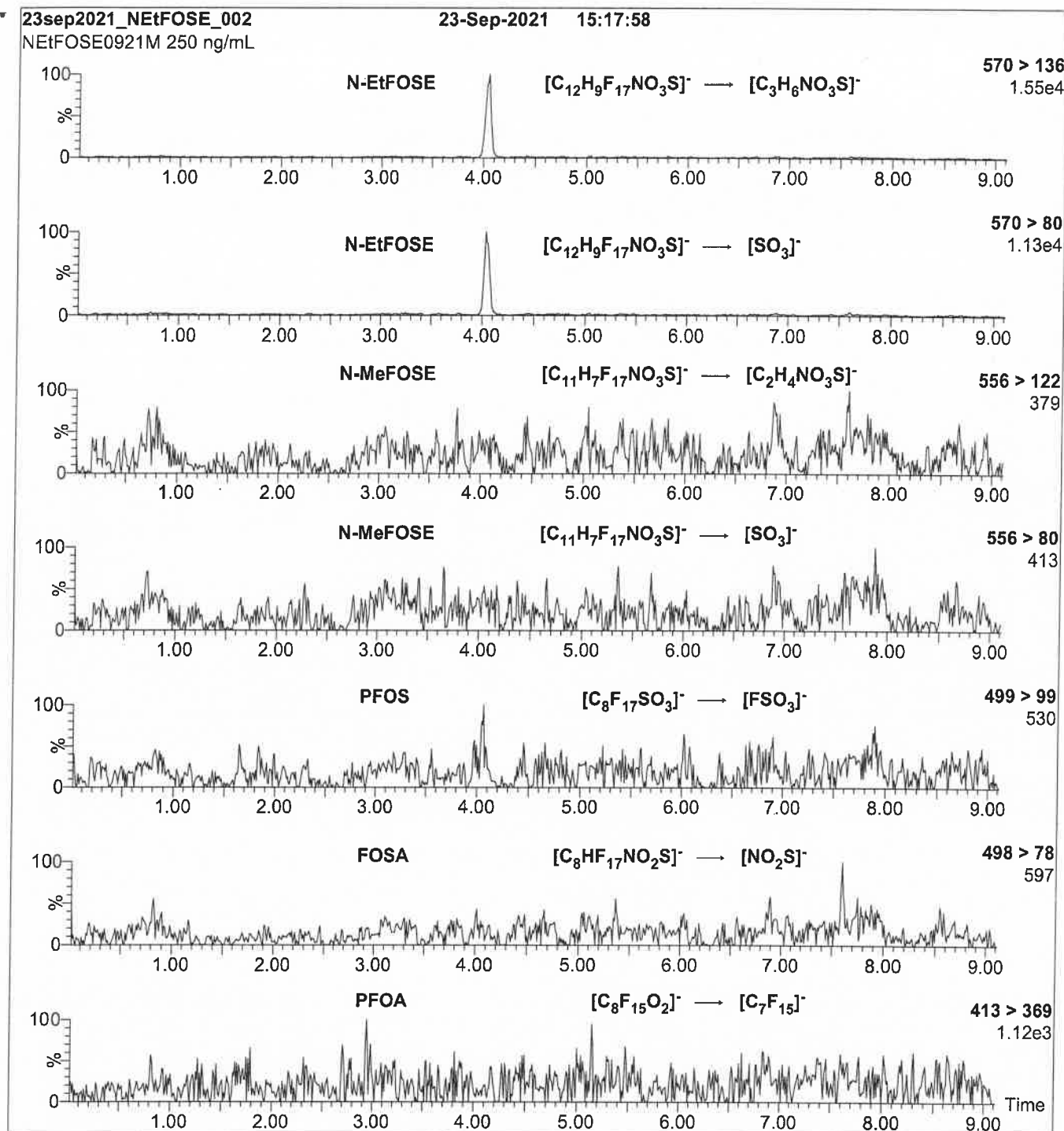
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 65.00

Desolvation Temperature (°C) = 450

Desolvation Gas Flow (L/hr) = 1000

Figure 3: N-EtFOSE-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 3:

Injection: On-column (N-EtFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.14e-3

Collision Energy (eV) = 32

Reagent

LCN-EtFOSE-M2_00004



2981324

ID: LCN-ETFOSE-M2_00004

Exp: 09/30/25 Prpd: M Opi: 04/07/22

N-ETFOSE-M SECONDARY SOUF

Product Name: N-ETHYLPERFLUOROOCTANESULFONAMIDOETHANOL(N-ETFOSE)
(Isotopic Label & Enrichment Specification) UNLABELED (MIX OF ISOMERS) 50 UG/ML IN METHANOL

Lot Number: SEAA-007

Catalog Number: ULM-11036-S

Product Information

Chemical Purity Specification: $\geq 98\%$

MW*: 571.25

* For isotopically labeled compounds, MW listed is for the fully enriched product.

Labeled CAS Number: NA

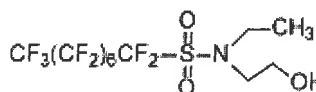
Unlabeled CAS Number: 1691-99-2

Chemical Formula: C₁₂H₁₀F₁₇NO₃S

Storage: Store refrigerated (-5° C to 5° C). Protect from light.

Stability: See storage and expiration date.

Intended Use: For Research Use Only. Not for use in diagnostic procedures.



Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Marina Klionsky

Marina Klionsky, Quality Review

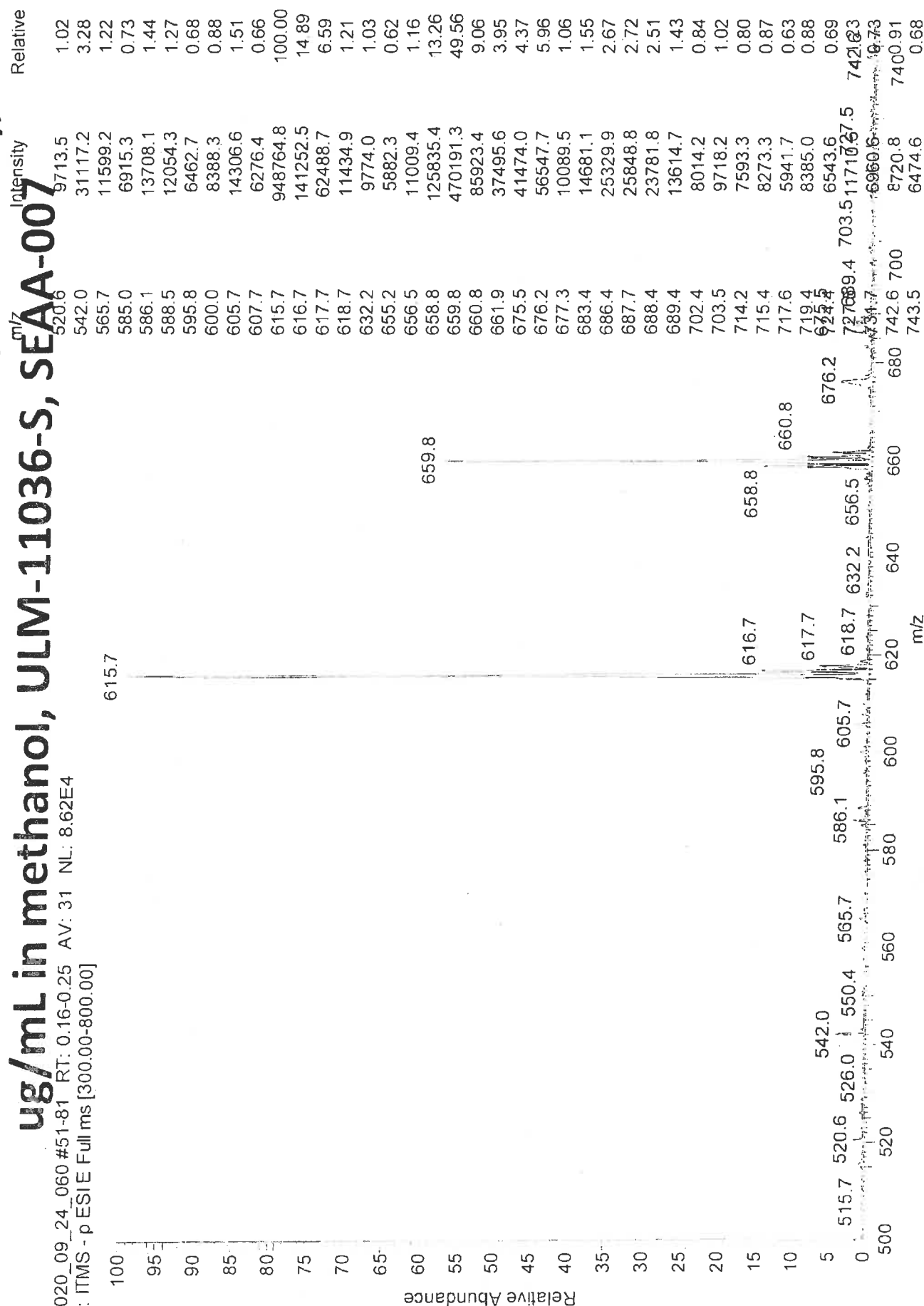
Quality Control Tests and Results

QC Release Date	9/30/2020
Expiration Date	9/30/2025
Concentration Based on Gravimetry	50.0 \pm 0.5 μ g/mL (k=2)
Chemical Purity of Neat Material(s)	100.0%

Ethylperfluorooctanesulfonamidoethanol (N-ETFOSE), 50

ug/mL in methanol, ULM-11036-S, SEAA-007

2020_09_24_060 #51-81 RT: 0.16-0.25 AV: 31 NL: 8.62E4
T: ITMS - p ESI E Full ms [300.00-800.00]



Reagent

LCN-MeFOSA-M_00027



3065117

ID: LCN-MeFOSA-M_00027

Exp: 02/28/27 Pdp: IM Opm: 06/16/22
N-MeFOSA-M

WELLINGTON LABORATORIES

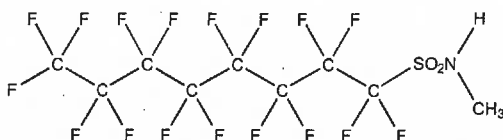
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M
COMPOUND: N-methylperfluoro-1-octanesulfonamide

LOT NUMBER: NMeFOSA0222M

STRUCTURE:

CAS #: 31506-32-8



MOLECULAR FORMULA: $C_9H_4F_{17}NO_2S$
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/28/2022
EXPIRY DATE: (mm/dd/yyyy) 02/28/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 513.17
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 03/10/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

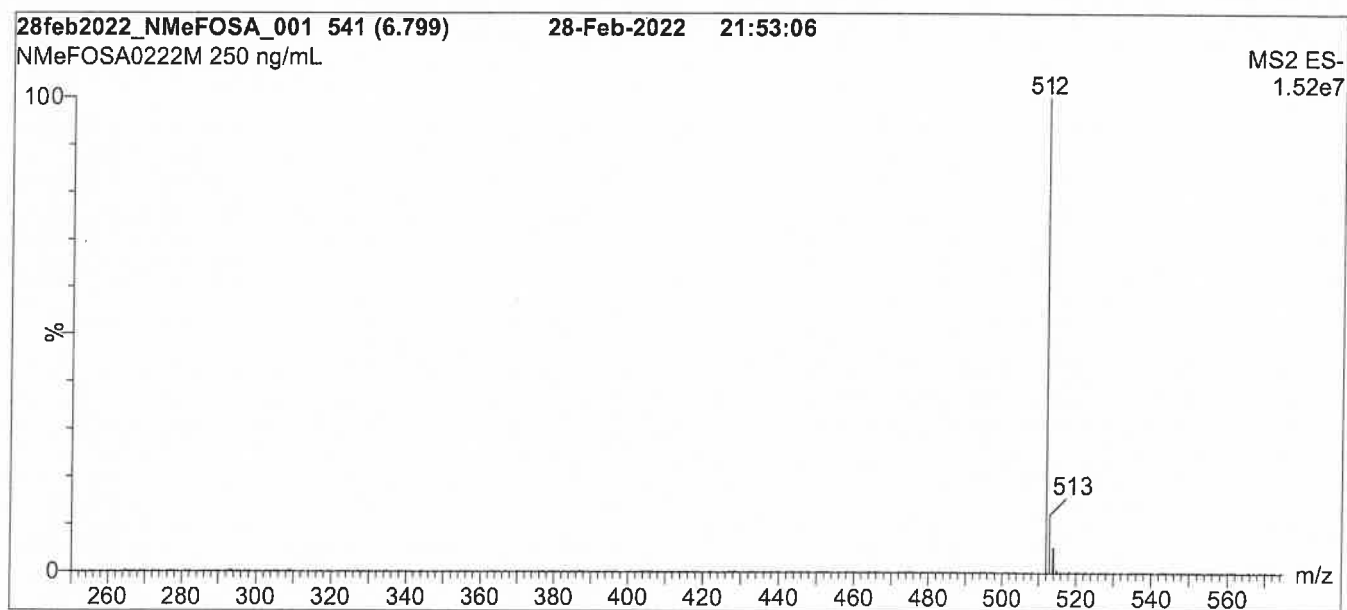
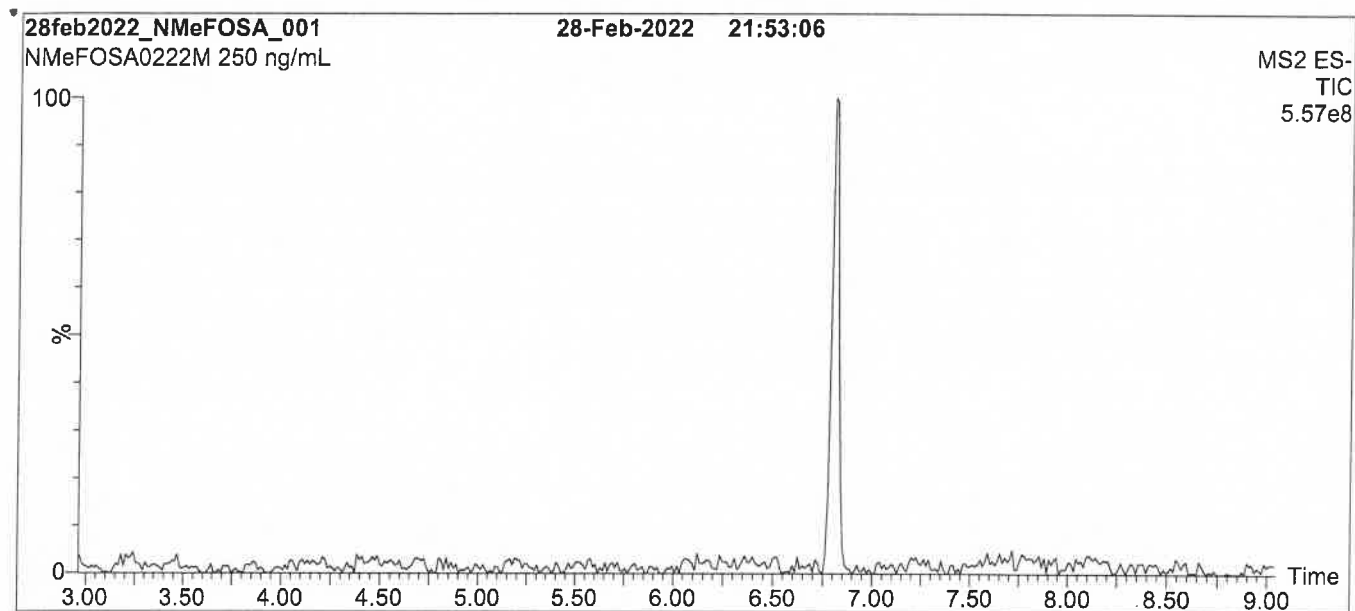
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: N-MeFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

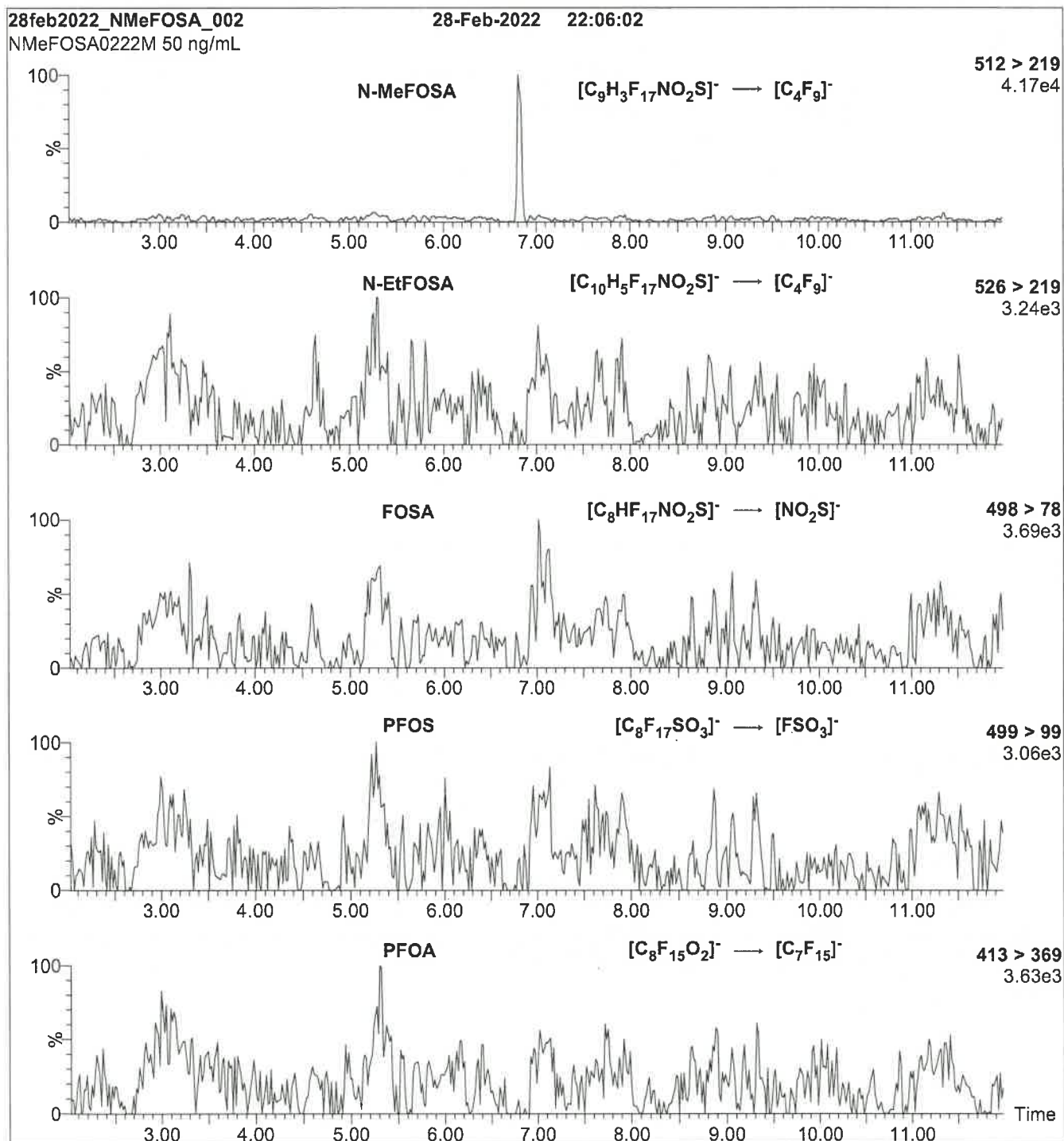
Capillary Voltage (kV) = 1.00

Cone Voltage (V) = 44.00

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (N-MeFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.33e-3

Collision Energy (eV) = 24

Reagent

LCN-MeFOSA-M2_00001



Product Name: N-METHYLPERFLUOROOCTANESULFONAMIDE
(Isotopic Label & Enrichment Specification) UNLABELED 100 UG/ML IN METHANOL

Lot Number: SDIL-029

Catalog Number: ULM-10779-S

Product Information

Chemical Purity Specification: $\geq 98\%$

MW*: 513.17
* For isotopically labeled compounds, MW listed is for the fully enriched product.

Labeled CAS Number: NA

Unlabeled CAS Number: 31506-32-8

Chemical Formula: C₉H₄F₁₇NO₂S

Storage: Store at room temperature away from light and moisture.

Stability: See storage and expiration date.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

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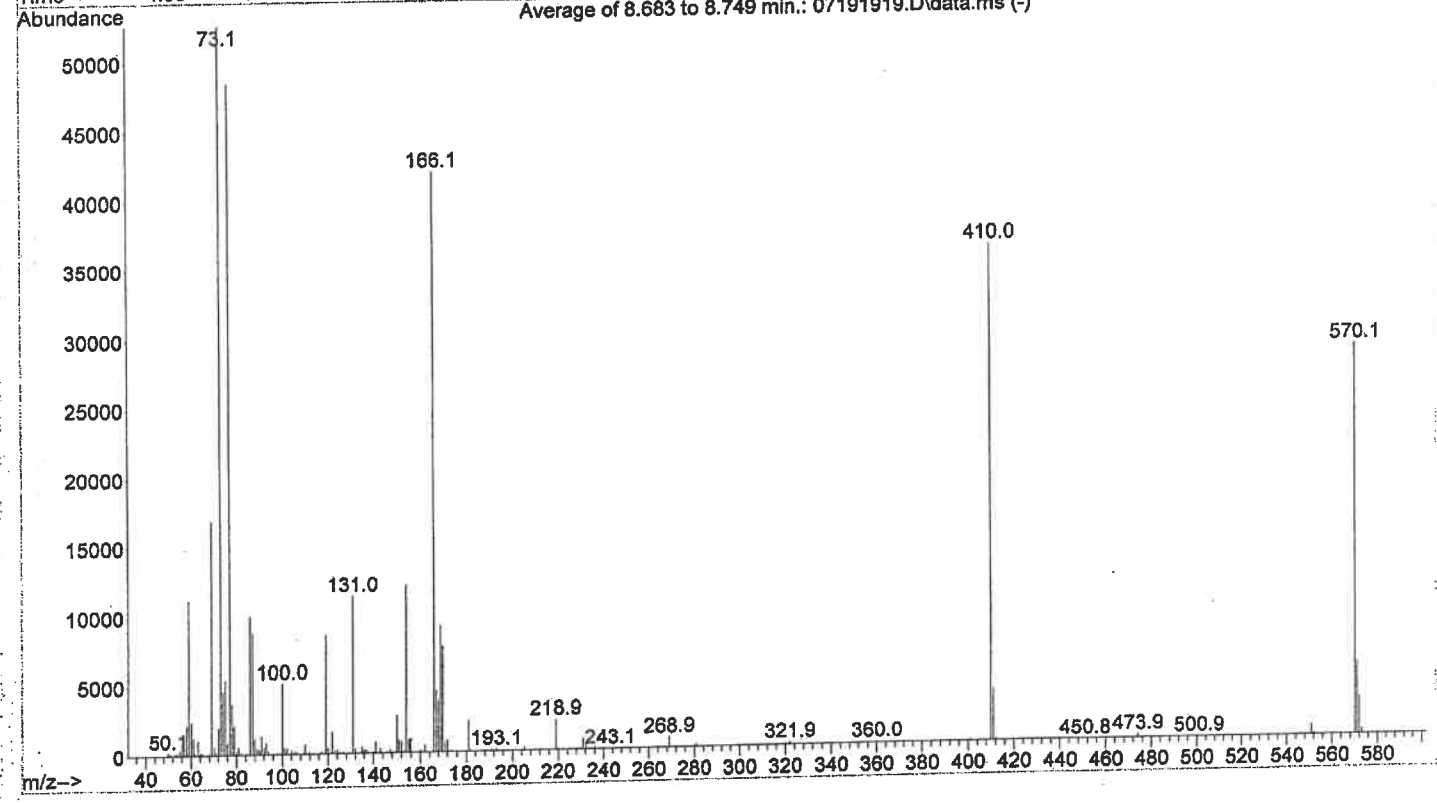
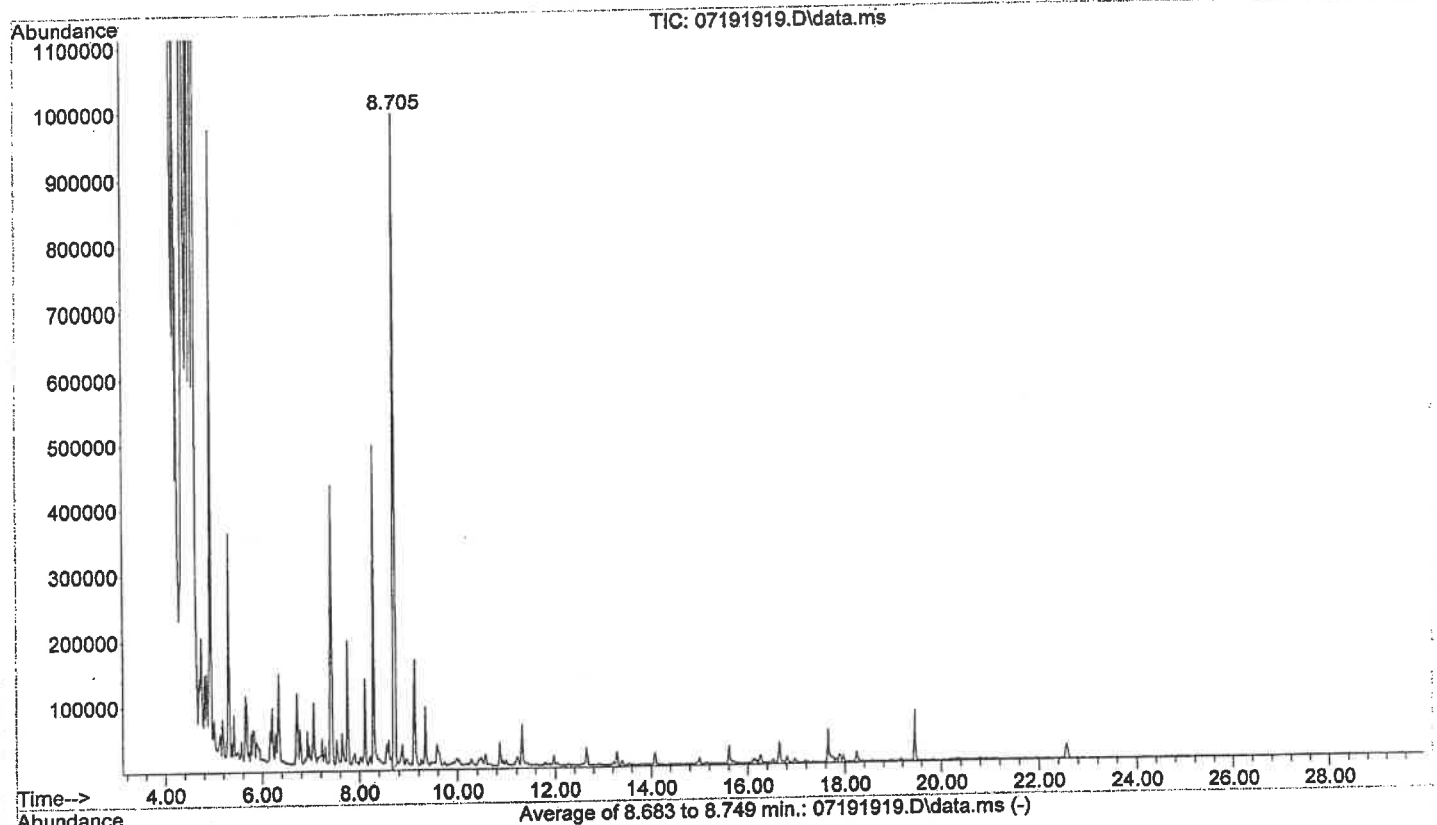
Approved by: Marina Klionsky

Marina Klionsky, Quality Review

Quality Control Tests and Results

QC Release Date	7/22/2019
Expiration Date	7/22/2024
Concentration Based on Gravimetry	100.0 \pm 1.2 μ g/mL (k=2)
Chemical Purity of Neat Material(s)	99.0%

File :D:\MassHunter\GCMS\1\data\071919\07191919.D
Operator : TS
Acquired : 19 Jul 2019 18:53 using AcqMethod DAVE2 EI Splitless_dual.M
Instrument : 5 977A GCMSD
Sample Name: ULM-10779-S SDIL-029, MA QC-TM-16
Misc Info : N-methylperfluorooctanesulfonamide
Vial Number: 82



Reagent

LCN-MeFOSE-M_00021



3065149

ID: LCN-MeFOSE-M_00021

Exp:05/13/27 Prpd:06/16/22

N-MeFOSE-M



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-MeFOSE-M

LOT NUMBER:

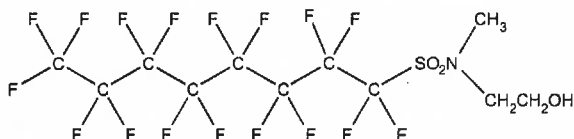
NMeFOSE0522M

COMPOUND:

2-(N-methylperfluoro-1-octanesulfonamido)ethanol

STRUCTURE:**CAS #:**

24448-09-7

**MOLECULAR FORMULA:** $C_{11}H_8F_{17}NO_3S$ **MOLECULAR WEIGHT:**

557.22

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/13/2022 (HRGC/LRMS)

05/13/2022 (LC/MS)

EXPIRY DATE: (mm/dd/yyyy)

05/13/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS Data (Full Scan and Mass Spectrum)

Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 06/14/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA

519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

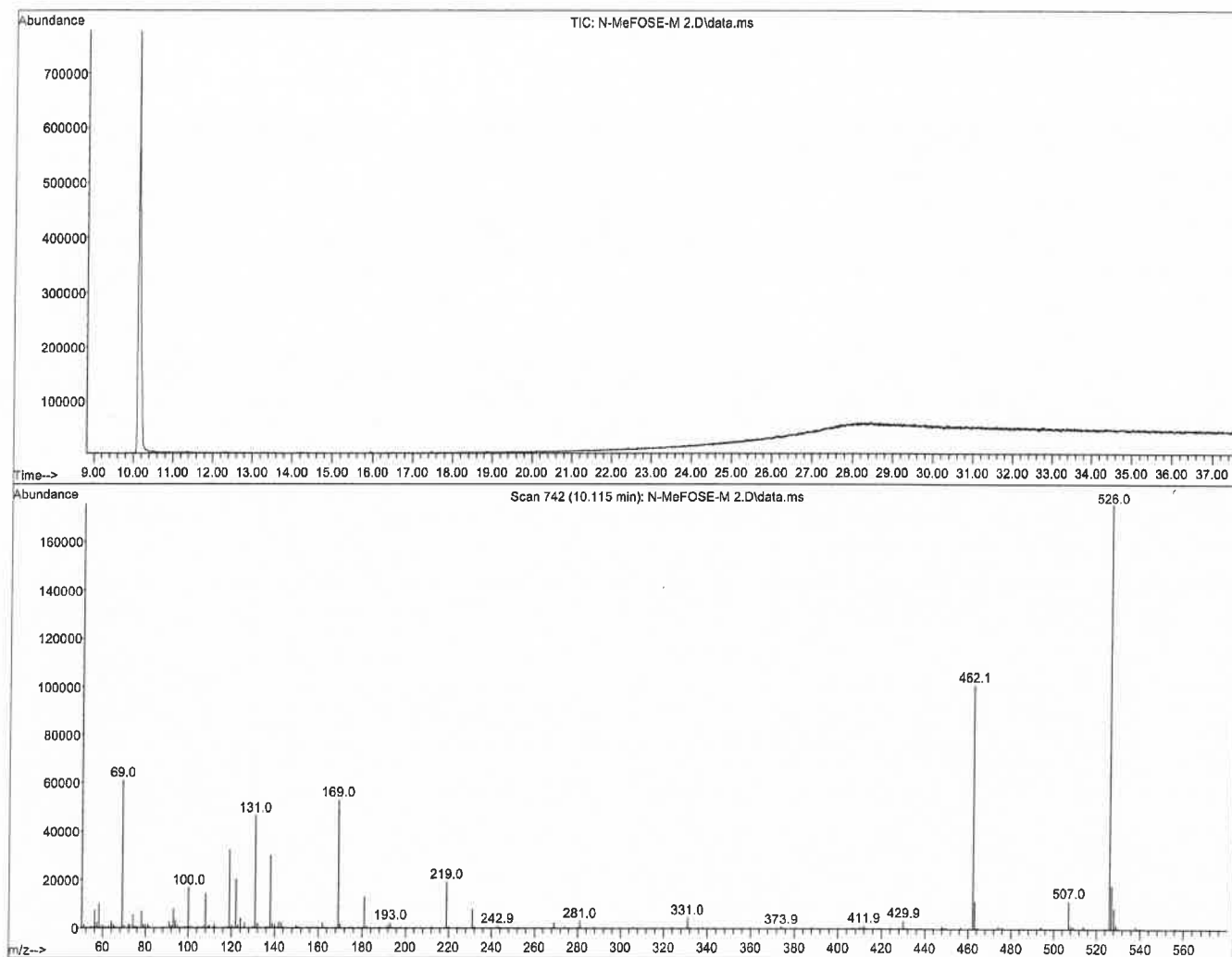
QUALITY MANAGEMENT:

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For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: N-MeFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Agilent 7890A HRGC

Agilent 5975C MSD

Chromatographic Conditions:

Column: 30 m DB-5 (0.25 mm id, 0.25 μ m film thickness) Agilent J&W

Flow: Constant at 1.0 mL/min

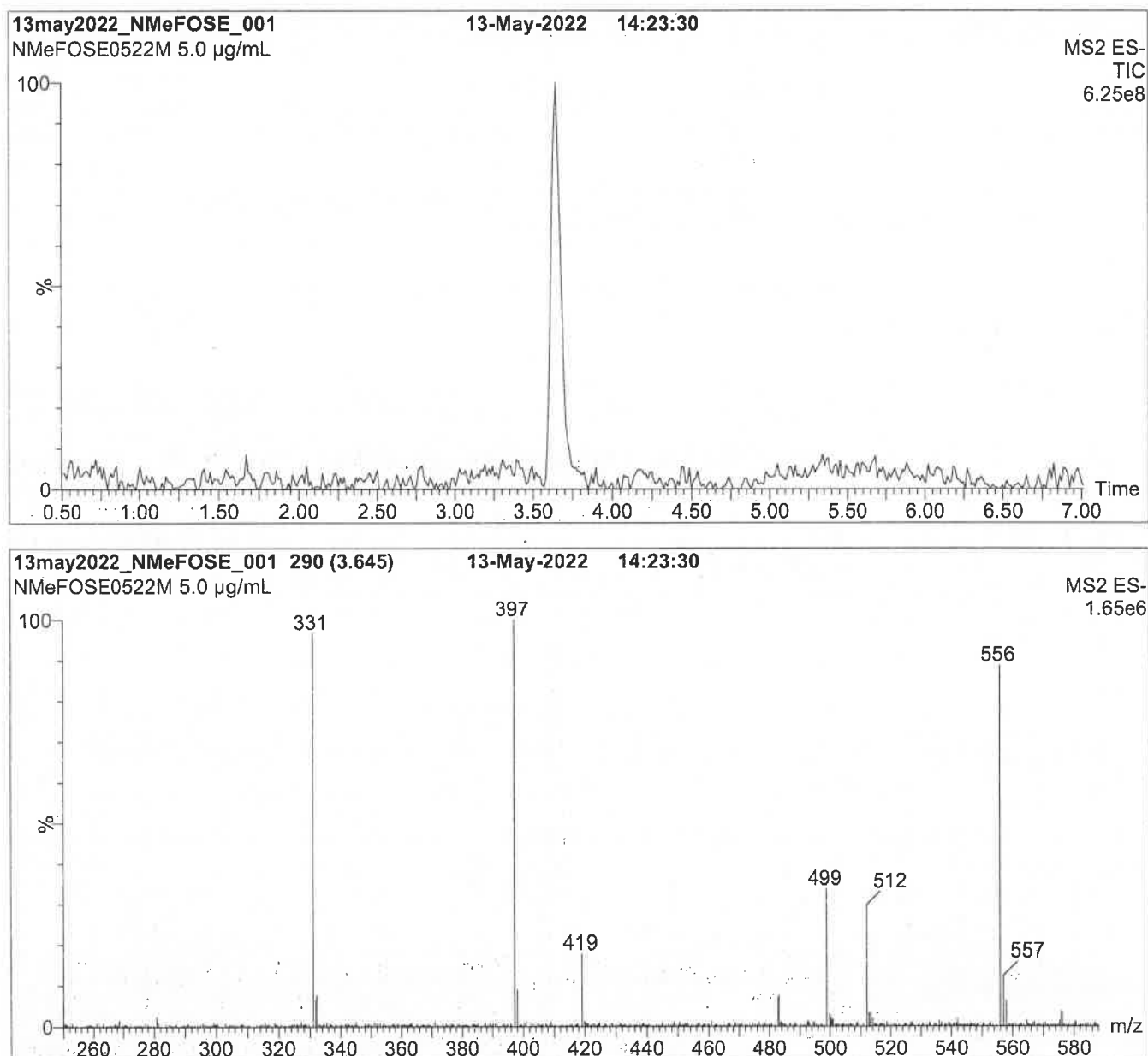
Injector: 250°C (Splitless Injection)

Oven: 100°C (5 min)
10°C/min to 310°C
310°C (10 min)

Ionization: EI+

Detector: 230°C
Full Scan (50-1000 amu)

Figure 2: N-MeFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 µm, 2.1 x 100 mm

Mobility phase: Gradient

Start: 30% H₂O / 70% MeOH

Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.

Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

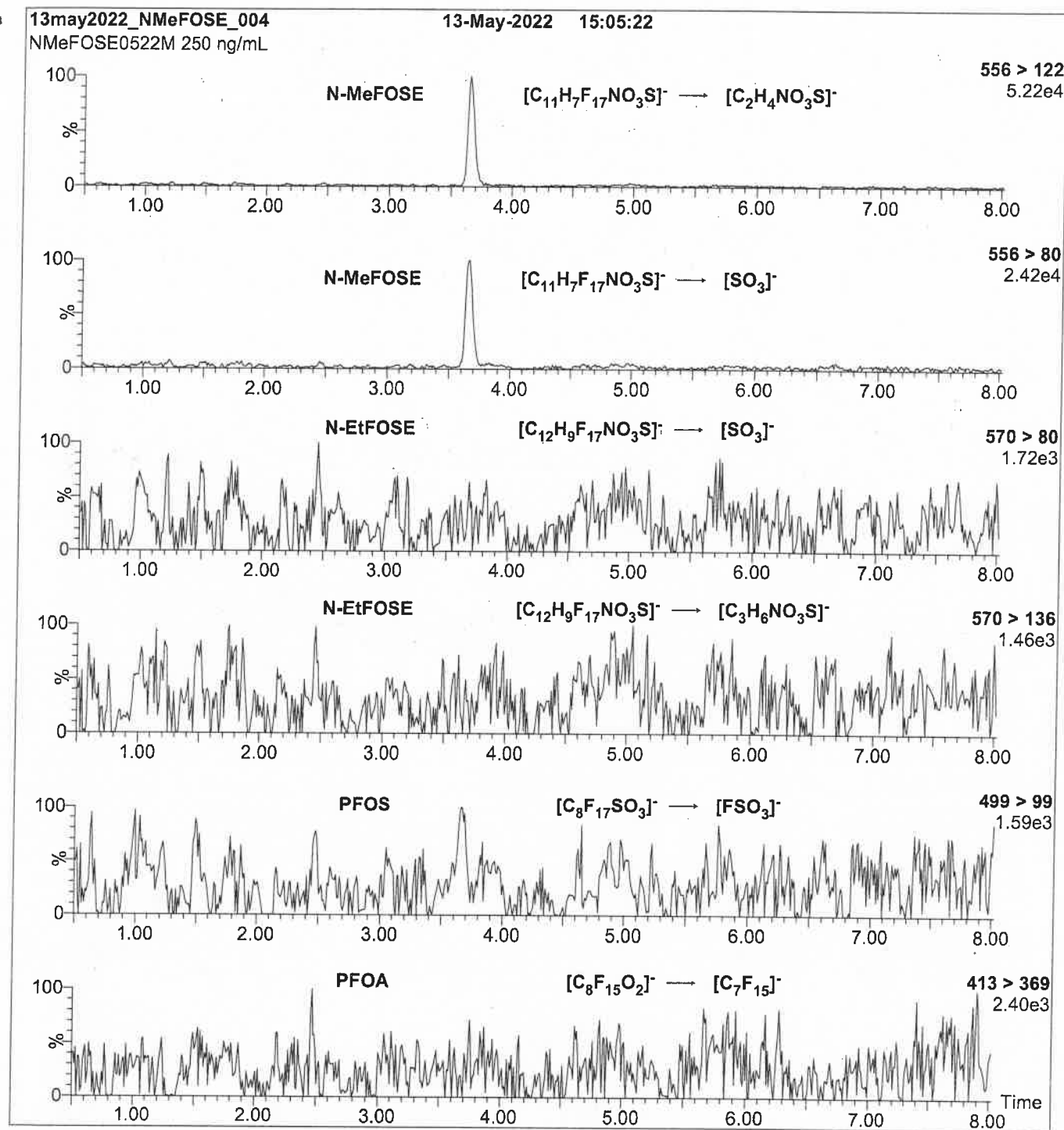
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 65.00

Desolvation Temperature (°C) = 450

Desolvation Gas Flow (L/hr) = 1000

Figure 3: N-MeFOSE-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 3:

Injection: On-column (N-MeFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.22e-3

Collision Energy (eV) = 36

Reagent

LCN-MeFOSE-M2_00004



2981341

ID: LCN-MeFOSE-M2_00004

Exp: 09/30/25 Prod: JM Cpn: 04/07/22

N-MeFOSE-M SECONDARY SOU

Product Name: N-METHYLPERFLUOROOCETANESULFONAMIDOETHANOL
(Isotopic Label & Enrichment Specification) (N-MEFOSE)(MIX OF ISOMERS) UNL 50UG/ML IN METHANOL

Lot Number: SEAA-009

Catalog Number: ULM-11034-S

Product Information

Chemical Purity Specification: $\geq 98\%$

MW*: 557.22
* For isotopically labeled compounds, MW listed is for the fully enriched product.

Labeled CAS Number: NA

Unlabeled CAS Number: 24448-09-7

Chemical Formula: C₁₁H₈F₁₇NO₃S

Storage: Store in freezer (-20° C) Protect from light.

Stability: See storage and expiration date.

Intended Use: For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Marina Klionsky

Marina Klionsky, Quality Review

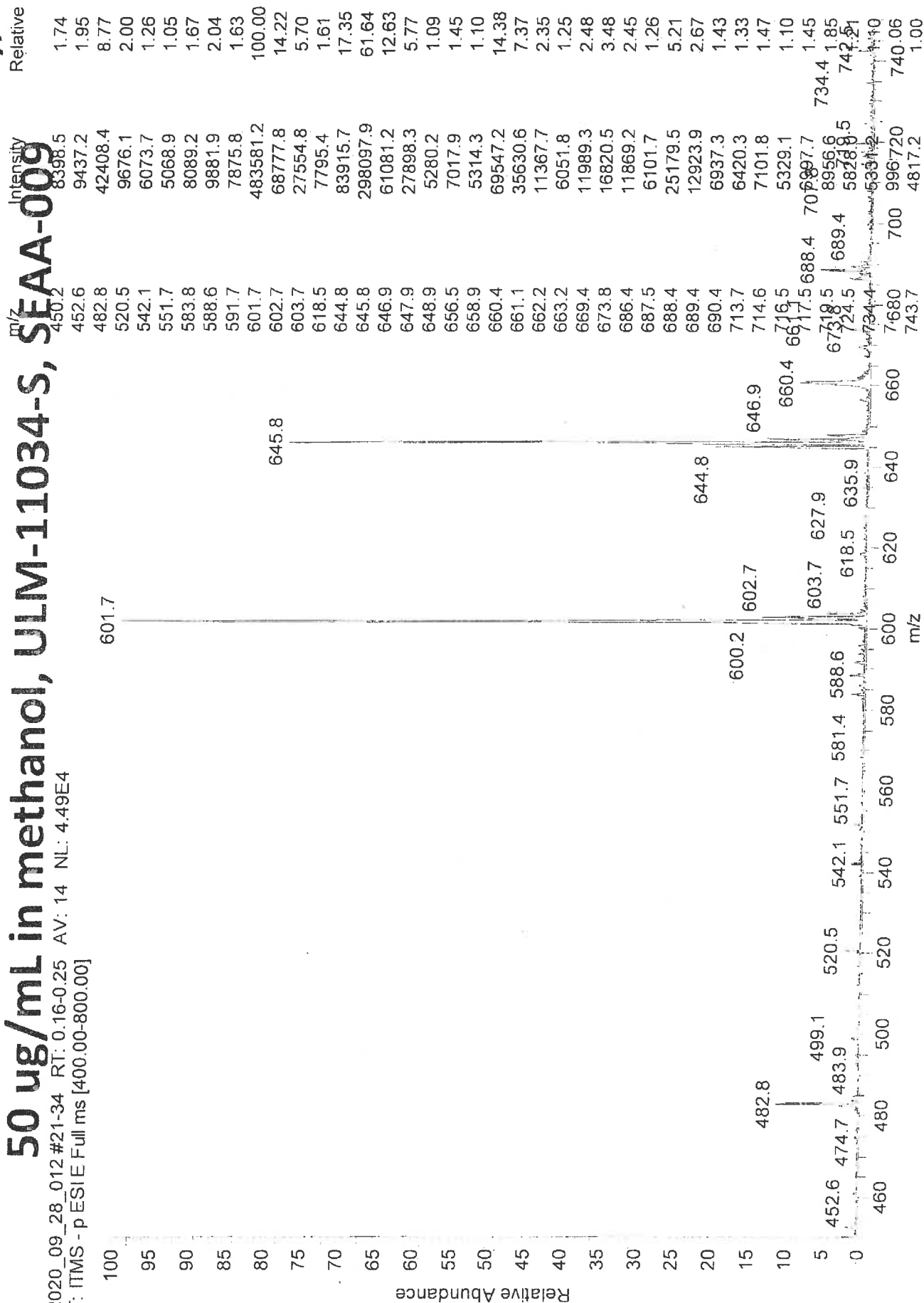
Quality Control Tests and Results

QC Release Date	9/30/2020
Expiration Date	9/30/2025
Concentration Based on Gravimetry	50.0 \pm 0.5 μ g/mL (k=2)
Chemical Purity of Neat Material(s)	100.0%

Methylperfluorooctanesulfonamidoethanol (N-METFOSE),

50 ug/mL in methanol, ULM-11034-S, SEAA-009

2020_09_28_012 #21-34 RT: 0.16-0.25 AV: 14 NL: 4.49E4
T: ITMS - p ESIE Full ms [400.00-800.00]



Reagent

LCPF4OPeA_00014



3112839

ID: LCPF4OPeA_00014

Exp: 10/19/26 Pripd: M Opn: 07/22/22

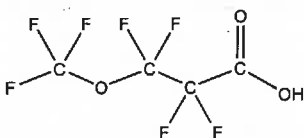
PF4OPeA F/ PF4OPeA Stock 50



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF4OPeA **LOT NUMBER:** PF4OPeA0921
COMPOUND: Perfluoro-4-oxapentanoic acid
SYNONYM: Perfluoro-3-methoxypropanoic acid (PFMPA)
STRUCTURE: **CAS #:** 377-73-1



MOLECULAR FORMULA: $C_4HF_7O_3$ **MOLECULAR WEIGHT:** 230.04
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 10/19/2021
EXPIRY DATE: (mm/dd/yyyy) 10/19/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

10/20/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

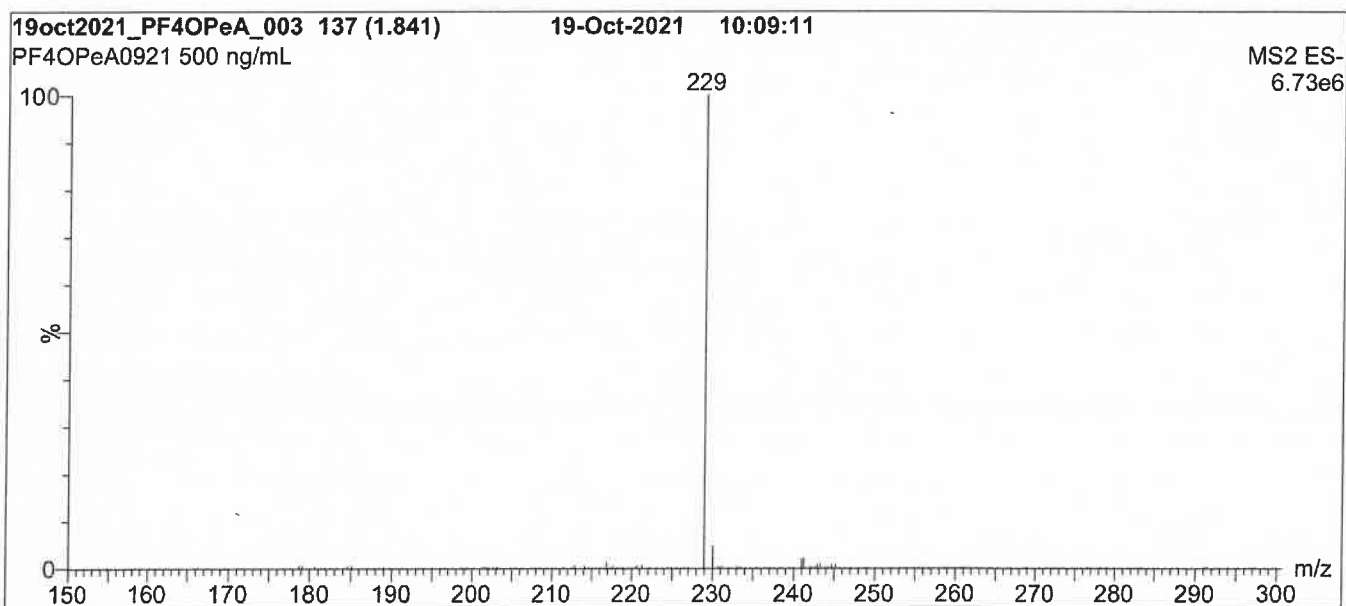
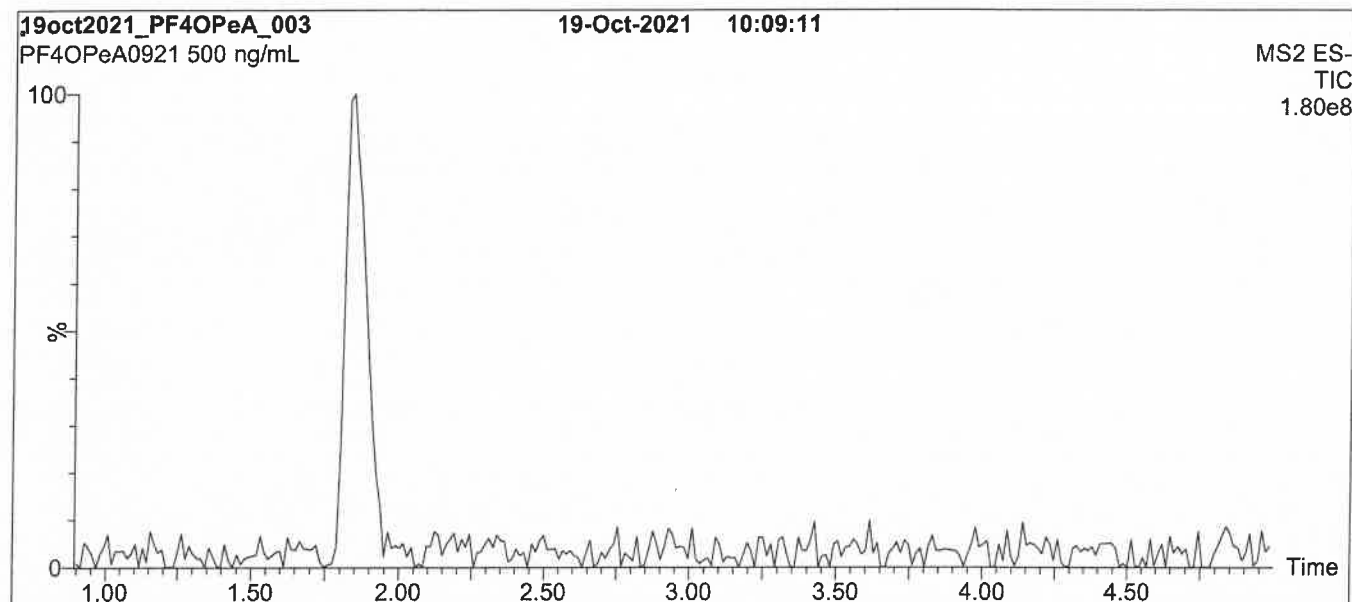
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: PF4OPeA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)

(both with 10 mM NH₄OAc buffer)

Ramp to 90% organic over 8 min and hold for 1 min
before returning to initial conditions in 1 min.

Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)

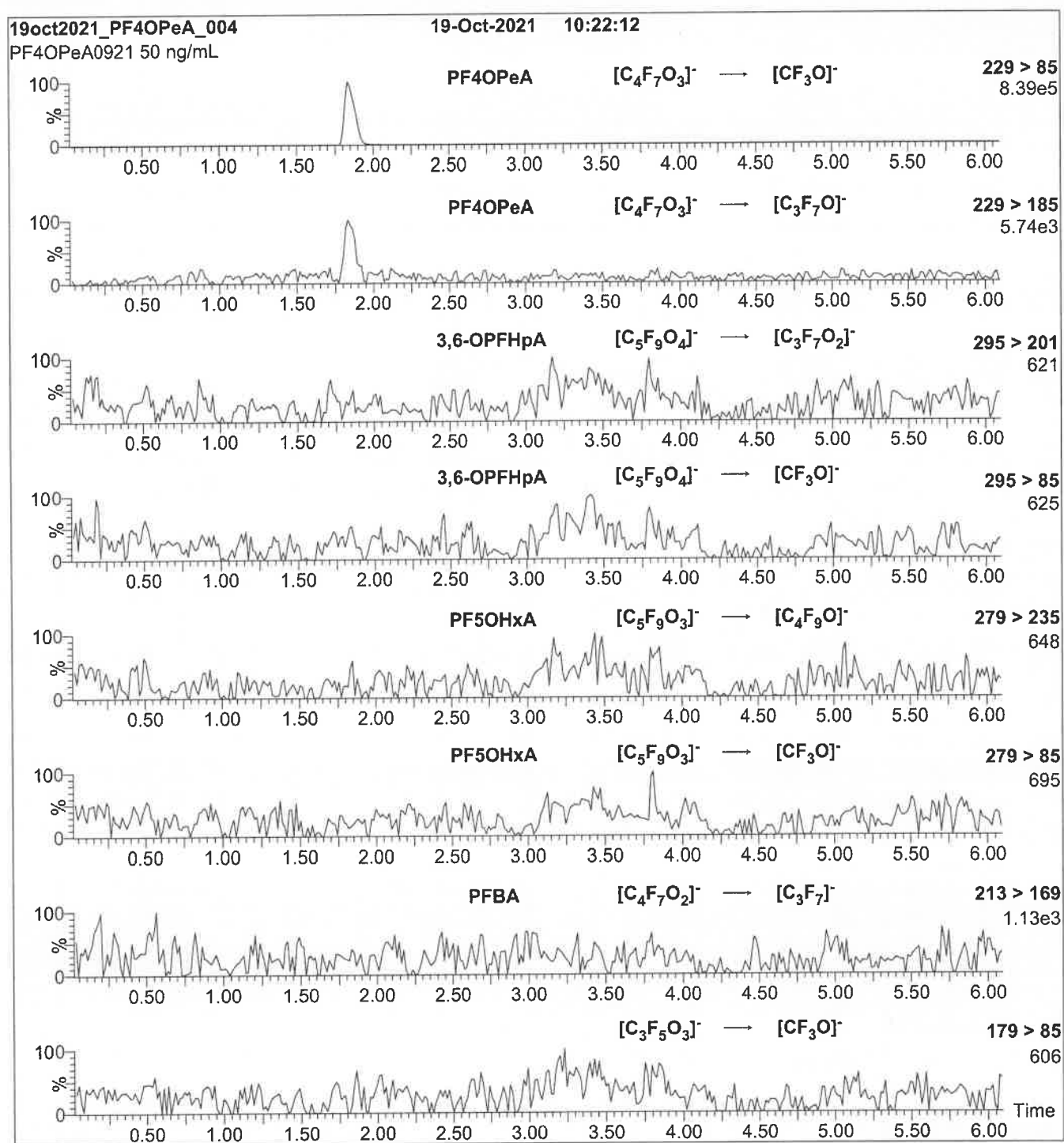
Capillary Voltage (kV) = 0.50

Cone Voltage (V) = 9.50

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: PF4OPeA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PF4OPeA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

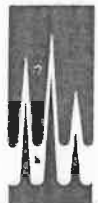
MS Parameters:

Collision Gas (mbar) = 3.27e-3

Collision Energy (eV) = 10

Reagent

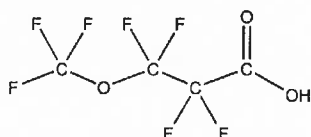
LCPF4OPeA_00015



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF40PeA **LOT NUMBER:** PF40PeA0722
COMPOUND: Perfluoro-4-oxapentanoic acid
SYNONYM: Perfluoro-3-methoxypropanoic acid (PFMPA)
STRUCTURE: **CAS #:** 377-73-1



MOLECULAR FORMULA: C₄HF₇O₃ **MOLECULAR WEIGHT:** 230.04
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 08/02/2022
EXPIRY DATE: (mm/dd/yyyy) 08/02/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 08/15/2022
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

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SYNTHESIS / CHARACTERIZATION:

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UNCERTAINTY:

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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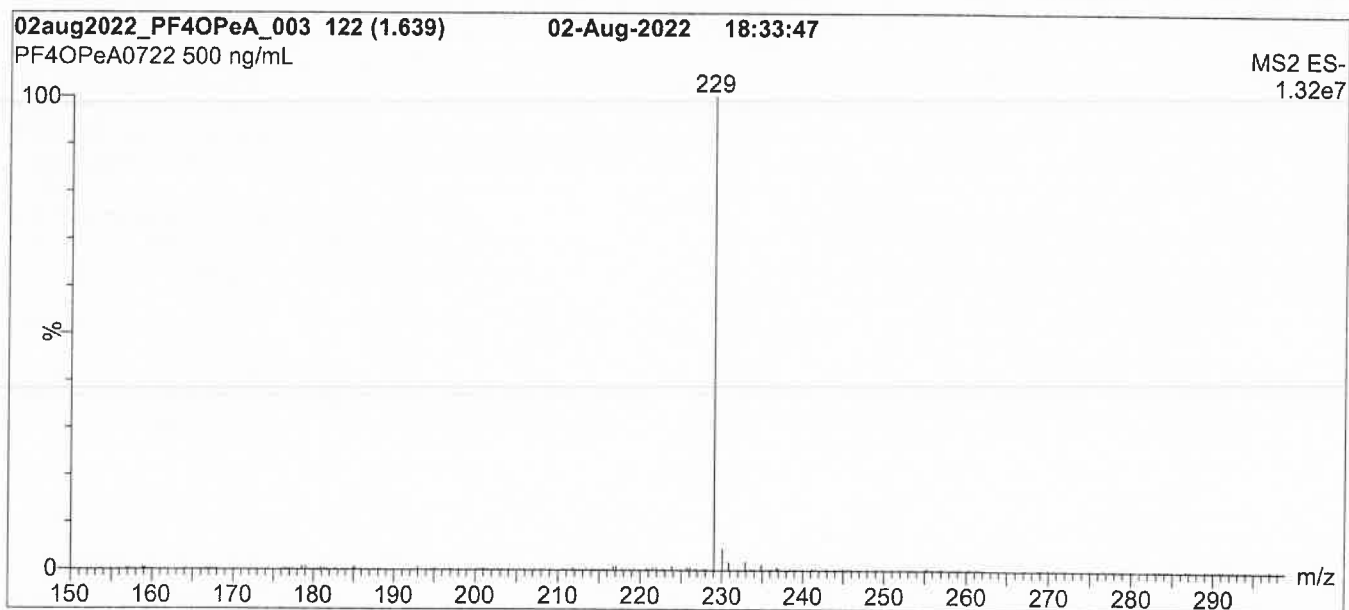
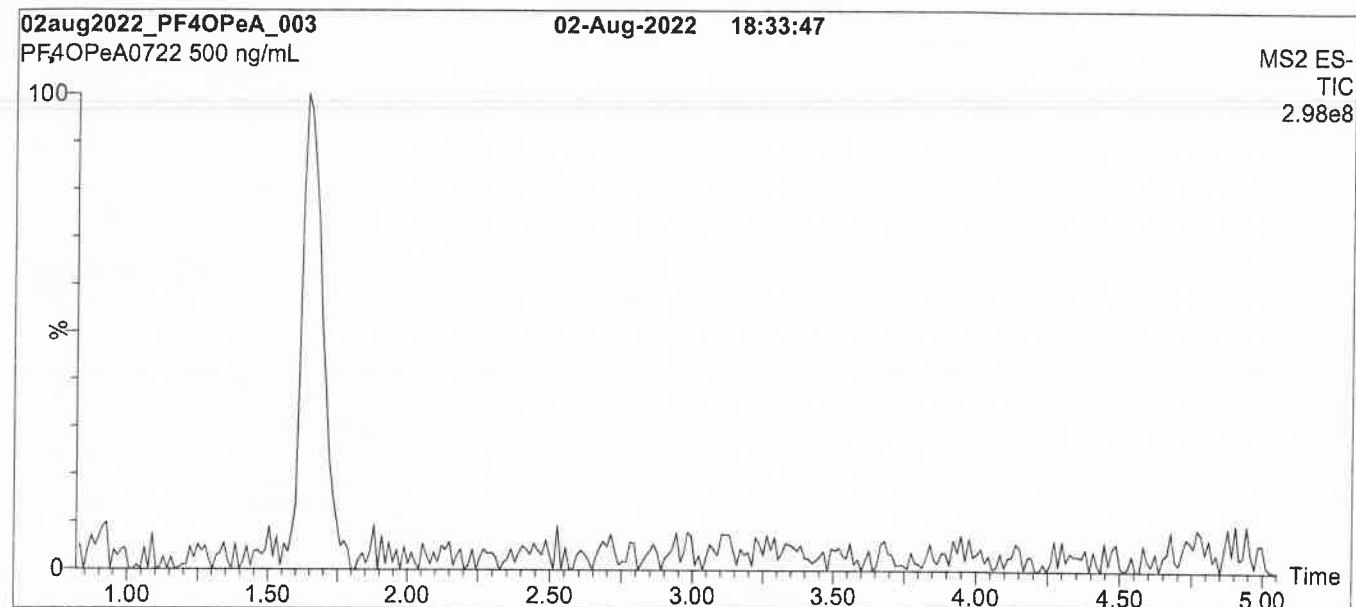
QUALITY MANAGEMENT:

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For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: PF4OPeA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)

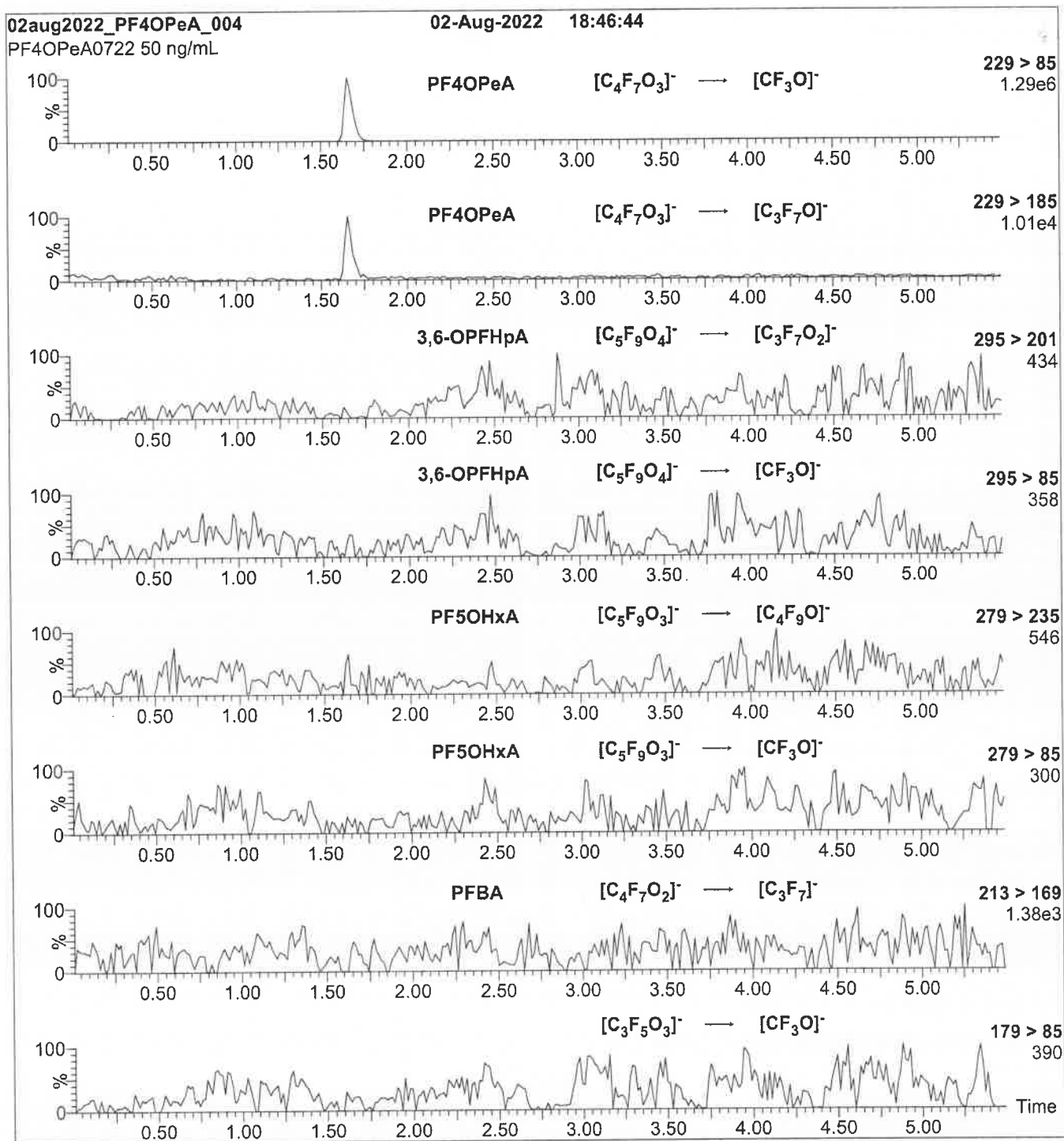
Capillary Voltage (kV) = 0.50

Cone Voltage (V) = 14.50

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: PF4OPeA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PF4OPeA)
Mobile phase: Same as Figure 1
Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 10

Reagent

LCPF5OHxA_00011



3065163

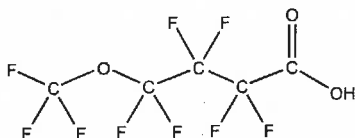
ID: LCPF5OHxA_00011

Exp: 10/19/26 Ppdt: PCY Opn: 06/16/22
PFECA A/ PF5OHxA Stock 50

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF5OHxA
COMPOUND: Perfluoro-5-oxahexanoic acid
SYNONYM: Perfluoro-4-methoxybutanoic acid (PFMBA)
STRUCTURE:
LOT NUMBER: PF5OHxA1021
CAS #: 863090-89-5



MOLECULAR FORMULA: C₅HF₉O₃
CONCENTRATION: 50.0 ± 2.5 µg/mL
MOLECULAR WEIGHT: 280.05
SOLVENT(S): Methanol
Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 10/19/2021
EXPIRY DATE: (mm/dd/yyyy) 10/19/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 10/19/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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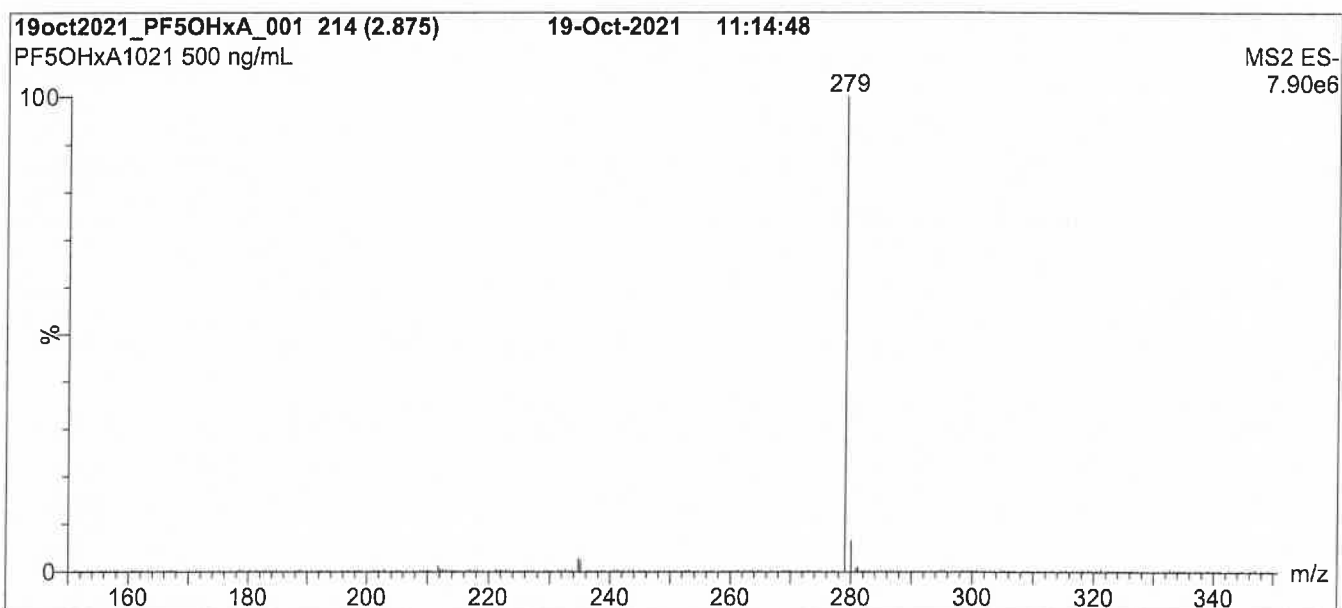
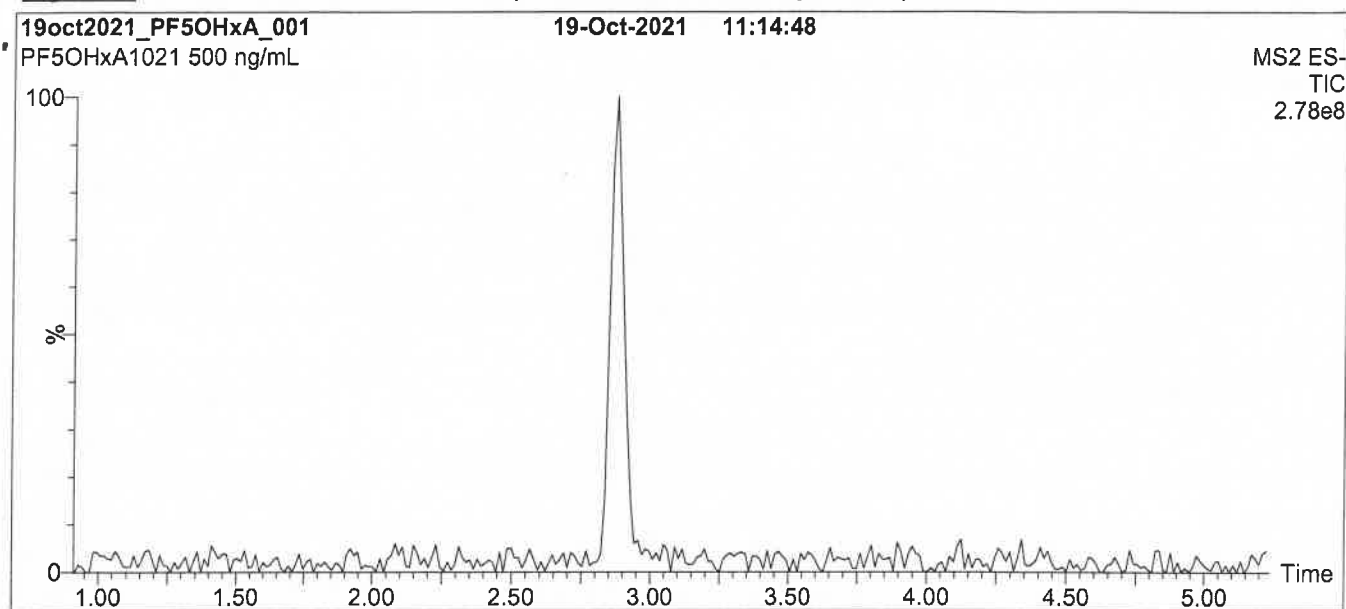
QUALITY MANAGEMENT:

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Figure 1: PF5OHxA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)

(both with 10 mM NH₄OAc buffer)

Ramp to 90% organic over 8 min and hold for 1 min
before returning to initial conditions in 1 min.

Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)

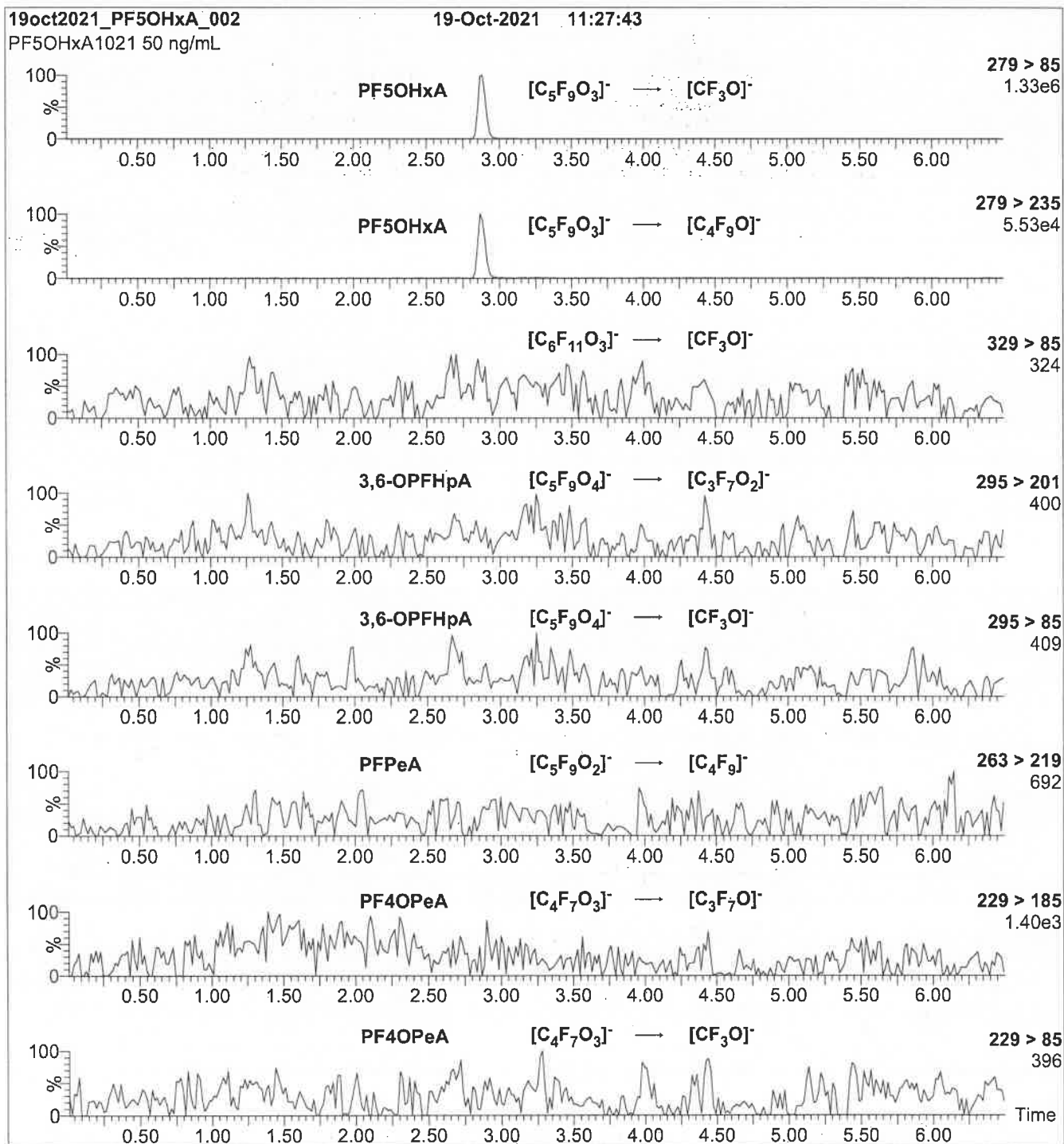
Capillary Voltage (kV) = 0.50

Cone Voltage (V) = 14.50

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: PF5OHxA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PF5OHxA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.27e-3

Collision Energy (eV) = 10

Reagent

LCPFBA_00028



3064230

ID: LCPFB_A_00028

Exp: 04/18/27 Pp'd 1M Opn: 06/16/22

PF-n-butanoic acid



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

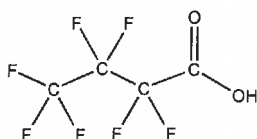
PFBA

LOT NUMBER: PFBA0422**COMPOUND:**

Perfluoro-n-butanoic acid

STRUCTURE:**CAS #:**

375-22-4

**MOLECULAR FORMULA:** $C_4HF_7O_2$ **MOLECULAR WEIGHT:** 214.04**CONCENTRATION:**50.0 \pm 2.5 μ g/mL**SOLVENT(S):**

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

04/18/2022

EXPIRY DATE: (mm/dd/yyyy)

04/18/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:** 04/28/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

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Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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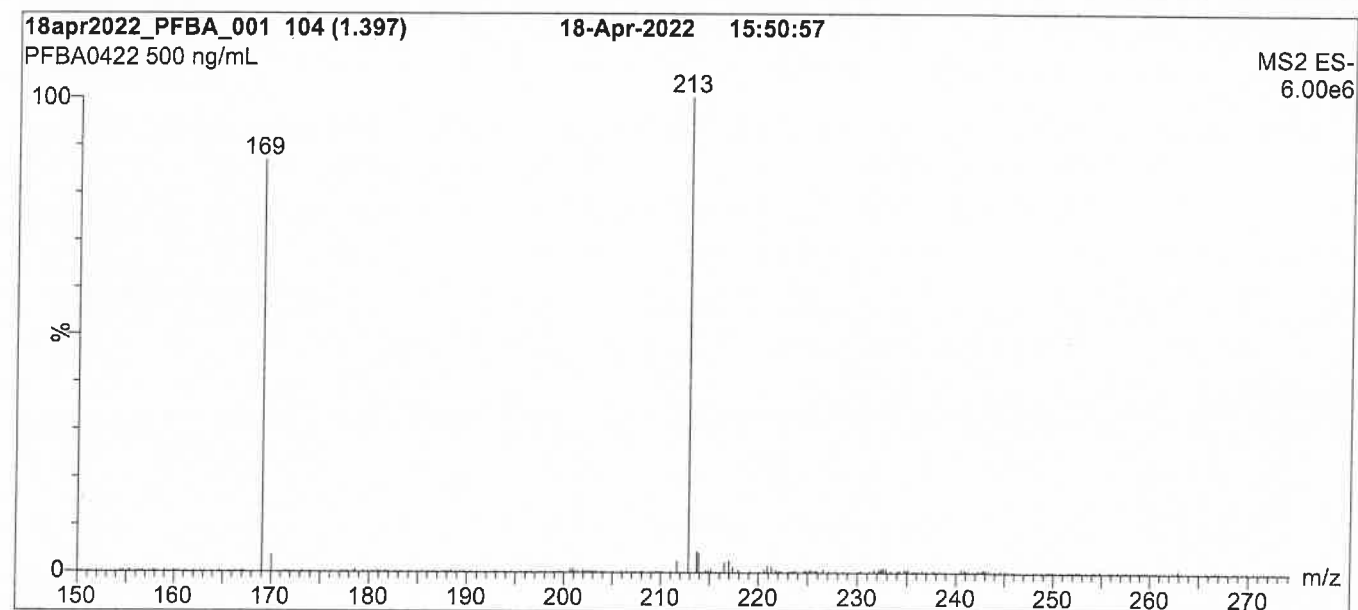
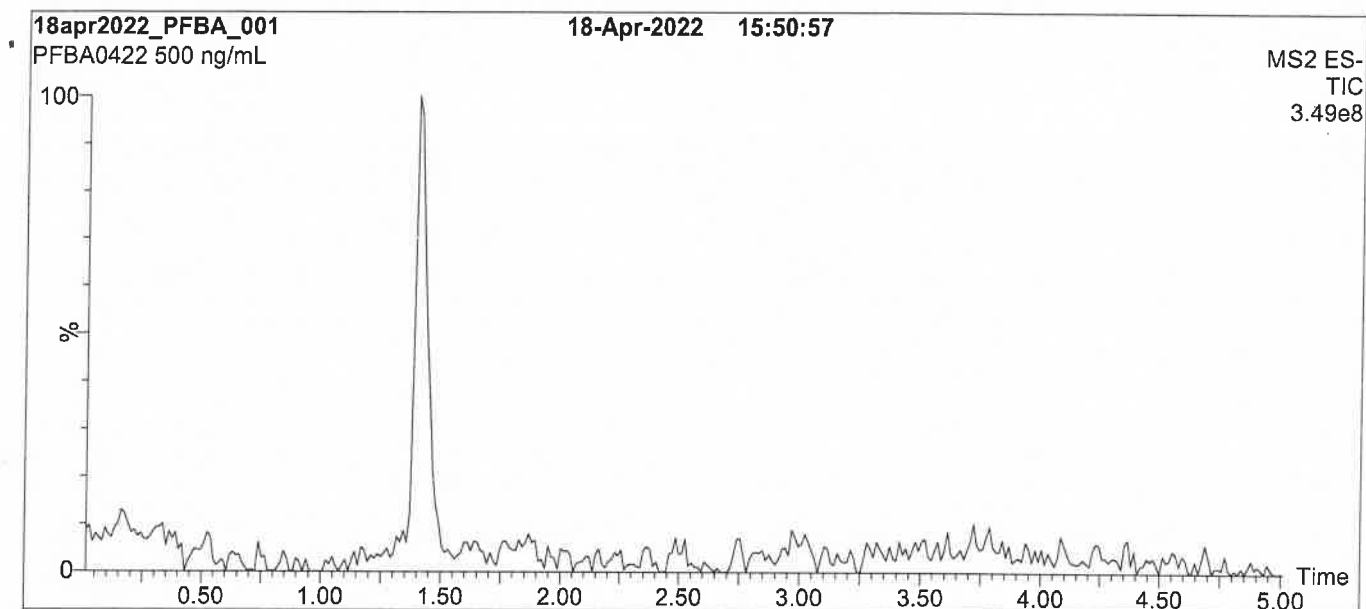
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: PFBA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)

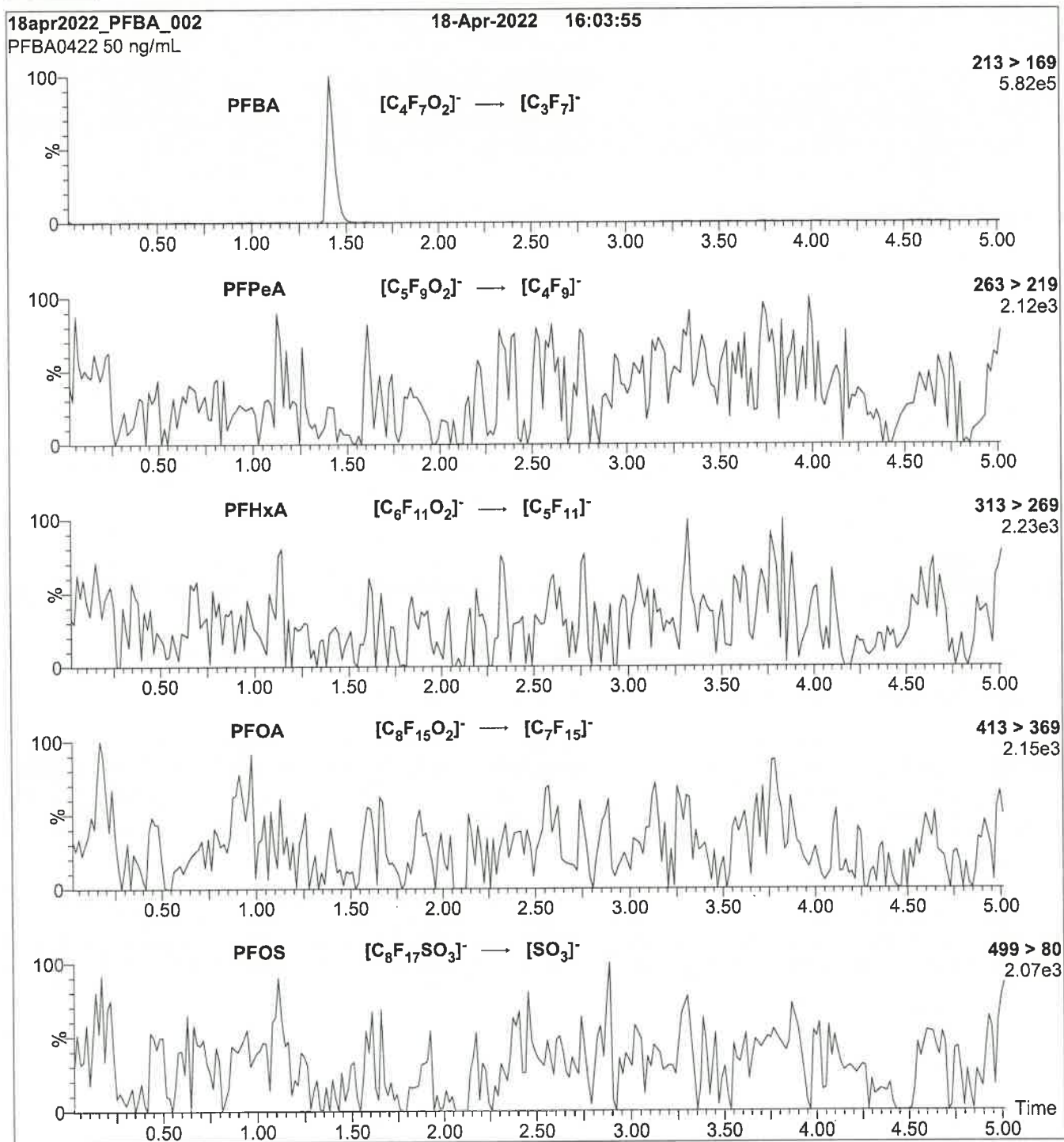
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFBA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFBA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.20e-3

Collision Energy (eV) = 8

Reagent

LCPFBA2_00003

**Product Name:**

(Isotopic Label & Enrichment Specification)

PERFLUOROBUTYRIC ACID, SODIUM SALT
UNLABELED 50 UG/ML IN METHANOL**Lot Number:**

SDJL-002

Catalog Number:

ULM-11058-S

$$\begin{array}{r}
 236.02 \\
 - 22.99 \\
 \hline
 213.03
 \end{array}
 \quad
 \begin{array}{r}
 213.03 \\
 236.02 \\
 \hline
 0.9026 \times 50 = 45.13 \frac{\mu\text{g}}{\text{mL}}
 \end{array}$$

CV 8/2/21

Product InformationChemical Purity Specification: $\geq 98\%$ **MW*:**

For isotopically labeled compounds, MW listed is for the fully enriched product.

236.02

Labeled CAS Number:

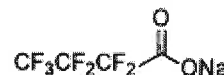
NA

Unlabeled CAS Number:

2218-54-4

Chemical Formula:

C4F7NaO2

**Storage:**

Store at room temperature away from light and moisture.

Stability:

See storage and expiration date

Intended Use:

For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Marina Kliensky

Marina Kliensky, Quality Review

Quality Control Tests and Results

QC Release Date	1/20/2020
Expiration Date	1/20/2025
Concentration Based on Gravimetry (of the salt)	50.0 \pm 0.5 $\mu\text{g/mL}$ (k=2)
Chemical Purity of Neat Material(s)	99.0%

Reagent

LCPFBSA_00025



3064810

ID: LCPFBSA_00025

Exp:04/05/27 Pp:3M Opn:06/16/22
Perfluorobutanesulfonic a

WELLINGTON LABORATORIES

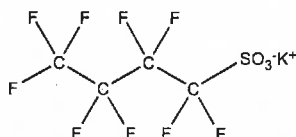
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFBS
COMPOUND: Potassium perfluoro-1-butanesulfonate

LOT NUMBER: LPFBS0322

STRUCTURE:

CAS #: 29420-49-3



MOLECULAR FORMULA: $C_4F_9SO_3K$
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ (K salt)
 $44.4 \pm 2.2 \mu\text{g/mL}$ (PFBS acid)
 $44.2 \pm 2.2 \mu\text{g/mL}$ (PFBS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 04/05/2022
EXPIRY DATE: (mm/dd/yyyy) 04/05/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 338.19
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
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ADDITIONAL INFORMATION:

- See page 2 for further details.

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B.G. Chittim, General Manager

Date: 04/26/2022
(mm/dd/yyyy)

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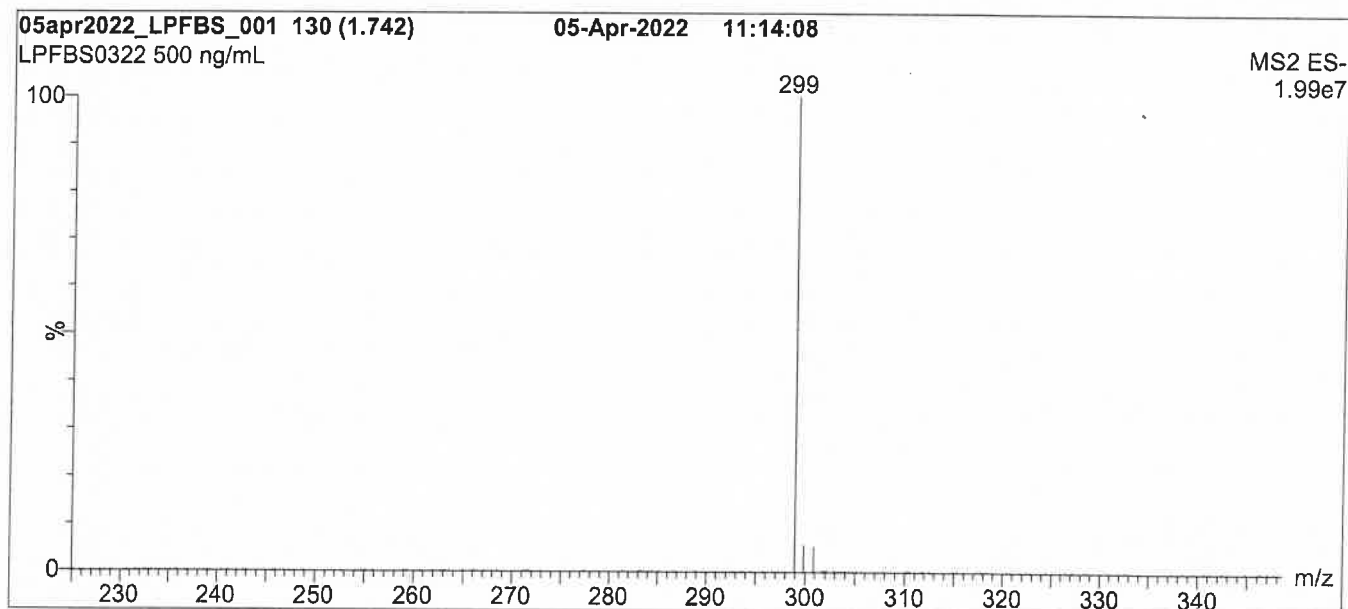
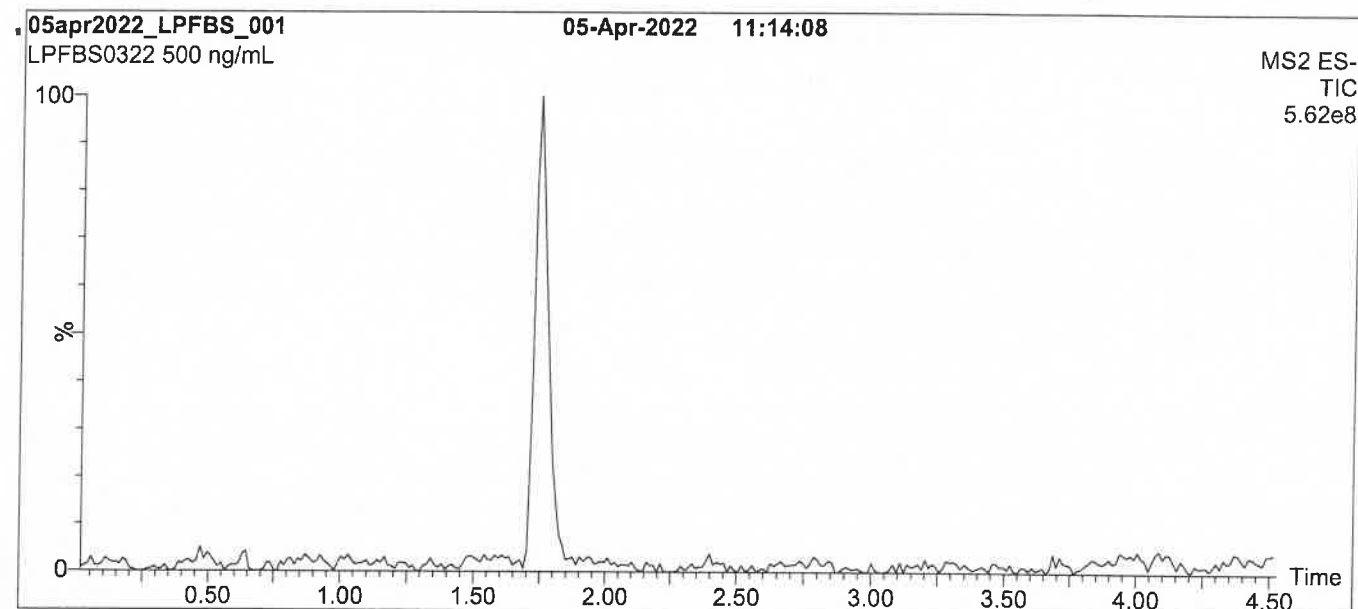
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Figure 1: L-PFBS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions over 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

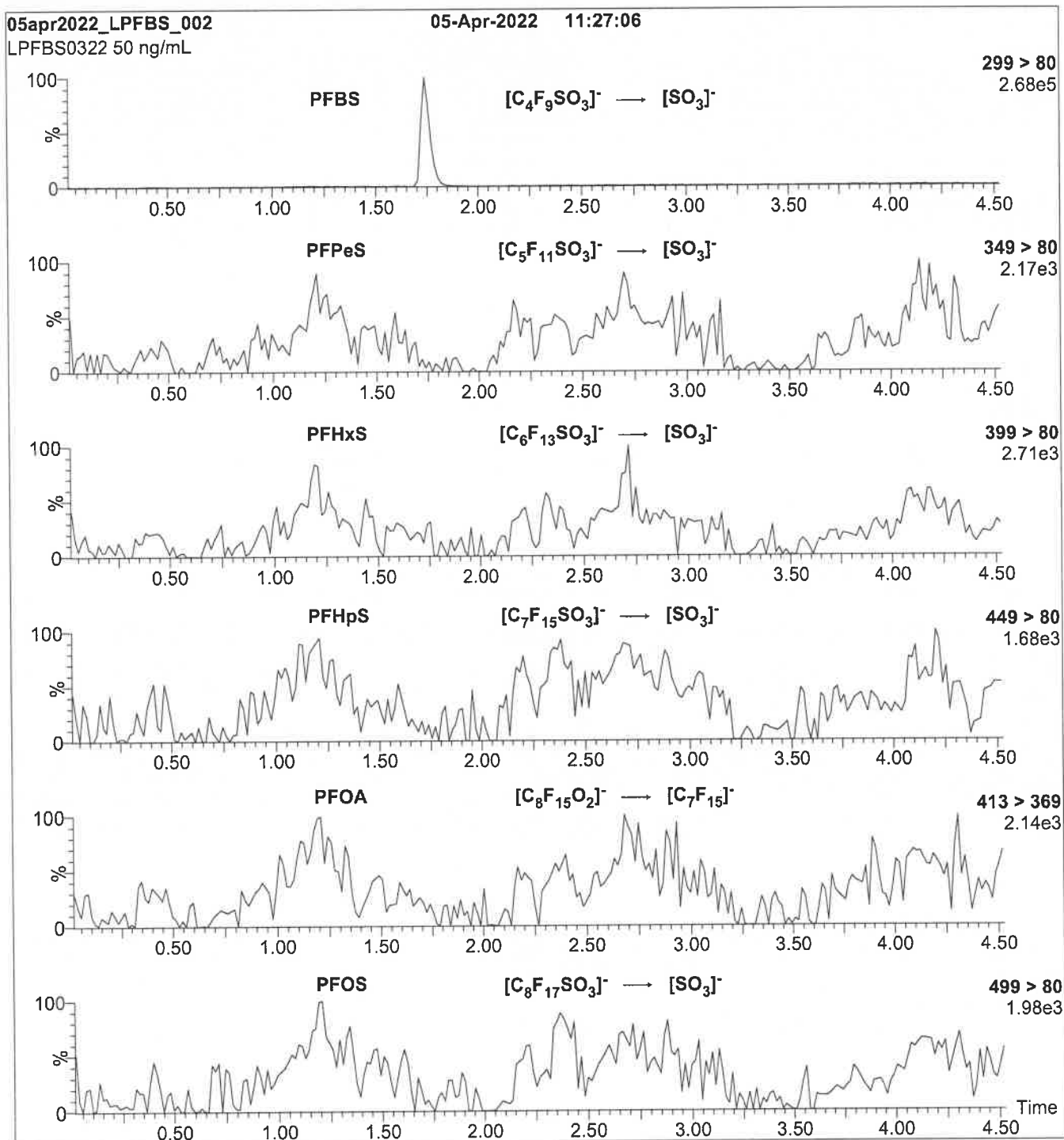
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: L-PFBS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (L-PFBS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 30

Reagent

LCPFDA_00033



3112540

ID: LCPFDA_00033

Exp: 02/22/27 Prip: JM Opn: 07/22/22

PF-n-decanoic acid



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFDA

LOT NUMBER:

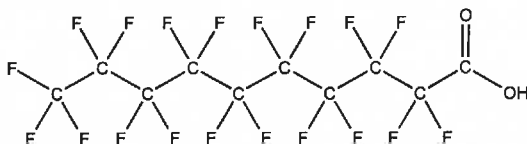
PFDA0222

COMPOUND:

Perfluoro-n-decanoic acid

STRUCTURE:**CAS #:**

335-76-2

**MOLECULAR FORMULA:** $C_{10}H_{19}O_2$ **MOLECULAR WEIGHT:**

514.08

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

02/22/2022

EXPIRY DATE: (mm/dd/yyyy)

02/22/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~0.2% of an unknown impurity.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:**02/25/2022
(mm/dd/yyyy)

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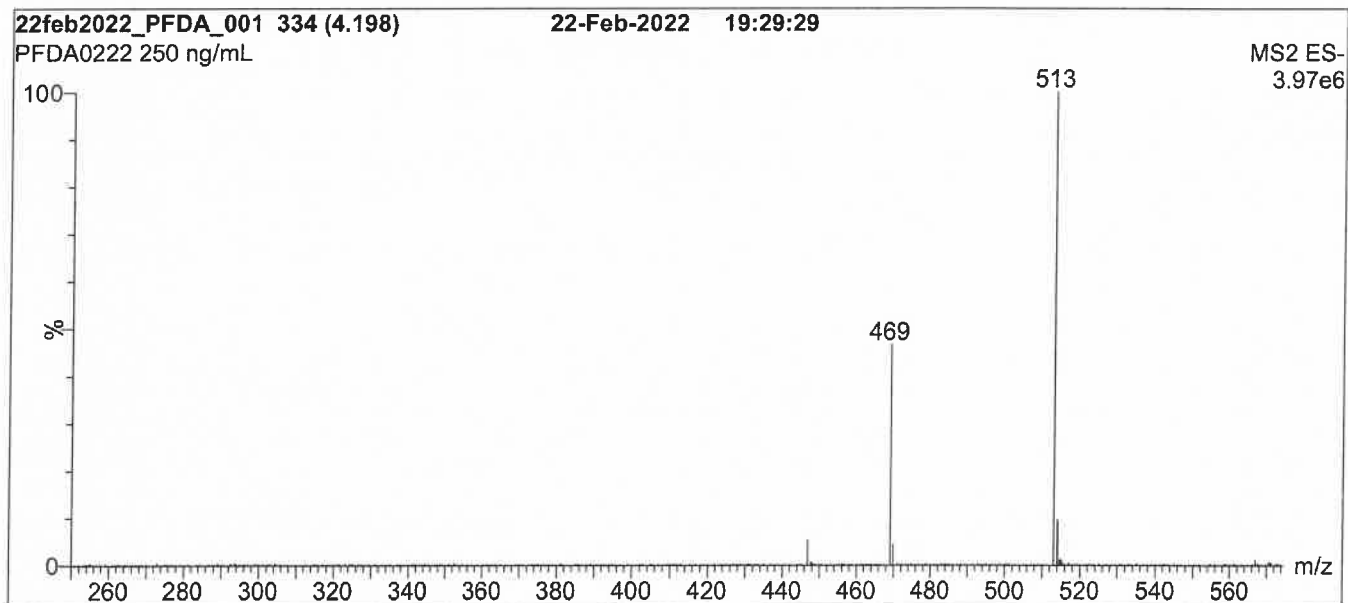
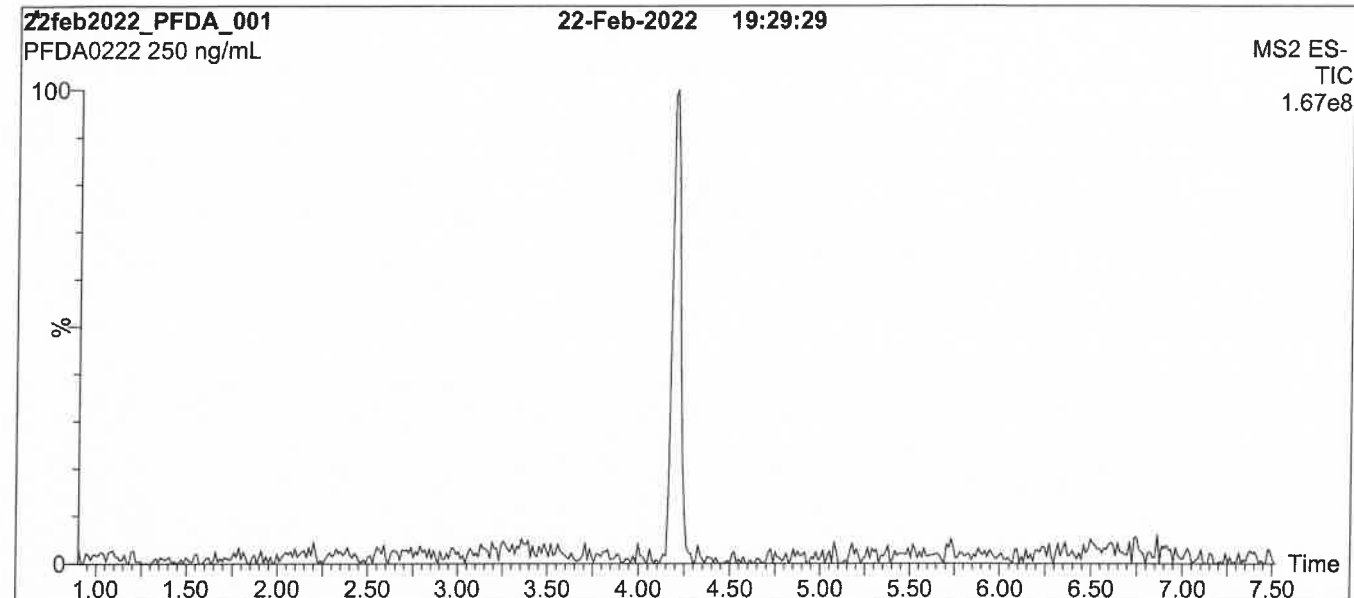
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Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

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1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)

Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.

Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

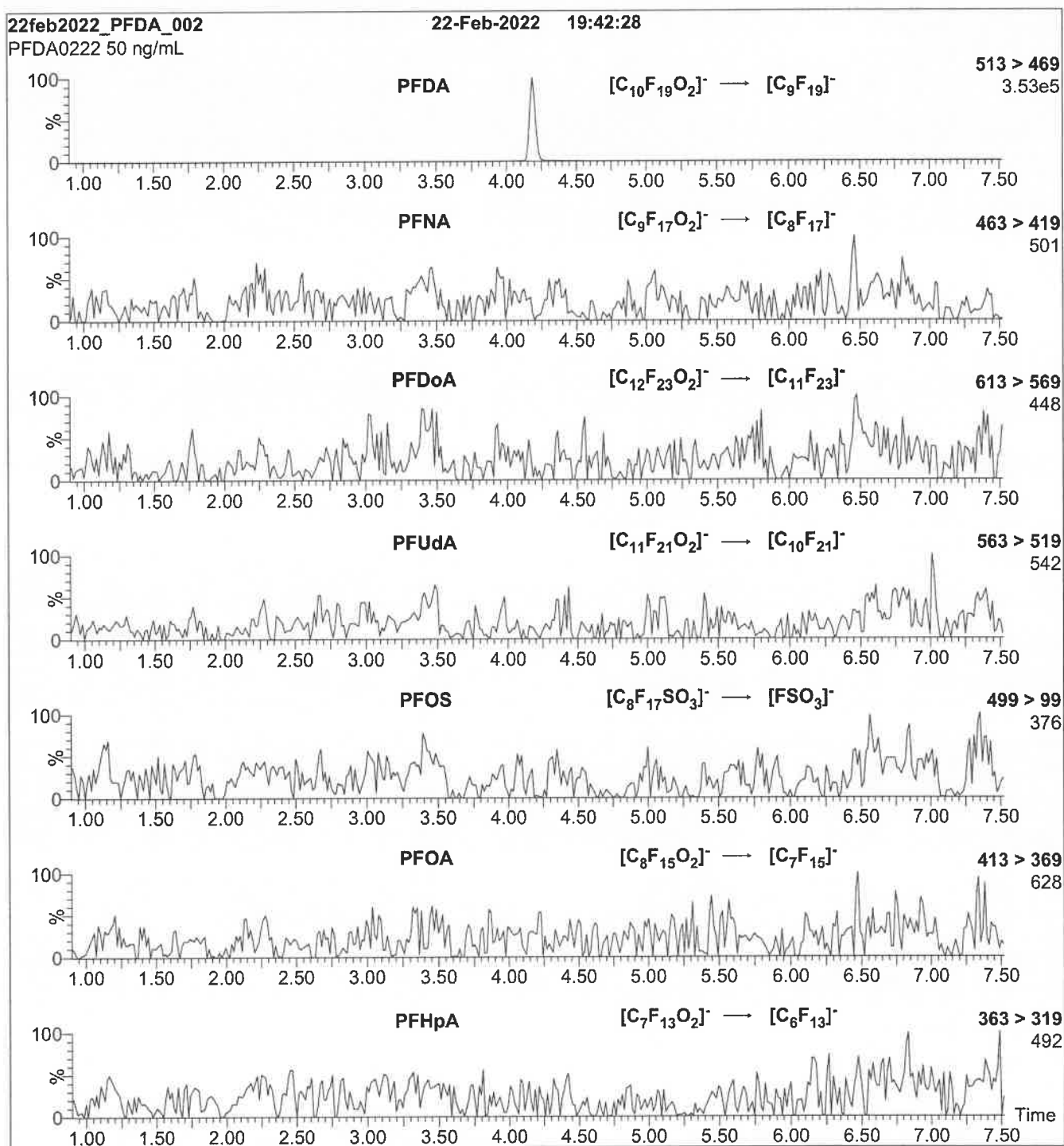
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFDA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 10

Reagent

LCPFDoA_00031



3112541

ID: LCPFDaA_00031

Exp: 01/27/27 Pripd3M Opn: 01/22/22
PF-n-dodecanoic acid**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PRODUCT CODE:**

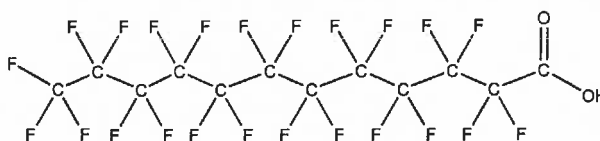
PFDaA

LOT NUMBER: PFDaA0122**COMPOUND:**

Perfluoro-n-dodecanoic acid

STRUCTURE:**CAS #:**

307-55-1

**MOLECULAR FORMULA:** $C_{12}H_{23}O_2$ **MOLECULAR WEIGHT:**

614.10

CONCENTRATION:50.0 \pm 2.5 μ g/mL**SOLVENT(S):**

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

01/27/2022

EXPIRY DATE: (mm/dd/yyyy)

01/27/2027

RECOMMENDED STORAGE:

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DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

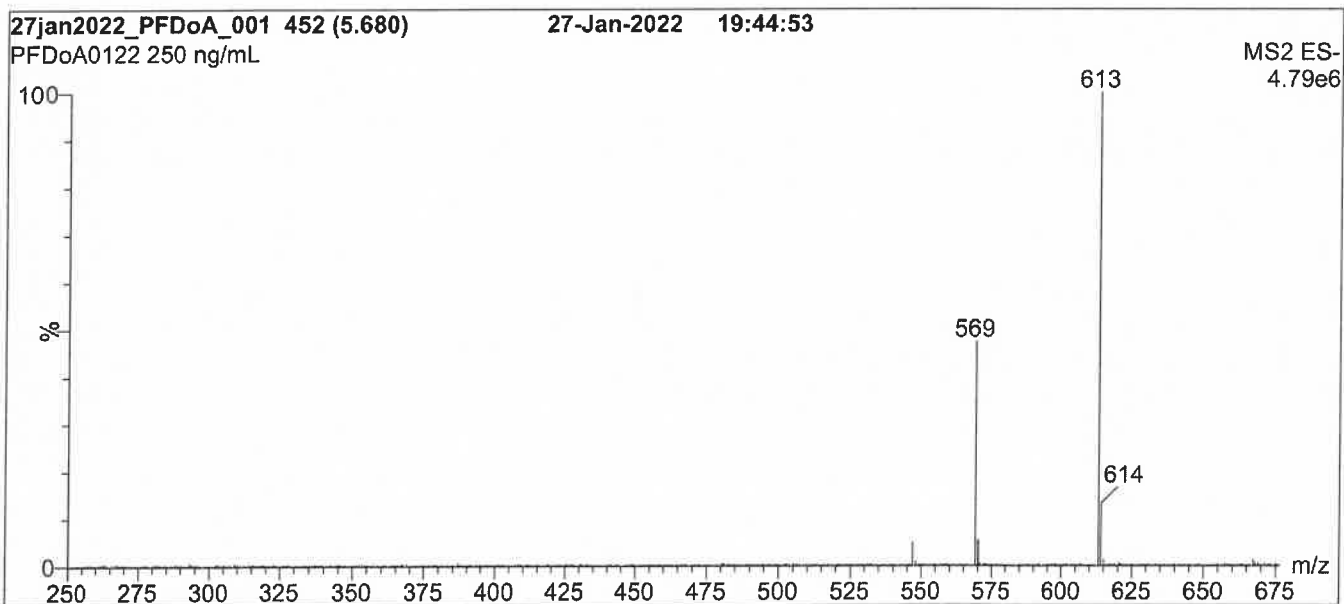
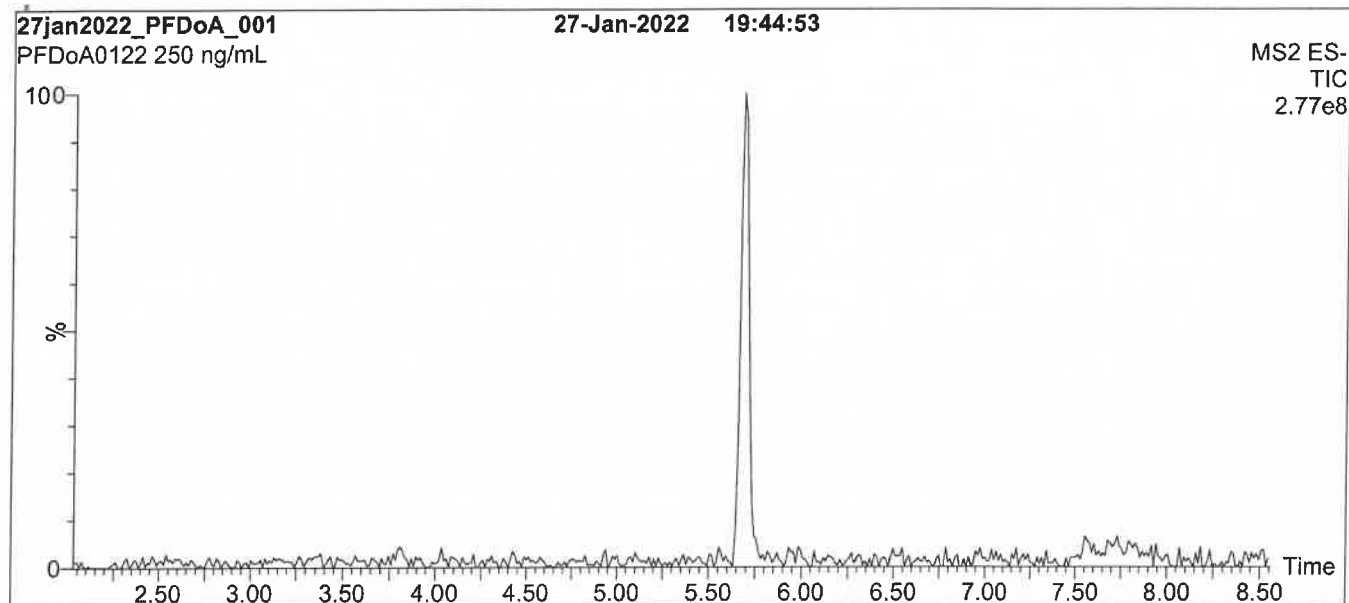
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



****For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com****

Figure 1: PFD_oA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)

Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.

Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

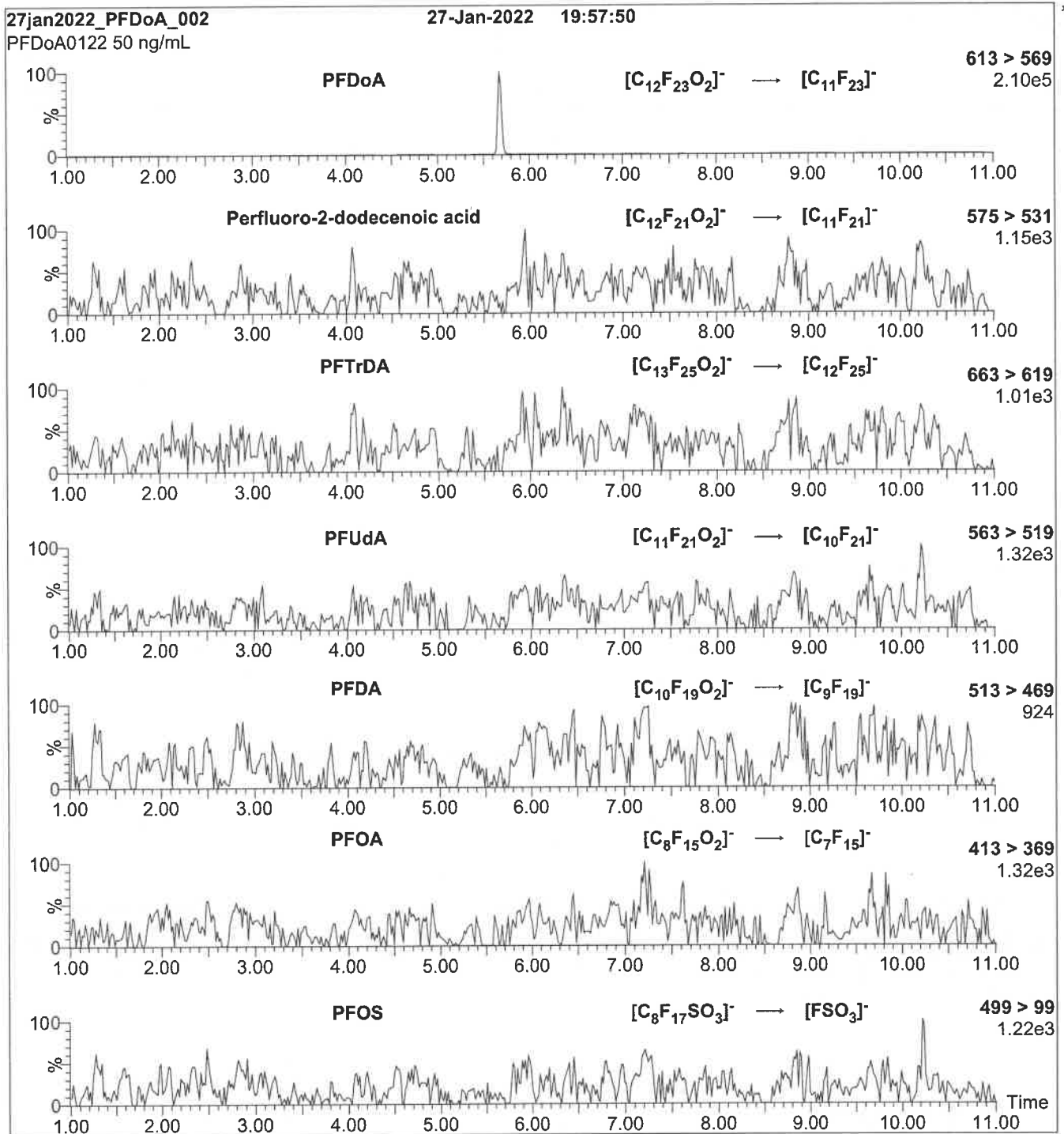
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFDaA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFDaA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.27e-3

Collision Energy (eV) = 12

Reagent

LCPFDoS_00016



2728735

ID: LCPFDoS_00016

Exp: 07/09/26 Pripd: IM Opr: 10/11/21

L-PFDoS at 48.4ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

L-PFDoS

LOT NUMBER:

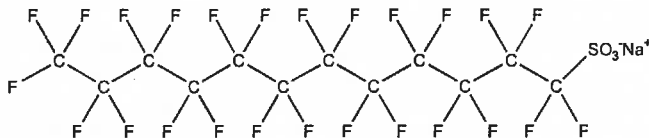
LPFDoS0721

COMPOUND:

Sodium perfluoro-1-dodecanesulfonate

STRUCTURE:**CAS #:**

1260224-54-1

**MOLECULAR FORMULA:** $C_{12}F_{25}SO_3Na$ **MOLECULAR WEIGHT:**

722.14

CONCENTRATION:50.0 \pm 2.5 μ g/mL (Na salt)**SOLVENT(S):**

Methanol

48.5 \pm 2.4 μ g/mL (PFDoS acid)48.4 \pm 2.4 μ g/mL (PFDoS anion)**CHEMICAL PURITY:**

>98%

LAST TESTED: (mm/dd/yyyy)

07/09/2021

EXPIRY DATE: (mm/dd/yyyy)

07/09/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.2% of perfluoro-n-dodecanoic acid (PFDaA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 07/16/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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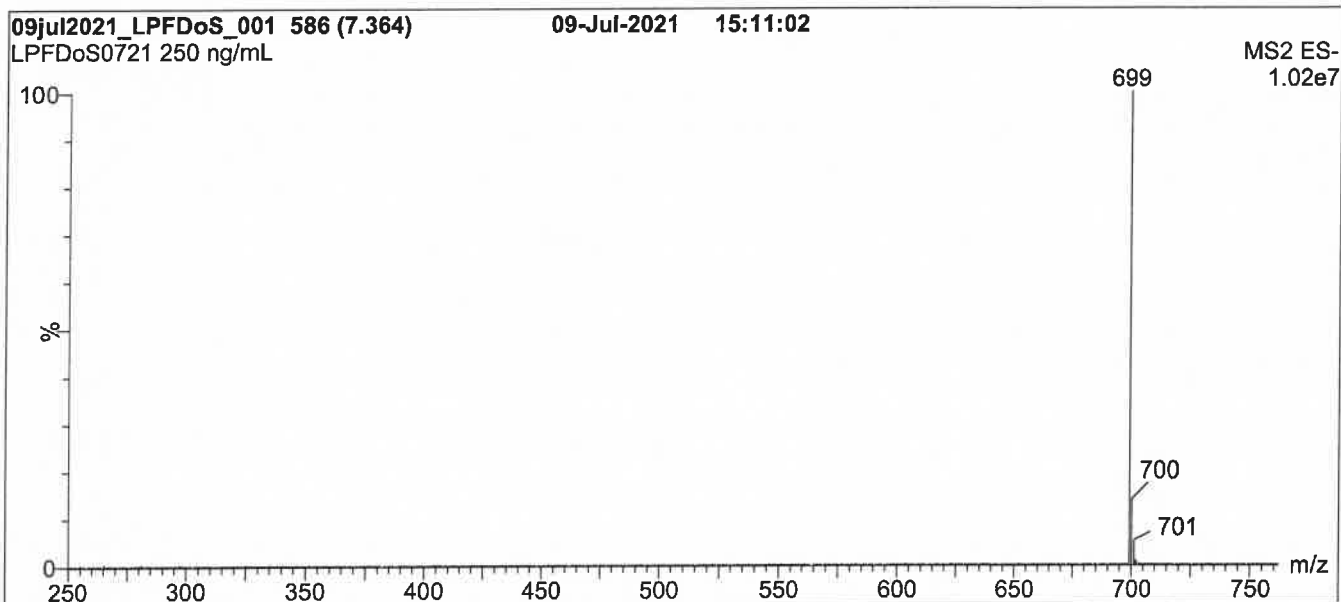
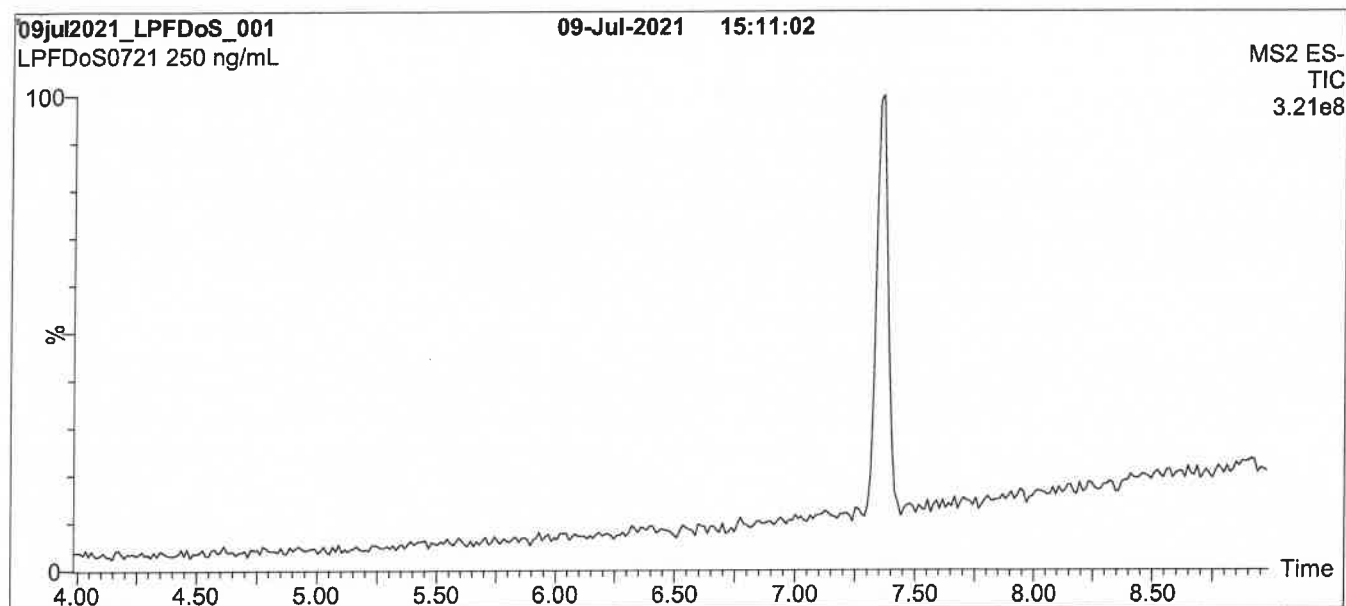
QUALITY MANAGEMENT:

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For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: L-PFDoS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 80% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

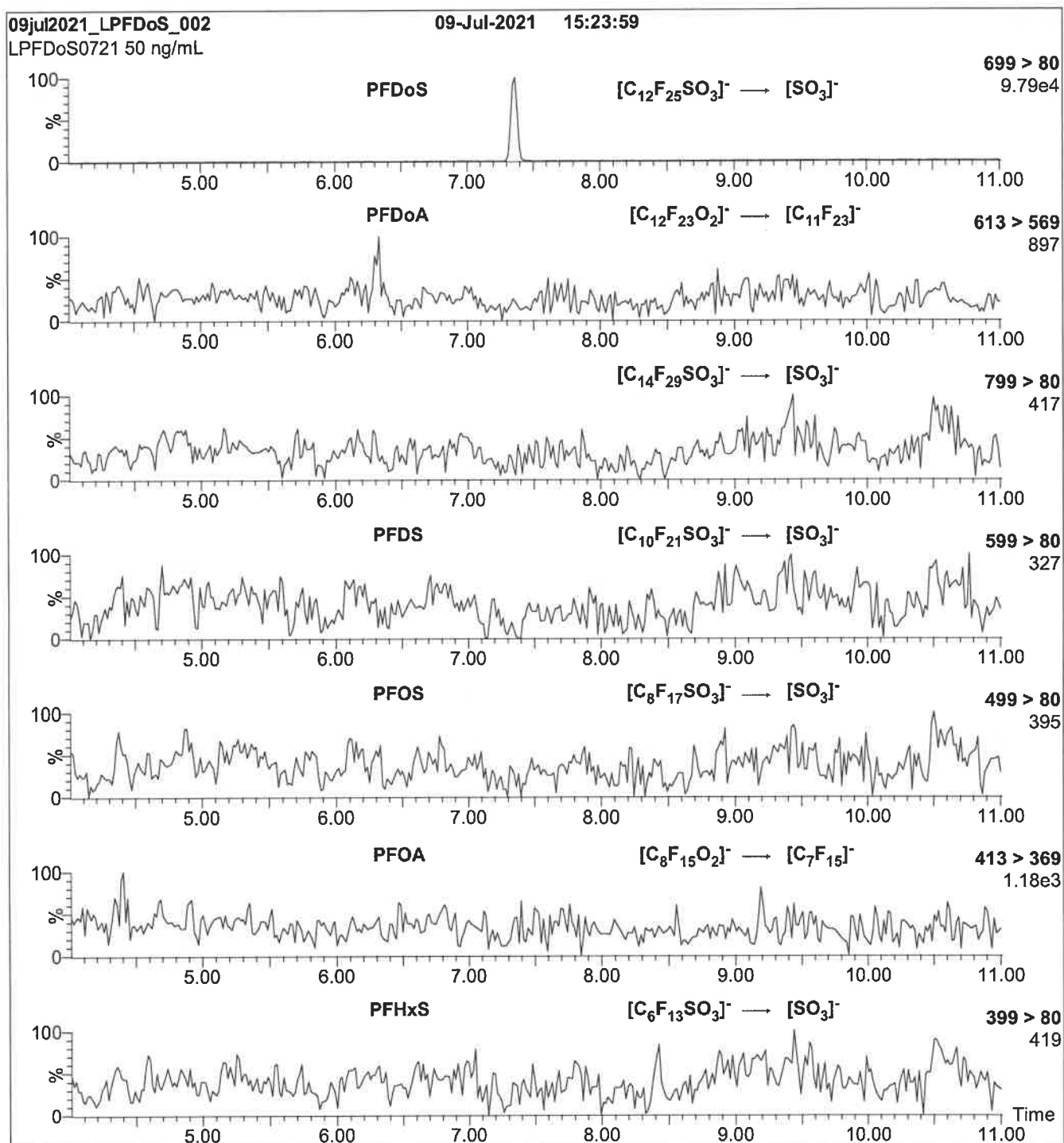
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: L-PFDoS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (L-PFDoS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.47e-3

Collision Energy (eV) = 60

Reagent

LCPFDoS_00020



3065105

ID: LCPFDoS_00020

Exp 04/2027 Prep3M Opm36/16/22

L-PFDoS at 48.5ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

L-PFDoS

LOT NUMBER:

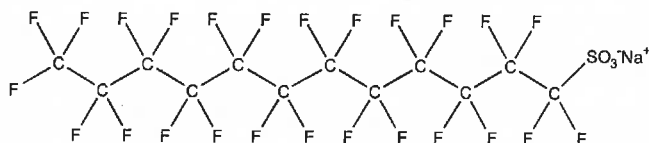
LPFDoS0422

COMPOUND:

Sodium perfluoro-1-dodecanesulfonate

STRUCTURE:**CAS #:**

1260224-54-1

**MOLECULAR FORMULA:** $C_{12}F_{28}SO_3Na$ **MOLECULAR WEIGHT:**

722.14

CONCENTRATION:

50.0 ± 2.5 µg/mL (Na salt)

SOLVENT(S):

Methanol

48.5 ± 2.4 µg/mL (PFDoS acid)

48.4 ± 2.4 µg/mL (PFDoS anion)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

04/20/2022

EXPIRY DATE: (mm/dd/yyyy)

04/20/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**

B.G. Chittim, General Manager
Date: 05/16/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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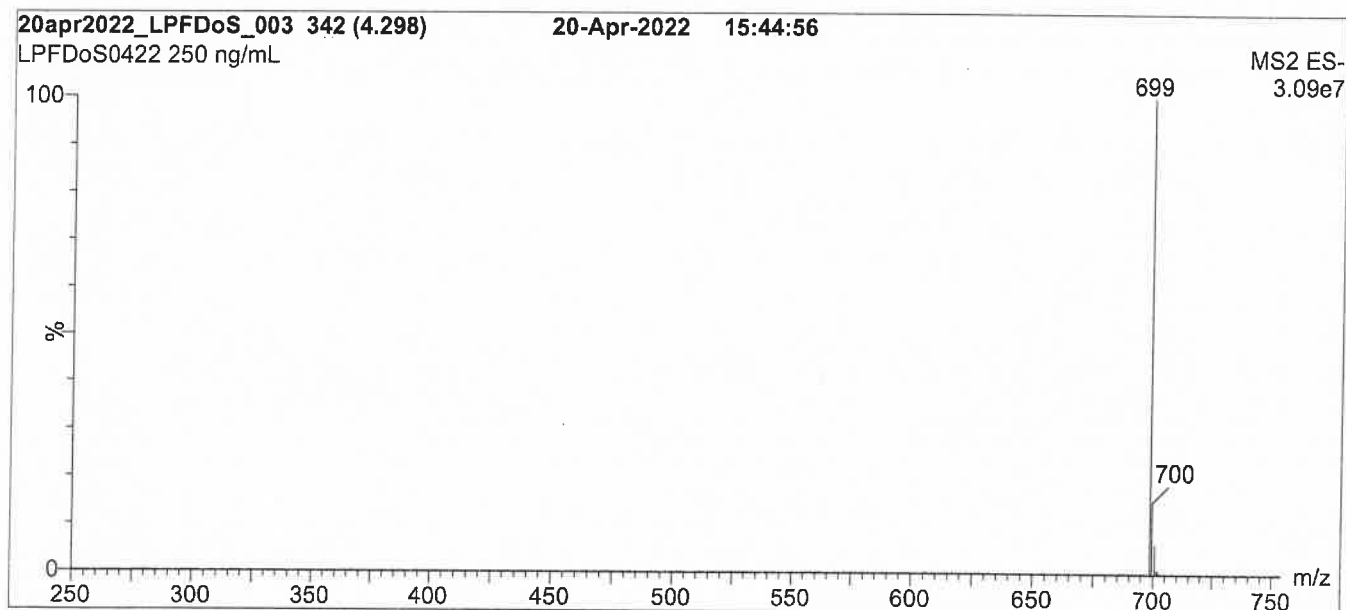
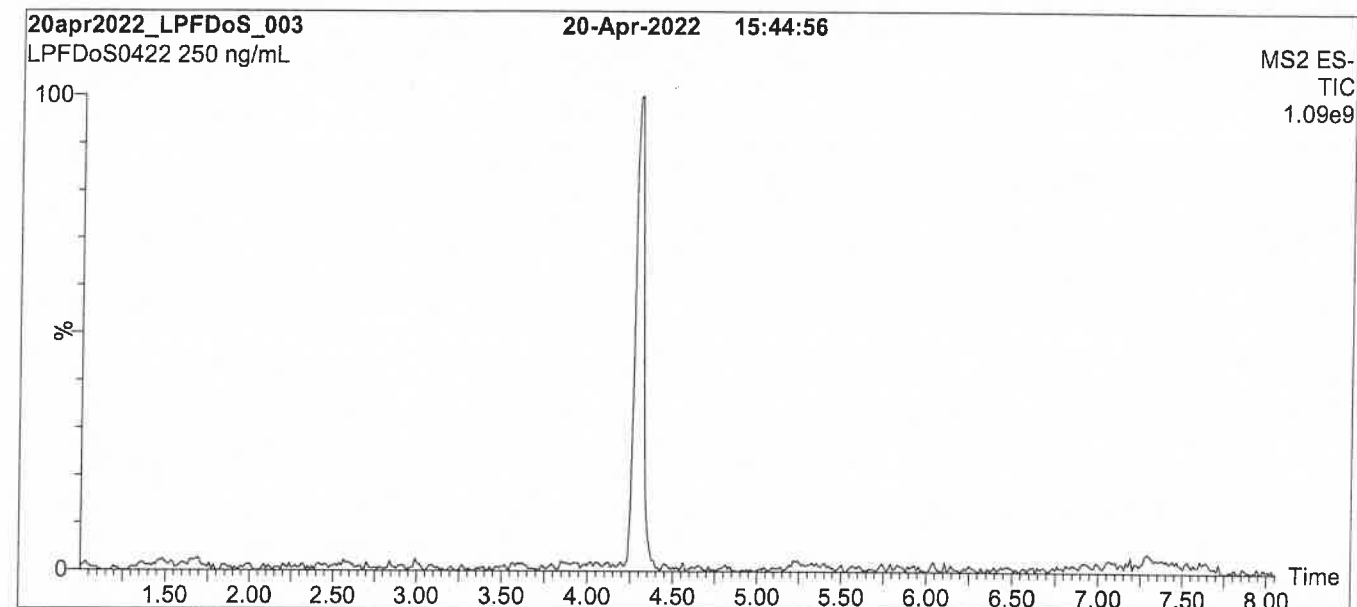
QUALITY MANAGEMENT:

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Figure 1: L-PFDoS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)

Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

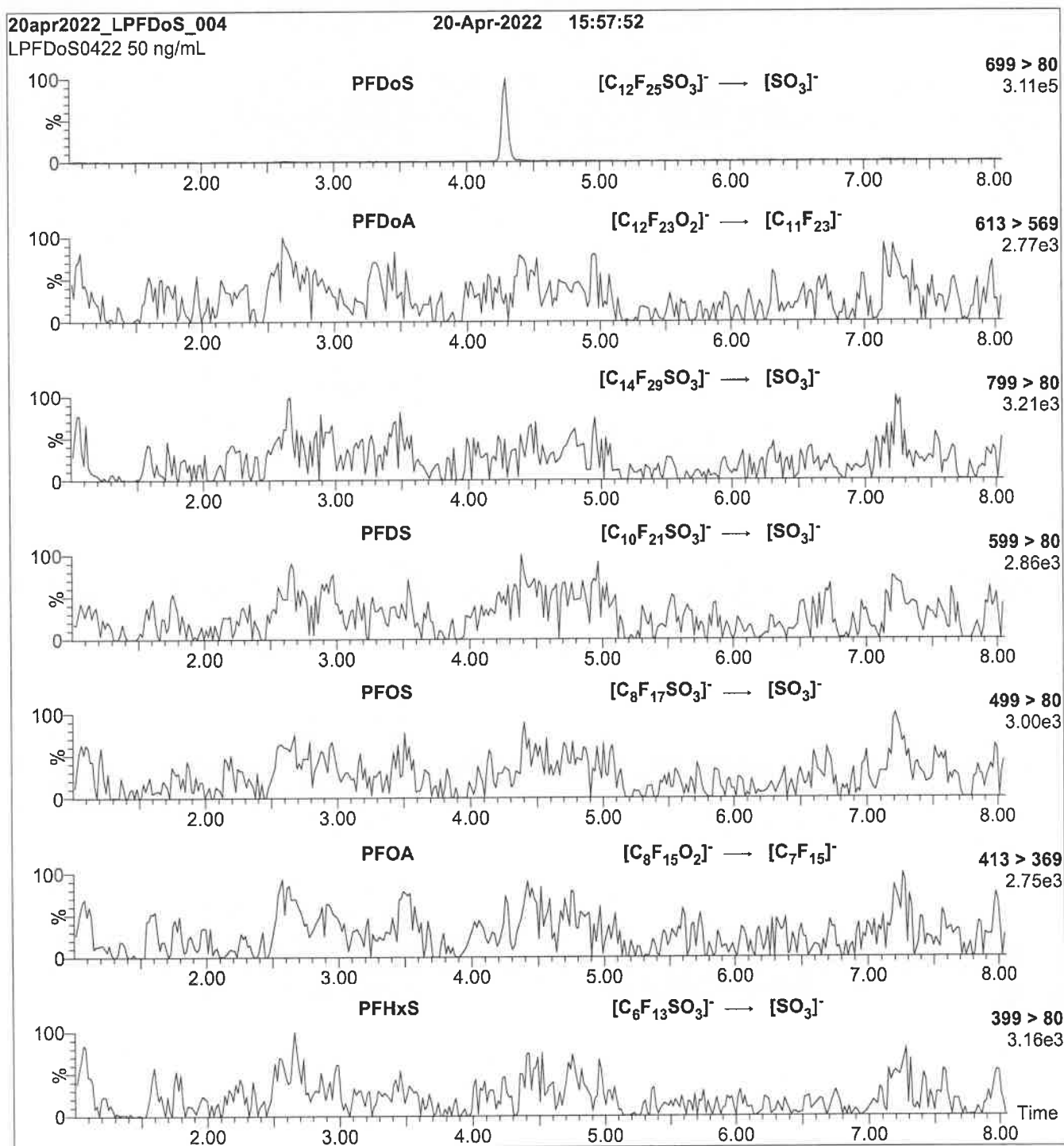
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: L-PFDoS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (L-PFDoS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.20e-3

Collision Energy (eV) = 60

Reagent

LCPFDS2_00005



Cambridge Isotope Labor

2711322
ID: LCPFD62_00003
Exp: 09/08/26 Prod: PCY Opn: 09/29/21
PFDS POTASSIUM SALT SECON

Certificate of Analysis

Product Name:

(Isotopic Label & Enrichment Specification)

PERFLUORODECANESULFONATE, POTASSIUM SALT
UNLABELED 50 UG/ML IN METHANOL**Lot Number:**

SEBG-007

Catalog Number:

ULM-12322-S

Product Information**Chemical Purity Specification:**

≥ 98%

MW*:

* For isotopically labeled compounds, MW listed is for the fully enriched product.

638.23

Labeled CAS Number:

NA

Unlabeled CAS Number:

2806-16-8

Chemical Formula:

C10F21KO3S

Storage:

Store at room temperature away from light and moisture.

Stability:

See storage and expiration date.

Intended Use:

For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Marina Klionsky

Marina Klionsky, Quality Review

Quality Control Tests and Results

QC Release Date

9/8/2021

Expiration Date

9/8/2026

Concentration Based on Gravimetry (of the salt)

50.0 ± 0.5 µg/mL (k=2)

(continued on next page)

CIL subscribes to the following standards for different products: ISO 17034, ISO/IEC 17025, ISO 13485, and cGMP as appropriate.

50 Frontage Road, Andover, MA 01810-5413 USA • 1.800.322.1174 (North America) • +1.978.749.8000 (International) • isotope.com



Product Name: PERFLUORODECANESULFONATE, POTASSIUM SALT
(Isotopic Label & Enrichment Specification) UNLABELED 50 UG/ML IN METHANOL

Lot Number: SEBG-007

Catalog Number: ULM-12322-S

Quality Control Tests and Results (continued)

Chemical Purity of Neat Material(s)	98%
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CIL subscribes to the following standards for different products: ISO 17034, ISO/IEC 17025, ISO 13485, and cGMP as appropriate.

Reagent

LCPFDSA_00016



3065083

ID: LCPFDSA_00016

Exp: 02/22/27 Ppd: 1M Opm: 06/16/22
Perfluorodecane Sulfonic

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

L-PFDS

LOT NUMBER:

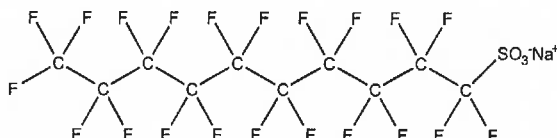
LPFDS0222

COMPOUND:

Sodium perfluoro-1-decanesulfonate

STRUCTURE:**CAS #:**

2806-15-7

**MOLECULAR FORMULA:** $C_{10}F_{21}SO_3Na$ **MOLECULAR WEIGHT:**

622.13

CONCENTRATION:

50.0 ± 2.5 µg/mL (Na salt)

SOLVENT(S):

Methanol

48.2 ± 2.4 µg/mL (PFDS acid)

48.2 ± 2.4 µg/mL (PFDS anion)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

02/22/2022

EXPIRY DATE: (mm/dd/yyyy)

02/22/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.9% of sodium perfluoro-1-dodecanesulfonate (L-PFDoS).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:** 02/28/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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where x is expressed as a relative standard uncertainty of the individual parameter.

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

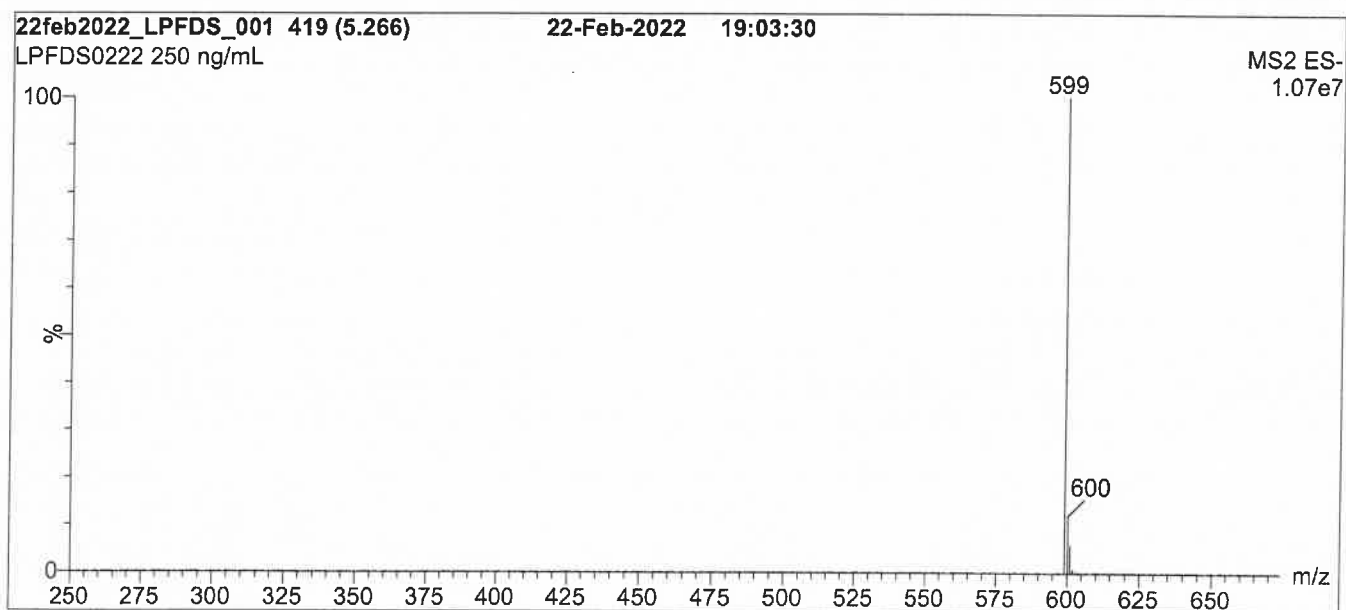
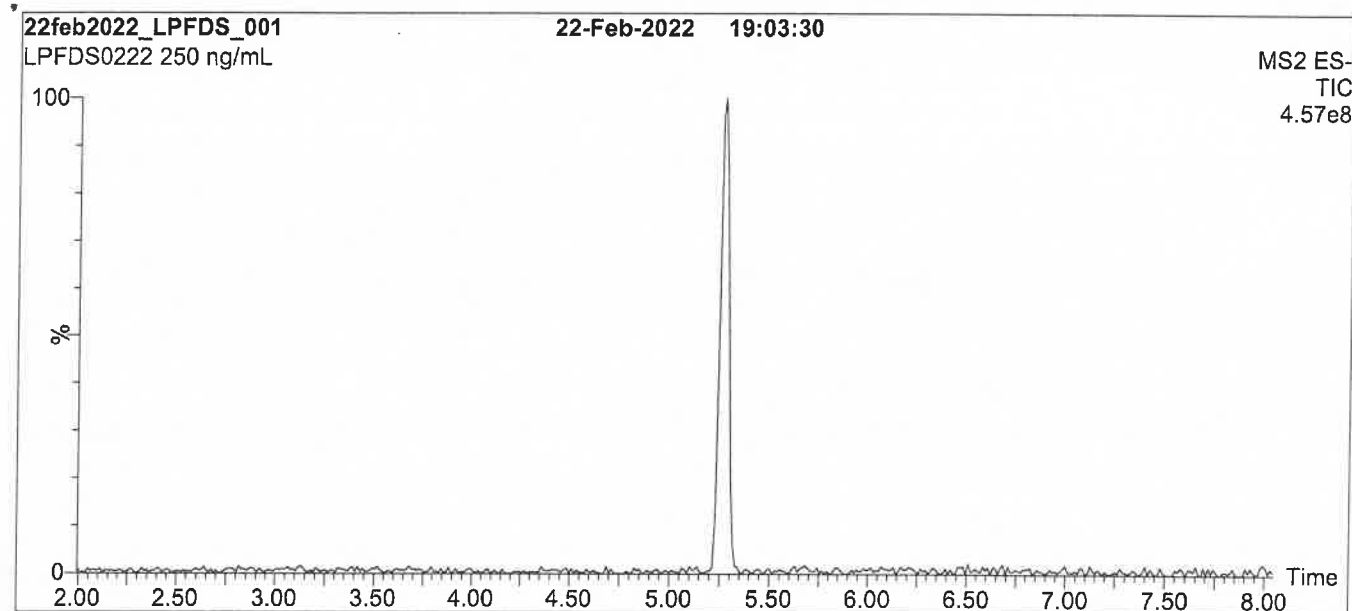
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: L-PFDS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

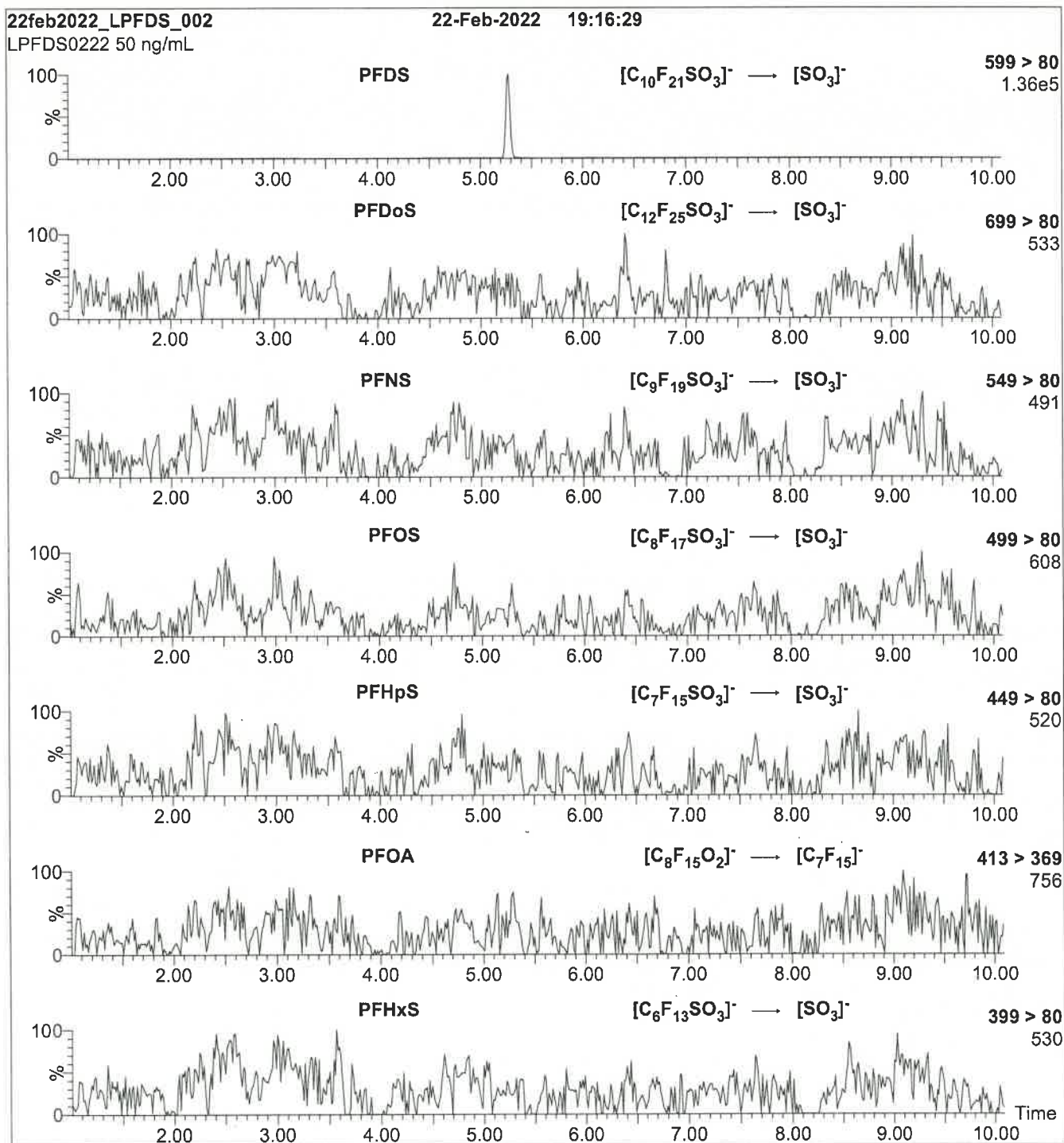
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: L-PFDS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (L-PFDS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 56

Reagent

LCPFECHS_00005



2740138

ID: LCPFECHS_00005

Exp: 10/14/26 Pripd: PCY Opm: 10/19/21

PFECHS Stock 46.1 ug/mL



WELLINGTON LABORATORIES

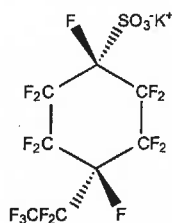
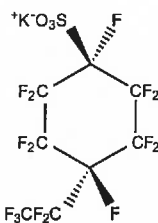
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFECHS

LOT NUMBER: PFECHS1021**COMPOUND:**

Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

STRUCTURE:*cis-isomer**trans-isomer***CAS #:**

335-24-0

MOLECULAR FORMULA: $C_8F_{15}SO_3K$ **MOLECULAR WEIGHT:** 500.22**CONCENTRATION:**

50.0 ± 2.5 µg/mL (K salt)
 46.2 ± 2.3 µg/mL (PFECHS acid)
 46.1 ± 2.3 µg/mL (PFECHS anion)

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

10/14/2021

EXPIRY DATE: (mm/dd/yyyy)

10/14/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains a mixture of the *cis/trans* isomers of PFECHS at a ratio of 1:1.27 (*cis:trans*).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

 B.G. Chittim, General Manager

Date: 10/15/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

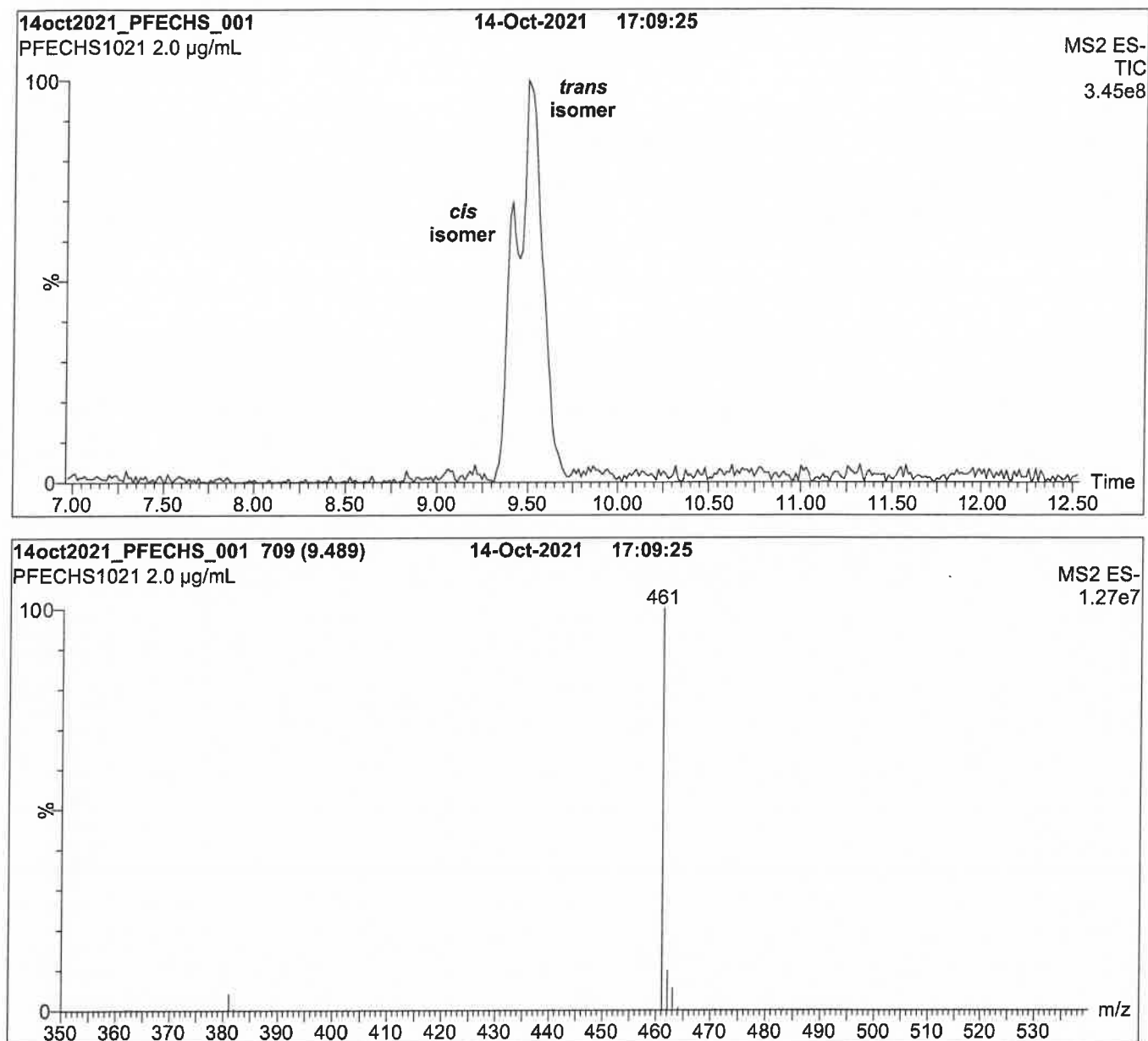
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: PFECHS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity CSH Fluoro-Phenyl
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 75% H₂O / 25% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 60% organic over 13 min, then ramp to
80% organic over 2 min and hold for 2 min
before returning to initial conditions in 1 min.

Time: 20 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (350 - 850 amu)

Source: Electrospray (negative)

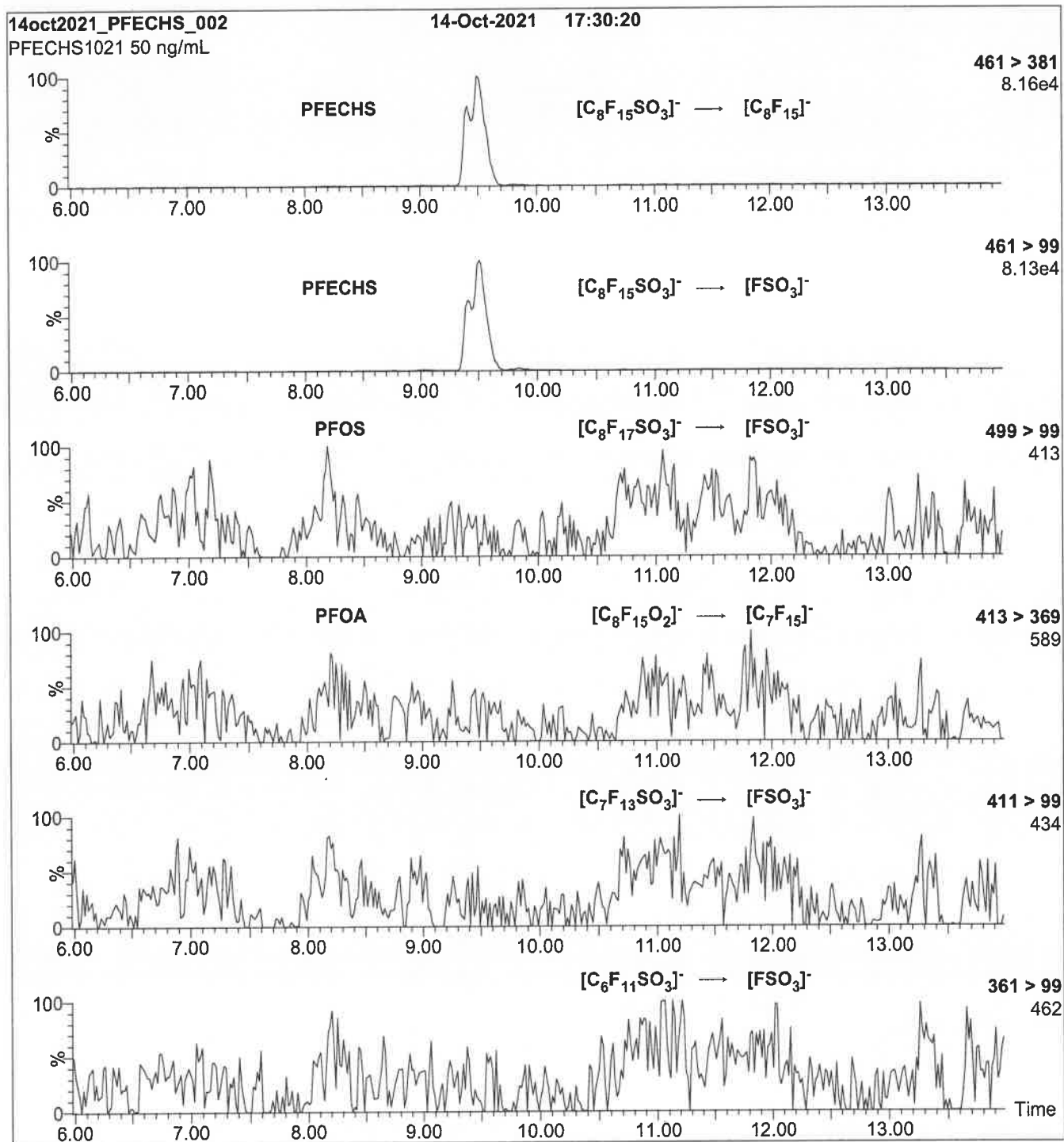
Capillary Voltage (kV) = 1.50

Cone Voltage (V) = 45.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 750

Figure 2: PFECHS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFECHS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.37e-3

Collision Energy (eV) = 24

Reagent

LCPFECHS_00007



2979901

ID: LCPFECHS_00007

Exp: 03/28/27 Prod: PCY Opn: 04/19/22
PFECHS Stock 46.1 ug/mL

WELLINGTON LABORATORIES

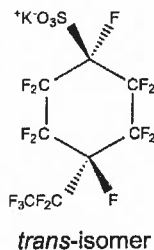
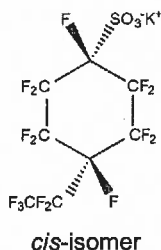
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFECHS

LOT NUMBER: PFECHS0222**COMPOUND:**

Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

STRUCTURE:**CAS #:**

335-24-0

MOLECULAR FORMULA: $C_8F_{16}SO_3K$ **MOLECULAR WEIGHT:** 500.22**CONCENTRATION:** $50.0 \pm 2.5 \mu\text{g/mL}$ (K salt)
 $46.2 \pm 2.3 \mu\text{g/mL}$ (PFECHS acid)
 $46.1 \pm 2.3 \mu\text{g/mL}$ (PFECHS anion)**SOLVENT(S):**

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

03/28/2022

EXPIRY DATE: (mm/dd/yyyy)

03/28/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains a mixture of the *cis/trans* isomers of PFECHS at a ratio of 1:1.27 (*cis:trans*).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 03/30/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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LIMITED WARRANTY:

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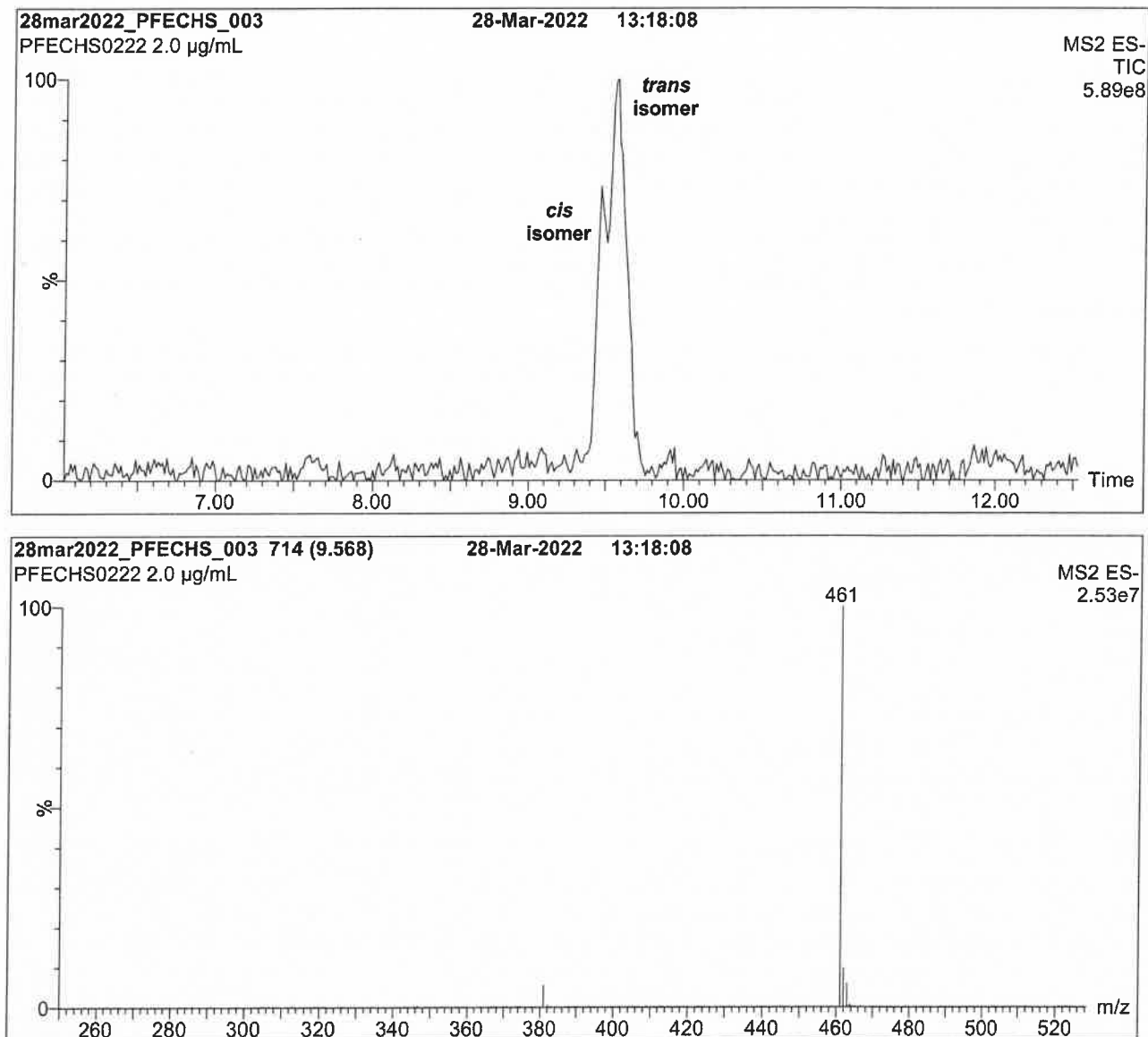
QUALITY MANAGEMENT:

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****For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com****

Figure 1: PFECHS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity CSH Fluoro-Phenyl
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 75% H₂O / 25% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 60% organic over 13 min, then ramp to
80% organic over 2 min and hold for 2 min
before returning to initial conditions in 1 min.

Time: 20 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

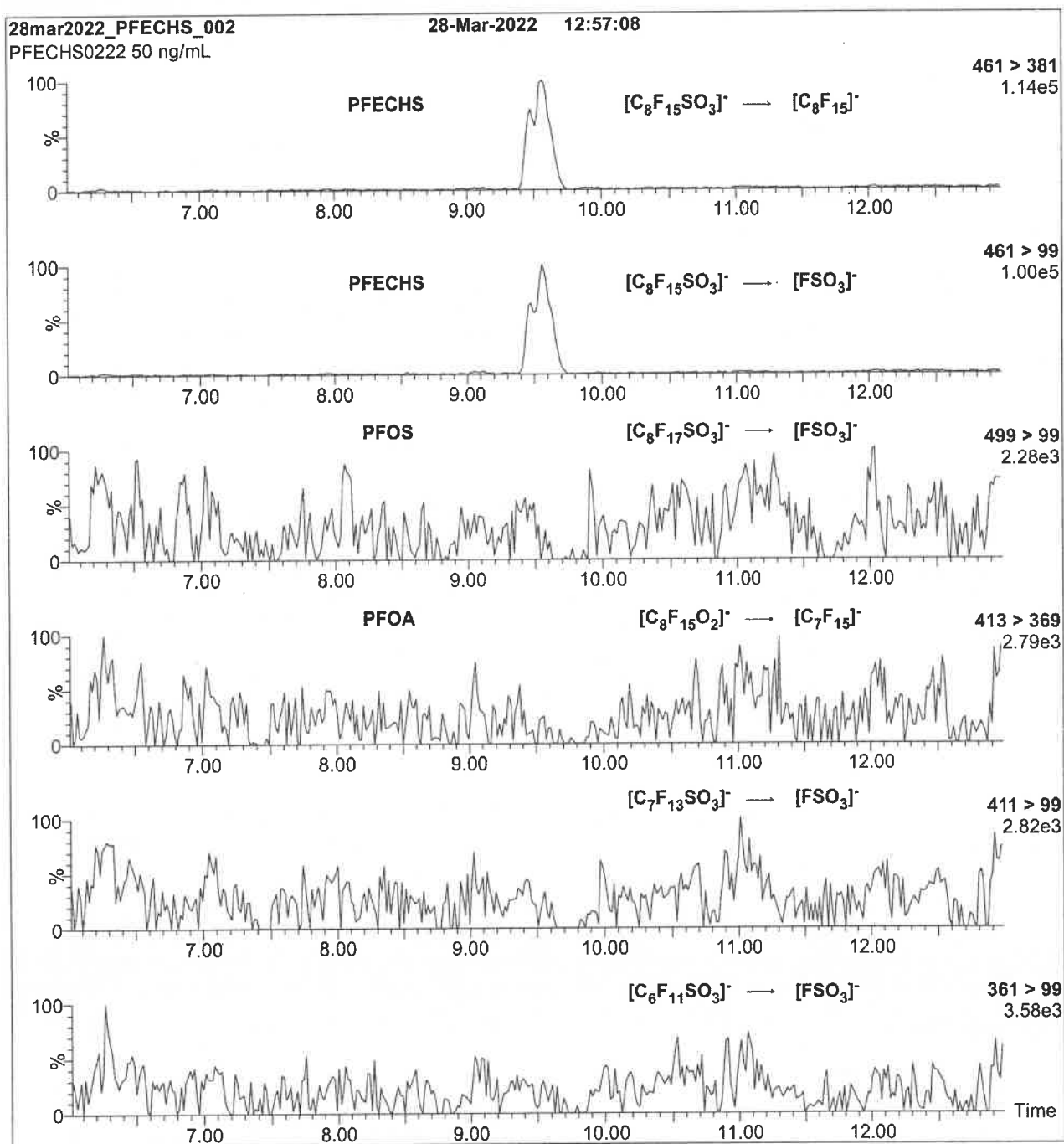
Capillary Voltage (kV) = 1.50

Cone Voltage (V) = 45.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 750

Figure 2: PFECHS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFECHS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.37e-3

Collision Energy (eV) = 24

Reagent

LCPFEEA_00009



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

2955412
ID: LCPFEESA_00009
Exp: 11/22/26 Prpd: CV Opm: 03/31/22
PFEESA/ PES Stock 44.5 ug

PRODUCT CODE:

PFEESA

LOT NUMBER:

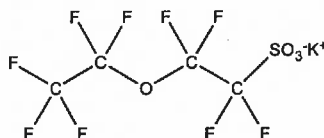
PFEESA1121

COMPOUND:

Potassium perfluoro(2-ethoxyethane)sulfonate

STRUCTURE:**CAS #:**

117205-07-9

**MOLECULAR FORMULA:** $C_4F_9SO_4K$ **MOLECULAR WEIGHT:**

354.19

CONCENTRATION:

50.0 ± 2.5 µg/mL (K salt)
44.6 ± 2.2 µg/mL (PFEESA acid)
44.5 ± 2.2 µg/mL (PFEESA anion)

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/22/2021

EXPIRY DATE: (mm/dd/yyyy)

11/22/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.2% of perfluoro-n-octanoic acid (PFOA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

11/29/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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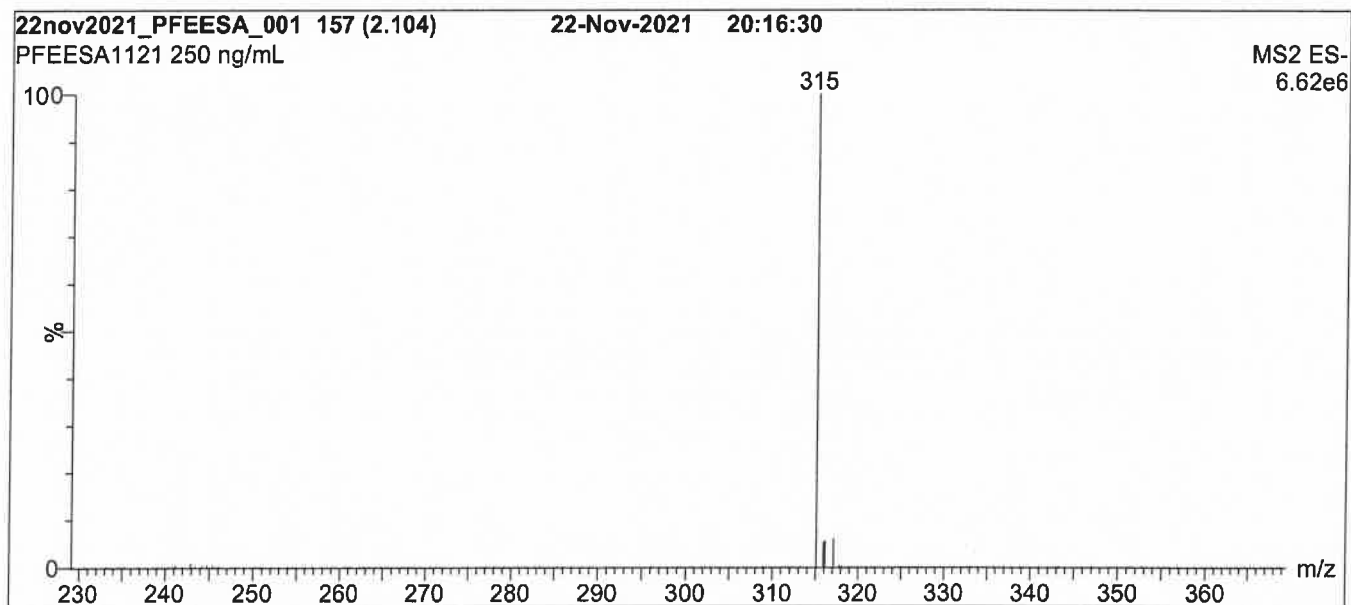
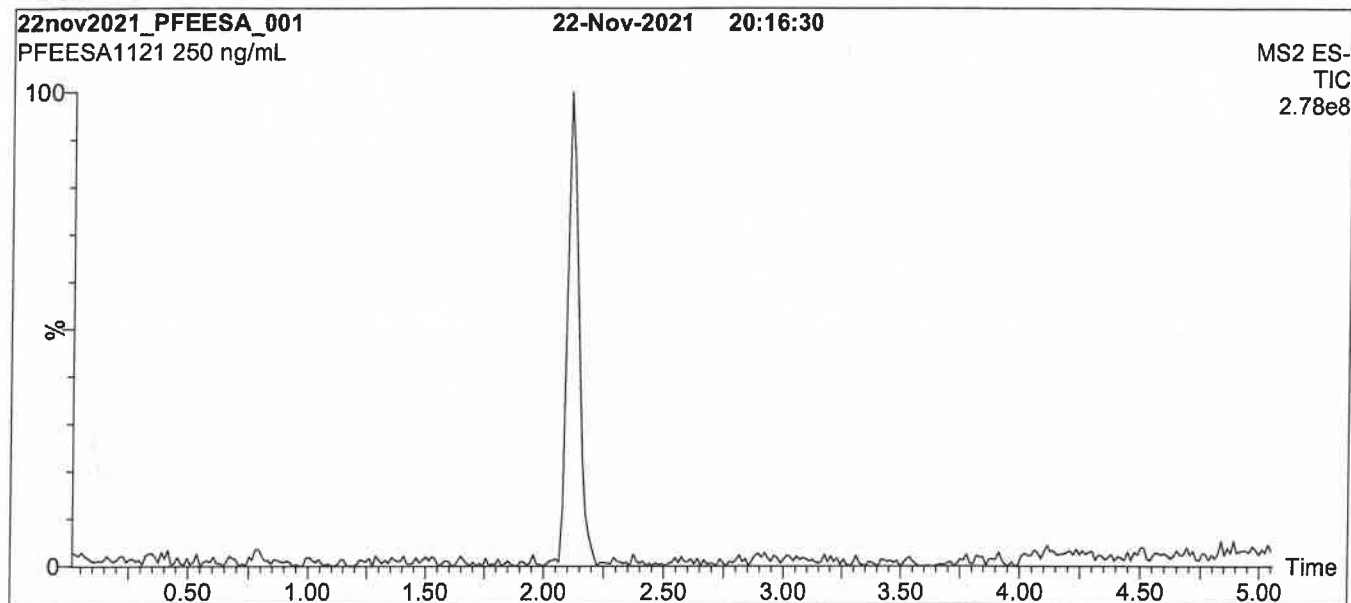
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: PFEESA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

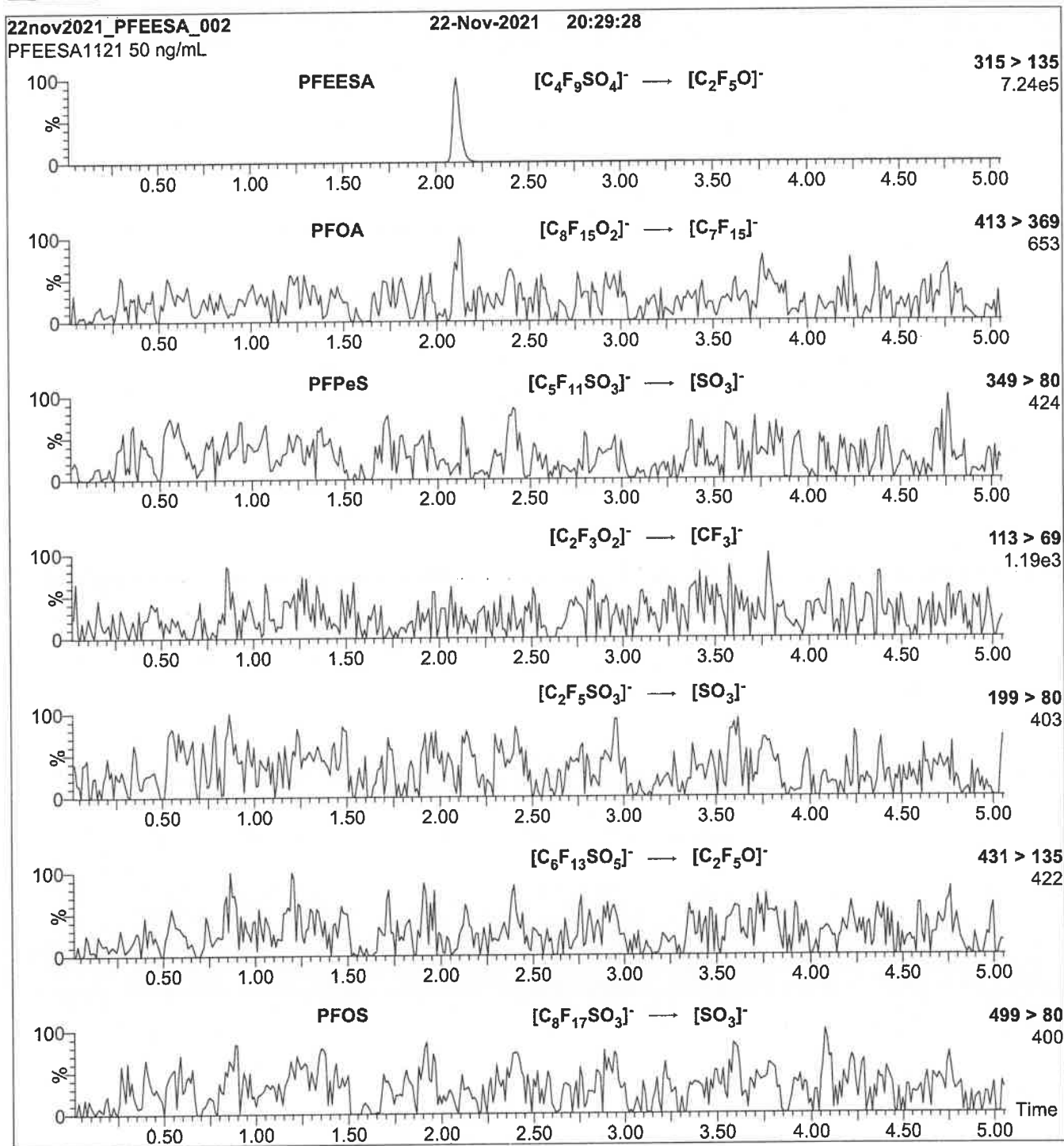
Capillary Voltage (kV) = 1.00

Cone Voltage (V) = 38.00

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFEESA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFEESA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 22

Reagent

LCPFEEA_00010



2979942

ID: LCPFEESA_00010

Exp: 11/22/26 Prod: PCY Opi: 04/19/22
PFEESA/ PES Stock 44.5 ug**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PRODUCT CODE:**

PFEESA

LOT NUMBER:

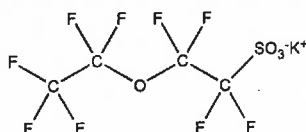
PFEESA1121

COMPOUND:

Potassium perfluoro(2-ethoxyethane)sulfonate

STRUCTURE:**CAS #:**

117205-07-9

**MOLECULAR FORMULA:** $C_4F_9SO_4K$ **MOLECULAR WEIGHT:**

354.19

CONCENTRATION:

50.0 ± 2.5 µg/mL (K salt)
 44.6 ± 2.2 µg/mL (PFEESA acid)
 44.5 ± 2.2 µg/mL (PFEESA anion)

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/22/2021

EXPIRY DATE: (mm/dd/yyyy)

11/22/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.2% of perfluoro-n-octanoic acid (PFOA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

11/29/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

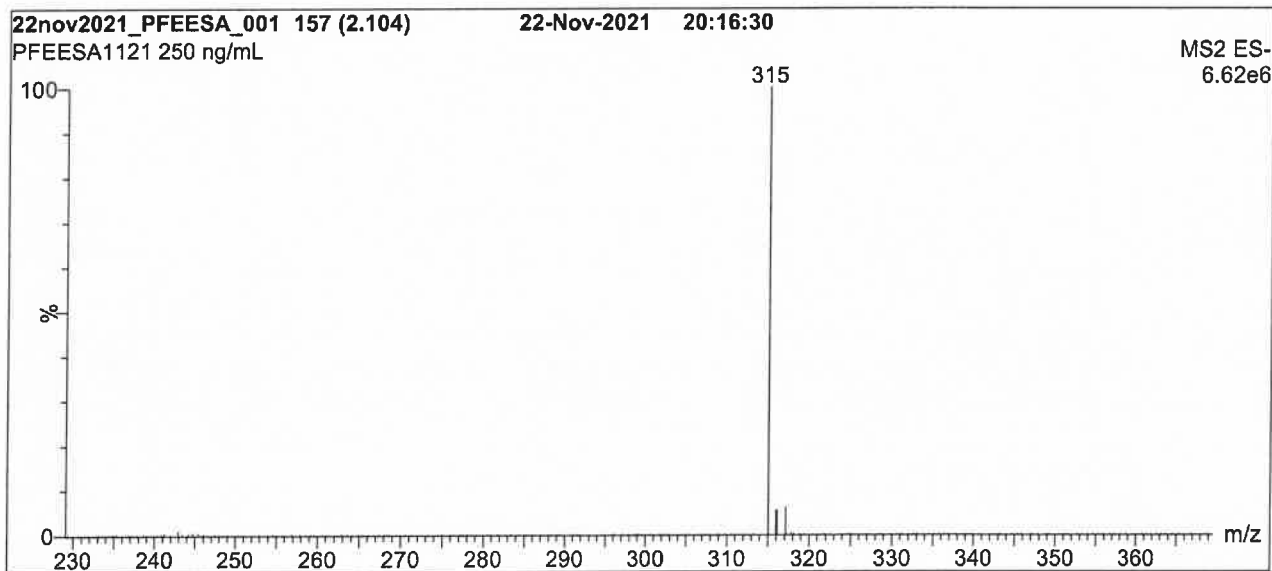
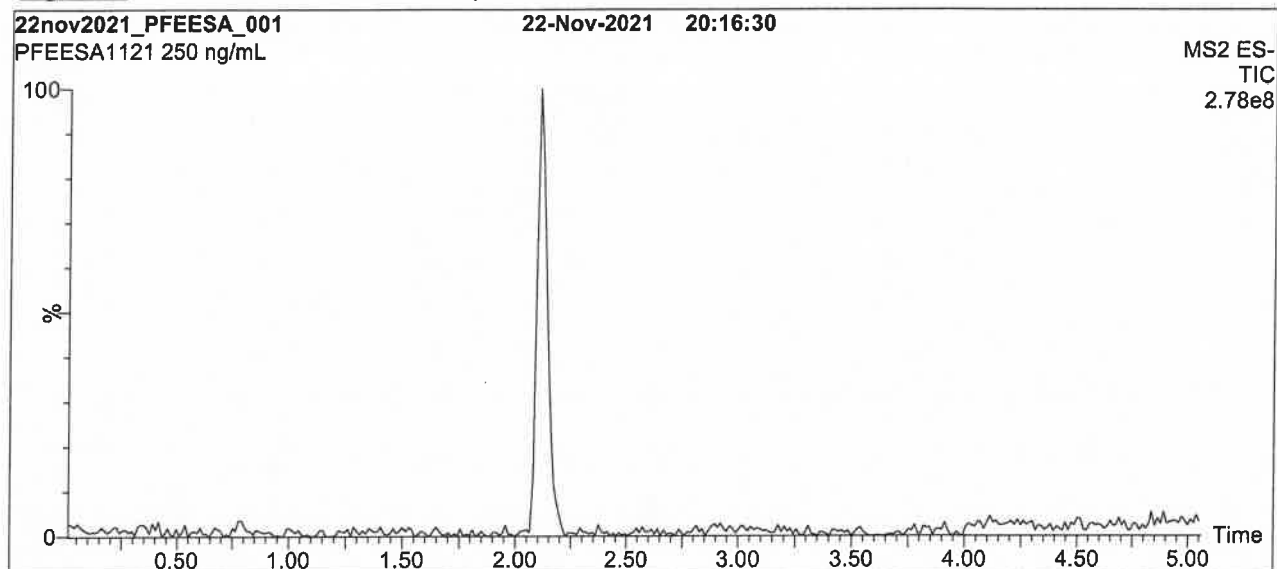
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: PFEESA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

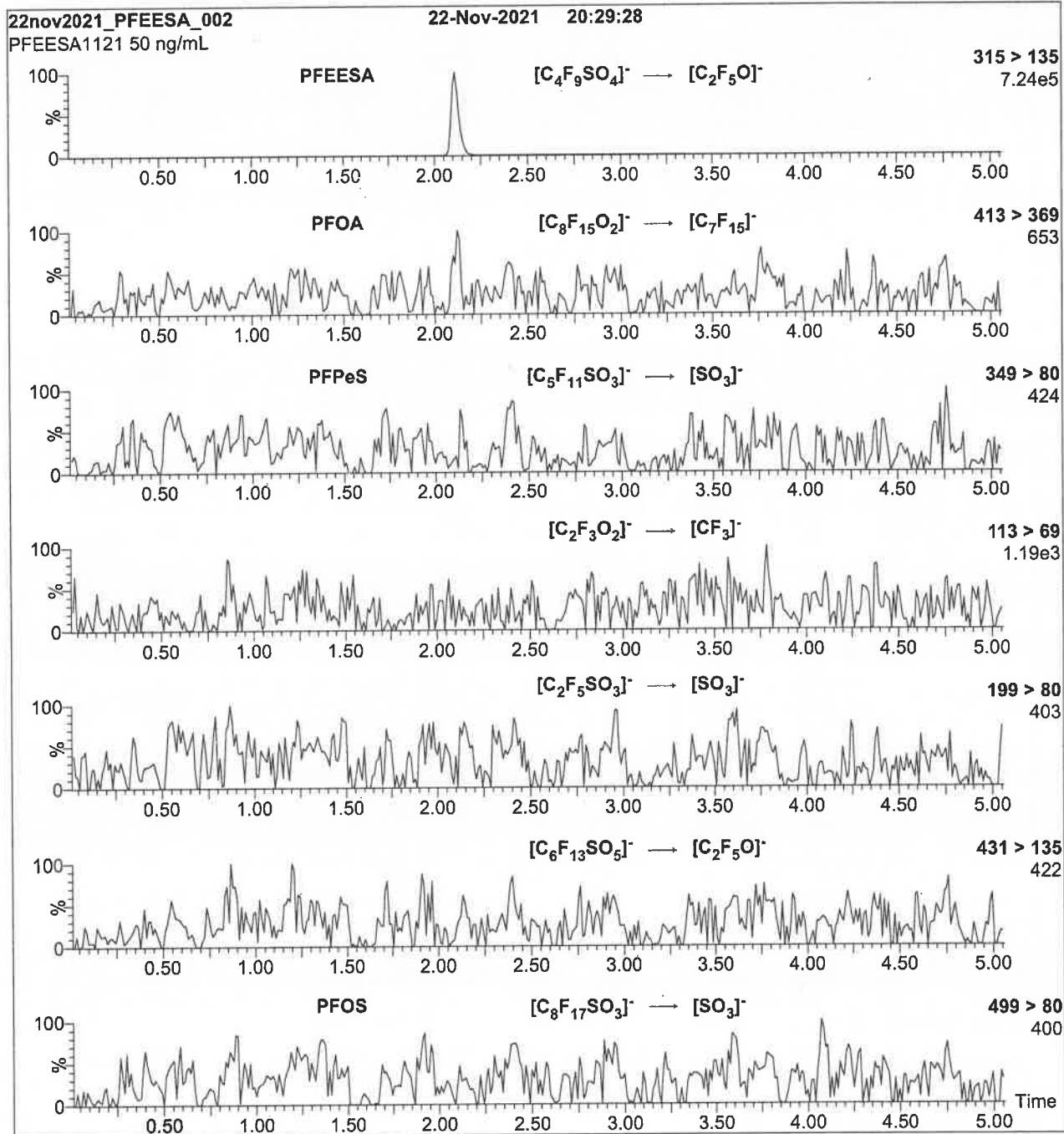
Capillary Voltage (kV) = 1.00

Cone Voltage (V) = 38.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFEESA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFEESA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3

Collision Energy (eV) = 22

Reagent

LCPFHpA_00035



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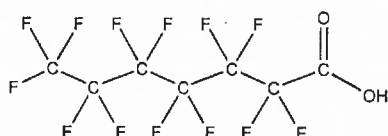
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFHpA
COMPOUND: Perfluoro-n-heptanoic acid

LOT NUMBER: PFHpA0222

STRUCTURE:

CAS #: 375-85-9



MOLECULAR FORMULA: $C_7H_{13}O_2$
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$

MOLECULAR WEIGHT: 364.06
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/17/2022
EXPIRY DATE: (mm/dd/yyyy) 03/17/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 04/14/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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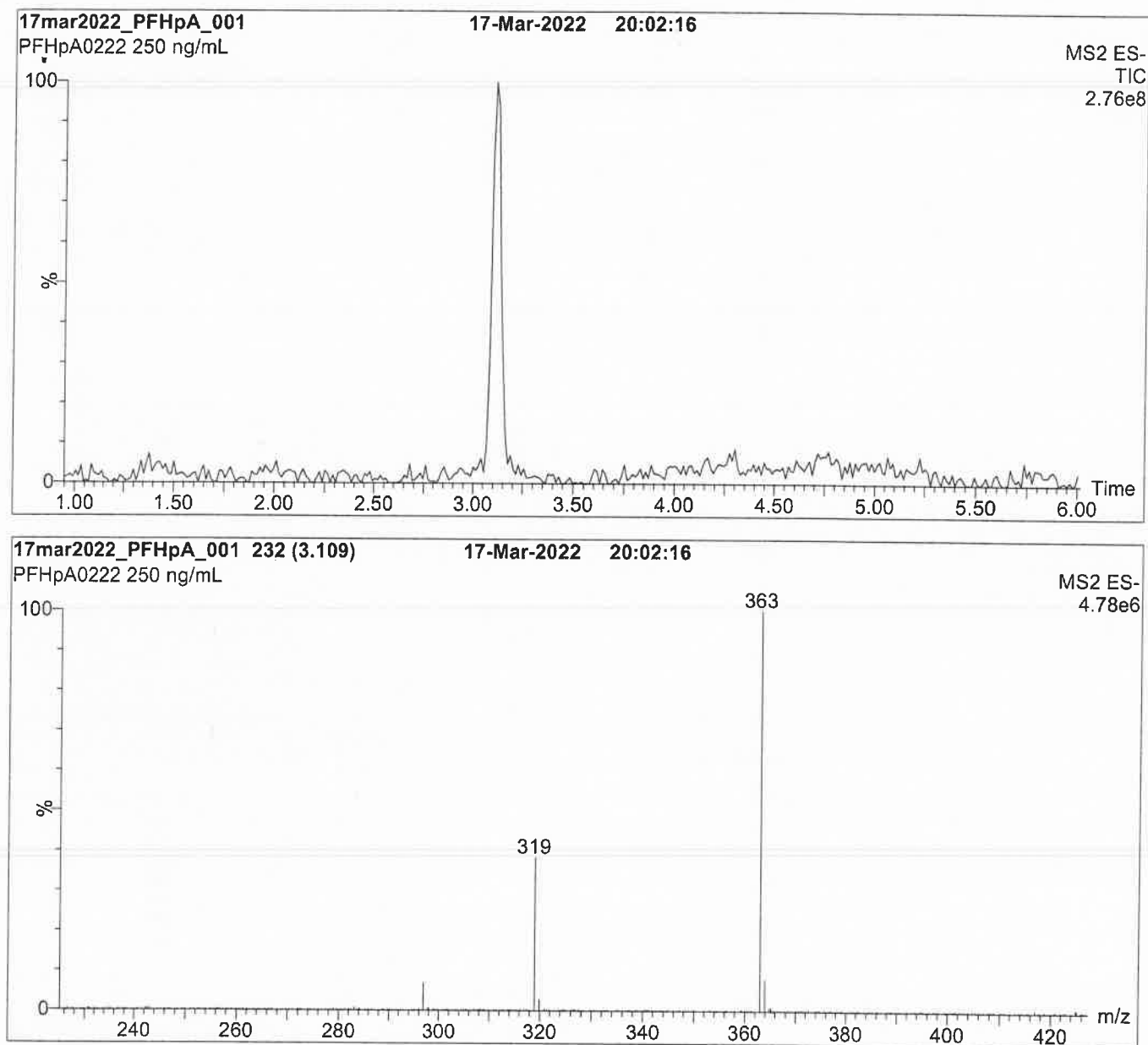
QUALITY MANAGEMENT:

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Figure 1: PFHpA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

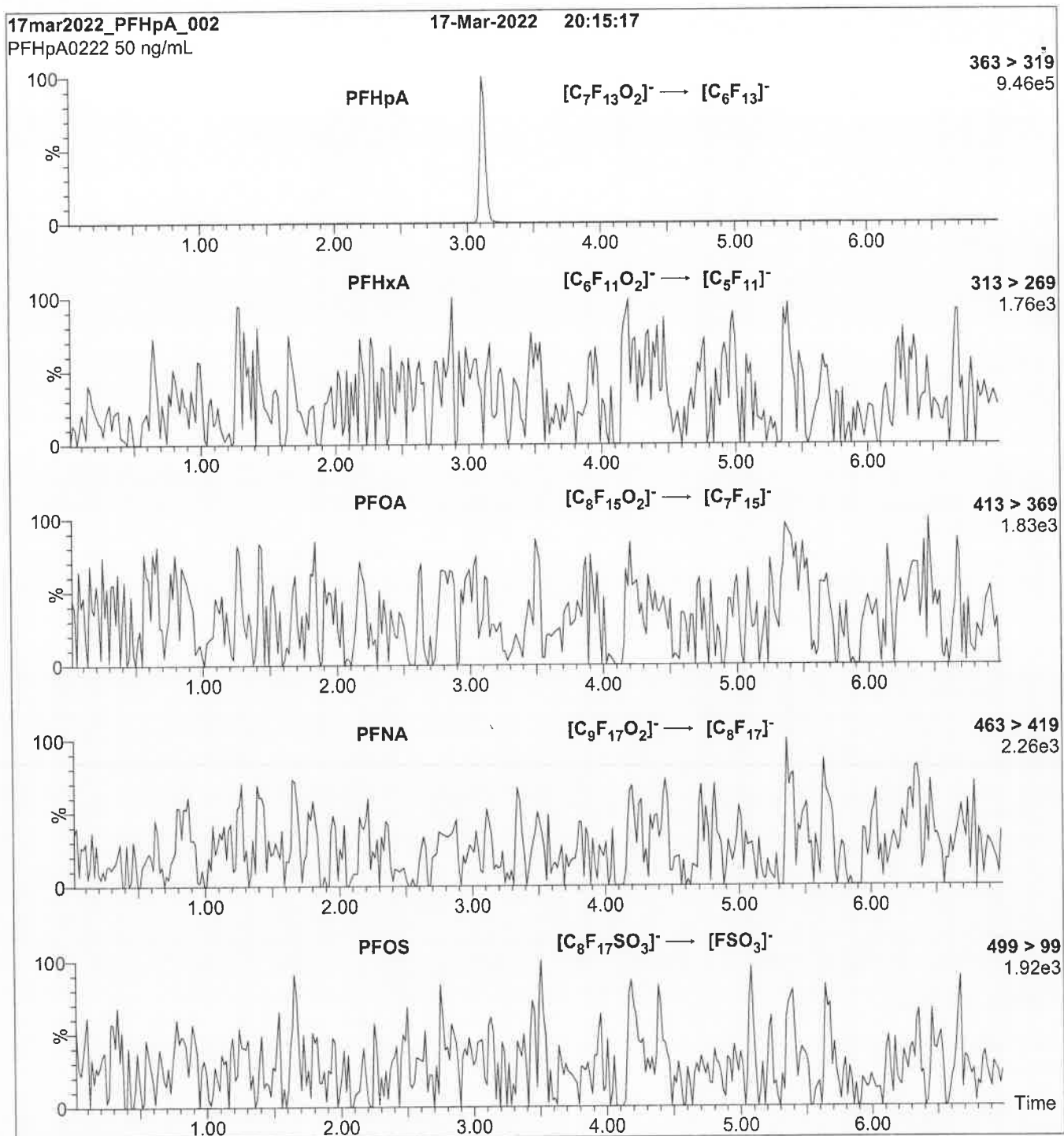
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFHpA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFHpA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 8

Reagent

LCPFHpS2_00002



Product Name: PERFLUOROHEPTANESULFONATE, SODIUM SALT
(Isotopic Label & Enrichment Specification) UNLABELED 50 UG/ML IN METHANOL

Lot Number: SEBC-007

Catalog Number: ULM-9531-S

Product Information

Chemical Purity Specification: $\geq 98\%$

MW*: 472.10
* For isotopically labeled compounds, MW listed is for the fully enriched product.

Labeled CAS Number: NA

Unlabeled CAS Number: 21934-50-9

Chemical Formula: $\text{CF}_3(\text{CF}_2)_5\text{CF}_2\text{SO}_3\text{Na}$

Storage: Store at room temperature away from light and moisture.
Stability: See storage and expiration date.

Intended Use: For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Marina Klionsky

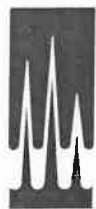
Marina Klionsky, Quality Review

Quality Control Tests and Results

QC Release Date	4/7/2021
Expiration Date	4/7/2031
Concentration Based on Gravimetry (of the salt)	$50.0 \pm 0.5 \mu\text{g/mL}$ (k=2)
Chemical Purity of Neat Material(s)	100.0%

Reagent

LCPFHpSA_00021



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

3065075
ID: LCPFHpSA_00021
Exp: 01/27/27 Ppd: M Opn: 06/16/22
Perfluoroheptanesulfonic

PRODUCT CODE:

L-PFHpS

COMPOUND:

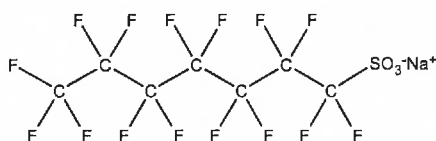
Sodium perfluoro-1-heptanesulfonate

LOT NUMBER:

LPFHpS0122

STRUCTURE:**CAS #:**

21934-50-9

**MOLECULAR FORMULA:** $C_7F_{15}SO_3Na$ **CONCENTRATION:**

50.0 ± 2.5 µg/mL (Na salt)

47.7 ± 2.4 µg/mL (PFHpS acid)

47.6 ± 2.4 µg/mL (PFHpS anion)

MOLECULAR WEIGHT:

472.10

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

01/27/2022

EXPIRY DATE: (mm/dd/yyyy)

01/27/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 02/15/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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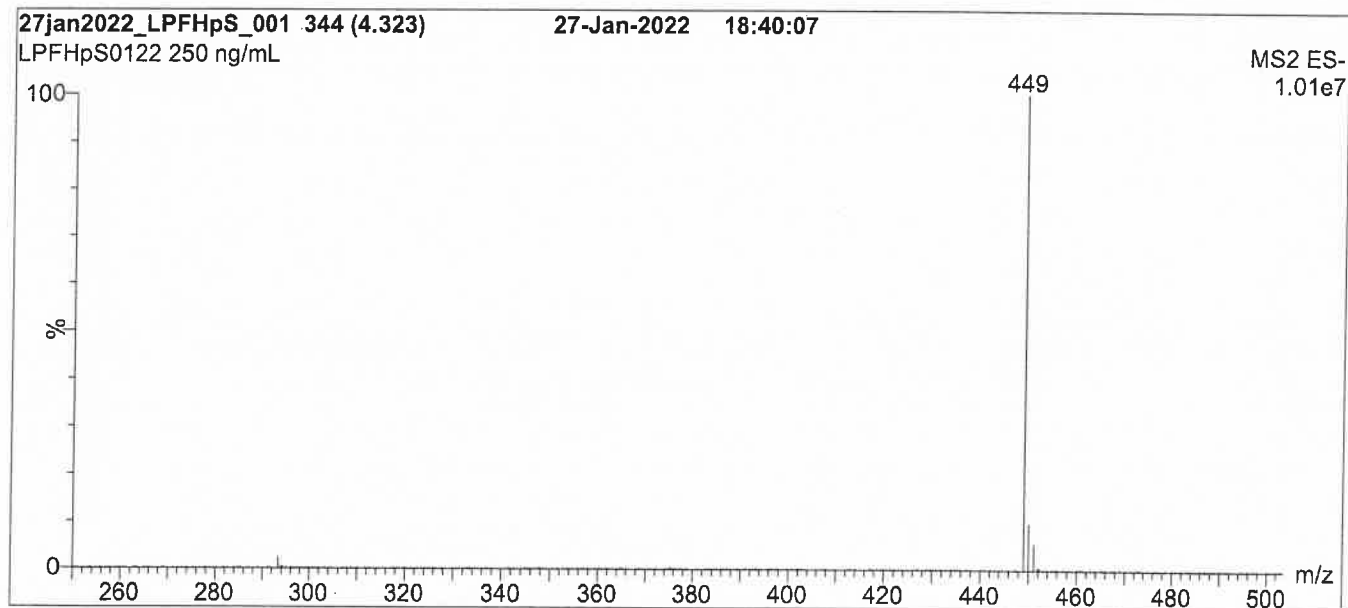
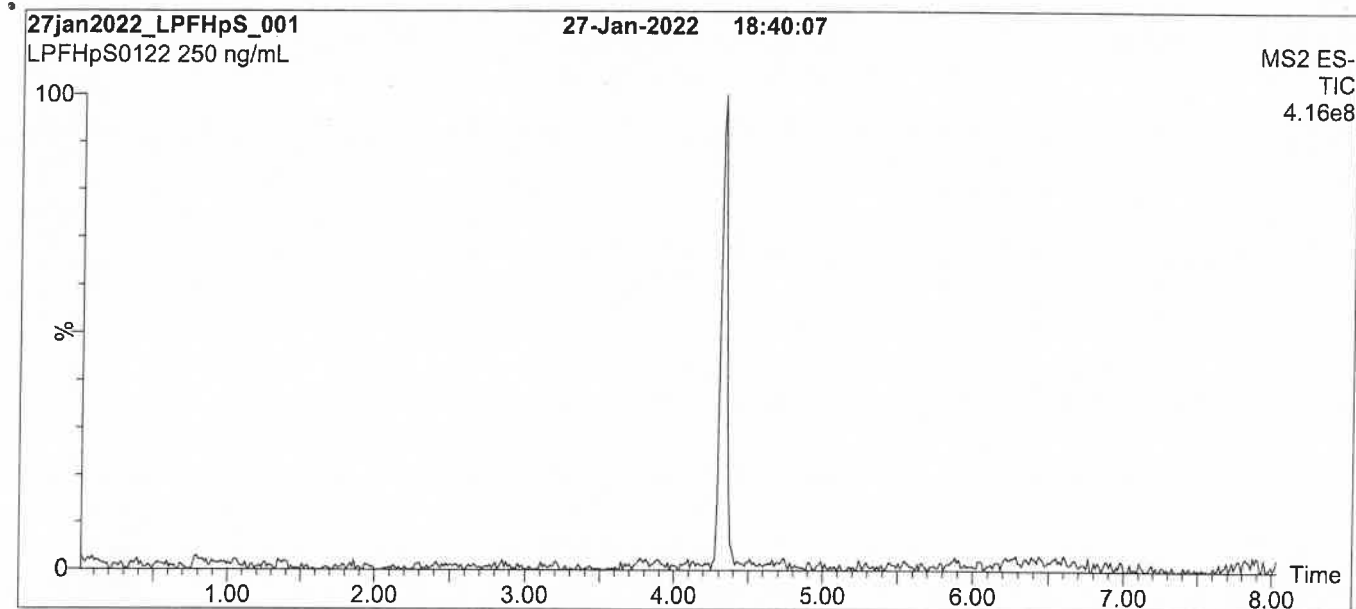
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Figure 1: L-PFHpS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

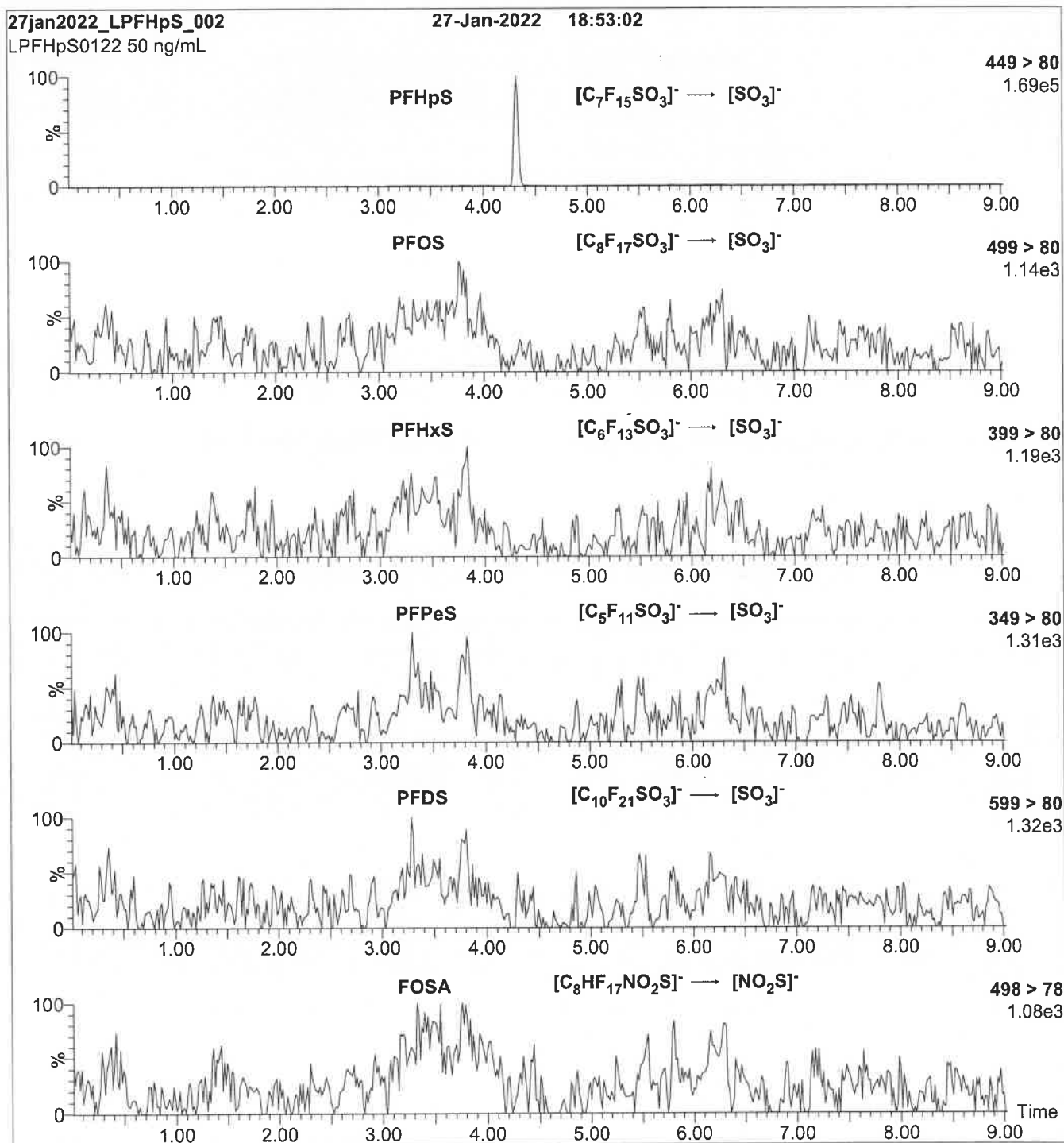
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: L-PFHpS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (L-PFHpS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.27e-3

Collision Energy (eV) = 42

Reagent

LCPFHxA_00033



3112508

ID: LCPFHxA_00033

Exp: 01/27/27 Ppd3M Opm: 01/22/22

PF-n-hexanoic acid



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

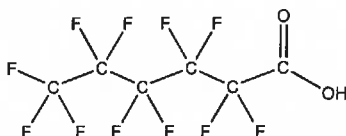
PFHxA

LOT NUMBER: PFHxA0122**COMPOUND:**

Perfluoro-n-hexanoic acid

STRUCTURE:**CAS #:**

307-24-4

**MOLECULAR FORMULA:** $C_6H_5F_{11}O_2$ **MOLECULAR WEIGHT:** 314.05**CONCENTRATION:** $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

01/27/2022

EXPIRY DATE: (mm/dd/yyyy)

01/27/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:**02/15/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

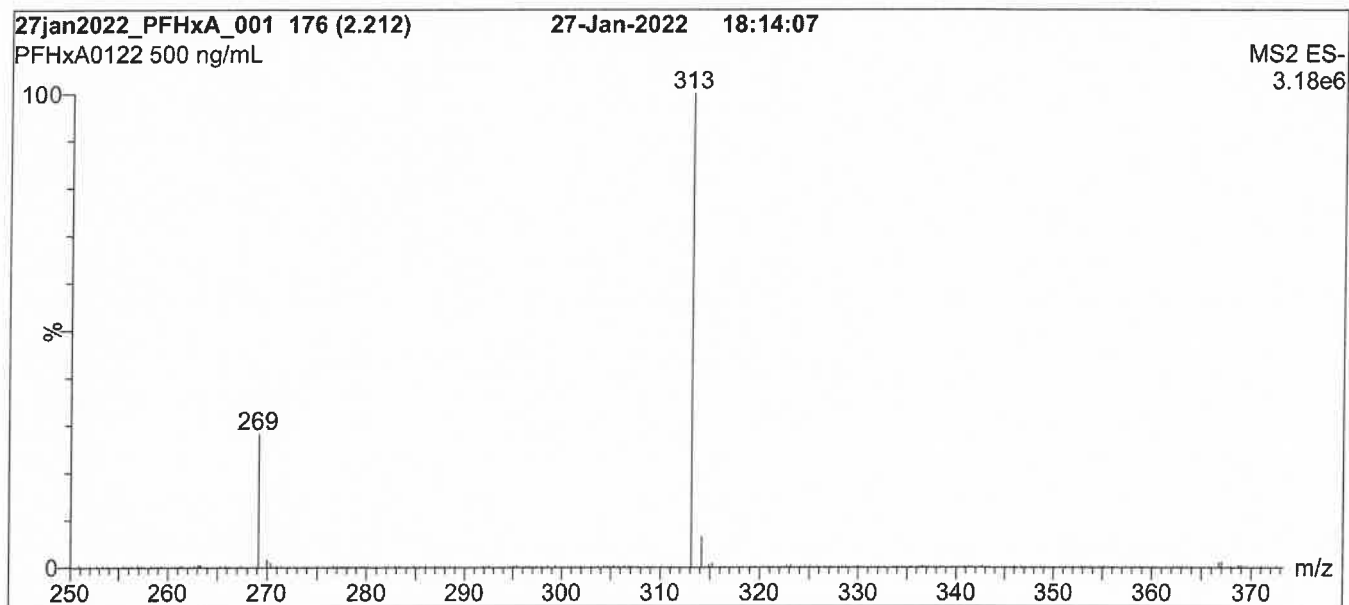
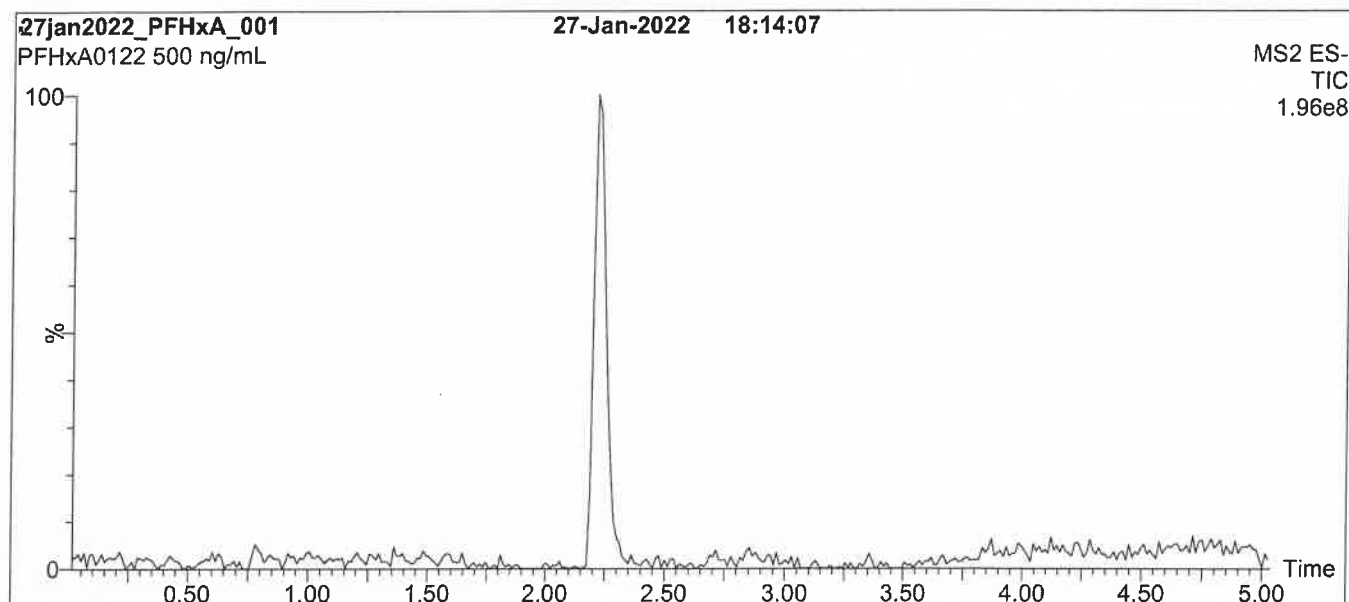
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: PFHxA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

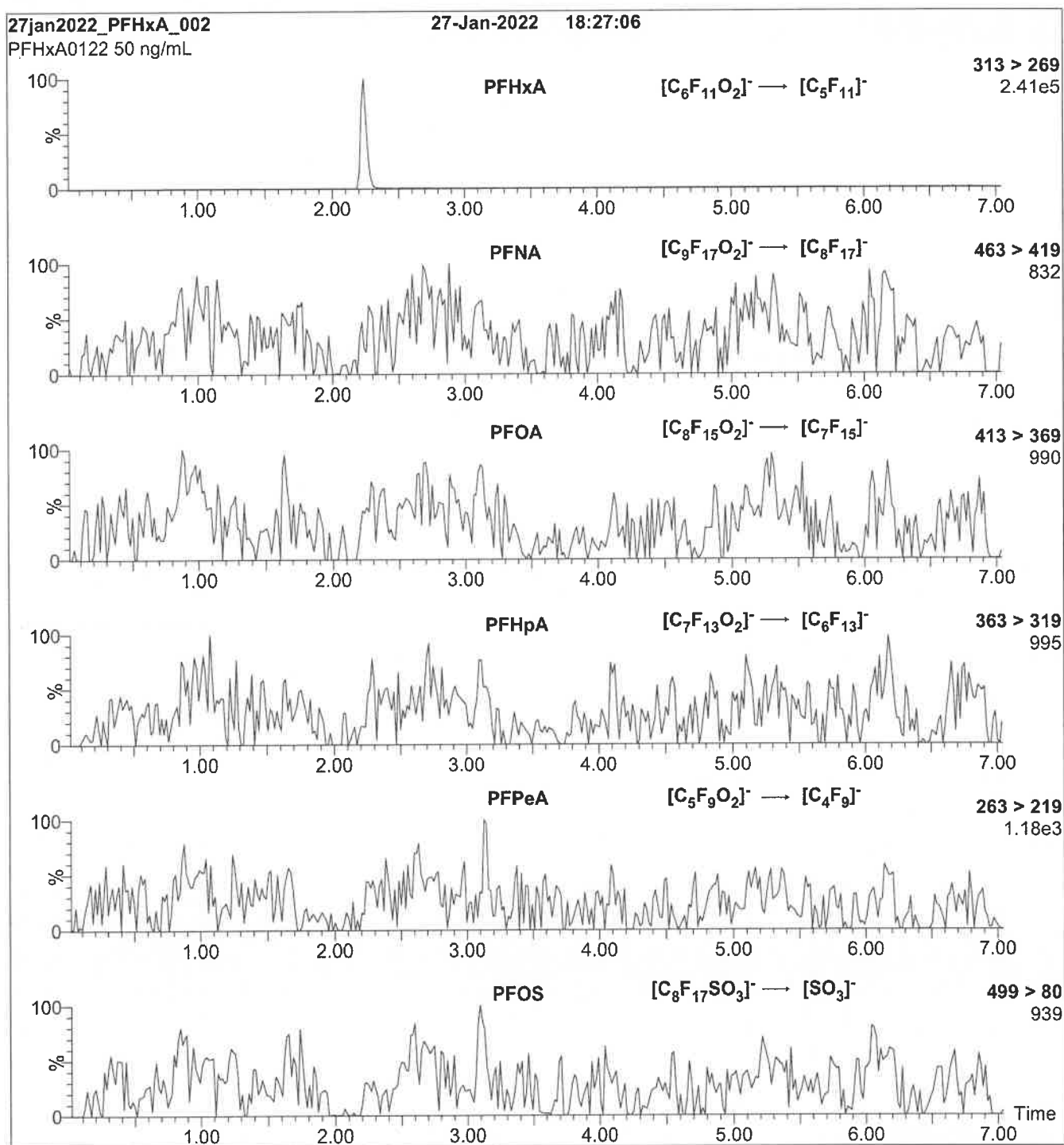
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFHxA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFHxA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.27e-3

Collision Energy (eV) = 8

Reagent

LCPFHxDA_00028



3064562

ID: LCPFHxDA_00028

Exp:02/23/27 Prpd:MM Opi:06/16/22

PFHxDA stock 50ug/mL



WELLINGTON LABORATORIES

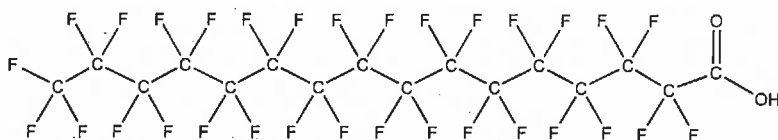
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFHxDA
COMPOUND: Perfluoro-n-hexadecanoic acid

LOT NUMBER: PFHxDA0222

STRUCTURE:

CAS #: 67905-19-5



MOLECULAR FORMULA: $C_{16}H_{31}O_2$
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$

MOLECULAR WEIGHT: 814.13
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 02/23/2022

EXPIRY DATE: (mm/dd/yyyy) 02/23/2027

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 03/08/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

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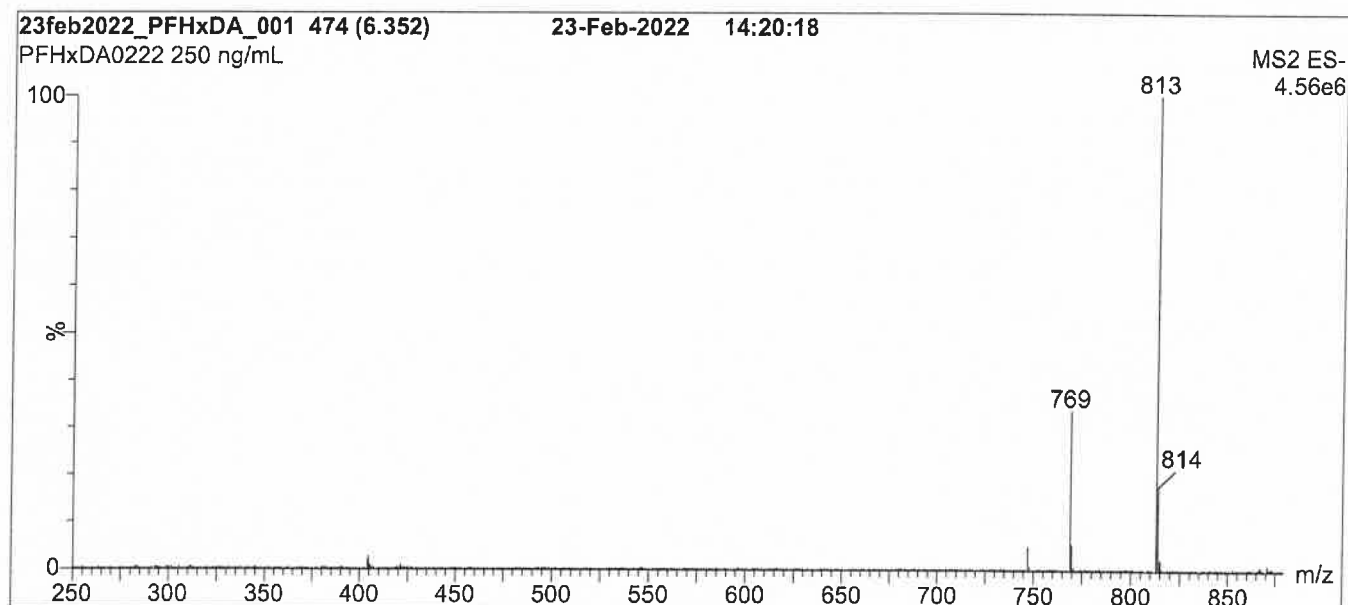
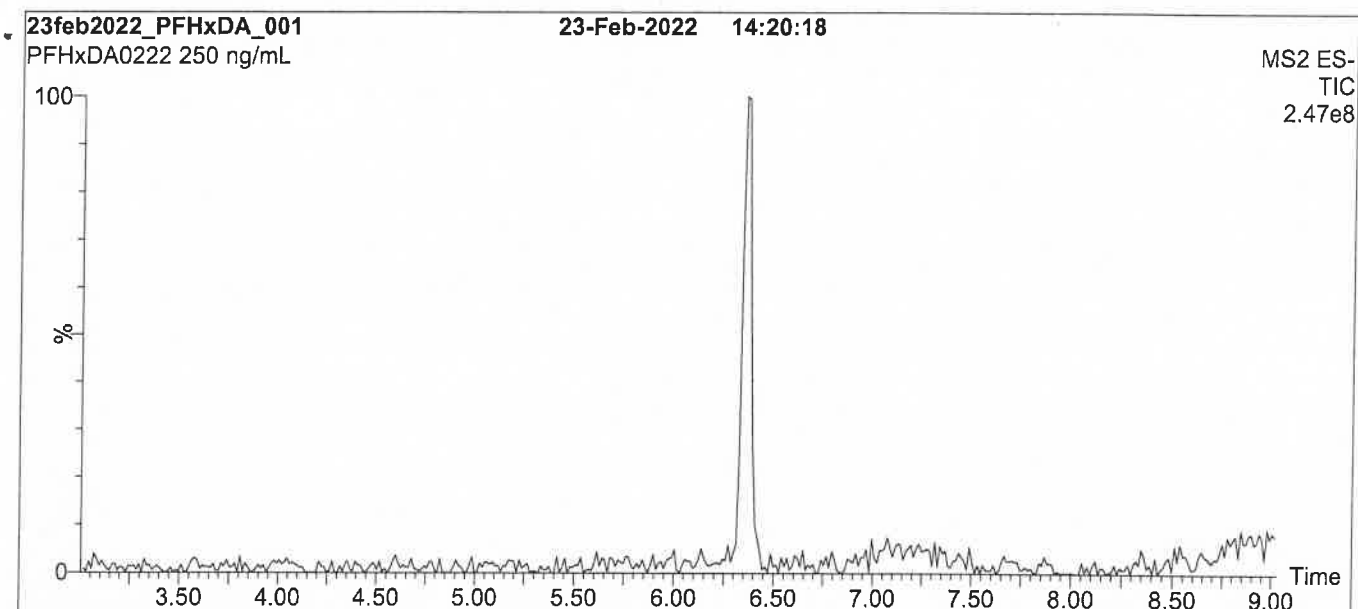
QUALITY MANAGEMENT:

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Figure 1: PFHxDA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

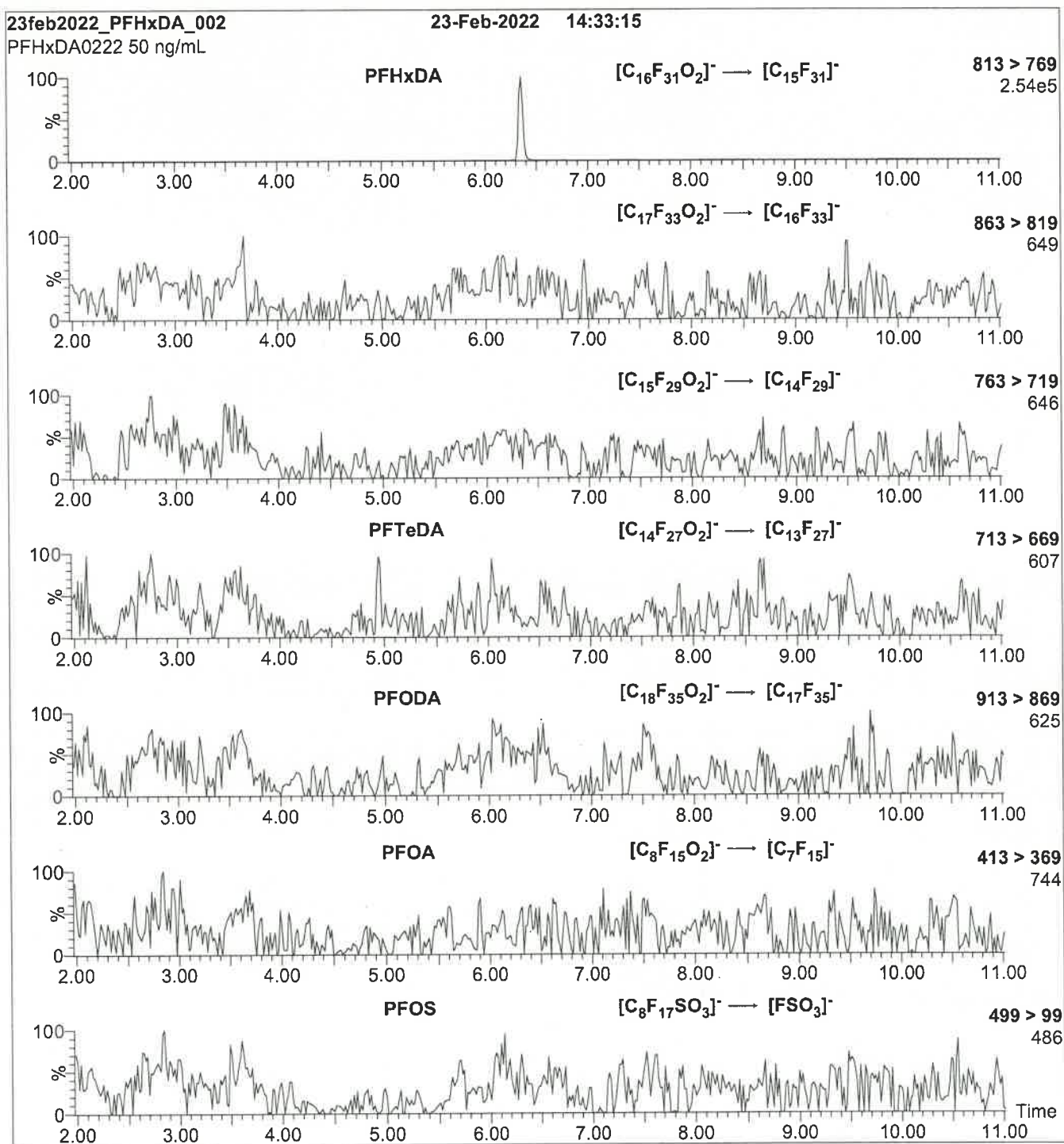
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFHxDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFHxDA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 14

Reagent

LCPFHxDA2_00002



Product Name: PERFLUOROHEXADECANOIC ACID
(Isotopic Label & Enrichment Specification) UNLABELED 50 UG/ML IN METHANOL

Lot Number: SDJH-014

Catalog Number: ULM-10721-S

Product Information

Chemical Purity Specification: $\geq 98\%$

MW*: 814.13
* For isotopically labeled compounds, MW listed is for the fully enriched product.

Labeled CAS Number: NA

Unlabeled CAS Number: 67905-19-5

Chemical Formula: C₁₆H₃₁O₂

Storage: Store at room temperature away from light and moisture.
Stability: See storage and expiration date.

Intended Use: For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Marina Klionsky
Marina Klionsky, Quality Review

Quality Control Tests and Results

QC Release Date	4/30/2020
Expiration Date	4/30/2025
Concentration Based on Gravimetry	50.0 \pm 0.5 μ g/mL (k=2)
Chemical Purity of Neat Material(s)	98%

Reagent

LCPFHxS-br_00027



3064790

ID: LCPFHxS-br_00027

Exp:12/07/26 Prpd:IM Opr:06/16/22

Potassium Perfluorohexane



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-PFHxSK

Potassium Perfluorohexanesulfonate Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE: br-PFHxSK
LOT NUMBER: brPFHxSK1121
CONCENTRATION: 50.0 ± 2.5 µg/mL (total potassium salt)
45.6 ± 2.3 µg/mL (total PFHxS acid)
45.5 ± 2.3 µg/mL (total PFHxS anion)
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 11/24/2021
LAST TESTED: (mm/dd/yyyy) 12/07/2021
EXPIRY DATE: (mm/dd/yyyy) 12/07/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% perfluorohexanesulfonate linear and branched isomers. The full name, structure and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.3% of perfluoro-n-hexanoic acid and ~0.3% of perfluoro-1-pentanesulfonate.
- CAS #: 3871-99-6 (for linear isomer; potassium salt).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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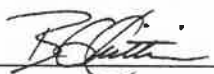
Table A: br-PFHxSK; Isomeric Components and Percent Composition (by ^{19}F -NMR)*

Isomer	Compound	Structure	Percent Composition by ^{19}F -NMR
1	Potassium perfluoro-1-hexanesulfonate	$\text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+$	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CFSO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	2.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CFCF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	1.4
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CFCF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	5.0
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CFCF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	8.9
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$\begin{array}{c} \text{CF}_3 \\ \\ \text{CF}_3\text{CCF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	0.2
7	Other Unidentified Isomers		0.5

* Percent of total perfluorohexanesulfonate isomers only.

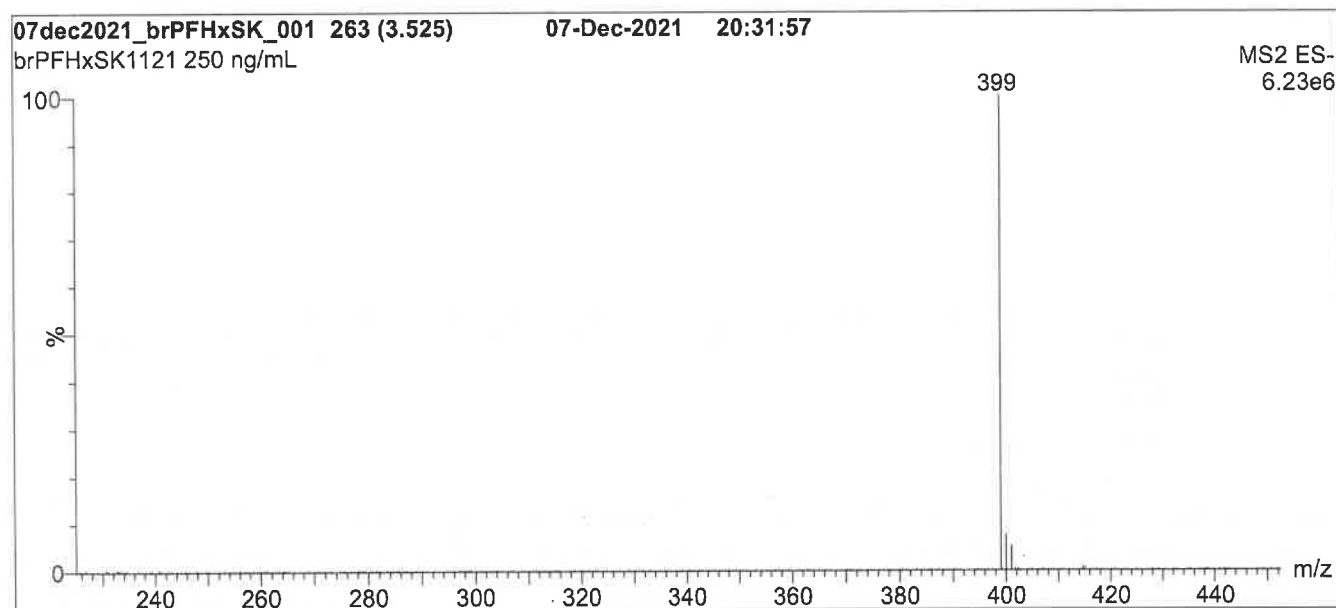
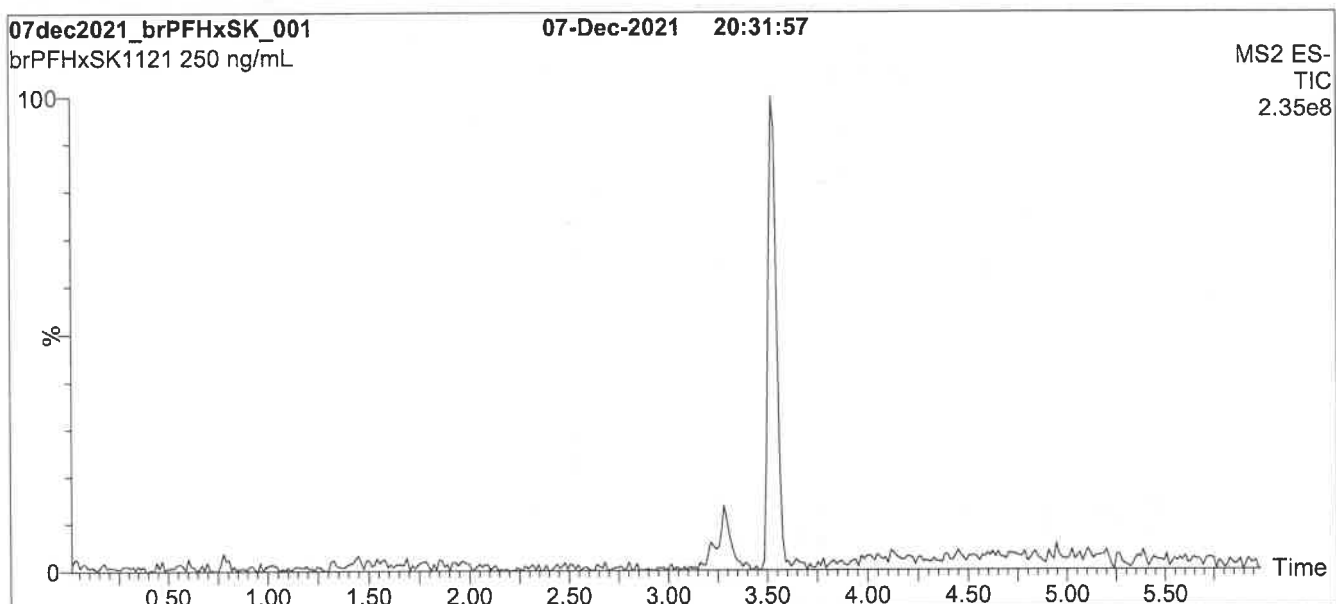
** Systematic Name: Potassium perfluorohexane-2-sulfonate.

Certified By:


B.G. Chittim, General Manager

Date: 01/04/2022
(mm/dd/yyyy)

Figure 1: br-PFHxSK; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

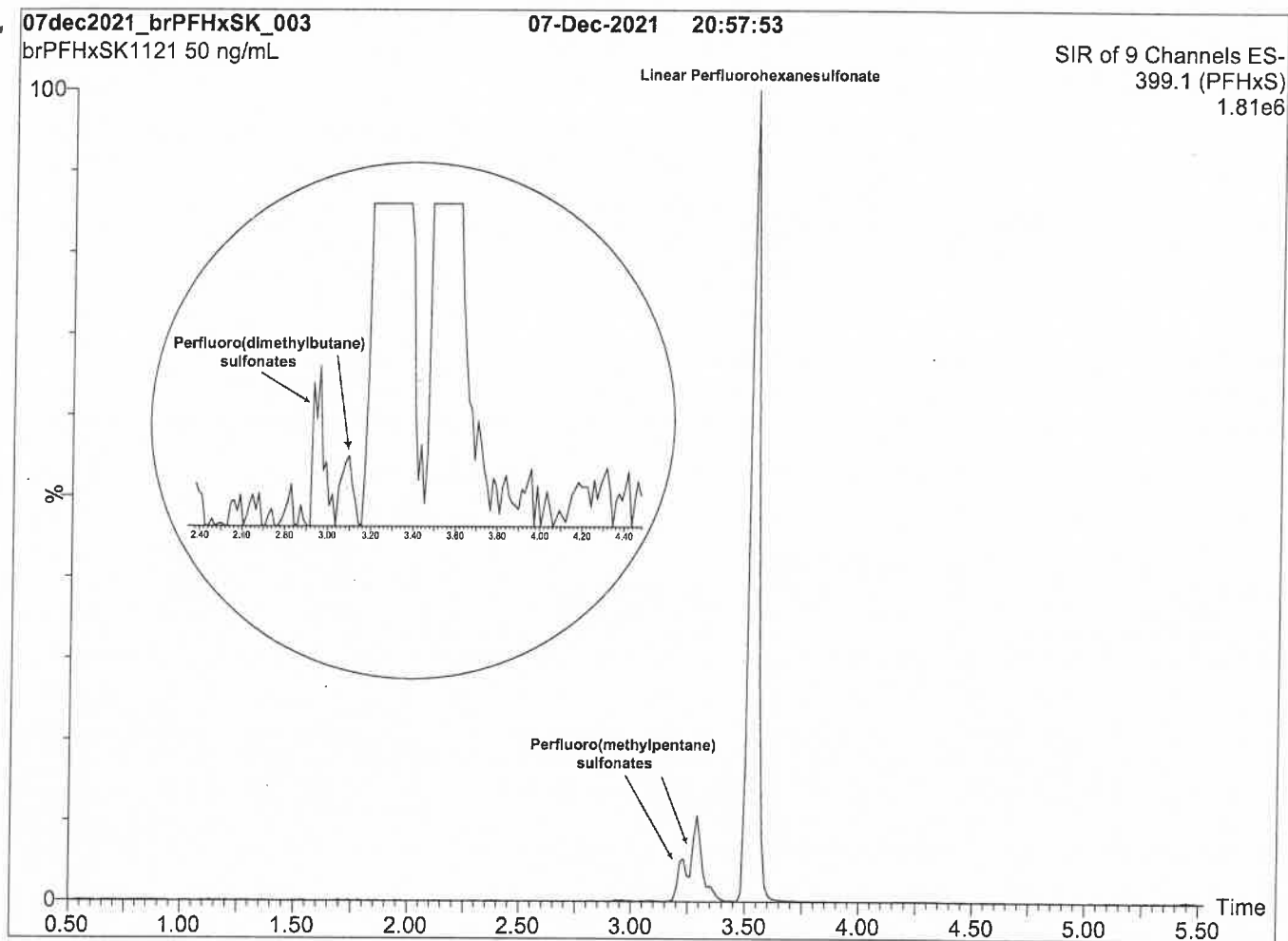
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: br-PFHxSK; LC/MS Data (SIR)



Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

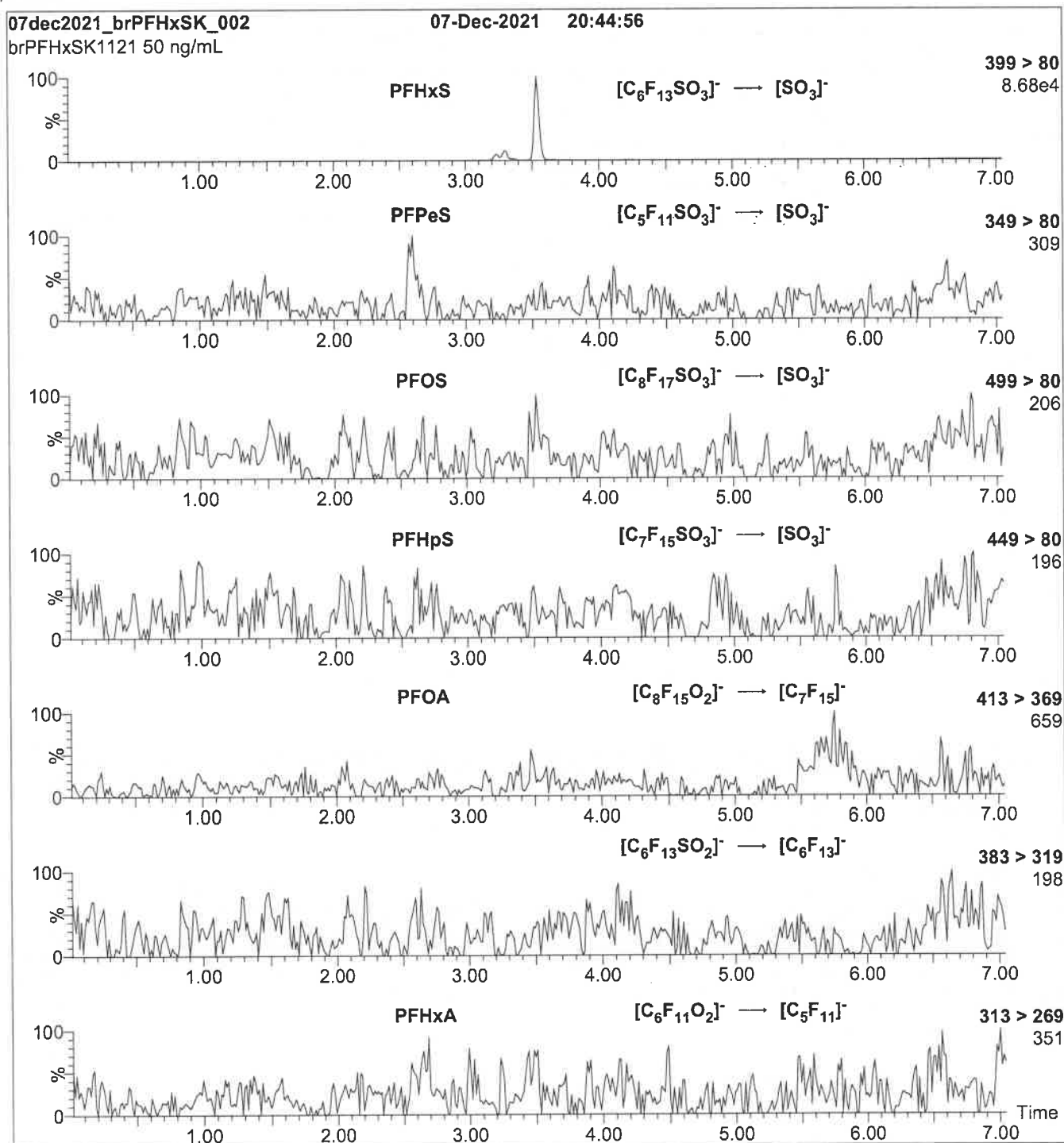
Flow: 300 μ L/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (2-6)
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 3: br-PFHxSK; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 3:

Injection: On-column (br-PFHxSK)

Mobile phase: Same as Figures 1 and 2

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 42

Reagent

LCPFNA_00035



3112517

ID: LCPFNA_00035

Exp: 01/27/27 Prod: 04/07/22/22
PF-n-nonanoic acid

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFNA

LOT NUMBER:

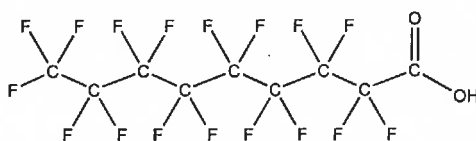
PFNA0122

COMPOUND:

Perfluoro-n-nonanoic acid

STRUCTURE:**CAS #:**

375-95-1

**MOLECULAR FORMULA:** $C_9H_{17}O_2$ **MOLECULAR WEIGHT:**

464.08

CONCENTRATION:50.0 \pm 2.5 μ g/mL**SOLVENT(S):**

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

01/27/2022

EXPIRY DATE: (mm/dd/yyyy)

01/27/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~0.2% of perfluoro-n-octanoic acid (PFOA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

02/04/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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HOMOGENEITY:

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UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

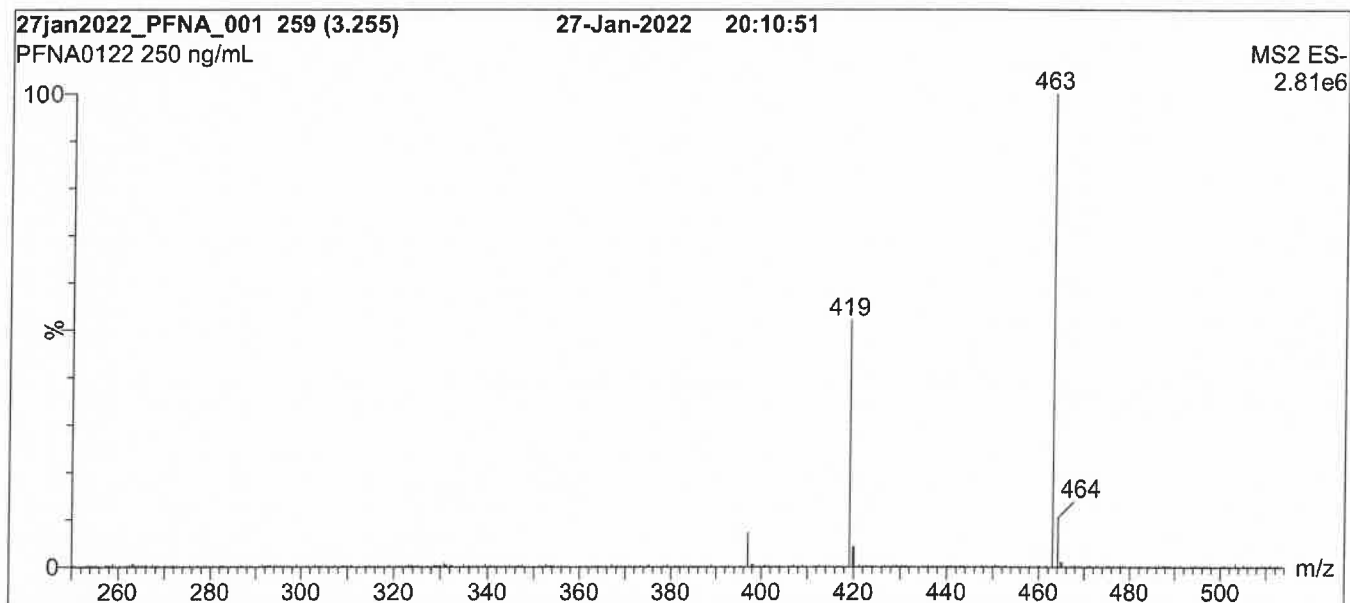
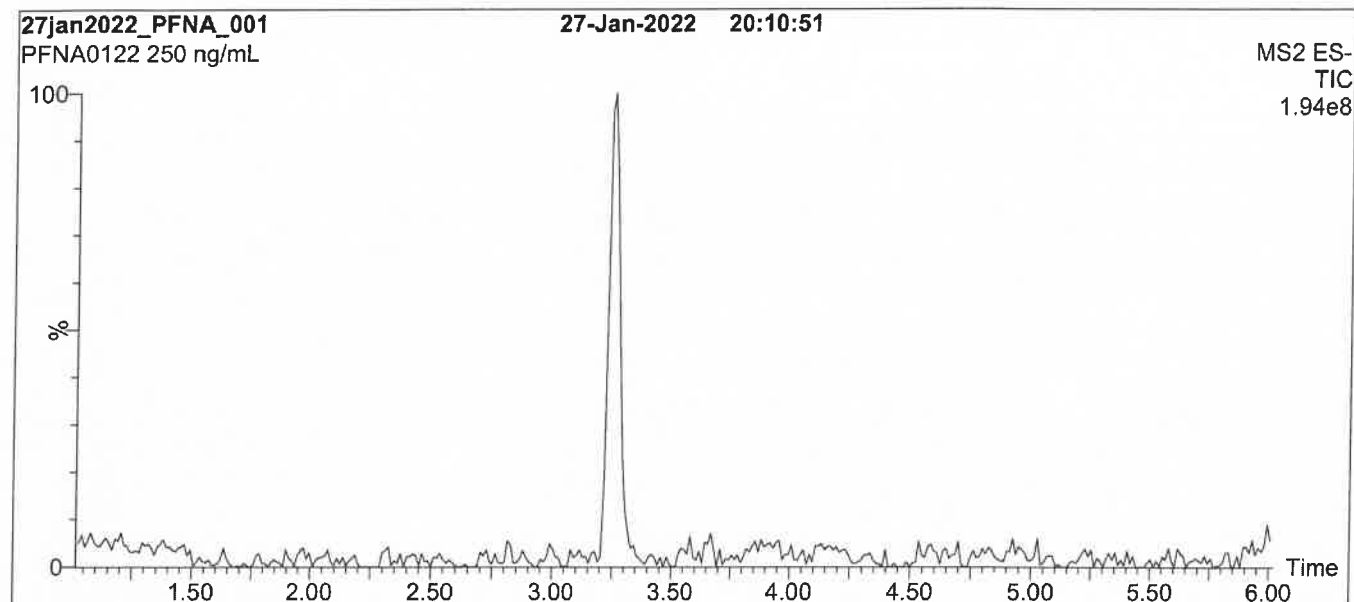
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: PFNA; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

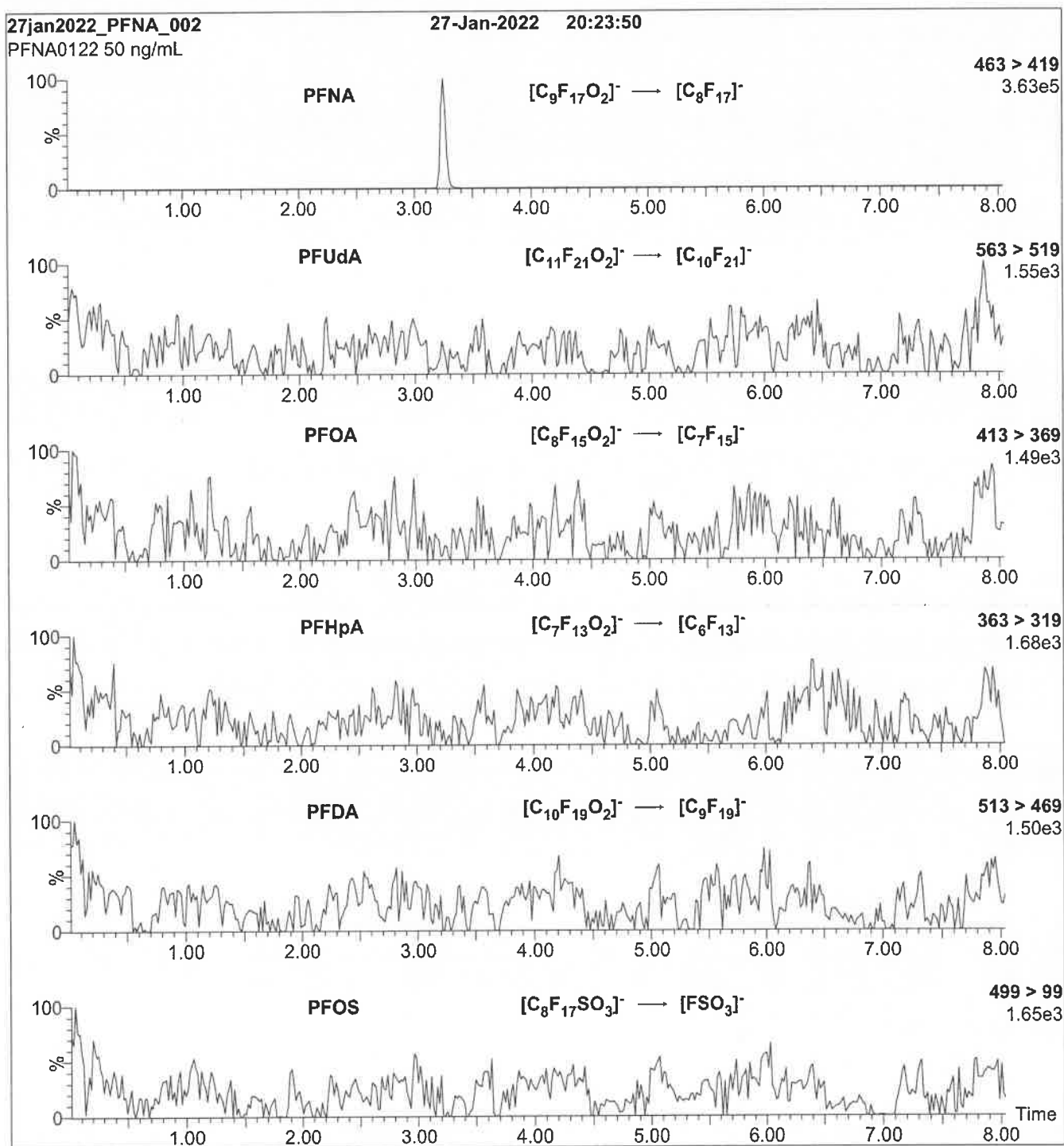
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFNA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFNA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.27e-3

Collision Energy (eV) = 10

Reagent

LCPFNS_00020



3065080

ID: LCPFNS_00020

Exp: 04/20/27 Ppd: 3M Opm: 96/16/22

L-PFNS at 48.1 ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

L-PFNS

LOT NUMBER:

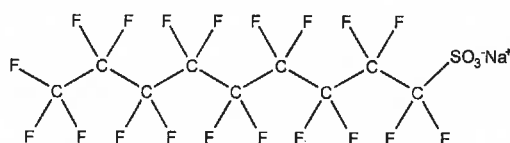
LPFNS0422

COMPOUND:

Sodium perfluoro-1-nonanesulfonate

STRUCTURE:**CAS #:**

98789-57-2

**MOLECULAR FORMULA:** $C_9F_{19}SO_3Na$ **MOLECULAR WEIGHT:**

572.12

CONCENTRATION:

50.0 ± 2.5 µg/mL (Na salt)

SOLVENT(S):

Methanol

48.1 ± 2.4 µg/mL (PFNS acid)

48.0 ± 2.4 µg/mL (PFNS anion)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

04/20/2022

EXPIRY DATE: (mm/dd/yyyy)

04/20/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General ManagerDate: 04/28/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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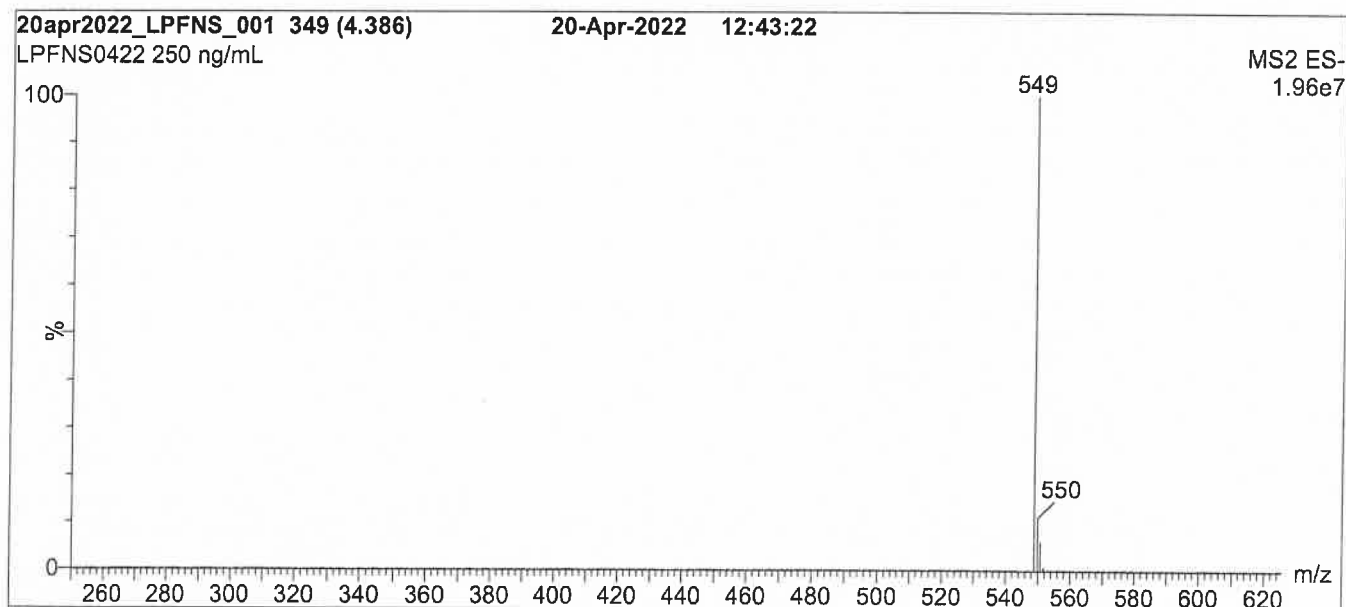
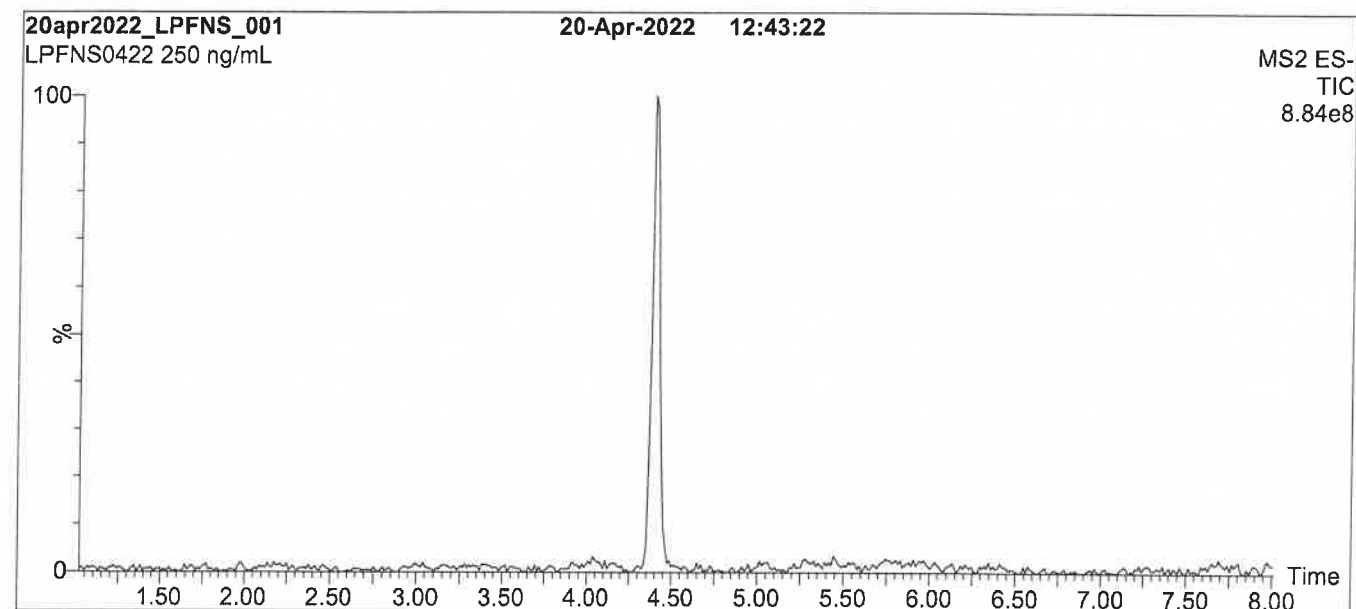
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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Figure 1: L-PFNS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

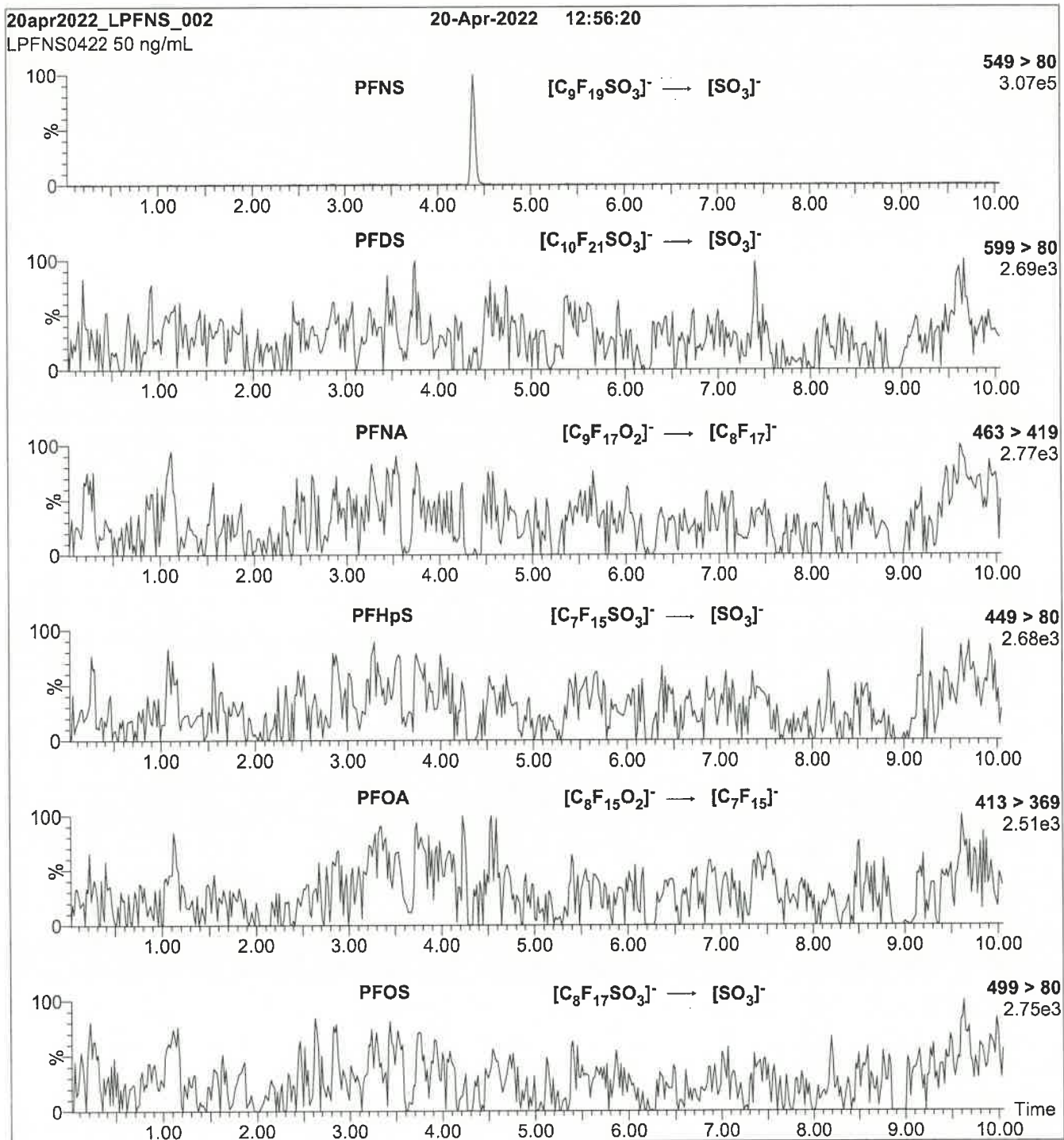
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: L-PFNS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (L-PFNS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.20e-3

Collision Energy (eV) = 64

Reagent

LCPFNS2_00003

**Product Name:**

(Isotopic Label & Enrichment Specification)

PERFLUORONONANESULFONATE, SODIUM SALT
UNLABELED 50 UG/ML IN METHANOL**Lot Number:**

SDEF-007

Catalog Number:

ULM-9530-S

572.12 549.13 = 0.9598 × 50 = 47.99 µg/mL
- 22.99 572.12
549.13 CV 8/3/21

Product Information**Chemical Purity Specification:**

≥ 98%

MW*:

* For isotopically labeled compounds, MW listed is for the fully enriched product.

572.12

Labeled CAS Number:

NA

Unlabeled CAS Number:

98789-57-2

Chemical Formula:CF₃(CF₂)₇CF₂SO₃Na**Storage:**

Store at room temperature away from light and moisture.

Intended Use:

For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated.

The retest date for this chemical has been designated based on CIL's experience in working with chemical standards for over 30 years, and includes review of actual analytical results and relevant literature references. The retest date is valid only for unopened vials or ampoules that have been stored as recommended.

Approved by: Marina Kliensky

Marina Kliensky, Quality Review

Quality Control Tests and Results

QC Release Date	9/29/2016
Expiration Date	9/29/2026
Concentration Based on Gravimetry (of the salt)	50.0 ± 0.8 µg/mL (k=2)
Chemical Purity of Neat Material(s)	100.0%

Additional Testing Information:

Retest/Review Date: 10/03/26

Reagent

LCPFOA_00032



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFOA

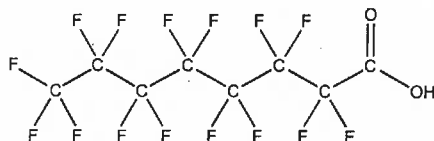
LOT NUMBER: PFOA0222

COMPOUND:

Perfluoro-n-octanoic acid

STRUCTURE:

CAS #: 335-67-1



MOLECULAR FORMULA:

$C_8H_{15}O_2$

CONCENTRATION:

50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT:

414.07

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

02/22/2022

EXPIRY DATE: (mm/dd/yyyy)

02/22/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 03/01/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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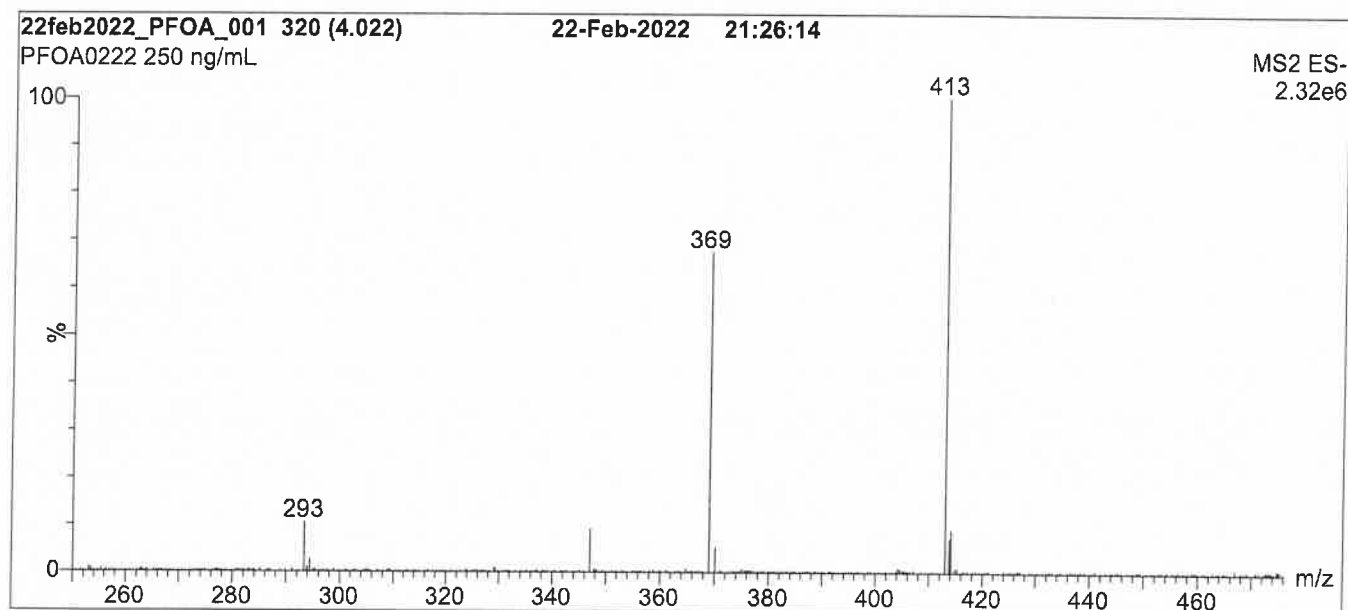
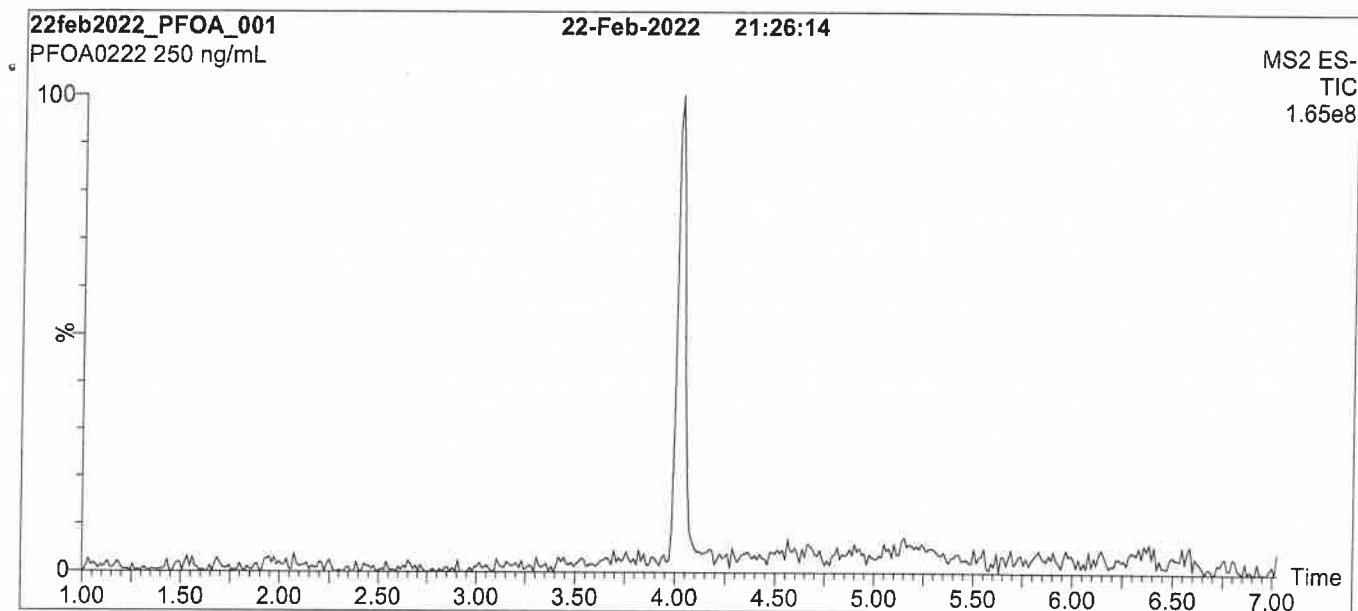
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Figure 1: PFOA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

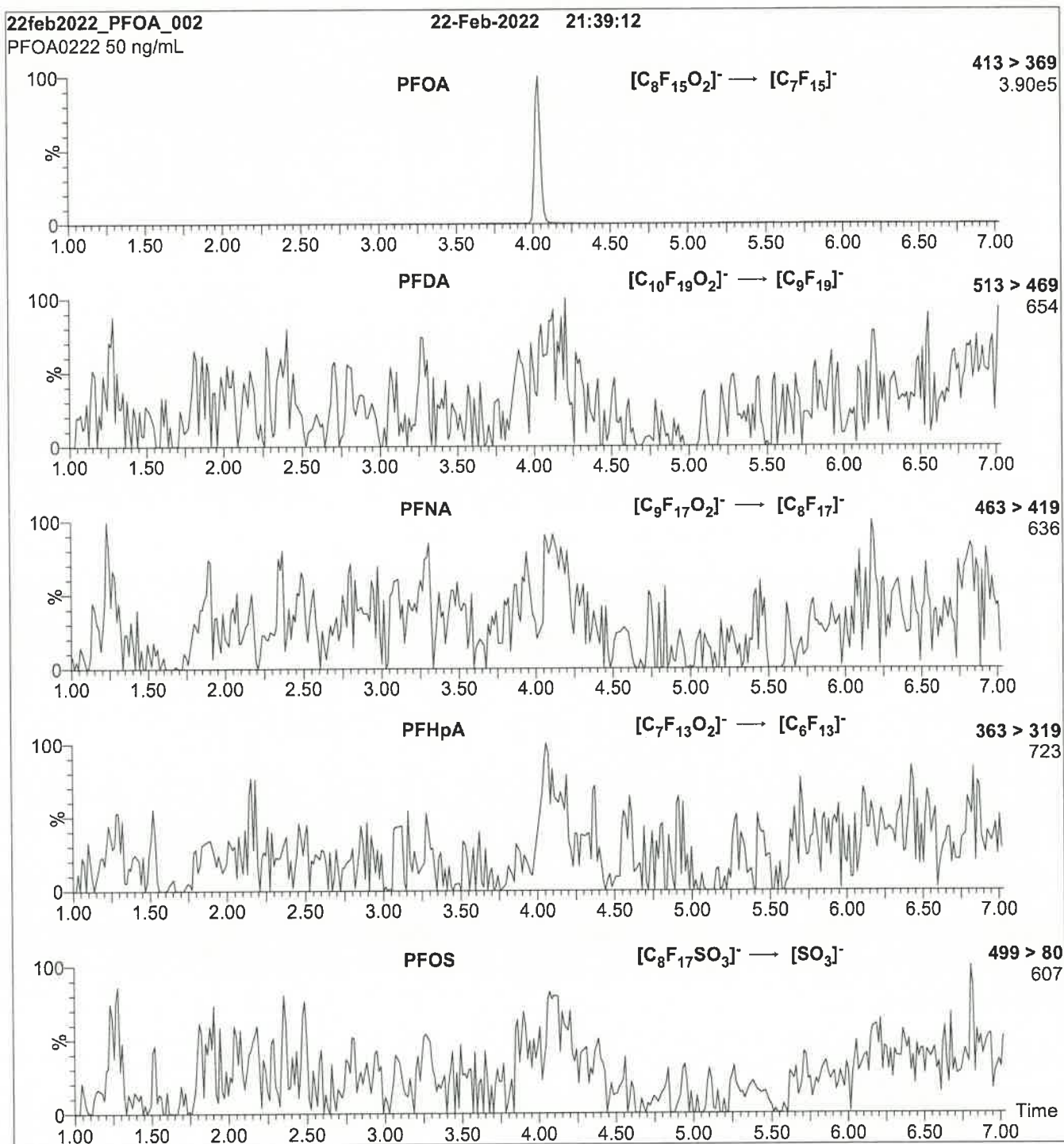
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFOA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFOA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 8

Reagent

LCPFODA_00028

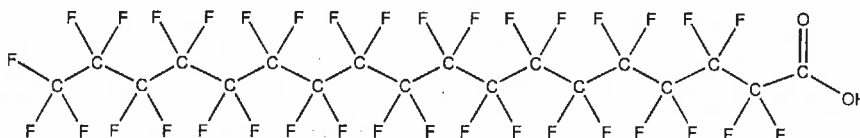


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFODA
COMPOUND: Perfluoro-n-octadecanoic acid
LOT NUMBER: PFODA0821

STRUCTURE:
CAS #: 16517-11-6



MOLECULAR FORMULA: $C_{18}H_{35}O_2$
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$
MOLECULAR WEIGHT: 914.14
SOLVENT(S): Methanol
Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/03/2021
EXPIRY DATE: (mm/dd/yyyy) 09/03/2026
RECOMMENDED STORAGE: Store ampoule at ambient temperature in a dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- The solubility of this product in methanol is very sensitive to storage conditions and solvent composition. The stated validity period applies to the sealed ampoules stored at ambient temperature.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 09/28/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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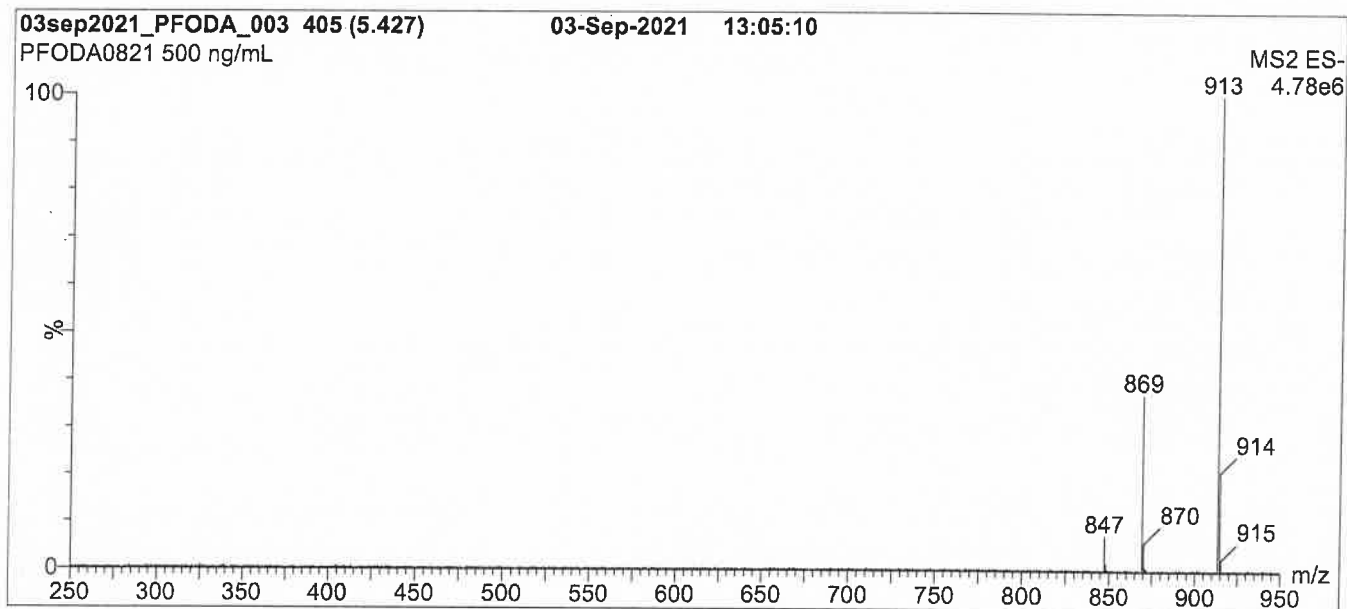
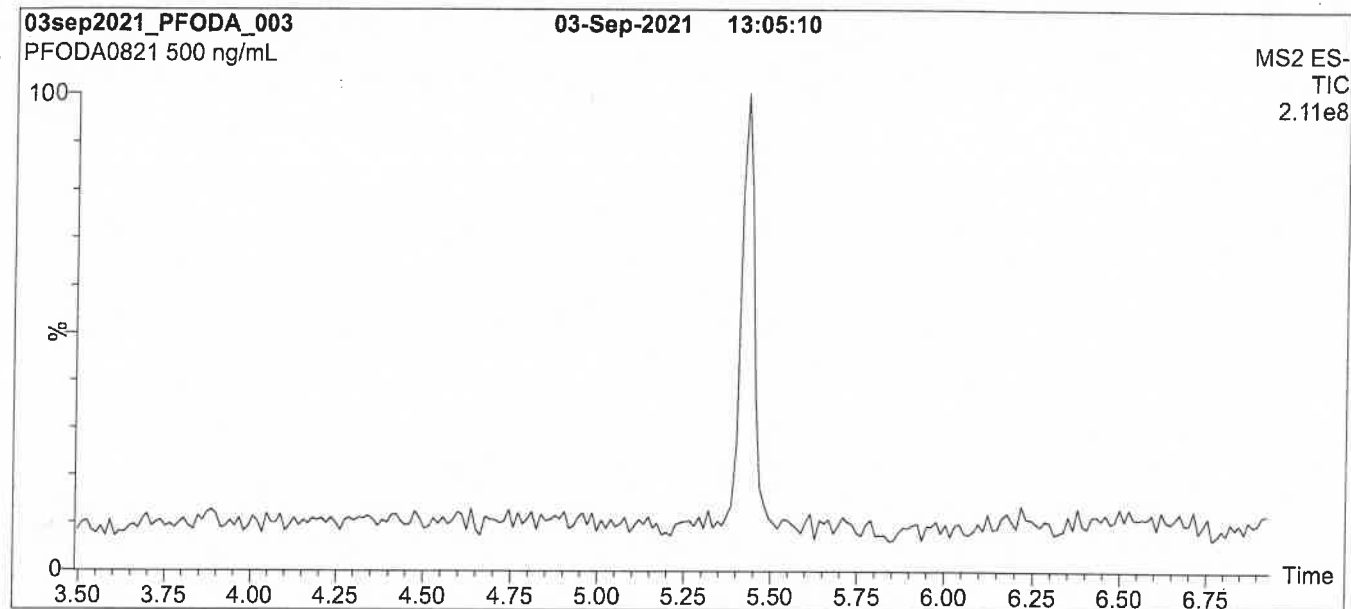
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Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S Micro MS

Chromatographic Conditions:

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1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 25% H₂O / 75% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 95% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

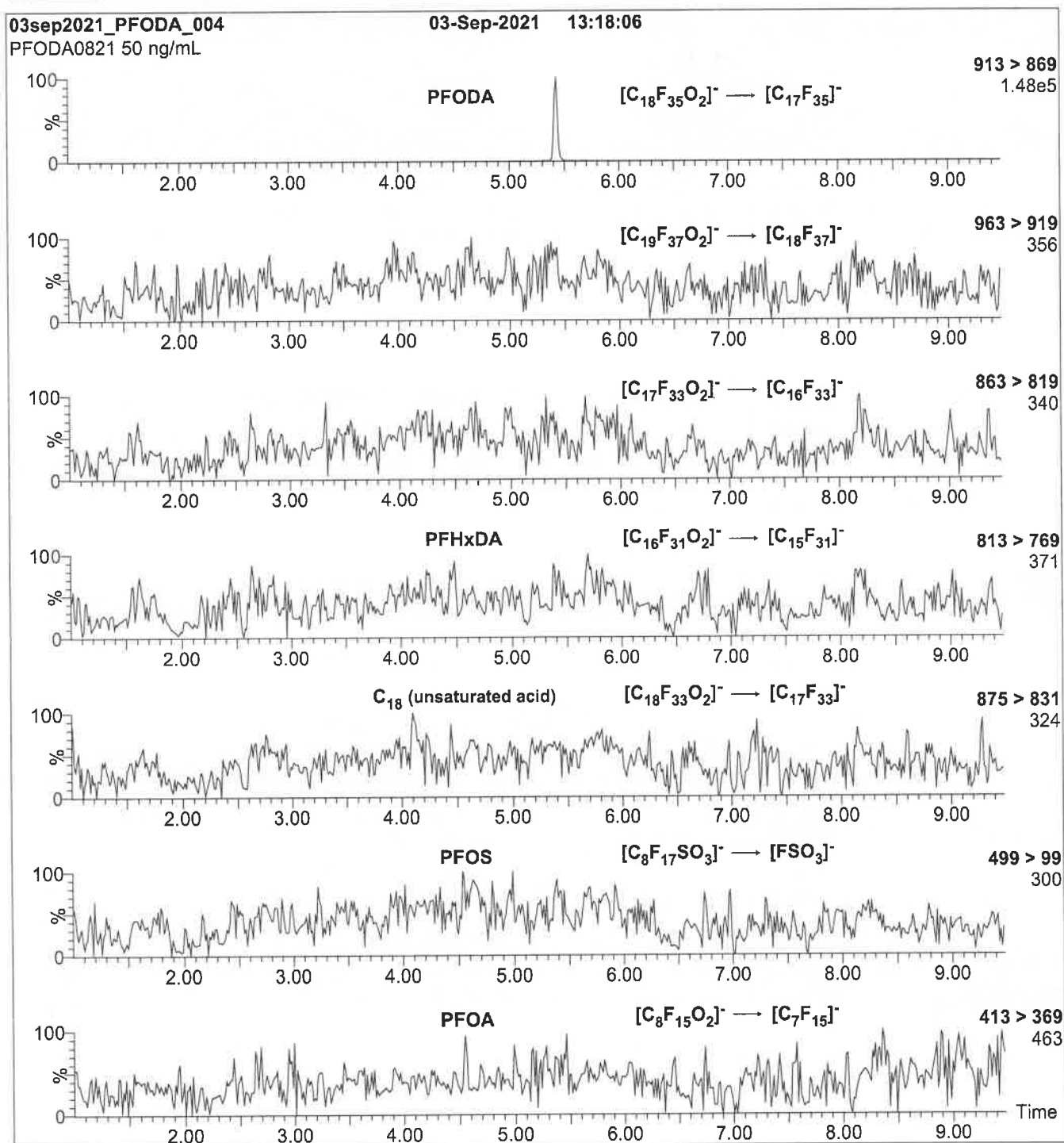
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 950 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFODA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFODA)
Mobile phase: Same as Figure 1
Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 15

Reagent

LCPFODA2_00003



Product Name: PERFLUOROOCTADECANOIC ACID
(Isotopic Label & Enrichment Specification) UNLABELED 50 UG/ML IN METHANOL

Lot Number: SDJH-015

Catalog Number: ULM-10722-S

Product Information

Chemical Purity Specification: $\geq 98\%$

MW*: 914.15
* For isotopically labeled compounds, MW listed is for the fully enriched product.

Labeled CAS Number: NA

Unlabeled CAS Number: 16517-11-6

Chemical Formula: C₁₈H₃₅F₁₇O₂

Storage: Store at room temperature away from light and moisture.
Stability: See storage and expiration date.

Intended Use: For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Marina Klionsky
Marina Klionsky, Quality Review

Quality Control Tests and Results

QC Release Date	2/20/2020
Expiration Date	2/20/2025
Concentration Based on Gravimetry	50.0 \pm 0.5 μ g/mL (k=2)
Chemical Purity of Neat Material(s)	100.0%

Reagent

LCPFOS-br_00029

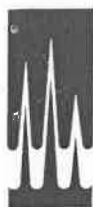


3112566

ID: LCPFOS-br_00029

Exp: 12/07/26 Prid: M Opn: 07/22/22

Potassium Perfluorooctane



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-PFOSK

Potassium Perfluorooctanesulfonate Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE: br-PFOSK
LOT NUMBER: brPFOSK1121
CONCENTRATION: 50.0 \pm 2.5 $\mu\text{g/mL}$ (total potassium salt)
46.5 \pm 2.3 $\mu\text{g/mL}$ (total PFOS acid)
46.4 \pm 2.3 $\mu\text{g/mL}$ (total PFOS anion)
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 11/24/2021
LAST TESTED: (mm/dd/yyyy) 12/07/2021
EXPIRY DATE: (mm/dd/yyyy) 12/07/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be $\geq 98\%$ perfluorooctanesulfonate linear and branched isomers. The full name, structure and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ^{19}F -NMR
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- A 5-point calibration curve was generated using linear PFOS (potassium salt) and mass-labelled PFOS as an internal standard to enable quantitation of br-PFOSK using isotopic dilution.
- CAS#: 2795-39-3 (for linear isomer; potassium salt).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: br-PFOSK; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR
1	Potassium perfluoro-1-octanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF(SO ₃ ⁻)K ⁺ CF ₃	1.2
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF(CF ₃)SO ₃ ⁻ K ⁺ CF ₃	0.6
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF(CF ₃)CF ₂ SO ₃ ⁻ K ⁺ CF ₃	1.9
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF(CF ₃)CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	2.2
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF(CF ₃)CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	4.5
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF(CF ₃)CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	10.0
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CCF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.2
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF ₂ CCF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.03
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF(CF ₃)CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.4
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF(CF ₃)CF ₂ CF(CF ₃)CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.07

* Percent of total perfluorooctanesulfonate isomers only. Isomers are labelled in Figure 2.

** Systematic Name: Potassium perfluorooctane-2-sulfonate.

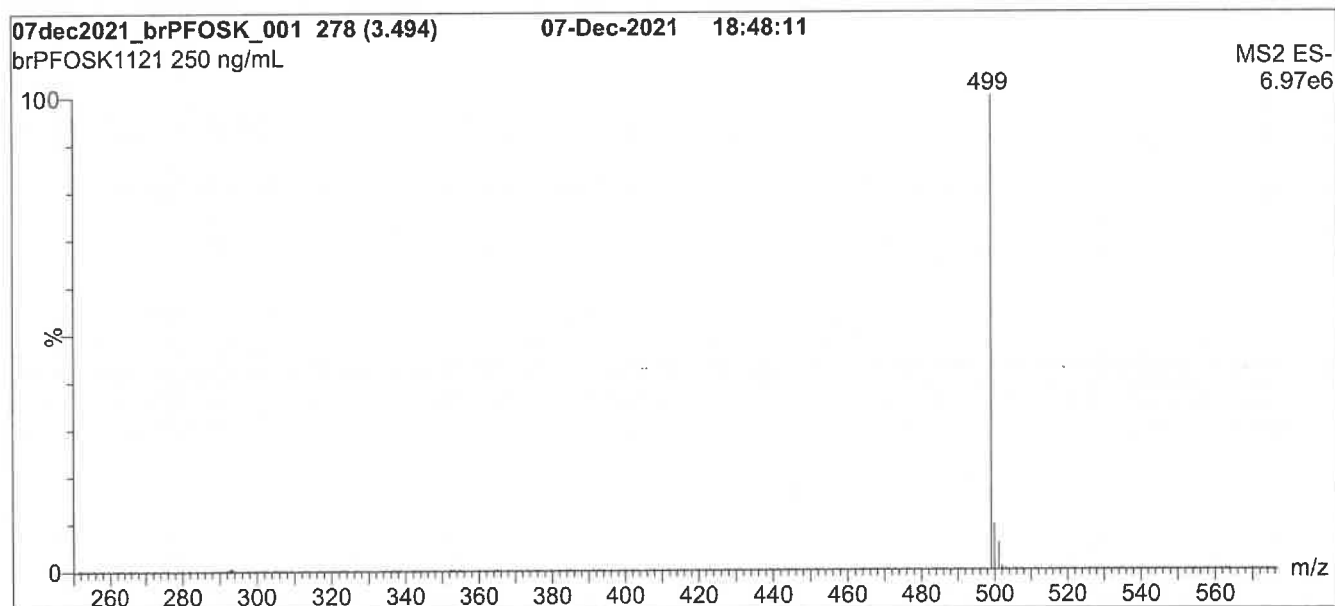
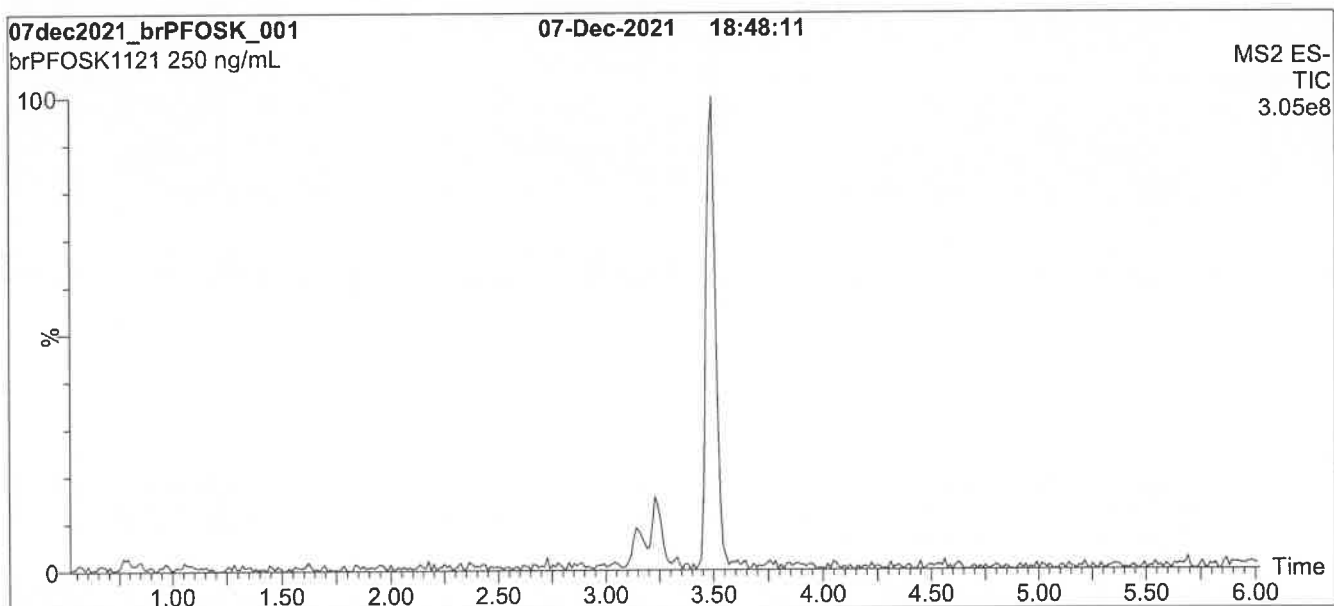
Certified By:


B.G. Chittim, General Manager

Date: 12/20/2021

(mm/dd/yyyy)

Figure 1: br-PFOSK; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

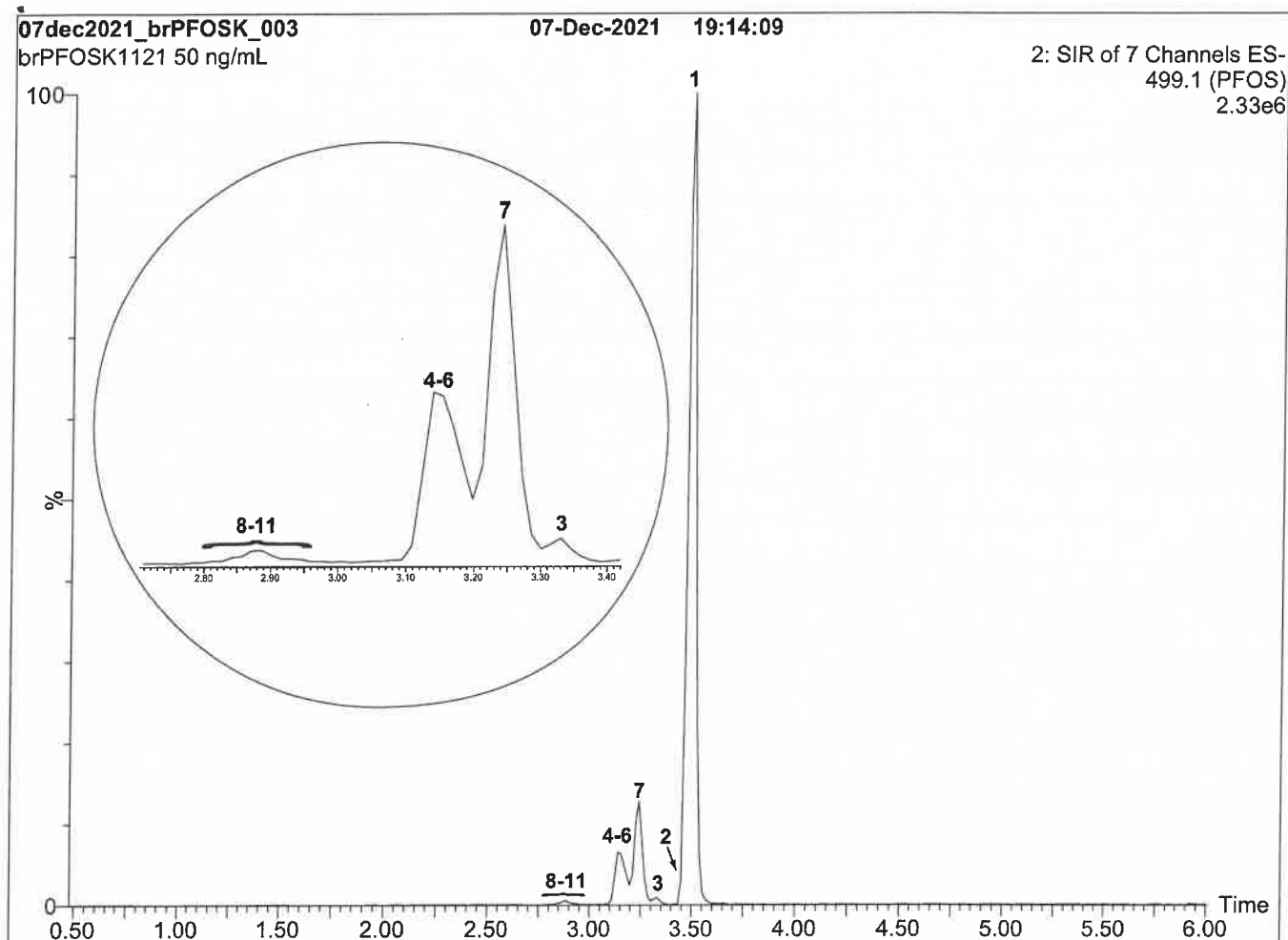
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: br-PFOSK; LC/MS Data (SIR)



Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

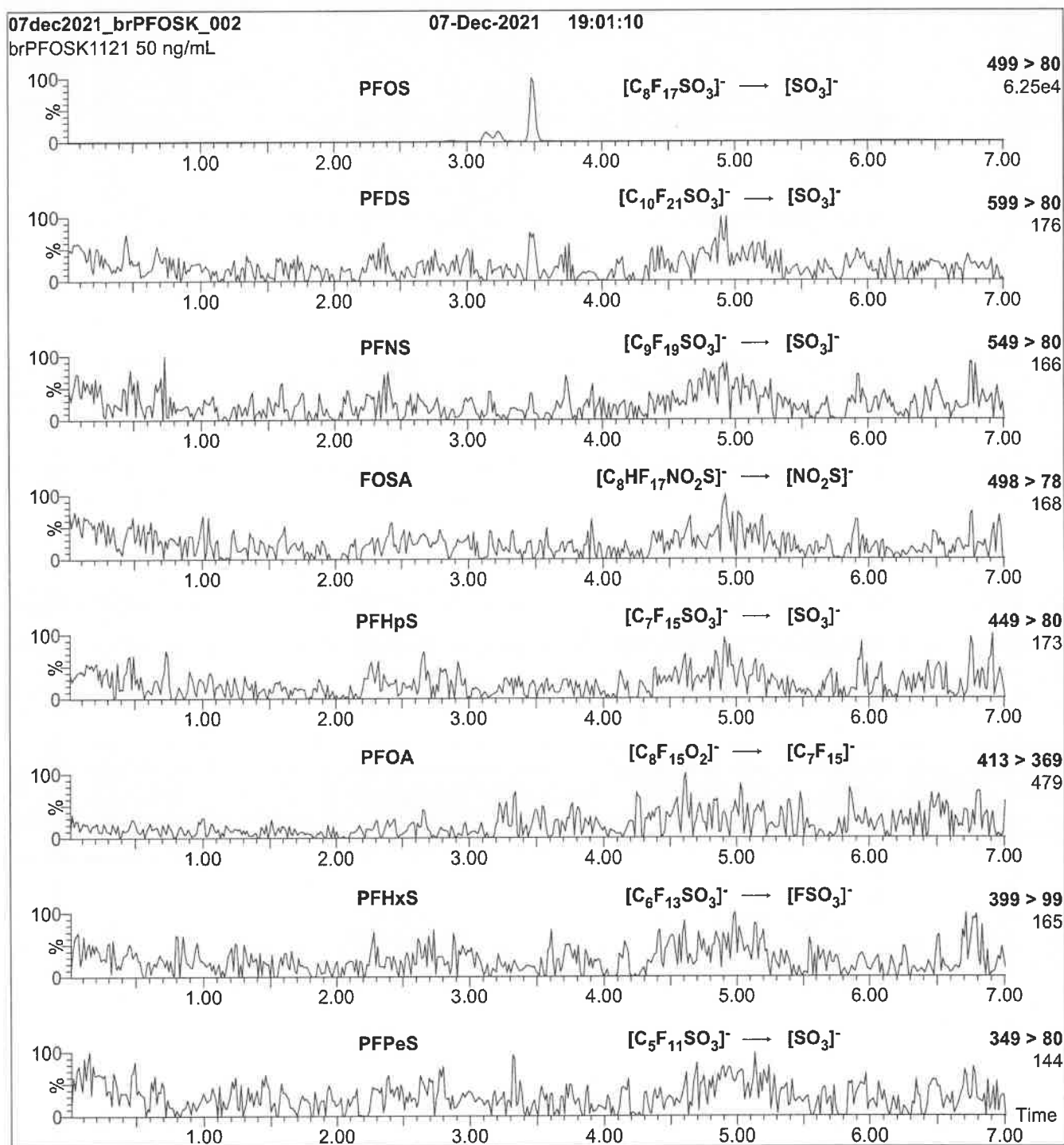
Flow: 300 μ L/min

MS Parameters:

Experiment: SIR of 7 channels

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (2-12)
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 3: br-PFOSK; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 3:

Injection: On-column (br-PFOSK)

Mobile phase: Same as Figure 2

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 64

Reagent

LCPFOSA_00029



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

3065114
ID: LCPFOA_00029
Exp: 04/05/27 Ppdm Opn: 06/16/22
PF-1-octanesulfonamide

PRODUCT CODE:

FOSA-I

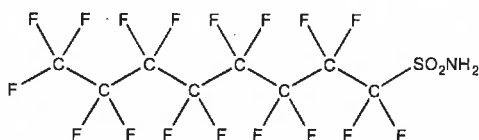
LOT NUMBER: FOSA0322I

COMPOUND:

Perfluoro-1-octanesulfonamide

STRUCTURE:

CAS #: 754-91-6



MOLECULAR FORMULA:

C₈H₂F₁₇NO₂S

MOLECULAR WEIGHT: 499.14

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

04/05/2022

EXPIRY DATE: (mm/dd/yyyy)

04/05/2027

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 05/12/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

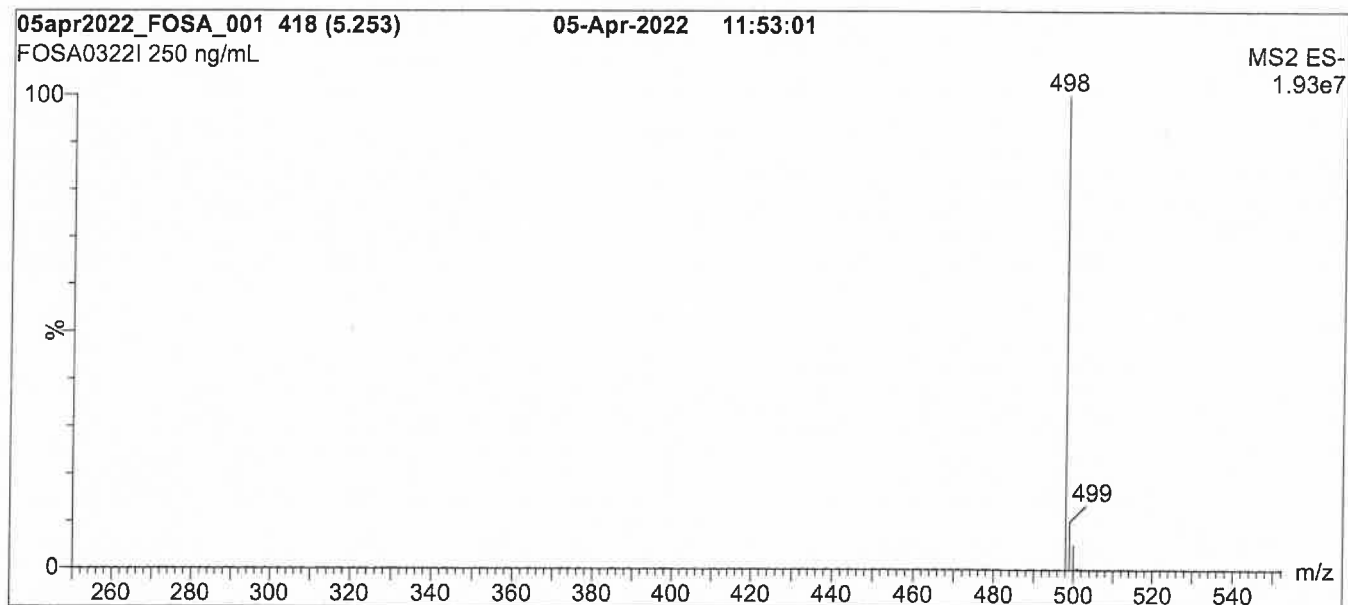
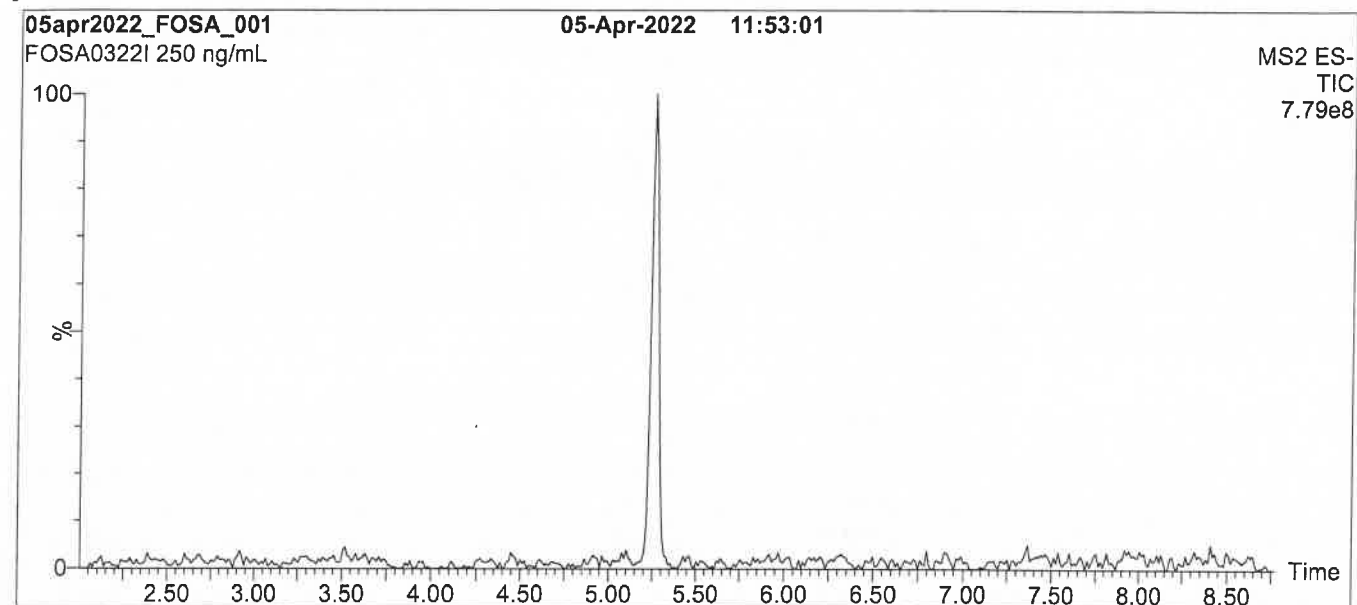
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: FOSA-I; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

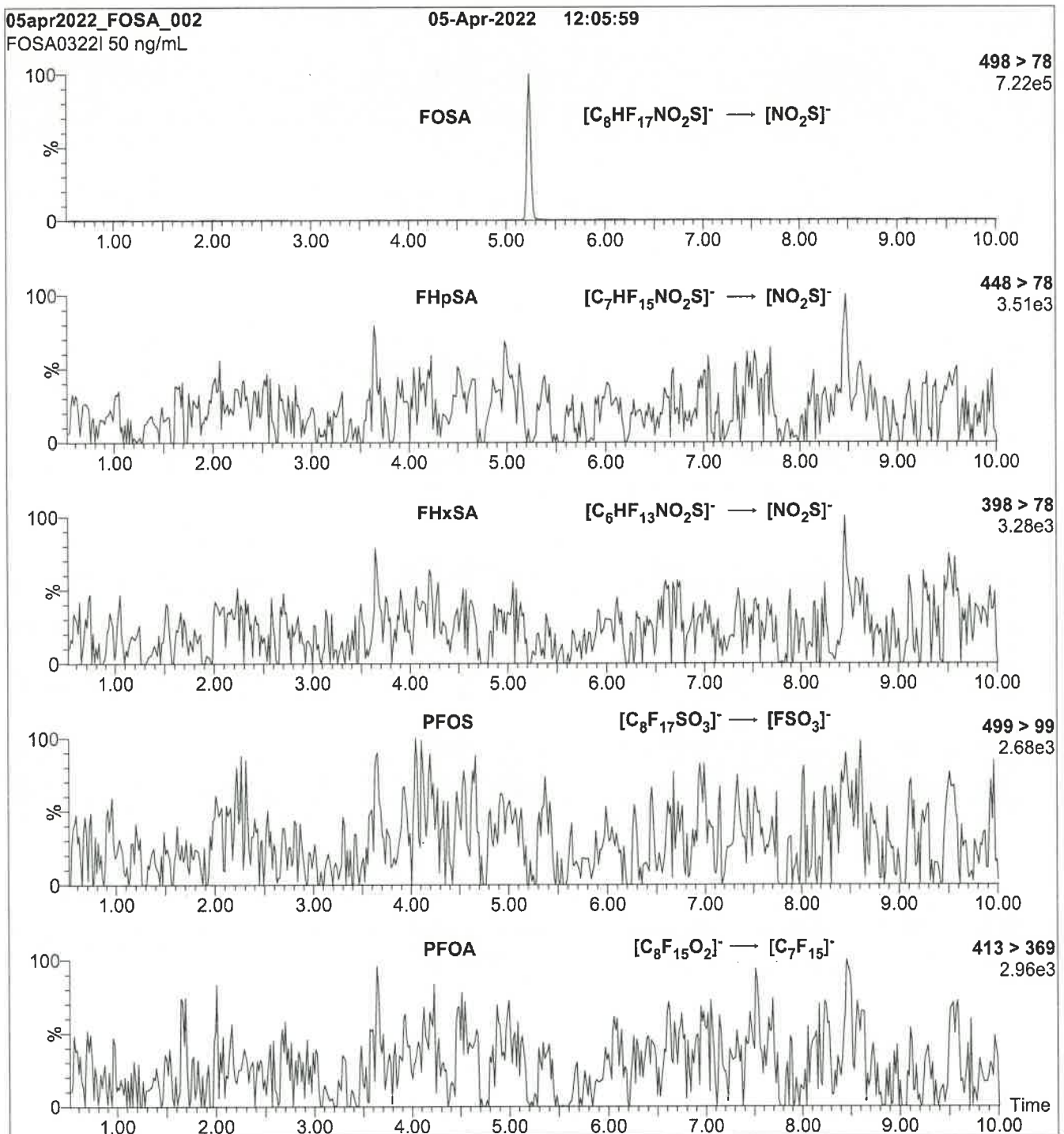
Capillary Voltage (kV) = 1.50

Cone Voltage (V) = 20.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: FOSA-I; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (FOSA-I)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 30

Reagent

LCPFOSA2_00002



Product Name: (Isotopic Label & Enrichment Specification) PERFLUOROOCTANESULFONAMIDE (PFOSA)
UNLABELED 50 UG/ML IN METHANOL

Lot Number: SDJH-016

Catalog Number: ULM-10977-S

Product Information

Chemical Purity Specification: $\geq 98\%$

MW*: 499.15
* For isotopically labeled compounds, MW listed is for the fully enriched product.

Labeled CAS Number: NA

Unlabeled CAS Number: 754-91-6

Chemical Formula: C₈H₂F₁₇NO₂S

Storage: Store at room temperature away from light and moisture.
Stability: See storage and expiration date.

Intended Use: For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Marina Klionsky
Marina Klionsky, Quality Review

Quality Control Tests and Results

QC Release Date	1/23/2020
Expiration Date	1/23/2025
Concentration Based on Gravimetry	50.0 \pm 0.5 μ g/mL (k=2)
Chemical Purity of Neat Material(s)	99.7%

Reagent

LCPFPeA_00028



3064447

ID: LCPFPeA_00028
Exp: 02/08/27 Prpd: 3M Opn: 06/16/22
PF-n-pentanoic acid**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PRODUCT CODE:**

PFPeA

LOT NUMBER:

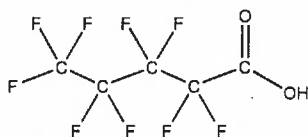
PFPeA0122

COMPOUND:

Perfluoro-n-pentanoic acid

STRUCTURE:**CAS #:**

2706-90-3

**MOLECULAR FORMULA:** $C_5H_9F_9O_2$ **MOLECULAR WEIGHT:**

264.05

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

02/08/2022

EXPIRY DATE: (mm/dd/yyyy)

02/08/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**

B.G. Chittim, General Manager
Date: 02/17/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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LIMITED WARRANTY:

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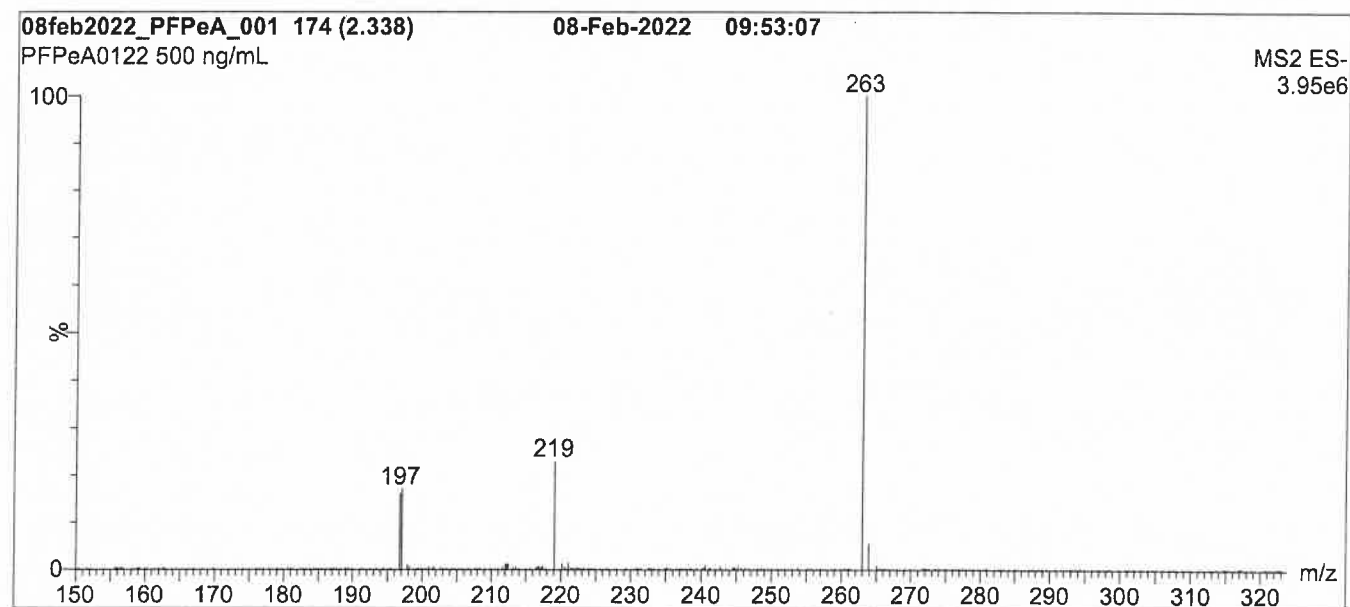
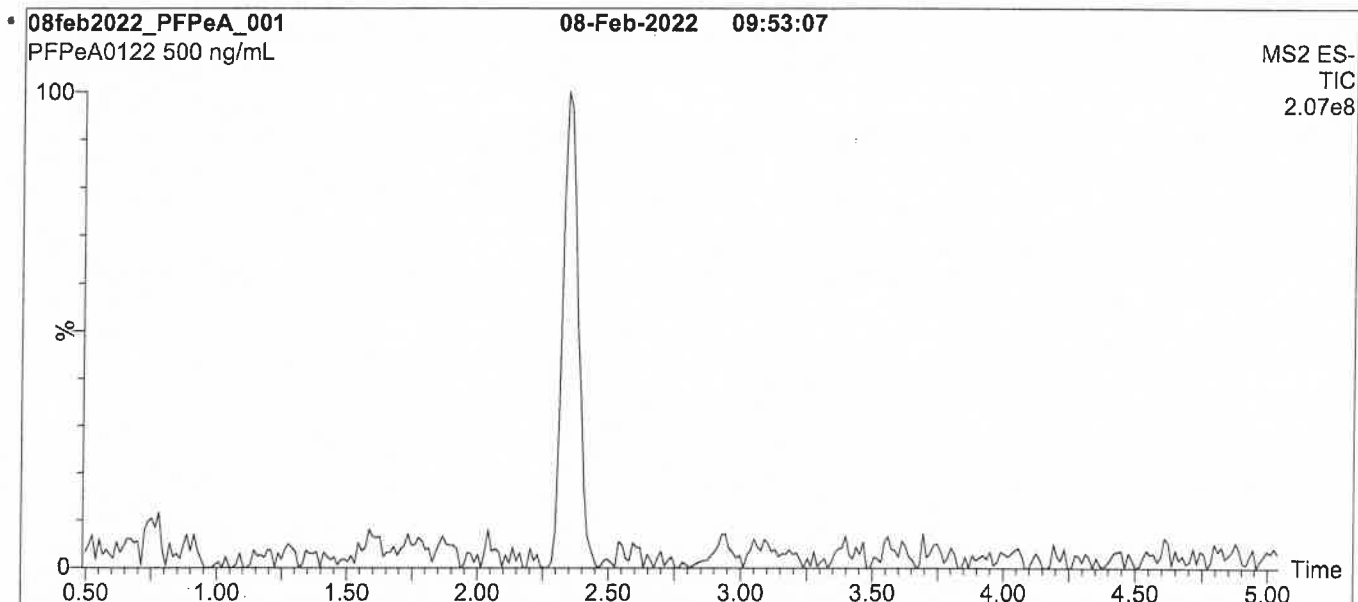
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: PFPeA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)

Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)

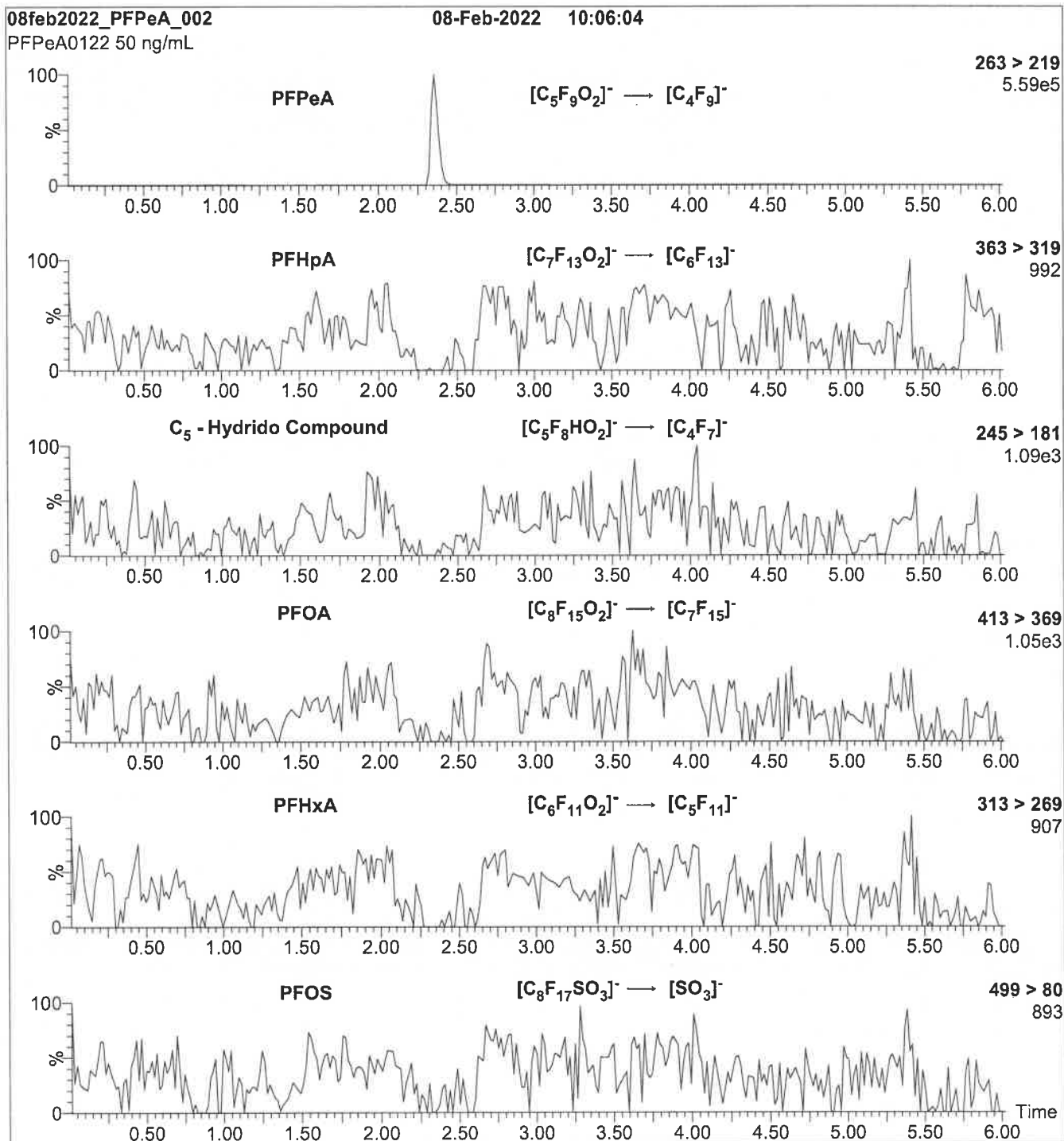
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFPeA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFPeA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.37e-3

Collision Energy (eV) = 8

Reagent

LCPFPeA2_00003

**Product Name:**

(Isotopic Label & Enrichment Specification)

PERFLUOROPENTANOIC ACID, SODIUM SALT
UNLABELED 50 UG/ML IN METHANOL**Lot Number:**

SDJF-016

Catalog Number:

ULM-10960-S

Product Information**Chemical Purity Specification:**

≥ 98%

MW*:* For isotopically labeled compounds, MW listed is for the fully enriched product.

286.02

Labeled CAS Number:

NA

Unlabeled CAS Number:

2706-89-0

Chemical Formula:C₅F₉NaO₂**Storage:**

Store at room temperature away from light and moisture.

Intended Use:

For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated.

The retest date for this chemical has been designated based on CIL's experience in working with chemical standards for over 30 years, and includes review of actual analytical results and relevant literature references. The retest date is valid only for unopened vials or ampoules that have been stored as recommended.

Approved by: Marina Kliensky

Marina Kliensky, Quality Review

Quality Control Tests and Results

QC Release Date

9/27/2019

Expiration Date

9/27/2024

Concentration Based on Gravimetry (of the salt)

50.0 ± 0.8 µg/mL (k=2)

Chemical Purity of Neat Material(s)

98.2%

Additional Testing Information:

Retest/Review Date: 10/11/24

Reagent

LCFPPeS_00020

2979780
ID: LCPFPeS_00020
Exp: 02/07/27 Prod: PCY Opm: 04/19/22
PF-1-pentanesulfonate Na



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

L-PFPeS

LOT NUMBER:

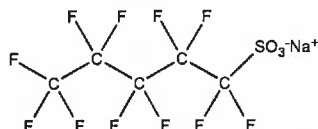
LPFPeS0122

COMPOUND:

Sodium perfluoro-1-pentanesulfonate

STRUCTURE:**CAS #:**

630402-22-1

**MOLECULAR FORMULA:** $C_5F_{11}SO_3Na$ **MOLECULAR WEIGHT:**

372.09

CONCENTRATION:

50.0 ± 2.5 µg/mL (Na salt)

SOLVENT(S):

Methanol

47.0 ± 2.3 µg/mL (PFPeS acid)

46.9 ± 2.3 µg/mL (PFPeS anion)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

02/07/2022

EXPIRY DATE: (mm/dd/yyyy)

02/07/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**
B.G. Chittim, General Manager**Date:**02/09/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

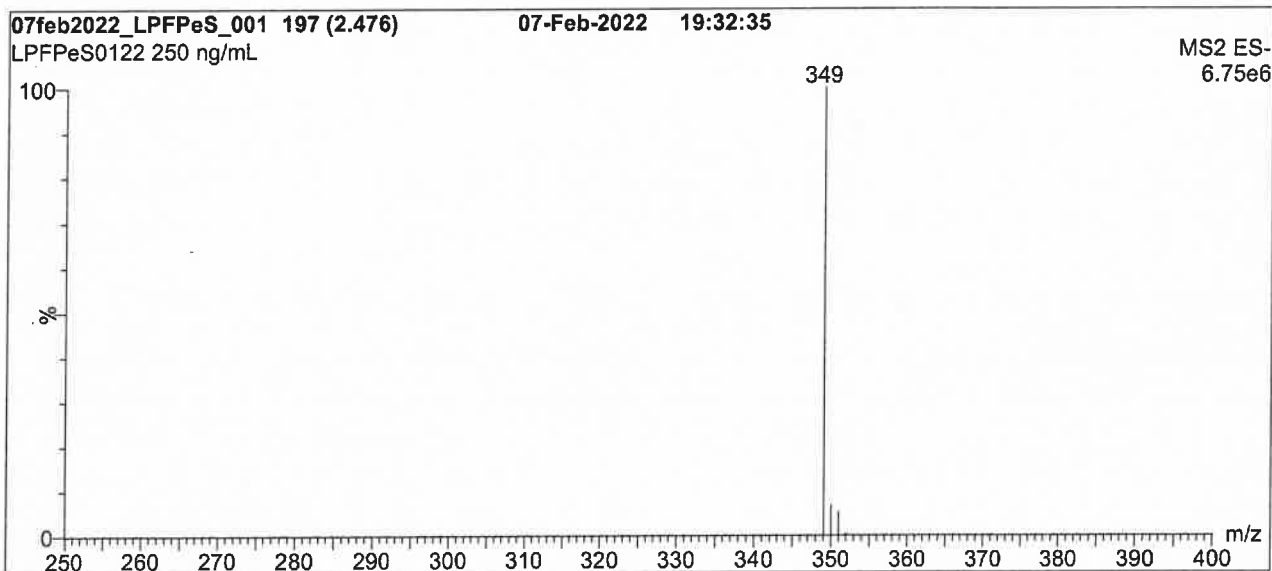
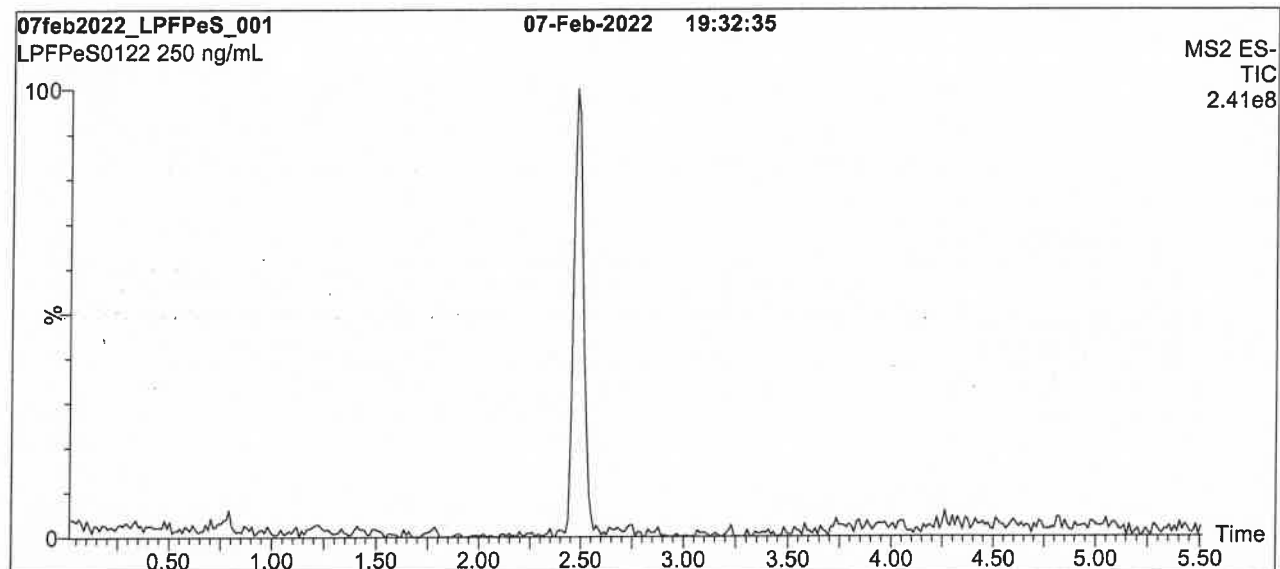
QUALITY MANAGEMENT:

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Figure 1: L-PFPeS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions over 0.75 min.
Time: 12 min

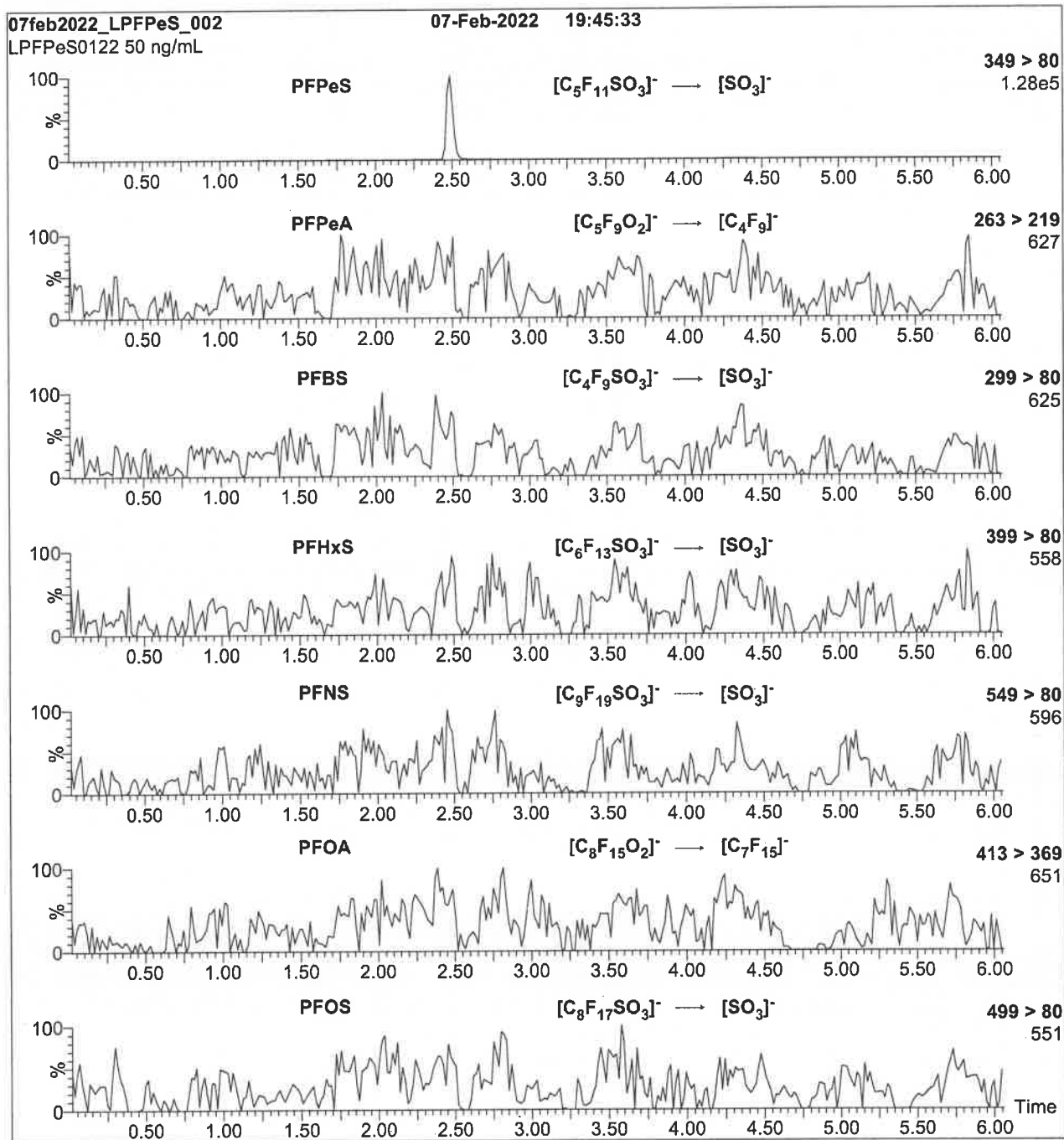
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: L-PFPeS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (L-PFPeS)
Mobile phase: Same as Figure 1
Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.37e-3
Collision Energy (eV) = 32

Reagent

LCPFPeS2_00003



Product Name: PERFLUOROPENTANESULFONATE, SODIUM SALT
(Isotopic Label & Enrichment Specification) UNLABELED 50 UG/ML IN METHANOL

Lot Number: SDEF-005

Catalog Number: ULM-9520-S

Product Information

Chemical Purity Specification: $\geq 98\%$

MW*: 372.08
* For isotopically labeled compounds, MW listed is for the fully enriched product.

Labeled CAS Number: NA

Unlabeled CAS Number: 630402-22-1

Chemical Formula: $\text{CF}_3(\text{CF}_2)_4\text{SO}_3\text{Na}$

Storage: Store at room temperature away from light and moisture.

Intended Use: For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated.

The retest date for this chemical has been designated based on CIL's experience in working with chemical standards for over 30 years, and includes review of actual analytical results and relevant literature references. The retest date is valid only for unopened vials or ampoules that have been stored as recommended.

Approved by: Marina Klionsky

Marina Klionsky, Quality Review

Quality Control Tests and Results

QC Release Date	9/29/2016
Expiration Date	9/29/2026
Concentration Based on Gravimetry (of the salt)	$50.0 \pm 0.8 \mu\text{g/mL}$ (k=2)
Chemical Purity of Neat Material(s)	100.0%

Additional Testing Information:
Retest/Review Date: 10/03/26

Reagent

LCPFTeDA_00032



3112544

ID: LCPFTeDA_00032

Exp:02/28/27 Prpd:JM Opm:07/22/22
PF-n-tetradecanoic acid**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION**PRODUCT CODE:**

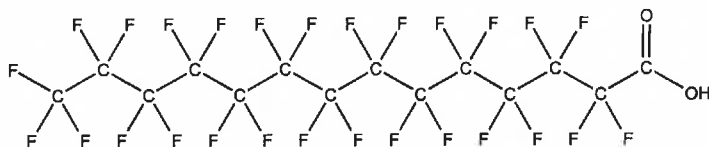
PFTeDA

LOT NUMBER: PFTeDA0222**COMPOUND:**

Perfluoro-n-tetradecanoic acid

STRUCTURE:**CAS #:**

376-06-7

**MOLECULAR FORMULA:** $C_{14}H_{27}O_2$ **MOLECULAR WEIGHT:**

714.11

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**Methanol
Water (<1%)**CHEMICAL PURITY:**

>98%

LAST TESTED: (mm/dd/yyyy)

02/28/2022

EXPIRY DATE: (mm/dd/yyyy)

02/28/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~0.3% of perfluoro-n-dodecanoic acid (PFDoA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**

B.G. Chittim, General Manager
Date: 03/09/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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SYNTHESIS / CHARACTERIZATION:

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x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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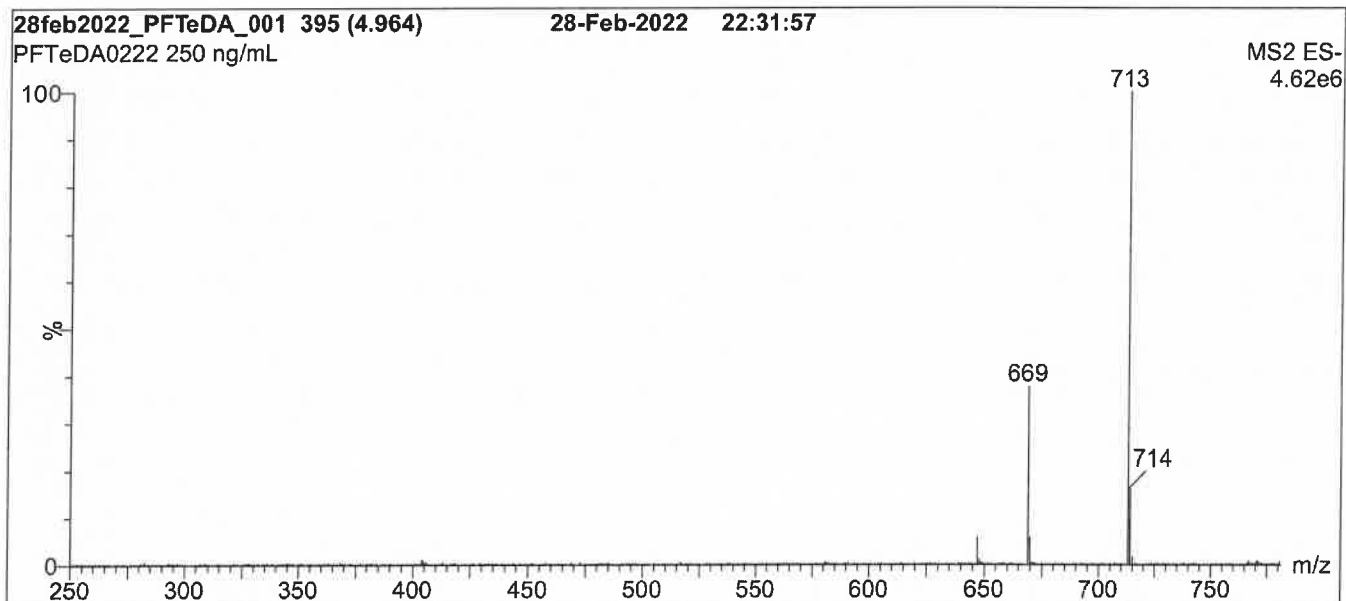
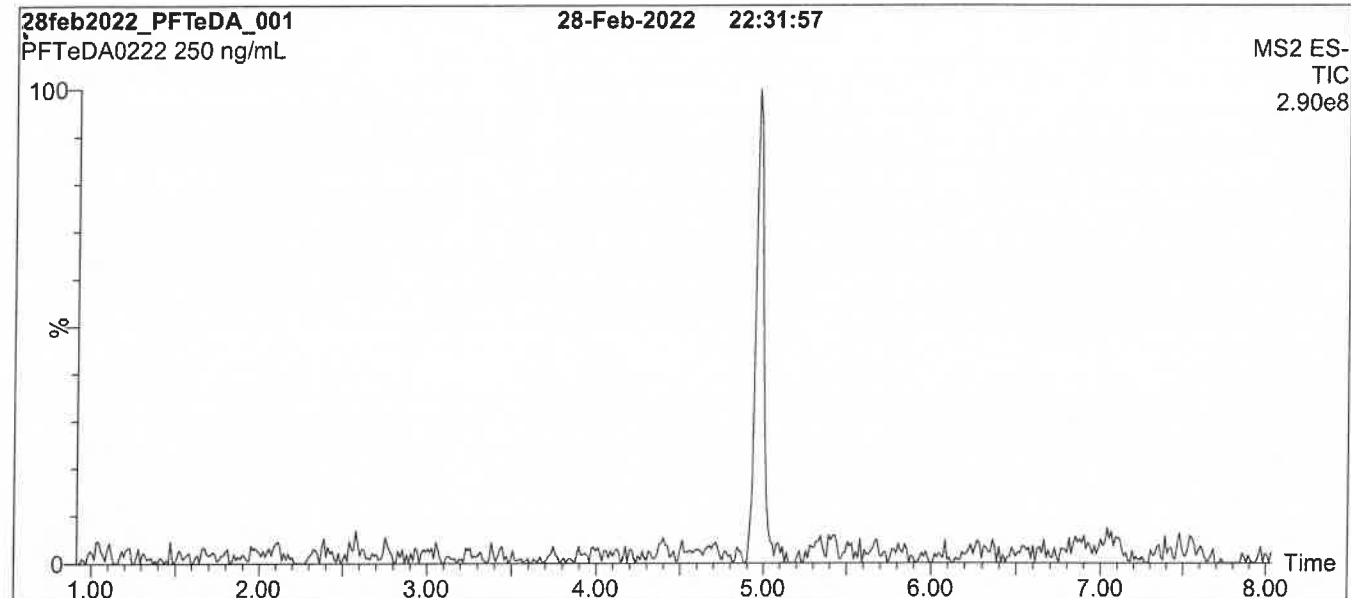
QUALITY MANAGEMENT:

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Figure 1: PFTeDA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

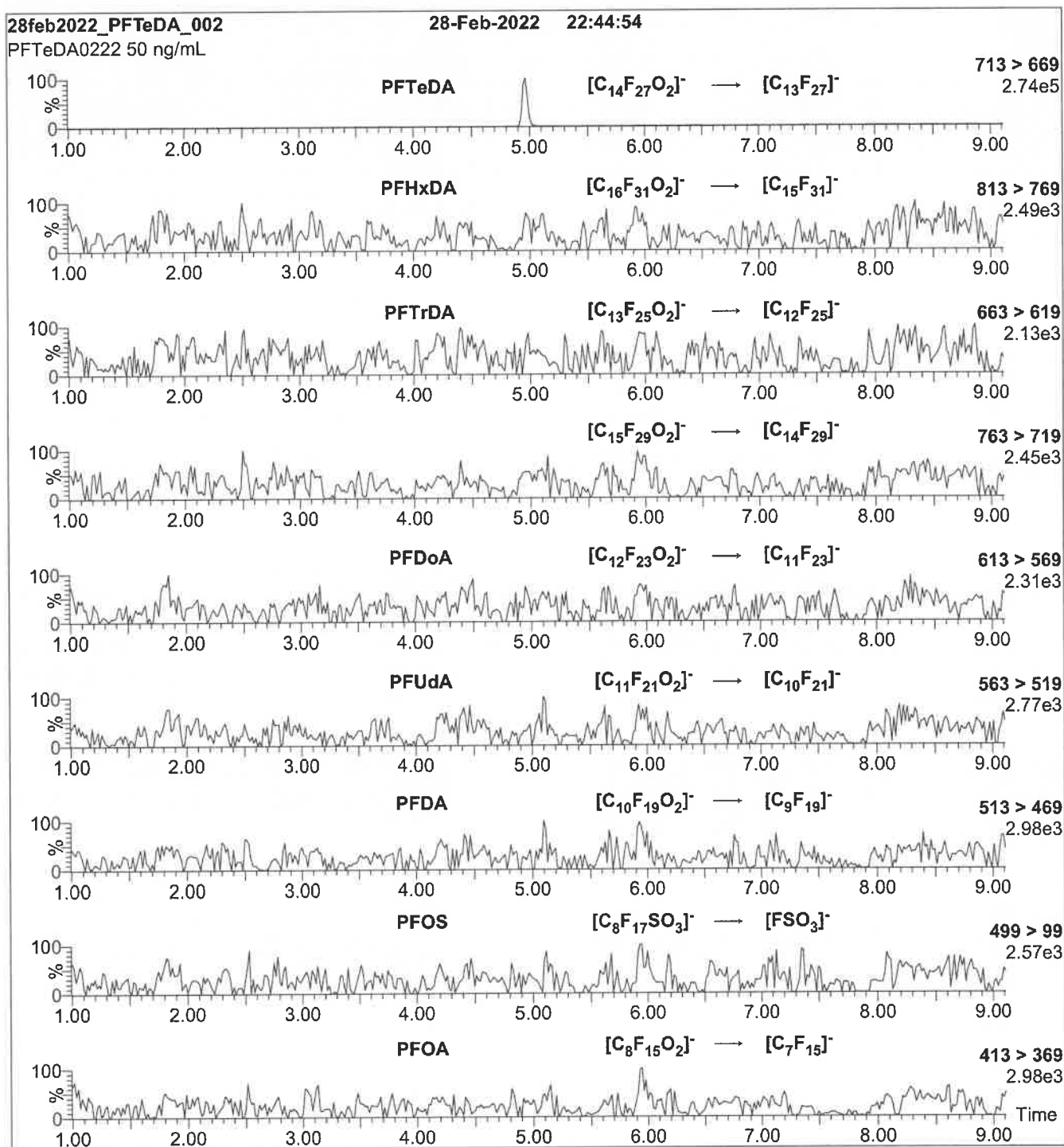
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFTeDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFTeDA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 14

Reagent

LCPFT_rDA_00030



3064558

ID: LCPFTrDA_00030

Exp: 02/07/27 Prod: 3M Opn: 06/16/22

PF-n-tridecanoic acid



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFTTrDA

LOT NUMBER:

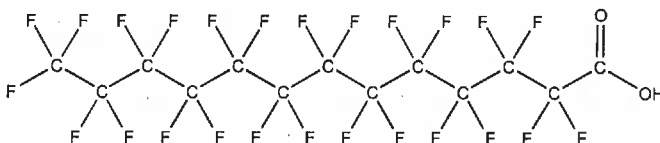
PFTTrDA0122

COMPOUND:

Perfluoro-n-tridecanoic acid

STRUCTURE:**CAS #:**

72629-94-8

**MOLECULAR FORMULA:** $C_{13}H_{25}O_2$ **MOLECULAR WEIGHT:**

664.11

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

02/07/2022

EXPIRY DATE: (mm/dd/yyyy)

02/07/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~0.4% of perfluoro-n-dodecanoic acid (PFDoA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**Certified By:**

B.G. Chittim, General Manager
Date:

02/16/2022

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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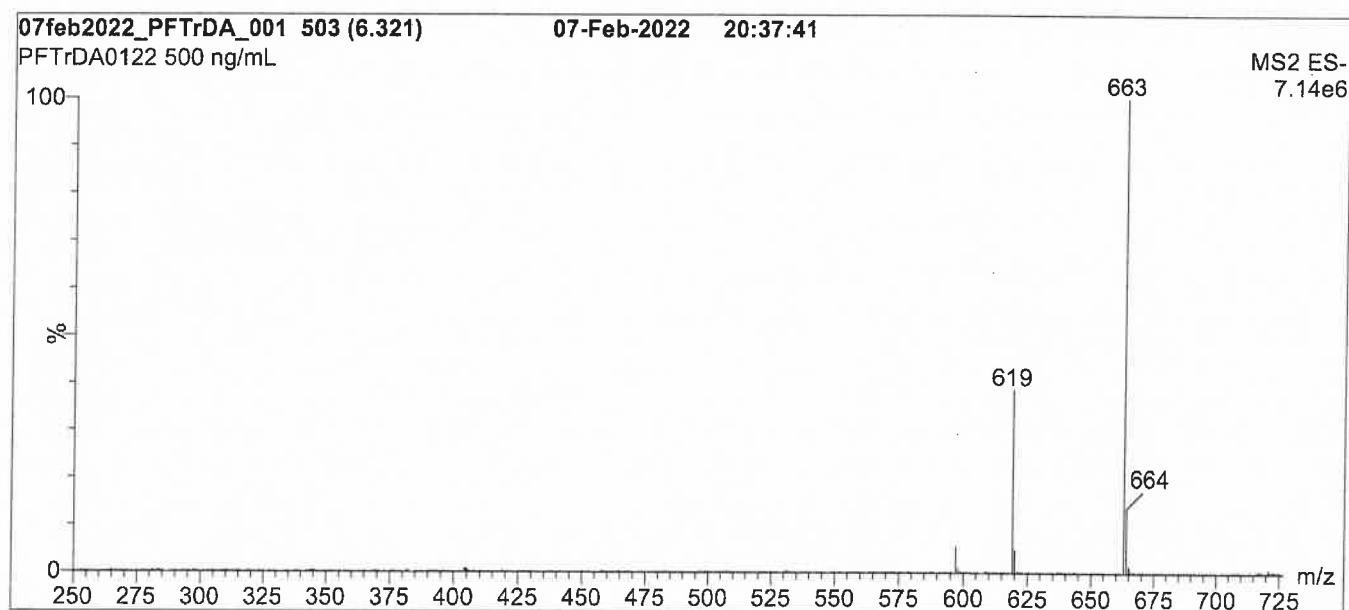
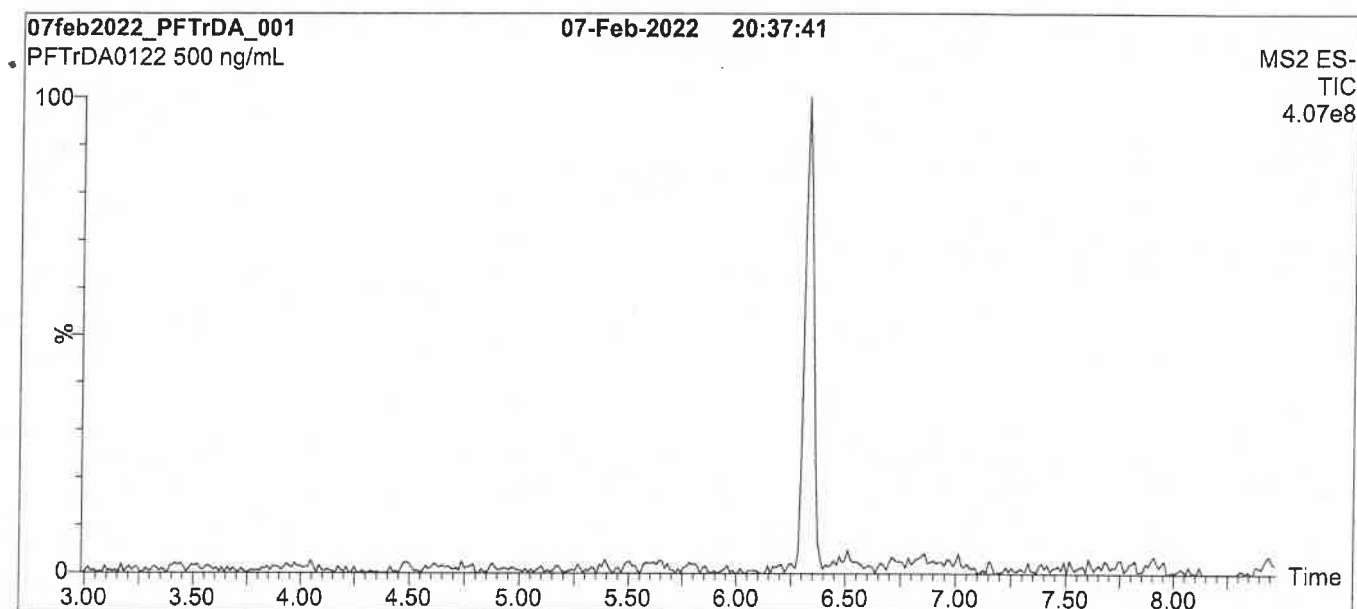
QUALITY MANAGEMENT:

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Figure 1: PFTrDA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)

Ramp to 90% organic over 9 min and hold for 1 min
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Time: 12 min

Flow: 300 μ L/min.

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

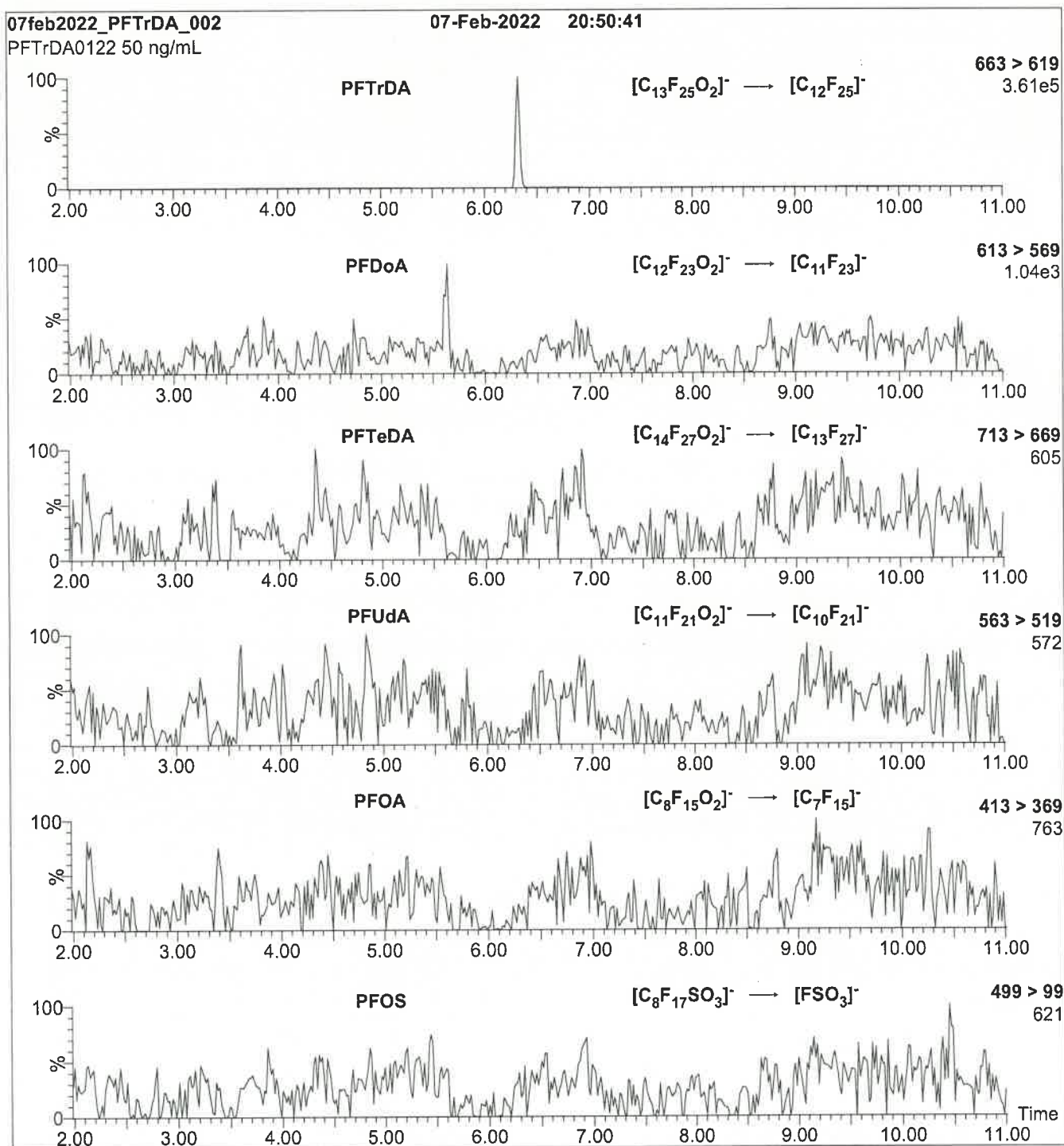
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFTrDA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFTTrDA)
Mobile phase: Same as Figure 1
Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.37e-3
Collision Energy (eV) = 12

Reagent

LCPFUdA_00033



3064515

ID: LCPFUdA_00033

Exp:02/22/27 Prod:161 Opm:06/16/22

PF-n-undecanoic acid



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFUdA

LOT NUMBER:

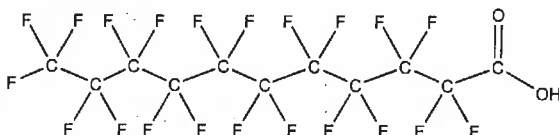
PFUdA0222

COMPOUND:

Perfluoro-n-undecanoic acid

STRUCTURE:**CAS #:**

2058-94-8

**MOLECULAR FORMULA:** $C_{11}H_{21}O_2$ **MOLECULAR WEIGHT:**

564.09

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

02/22/2022

EXPIRY DATE: (mm/dd/yyyy)

02/22/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

 B.G. Chittim, General Manager

Date:

03/01/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

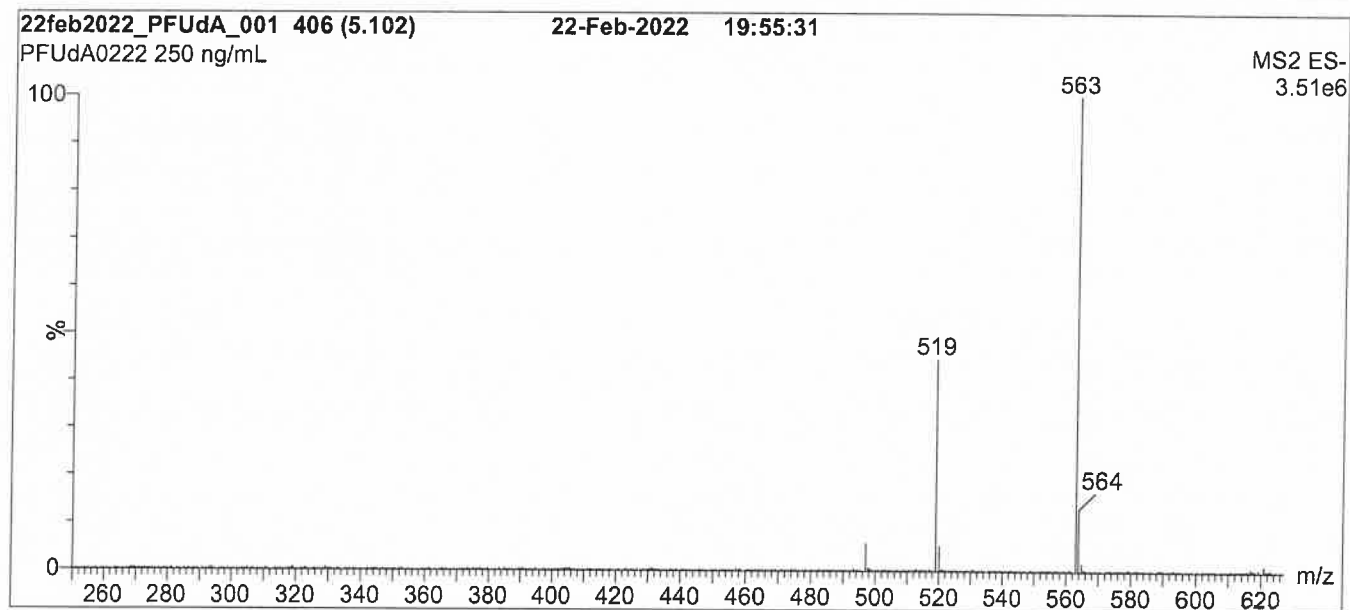
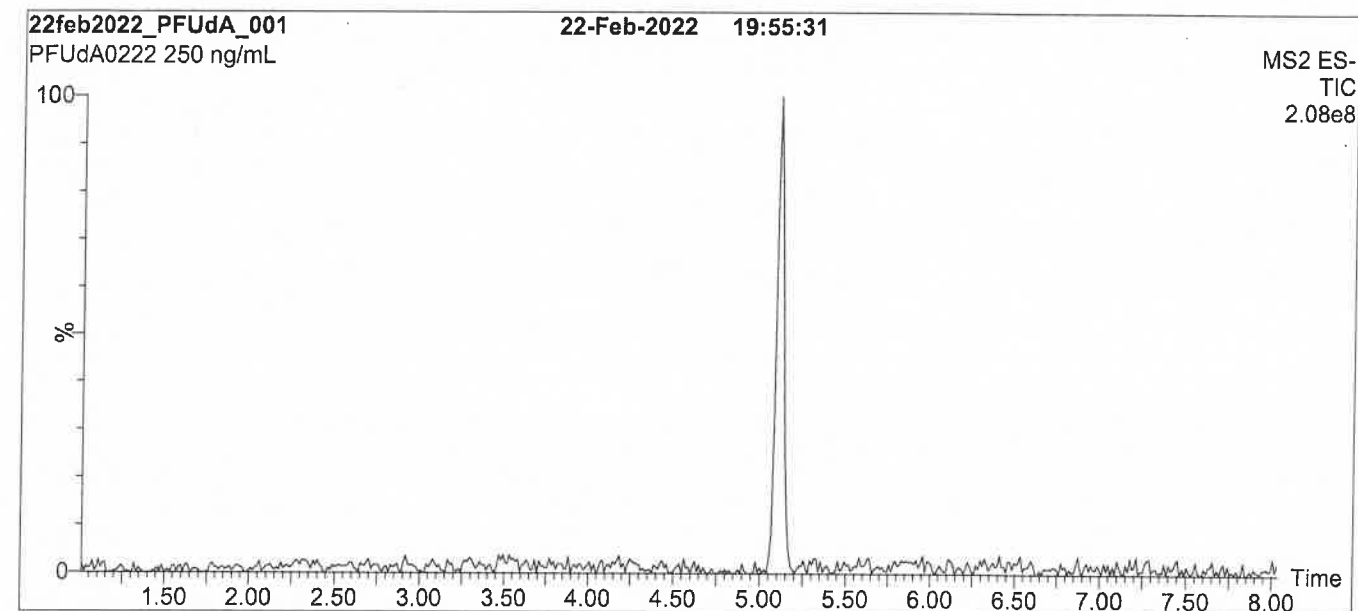
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: PFUdA; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)

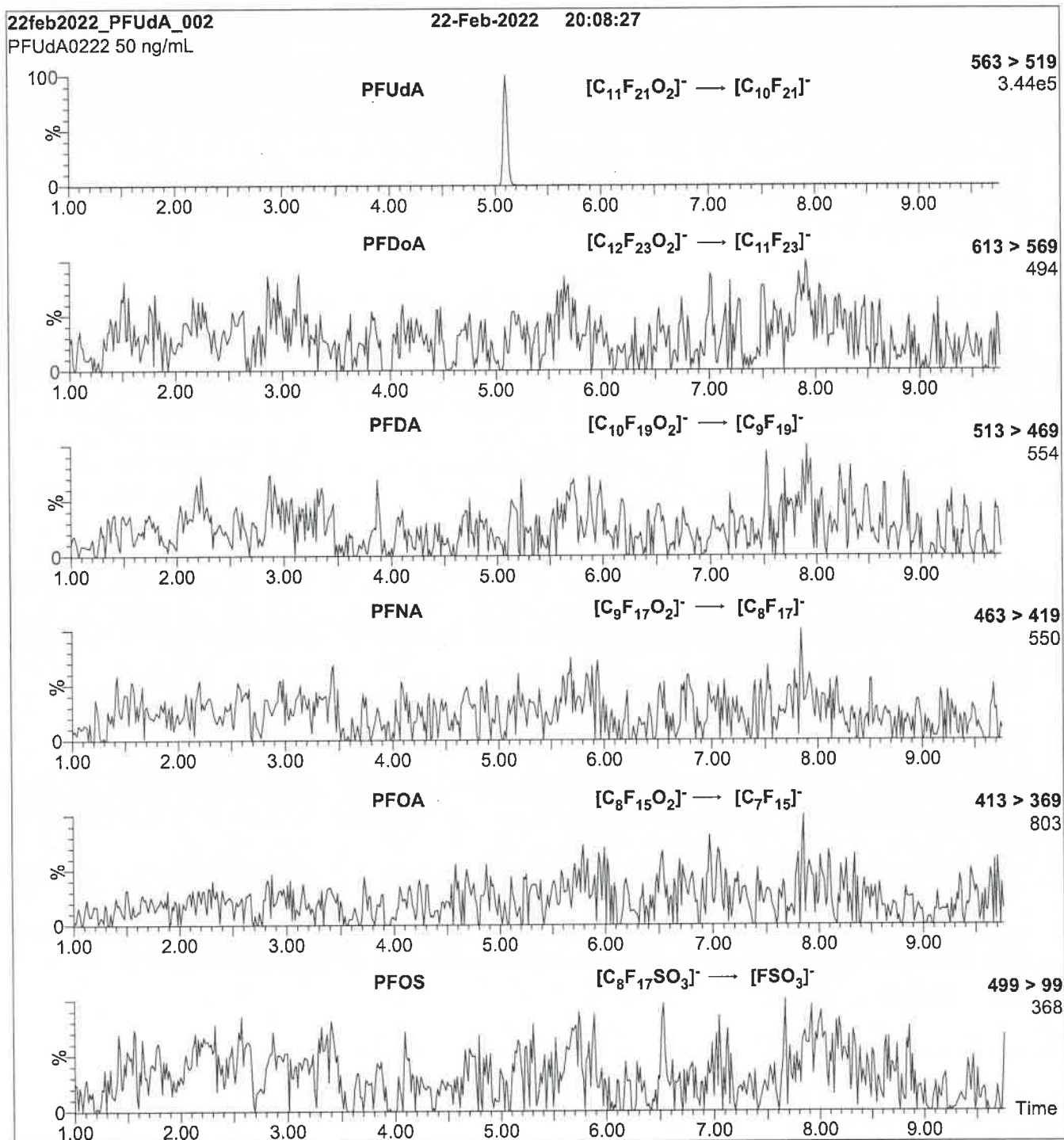
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFUdA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (PFUdA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 12

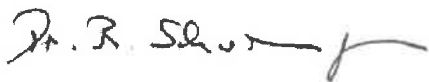
Reagent

Propionic Acd_00002

Certificate of Analysis

Product Name: Pentafluoropropionic acid
97 %
Product Number: 245917
Batch Number: BCCC3359
Brand: Aldrich
CAS Number: 422-64-0
Formula: $\text{CF}_3\text{CF}_2\text{COOH}$
Formula Weight: 164.03
Quality Release Date: 28 OCT 2019

TEST	SPECIFICATION	RESULT
APPEARANCE (COLOR)	COLORLESS TO FAINT YELLOW AND COLORLESS TO FAINT ORANGE	ALMOST COLORLESS
APPEARANCE (FORM)	LIQUID	LIQUID
TITRATION (T) NaOH 0.1M	96.5 - 103.5 %	99.6 %
PURITY (GC AREA %)	≥ 96.5 %	99.9 %
INFRARED SPECTRUM	CONFORMS TO STRUCTURE	CONFORMS



Dr. Reinhold Schwenninger
Quality Assurance
Buchs, Switzerland

Sigma-Aldrich warrants that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Method PFC IDA

Fluorinated Hydrocarbons by Method
PFAS IDA

FORM II
PFAS SURROGATE RECOVERY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Matrix: Water Level: Low
 GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	C3PFBS #	M242FTS #	PFHxA #	HFPODA #	C4PFHA #	PFHxS #
ADIT6-PIPE-AFFFN01-22DEC	320-95204-1	114	118	107	107	107	115	112	106
	MB 320-641482/1-A	106	113	101	103	104	111	107	99
	LCS 320-641482/2-A	109	112	107	107	105	111	103	104
	LCSD 320-641482/3-A	101	103	96	95	99	107	101	96

	<u>QC LIMITS</u>
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
C3PFBS = 13C3 PFBS	25-150
M242FTS = M2-4:2 FTS	25-150
PFHxA = 13C2 PFHxA	25-150
HFPODA = 13C3 HFPO-DA	25-150
C4PFHA = 13C4 PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
PFAS SURROGATE RECOVERY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Matrix: Water Level: Low
 GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	MFHEA #	M262FTS #	PFOA #	PFOS #	PFNA #	MFOEA #	PFOSA #	M282FTS #
ADIT6-PIPE-AFFFN01-22DEC	320-95204-1	114	109	98	86	93	117	49	37
	MB 320-641482/1-A	105	101	104	93	110	123	108	101
	LCS 320-641482/2-A	108	101	102	99	113	112	113	106
	LCSD 320-641482/3-A	102	97	101	94	110	115	104	96

	<u>QC LIMITS</u>
MFHEA = 13C-6:2 FTCA	25-150
M262FTS = M2-6:2 FTS	25-150
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150
PFNA = 13C5 PFNA	25-150
MFOEA = 13C-8:2 FTCA	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2 FTS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
PFAS SURROGATE RECOVERY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Matrix: Water Level: Low
 GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #	MFDEA #	NMFM #	dMeFOSA #	PFDoA #
ADIT6-PIPE-AFFFN01-22DEC	320-95204-1	39	108	111	113	153 *5+	125 *5+	120	123
	MB 320-641482/1-A	104	99	98	101	106	99	100	98
	LCS 320-641482/2-A	105	108	107	106	107	106	108	81
	LCSD 320-641482/3-A	98	96	100	104	106	102	99	97

	<u>QC LIMITS</u>
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150
MFDEA = 13C-10:2 FTCA	25-150
NMFM = d7-N-MeFOSE-M	10-120
dMeFOSA = d-N-MeFOSA-M	20-150
PFDoA = 13C2 PFDoA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
PFAS SURROGATE RECOVERY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Matrix: Water Level: Low
 GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M102FTS #	NEFM #	dEtFOSA #	PFTDA #	PFHxDA #
ADIT6-PIPE-AFFFN01-22DEC	320-95204-1	297 *5+	120	109	105	107
	MB 320-641482/1-A	106	112	100	95	88
	LCS 320-641482/2-A	91	100	87	93	93
	LCSD 320-641482/3-A	102	110	99	97	90

	<u>QC LIMITS</u>
M102FTS = 13C2 10:2 FTS	25-150
NEFM = d9-N-EtFOSE-M	10-120
dEtFOSA = d-N-EtFOSA-M	20-150
PFTDA = 13C2 PFTeDA	25-150
PFHxDA = 13C2 PFHxDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM III
PFAS LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2022.12.21_A18_PFC_A_037.d
 Lab ID: LCS 320-641482/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	10000	10100	101	76-136	
Perfluoropentanoic acid (PFPeA)	10000	9670	97	71-131	
Perfluorohexanoic acid (PFHxA)	10000	10600	106	73-133	
Perfluoroheptanoic acid (PFHpA)	10000	10700	107	72-132	
Perfluorooctanoic acid (PFOA)	10000	10500	105	70-130	
Perfluorononanoic acid (PFNA)	10000	9840	98	75-135	
Perfluorodecanoic acid (PFDA)	10000	10800	108	76-136	
Perfluoroundecanoic acid (PFUnA)	10000	10100	101	68-128	
Perfluorododecanoic acid (PFDoA)	10000	12700	127	71-131	
Perfluorotridecanoic acid (PFTrDA)	10000	13100	131	71-131	
Perfluorotetradecanoic acid (PFTeA)	10000	10900	109	70-130	
Perfluoro-n-hexadecanoic acid (PFHxDA)	10000	10300	103	76-136	
Perfluoro-n-octadecanoic acid (PFODA)	10000	9850	98	58-145	
Perfluorobutanesulfonic acid (PFBS)	8880	8860	100	67-127	
Perfluoropentanesulfonic acid (PFPeS)	9400	9840	105	66-126	
Perfluorohexanesulfonic acid (PFHxS)	9120	9120	100	59-119	
Perfluoroheptanesulfonic acid (PFHpS)	9540	10400	109	76-136	
Perfluorooctanesulfonic acid (PFOS)	9300	9960	107	70-130	
Perfluorononanesulfonic acid (PFNS)	9620	11100	115	75-135	
Perfluorodecanesulfonic acid (PFDS)	9640	11100	115	71-131	
Perfluorododecanesulfonic acid (PFDoS)	9700	9600	99	67-127	
Perfluorooctanesulfonamide (FOSA)	10000	10300	103	73-133	
NMeFOSAA	10000	10300	103	76-136	
NEtFOSAA	10000	10400	104	76-136	
4:2 FTS	9380	9270	99	79-139	
6:2 FTS	9520	10300	108	59-175	
8:2 FTS	9600	9530	99	75-135	
10:2 FTS	9660	9340	97	64-142	
NEtFOSA	10000	11700	117	78-138	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
PFAS LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2022.12.21_A18_PFC_A_037.d
 Lab ID: LCS 320-641482/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
NMeFOSA	10000	10400	104	67-154	
NMeFOSE	10000	10700	107	70-130	
NEtFOSE	10000	10200	102	71-131	
HFPO-DA (GenX)	10000	9720	97	51-173	
9Cl-PF3ONS	9340	10600	113	75-135	
11Cl-PF3OUdS	9440	10400	111	54-114	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	9440	10400	110	79-139	
3:3 FTCA	10000	11100	111	70-130	
5:3 FTCA	10000	10400	104	70-130	
7:3 FTCA	10000	9970	100	70-130	
6:2 FTCA	10000	9220	92	70-130	
8:2 FTCA	10000	8070	81	70-130	
10:2 FTCA	10000	8730	87	70-130	
PFECHS	9240	10300	111	70-130	
PFPrS	9200	9370	102	70-130	
NFDHA	10000	10700	107	70-130	
PFMBA	10000	10100	101	70-130	
PFMPA	10000	10200	102	70-130	
PFEESA	8920	9610	108	70-130	
PFMOAA	10000	10600	106	70-130	
PFPE-1	10000	10500	105	70-130	
PFO4DA	10000	11200	112	70-130	
PFO3OA	10000	11700	117	70-130	
PFO2HxA	10000	10100	101	70-130	
PFO5DA	10000	12200	122	70-130	
PMPA	10000	11500	115	70-130	
PEPA	10000	10800	108	70-130	
PFPrA	9700	8560	88	70-130	
R-EVE	10000	10100	101	70-130	
NVHOS	10000	10800	108	70-130	
Hydro-EVE Acid	10000	11000	110	70-130	
R-PSDCA	10000	10400	104	70-130	
Hydro-PS Acid	10000	11100	111	70-130	
13C8 FOSA	12500	14100	113	25-150	
13C4 PFBA	12500	13600	109	25-150	
13C5 PFPeA	12500	14000	112	25-150	
13C2 PFHxA	12500	13100	105	25-150	
13C4 PFHpA	12500	12900	103	25-150	
13C4 PFOA	12500	12700	102	25-150	
13C5 PFNA	12500	14100	113	25-150	
13C2 PFDA	12500	13100	105	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
PFAS LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2022.12.21_A18_PFC_A_037.d
 Lab ID: LCS 320-641482/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
13C2 PFUnA	12500	13200	106	25-150	
13C2 PFDoA	12500	10200	81	25-150	
13C2 PFTeDA	12500	11600	93	25-150	
13C2 PFHxDA	12500	11600	93	25-150	
13C3 PFBS	11700	12400	107	25-150	
18O2 PFHxS	11900	12300	104	25-150	
13C4 PFOS	12000	11900	99	25-150	
d3-NMeFOSAA	12500	13500	108	25-150	
d5-NEtFOSAA	12500	13400	107	25-150	
M2-4:2 FTS	11700	12500	107	25-150	
M2-6:2 FTS	11900	12000	101	25-150	
M2-8:2 FTS	12000	12700	106	25-150	
13C2 10:2 FTS	12100	11000	91	25-150	
d-N-MeFOSA-M	12500	13500	108	20-150	
d-N-EtFOSA-M	12500	10900	87	20-150	
d7-N-MeFOSE-M	12500	13300	106	10-120	
d9-N-EtFOSE-M	12500	12500	100	10-120	
13C3 HFPO-DA	12500	13900	111	25-150	
13C-6:2 FTCA	12500	13600	108	25-150	
13C-8:2 FTCA	12500	14000	112	25-150	
13C-10:2 FTCA	12500	13400	107	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
PFAS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2022.12.21_A18_PFC_A_038.d
 Lab ID: LCSD 320-641482/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorobutanoic acid (PFBA)	10000	9830	98	2	30	76-136	
Perfluoropentanoic acid (PFPeA)	10000	9610	96	1	30	71-131	
Perfluorohexanoic acid (PFHxA)	10000	10300	103	3	30	73-133	
Perfluoroheptanoic acid (PFHpA)	10000	10600	106	1	30	72-132	
Perfluorooctanoic acid (PFOA)	10000	10400	104	1	30	70-130	
Perfluorononanoic acid (PFNA)	10000	9470	95	4	30	75-135	
Perfluorodecanoic acid (PFDA)	10000	10700	107	0	30	76-136	
Perfluoroundecanoic acid (PFUnA)	10000	9650	96	4	30	68-128	
Perfluorododecanoic acid (PFDoA)	10000	10900	109	15	30	71-131	
Perfluorotridecanoic acid (PFTrDA)	10000	12000	120	9	30	71-131	
Perfluorotetradecanoic acid (PFTeA)	10000	9430	94	14	30	70-130	
Perfluoro-n-hexadecanoic acid (PFHxDA)	10000	10200	102	1	30	76-136	
Perfluoro-n-octadecanoic acid (PFODA)	10000	9630	96	2	30	58-145	
Perfluorobutanesulfonic acid (PFBS)	8880	9170	103	3	30	67-127	
Perfluoropentanesulfonic acid (PFPeS)	9400	9730	104	1	30	66-126	
Perfluorohexanesulfonic acid (PFHxS)	9120	9080	100	0	30	59-119	
Perfluoroheptanesulfonic acid (PFHpS)	9540	10400	109	1	30	76-136	
Perfluorooctanesulfonic acid (PFOS)	9300	9490	102	5	30	70-130	
Perfluorononanesulfonic acid (PFNS)	9620	10400	109	6	30	75-135	
Perfluorodecanesulfonic acid (PFDS)	9640	10200	106	8	30	71-131	
Perfluorododecanesulfonic acid (PFDoS)	9700	10500	109	9	30	67-127	
Perfluorooctanesulfonamide (FOSA)	10000	10000	100	3	30	73-133	
NMeFOSAA	10000	10600	106	3	30	76-136	
NEtFOSAA	10000	9790	98	6	30	76-136	
4:2 FTS	9380	9090	97	2	30	79-139	
6:2 FTS	9520	9780	103	5	30	59-175	
8:2 FTS	9600	9230	96	3	30	75-135	
10:2 FTS	9660	9330	97	0	30	64-142	
NEtFOSA	10000	11000	110	7	30	78-138	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
PFAS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2022.12.21_A18_PFC_A_038.d
 Lab ID: LCSD 320-641482/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
NMeFOSA	10000	10300	103	1	30	67-154	
NMeFOSE	10000	10900	109	2	30	70-130	
NEtFOSE	10000	10500	105	3	30	71-131	
HFPO-DA (GenX)	10000	9800	98	1	30	51-173	
9Cl-PF3ONS	9340	10000	108	5	30	75-135	
11Cl-PF3OUdS	9440	9820	104	6	30	54-114	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	9440	10200	108	2	30	79-139	
3:3 FTCA	10000	11500	115	3	30	70-130	
5:3 FTCA	10000	10100	101	2	30	70-130	
7:3 FTCA	10000	8770	88	13	30	70-130	
6:2 FTCA	10000	10600	106	14	30	70-130	
8:2 FTCA	10000	7860	79	3	30	70-130	
10:2 FTCA	10000	9090	91	4	30	70-130	
PFECHS	9240	9390	102	9	30	70-130	
PFPrS	9200	9660	105	3	30	70-130	
NFDHA	10000	10500	105	2	30	70-130	
PFMBA	10000	10300	103	2	30	70-130	
PFMPA	10000	10200	102	0	30	70-130	
PFEESA	8920	9680	109	1	30	70-130	
PFMOAA	10000	10900	109	2	30	70-130	
PFPE-1	10000	10400	104	1	30	70-130	
PFO4DA	10000	10400	104	7	30	70-130	
PFO3OA	10000	10800	108	8	30	70-130	
PFO2HxA	10000	11000	110	9	30	70-130	
PFO5DA	10000	10200	102	18	30	70-130	
PMPA	10000	11600	116	0	30	70-130	
PEPA	10000	10900	109	1	30	70-130	
PFPrA	9700	8750	90	2	30	70-130	
R-EVE	10000	9920	99	1	30	70-130	
NVHOS	10000	11400	114	5	30	70-130	
Hydro-EVE Acid	10000	10600	106	3	30	70-130	
R-PSDCA	10000	10200	102	2	30	70-130	
Hydro-PS Acid	10000	10400	104	6	30	70-130	
13C8 FOSA	12500	13000	104			25-150	
13C4 PFBA	12500	12600	101			25-150	
13C5 PFPeA	12500	12800	103			25-150	
13C2 PFHxA	12500	12400	99			25-150	
13C4 PFHpA	12500	12700	101			25-150	
13C4 PFOA	12500	12600	101			25-150	
13C5 PFNA	12500	13700	110			25-150	
13C2 PFDA	12500	12300	98			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
PFAS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2022.12.21_A18_PFC_A_038.d
 Lab ID: LCSD 320-641482/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
13C2 PFUnA	12500	13000	104			25-150	
13C2 PFDoA	12500	12100	97			25-150	
13C2 PFTeDA	12500	12200	97			25-150	
13C2 PFHxDA	12500	11300	90			25-150	
13C3 PFBS	11700	11200	96			25-150	
18O2 PFHxS	11900	11300	96			25-150	
13C4 PFOS	12000	11300	94			25-150	
d3-NMeFOSAA	12500	12000	96			25-150	
d5-NEtFOSAA	12500	12500	100			25-150	
M2-4:2 FTS	11700	11100	95			25-150	
M2-6:2 FTS	11900	11500	97			25-150	
M2-8:2 FTS	12000	11500	96			25-150	
13C2 10:2 FTS	12100	12300	102			25-150	
d-N-MeFOSA-M	12500	12400	99			20-150	
d-N-EtFOSA-M	12500	12400	99			20-150	
d7-N-MeFOSE-M	12500	12700	102			10-120	
d9-N-EtFOSE-M	12500	13800	110			10-120	
13C3 HFPO-DA	12500	13300	107			25-150	
13C-6:2 FTCA	12500	12700	102			25-150	
13C-8:2 FTCA	12500	14300	115			25-150	
13C-10:2 FTCA	12500	13300	106			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM IV
PFAS METHOD BLANK SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
SDG No.: _____
Lab File ID: 2022.12.21_A18_PFC_A_036.d Lab Sample ID: MB 320-641482/1-A
Matrix: Water Date Extracted: 12/19/2022 18:17
Instrument ID: A18 Date Analyzed: 12/22/2022 15:53
Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-641482/2-A	2022.12.21_A18_PFC_A_037.d	12/22/2022 16:03
	LCSD 320-641482/3-A	2022.12.21_A18_PFC_A_038.d	12/22/2022 16:14
ADIT6-PIPE-AFFFN01-22DEC	320-95204-1	2022.12.21_A18_PFC_A_039.d	12/22/2022 16:24

FORM VIII
PFAS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Sample No.: ICIS 320-641843/5 Date Analyzed: 12/21/2022 12:40
 Instrument ID: A18 GC Column: Gemini C18 3x50 ID: 3 (mm)
 Lab File ID (Standard): 2022.12.21_A18_PFC+ Heated Purge: (Y/N) N
 Calibration ID: 63245

	13PFOA					
	AREA #	RT #	#	RT #	#	RT #
INITIAL CALIBRATION MID-POINT	5748994	4.61				
UPPER LIMIT	8623491	4.81				
LOWER LIMIT	2874497	4.41				
LAB SAMPLE ID	CLIENT SAMPLE ID					
ICB 320-641843/9		5903177	4.62			
ICV 320-641843/10		5362668	4.59			
CCV 320-642483/3 CCVIS		5545026	4.56			

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
 RT Limit = \pm 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
PFAS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Sample No.: CCV 320-642483/3 Date Analyzed: 12/22/2022 11:00
 Instrument ID: A18 GC Column: Gemini C18 3x50 ID: 3 (mm)
 Lab File ID (Standard): 2022.12.21_A18_PFC Heated Purge: (Y/N) N
 Calibration ID: 63245

		13PFOA					
		AREA #	RT #	#	RT #	#	RT #
12/24 HOUR STD		5545026	4.56				
UPPER LIMIT		8317539	4.76				
LOWER LIMIT		2772513	4.36				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-642483/1		5739037	4.57				
CCVL 320-642483/2		5585424	4.57				
CCV 320-642490/21		5427508	4.56				
MB 320-641482/1-A		5559809	4.59				
LCS 320-641482/2-A		5163491	4.55				
LCSD 320-641482/3-A		5658037	4.57				
320-95204-1	ADIT6-PIPE-AFFFN01-22 DEC	5131414	4.58				
CCV 320-642490/28		5696055	4.57				

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
 RT Limit = \pm 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Client Sample ID: ADIT6-PIPE-AFFFN01-22DEC Lab Sample ID: 320-95204-1

Matrix: Water Lab File ID: 2022.12.21_A18_PFC_A_039.d

Analysis Method: 537 (modified) Date Collected: 12/08/2022 14:00

Extraction Method: 3535 Date Extracted: 12/19/2022 18:17

Sample wt/vol: 0.002 (mL) Date Analyzed: 12/22/2022 16:24

Con. Extract Vol.: 10.0 (mL) Dilution Factor: 1

Injection Volume: 20 (uL) GC Column: Gemini C18 3x50 ID: 3 (mm)

% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N

Cleanup Factor: _____

Analysis Batch No.: 642490 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	880000		630000	300000
2706-90-3	Perfluoropentanoic acid (PFPeA)	110000	J	250000	61000
307-24-4	Perfluorohexanoic acid (PFHxA)	1500000		250000	73000
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		250000	31000
335-67-1	Perfluorooctanoic acid (PFOA)	210000	J	250000	110000
375-95-1	Perfluorononanoic acid (PFNA)	ND		250000	34000
335-76-2	Perfluorodecanoic acid (PFDA)	ND		250000	39000
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		250000	140000
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		250000	69000
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		250000	160000
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		250000	91000
67905-19-5	Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		250000	110000
16517-11-6	Perfluoro-n-octadecanoic acid (PFODA)	ND		250000	120000
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		250000	25000
2706-91-4	Perfluoropentanesulfonic acid (PFPeS)	ND		250000	38000
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		250000	71000
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)	ND		250000	24000
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		250000	68000
68259-12-1	Perfluorononanesulfonic acid (PFNS)	ND		250000	46000
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		250000	40000
79780-39-5	Perfluorododecanesulfonic acid (PFDoS)	ND		250000	120000
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		250000	120000
2355-31-9	NMeFOSAA	ND		630000	150000
2991-50-6	NEtFOSAA	ND		630000	160000
757124-72-4	4:2 FTS	73000	J	250000	30000
27619-97-2	6:2 FTS	29000000		630000	310000
39108-34-4	8:2 FTS	ND		250000	58000
120226-60-0	10:2 FTS	ND		250000	84000
4151-50-2	NEtFOSA	ND		250000	110000

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins Sacramento</u>	Job No.: <u>320-95204-1</u>
SDG No.: _____	
Client Sample ID: <u>ADIT6-PIPE-AFFFN01-22DEC</u>	Lab Sample ID: <u>320-95204-1</u>
Matrix: <u>Water</u>	Lab File ID: <u>2022.12.21_A18_PFC_A_039.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>12/08/2022 14:00</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>12/19/2022 18:17</u>
Sample wt/vol: <u>0.002(mL)</u>	Date Analyzed: <u>12/22/2022 16:24</u>
Con. Extract Vol.: <u>10.0(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20(uL)</u>	GC Column: <u>Gemini C18 3x50 ID: 3(mm)</u>
% Moisture: _____ % Solids: _____	GPC Cleanup: (Y/N) <u>N</u>
Cleanup Factor: _____	
Analysis Batch No.: <u>642490</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
31506-32-8	NMeFOSA	ND		250000	54000
24448-09-7	NMeFOSE	ND		500000	180000
1691-99-2	NEtFOSE	ND		250000	110000
13252-13-6	HFPO-DA (GenX)	ND		500000	190000
756426-58-1	9Cl-PF3ONS	ND		250000	30000
763051-92-9	11Cl-PF3OUdS	ND		250000	40000
919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		250000	50000
356-02-5	3:3 FTCA	ND		250000	54000
914637-49-3	5:3 FTCA	ND		250000	41000
812-70-4	7:3 FTCA	ND		250000	69000
53826-12-3	6:2 FTCA	ND		250000	120000
27854-31-5	8:2 FTCA	ND		250000	41000
53826-13-4	10:2 FTCA	ND		380000	170000
133201-07-7	PFECHS	ND		250000	56000
423-41-6	PFPrS	ND		250000	30000
151772-58-6	NFDHA	ND		250000	78000
863090-89-5	PFMBA	ND		250000	33000
377-73-1	PFMPA	ND		250000	35000
113507-82-7	PFEESA	ND		250000	36000
674-13-5	PFMOAA	ND		250000	51000
801212-59-9	PFPE-1	ND		250000	36000
39492-90-5	PFO4DA	ND		250000	50000
39492-89-2	PFO3OA	ND		250000	110000
39492-88-1	PFO2HxA	ND		250000	69000
39492-91-6	PFO5DA	ND		250000	130000
13140-29-9	PMPA	ND		250000	43000
267239-61-2	PEPA	ND		250000	60000
422-64-0	PFPrA	ND		250000	44000
2416366-22-6	R-EVE	ND		250000	39000
801209-99-4	NVHOS	ND		380000	160000
773804-62-9	Hydro-EVE Acid	ND		250000	30000
2416366-21-5	R-PSDCA	ND		380000	180000

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
SDG No.: _____
Client Sample ID: ADIT6-PIPE-AFFFN01-22DEC Lab Sample ID: 320-95204-1
Matrix: Water Lab File ID: 2022.12.21_A18_PFC_A_039.d
Analysis Method: 537 (modified) Date Collected: 12/08/2022 14:00
Extraction Method: 3535 Date Extracted: 12/19/2022 18:17
Sample wt/vol: 0.002 (mL) Date Analyzed: 12/22/2022 16:24
Con. Extract Vol.: 10.0 (mL) Dilution Factor: 1
Injection Volume: 20 (uL) GC Column: Gemini C18 3x50 ID: 3 (mm)
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 642490 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
749836-20-2	Hydro-PS Acid	ND		250000	55000

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
SDG No.: _____
Client Sample ID: ADIT6-PIPE-AFFFN01-22DEC Lab Sample ID: 320-95204-1
Matrix: Water Lab File ID: 2022.12.21_A18_PFC_A_039.d
Analysis Method: 537 (modified) Date Collected: 12/08/2022 14:00
Extraction Method: 3535 Date Extracted: 12/19/2022 18:17
Sample wt/vol: 0.002(mL) Date Analyzed: 12/22/2022 16:24
Con. Extract Vol.: 10.0(mL) Dilution Factor: 1
Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 642490 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01056	13C8 FOSA	49		25-150
STL00992	13C4 PFBA	114		25-150
STL01893	13C5 PFPeA	118		25-150
STL00993	13C2 PFHxA	107		25-150
STL01892	13C4 PFHpA	112		25-150
STL00990	13C4 PFOA	98		25-150
STL00995	13C5 PFNA	93		25-150
STL00996	13C2 PFDA	39		25-150
STL00997	13C2 PFUnA	113		25-150
STL00998	13C2 PFDoA	123		25-150
STL02116	13C2 PFTeDA	105		25-150
STL02115	13C2 PFHxDA	107		25-150
STL02337	13C3 PFBS	107		25-150
STL00994	18O2 PFHxS	106		25-150
STL00991	13C4 PFOS	86		25-150
STL02118	d3-NMeFOSAA	108		25-150
STL02117	d5-NEtFOSAA	111		25-150
STL02395	M2-4:2 FTS	107		25-150
STL02279	M2-6:2 FTS	109		25-150
STL02280	M2-8:2 FTS	37		25-150
STL02814	13C2 10:2 FTS	297	*5+	25-150
STL02275	d-N-MeFOSA-M	120		20-150
STL02282	d-N-EtFOSA-M	109		20-150
STL02277	d7-N-MeFOSE-M	125	*5+	10-120
STL02278	d9-N-EtFOSE-M	120		10-120
STL02255	13C3 HFPO-DA	115		25-150
STL02802	13C-6:2 FTCA	114		25-150
STL02803	13C-8:2 FTCA	117		25-150
STL02804	13C-10:2 FTCA	153	*5+	25-150

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_039.d
 Lims ID: 320-95204-A-1-C
 Client ID: ADIT6-PIPE-AFFFN01-22DEC
 Sample Type: Client
 Inject. Date: 22-Dec-2022 16:24:09 ALS Bottle#: 23 Worklist Smp#: 25
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 320-95204-a-1-c
 Misc. Info.: Plate: 3 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Method: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 23-Dec-2022 12:47:11 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1657

First Level Reviewer: sanjumnair

Date: 23-Dec-2022 12:47:11

Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_035.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 8 13C4 PFBA										
217.00 > 172.00	2.687	2.678	0.009	0.587	5202412	1.43		114	17364	
7 Perfluorobutanoic acid										
212.90 > 169.00	2.687	2.678	0.009	1.000	816771	0.1765			35.5	
D 16 13C5 PFPeA										
267.90 > 223.00	3.058	3.048	0.010	0.669	4800931	1.48		118	50519	
15 Perfluoropentanoic acid										
262.90 > 219.00	3.058	3.048	0.010	1.000	85037	0.0212			76.9	
D 18 13C3 PFBS										
301.90 > 80.00	3.095	3.085	0.010	0.677	2801135	1.25		107	16775	
26 1H,1H,2H,2H-perfluorohexanesulfo										M
327.00 > 307.00	3.440	3.430	0.010	1.000	19126	0.0147	Target=2.02		1118	M
327.00 > 79.96	3.440	3.430	0.010	1.000	8603		2.22(1.01-3.03)		93.6	M
D 25 M2-4:2 FTS										
329.00 > 81.00	3.440	3.430	0.010	0.752	653409	1.25		107	3894	
28 Perfluorohexanoic acid										
313.00 > 269.00	3.494	3.483	0.011	1.000	1116690	0.3089	Target=13.57		1405	
313.00 > 119.00	3.494	3.483	0.011	1.000	85139		13.12(6.78-20.35)		897	
D 27 13C2 PFHxA										
315.00 > 270.00	3.494	3.483	0.011	0.764	4794862	1.34		107	37330	
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.650	3.648	0.002	0.798	173217	1.44		115	6049	
D 35 13C4 PFHpA										
367.00 > 322.00	4.014	4.009	0.005	0.877	5294407	1.39		112	28386	
36 Perfluoroheptanoic acid										M
363.00 > 319.00	4.014	4.009	0.005	1.000	18697	0.004851	Target=3.79		16.8	M
363.00 > 169.00	4.031	4.009	0.022	1.004	3720		5.03(1.89-5.68)		89.3	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 37 18O2 PFHxS										
403.00 > 84.00	4.031	4.027	0.004	0.881	1863127	1.26		106	24401	
41 5:3 FTCA										M
340.88 > 236.90	4.099	4.086	0.013	0.981	4810	0.007247	Target=1.10	52.8		
340.88 > 216.90	4.090	4.086	0.004	0.979	3272		1.47(0.55-1.65)	25.7		M
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.177	4.171	0.006	0.913	247780	1.42		114	2022	
53 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.540	4.535	0.005	1.000	7123828	5.85	Target=2.58	26515		
427.00 > 79.96	4.540	4.535	0.005	1.000	2904238		2.45(1.29-3.87)	18727		
D 52 M2-6:2 FTS										
429.00 > 81.00	4.540	4.535	0.005	0.992	713733	1.30		109	10783	
D 56 13C4 PFOA										
417.00 > 372.00	4.575	4.569	0.006	1.000	5098398	1.23		98.3	15581	
58 Perfluorooctanoic acid										
413.00 > 369.00	4.575	4.569	0.006	1.000	157195	0.0413	Target=2.58	163		
413.00 > 169.00	4.575	4.569	0.006	1.000	58626		2.68(1.29-3.87)	424		
* 55 13C2 PFOA										
415.00 > 370.00	4.575	4.569	0.006		5131414	1.25		19868		
D 61 13C4 PFOS										
503.00 > 80.00	5.120	5.116	0.004	1.119	1030721	1.03		86.0	5413	
D 64 13C5 PFNA										
468.00 > 423.00	5.120	5.123	-0.003	1.119	4721059	1.16		93.0	28439	
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.317	5.312	0.005	1.162	189923	1.46		117	2059	
D 72 13C8 FOSA										
506.00 > 78.00	5.610	5.605	0.005	1.226	820829	0.6175		49.4	4257	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.626	5.621	0.005	1.230	247250	0.4461		37.2	3829	
D 76 13C2 PFDA										
515.00 > 470.00	5.650	5.630	0.020	1.235	1897868	0.4847		38.8	9242	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.870	5.858	0.012	1.283	734121	1.35		108	6049	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.100	6.095	0.005	1.333	757003	1.39		111	2418	
D 82 13C2 PFUnA										
565.00 > 520.00	6.110	6.095	0.015	1.336	5169706	1.41		113	26100	
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.287	6.275	0.011	1.374	139332	1.91		153	950	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.331	6.319	0.012	1.384	1019203	1.56		125	5173	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.349	6.337	0.012	1.388	646223	1.50		120	2473	
D 98 13C2 PFDoA										
615.00 > 570.00	6.518	6.515	0.003	1.425	6211565	1.54		123	24069	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.528	6.525	0.003	1.427	1855949	3.59		297	35679	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
101 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	6.538	6.535	0.003	1.002	11483	0.005734	Target=1.65		261	
627.00 > 79.96	6.528	6.535	-0.007	1.000	7549		1.52(0.82-2.47)		189	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.578	6.575	0.003	1.438	1131073	1.50		120	5830	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.608	6.605	0.003	1.444	549243	1.37		109	2421	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.225	7.222	0.003	1.579	4612012	1.32		105	8154	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.788	7.784	0.004	1.702	4074735	1.34		107	5462	
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.788	7.784	0.004	1.000	38104	0.001395	Target=8.57	97.6		M
813.00 > 169.00	7.797	7.784	0.013	1.001	4238		8.99(4.28-12.85)	80.1		M

QC Flag Legend

Processing Flags

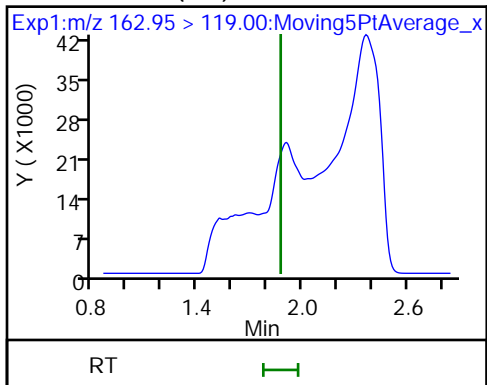
Review Flags

M - Manually Integrated

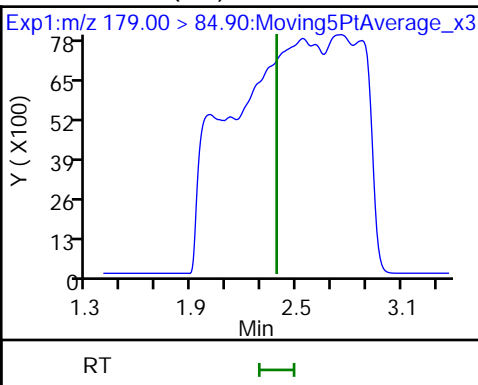
Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_039.d
Injection Date: 22-Dec-2022 16:24:09 Instrument ID: A18
Lims ID: 320-95204-A-1-C Lab Sample ID: 320-95204-1
Client ID: ADIT6-PIPE-AFFFN01-22DEC
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 23 Worklist Smp#: 25
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL

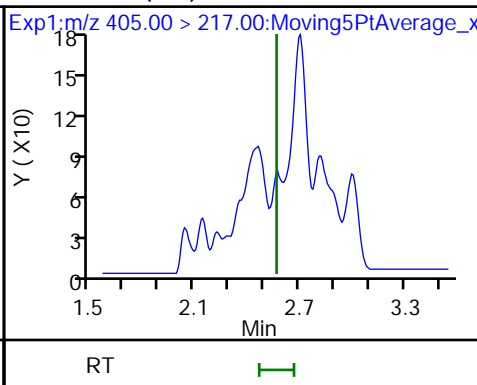
2 PPF Acid (ND)



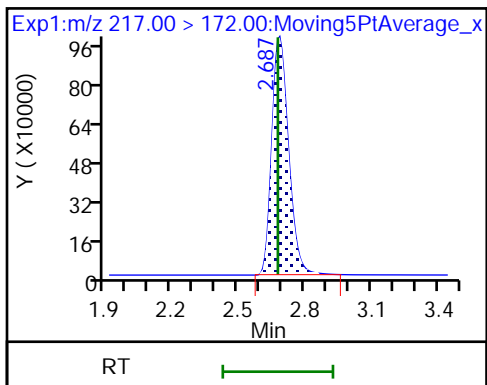
3 PFMOAA (ND)



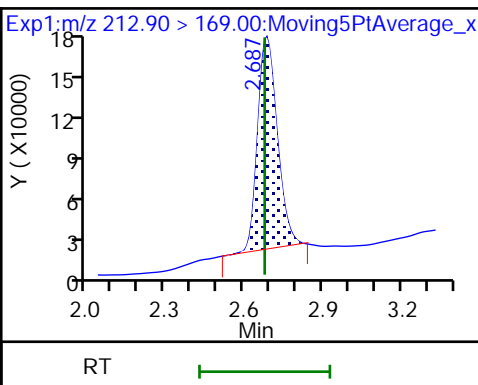
5 R-EVE (ND)



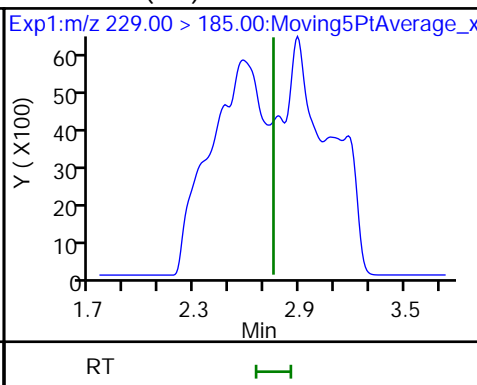
D 8 13C4 PFBA



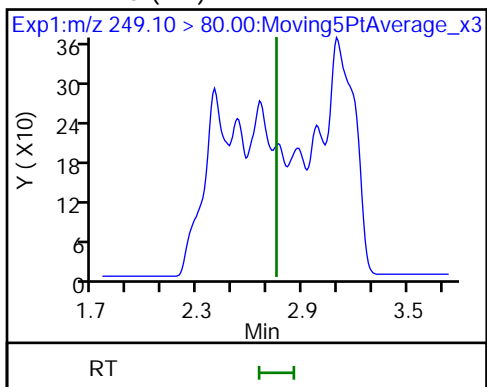
7 Perfluorobutanoic acid



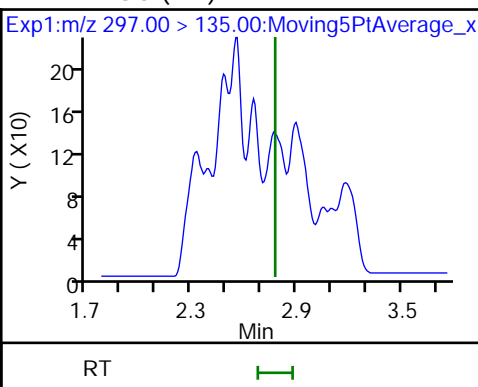
10 PMPA (ND)



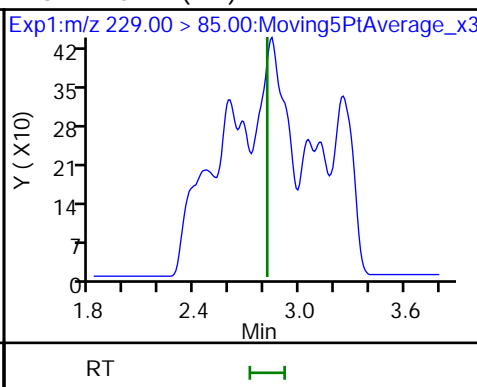
11 PFPrS (ND)



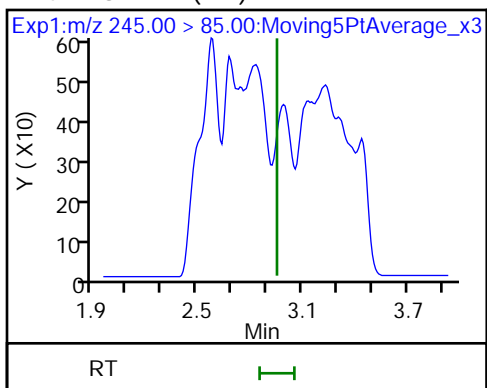
12 NVHOS (ND)



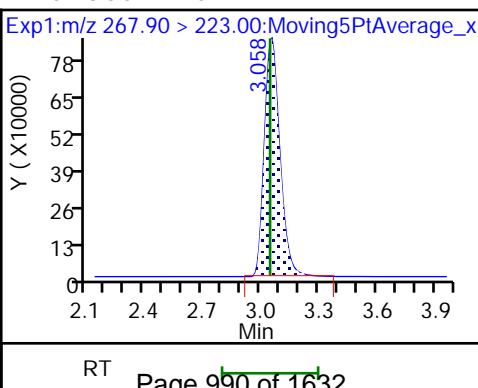
13 PFECa F (ND)



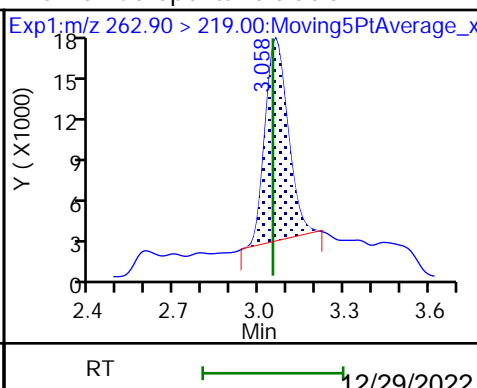
14 PFO2HxA (ND)

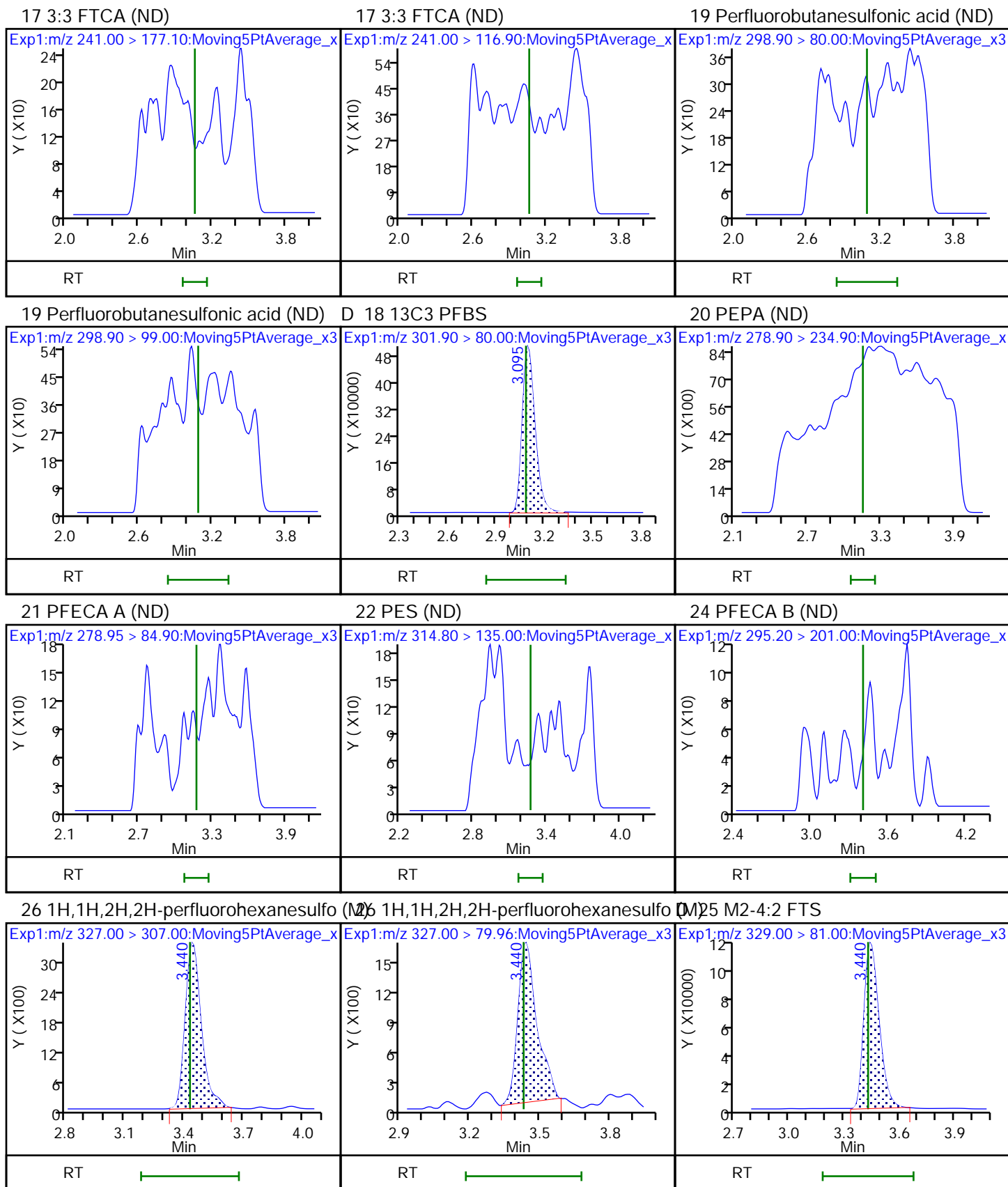


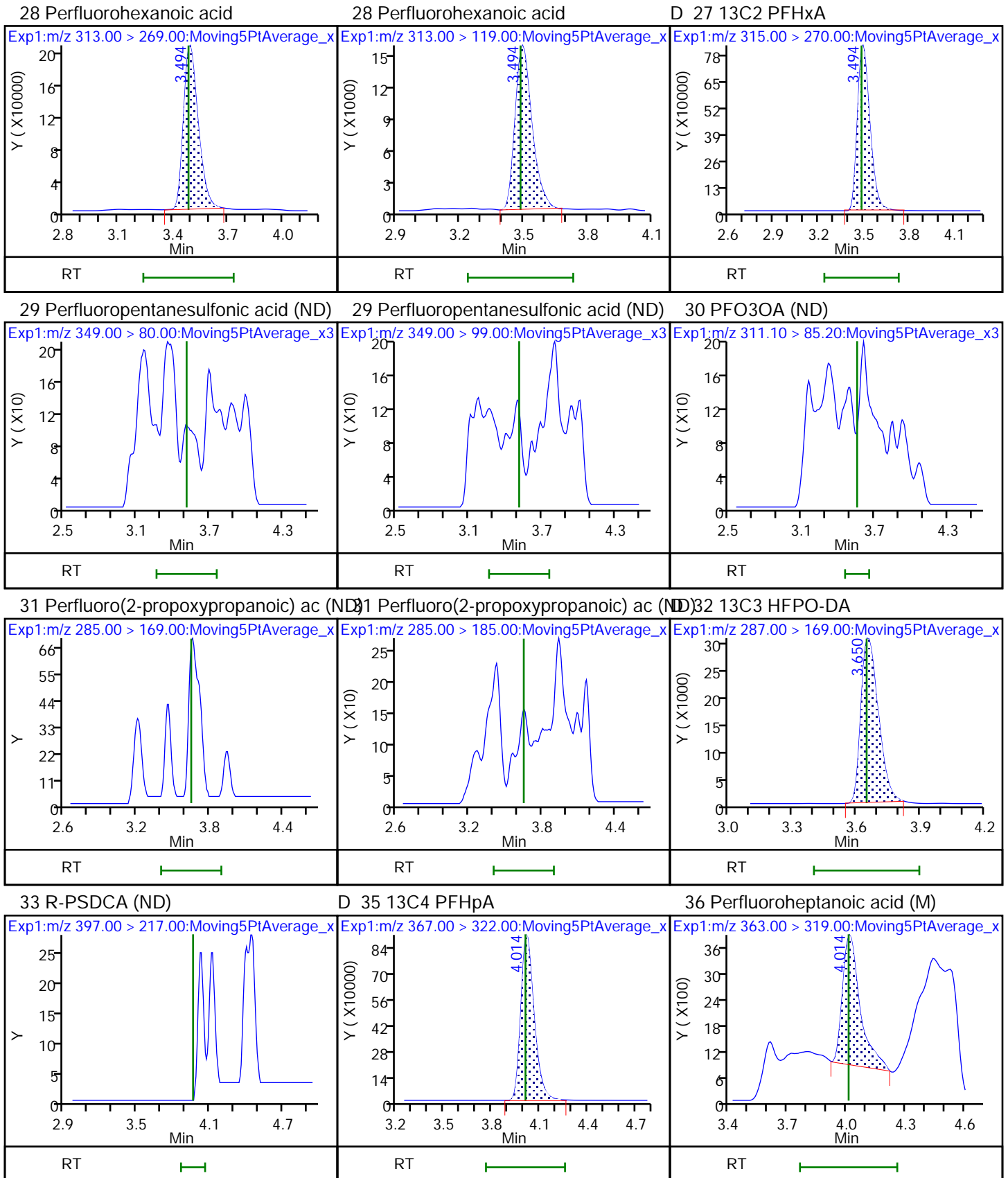
D 16 13C5 PFPeA



15 Perfluoropentanoic acid



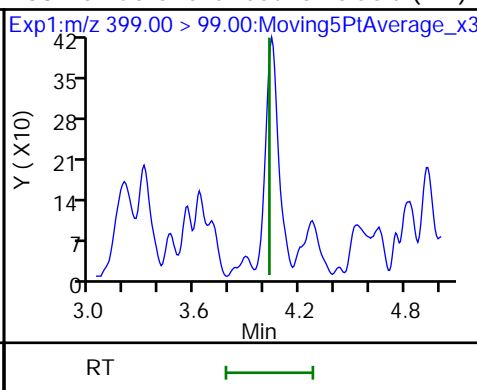
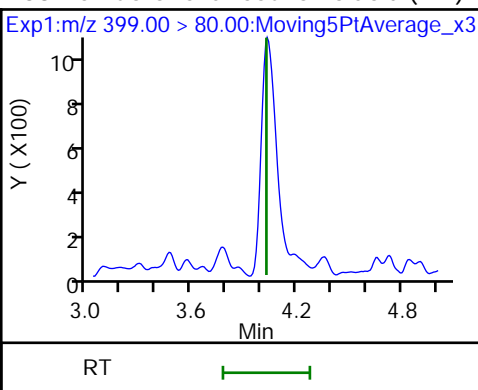
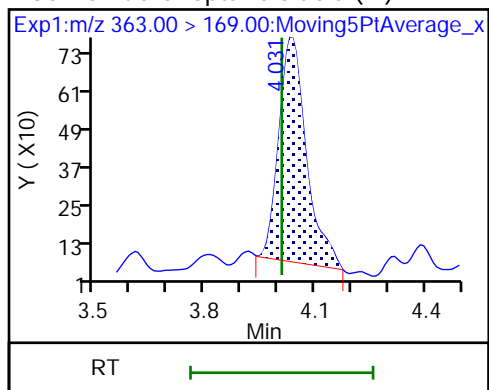




36 Perfluoroheptanoic acid (M)

38 Perfluorohexanesulfonic acid (ND)

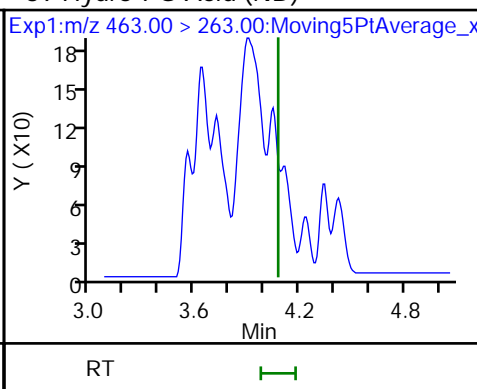
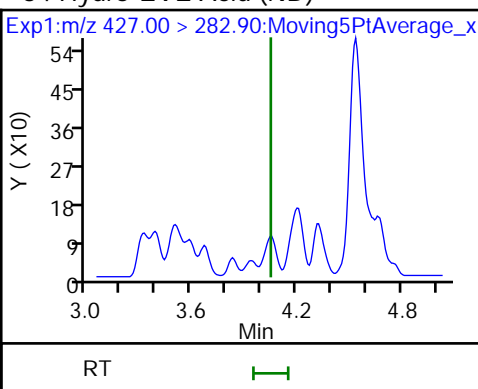
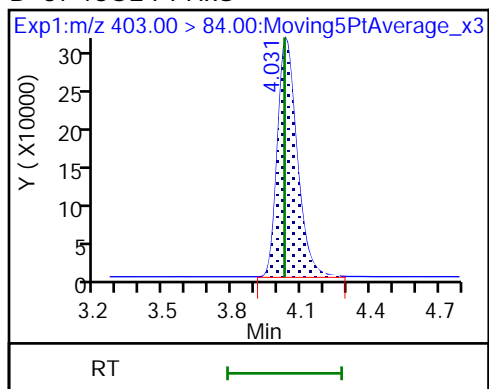
38 Perfluorohexanesulfonic acid (ND)



D 37 18O2 PFHxS

34 Hydro-EVE Acid (ND)

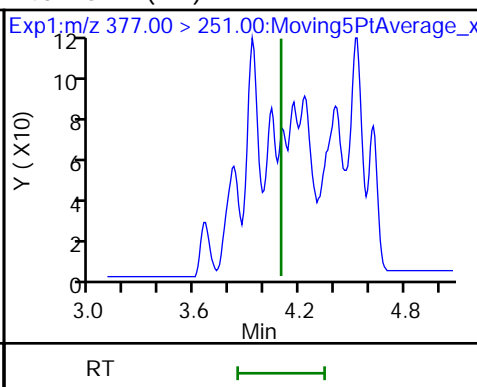
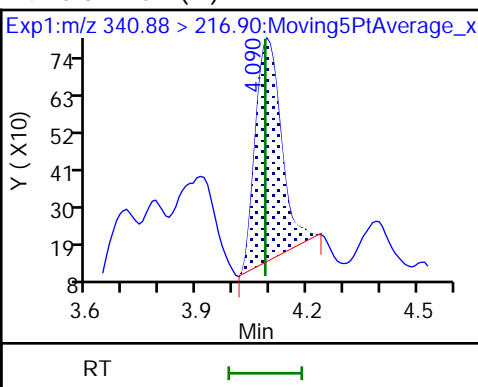
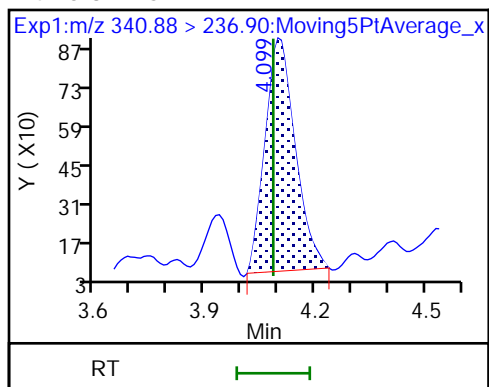
39 Hydro-PS Acid (ND)



41 5:3 FTCA

41 5:3 FTCA (M)

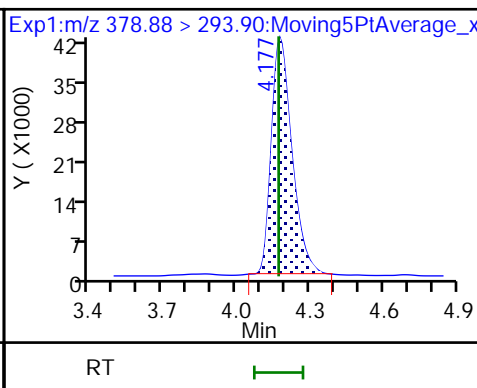
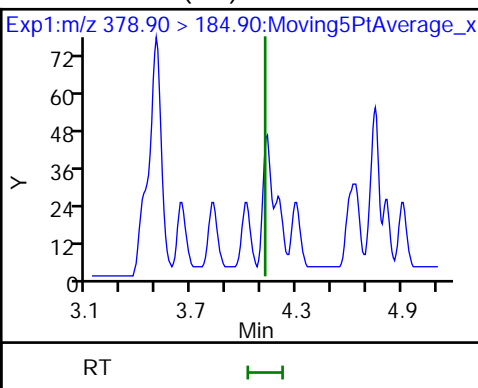
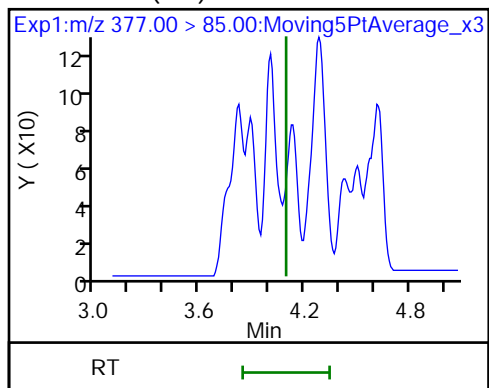
40 DONA (ND)

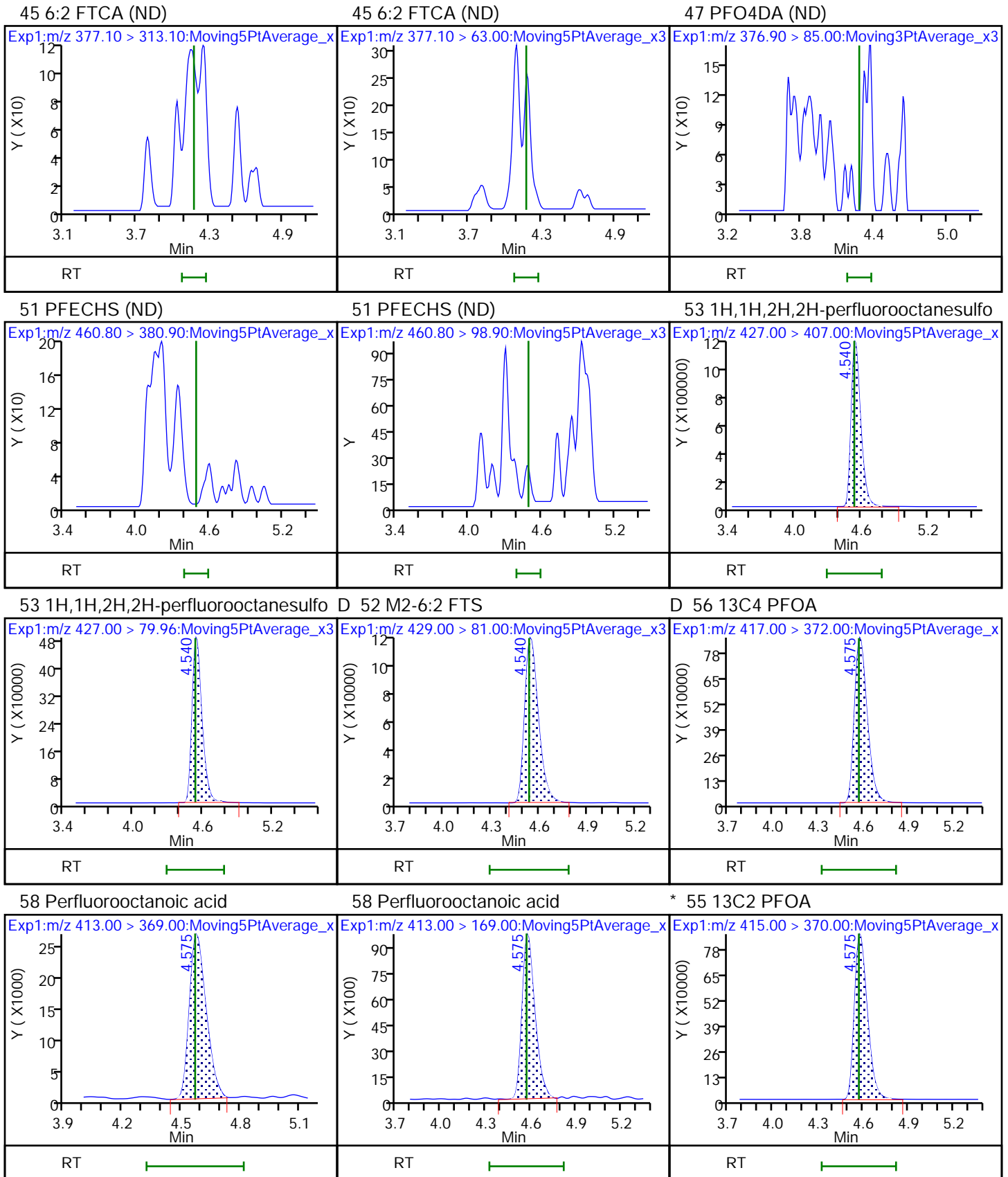


40 DONA (ND)

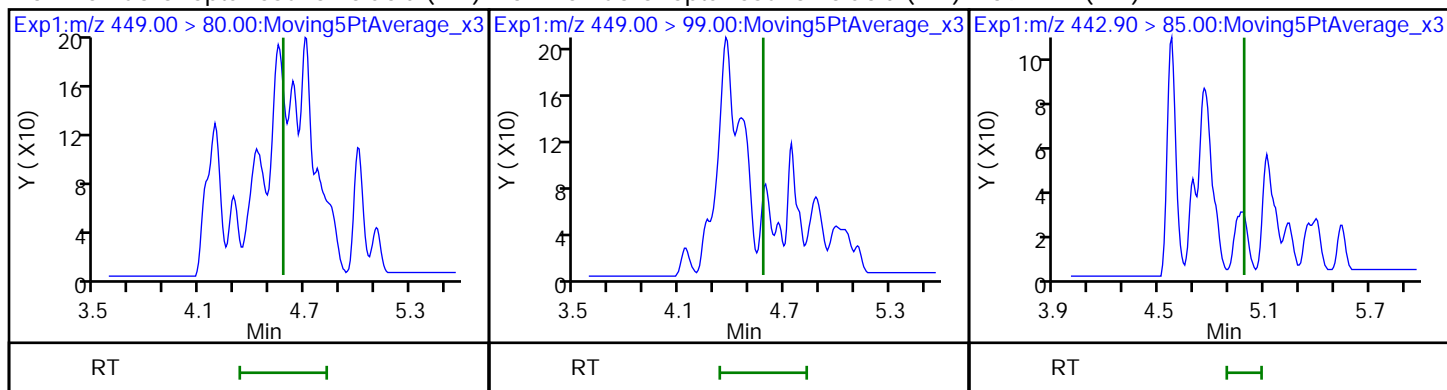
42 PFECA G (ND)

D 46 13C-6:2 FTCA





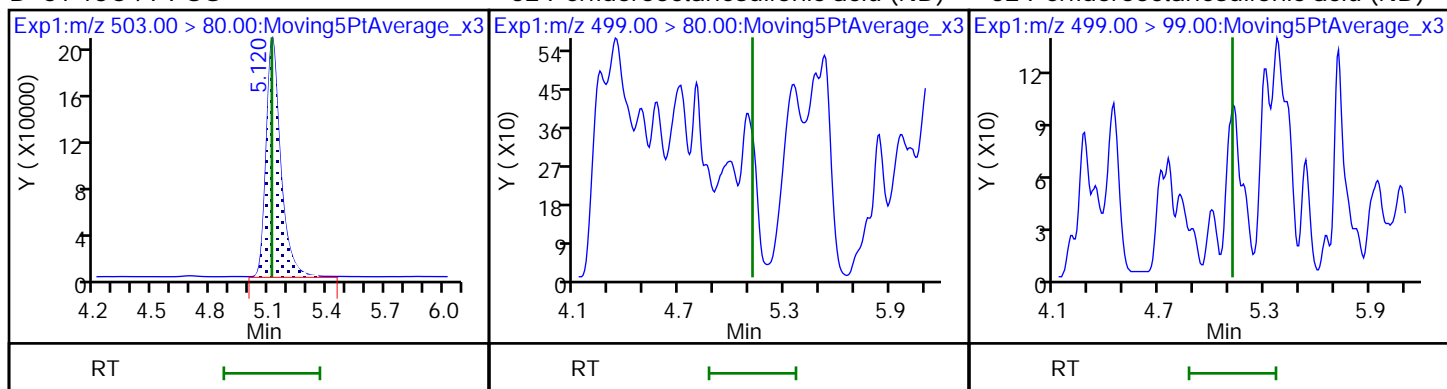
57 Perfluoroheptanesulfonic acid (ND) 57 Perfluoroheptanesulfonic acid (ND) 59 TAF (ND)



D 61 13C4 PFOS

62 Perfluorooctanesulfonic acid (ND)

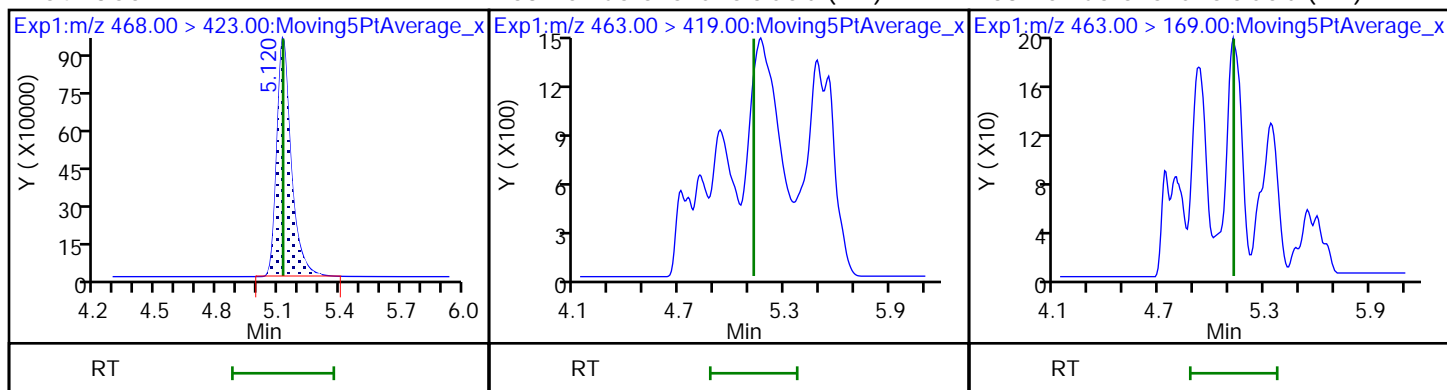
62 Perfluorooctanesulfonic acid (ND)



D 64 13C5 PFNA

63 Perfluorononanoic acid (ND)

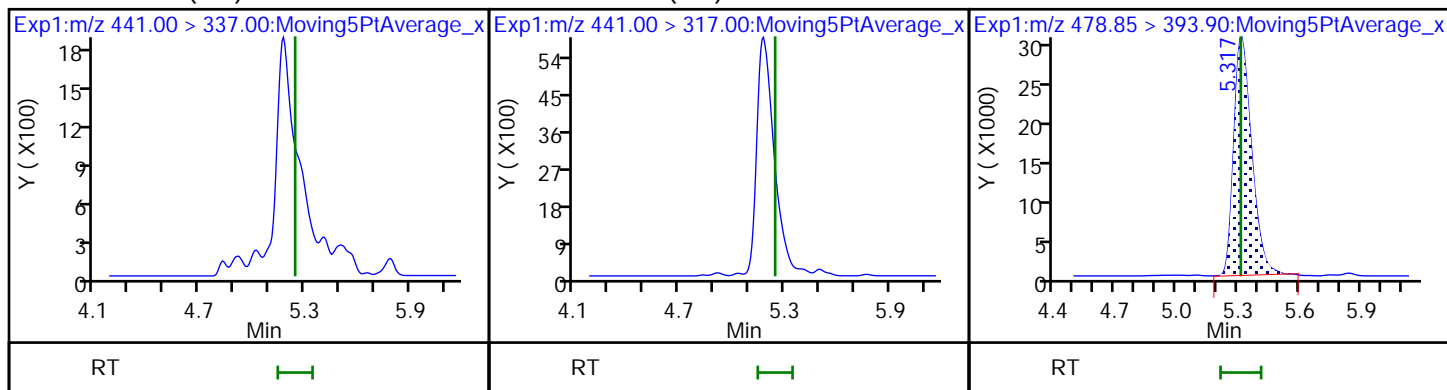
63 Perfluorononanoic acid (ND)



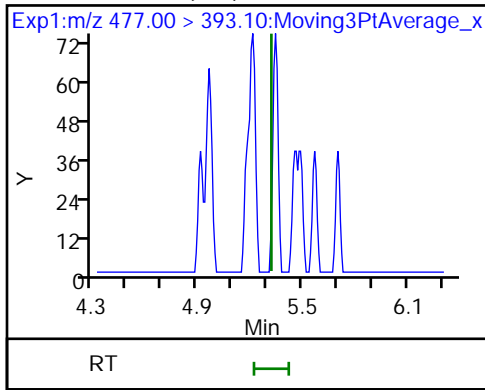
65 7:3 FTCA (ND)

65 7:3 FTCA (ND)

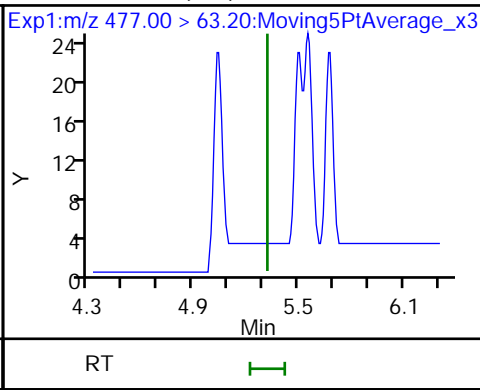
D 68 13C-8:2 FTCA



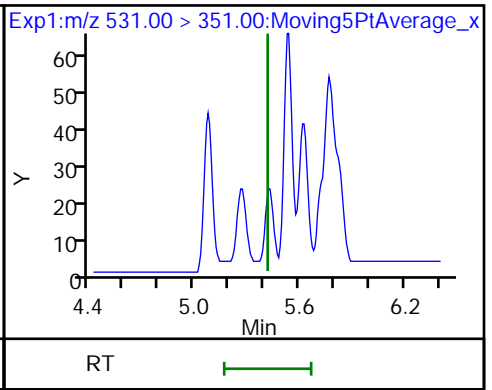
69 8:2 FTCA (ND)



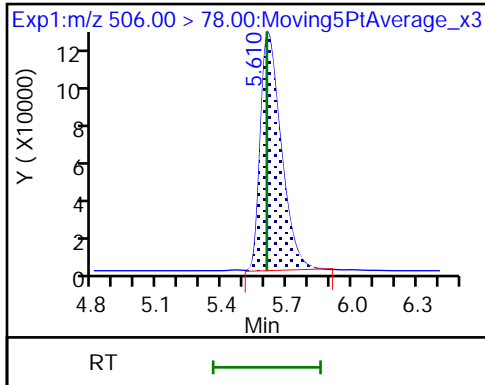
69 8:2 FTCA (ND)



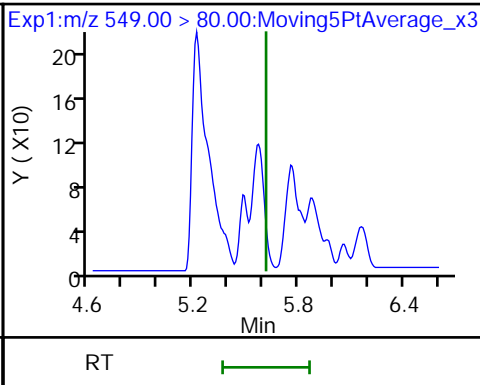
70 9-Chlorohexadecafluoro-3-oxanona (ND)



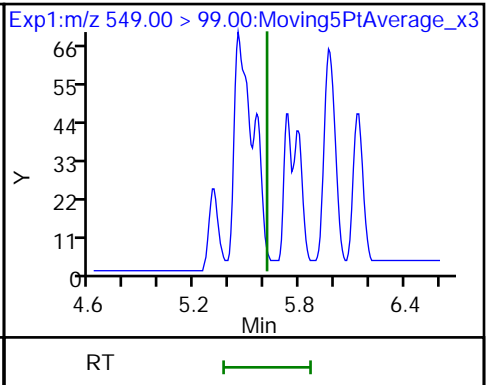
D 72 13C8 FOSA



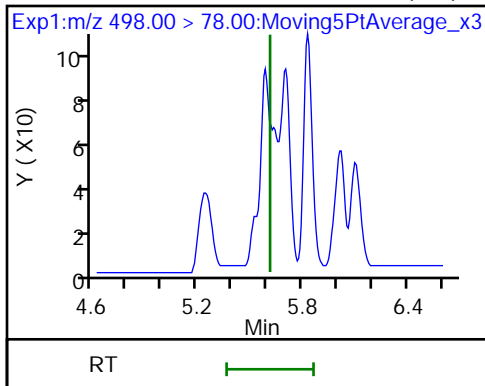
73 Perfluorononanesulfonic acid (ND)



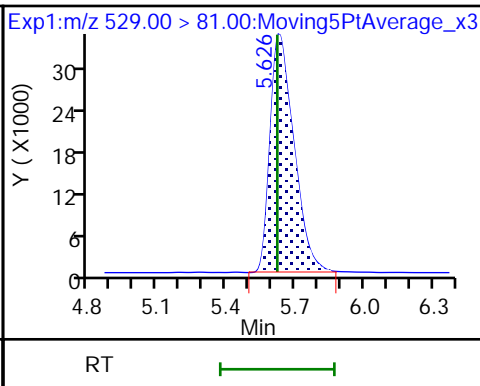
73 Perfluorononanesulfonic acid (ND)



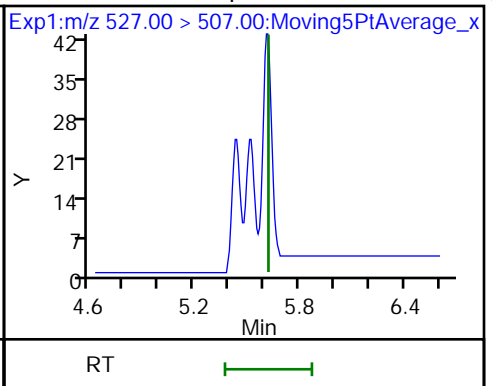
71 Perfluorooctanesulfonamide (ND)



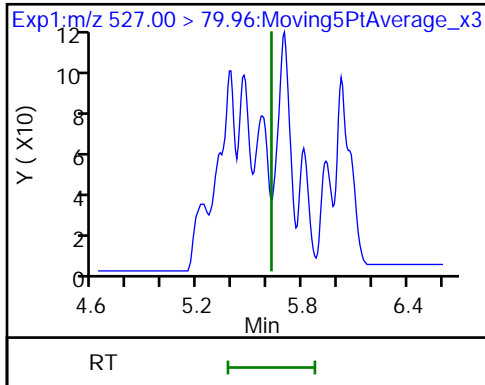
D 74 M2-8:2 FTS



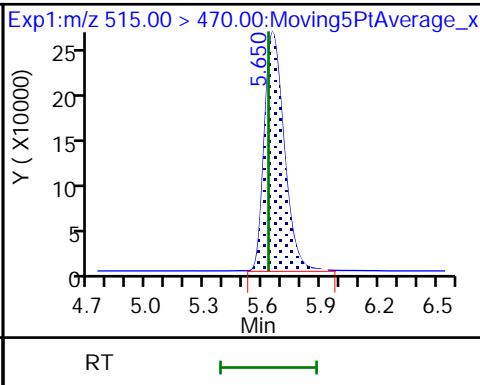
75 1H,1H,2H,2H-perfluorodecanesulfo (ND)



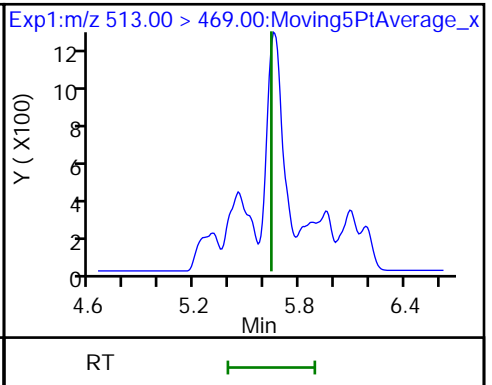
75 1H,1H,2H,2H-perfluorodecanesulfo (ND) 13C2 PFDA

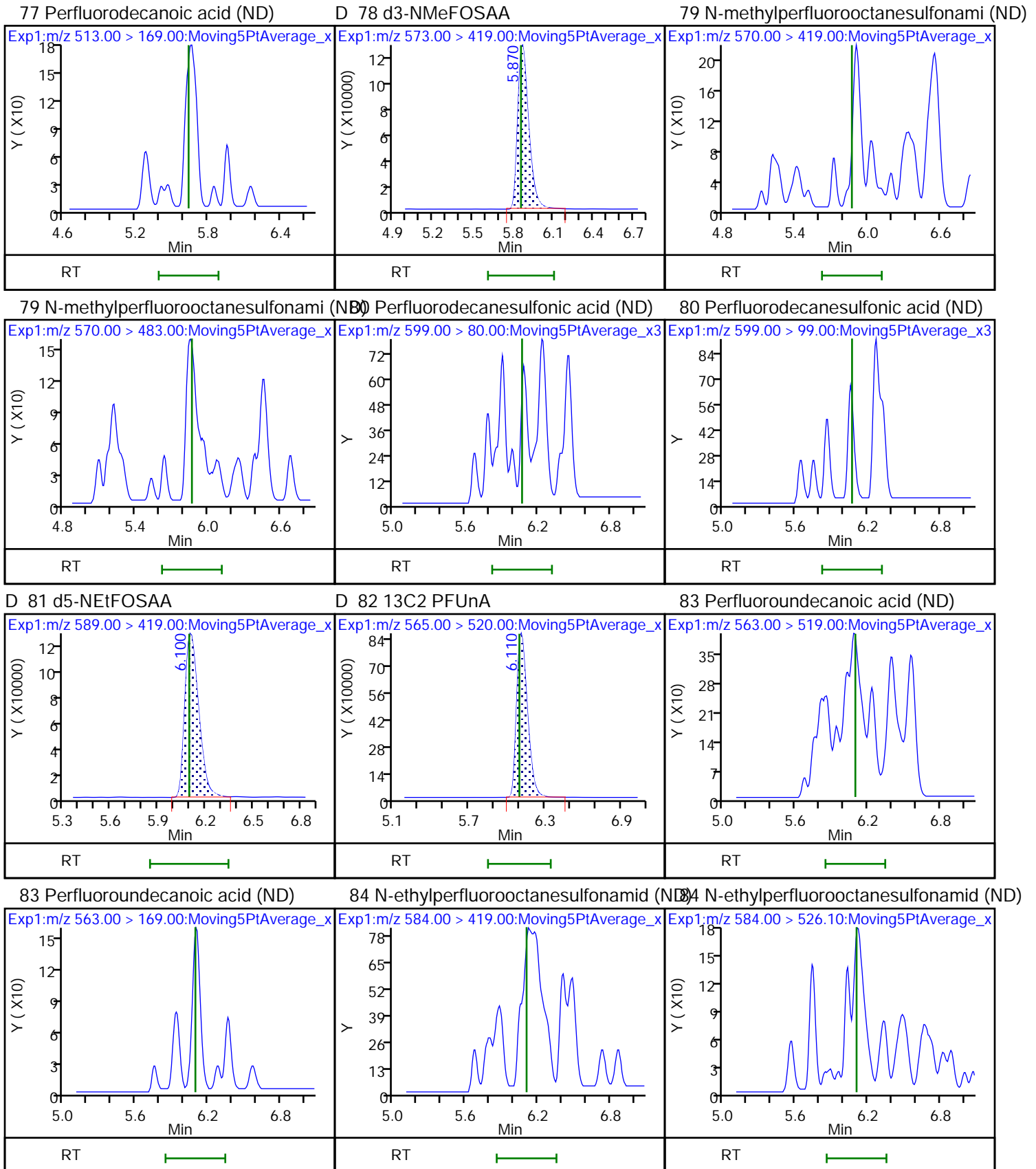


77 Perfluorodecanoic acid (ND)



77 Perfluorodecanoic acid (ND)

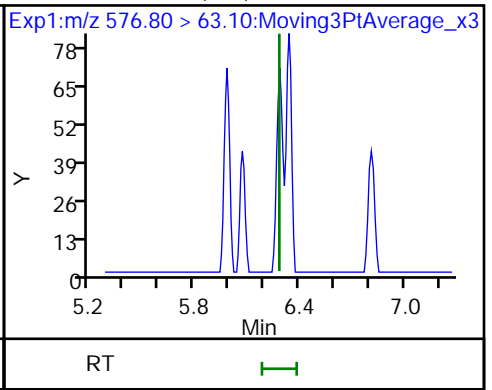
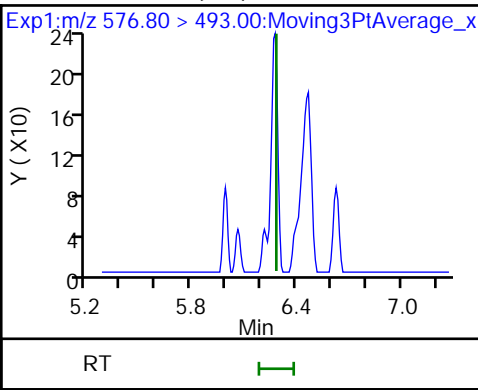
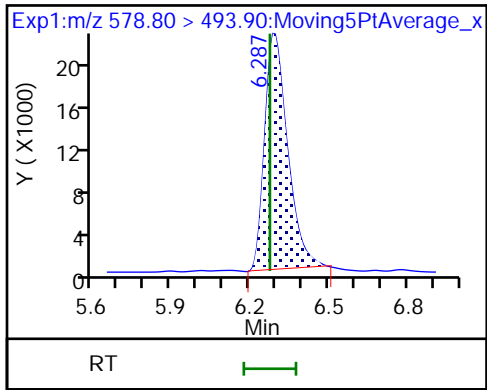




D 91 13C-10:2 FTCA

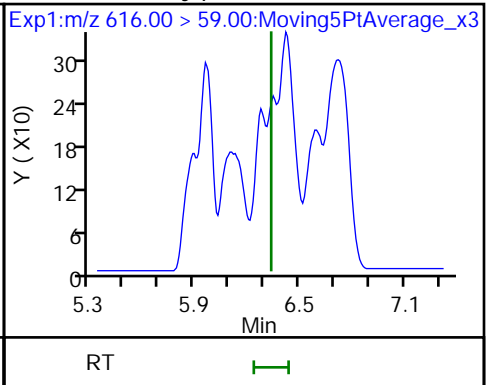
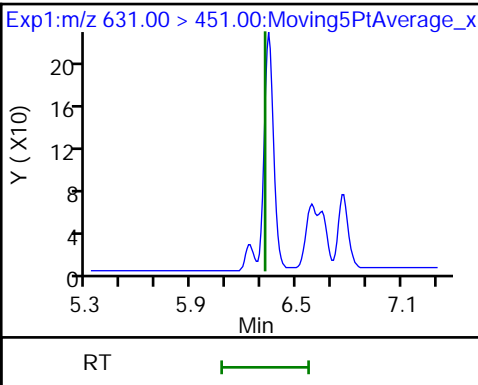
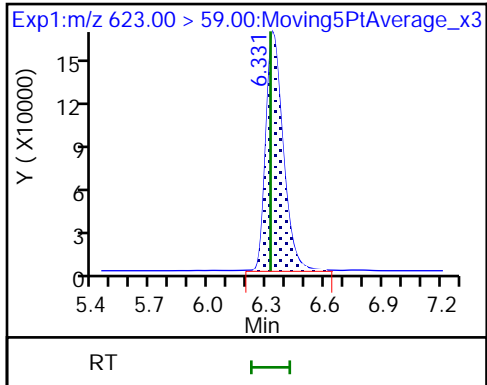
92 10:2 FTCA (ND)

92 10:2 FTCA (ND)



D 85 d7-N-MeFOSE-M

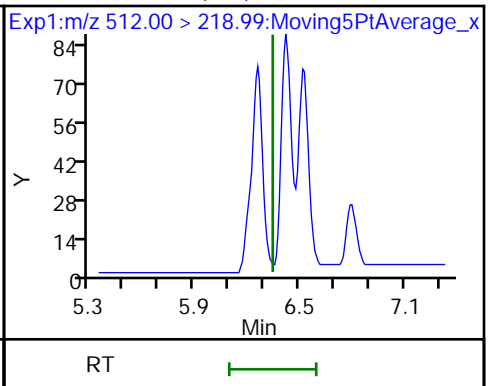
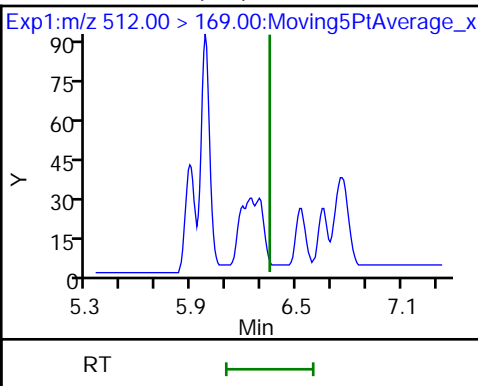
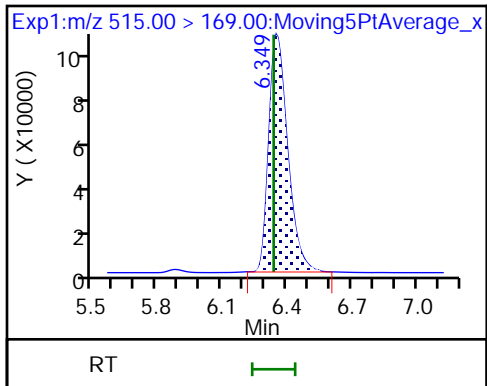
93 11-Chloroeicosafuoro-3-oxaundec (ND) 2-(N-methylperfluoro-1-octanesul (ND)



D 87 d-N-MeFOSA-M

88 NMeFOSA (ND)

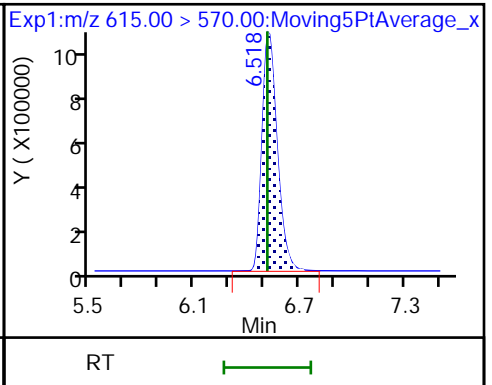
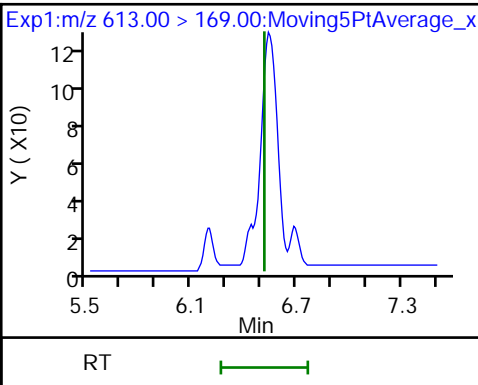
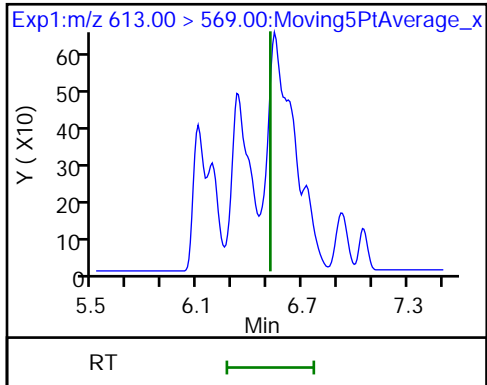
88 NMeFOSA (ND)



99 Perfluorododecanoic acid (ND)

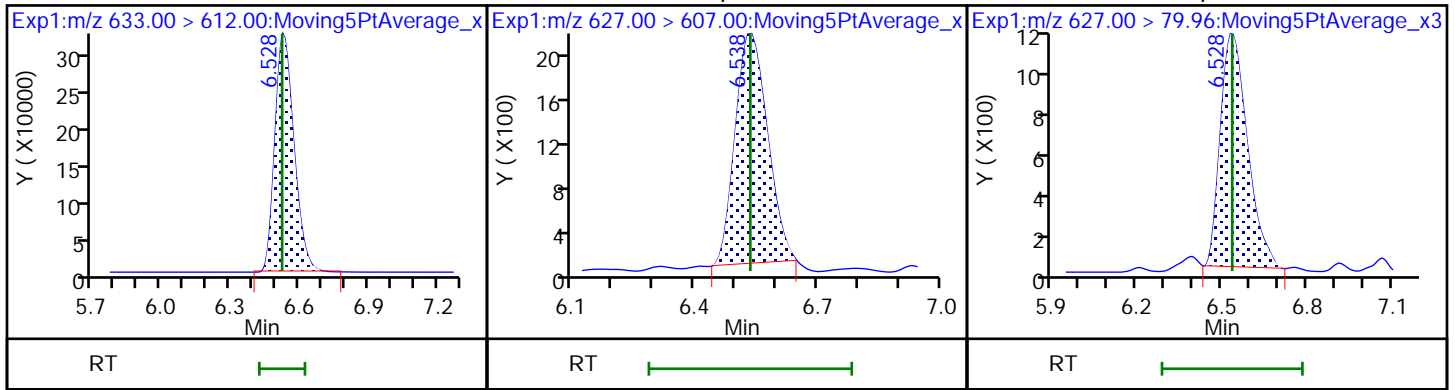
99 Perfluorododecanoic acid (ND)

D 98 13C2 PFDoA



D 100 13C2 10:2 FTS

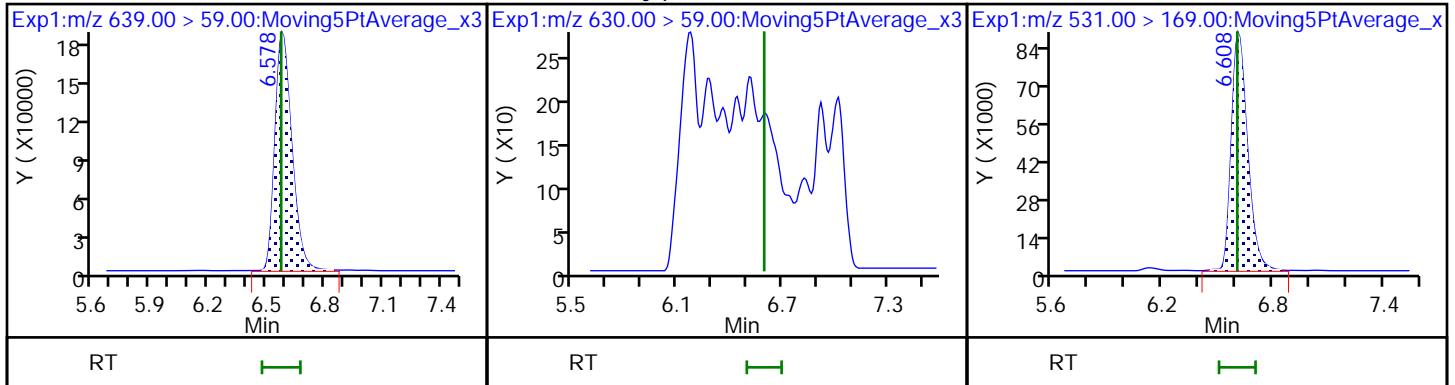
101 1H,1H,2H,2H-perfluorododecanesul 101 1H,1H,2H,2H-perfluorododecanesul



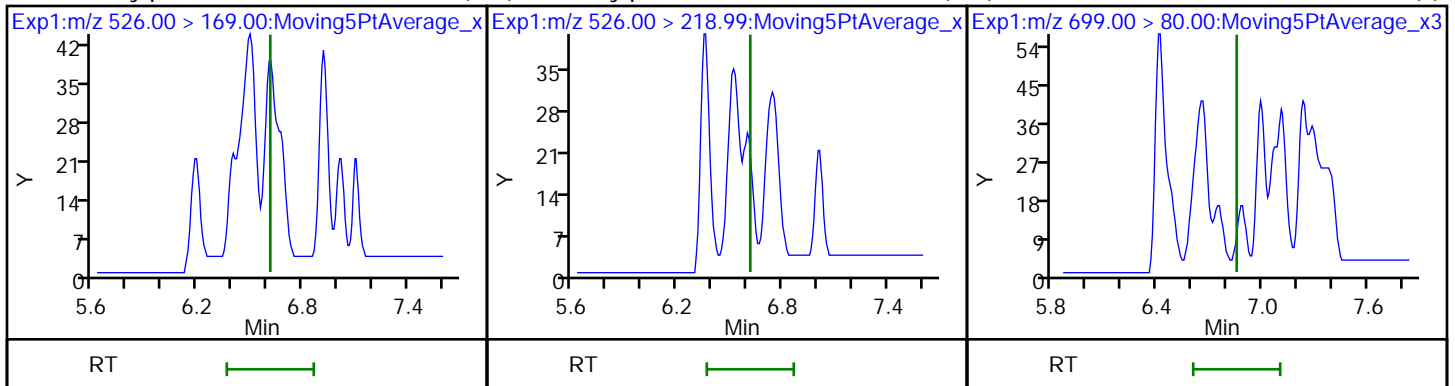
D 94 d9-N-EtFOSE-M

95 2-(N-ethylperfluoro-1-octanesul (ND)

96 d-N-EtFOSA-M

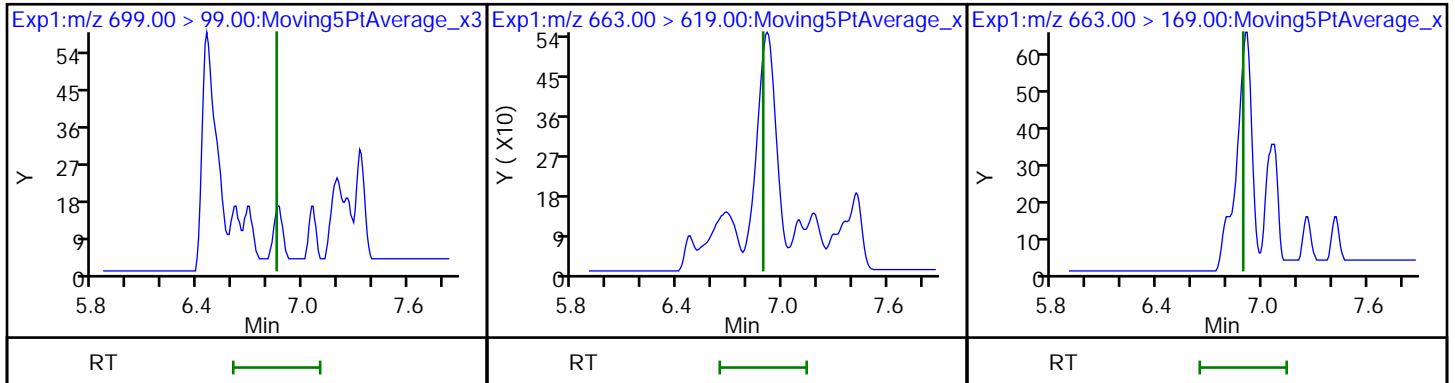


97 N-ethylperfluoro-1-octanesulfona (ND) 97 N-ethylperfluoro-1-octanesulfona (ND) 102 Perfluorododecanesulfonic acid ((ND)



102 Perfluorododecanesulfonic acid ((ND) 103 Perfluorotridecanoic acid (ND)

103 Perfluorotridecanoic acid (ND)

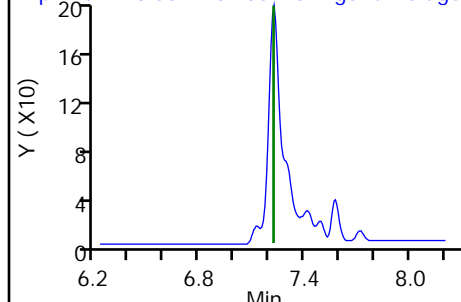


105 Perfluorotetradecanoic acid (ND)

105 Perfluorotetradecanoic acid (ND)

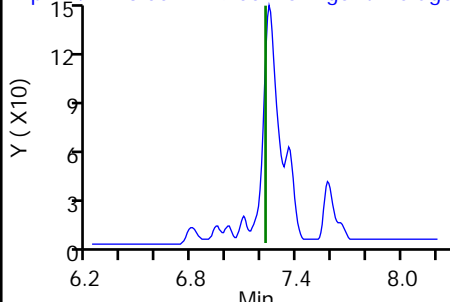
D 104 13C2 PFTeDA

Exp1:m/z 713.00 > 169.00:Moving5PtAverage_x



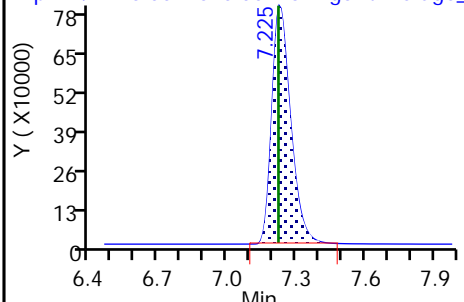
RT

Exp1:m/z 713.00 > 219.00:Moving5PtAverage_x



RT

Exp1:m/z 715.00 > 670.00:Moving5PtAverage_x



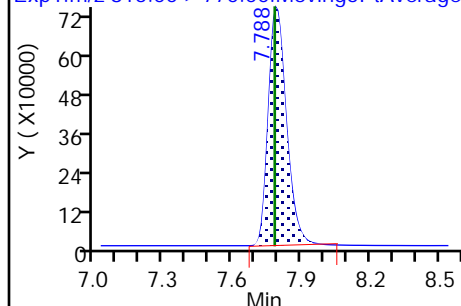
RT

D 106 13C2 PFHxDA

107 Perfluorohexadecanoic acid (M)

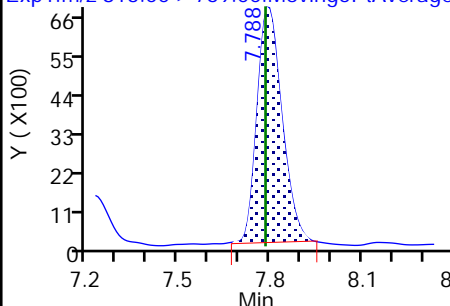
107 Perfluorohexadecanoic acid

Exp1:m/z 815.00 > 770.00:Moving5PtAverage_x



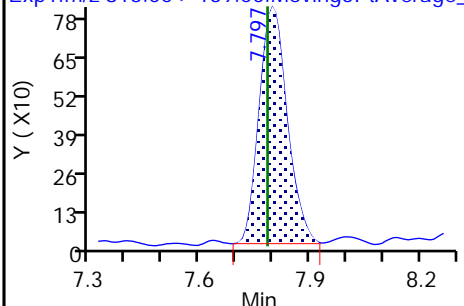
RT

Exp1:m/z 813.00 > 769.00:Moving5PtAverage_x



RT

Exp1:m/z 813.00 > 169.00:Moving5PtAverage_x

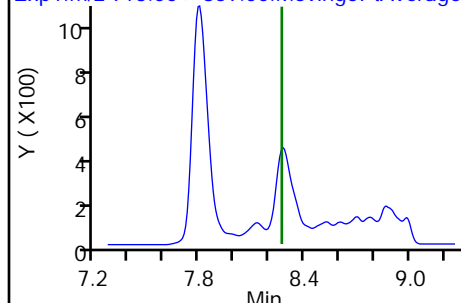


RT

108 Perfluorooctadecanoic acid (ND)

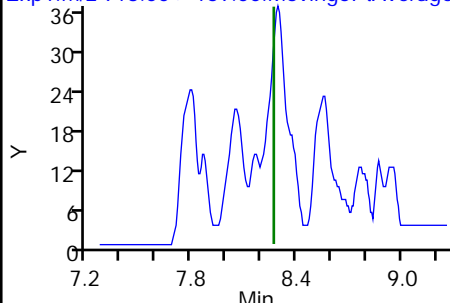
108 Perfluorooctadecanoic acid (ND)

Exp1:m/z 913.00 > 869.00:Moving5PtAverage_x



RT

Exp1:m/z 913.00 > 169.00:Moving5PtAverage_x



RT

Eurofins Sacramento

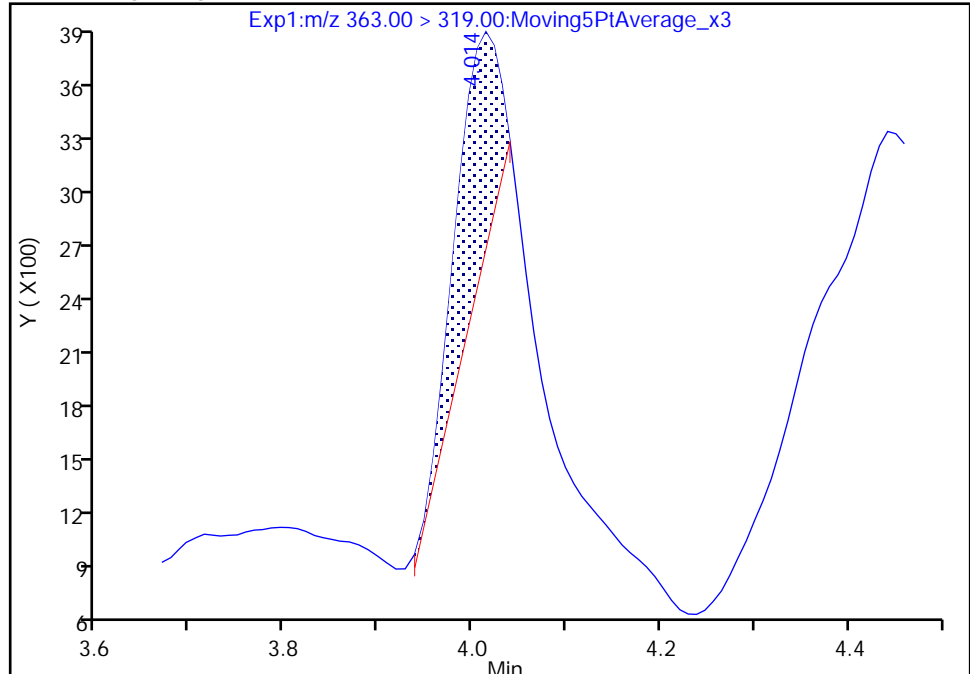
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Injection Date: 22-Dec-2022 16:24:09 Instrument ID: A18
Lims ID: 320-95204-A-1-C Lab Sample ID: 320-95204-1
Client ID: ADIT6-PIPE-AFFFN01-22DEC
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 23 Worklist Smp#: 25
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

36 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

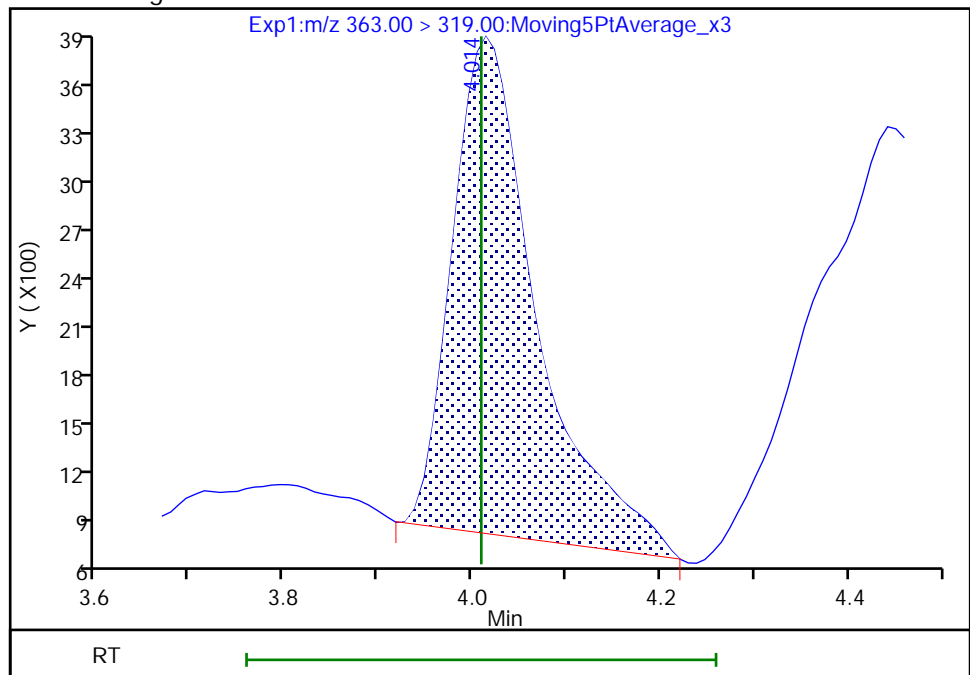
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Area: 4066
Amount: 0.001055
Amount Units: ng/ml

Processing Integration Results



RT: 4.01
Area: 18697
Amount: 0.004851
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:46:15
Audit Action: Manually Integrated

Audit Reason: Baseline
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3:43 PM

Eurofins Sacramento

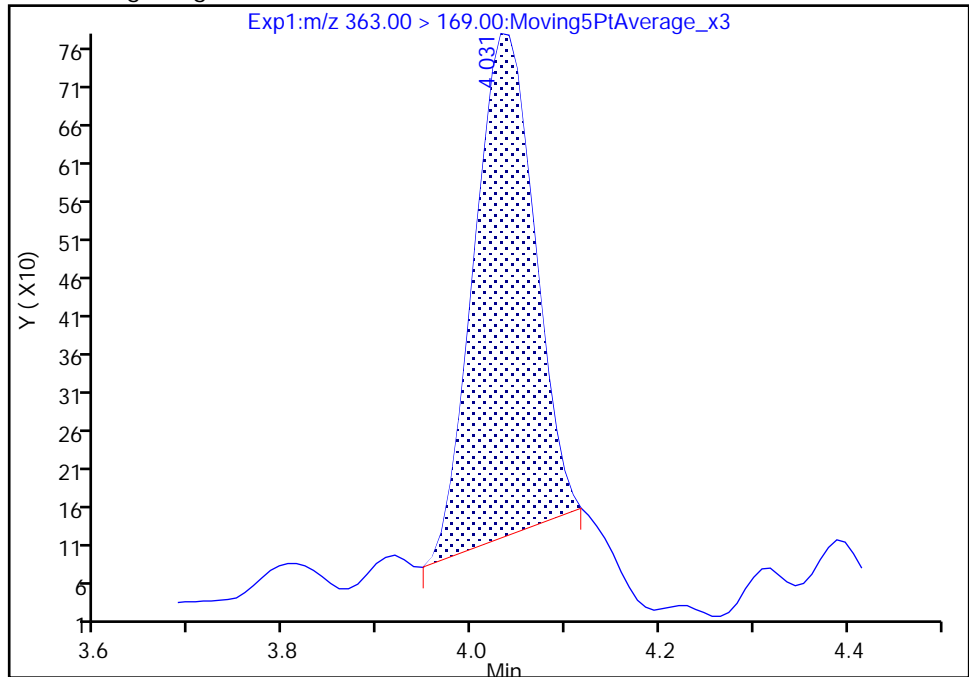
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Injection Date: 22-Dec-2022 16:24:09 Instrument ID: A18
Lims ID: 320-95204-A-1-C Lab Sample ID: 320-95204-1
Client ID: ADIT6-PIPE-AFFFN01-22DEC
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 23 Worklist Smp#: 25
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

36 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 2

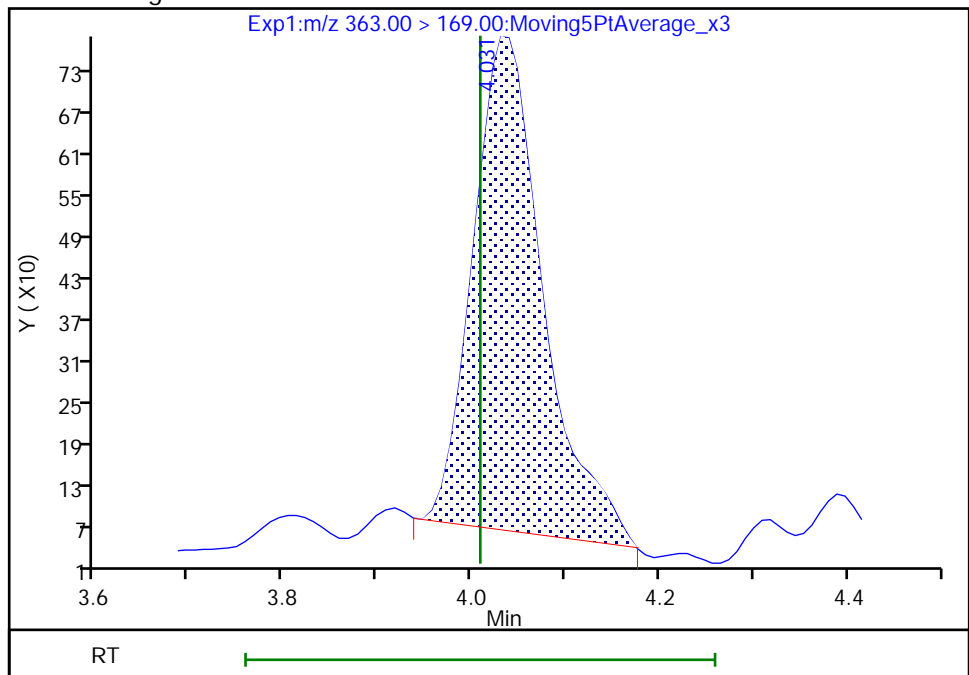
RT: 4.03
Area: 2943
Amount: 0.001055
Amount Units: ng/ml

Processing Integration Results



RT: 4.03
Area: 3720
Amount: 0.004851
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjunair, 23-Dec-2022 12:46:20

Audit Action: Manually Integrated

Audit Reason: Baseline

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3:43 PM

Eurofins Sacramento

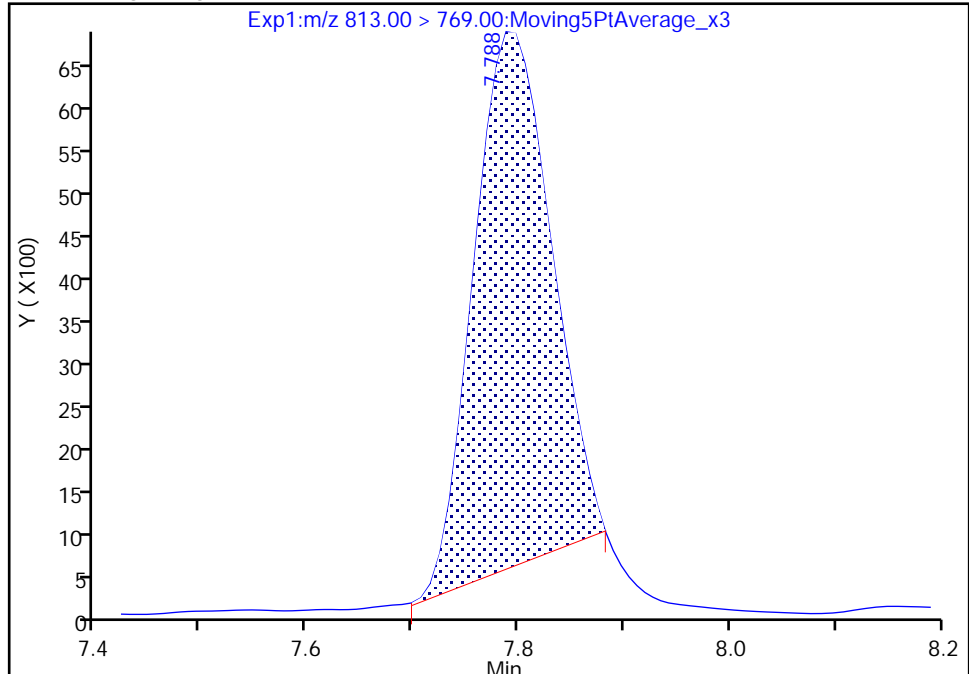
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Injection Date: 22-Dec-2022 16:24:09 Instrument ID: A18
Lims ID: 320-95204-A-1-C Lab Sample ID: 320-95204-1
Client ID: ADIT6-PIPE-AFFFN01-22DEC
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 23 Worklist Smp#: 25
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

107 Perfluorohexadecanoic acid, CAS: 67905-19-5

Signal: 1

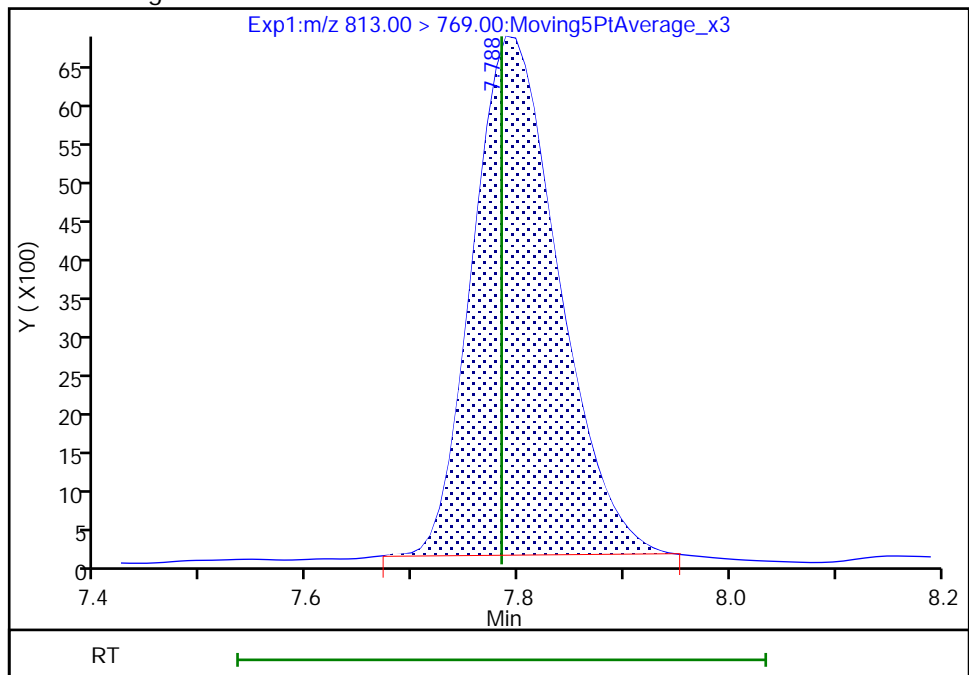
RT: 7.79
Area: 32172
Amount: -0.000728
Amount Units: ng/ml

Processing Integration Results



RT: 7.79
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Amount: 0.001395
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:46:56

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

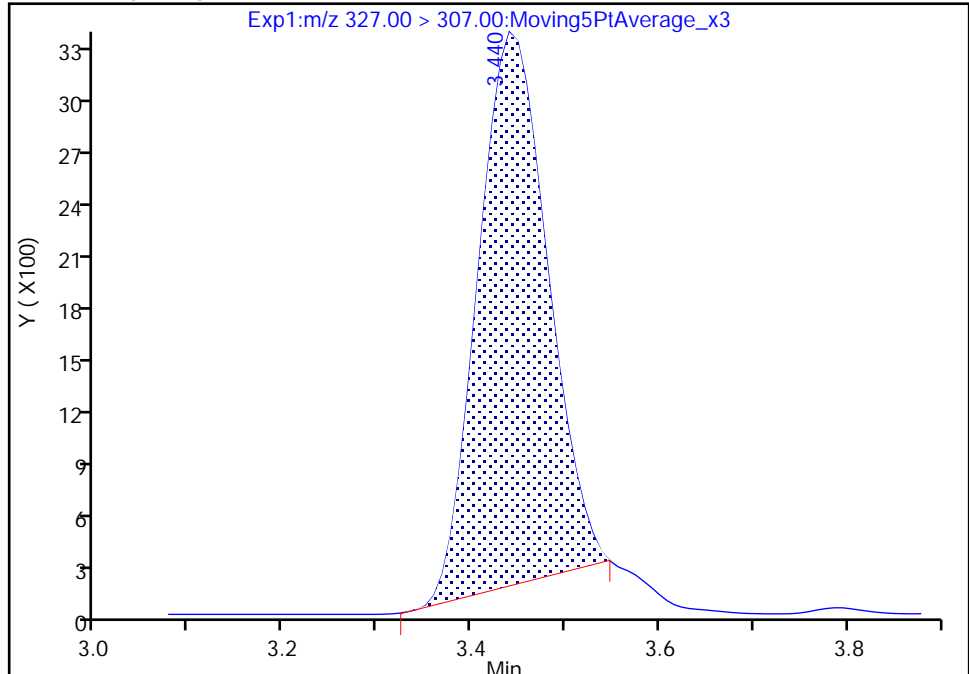
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Injection Date: 22-Dec-2022 16:24:09 Instrument ID: A18
Lims ID: 320-95204-A-1-C Lab Sample ID: 320-95204-1
Client ID: ADIT6-PIPE-AFFFN01-22DEC
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 23 Worklist Smp#: 25
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

26 1H,1H,2H,2H-perfluorohexanesulfo, CAS: 757124-72-4

Signal: 1

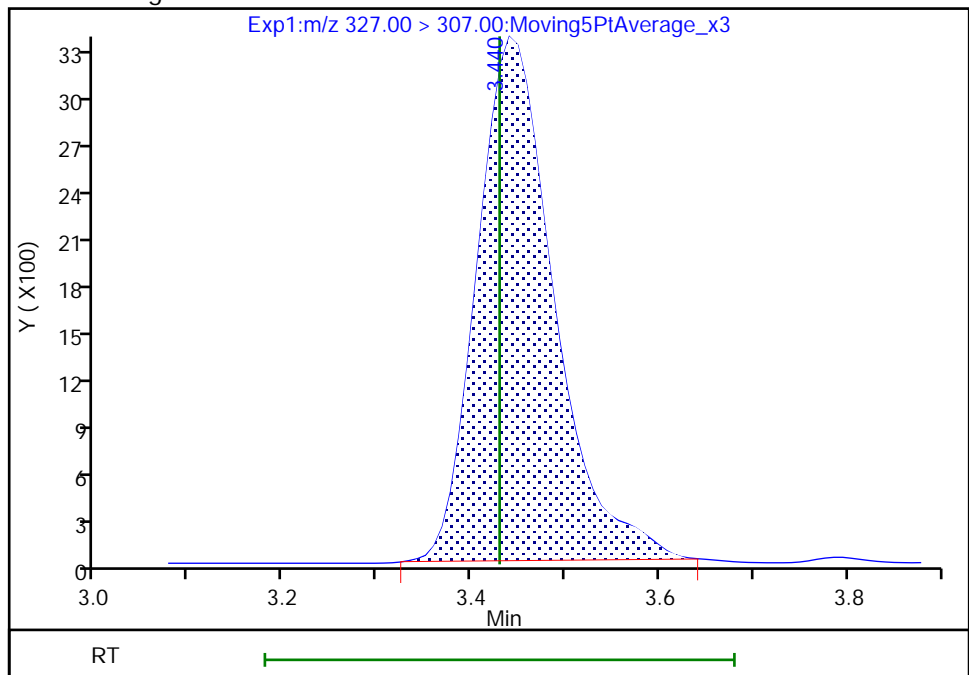
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Area: 16569
Amount: 0.012728
Amount Units: ng/ml

Processing Integration Results



RT: 3.44
Area: 19126
Amount: 0.014692
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:46:07

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

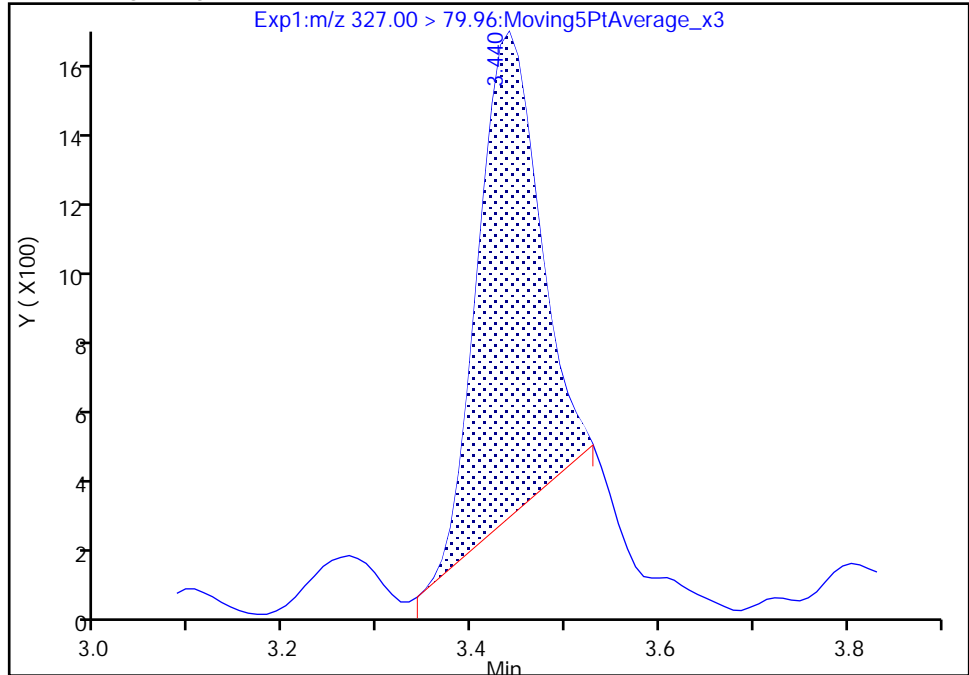
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Injection Date: 22-Dec-2022 16:24:09 Instrument ID: A18
Lims ID: 320-95204-A-1-C Lab Sample ID: 320-95204-1
Client ID: ADIT6-PIPE-AFFFN01-22DEC
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 23 Worklist Smp#: 25
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

26 1H,1H,2H,2H-perfluorohexanesulfo, CAS: 757124-72-4

Signal: 2

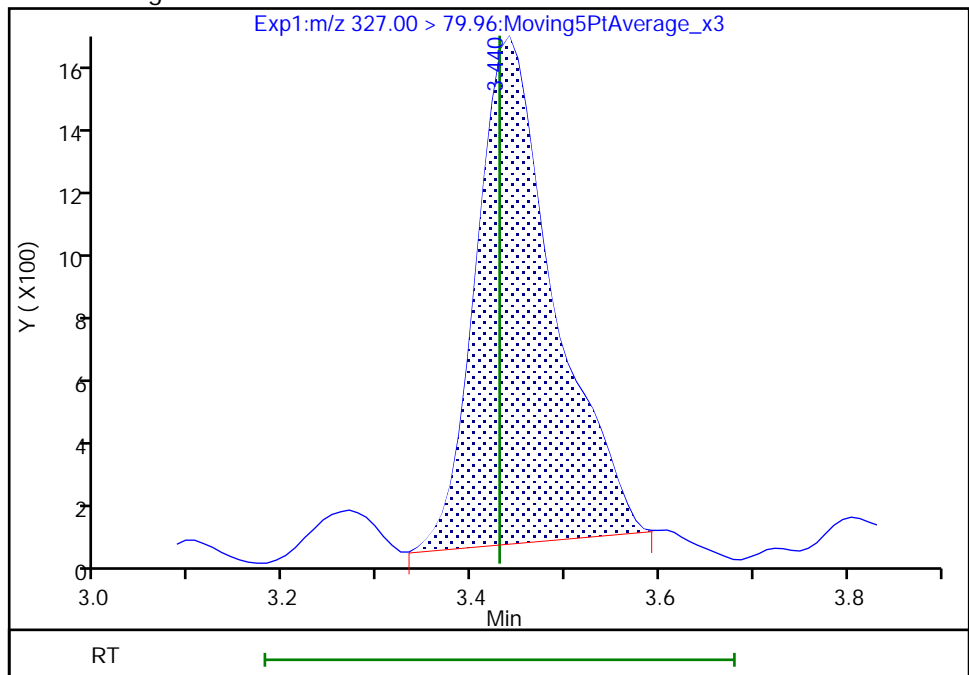
RT: 3.44
Area: 5893
Amount: 0.012728
Amount Units: ng/ml

Processing Integration Results



RT: 3.44
Area: 8603
Amount: 0.014692
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:46:11

Audit Action: Manually Integrated

Audit Reason: Baseline

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3:43 PM

Eurofins Sacramento

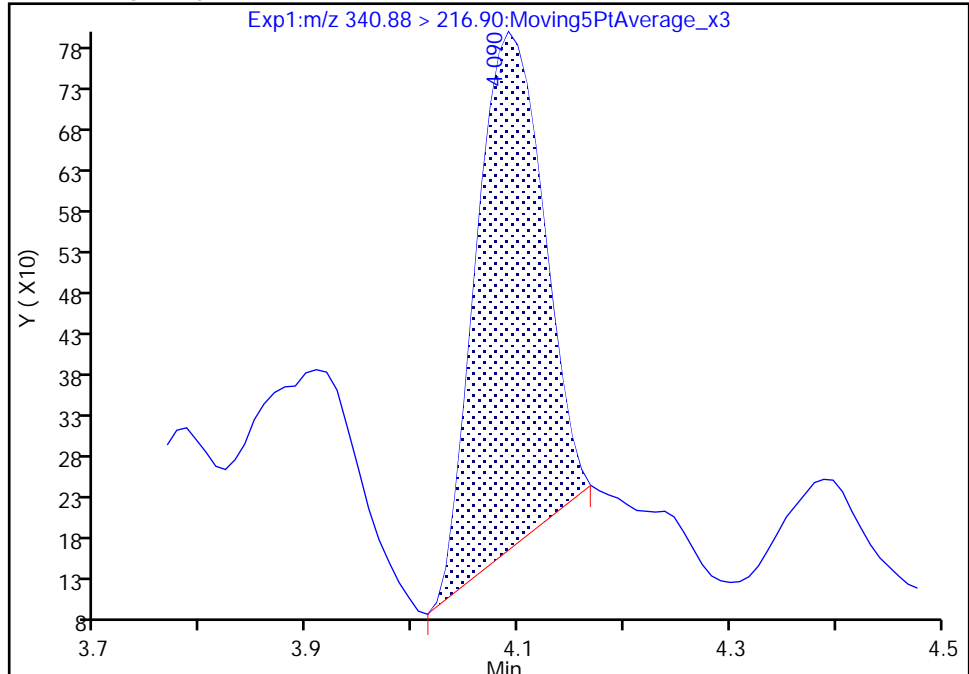
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Injection Date: 22-Dec-2022 16:24:09 Instrument ID: A18
Lims ID: 320-95204-A-1-C Lab Sample ID: 320-95204-1
Client ID: ADIT6-PIPE-AFFFN01-22DEC
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 23 Worklist Smp#: 25
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

41 5:3 FTCA, CAS: 914637-49-3

Signal: 2

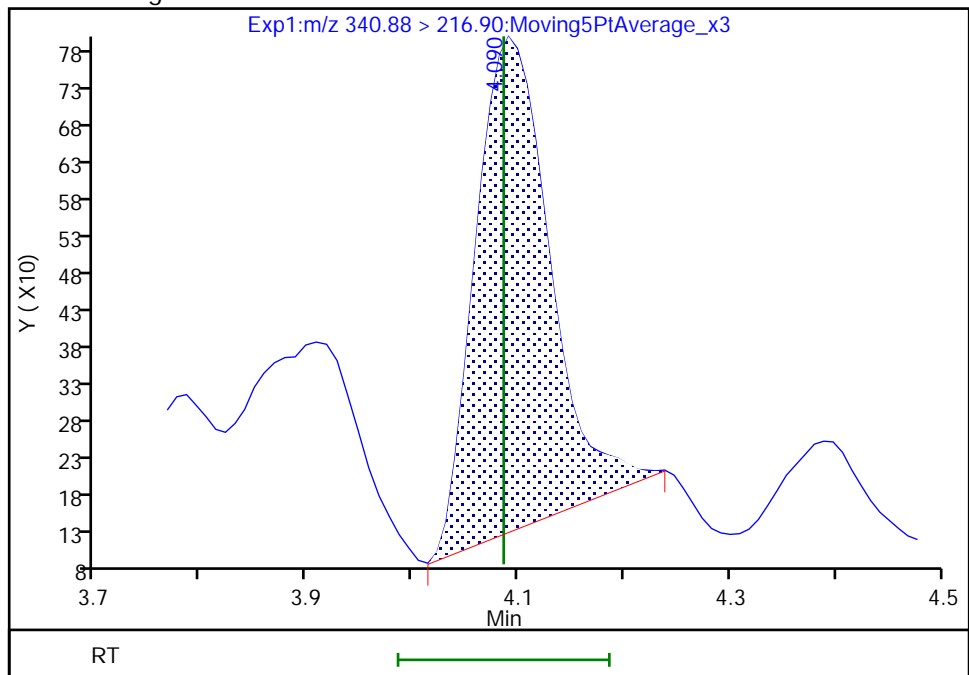
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Area: 2814
Amount: 0.007247
Amount Units: ng/ml

Processing Integration Results



RT: 4.09
Area: 3272
Amount: 0.007247
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:46:28
Audit Action: Manually Integrated

Audit Reason: Baseline
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3:43 PM

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843
SDG No.: _____
Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N
Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-641843/2	2022.12.21_A18_PFC+_ICAL_009.d
Level 2	IC 320-641843/3	2022.12.21_A18_PFC+_ICAL_010.d
Level 3	IC 320-641843/4	2022.12.21_A18_PFC+_ICAL_011.d
Level 4	ICIS 320-641843/5	2022.12.21_A18_PFC+_ICAL_012.d
Level 5	IC 320-641843/6	2022.12.21_A18_PFC+_ICAL_013.d
Level 6	IC 320-641843/7	2022.12.21_A18_PFC+_ICAL_014.d
Level 7	IC 320-641843/8	2022.12.21_A18_PFC+_ICAL_015.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD /RSE	#	MAX %RSD /RSE	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
MTP	0.0453 0.0725	0.0418 0.0728	0.0693	0.0735	0.0768	L1ID	-0.00 1	0.073 4							0.9990		0.9900
PFPrA	++++ 0.8180	0.5184 ++++	0.5476	0.7287	0.7968	L1ID	-0.02 4	0.806 2							0.9980		0.9900
PFMOAA	0.6111 0.5398	0.5367 0.5799	0.5464	0.5391	0.5713	AveI D		0.560 6				5.0		30.0			
R-PSDA	0.1169 0.1434	0.1357 0.1383	0.1366	0.1308	0.1405	AveI D		0.134 6				6.5		30.0			
R-EVE	0.3459 0.3416	0.3380 0.3459	0.3409	0.3342	0.3470	AveI D		0.341 9				1.4		30.0			
Hydrolyzed PSDA	0.4262 0.4474	0.4076 0.4536	0.4016	0.4143	0.4480	AveI D		0.428 4				5.0		30.0			
Perfluorobutanoic acid (PFBA)	++++ 1.0987	1.2198 1.1065	1.0922	1.0431	1.1098	AveI D		1.111 7				5.2		30.0			
PMPA	0.9759 1.1395	1.0939 1.2079	1.2072	1.2134	1.2065	AveI D		1.149 2				7.7		30.0			
PFPrS	0.9626 0.9633	0.9285 0.8985	0.9041	0.9480	0.9395	AveI D		0.934 9				2.8		30.0			
NVHOS	0.0282 0.0287	0.0256 0.0274	0.0306	0.0309	0.0309	AveI D		0.028 9				7.0		30.0			
PFMPA	0.6195 0.6667	0.6549 0.6613	0.6300	0.6777	0.6944	AveI D		0.657 8				4.0		30.0			
PFO2HxA	0.1390 0.1378	0.1350 0.1388	0.1236	0.1399	0.1477	AveI D		0.137 4				5.2		30.0			
Perfluoropentanoic acid (PFPeA)	1.1534 1.0423	1.0535 1.0332	1.0025	0.9811	1.0474	AveI D		1.044 8				5.2		30.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type. RSD is calculated for Ave curve types. RSE is used for all other types.

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843

SDG No.: _____

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD /RSE	#	MAX %RSD /RSE	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
3:3 FTCA	0.0679 0.0808	0.0740 0.0806	0.0736	0.0801	0.0808	AveI n		0.076 8				6.6		30.0			
Perfluorobutanesulfonic acid (PFBS)	0.9190 1.0261	0.9703 1.0120	0.9365	0.9959	1.0143	AveI n		0.982 n				4.2		30.0			
PEPA	1.0075 1.1117	1.1414 1.1294	1.1101	1.1139	1.1596	AveI n		1.110 5				4.4		30.0			
PFMBA	1.0615 1.1385	1.1237 1.1025	1.0896	1.0893	1.1649	AveI n		1.110 n				3.1		30.0			
PFEESA	3.1865 3.2951	3.1727 3.3059	3.2272	3.2587	3.4081	AveI n		3.264 9				2.5		30.0			
FBSA	0.4058 0.3902	0.3636 0.3754	0.3256	0.3540	0.3804	AveI n		0.370 7				7.0		30.0			
NFDHA	0.1816 0.1969	0.1632 0.1680	0.1637	0.1675	0.1713	AveI n		0.173 2				7.0		30.0			
4:2 FTS	2.2100 2.2833	2.4130 2.3830	2.3801	2.2776	2.4045	AveI n		2.335 9				3.4		30.0			
Perfluorohexanoic acid (PFHxA)	1.0444 0.9298	0.9119 0.9411	0.8661	0.9695	0.9336	AveI n		0.942 3				5.8		30.0			
Perfluoropentanesulfonic acid (PFPeS)	0.8226 0.8468	0.7774 0.8079	0.7540	0.7891	0.8313	AveI n		0.804 1				4.0		30.0			
PFO3OA	0.0539 0.0529	0.0614 0.0509	0.0527	0.0597	0.0551	AveI n		0.055 2				7.1		30.0			
HFPO-DA (GenX)	0.9149 1.0669	1.1116 1.0329	1.1855	1.0065	1.0798	AveI n		1.056 9				8.0		30.0			
R-PSDCA	0.3009 0.2711	0.3285 0.2828	0.2911	0.2654	0.3202	AveI n		0.294 3				8.1		30.0			
Perfluoroheptanoic acid (PFHpA)	0.8377 0.9611	0.8866 0.9274	0.9193	0.9127	0.9255	AveI n		0.910 n				4.3		30.0			
Perfluorohexanesulfonic acid (PFHxS)	1.0616 0.9720	0.9811 0.9893	0.8871	0.8982	0.9649	AveI n		0.964 9				6.1		30.0			
Hydro-EVE Acid	1.2928 1.3926	1.4439 1.4382	1.3068	1.4178	1.4122	AveI n		1.386 3				4.4		30.0			
Hydro-PS Acid	1.1305 1.2485	1.2443 1.3090	1.1841	1.2449	1.2833	AveI n		1.234 9				4.9		30.0			
5:3 FTCA	3.0337 3.2805	3.5044 3.4109	3.5099	3.3511	3.3493	AveI n		3.348 6				4.8		30.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type. RSD is calculated for Ave curve types. RSE is used for all other types.

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843
SDG No.: _____
Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N
Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD /RSE	#	MAX %RSD /RSE	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	7.0459 6.5096	6.4985 6.6130	6.4833	6.5675	6.9054	AveI n		6.660 5				3.4		30.0			
PFPE-1	10.346 8.8350	9.5722 9.1635	9.9221	9.8861	10.647	AveI n		9.767 4				6.5		30.0			
6:2 FTUCA	0.9725 1.0178	1.0234 1.0749	0.9168	1.0397	1.0395	AveI n		1.012 1				5.1		30.0			
6:2 FTCA	0.2648 0.2690	0.2436 0.2760	0.2716	0.2536	0.2501	AveI n		0.261 2				4.7		30.0			
PFO4DA	0.0578 0.0566	0.0485 0.0633	0.0406	0.0601	0.0613	AveI n		0.055 5				14.6		30.0			
PS Acid	0.3808 0.4261	0.4375 0.4124	0.3837	0.4223	0.4480	AveI n		0.415 8				6.1		30.0			
EVE Acid	1.2487 1.2652	1.2975 1.2303	1.2439	1.3245	1.3564	AveI n		1.280 9				3.6		30.0			
FHxSA	2.0784 2.2004	2.0069 1.9703	1.8234	1.9174	1.9876	AveI n		1.997 8				6.0		30.0			
PFECHS	0.7672 0.9296	0.9003 0.8925	0.8343	0.9095	0.9254	AveI n		0.879 8				6.7		30.0			
6:2 FTS	1.8798 2.1379	2.0249 2.0566	1.9094	2.0722	2.1351	AveI n		2.030 8				5.0		50.0			
Perfluorooctanoic acid (PFOA)	0.9615 0.9712	0.9281 0.9007	0.8900	0.9380	0.9402	AveI n		0.932 8				3.2		30.0			
Perfluoroheptanesulfonic acid (PFHpS)	1.2187 1.2252	1.2691 1.1725	1.0712	1.1559	1.2889	AveI n		1.200 2				6.2		30.0			
PFO5DA	0.0335 0.0409	0.0381 0.0382	0.0352	0.0365	0.0393	AveI n		0.037 4				6.7		30.0			
Perfluorooctanesulfonic acid (PFOS)	1.0755 1.0289	1.1344 1.0292	0.9035	1.0114	1.0880	AveI n		1.038 7				7.0		30.0			
Perfluorononanoic acid (PFNA)	0.8815 0.8673	0.8077 0.8884	0.8550	0.8736	0.8976	AveI n		0.867 3				3.4		30.0			
7:3 FTCA	5.8790 5.2501	5.1558 5.1766	4.4903	5.6013	5.5028	AveI n		5.293 7				8.3		30.0			
8:2 FTUCA	0.9762 0.9384	0.9591 0.9601	0.8941	0.9740	0.9643	AveI n		0.952 3				3.0		30.0			
8:2 FTCA	1.0419 1.0071	1.0424 0.9833	0.8492	1.0507	1.1136	AveI n		1.012 6				8.2		30.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type. RSD is calculated for Ave curve types. RSE is used for all other types.

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843
SDG No.: _____
Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N
Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD /RSE	#	MAX %RSD /RSE	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
9Cl-PF3ONS	2.4861 2.4958	2.5264 2.6166	2.2697	2.5049	2.5859	AveI n		2.497 9				4.5		30.0			
Perfluorooctanesulfonamide (FOSA)	0.9413 0.9614	0.9796 0.9786	0.8801	0.9602	0.9714	AveI n		0.953 2				3.7		30.0			
Perfluorononanesulfonic acid (PFNS)	0.7526 0.8035	0.7364 0.8269	0.6929	0.7818	0.8371	AveI n		0.775 9				6.7		30.0			
8:2 FTS	1.6176 1.6221	1.8182 1.5417	1.5976	1.6378	1.6909	AveI n		1.646 6				5.3		30.0			
Perfluorodecanoic acid (PFDA)	0.6069 0.6953	0.6384 0.6992	0.6195	0.6624	0.6819	AveI n		0.657 7				5.6		30.0			
NMeFOSAA	0.7819 0.7790	0.9002 0.7527	0.7701	0.7745	0.7761	AveI n		0.790 7				6.2		30.0			
Perfluorodecanesulfonic acid (PFDS)	0.6505 0.6795	0.7767 0.7337	0.6611	0.7137	0.8013	LlID	-0.00 1	0.726 7							0.9970		0.9900
Perfluoroundecanoic acid (PFUnA)	0.6986 0.6679	0.6438 0.7035	0.6937	0.6964	0.6826	AveI n		0.683 8				3.1		30.0			
NEtFOSAA	0.7049 0.7607	0.7123 0.7968	0.7549	0.7460	0.7901	AveI n		0.752 2				4.7		30.0			
10:2 FTUCA	0.6740 0.6964	0.7309 0.7172	0.6900	0.6926	0.7460	AveI n		0.706 7				3.6		30.0			
10:2 FTCA	++++ 1.0509	0.5766 0.9150	1.0241	0.8558	1.0292	LlID	-0.01 4	0.968 2							0.9950		0.9900
NMeFOSE	0.9587 0.9985	0.9640 0.9862	0.9546	1.0010	1.0340	AveI n		0.985 3				2.9		30.0			
NMeFOSA	0.7854 0.9552	1.1701 0.9466	0.9879	0.9905	0.9541	AveI n		0.970 0				11.6		30.0			
11Cl-PF3OUds	2.9883 3.1211	3.1825 3.4083	2.9253	3.2355	3.4683	AveI n		3.189 9				6.3		30.0			
Perfluorododecanoic acid (PFDoA)	0.7756 0.8339	1.0222 0.8352	0.8443	0.8644	0.8650	AveI n		0.863 0				8.8		30.0			
10:2 FTS	1.5805 1.3179	1.2590 1.2174	1.1622	1.3015	1.2883	AveI n		1.303 8				10.2		30.0			
NEtFOSE	0.8625 0.9608	0.8758 1.0176	0.8811	0.9941	1.0548	AveI n		0.949 5				8.1		30.0			
NEtFOSA	0.7491 1.1094	0.8715 0.9613	0.8710	0.9644	1.0098	AveI n		0.933 8				12.4		30.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type. RSD is calculated for Ave curve types. RSE is used for all other types.

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843

SDG No.: _____

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD /RSE	#	MAX %RSD /RSE	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorododecanesulfonic acid (PFDoS)	0.2809 0.2193	0.2414 0.2675	0.2141	0.2302	0.2980	AveI n		0.250 2				12.9		30.0			
Perfluorotridecanoic acid (PFTrDA)	0.7469 0.7464	0.9265 0.7487	0.7734	0.7048	0.8507	AveI n		0.785 3				9.7		30.0			
6:2 Fluorotelomer phosphate diester	0.9637 0.9695	0.9785 0.9384	0.9614	0.9407	1.0020	AveI n		0.964 9				2.3		30.0			
Perfluorotetradecanoic acid (PFTeA)	0.0932 0.1005	0.0939 0.1042	0.0942	0.1027	0.0984	AveI n		0.098 2				4.6		30.0			
6:2/8:2 Fluorotelomer phosphate diester	1.0140 0.8457	0.9583 0.8903	0.9119	1.0691	1.0817	AveI n		0.967 3				9.4		30.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.3625 0.8765	1.0547 0.8515	0.8314	0.8436	0.8693	LIID	0.010 5	0.857 2							1.0000		0.9900
8:2 Fluorotelomer phosphate diester	0.9035 0.9557	0.9349 0.9628	0.8918	0.9605	0.9433	AveI n		0.936 1				3.0		30.0			
Perfluoro-n-octadecanoic acid (PFODA)	0.5059 0.4992	0.4297 0.4826	0.4065	0.5083	0.5082	AveI n		0.477 2				8.8		50.0			
10:2 Fluorotelomer phosphate diester	0.0625 0.1495	0.0506 0.1237	0.0522	0.1011	0.1395	AveI n		0.097 0				43.4	*	30.0			
13C4 PFBA	0.8472 0.8560	0.9168 0.9128	0.8764	0.9238	0.8682	Ave		0.885 9				3.5		30.0			
13C5 PFPeA	0.7752 0.7622	0.7820 0.8468	0.7863	0.8220	0.7755	Ave		0.792 9				3.8		30.0			
13C3 PFBS	0.5295 0.5201	0.5601 0.5829	0.5532	0.5389	0.5402	Ave		0.546 4				3.8		30.0			
M2-4:2 FTS	0.1298 0.1259	0.1340 0.1208	0.1299	0.1278	0.1226	Ave		0.127 3				3.6		30.0			
13C2 PFHxA	0.8344 0.8354	0.8736 0.9148	0.8973	0.8795	0.8732	Ave		0.872 6				3.4		30.0			
13C3 HFPO-DA	0.0283 0.0280	0.0282 0.0304	0.0308	0.0311	0.0283	Ave		0.029 3				4.8		30.0			
13C4 PFHpA	0.9405 0.9082	0.8928 0.9236	0.9552	0.9402	0.9118	Ave		0.924 6				2.4		30.0			
18O2 PFHxS	0.3591 0.3512	0.3641 0.3618	0.3719	0.3636	0.3590	Ave		0.361 5				1.7		30.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type. RSD is calculated for Ave curve types. RSE is used for all other types.

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843

SDG No.: _____

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD /RSE	#	MAX %RSD /RSE	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C-6:2 FTUCA	0.5639 0.5346	0.5490 0.5294	0.5892	0.5491	0.5234	Ave		0.548 4				4.1		30.0			
13C-6:2 FTCA	0.0402 0.0429	0.0436 0.0424	0.0428	0.0430	0.0423	Ave		0.042 4				2.6		30.0			
M2-6:2 FTS	0.1398 0.1264	0.1473 0.1279	0.1410	0.1309	0.1258	Ave		0.134 2				6.3		30.0			
13C4 PFOA	1.0044 0.9710	1.0375 1.0367	1.0445	1.0059	0.9720	Ave		1.010 3				3.0		30.0			
13C4 PFOS	0.2381 0.2421	0.2442 0.2492	0.2514	0.2448	0.2359	Ave		0.243 7				2.3		30.0			
13C5 PFNA	0.9489 0.9961	1.0403 0.9928	0.9733	1.0211	0.9494	Ave		0.988 8				3.5		30.0			
13C-8:2 FTUCA	0.5753 0.5822	0.6235 0.5990	0.5978	0.5911	0.5608	Ave		0.590 0				3.4		30.0			
13C-8:2 FTCA	0.0299 0.0306	0.0333 0.0335	0.0343	0.0304	0.0298	Ave		0.031 7				6.1		30.0			
13C8 FOSA	0.3138 0.3104	0.3259 0.3337	0.3315	0.3289	0.3226	Ave		0.323 8				2.7		30.0			
M2-8:2 FTS	0.1385 0.1257	0.1369 0.1374	0.1382	0.1373	0.1310	Ave		0.135 0				3.6		30.0			
13C2 PFDA	0.9042 0.9152	0.9380 1.0087	0.9580	1.0094	0.9437	Ave		0.953 9				4.4		30.0			
d3-NMeFOSAA	0.1278 0.1254	0.1324 0.1460	0.1262	0.1362	0.1312	Ave		0.132 2				5.4		30.0			
d5-NMeFOSAA	0.1293 0.1218	0.1398 0.1331	0.1321	0.1408	0.1314	Ave		0.132 6				4.8		30.0			
13C2 PFUnA	0.8424 0.8757	0.8939 0.9552	0.8752	0.9300	0.8898	Ave		0.894 6				4.2		30.0			
13C-10:2 FTUCA	0.5015 0.5090	0.5421 0.5779	0.5209	0.5480	0.5258	Ave		0.532 2				4.9		30.0			
d7-N-MeFOSE-M	0.1455 0.1535	0.1545 0.1798	0.1554	0.1653	0.1587	Ave		0.159 0				6.9		30.0			
13C-10:2 FTCA	0.0178 0.0158	0.0189 0.0190	0.0182	0.0179	0.0170	Ave		0.017 8				6.3		30.0			
d-N-MeFOSA-M	0.0999 0.0995	0.1030 0.1164	0.1017	0.1082	0.1082	Ave		0.105 3				5.8		30.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type. RSD is calculated for Ave curve types. RSE is used for all other types.

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843
SDG No.: _____
Instrument ID: A18 GC Column: Gemini C18 ID: 3 (mm) Heated Purge: (Y/N) N
Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD /RSE	#	MAX %RSD /RSE	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
d9-N-EtFOSE-M	0.1674 0.1621	0.1851 0.2074	0.1839	0.1998	0.1821	Ave		0.184 0				8.8		30.0			
13C2 PFDoA	0.9367 0.9652	0.8744 1.0919	0.9740	1.0382	1.0053	Ave		0.983 7				7.2		30.0			
13C2 10:2 FTS	0.1173 0.1108	0.1392 0.1303	0.1240	0.1347	0.1260	Ave		0.126 0				7.8		30.0			
d-N-EtFOSA-M	0.0949 0.0814	0.1024 0.1121	0.0941	0.1022	0.0988	Ave		0.098 0				9.7		30.0			
13C4-6:2 Fluorotelomer phosphate diester	0.2827 0.3011	0.2989 0.2854	0.3171	0.2665	0.2537	Ave		0.286 5				7.5		30.0			
13C2 PFTeDA	0.8341 0.8508	0.9304 0.8899	0.8800	0.8152	0.7719	Ave		0.853 2				6.1		30.0			
13C2 PFHxDA	0.6906 0.7198	0.7222 0.7406	0.7620	0.7772	0.7641	Ave		0.739 5				4.1		30.0			
13C4-8:2 Fluorotelomer phosphate diester	0.2200 0.1830	0.2273 0.1761	0.2315	0.2189	0.1967	Ave		0.207 6				10.7		30.0			
13C8 PFOA	1.1919 1.1615	1.2311 1.2016	1.2528	1.2035	1.1629	Ave		1.200 8				2.8		20.0			
13C8 PFOS	0.1085 0.0969	0.1080 0.1042	0.1068	0.1022	0.1045	Ave		0.104 4				3.8		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type. RSD is calculated for Ave curve types. RSE is used for all other types.

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843

SDG No.: _____

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-641843/2	2022.12.21_A18_PFC+_ICAL_009.d
Level 2	IC 320-641843/3	2022.12.21_A18_PFC+_ICAL_010.d
Level 3	IC 320-641843/4	2022.12.21_A18_PFC+_ICAL_011.d
Level 4	ICIS 320-641843/5	2022.12.21_A18_PFC+_ICAL_012.d
Level 5	IC 320-641843/6	2022.12.21_A18_PFC+_ICAL_013.d
Level 6	IC 320-641843/7	2022.12.21_A18_PFC+_ICAL_014.d
Level 7	IC 320-641843/8	2022.12.21_A18_PFC+_ICAL_015.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
MTP		L1ID	4793 1444316	8865 2684293	70241	312483	767944	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
PFPrA		L1ID	++++ 15812724	106721 ++++	538300	3003146	7727891	++++ 4.85	0.0485 ++++	0.243	0.970	2.43
PFMOAA		AveI D	64655 10757290	113904 21394563	553666	2290451	5712893	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
R-PSDA		AveI D	12364 2857369	28809 5101615	138397	555629	1405069	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
R-EVE		AveI D	36597 6808187	71743 12761090	345490	1419875	3470098	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Hydrolyzed PSDA		AveI D	45091 8915603	86501 16734493	407011	1760280	4479780	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanoic acid (PFBA)		AveI D	++++ 21896850	258886 40821406	1106755	4432266	11097322	++++ 5.00	0.0500 10.0	0.250	1.00	2.50
PMPA		AveI D	103252 22708548	232172 44561556	1223325	5155624	12063658	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
PFPrS		AveI D	58559 10732437	110770 19474699	532061	2161789	5377367	0.0230 4.60	0.0460 9.20	0.230	0.920	2.30
NVHOS		AveI D	2979	5426	30999	131289	308696	0.0250	0.0500	0.250	1.00	2.50

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843

SDG No.: _____

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
			572522	1010112				5.00	10.0			
PFMPA		AveI D	59972	118568	572763	2562254	6202101	0.0250	0.0500	0.250	1.00	2.50
			11831214	22632055				5.00	10.0			
PFO2HxA		AveI D	13452	24443	112410	529014	1319068	0.0250	0.0500	0.250	1.00	2.50
			2445617	4751670				5.00	10.0			
Perfluoropentanoic acid (PFPeA)		AveI D	111661	190715	911458	3708927	9355171	0.0250	0.0500	0.250	1.00	2.50
			18496501	35363238				5.00	10.0			
3:3 FTCA		AveI D	4489	9594	47081	198613	502851	0.0250	0.0500	0.250	1.00	2.50
			978892	1898204				5.00	10.0			
Perfluorobutanesulfonic acid (PFBS)		AveI D	53960	111734	531914	2192016	5603815	0.0222	0.0444	0.222	0.888	2.22
			11033889	21173366				4.44	8.88			
PEPA		AveI D	97529	206643	1009362	4211151	10356479	0.0250	0.0500	0.250	1.00	2.50
			19727243	38654364				5.00	10.0			
PFMBA		AveI D	102765	203427	990677	4118333	10404283	0.0250	0.0500	0.250	1.00	2.50
			20203303	37733865				5.00	10.0			
PFEEESA		AveI D	187947	366993	1841311	7204857	18913470	0.0223	0.0446	0.223	0.892	2.23
			35592918	69477853				4.46	8.92			
FBSA		AveI D	15902	27434	124813	535406	1413302	0.0250	0.0500	0.250	1.00	2.50
			2819947	5062726				5.00	10.0			
NFDHA		AveI D	18924	33015	169872	677355	1722749	0.0250	0.0500	0.250	1.00	2.50
			3830153	6210272				5.00	10.0			
4:2 FTS		AveI D	33613	70217	335456	1255344	3184643	0.0235	0.0469	0.235	0.938	2.35
			6275641	10909716				4.69	9.38			
Perfluorohexanoic acid (PFHxA)		AveI D	108826	184422	898628	3921540	9388581	0.0250	0.0500	0.250	1.00	2.50

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843

SDG No.: _____

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
			18084525	34797665				5.00	10.0			
Perfluoropentanesulfonic acid (PFPeS)		AveI D	51128	94760	453374	1838444	4861309	0.0235	0.0470	0.235	0.940	2.35
			9638754	17891547				4.70	9.40			
PFO3OA		AveI D	5613	12421	54635	241552	554129	0.0250	0.0500	0.250	1.00	2.50
			1029546	1880458				5.00	10.0			
HFPO-DA (GenX)		AveI D	3234	7246	42236	144171	352018	0.0250	0.0500	0.250	1.00	2.50
			694589	1269709				5.00	10.0			
R-PSDCA		AveI D	35346	67892	321468	1147862	3362349	0.0250	0.0500	0.250	1.00	2.50
			5732420	10558154				5.00	10.0			
Perfluoroheptanoic acid (PFHpA)		AveI D	98392	183256	1015299	3946695	9719521	0.0250	0.0500	0.250	1.00	2.50
			20321592	34616695				5.00	10.0			
Perfluorohexanesulfonic acid (PFHxS)		AveI D	43419	75422	347847	1369794	3637958	0.0228	0.0456	0.228	0.912	2.28
			7247209	13190799				4.56	9.12			
Hydro-EVE Acid		AveI D	151848	298442	1443299	6130947	14830278	0.0250	0.0500	0.250	1.00	2.50
			29445906	53685526				5.00	10.0			
Hydro-PS Acid		AveI D	132785	257193	1307850	5383069	13476928	0.0250	0.0500	0.250	1.00	2.50
			26399096	48863947				5.00	10.0			
5:3 FTCA		AveI D	15216	35339	173515	662006	1633097	0.0250	0.0500	0.250	1.00	2.50
			3278502	5851847				5.00	10.0			
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)		AveI D	197765	346767	1779139	6979330	17713495	0.0236	0.0472	0.236	0.944	2.36
			34640245	62873239				4.72	9.44			
PFPE-1		AveI D	51891	96527	490502	1952986	5191315	0.0250	0.0500	0.250	1.00	2.50
			8829678	15721252				5.00	10.0			
6:2 FTUCA		AveI D	68490	130071	624645	2625569	6265675	0.0250	0.0500	0.250	1.00	2.50

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843

SDG No.: _____

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
			12668318	23001214				5.00	10.0			
6:2 FTCA		AveI D	1328	2456	13427	50100	121929	0.0250	0.0500	0.250	1.00	2.50
			268834	473467				5.00	10.0			
PFO4DA		AveI D	6795	10033	44856	259809	643652	0.0250	0.0500	0.250	1.00	2.50
			1195996	2362094				5.00	10.0			
PS Acid		AveI D	47770	105073	463468	1953502	5014718	0.0250	0.0500	0.250	1.00	2.50
			9633569	17279343				5.00	10.0			
EVE Acid		AveI D	156635	311638	1502374	6127163	15183952	0.0250	0.0500	0.250	1.00	2.50
			28603832	51552254				5.00	10.0			
FHxSA		AveI D	81446	151404	699013	2900157	7384003	0.0250	0.0500	0.250	1.00	2.50
			15903608	26572256				5.00	10.0			
PFECHS		AveI D	88924	199805	931019	3887665	9572203	0.0231	0.0462	0.231	0.924	2.31
			19418185	34555975				4.62	9.24			
6:2 FTS		AveI D	31248	65730	296332	1187597	2945376	0.0238	0.0476	0.238	0.952	2.38
			5989352	10117176				4.76	9.52			
Perfluorooctanoic acid (PFOA)		AveI D	120607	222902	1074913	4339534	10525136	0.0250	0.0500	0.250	1.00	2.50
			21956034	37740925				5.00	10.0			
Perfluoroheptanesulfonic acid (PFHpS)		AveI D	34568	68440	297084	1241411	3341193	0.0239	0.0477	0.239	0.954	2.39
			6588994	11265901				4.77	9.54			
PFO5DA		AveI D	4208	9153	42512	168971	439405	0.0250	0.0500	0.250	1.00	2.50
			924294	1600208				5.00	10.0			
Perfluorooctanesulfonic acid (PFOS)		AveI D	29739	59636	244252	1058849	2749473	0.0233	0.0465	0.233	0.930	2.33
			5393926	9640352				4.65	9.30			
Perfluorononanoic acid (PFNA)		AveI D	104467	194512	962229	4102406	9814873	0.0250	0.0500	0.250	1.00	2.50

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843

SDG No.: _____

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
			20114046	35644768				5.00	10.0			
7:3 FTCA		AveI D	21983	39722	178333	783070	1886301	0.0250	0.0500	0.250	1.00	2.50
			3743662	7008185				5.00	10.0			
8:2 FTUCA		AveI D	70138	138449	617990	2648023	6228684	0.0250	0.0500	0.250	1.00	2.50
			12719905	23243416				5.00	10.0			
8:2 FTCA		AveI D	3896	8031	33725	146890	381714	0.0250	0.0500	0.250	1.00	2.50
			718107	1331255				5.00	10.0			
9Cl-PF3ONS		AveI D	69041	133385	616243	2633729	6563064	0.0234	0.0467	0.234	0.934	2.34
			13140579	24613739				4.67	9.34			
Perfluorooctanesulfonamide (FOSA)		AveI D	36887	73903	337367	1452346	3608992	0.0250	0.0500	0.250	1.00	2.50
			6948494	13198398				5.00	10.0			
Perfluorononanesulfonic acid (PFNS)		AveI D	21528	40042	193768	846657	2188334	0.0241	0.0481	0.241	0.962	2.41
			4357422	8011435				4.81	9.62			
8:2 FTS		AveI D	26866	55336	245067	992850	2449746	0.0240	0.0480	0.240	0.960	2.40
			4557728	8220358				4.80	9.60			
Perfluorodecanoic acid (PFDA)		AveI D	68541	138626	686184	3075188	7411363	0.0250	0.0500	0.250	1.00	2.50
			14816220	28503226				5.00	10.0			
NMeFOSAA		AveI D	12477	27599	112348	485240	1172422	0.0250	0.0500	0.250	1.00	2.50
			2274221	4440545				5.00	10.0			
Perfluorodecanesulfonic acid (PFDS)		L1ID	18645	42326	185257	774535	2099043	0.0241	0.0482	0.241	0.964	2.41
			3692463	7123758				4.82	9.64			
Perfluoroundecanoic acid (PFUnA)		AveI D	73493	133216	702006	2978749	6995780	0.0250	0.0500	0.250	1.00	2.50
			13618108	27161903				5.00	10.0			
NEtFOSAA		AveI D	11384	23047	115316	482908	1195968	0.0250	0.0500	0.250	1.00	2.50

FORM VI
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Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843

SDG No.: _____

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
			2156668	4285807				5.00	10.0			
10:2 FTUCA		AveI D	42219	91725	415592	1745695	4517554	0.0250	0.0500	0.250	1.00	2.50
			8252861	16749300				5.00	10.0			
10:2 FTCA		L1ID	+++++	2517	21537	70591	201176	+++++	0.0500	0.250	1.00	2.50
			385414	701424				5.00	10.0			
NMeFOSE		AveI D	17425	34482	171546	761000	1889290	0.0250	0.0500	0.250	1.00	2.50
			3568654	7165196				5.00	10.0			
NMeFOSA		AveI D	9802	27890	116137	493005	1188411	0.0250	0.0500	0.250	1.00	2.50
			2211769	4453737				5.00	10.0			
11Cl-PF3OUds		AveI D	83876	169823	802771	3438384	8896761	0.0236	0.0472	0.236	0.944	2.36
			16608797	32404058				4.72	9.44			
Perfluorododecanoic acid (PFDoA)		AveI D	90734	206927	950924	4127612	10014790	0.0250	0.0500	0.250	1.00	2.50
			18739640	36859311				5.00	10.0			
10:2 FTS		AveI D	22360	39188	160988	778925	1805724	0.0242	0.0483	0.242	0.966	2.42
			3284195	6193282				4.83	9.66			
NEtFOSE		AveI D	18028	37537	187348	913324	2211695	0.0250	0.0500	0.250	1.00	2.50
			3626119	8528259				5.00	10.0			
NEtFOSA		AveI D	8879	20666	94779	453389	1149582	0.0250	0.0500	0.250	1.00	2.50
			2102659	4357169				5.00	10.0			
Perfluorododecanesulfonic acid (PFDoS)		AveI D	8101	13237	60384	251411	785495	0.0243	0.0485	0.243	0.970	2.43
			1198872	2613042				4.85	9.70			
Perfluorotridecanoic acid (PFTrDA)		AveI D	87369	187554	871048	3365179	9848838	0.0250	0.0500	0.250	1.00	2.50
			16773129	33041960				5.00	10.0			
6:2 Fluorotelomer phosphate diester		AveI D	33100	65887	342918	1121844	2848794	0.0243	0.0486	0.243	0.973	2.43
			6612353	10533014				4.86	9.73			

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843

SDG No.: _____

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorotetradecanoic acid (PFTeA)		AveI D	9714	20219	95844	385185	874377	0.0250	0.0500	0.250	1.00	2.50
			1990497	3747000				5.00	10.0			
6:2/8:2 Fluorotelomer phosphate diester		AveI D	34934	64723	326267	1278763	3084577	0.0244	0.0488	0.244	0.976	2.44
			5785265	10023183				4.88	9.76			
Perfluoro-n-hexadecanoic acid (PFHxDA)		L1ID	117504	176336	732541	3015244	7649456	0.0250	0.0500	0.250	1.00	2.50
			14688865	25488462				5.00	10.0			
8:2 Fluorotelomer phosphate diester		AveI D	24283	48137	233532	945769	2090344	0.0245	0.0489	0.245	0.978	2.45
			3984109	6702117				4.89	9.78			
Perfluoro-n-octadecanoic acid (PFODA)		AveI D	43635	71843	358161	1816861	4471764	0.0250	0.0500	0.250	1.00	2.50
			8365597	14443907				5.00	10.0			
10:2 Fluorotelomer phosphate diester		AveI D	1726	2676	14035	102291	317686	0.0251	0.0502	0.251	1.00	2.51
			640319	884641				5.02	10.0			
13C4 PFBA	13PF OA	Ave	5289988	5305834	5066845	5311179	4999599	1.25	1.25	1.25	1.25	1.25
			4982225	4611646				1.25	1.25			
13C5 PFPeA	13PF OA	Ave	4840346	4525957	4546088	4725710	4465695	1.25	1.25	1.25	1.25	1.25
			4436348	4278195				1.25	1.25			
13C3 PFBS	13PF OA	Ave	3081314	3021473	2980714	2887646	2899206	1.17	1.17	1.17	1.17	1.17
			2821528	2744823				1.17	1.17			
M2-4:2 FTS	13PF OA	Ave	760490	727484	704703	688975	662219	1.17	1.17	1.17	1.17	1.17
			687123	572256				1.17	1.17			
13C2 PFHxA	13PF OA	Ave	5209983	5056255	5187930	5056091	5028123	1.25	1.25	1.25	1.25	1.25
			4862283	4621814				1.25	1.25			
13C3 HFPO-DA	13PF OA	Ave	176735	162965	178139	179051	162996	1.25	1.25	1.25	1.25	1.25
			162765	153654				1.25	1.25			

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843

SDG No.: _____

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C4 PFHpA	13PF OA	Ave	5872977	5167387	5522379	5405324	5250843	1.25	1.25	1.25	1.25	1.25
			5286047	4666051				1.25	1.25			
18O2 PFHxS	13PF OA	Ave	2121163	1993425	2033754	1977270	1955429	1.18	1.18	1.18	1.18	1.18
			1933548	1728897				1.18	1.18			
13C-6:2 FTUCA	13PF OA	Ave	3521172	3177503	3406633	3156625	3013717	1.25	1.25	1.25	1.25	1.25
			3111763	2674693				1.25	1.25			
13C-6:2 FTCA	13PF OA	Ave	250779	252103	247177	246937	243796	1.25	1.25	1.25	1.25	1.25
			249850	214455				1.25	1.25			
M2-6:2 FTS	13PF OA	Ave	829396	809811	774362	714883	688289	1.19	1.19	1.19	1.19	1.19
			698908	613639				1.19	1.19			
13C4 PFOA	13PF OA	Ave	6271839	6004578	6038830	5782654	5597131	1.25	1.25	1.25	1.25	1.25
			5651966	5237620				1.25	1.25			
13C4 PFOS	13PF OA	Ave	1424220	1353806	1392450	1348079	1301599	1.20	1.20	1.20	1.20	1.20
			1350075	1206062				1.20	1.20			
13C5 PFNA	13PF OA	Ave	5925306	6020708	5627096	5870061	5467050	1.25	1.25	1.25	1.25	1.25
			5797989	5015471				1.25	1.25			
13C-8:2 FTUCA	13PF OA	Ave	3592347	3608847	3455886	3398407	3229578	1.25	1.25	1.25	1.25	1.25
			3388615	3026054				1.25	1.25			
13C-8:2 FTCA	13PF OA	Ave	186962	192610	198577	174753	171395	1.25	1.25	1.25	1.25	1.25
			178265	169228				1.25	1.25			
13C8 FOSA	13PF OA	Ave	1959299	1886081	1916740	1890673	1857541	1.25	1.25	1.25	1.25	1.25
			1806938	1685839				1.25	1.25			
M2-8:2 FTS	13PF OA	Ave	830405	760844	766962	757758	724409	1.20	1.20	1.20	1.20	1.20
			702421	666486				1.20	1.20			

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
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Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843

SDG No.: _____

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C2 PFDA	13PF OA	Ave	5646361 5327115	5428601 5095868	5538643	5802988	5434160	1.25 1.25	1.25 1.25	1.25	1.25	1.25
d3-NMeFOSAA	13PF OA	Ave	797870 729840	766454 737397	729447	783120	755309	1.25 1.25	1.25 1.25	1.25	1.25	1.25
d5-NEtFOSAA	13PF OA	Ave	807536 708804	808849 672383	763789	809200	756881	1.25 1.25	1.25 1.25	1.25	1.25	1.25
13C2 PFUnA	13PF OA	Ave	5260158 5097277	5173428 4825909	5059809	5346327	5124120	1.25 1.25	1.25 1.25	1.25	1.25	1.25
13C-10:2 FTUCA	13PF OA	Ave	3131769 2962874	3137556 2919338	3011646	3150416	3027785	1.25 1.25	1.25 1.25	1.25	1.25	1.25
d7-N-MeFOSE-M	13PF OA	Ave	908767 893540	894226 908186	898476	950291	913617	1.25 1.25	1.25 1.25	1.25	1.25	1.25
13C-10:2 FTCA	13PF OA	Ave	111336 91688	109123 95821	105148	103109	97732	1.25 1.25	1.25 1.25	1.25	1.25	1.25
d-N-MeFOSA-M	13PF OA	Ave	623985 578889	595910 588140	587805	622195	622786	1.25 1.25	1.25 1.25	1.25	1.25	1.25
d9-N-EtFOSE-M	13PF OA	Ave	1045109 943499	1071457 1047626	1063135	1148436	1048354	1.25 1.25	1.25 1.25	1.25	1.25	1.25
13C2 PFDoA	13PF OA	Ave	5849099 5617808	5060592 5516531	5631274	5968570	5788906	1.25 1.25	1.25 1.25	1.25	1.25	1.25
13C2 10:2 FTS	13PF OA	Ave	706621 622362	777382 635276	691905	747337	700116	1.21 1.21	1.21 1.21	1.21	1.21	1.21
d-N-EtFOSA-M	13PF OA	Ave	592648 473811	592841 566557	544076	587666	569194	1.25 1.25	1.25 1.25	1.25	1.25	1.25

FORM VI
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RESPONSE AND CONCENTRATION

Lab Name: Eurofins Sacramento Job No.: 320-95204-1 Analy Batch No.: 641843

SDG No.: _____

Instrument ID: A18 GC Column: Gemini C18 ID: 3 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/21/2022 12:10 Calibration End Date: 12/21/2022 13:11 Calibration ID: 63245

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C4-6:2 Fluorotelomer phosphate diester	13PF OA	Ave	1717500	1683560	1783673	1490851	1421678	1.22	1.22	1.22	1.22	1.22
			1705249	1403184				1.22	1.22			
13C2 PFTeDA	13PF OA	Ave	5208696	5384742	5087560	4686411	4445136	1.25	1.25	1.25	1.25	1.25
			4952271	4495946				1.25	1.25			
13C2 PFHxDA	13PF OA	Ave	4312190	4179814	4405212	4467876	4399767	1.25	1.25	1.25	1.25	1.25
			4189416	3741509				1.25	1.25			
13C4-8:2 Fluorotelomer phosphate diester	13PF OA	Ave	1344001	1287349	1309386	1230960	1108137	1.22	1.22	1.22	1.22	1.22
			1042281	870185				1.22	1.22			
13C8 PFOA	13PF OA	Ave	7442454	7125345	7243095	6918984	6696405	1.25	1.25	1.25	1.25	1.25
			6760789	6070302				1.25	1.25			
13C8 PFOS	13PF OA	Ave	647489	597424	590205	561872	575383	1.20	1.20	1.20	1.20	1.20
			539220	503120				1.20	1.20			

Curve Type Legend

Ave = Average ISTD
AveID = Average isotope dilution
LlID = Linear 1/conc IsoDil

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
 Lims ID: IC L1
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 21-Dec-2022 12:10:28 ALS Bottle#: 1 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD 1 (07)
 Misc. Info.: Plate: 2 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Sublist: chrom-PFAS+_A18*sub3
 Method: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Dec-2022 07:19:45 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1678

First Level Reviewer: YS2U

Date: 21-Dec-2022 13:32:49

Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 MTP										M
175.00 > 97.00	1.509	1.488	0.021	0.559	4793	0.0283		113	17.1	M
2 PPF Acid										M
162.95 > 119.00	1.918	1.893	0.025	0.710	49892	0.0438		181	4.4	M
3 PFMOAA										M
179.00 > 84.90	2.404	2.387	0.017	0.890	64655	0.0273		109	16.6	M
4 R-PSDA										
441.00 > 241.00	2.581	2.573	0.008	0.955	12364	0.0217		86.8	448	
5 R-EVE										
405.00 > 217.00	2.589	2.577	0.012	0.958	36597	0.0253		101	1057	
6 Hydrolyzed PSDA										
439.10 > 342.90	2.589	2.581	0.008	0.958	45091	0.0249		99.5	982	
D 8 13C4 PFBA										
217.00 > 172.00	2.702	2.688	0.014	0.584	5289988	1.20		95.6	15760	
7 Perfluorobutanoic acid										M
212.90 > 169.00	2.702	2.690	0.012	1.000	161606	0.0344		137	5.2	M
10 PMPA										M
229.00 > 185.00	2.774	2.760	0.014	1.027	103252	0.0212		84.9	59.4	M
11 PFPrS										M
249.10 > 80.00	2.783	2.771	0.012	0.892	58559	0.0237		103	540	M
12 NVHOS										M
297.00 > 135.00	2.811	2.790	0.021	1.040	2979	0.0244		97.5	56.1	M
13 PFECA F										M
229.00 > 85.00	2.839	2.829	0.010	0.921	59972	0.0235		94.2	562	M
14 PFO2HxA										M
245.00 > 85.00	2.987	2.976	0.011	0.969	13452	0.0253		101	57.5	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 16 13C5 PFPeA										
267.90 > 223.00	3.083	3.068	0.015	0.666	4840346	1.22		97.8	32125	
15 Perfluoropentanoic acid										
262.90 > 219.00	3.083	3.069	0.014	1.000	111661	0.0276		110	141	
17 3:3 FTCA										
241.00 > 177.10	3.083	3.075	0.008	0.988	4489	0.0221	Target=1.46	88.4	47.1	Ma
241.00 > 116.90	3.083	3.075	0.008	0.988	2332		1.92(0.73-2.18)	88.4	12.3	M
19 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.120	3.111	0.009	1.000	53960	0.0208	Target=2.33	93.6	256	
298.90 > 99.00	3.120	3.111	0.009	1.000	24789		2.18(1.16-3.49)	93.6	135	
D 18 13C3 PFBS										
301.90 > 80.00	3.120	3.111	0.009	0.674	3081314	1.13		96.9	15783	
20 PEPA										
278.90 > 234.90	3.188	3.178	0.010	1.034	97529	0.0227		90.7	14.6	M
21 PFECA A										
278.95 > 84.90	3.208	3.198	0.010	1.041	102765	0.0239		95.6	1547	
22 PES										
314.80 > 135.00	3.303	3.292	0.011	1.059	187947	0.0218		97.6	2412	
23 FBSA										
297.90 > 78.00	3.348	3.338	0.010	0.594	15902	0.0274		109	218	
24 PFECA B										
295.20 > 201.00	3.455	3.438	0.017	0.980	18924	0.0262		105	400	M
26 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.464	3.461	0.003	0.997	33613	0.0222	Target=1.98	94.6	1133	
327.00 > 79.96	3.473	3.461	0.012	1.000	18588		1.81(0.99-2.97)	94.6	158	
D 25 M2-4:2 FTS										
329.00 > 81.00	3.473	3.463	0.010	0.751	760490	1.20		102	4421	
D 27 13C2 PFHxA										
315.00 > 270.00	3.526	3.513	0.013	0.762	5209983	1.20		95.6	44210	
28 Perfluorohexanoic acid										
313.00 > 269.00	3.526	3.514	0.012	1.000	108826	0.0277	Target=13.54	111	151	M
313.00 > 119.00	3.526	3.514	0.012	1.000	7640		14.24(6.77-20.31)	111	86.6	M
29 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.562	3.545	0.017	1.142	51128	0.0240	Target=3.08	102	557	M
349.00 > 99.00	3.562	3.545	0.017	1.142	16440		3.11(1.54-4.63)	102	306	M
30 PFO3OA										
311.10 > 85.20	3.605	3.598	0.007	1.023	5613	0.0244		97.5	90.0	M
31 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.683	3.685	-0.002	0.998	3234	0.0216	Target=0.84	86.6	142	M
285.00 > 185.00	3.691	3.685	0.006	1.000	5392		0.60(0.42-1.25)	86.6	73.5	M
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.691	3.685	0.006	0.798	176735	1.21		96.6	4778	
33 R-PSDCA										
397.00 > 217.00	4.016	4.000	0.016	0.990	35346	0.0256		102	954	
D 35 13C4 PFHpA										
367.00 > 322.00	4.059	4.048	0.011	0.877	5872977	1.27		102	31985	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
36 Perfluoroheptanoic acid										
363.00 > 319.00	4.059	4.047	0.012	1.000	98392	0.0230	Target=3.56	92.0	147	
363.00 > 169.00	4.059	4.047	0.012	1.000	25832		3.81(1.78-5.34)	92.0	460	
38 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.075	4.060	0.015	1.000	43419	0.0251	Target=3.26	110	371	M
399.00 > 99.00	4.084	4.060	0.024	1.002	13770		3.15(1.63-4.88)	110	75.0	M
D 37 18O2 PFHxS										
403.00 > 84.00	4.075	4.063	0.012	0.881	2121163	1.17		99.3	22721	
34 Hydro-EVE Acid										
427.00 > 282.90	4.101	4.078	0.023	1.011	151848	0.0233		93.3	1819	
39 Hydro-PS Acid										
463.00 > 263.00	4.126	4.114	0.012	1.017	132785	0.0229		91.5	552	
41 5:3 FTCA										
340.88 > 236.90	4.135	4.127	0.008	0.979	15216	0.0226	Target=1.10	90.6	238	
340.88 > 216.90	4.143	4.127	0.016	0.981	15030		1.01(0.55-1.65)	90.6	122	
40 DONA										
377.00 > 251.00	4.143	4.128	0.015	0.801	197765	0.0250	Target=2.23	106	3599	M
377.00 > 85.00	4.143	4.128	0.015	0.801	82447		2.40(1.11-3.34)	106	634	M
42 PFECA G										
378.90 > 184.90	4.170	4.158	0.012	0.988	51891	0.0265		106	1058	M
D 44 13C-6:2 FTUCA										
358.86 > 293.90	4.196	4.185	0.011	0.907	3521172	1.29		103	28812	
43 6:2 FTUCA										
356.86 > 292.90	4.196	4.188	0.008	1.000	68490	0.0240	Target=12.98	96.1	810	M
356.86 > 243.00	4.196	4.188	0.008	1.000	6509		10.52(6.49-19.46)	96.1	257	M
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.222	4.212	0.010	0.913	250779	1.18		94.6	1335	
45 6:2 FTCA										
377.10 > 313.10	4.231	4.217	0.014	1.002	1328	0.0253	Target=0.65	101	41.6	M
377.10 > 63.00	4.205	4.217	-0.012	0.996	1637		0.81(0.33-0.98)	101	76.3	M
47 PFO4DA										
376.90 > 85.00	4.320	4.320	0.0	1.064	6795	0.0261		104	0.4	M
48 PS Acid										
442.80 > 146.80	4.435	4.418	0.017	0.959	47770	0.0229		91.6	171	
49 EVE Acid										
407.00 > 262.90	4.435	4.425	0.010	0.959	156635	0.0244		97.5	8146	
50 FHxSA										
397.90 > 78.00	4.525	4.515	0.010	0.803	81446	0.0260		104	1553	
51 PFECHS										
460.80 > 380.90	4.551	4.535	0.016	0.984	88924	0.0201	Target=2.05	87.2	419	
460.80 > 98.90	4.542	4.535	0.007	0.982	49314		1.80(1.03-3.08)	87.2	934	
53 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.593	4.578	0.015	1.000	31248	0.0220	Target=2.31	92.6	601	
427.00 > 79.96	4.602	4.578	0.024	1.002	13925		2.24(1.16-3.47)	92.6	130	
D 52 M2-6:2 FTS										
429.00 > 81.00	4.593	4.580	0.013	0.993	829396	1.24		104	13270	
\$ 54 13C8 PFOA										
421.00 > 376.00	4.627	4.613	0.014	1.000	7441454	1.24		99.3	19268	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 55 13C2 PFOA										
415.00 > 370.00	4.627	4.615	0.012		6244331	1.25			21310	
D 56 13C4 PFOA										
417.00 > 372.00	4.627	4.613	0.014	1.000	6271839	1.24		99.4	22612	
58 Perfluorooctanoic acid										
413.00 > 369.00	4.627	4.614	0.013	1.000	120607	0.0258	Target=2.69	103	91.2	M
413.00 > 169.00	4.618	4.614	0.004	0.998	46821		2.58(1.35-4.04)	103	330	M
57 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.635	4.620	0.015	0.896	34568	0.0242	Target=4.67	102	478	
449.00 > 99.00	4.627	4.620	0.007	0.894	8174		4.23(2.33-7.00)	102	118	
59 TAF										
442.90 > 85.00	5.052	5.041	0.011	1.092	4208	0.0224		89.7	145	M
\$ 60 13C8 PFOS										
507.00 > 99.00	5.173	5.161	0.012	1.118	647489	1.24		104	7001	
D 61 13C4 PFOS										
503.00 > 80.00	5.173	5.162	0.011	1.118	1424220	1.17		97.7	7546	
62 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.173	5.163	0.010	1.000	29739	0.0241	Target=5.09	104	36.7	M
499.00 > 99.00	5.181	5.163	0.018	1.002	4601		6.46(2.55-7.64)	104	38.0	M
D 64 13C5 PFNA										
468.00 > 423.00	5.181	5.170	0.011	1.120	5925306	1.20		96.0	33121	
63 Perfluorononanoic acid										
463.00 > 419.00	5.190	5.173	0.017	1.002	104467	0.0254	Target=7.64	102	124	M
463.00 > 169.00	5.181	5.173	0.008	1.000	12465		8.38(3.82-11.46)	102	235	
65 7:3 FTCA										
441.00 > 337.00	5.311	5.297	0.014	0.988	21983	0.0278	Target=1.18	111	155	
441.00 > 317.00	5.311	5.297	0.014	0.988	17391		1.26(0.59-1.77)	111	119	
D 67 13C-8:2 FTUCA										
458.86 > 393.90	5.357	5.340	0.017	1.158	3592347	1.22		97.5	14479	
66 8:2 FTUCA										
456.86 > 392.90	5.357	5.342	0.015	1.000	70138	0.0256	Target=39.03	103	1401	M
456.86 > 343.00	5.357	5.342	0.015	1.000	1443		48.61(19.51-58.54)	103	70.3	M
69 8:2 FTCA										
477.00 > 393.10	5.375	5.361	0.014	1.000	3896	0.0257	Target=2.58	103	19.6	M
477.00 > 63.20	5.366	5.361	0.005	0.998	2068		1.88(1.29-3.87)	103	75.3	M
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.375	5.363	0.012	1.162	186962	1.18		94.5	1723	
70 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	5.483	5.470	0.013	1.060	69041	0.0232		99.5	1445	
71 Perfluorooctanesulfonamide										
498.00 > 78.00	5.638	5.628	0.010	1.000	36887	0.0247		98.8	1020	
D 72 13C8 FOSA										
506.00 > 78.00	5.638	5.628	0.010	1.219	1959299	1.21		96.9	15802	
73 Perfluorononanesulfonic acid										
549.00 > 80.00	5.685	5.672	0.013	1.099	21528	0.0233	Target=2.73	97.0	643	
549.00 > 99.00	5.677	5.672	0.005	1.097	9897		2.18(1.37-4.10)	97.0	240	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.693	5.681	0.012	1.230	820405	1.23		103	19988	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 1H,1H,2H,2H-perfluorodecanesulfo										M
527.00 > 507.00	5.693	5.683	0.010	1.000	26866	0.0236	Target=2.39	98.2	1663	
527.00 > 79.96	5.693	5.683	0.010	1.000	11773		2.28(1.19-3.58)	98.2	221	M
77 Perfluorodecanoic acid										
513.00 > 469.00	5.708	5.691	0.017	1.001	68541	0.0231	Target=7.32	92.3	247	
513.00 > 169.00	5.715	5.691	0.024	1.003	9816		6.98(3.66-10.98)	92.3	253	
D 76 13C2 PFDA										
515.00 > 470.00	5.700	5.690	0.010	1.232	5646361	1.18		94.8	44837	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.930	5.917	0.013	1.282	797870	1.21		96.7	4963	
79 N-methylperfluorooctanesulfonami										M
570.00 > 419.00	5.939	5.923	0.015	1.001	12477	0.0247	Target=0.78	98.9	132	M
570.00 > 483.00	5.939	5.923	0.015	1.001	15617		0.80(0.39-1.18)	98.9	422	M
80 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.146	6.133	0.013	1.188	18645	0.0230	Target=3.04	95.4	590	
599.00 > 99.00	6.157	6.133	0.024	1.190	5570		3.35(1.52-4.56)	95.4	133	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.177	6.158	0.019	1.335	807536	1.22		97.5	3520	
D 82 13C2 PFUnA										
565.00 > 520.00	6.177	6.163	0.014	1.335	5260158	1.18		94.2	40631	
83 Perfluoroundecanoic acid										
563.00 > 519.00	6.177	6.163	0.014	1.000	73493	0.0255	Target=8.03	102	331	
563.00 > 169.00	6.186	6.163	0.023	1.002	7430		9.89(4.02-12.05)	102	220	
84 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	6.177	6.168	0.009	1.000	11384	0.0234	Target=0.76	93.7	186	
584.00 > 526.10	6.186	6.168	0.018	1.002	17169		0.66(0.38-1.14)	93.7	222	
D 89 13C-10:2 FTUCA										
558.86 > 493.90	6.337	6.324	0.013	1.370	3131769	1.18		94.2	13049	
90 10:2 FTUCA										
556.86 > 492.90	6.337	6.326	0.011	1.000	42219	0.0238		95.4	820	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.337	6.327	0.010	1.370	908767	1.14		91.6	5181	
92 10:2 FTCA										M
576.80 > 493.00	6.364	6.342	0.022	1.001	2419	0.0424	Target=2.24	170	24.8	M
576.80 > 63.10	6.346	6.342	0.004	0.999	769		3.15(1.12-3.36)	170	8.0	M
86 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	6.346	6.341	0.005	1.001	17425	0.0243		97.3	144	
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.355	6.342	0.013	1.374	111336	1.25		100	605	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.364	6.348	0.016	1.375	623985	1.19		94.9	2146	
88 NMeFOSA										M
512.00 > 169.00	6.373	6.355	0.018	1.001	9802	0.0202	Target=1.97	81.0	193	
512.00 > 218.99	6.364	6.355	0.009	1.000	7162		1.37(0.99-2.96)	81.0	139	M
93 11-Chloroeicosafuoro-3-oxaundec										
631.00 > 451.00	6.399	6.381	0.018	1.237	83876	0.0221		93.7	2777	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.585	6.580	0.005	1.423	1045109	1.14		91.0	5721	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
99 Perfluorododecanoic acid										
613.00 > 569.00	6.595	6.582	0.013	1.000	90734	0.0225	Target=7.94	89.9	268	
613.00 > 169.00	6.595	6.582	0.013	1.000	11342		8.00(3.97-11.90)	89.9	332	
D 98 13C2 PFDaA										
615.00 > 570.00	6.595	6.582	0.013	1.425	5849099	1.19		95.2	34177	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.605	6.592	0.012	1.428	706621	1.12		93.0	12515	
101 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	6.614	6.597	0.017	1.002	22360	0.0293	Target=1.64	121	873	M
627.00 > 79.96	6.614	6.597	0.017	1.002	14992		1.49(0.82-2.46)	121	303	M
95 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	6.605	6.599	0.005	1.003	18028	0.0227		90.8	163	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.614	6.609	0.005	1.430	592648	1.21		96.8	1630	
97 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	6.624	6.619	0.005	1.002	8879	0.0201	Target=1.81	80.2	249	
526.00 > 218.99	6.634	6.619	0.015	1.003	5860		1.52(0.90-2.71)	80.2	216	
102 Perfluorododecanesulfonic acid (
699.00 > 80.00	6.934	6.918	0.016	1.340	8101	0.0272	Target=0.69	112	356	
699.00 > 99.00	6.943	6.918	0.025	1.342	10583		0.77(0.34-1.03)	112	452	
103 Perfluorotridecanoic acid										
663.00 > 619.00	6.967	6.959	0.008	1.057	87369	0.0238	Target=6.68	95.1	504	
663.00 > 169.00	6.976	6.959	0.017	1.058	13145		6.65(3.34-10.02)	95.1	370	
D 112 13C4-6:2 diPAP										
792.82 > 78.90	7.214	7.198	0.016	1.559	1717500	1.20		98.7	3790	
114 6:2 diPAP										
788.79 > 78.90	7.214	7.200	0.014	1.000	33100	0.0243	Target=1.92	99.9	121	
788.79 > 96.90	7.214	7.200	0.014	1.000	15258		2.17(0.96-2.88)	99.9	74.8	
105 Perfluorotetradecanoic acid										
713.00 > 169.00	7.309	7.297	0.012	0.999	9714	0.0238	Target=0.92	95.0	583	M
713.00 > 219.00	7.309	7.297	0.012	0.999	11496		0.84(0.46-1.38)	95.0	495	M
D 104 13C2 PFTeDA										
715.00 > 670.00	7.317	7.298	0.019	1.582	5208696	1.22		97.8	6898	
115 6:2/8:2 diPAP										
888.70 > 78.90	7.705	7.687	0.018	1.068	34934	0.0256	Target=1.37	105	398	
888.70 > 96.90	7.705	7.687	0.018	1.068	24319		1.44(0.69-2.06)	105	173	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.894	7.873	0.021	1.706	4312190	1.17		93.4	7718	
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.887	7.873	0.014	0.999	117504	0.0275	Target=8.78	110	362	
813.00 > 169.00	7.887	7.873	0.014	0.999	13264		8.86(4.39-13.16)	110	276	
D 113 13C4-8:2 diPAP										
992.77 > 96.90	8.123	8.100	0.023	1.756	1344001	1.30		106	4313	
116 8:2 diPAP										
988.74 > 78.90	8.112	8.102	0.010	0.999	24283	0.0236	Target=1.17	96.5	565	
988.74 > 96.90	8.123	8.102	0.021	1.000	19896		1.22(0.59-1.76)	96.5	265	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
108 Perfluorooctadecanoic acid										
913.00 > 869.00	8.396	8.378	0.018	1.064	43635	0.0265	Target=10.07	106	74.7	
913.00 > 169.00	8.396	8.378	0.018	1.064	4218		10.34(5.04-15.11)	106	115	
117 10:2 diPAP										
1188.79 > 78.90	8.936	8.913	0.023	1.100	1726	0.0162	Target=1.10	64.4	88.5	M
1188.79 > 96.90	8.936	8.913	0.023	1.100	1684		1.02(0.55-1.65)	64.4	52.8	M

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

LCPFC+6C_LL1_00007

Amount Added: 1.00

Units: mL

Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d

Injection Date: 21-Dec-2022 12:10:28

Instrument ID: A18

Lims ID: IC L1

Client ID:

Operator ID: TAISACA18-PC\A-18

ALS Bottle#: 1

Worklist Smp#: 2

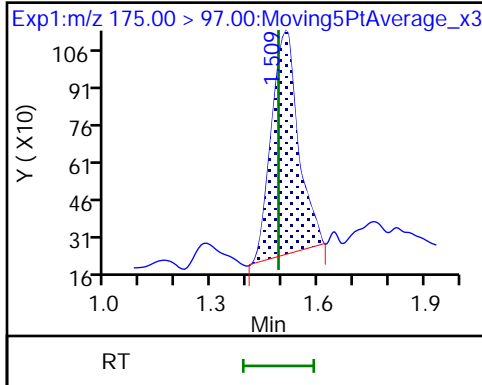
Injection Vol: 20.0 ul

Dil. Factor: 1.0000

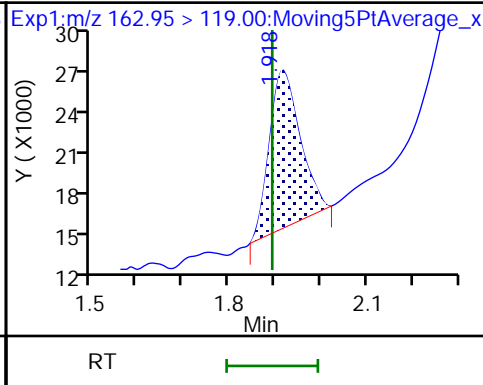
Method: PFAS+_A18

Limit Group: LC PFC ICAL

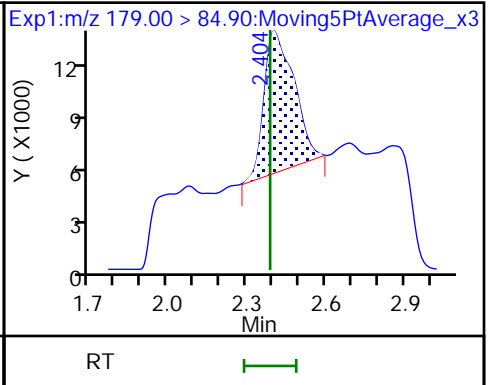
1 MTP (M)



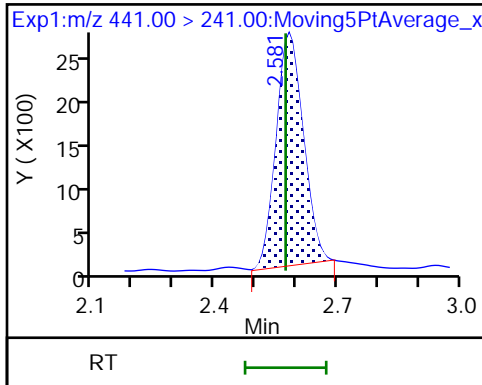
2 PPF Acid (M)



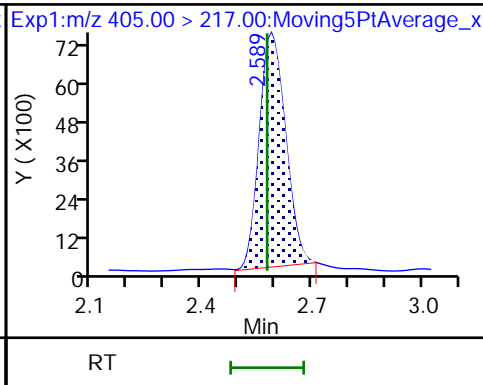
3 PFMOAA (M)



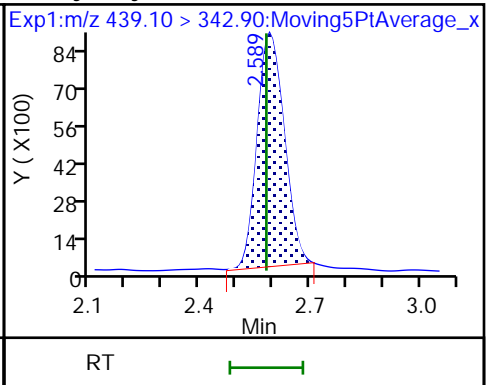
4 R-PSDA



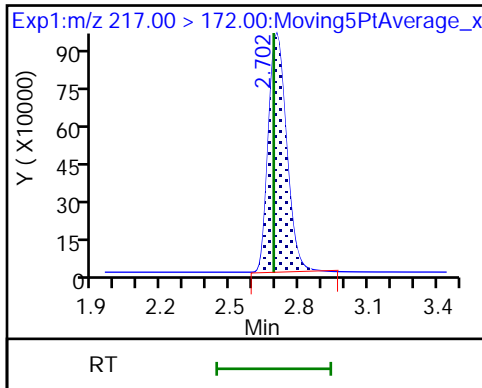
5 R-EVE



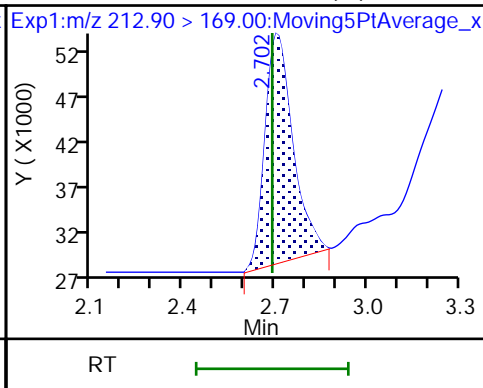
6 Hydrolyzed PSDA



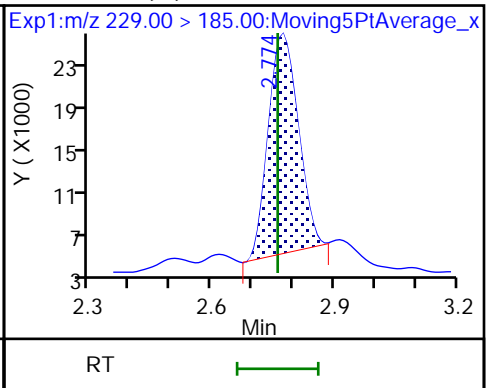
D 8 13C4 PFBA



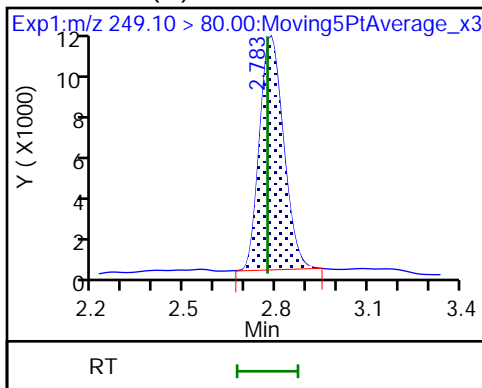
7 Perfluorobutanoic acid (M)



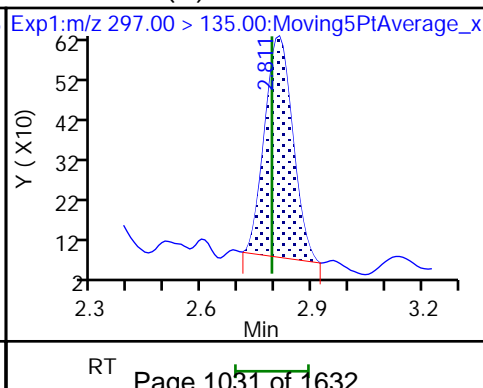
10 PMPA (M)



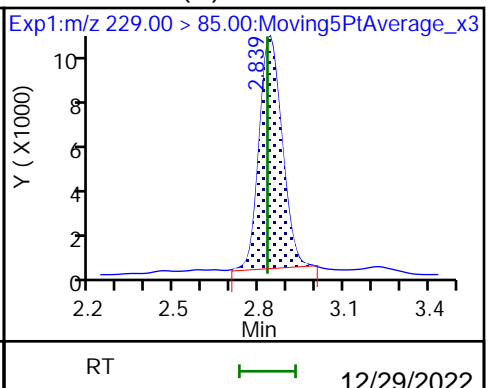
11 PFPrS (M)

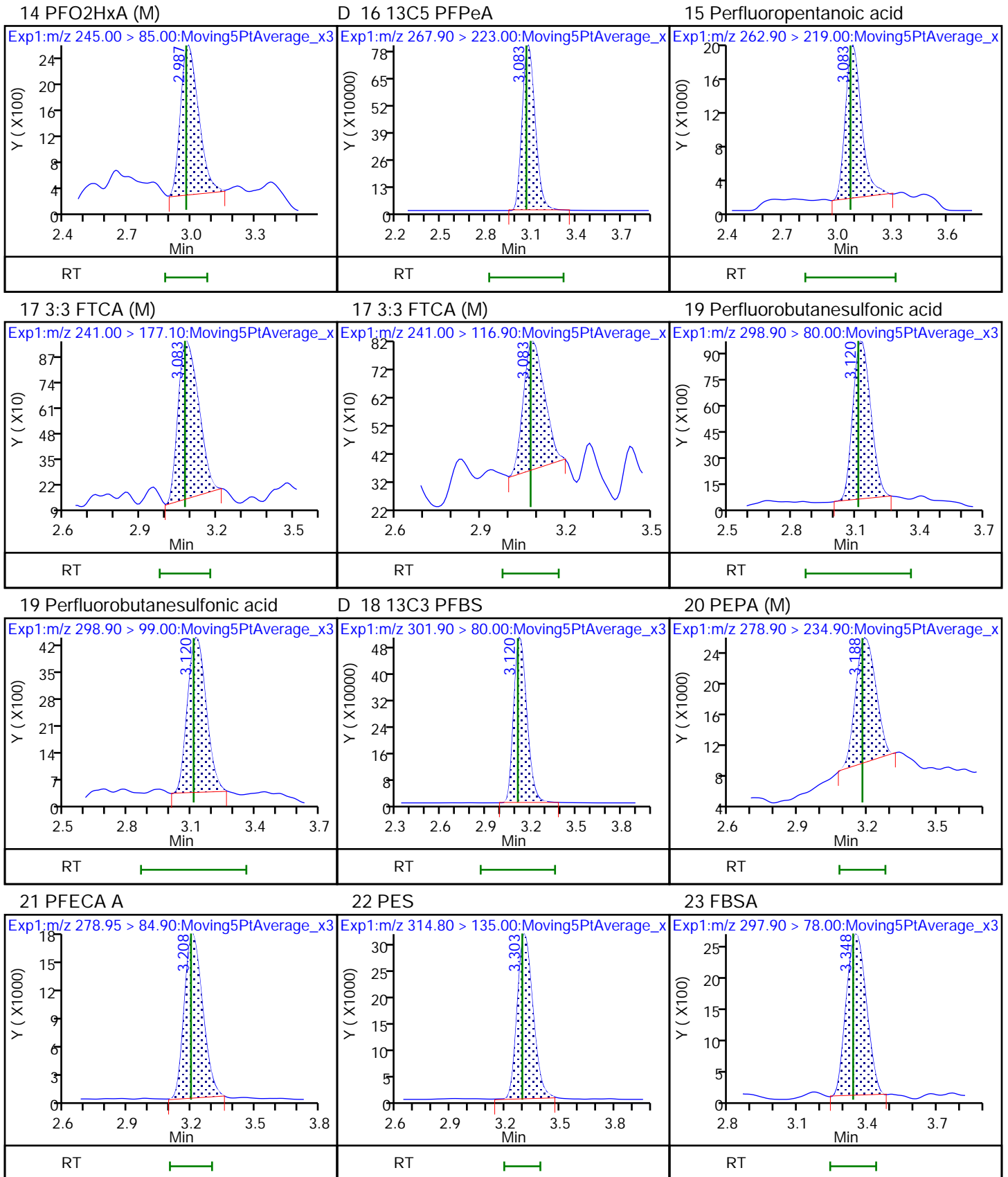


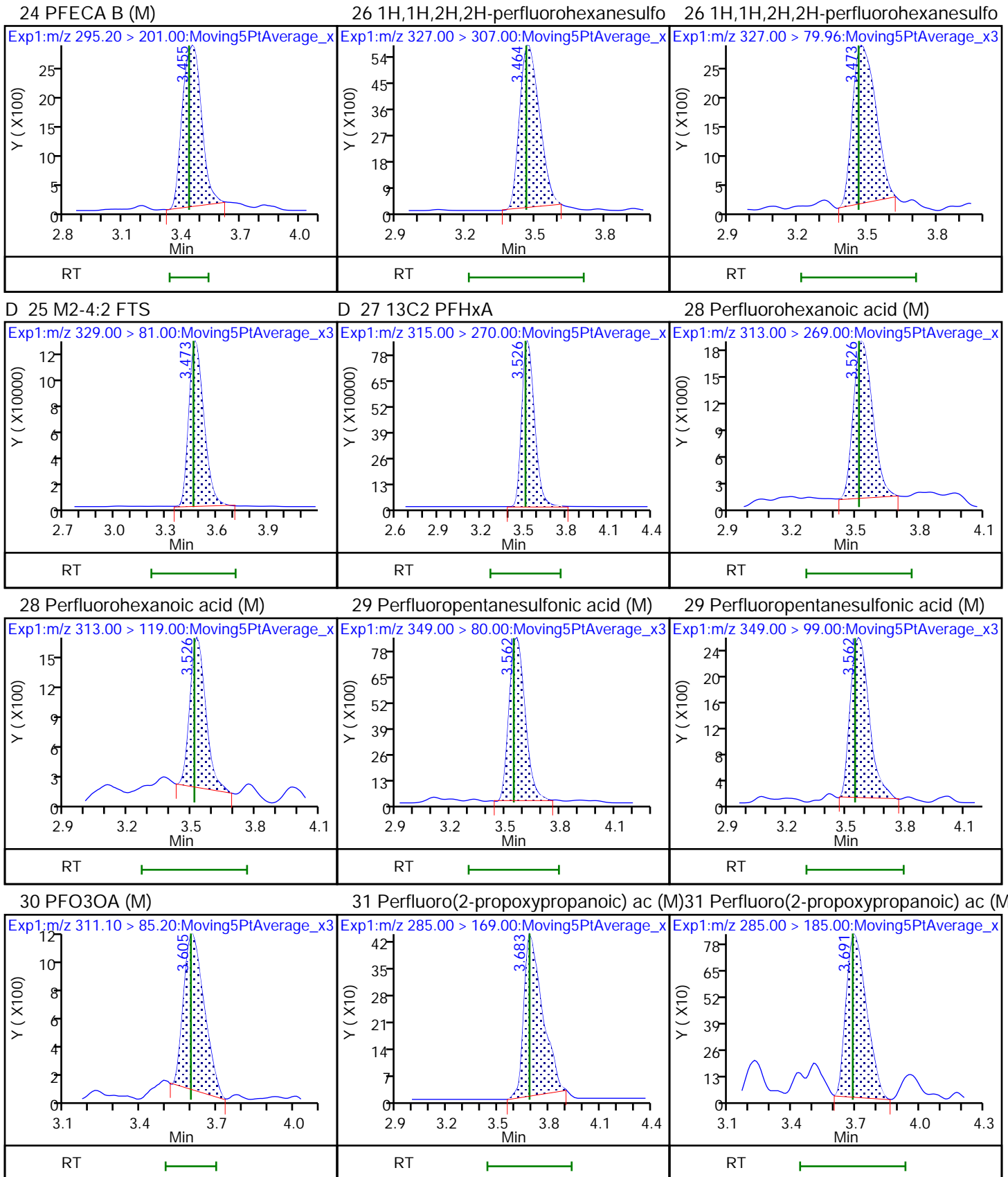
12 NVHOS (M)



13 PFECA F (M)



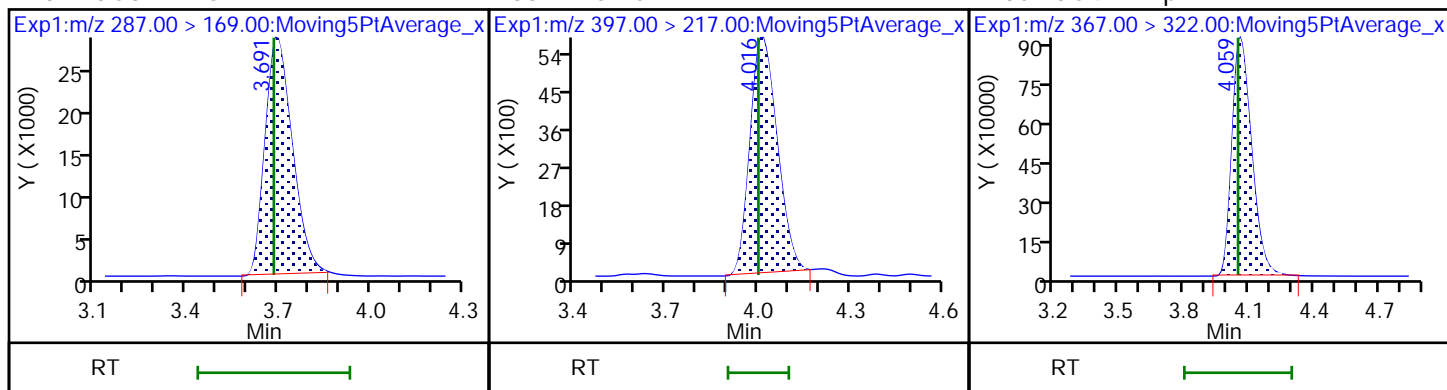




D 32 13C3 HFPO-DA

33 R-PSDCA

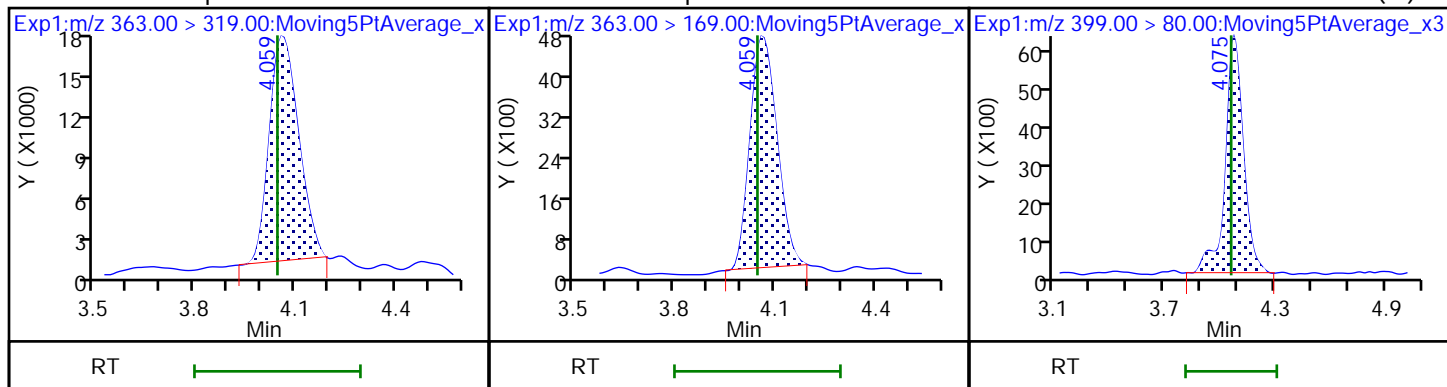
D 35 13C4 PFHpA



36 Perfluoroheptanoic acid

36 Perfluoroheptanoic acid

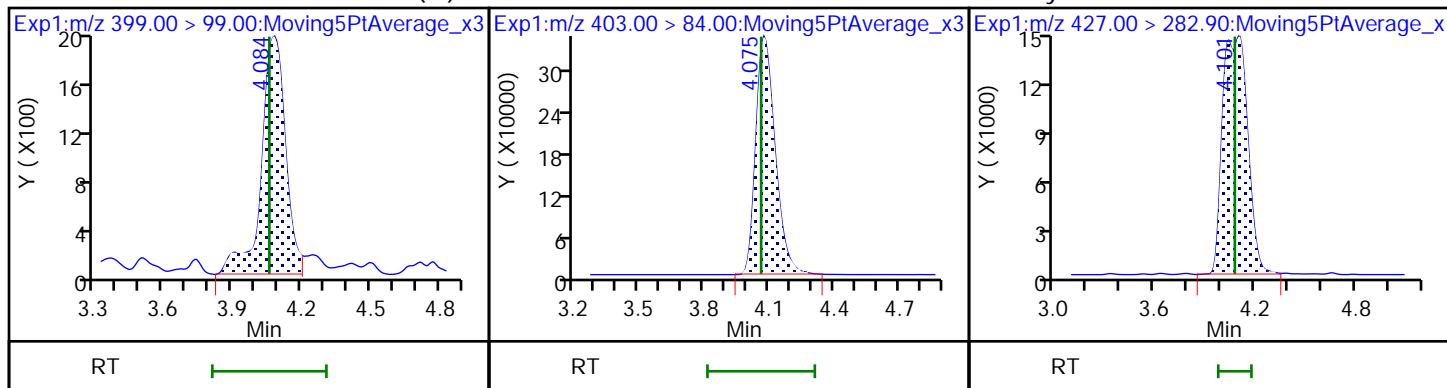
38 Perfluorohexanesulfonic acid (M)



38 Perfluorohexanesulfonic acid (M)

D 37 18O2 PFHxS

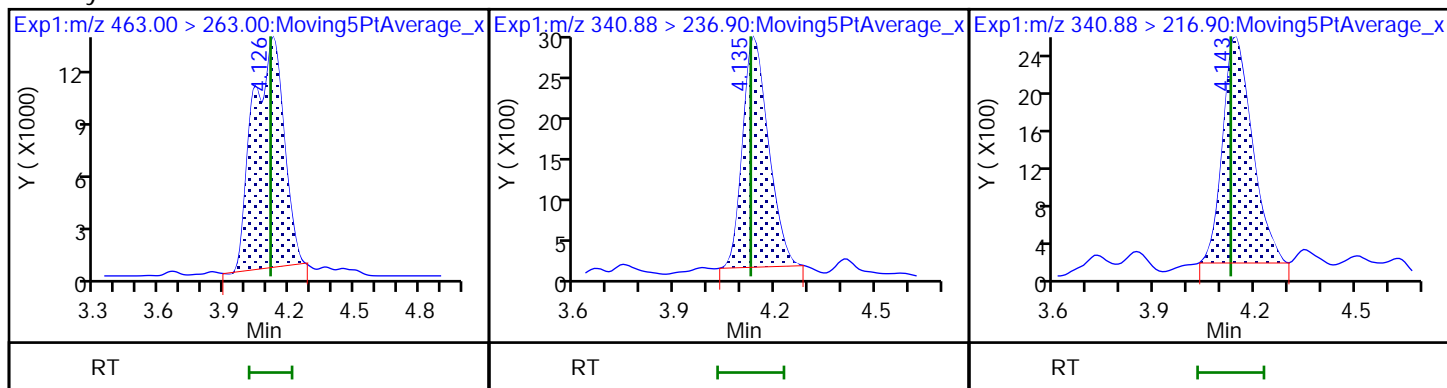
34 Hydro-EVE Acid

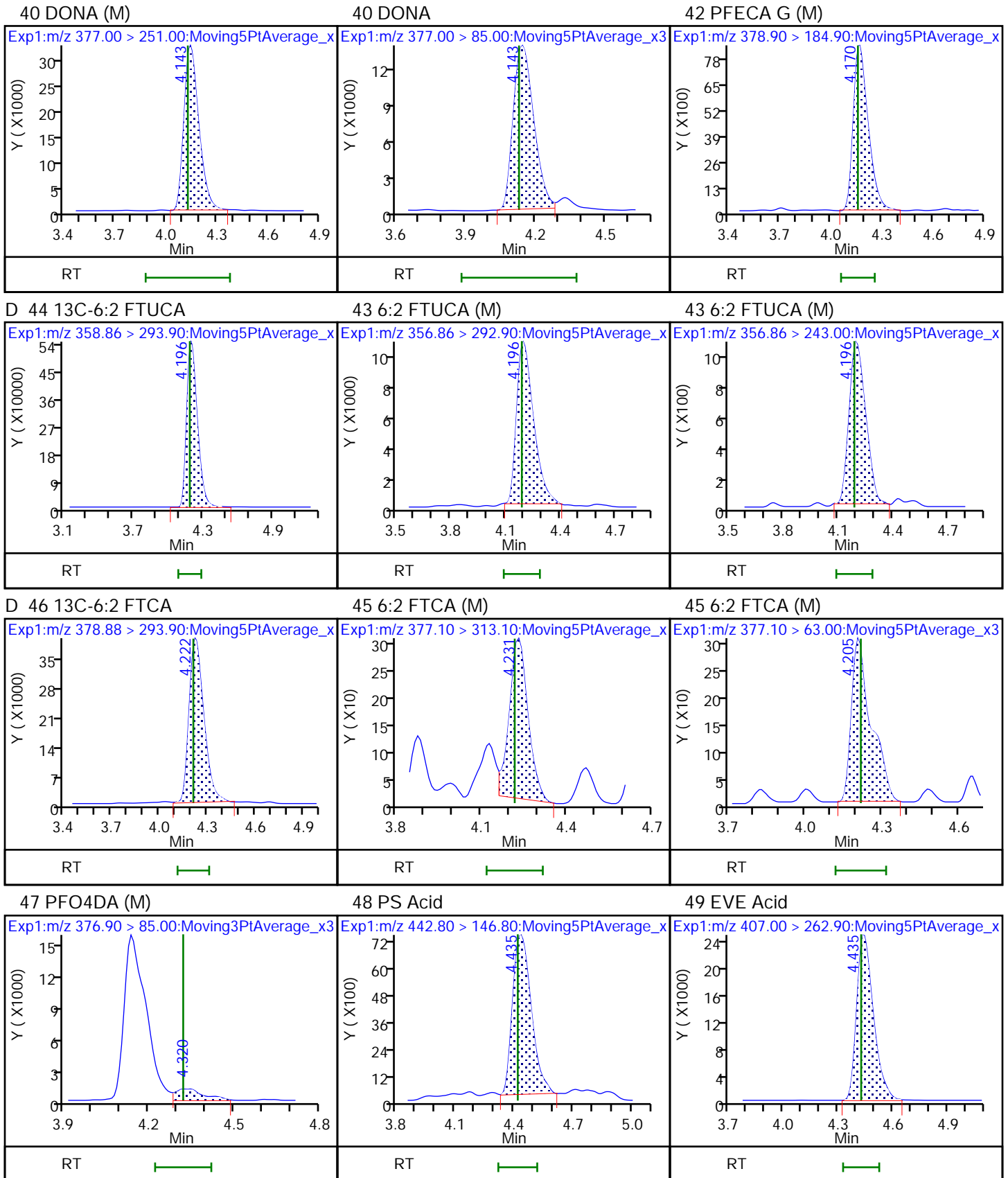


39 Hydro-PS Acid

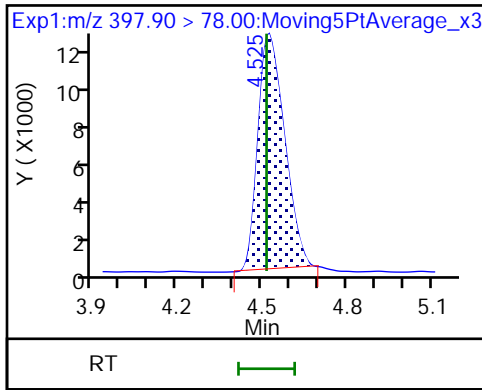
41 5:3 FTCA

41 5:3 FTCA

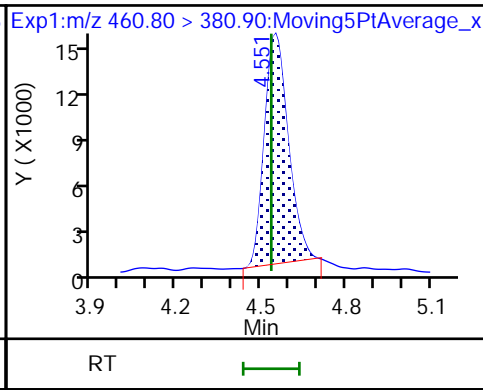




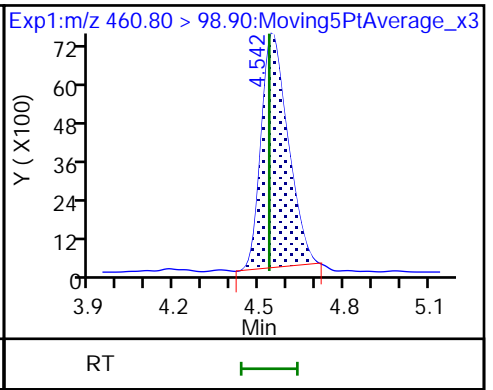
50 FHxSA



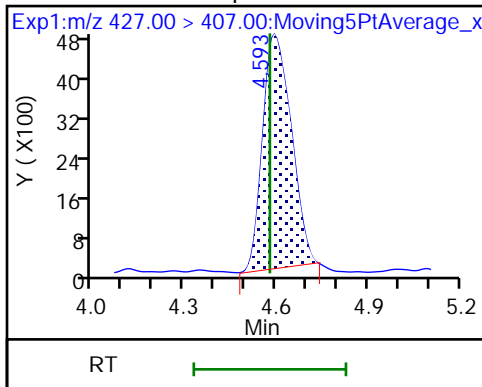
51 PFECHS



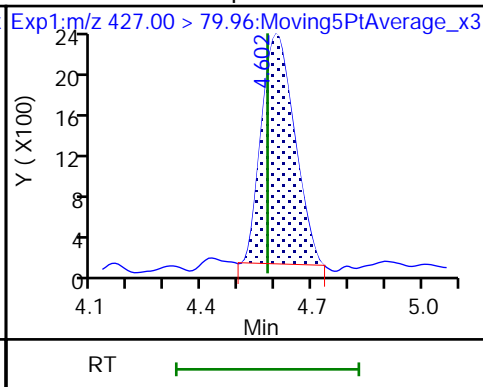
51 PFECHS



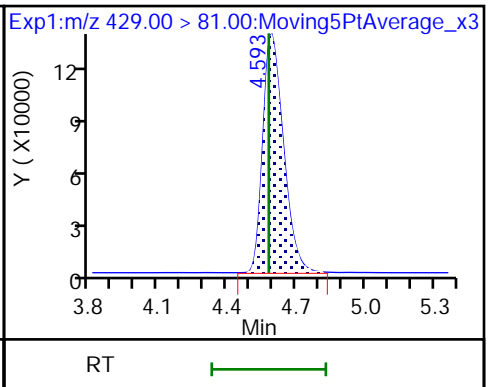
53 1H,1H,2H,2H-perfluorooctanesulfo



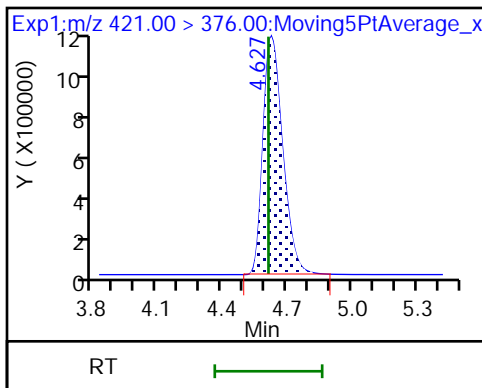
53 1H,1H,2H,2H-perfluorooctanesulfo



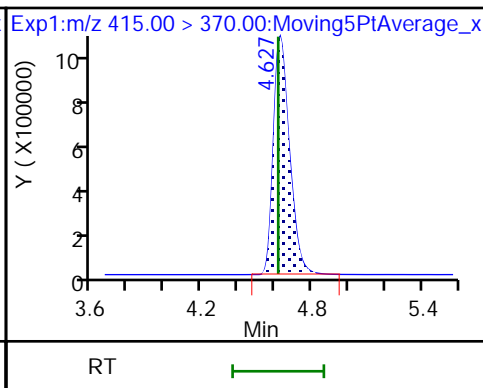
D 52 M2-6:2 FTS



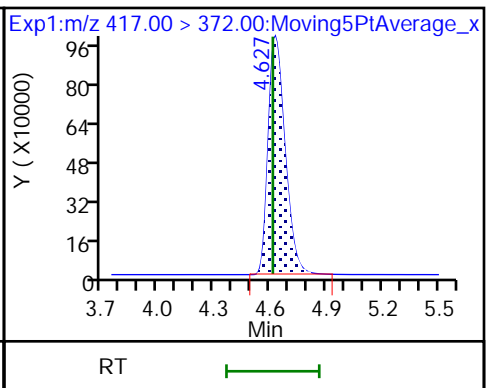
\$ 54 13C8 PFOA



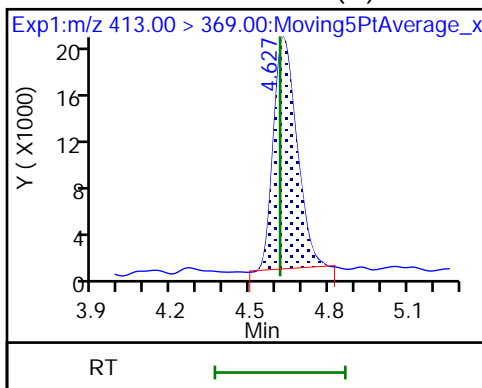
* 55 13C2 PFOA



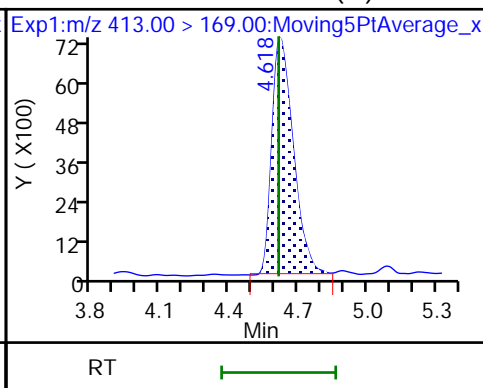
D 56 13C4 PFOA



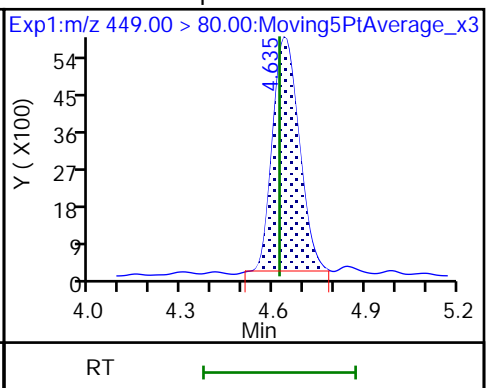
58 Perfluorooctanoic acid (M)



58 Perfluorooctanoic acid (M)



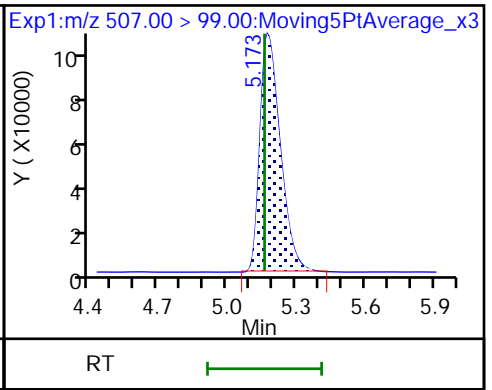
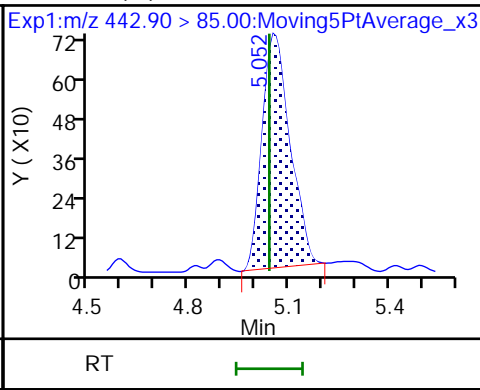
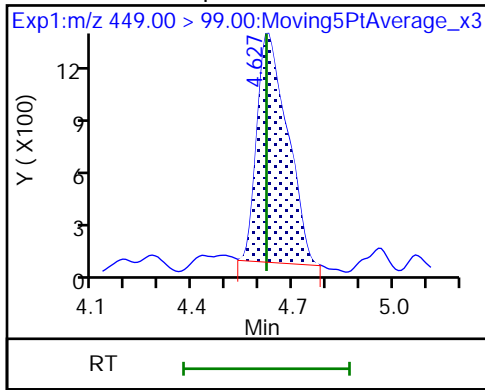
57 Perfluoroheptanesulfonic acid



57 Perfluoroheptanesulfonic acid

59 TAF (M)

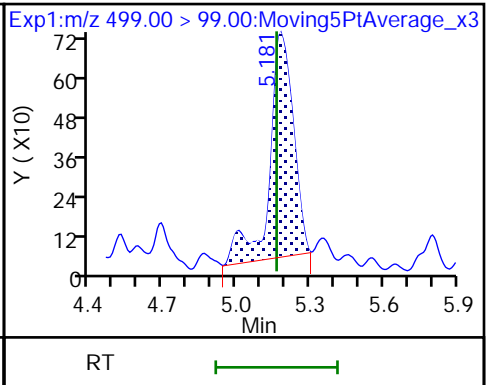
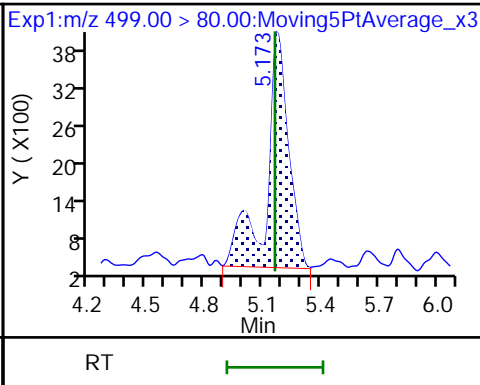
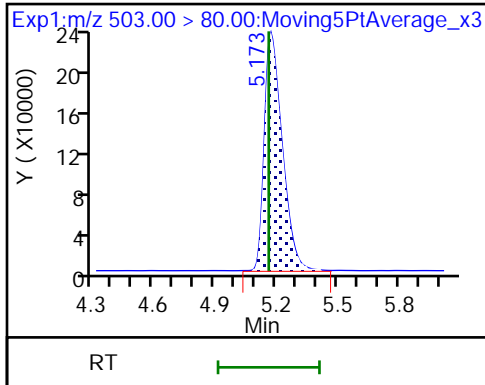
\$ 60 13C8 PFOS



D 61 13C4 PFOS

62 Perfluorooctanesulfonic acid (M)

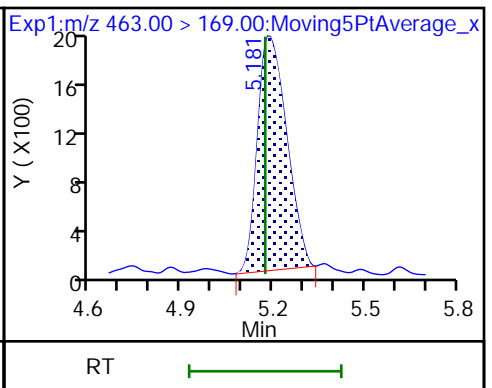
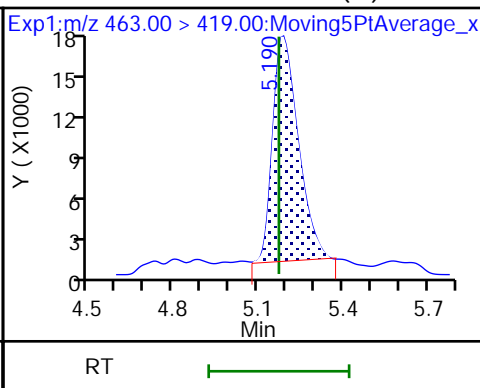
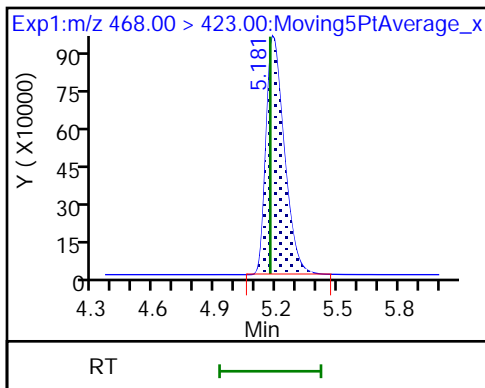
62 Perfluorooctanesulfonic acid (M)



D 64 13C5 PFNA

63 Perfluorononanoic acid (M)

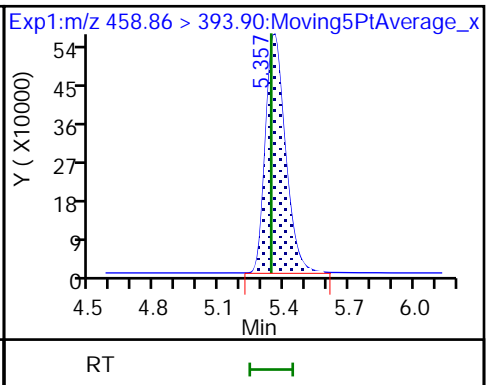
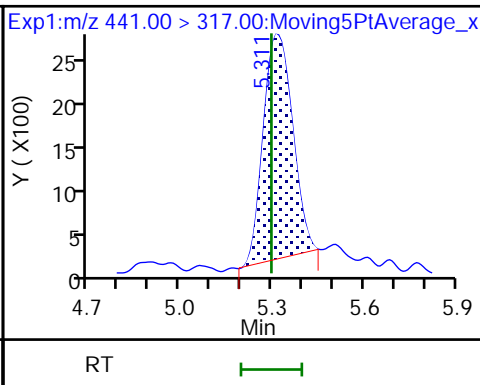
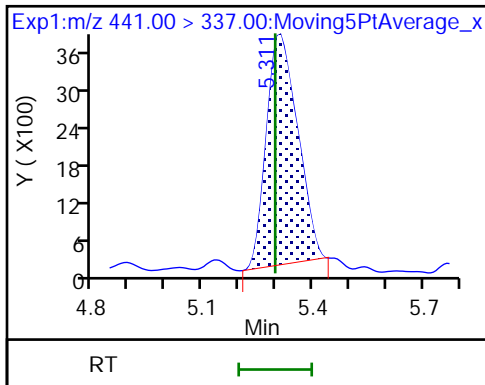
63 Perfluorononanoic acid

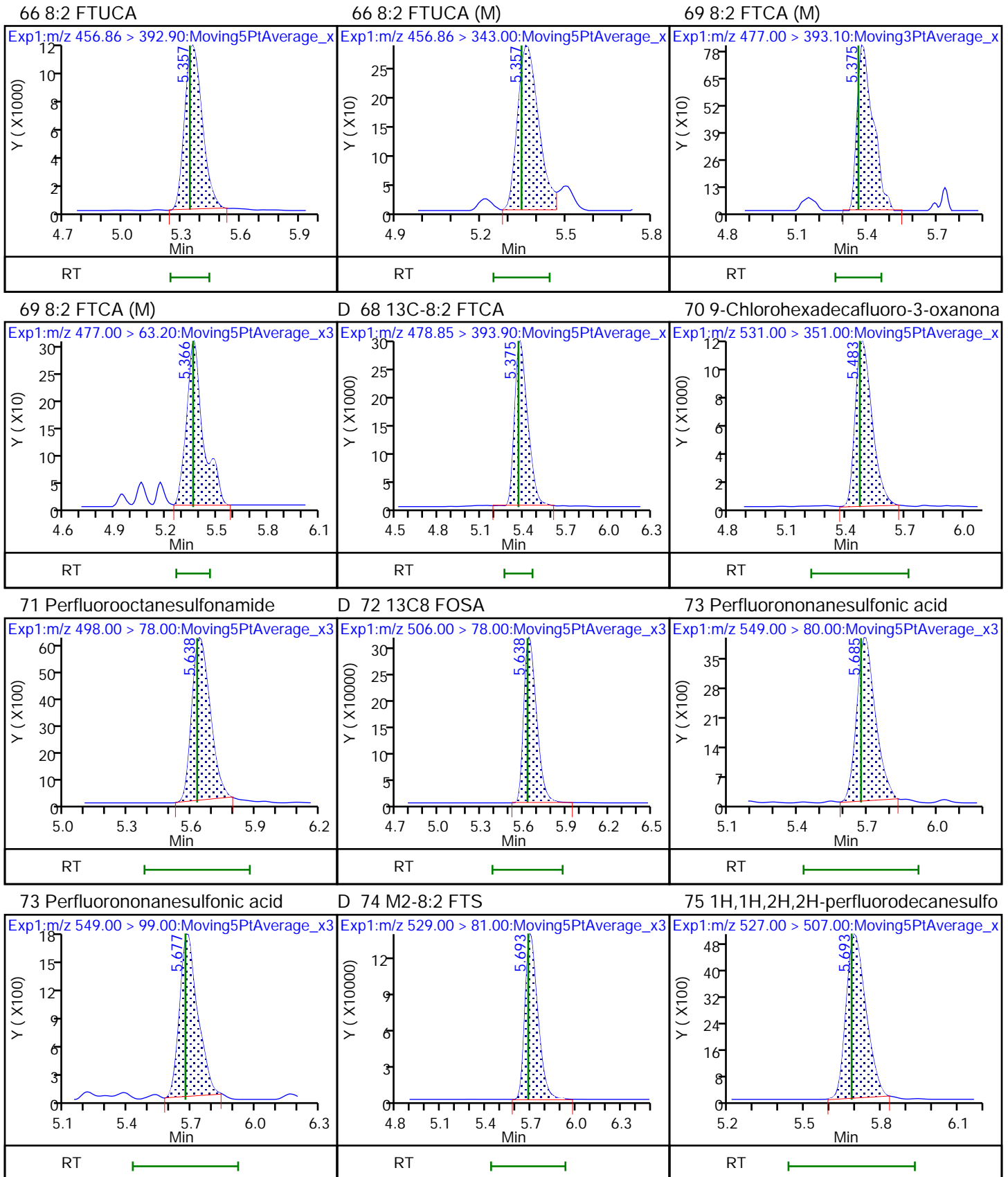


65 7:3 FTCA

65 7:3 FTCA

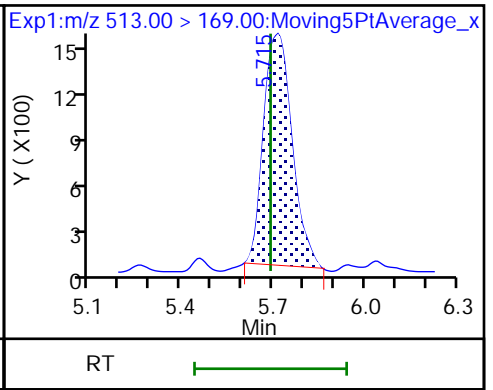
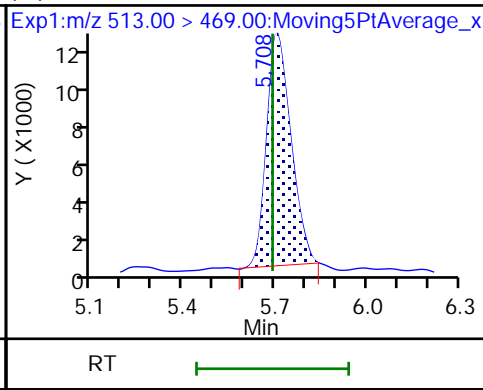
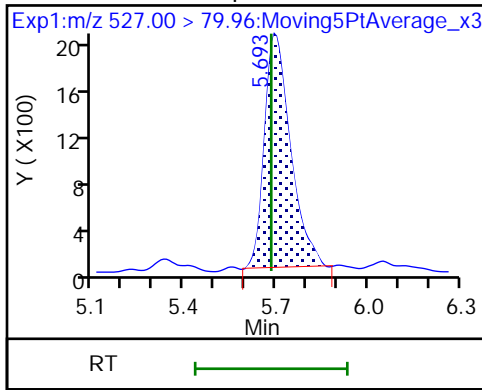
D 67 13C-8:2 FTUCA





75 1H,1H,2H,2H-perfluorodecanesulfo (M) Perfluorodecanoic acid

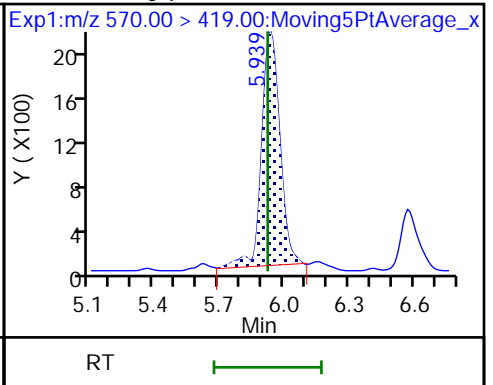
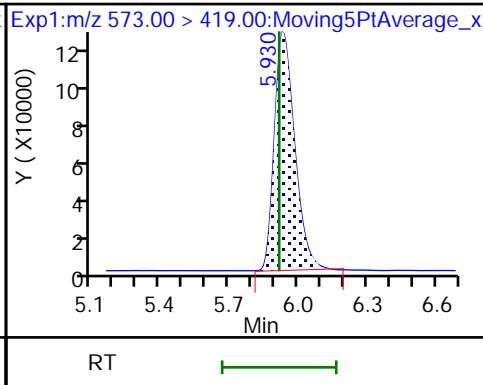
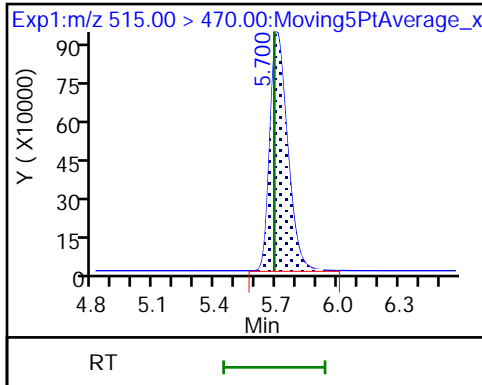
77 Perfluorodecanoic acid



D 76 13C2 PFDA

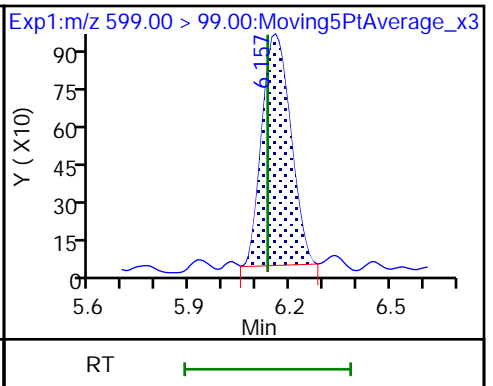
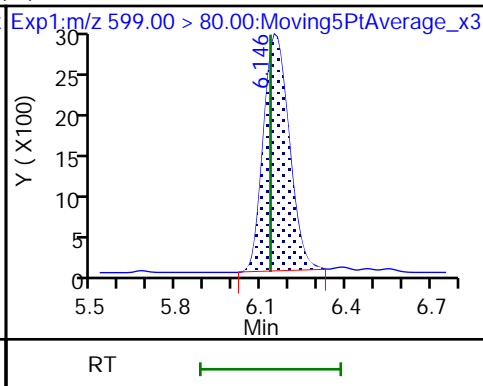
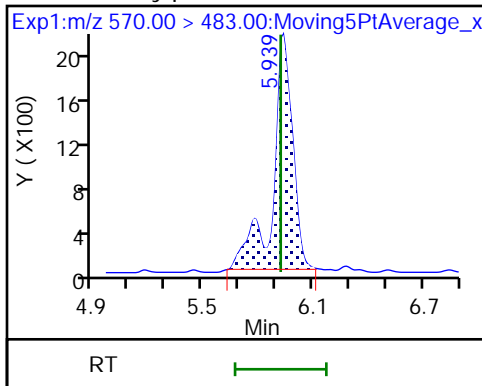
D 78 d3-NMeFOSAA

79 N-methylperfluorooctanesulfonami (M)



79 N-methylperfluorooctanesulfonami (M) 80 Perfluorodecanesulfonic acid

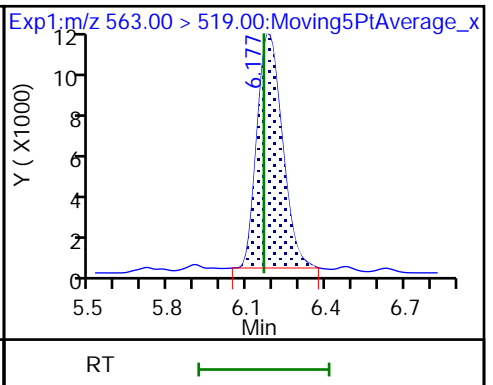
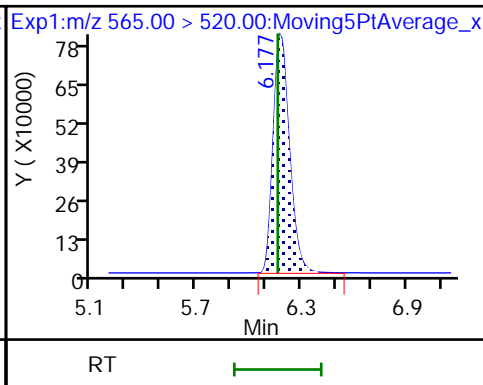
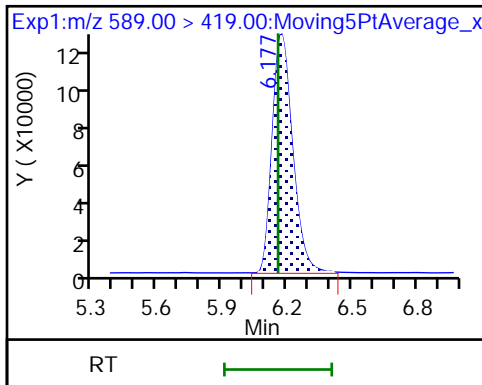
80 Perfluorodecanesulfonic acid



D 81 d5-NEtFOSAA

D 82 13C2 PFUnA

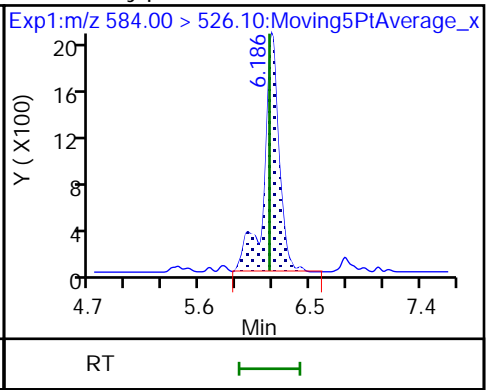
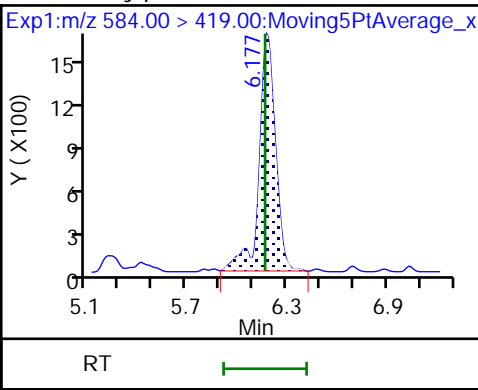
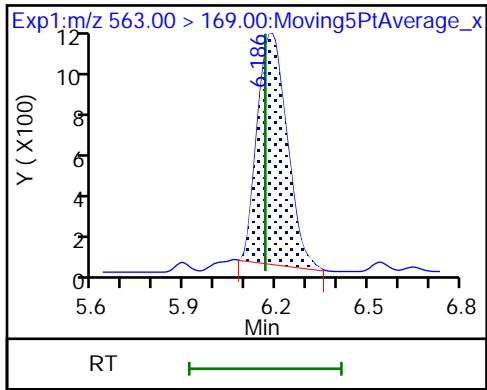
83 Perfluoroundecanoic acid



83 Perfluoroundecanoic acid

84 N-ethylperfluorooctanesulfonamid

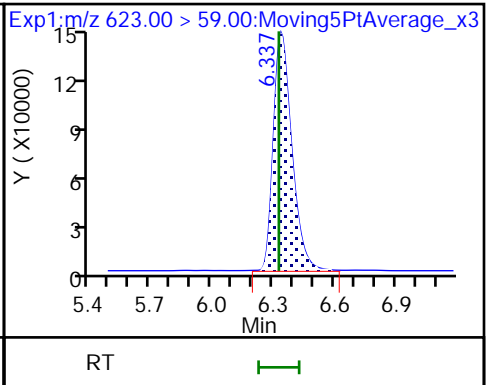
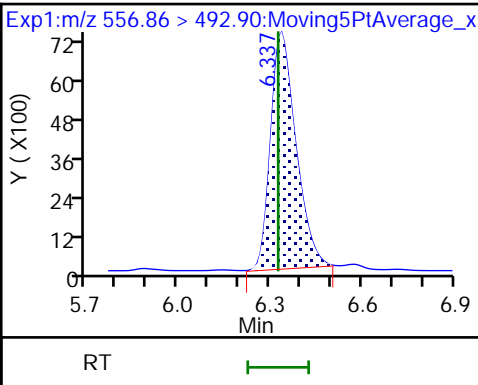
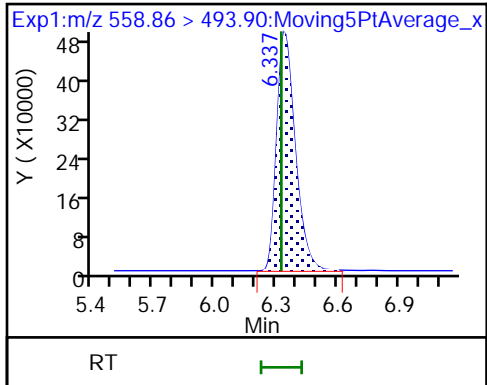
84 N-ethylperfluorooctanesulfonamid



D 89 13C-10:2 FTUCA

90 10:2 FTUCA

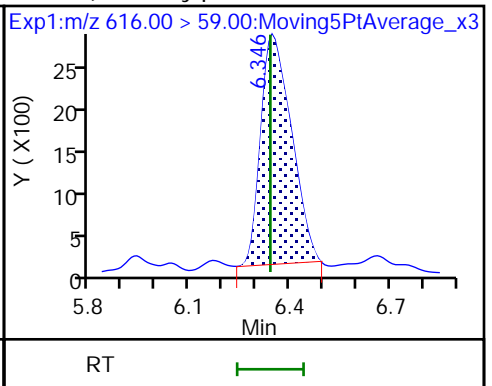
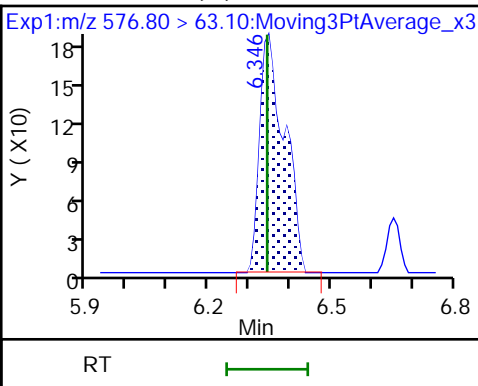
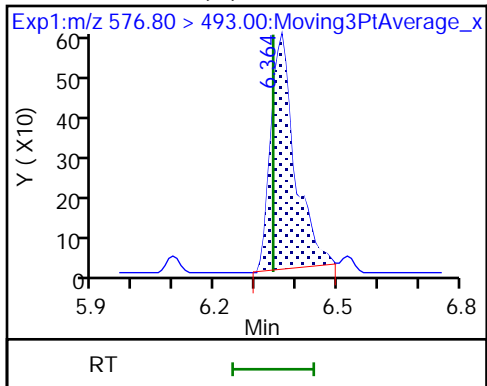
D 85 d7-N-MeFOSE-M



92 10:2 FTCA (M)

92 10:2 FTCA (M)

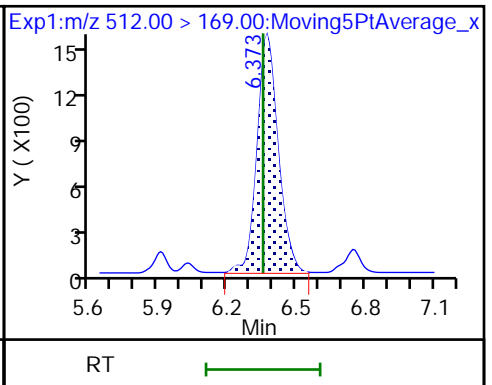
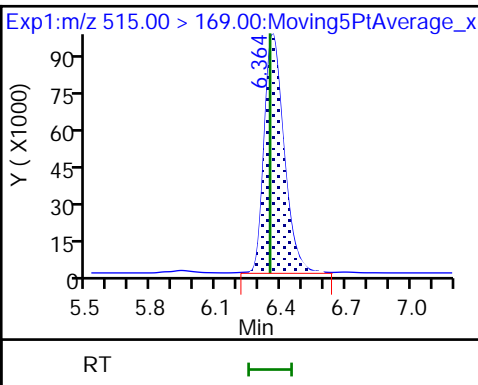
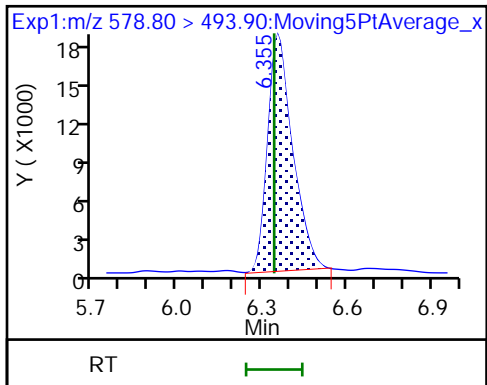
86 2-(N-methylperfluoro-1-octanesul



D 91 13C-10:2 FTCA

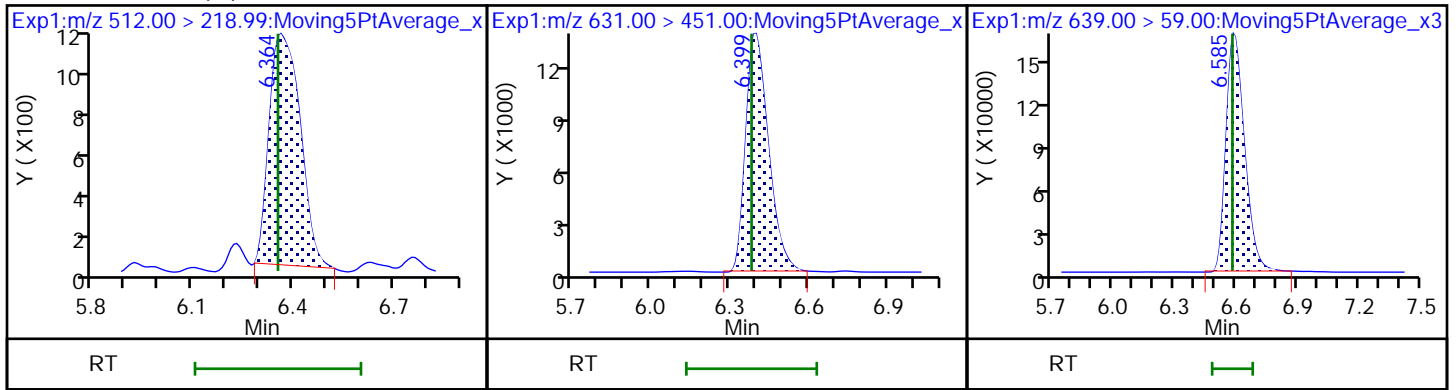
D 87 d-N-MeFOSA-M

88 NMeFOSA



88 NMeFOSA (M)

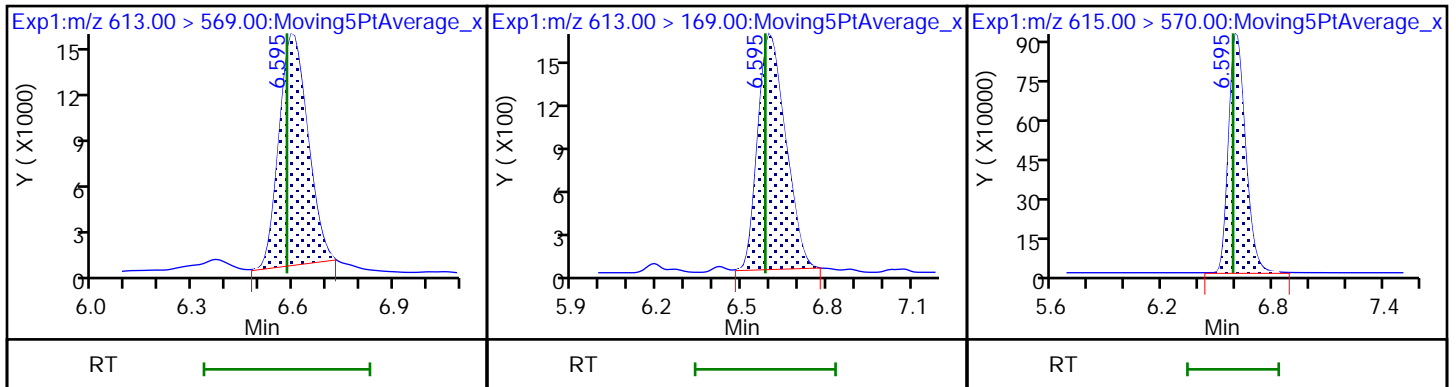
93 11-Chloroeicosafuoro-3-oxaundec D 94 d9-N-EtFOSE-M



99 Perfluorododecanoic acid

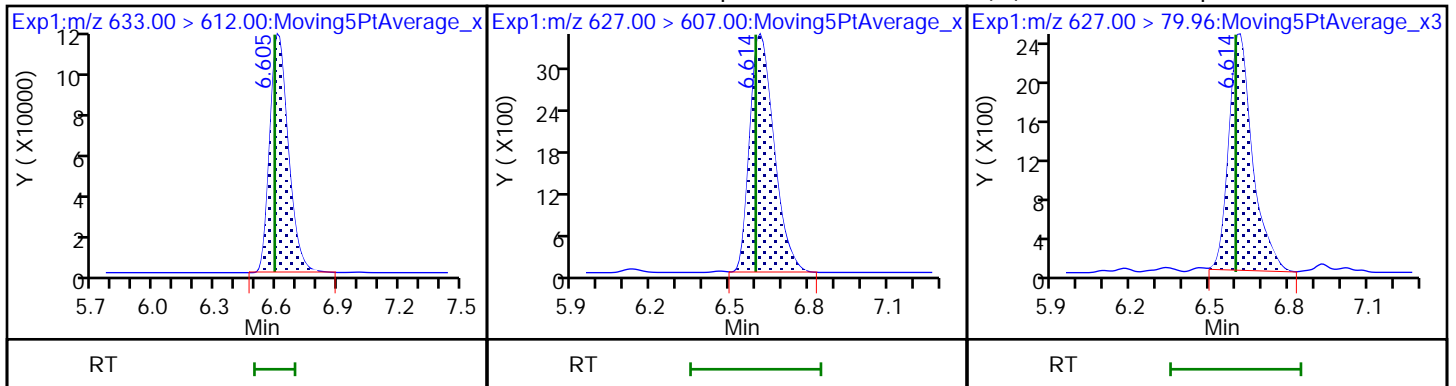
99 Perfluorododecanoic acid

D 98 13C2 PFDa



D 100 13C2 10:2 FTS

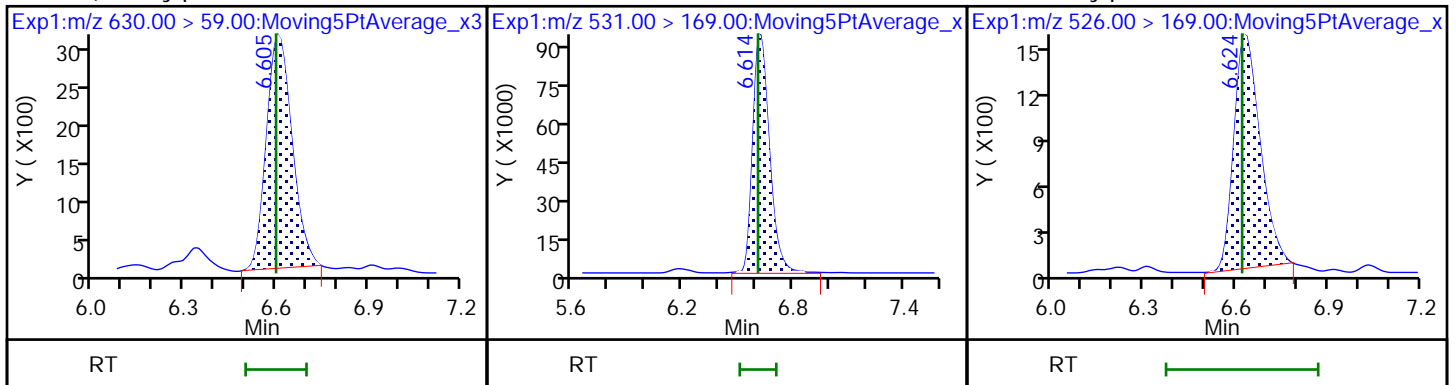
101 1H,1H,2H,2H-perfluorododecanesul (101) 1H,1H,2H,2H-perfluorododecanesul



95 2-(N-ethylperfluoro-1-octanesulf

D 96 d-N-EtFOSE-M

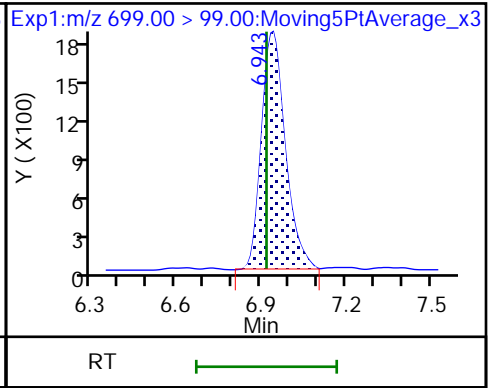
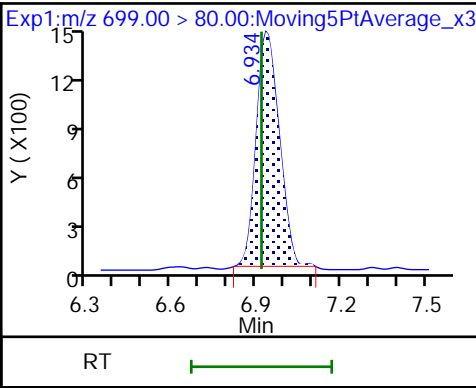
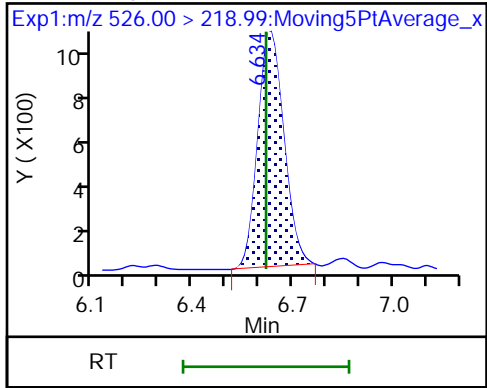
97 N-ethylperfluoro-1-octanesulfona



97 N-ethylperfluoro-1-octanesulfona

102 Perfluorododecanesulfonic acid (

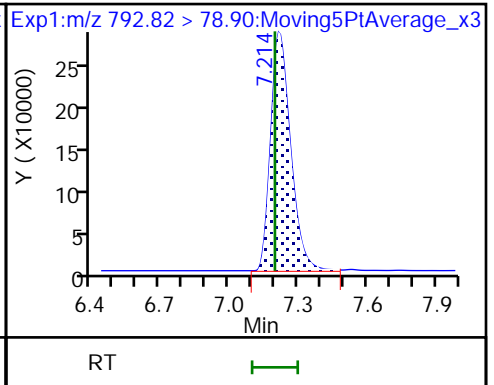
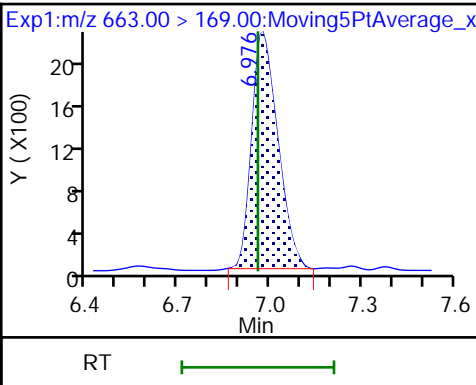
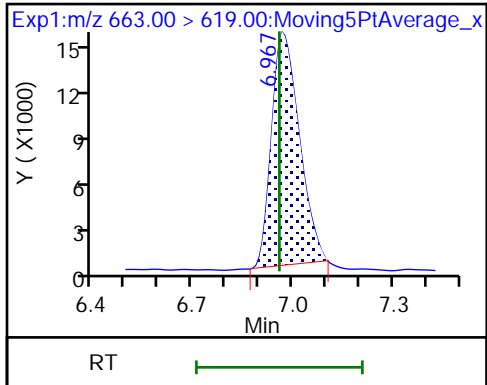
102 Perfluorododecanesulfonic acid (



103 Perfluorotridecanoic acid

103 Perfluorotridecanoic acid

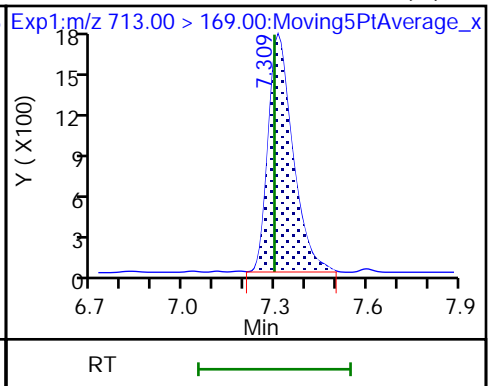
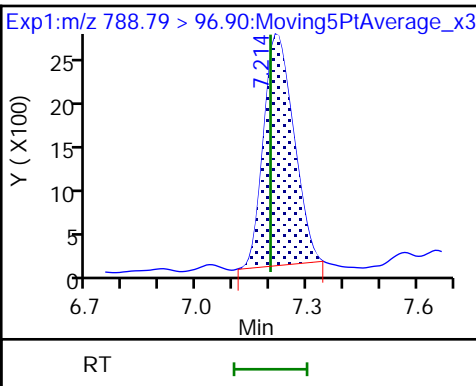
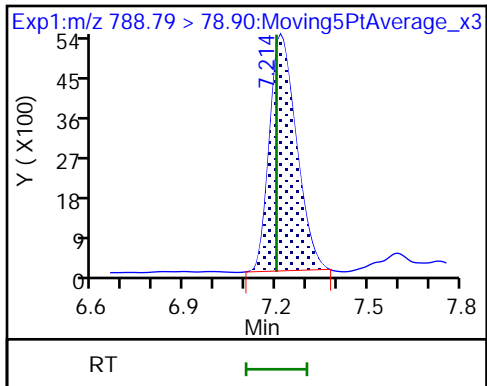
D 112 13C4-6:2 diPAP



114 6:2 diPAP

114 6:2 diPAP

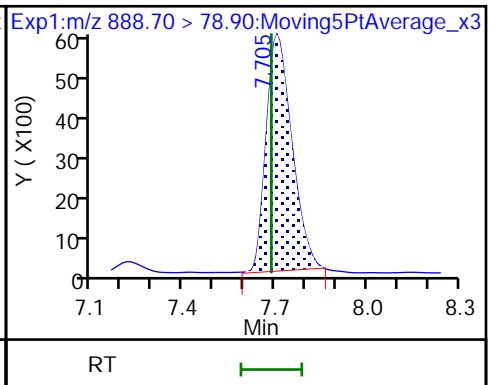
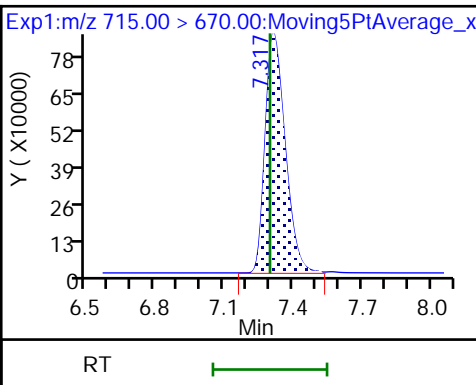
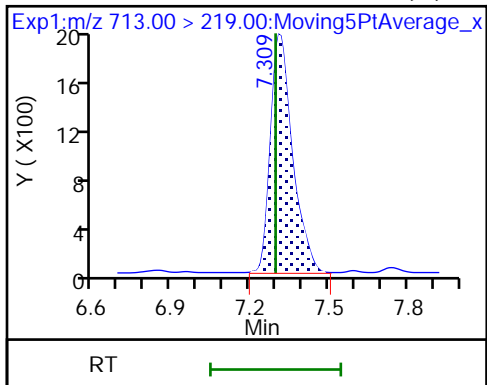
105 Perfluorotetradecanoic acid (M)



105 Perfluorotetradecanoic acid (M)

D 104 13C2 PFTeDA

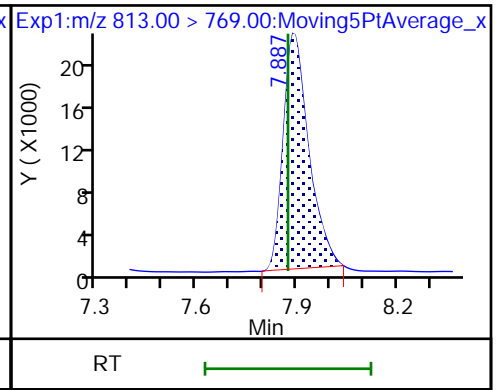
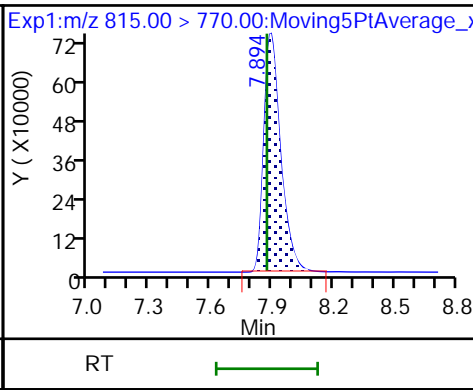
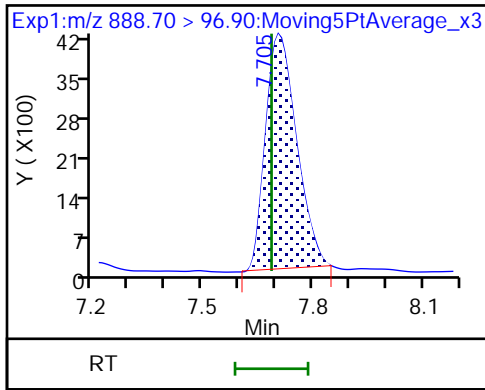
115 6:2/8:2 diPAP



115 6:2/8:2 diPAP

D 106 13C2 PFHxD

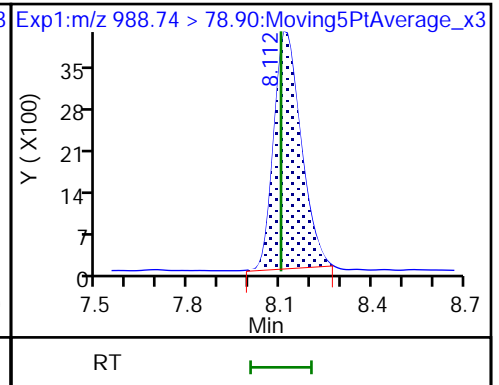
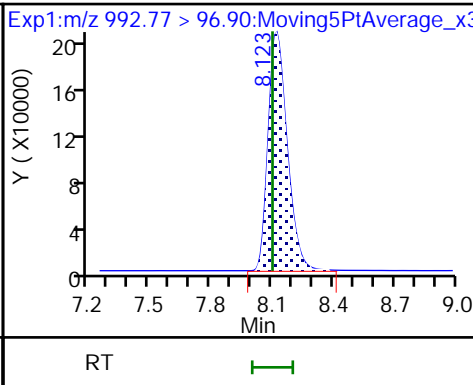
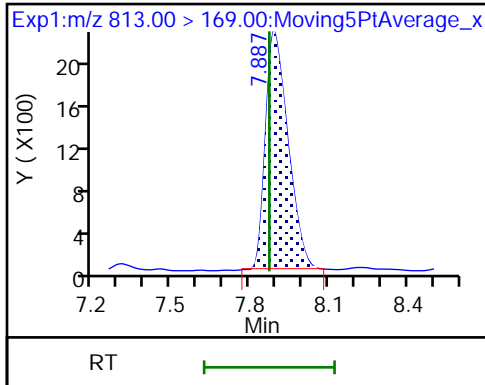
107 Perfluorohexadecanoic acid



107 Perfluorohexadecanoic acid

D 113 13C4-8:2 diPAP

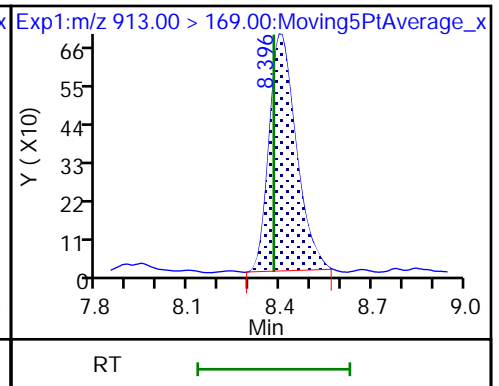
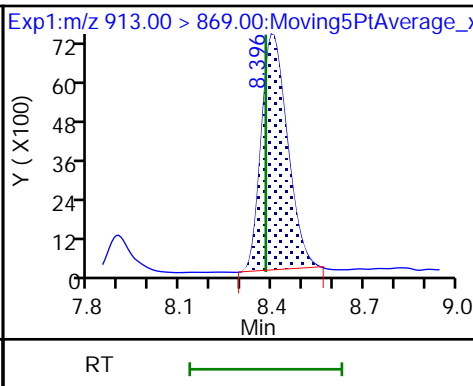
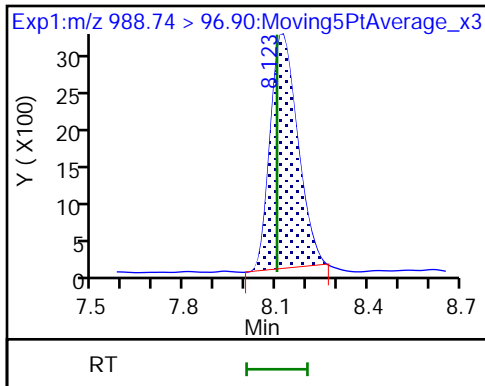
116 8:2 diPAP



116 8:2 diPAP

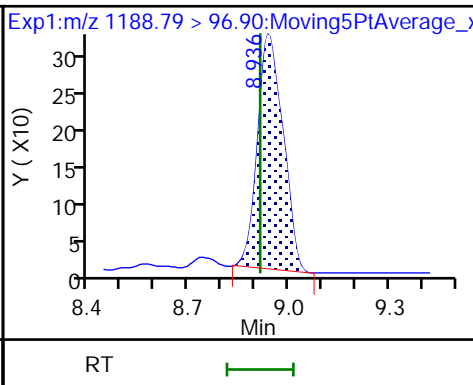
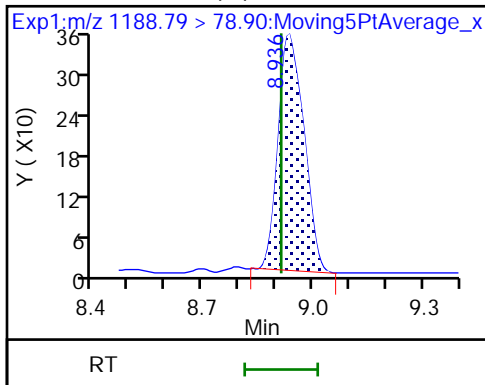
108 Perfluorooctadecanoic acid

108 Perfluorooctadecanoic acid



117 10:2 diPAP (M)

117 10:2 diPAP



Eurofins Sacramento

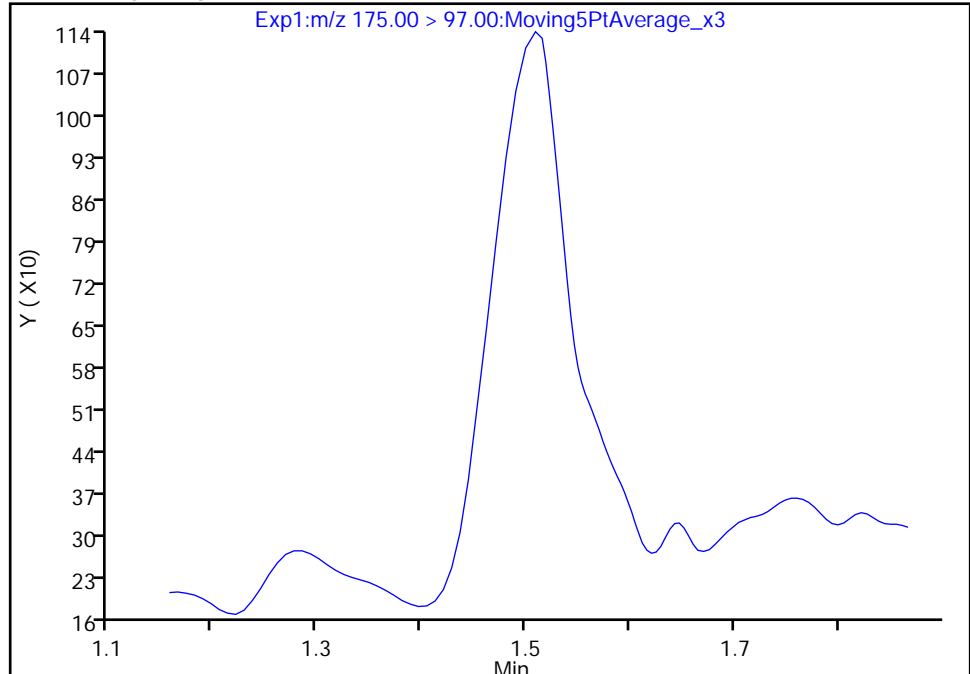
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

1 MTP, CAS: 93449-21-9

Signal: 1

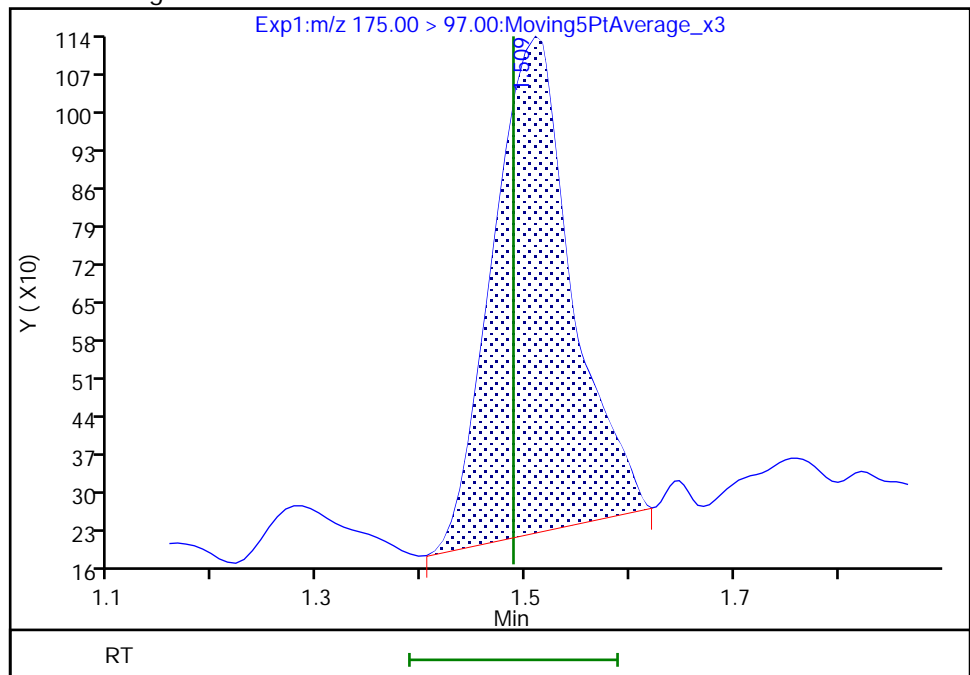
Not Detected
Expected RT: 1.49

Processing Integration Results



Manual Integration Results

RT: 1.51
Area: 4793
Amount: 0.028305
Amount Units: ng/ml



Reviewer: YS2U, 21-Dec-2022 13:20:12

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Eurofins Sacramento

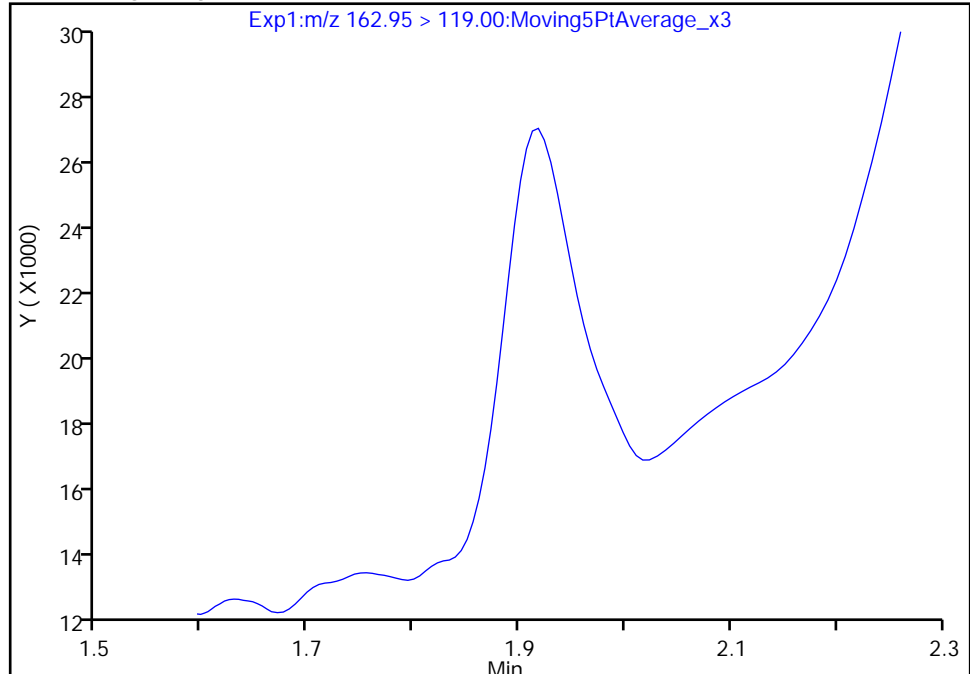
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

2 PPF Acid, CAS: 422-64-0

Signal: 1

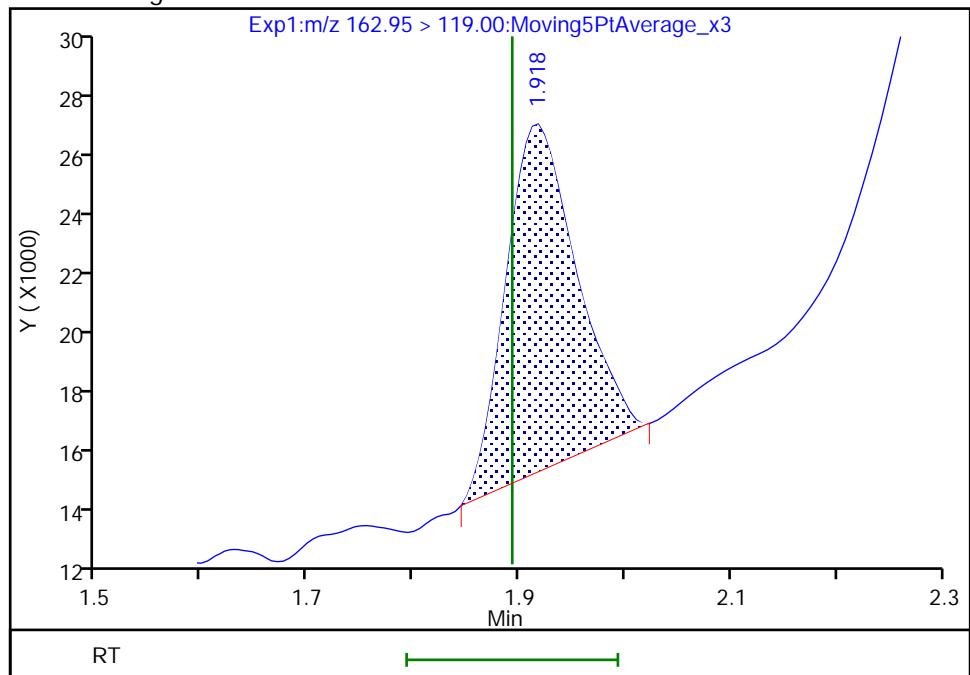
Not Detected
Expected RT: 1.89

Processing Integration Results



RT: 1.92
Area: 49892
Amount: 0.043841
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:20:22
Audit Action: Manually Integrated

Audit Reason: Assign Peak
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Eurofins Sacramento

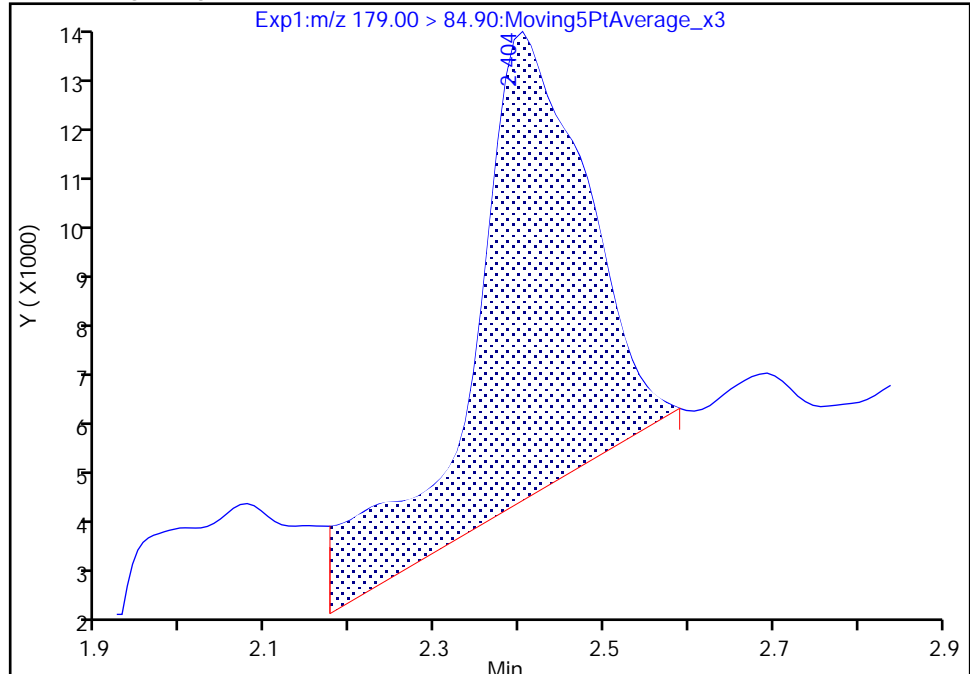
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

3 PFMOAA, CAS: 674-13-5

Signal: 1

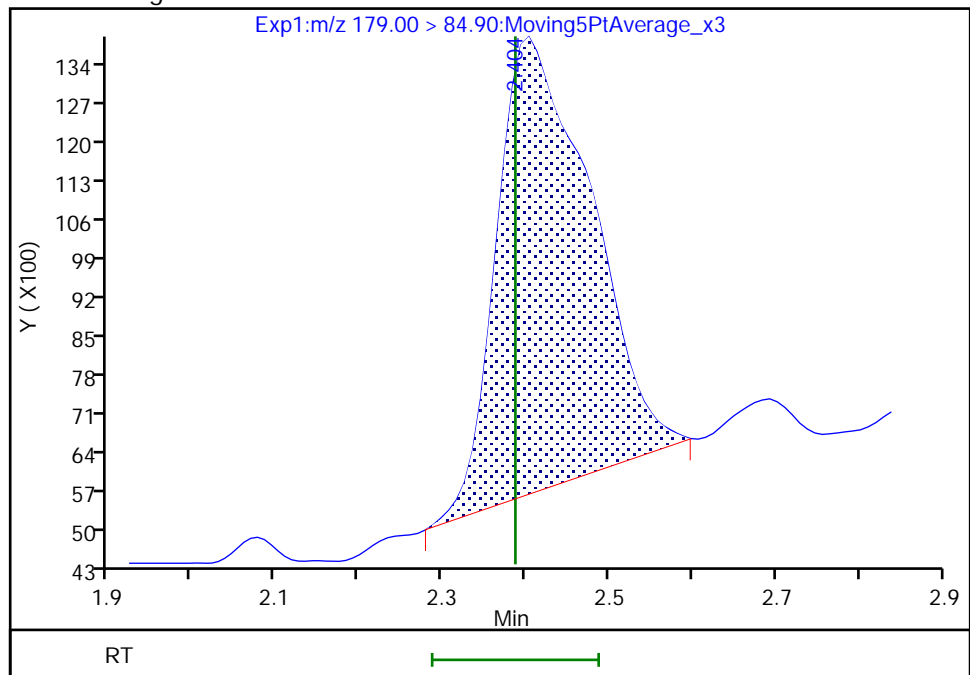
RT: 2.40
Area: 85041
Amount: 0.031492
Amount Units: ng/ml

Processing Integration Results



RT: 2.40
Area: 64655
Amount: 0.027252
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:20:38

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

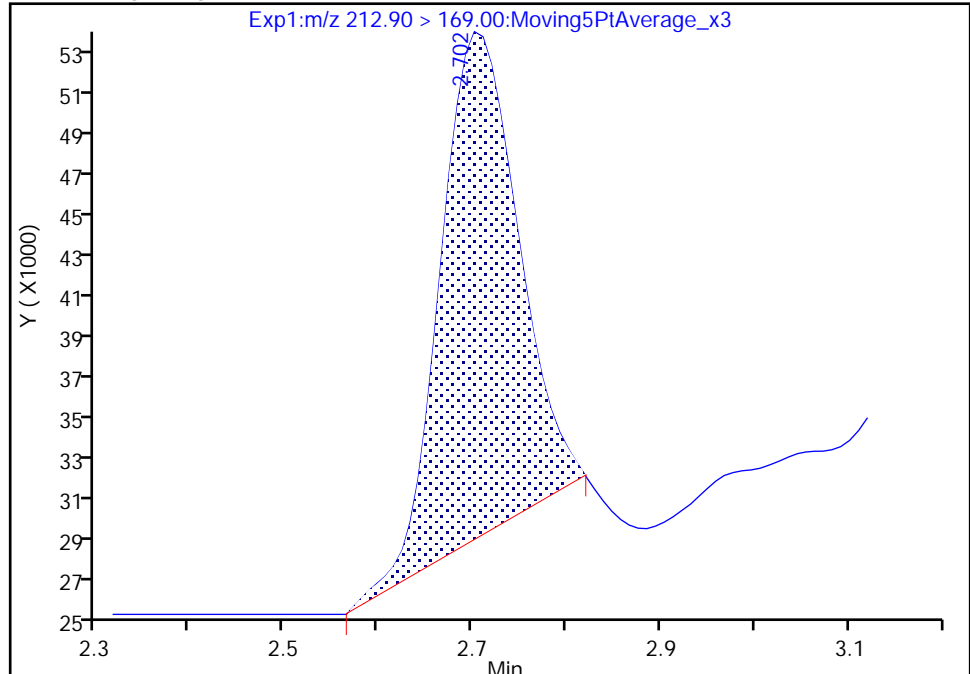
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

7 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

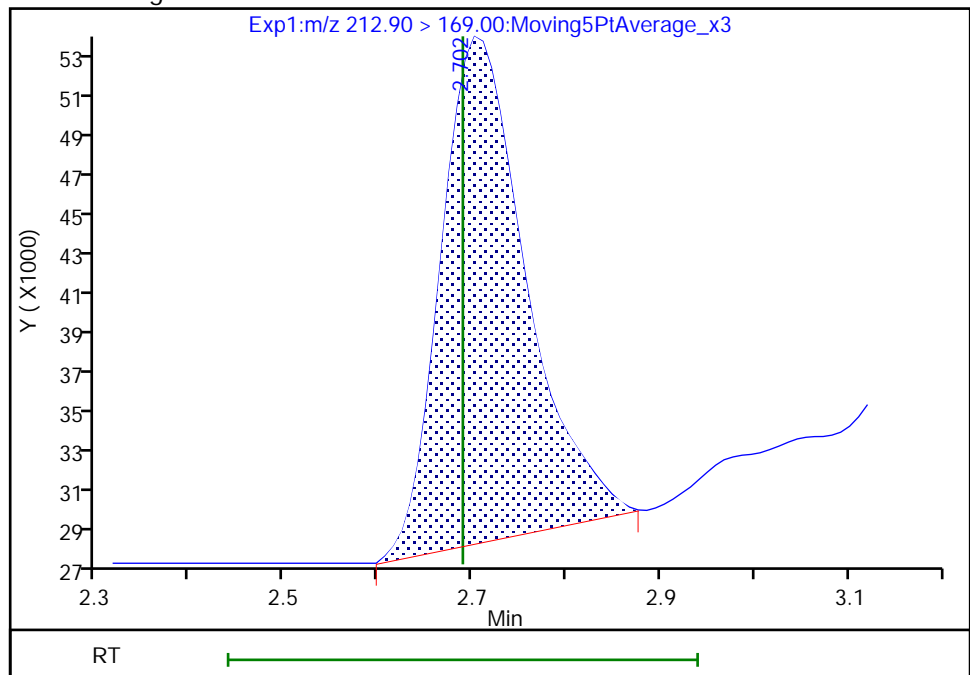
RT: 2.70
Area: 141922
Amount: 0.028562
Amount Units: ng/ml

Processing Integration Results



RT: 2.70
Area: 161606
Amount: 0.034350
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:20:49

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

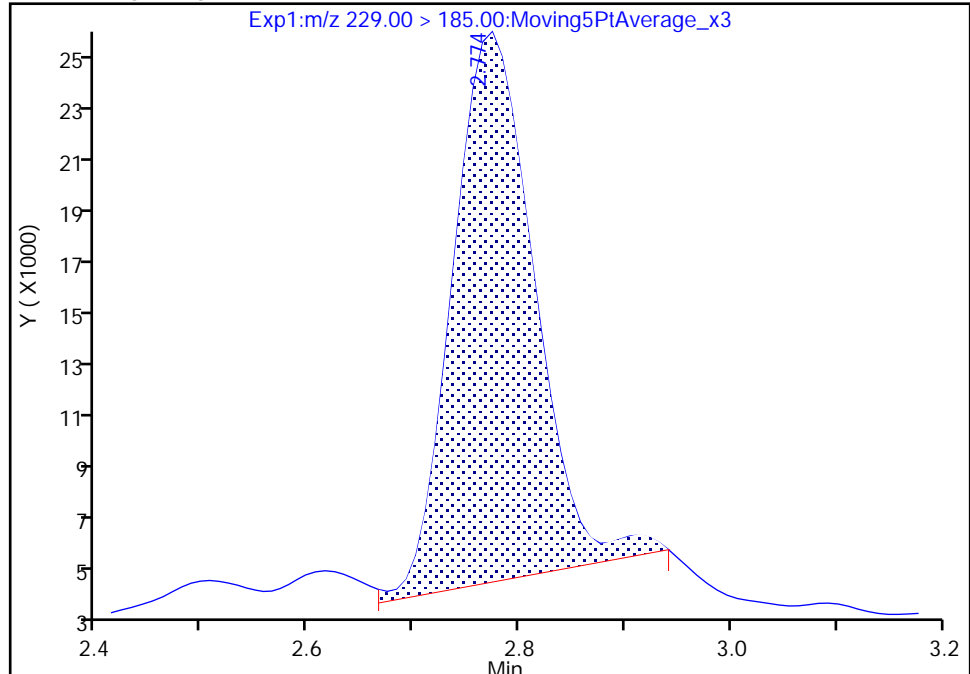
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

10 PMPA, CAS: 13140-29-9

Signal: 1

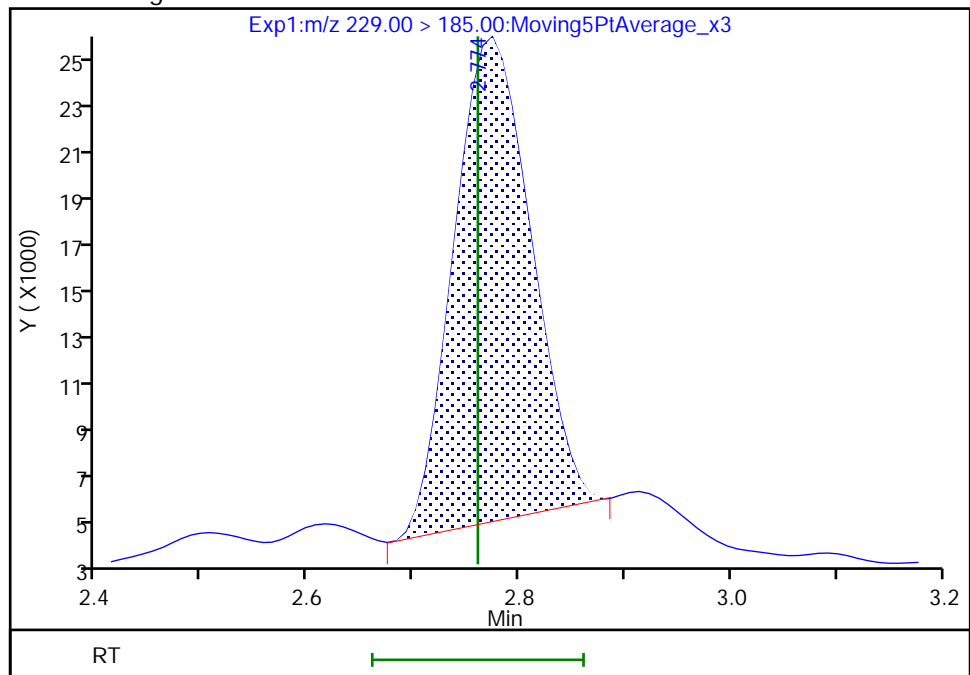
RT: 2.77
Area: 111692
Amount: 0.023099
Amount Units: ng/ml

Processing Integration Results



RT: 2.77
Area: 103252
Amount: 0.021231
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:21:01
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

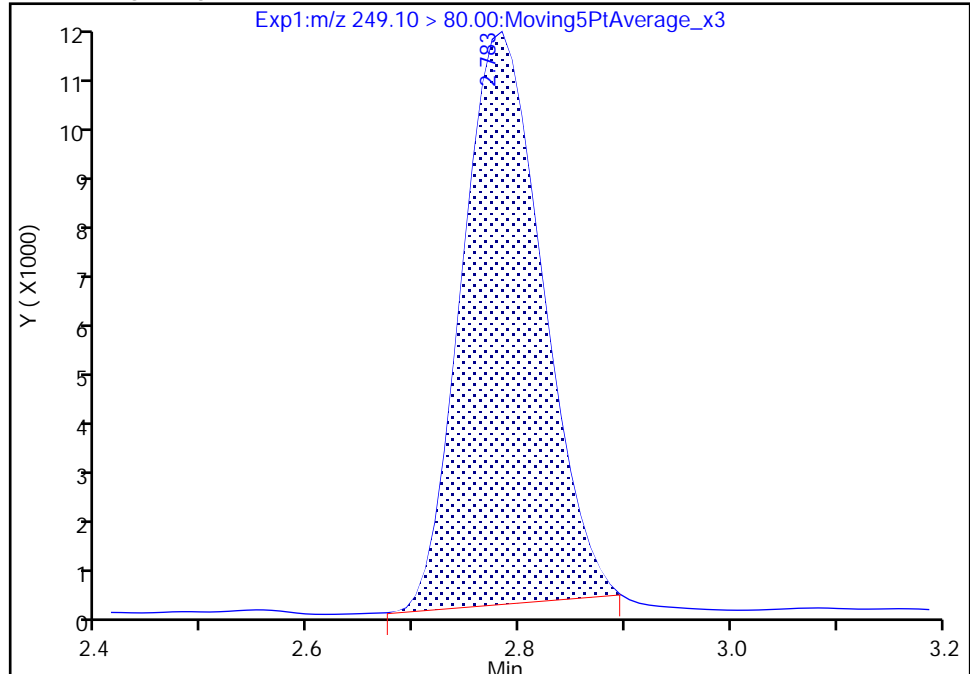
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

11 PFPrS, CAS: 423-41-6

Signal: 1

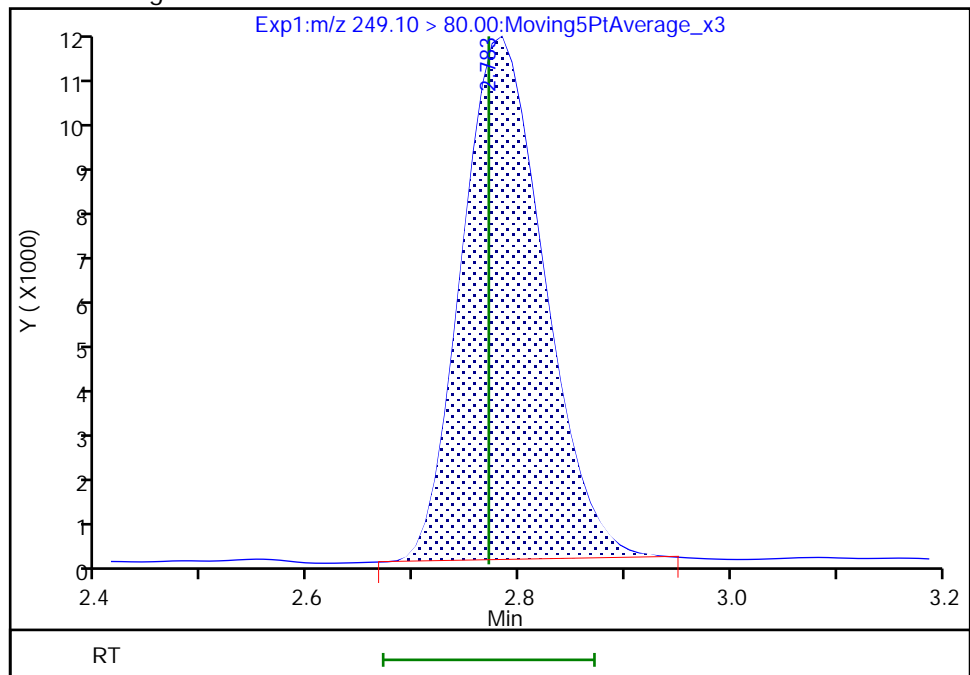
RT: 2.78
Area: 56520
Amount: 0.023041
Amount Units: ng/ml

Processing Integration Results



RT: 2.78
Area: 58559
Amount: 0.023681
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:21:09
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

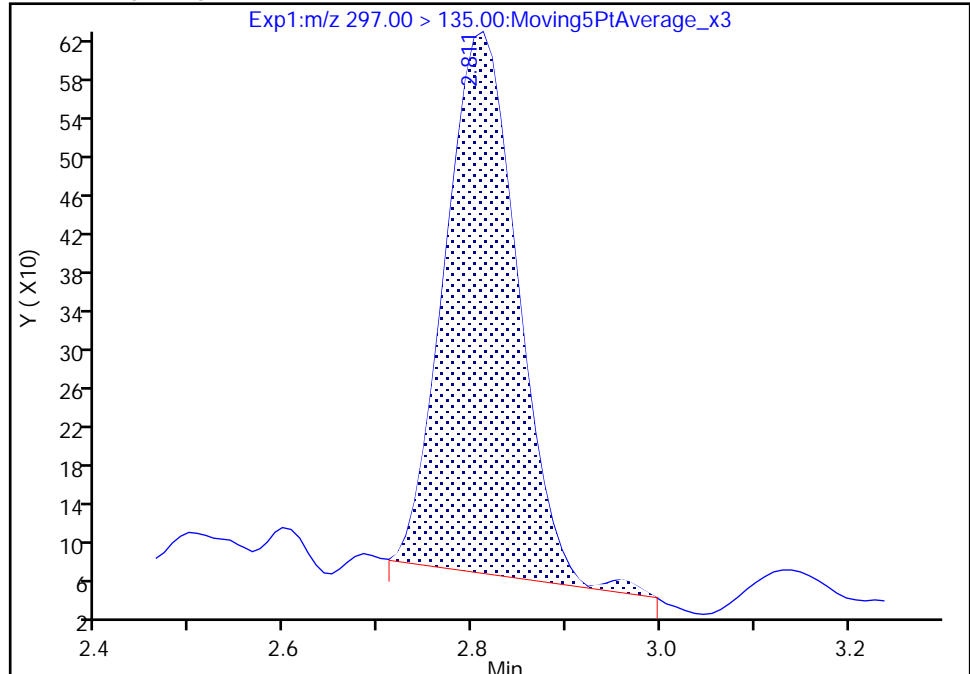
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

12 NVHOS, CAS: 801209-99-4

Signal: 1

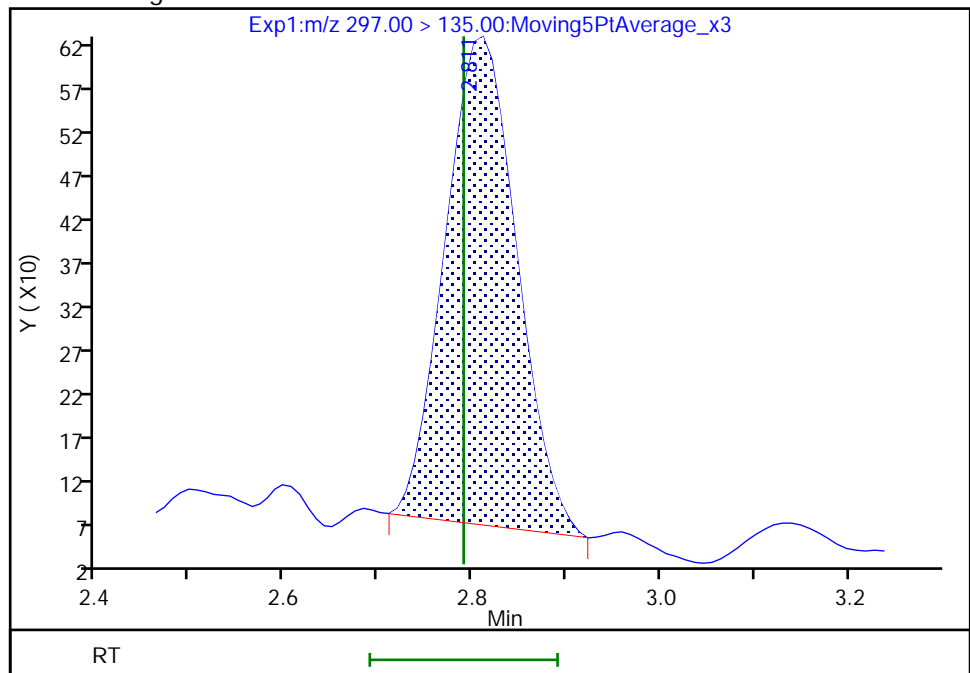
RT: 2.81
Area: 3023
Amount: 0.024014
Amount Units: ng/ml

Processing Integration Results



RT: 2.81
Area: 2979
Amount: 0.024370
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:21:21
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

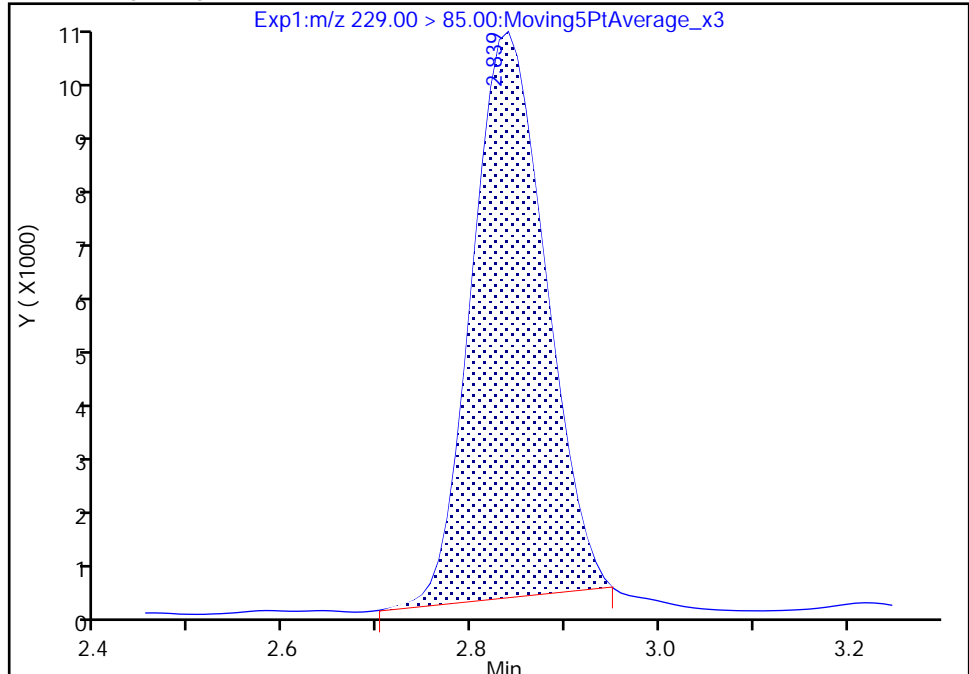
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

13 PFECA F, CAS: 377-73-1

Signal: 1

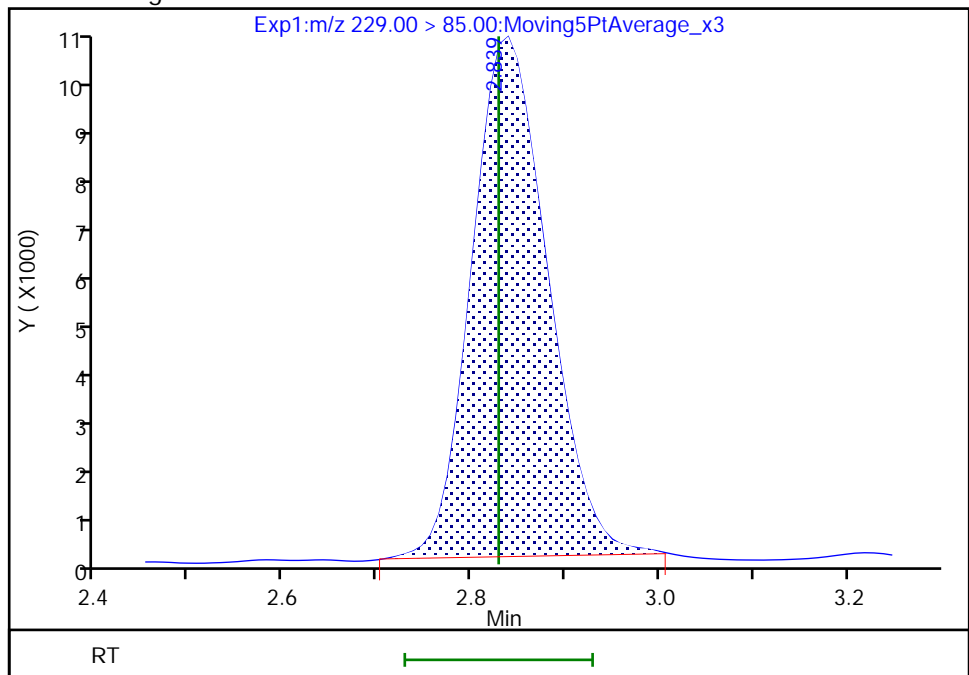
RT: 2.84
Area: 57305
Amount: 0.023428
Amount Units: ng/ml

Processing Integration Results



RT: 2.84
Area: 59972
Amount: 0.023545
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:21:35
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

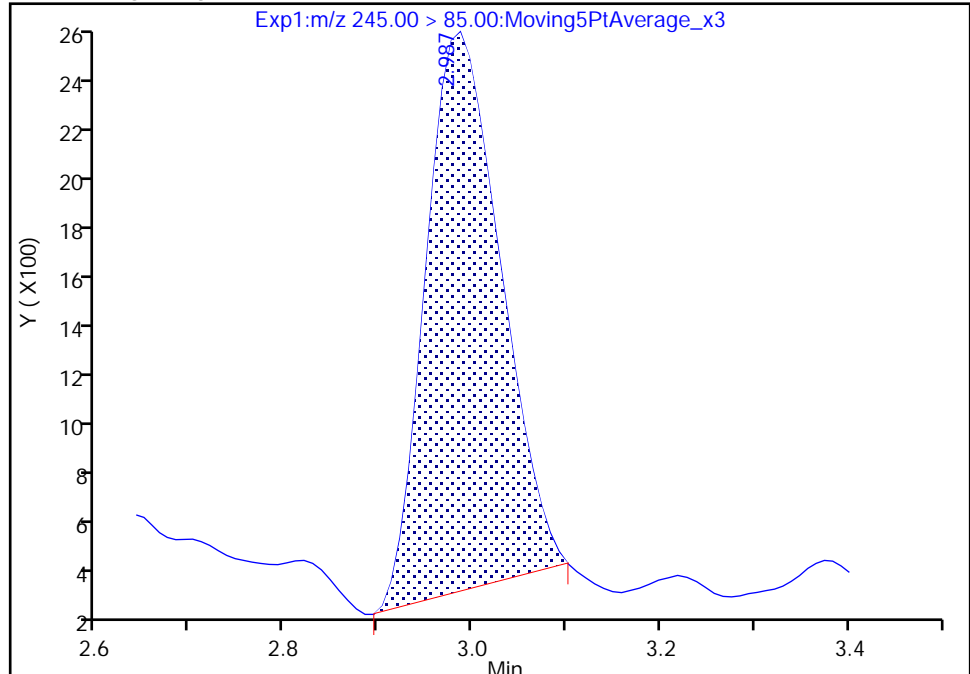
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

14 PFO2HxA, CAS: 39492-88-1

Signal: 1

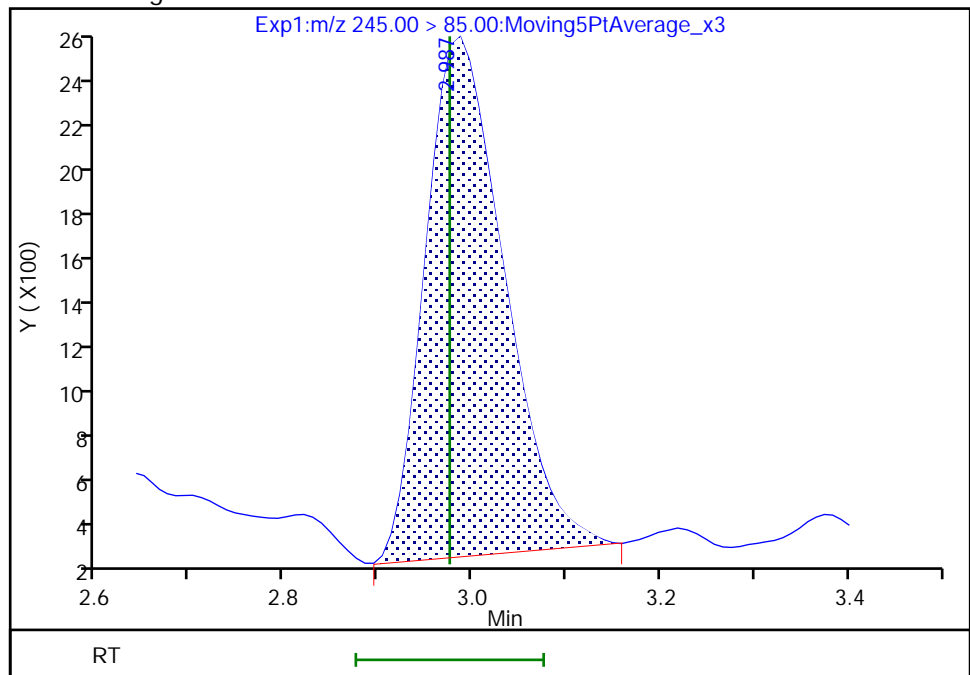
RT: 2.99
Area: 12436
Amount: 0.024374
Amount Units: ng/ml

Processing Integration Results



RT: 2.99
Area: 13452
Amount: 0.025281
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:21:44

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

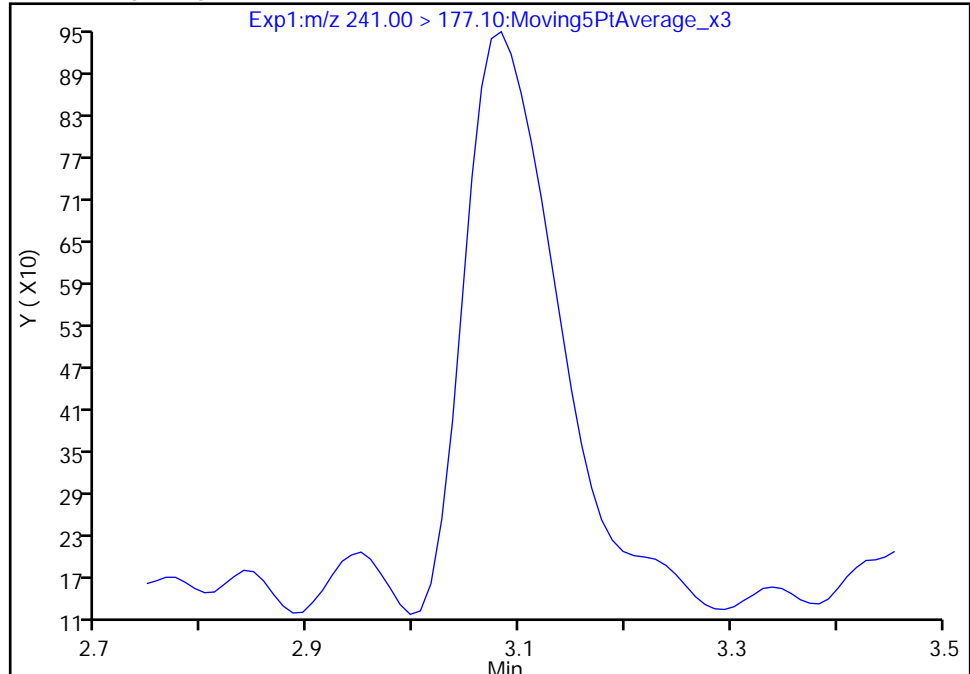
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

17 3:3 FTCA, CAS: 356-02-5

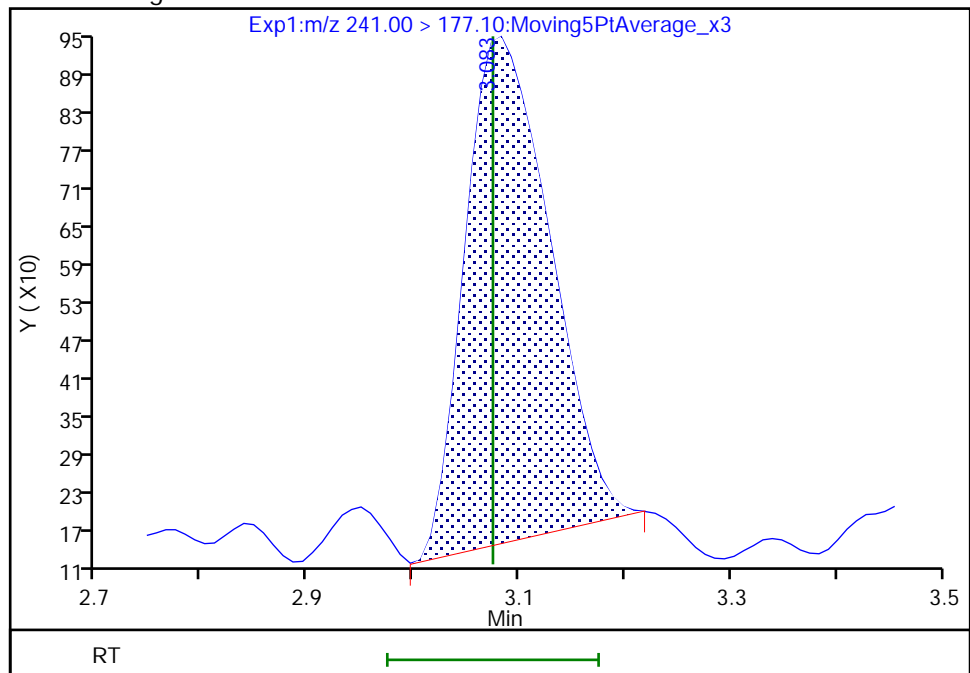
Signal: 1

Not Detected
Expected RT: 3.07

Processing Integration Results



Manual Integration Results



RT: 3.08
Area: 4489
Amount: 0.022090
Amount Units: ng/ml

Reviewer: YS2U, 21-Dec-2022 13:21:55
Audit Action: Assigned Compound ID

Audit Reason: Baseline

Eurofins Sacramento

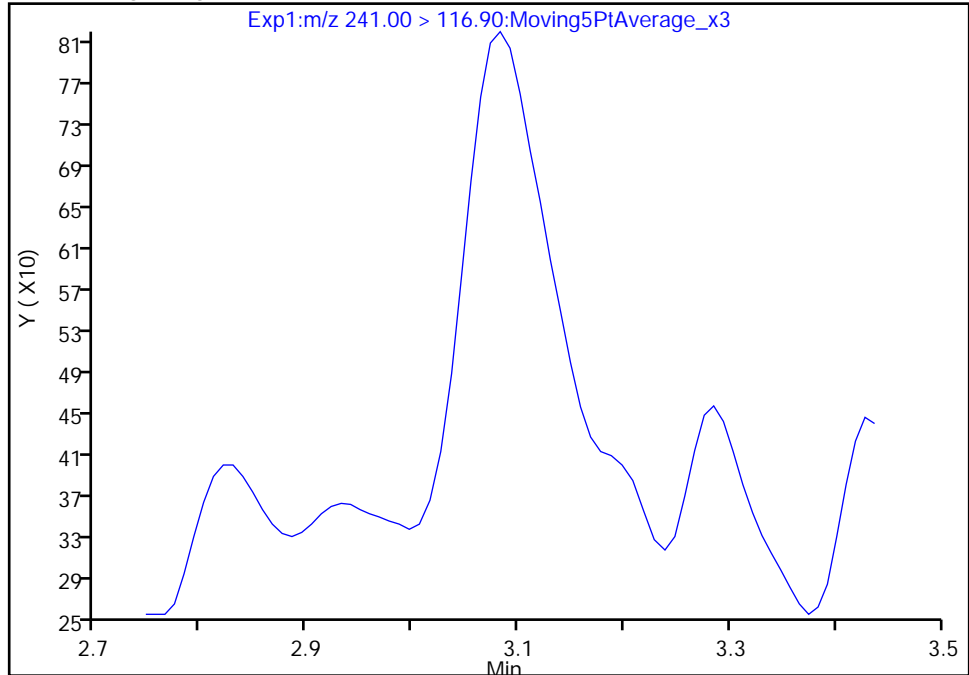
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

17 3:3 FTCA, CAS: 356-02-5

Signal: 2

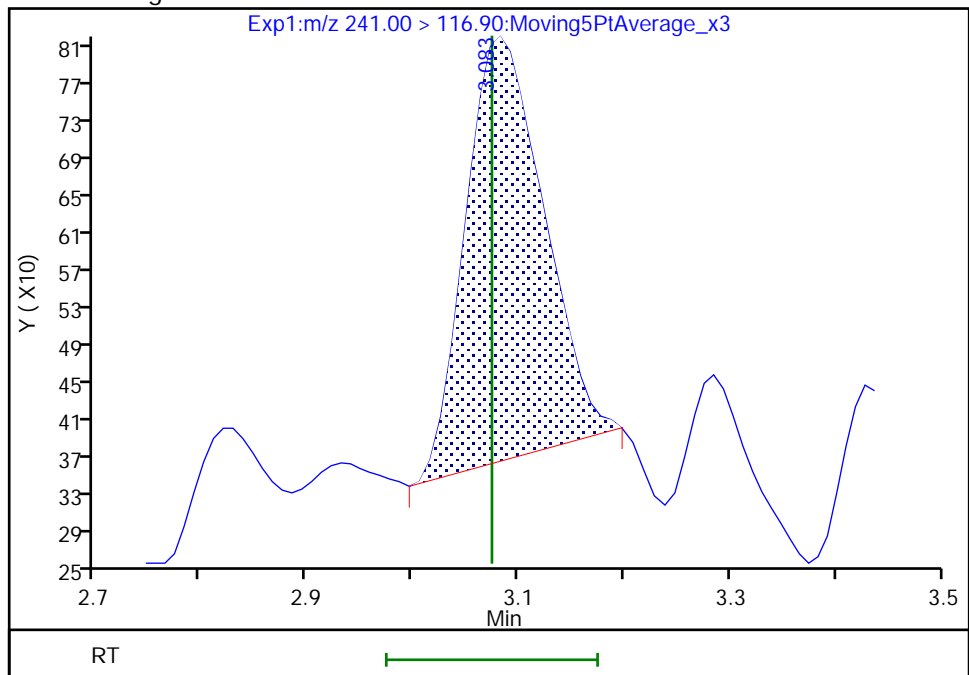
Not Detected
Expected RT: 3.07

Processing Integration Results



Manual Integration Results

RT: 3.08
Area: 2332
Amount: 0.022090
Amount Units: ng/ml



Reviewer: YS2U, 21-Dec-2022 13:22:04

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Eurofins Sacramento

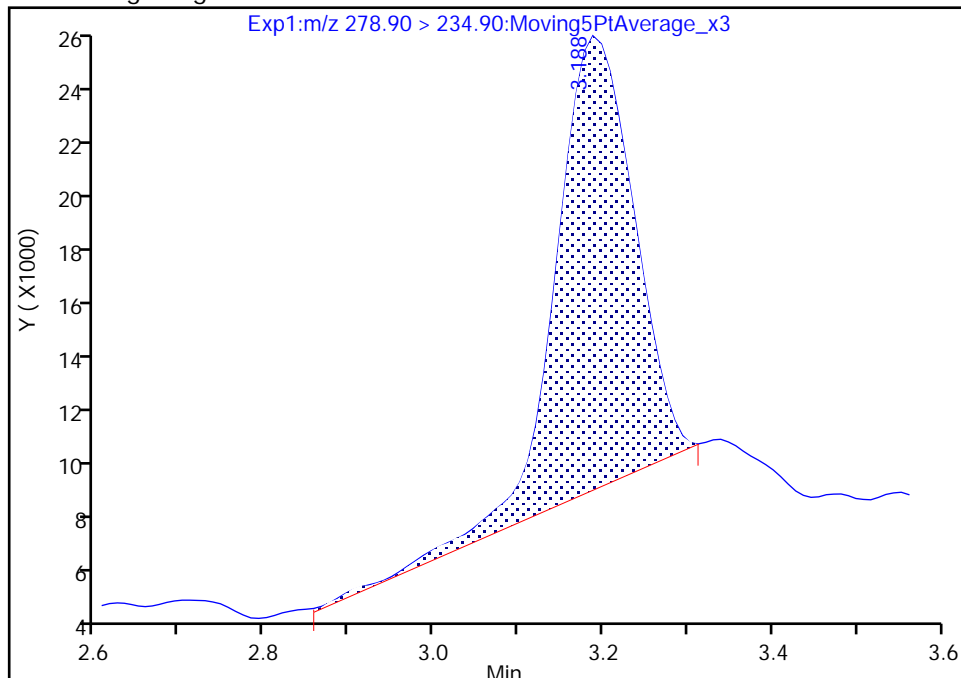
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

20 PEPA, CAS: 267239-61-2

Signal: 1

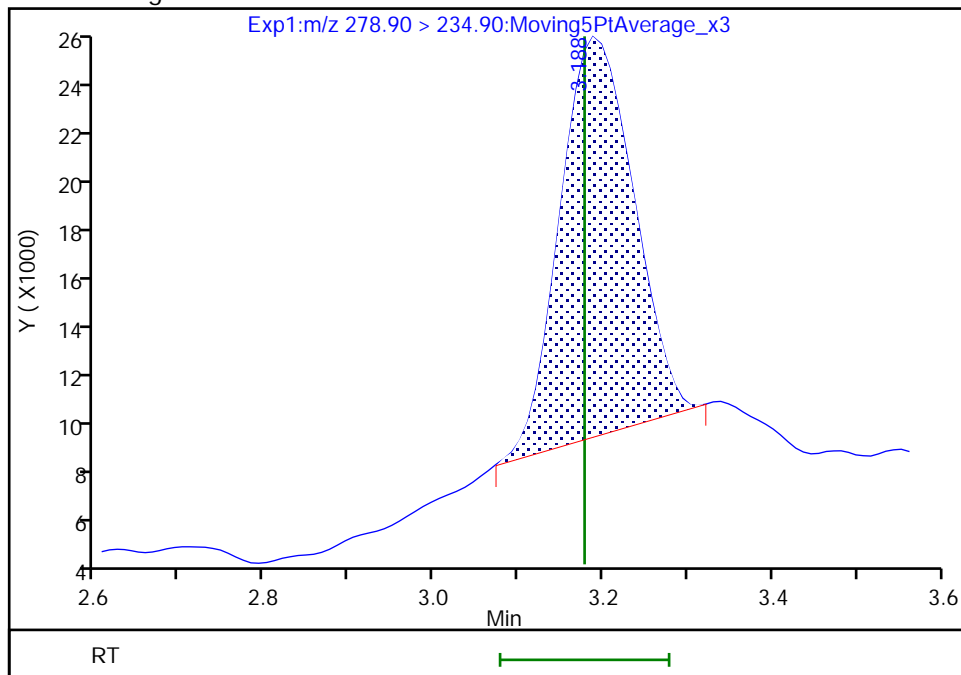
RT: 3.19
Area: 106452
Amount: 0.024627
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 97529
Amount: 0.022680
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:22:19
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

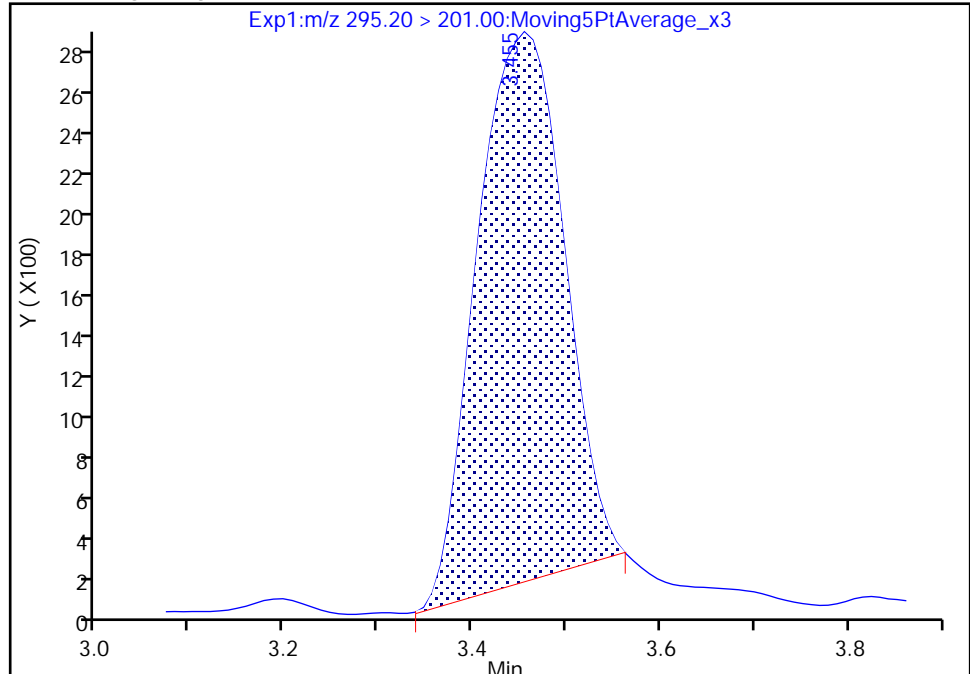
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

24 PFECA B, CAS: 151772-58-6

Signal: 1

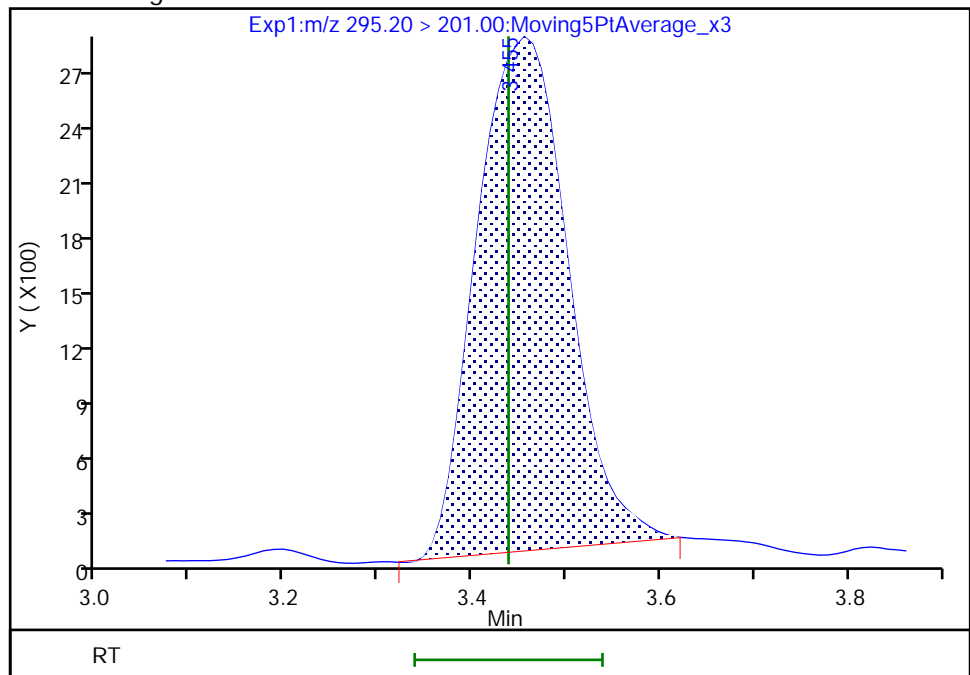
RT: 3.46
Area: 17468
Amount: 0.025321
Amount Units: ng/ml

Processing Integration Results



RT: 3.46
Area: 18924
Amount: 0.026218
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:22:30
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

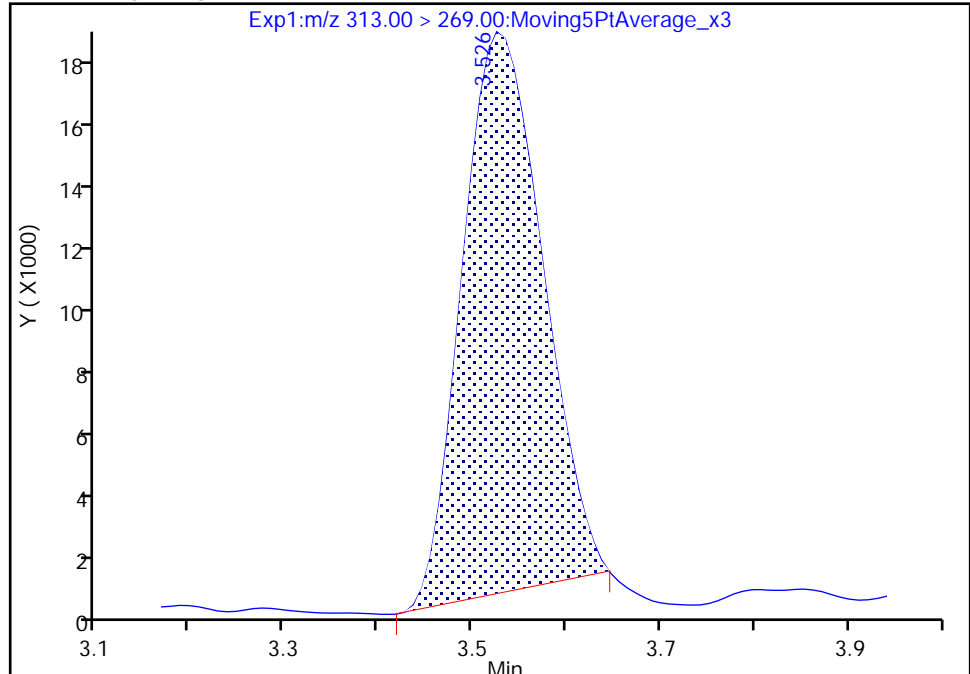
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

28 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

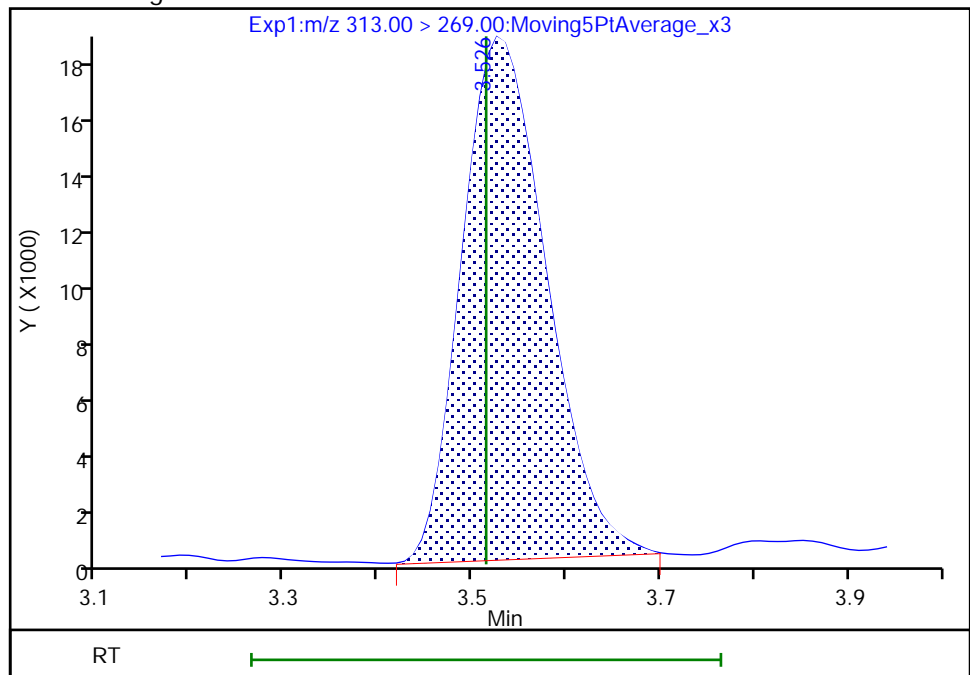
RT: 3.53
Area: 100907
Amount: 0.026061
Amount Units: ng/ml

Processing Integration Results



RT: 3.53
Area: 108826
Amount: 0.027707
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:22:45
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

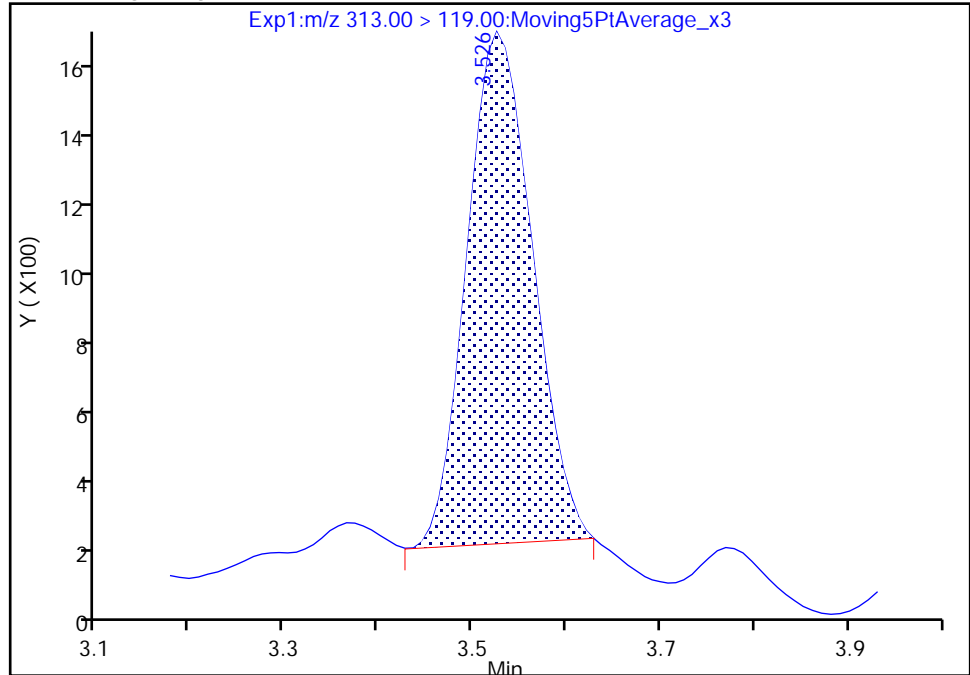
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

28 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

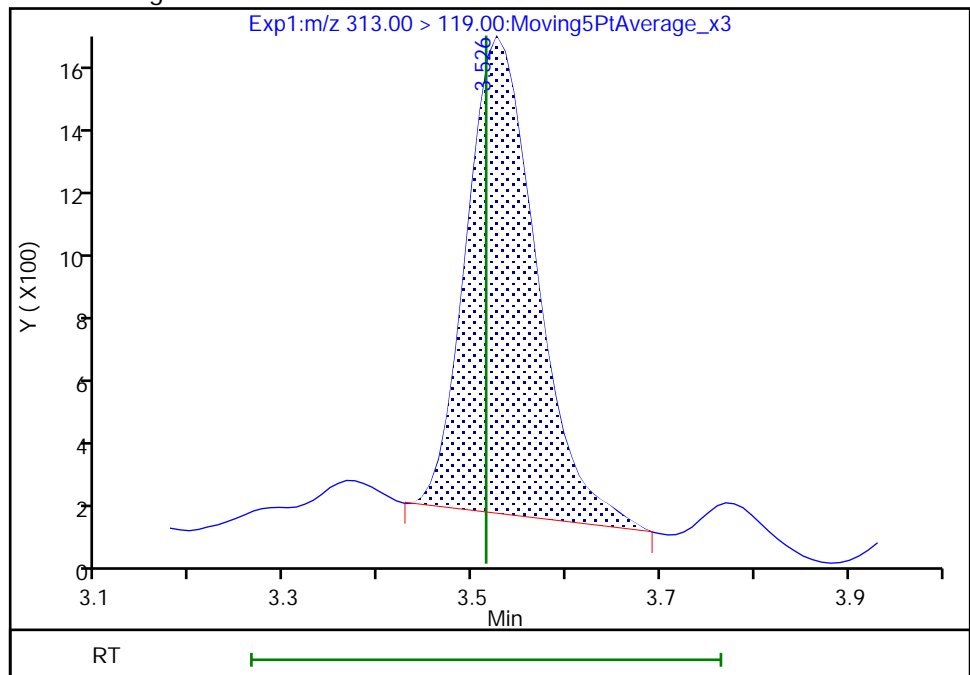
RT: 3.53
Area: 6904
Amount: 0.026061
Amount Units: ng/ml

Processing Integration Results



RT: 3.53
Area: 7640
Amount: 0.027707
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:22:52

Audit Action: Manually Integrated

Audit Reason: Baseline

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Eurofins Sacramento

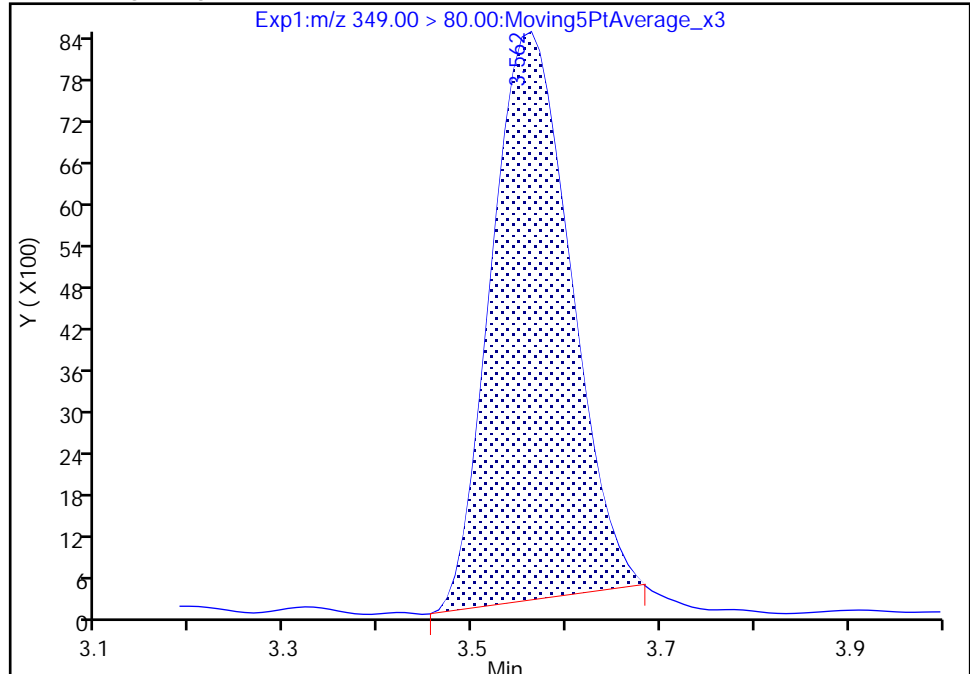
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

29 Perfluoropentanesulfonic acid, CAS: 2706-91-4

Signal: 1

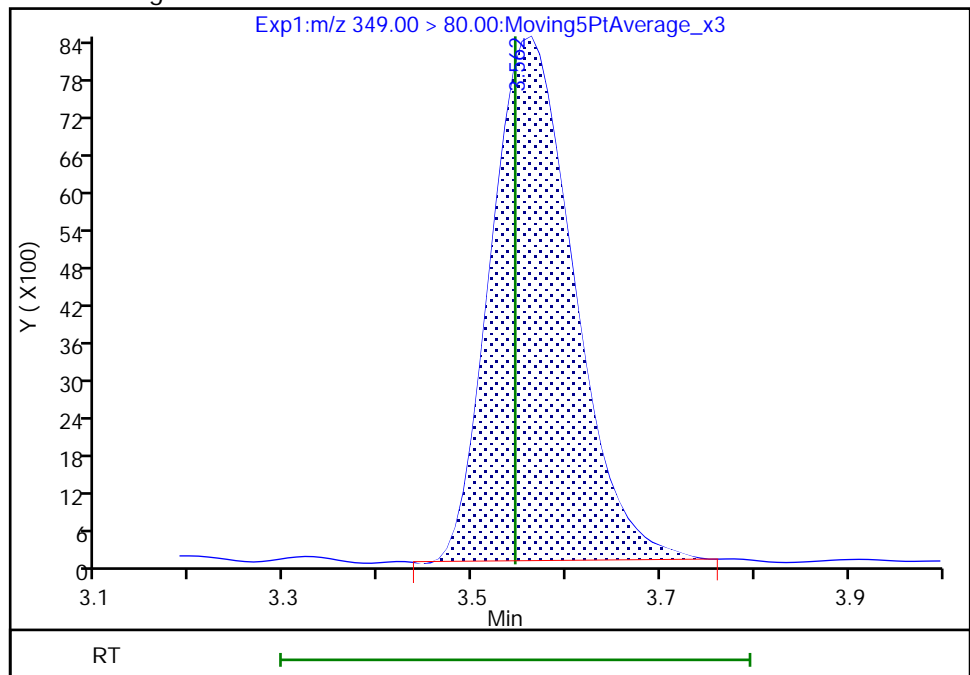
RT: 3.56
Area: 48198
Amount: 0.023545
Amount Units: ng/ml

Processing Integration Results



RT: 3.56
Area: 51128
Amount: 0.024039
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:23:02

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

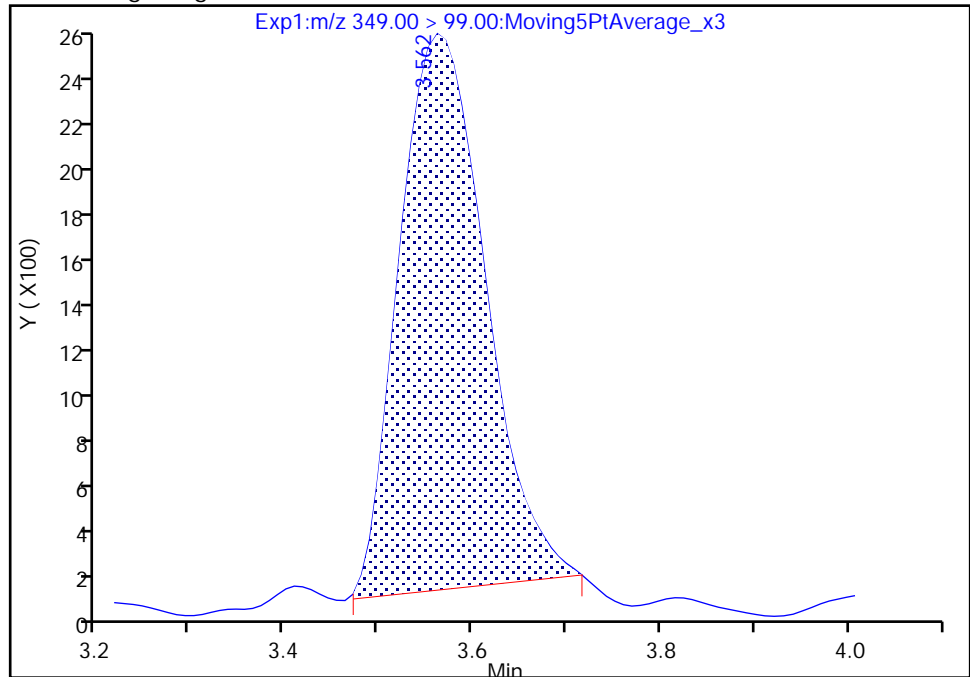
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

29 Perfluoropentanesulfonic acid, CAS: 2706-91-4

Signal: 2

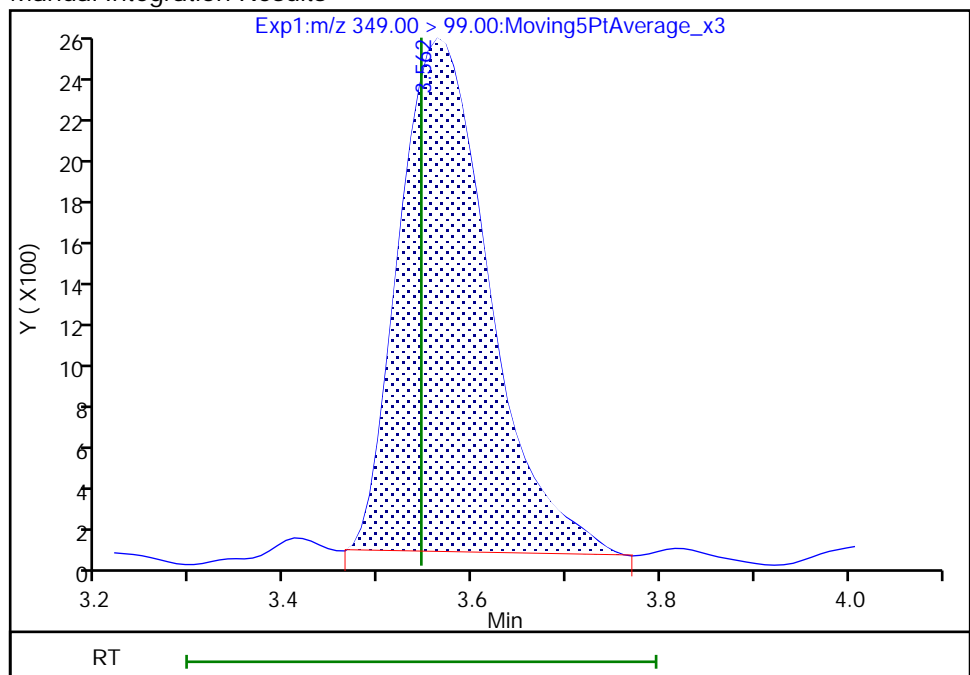
RT: 3.56
Area: 15314
Amount: 0.023545
Amount Units: ng/ml

Processing Integration Results



RT: 3.56
Area: 16440
Amount: 0.024039
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:23:07

Audit Action: Manually Integrated

Audit Reason: Baseline

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Eurofins Sacramento

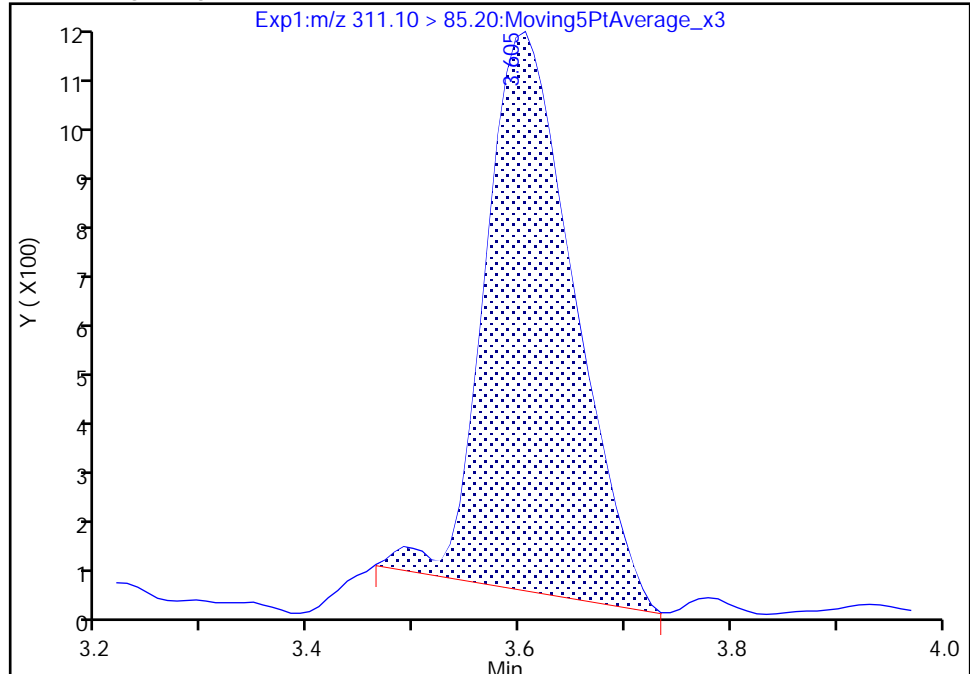
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

30 PFO3OA, CAS: 39492-89-2

Signal: 1

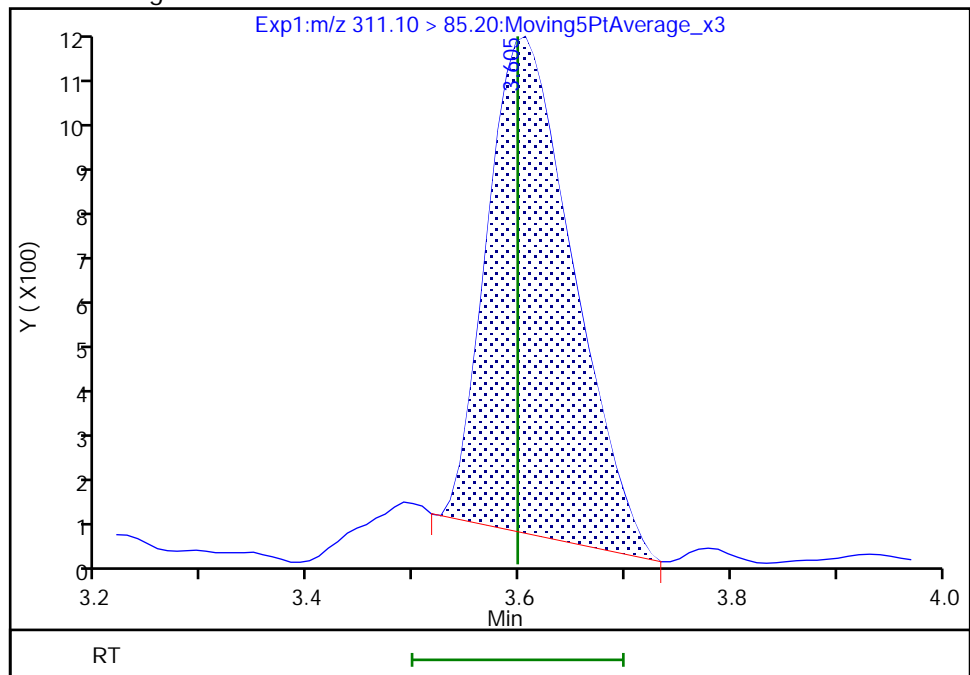
RT: 3.61
Area: 5865
Amount: 0.025280
Amount Units: ng/ml

Processing Integration Results



RT: 3.61
Area: 5613
Amount: 0.024387
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:23:15
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

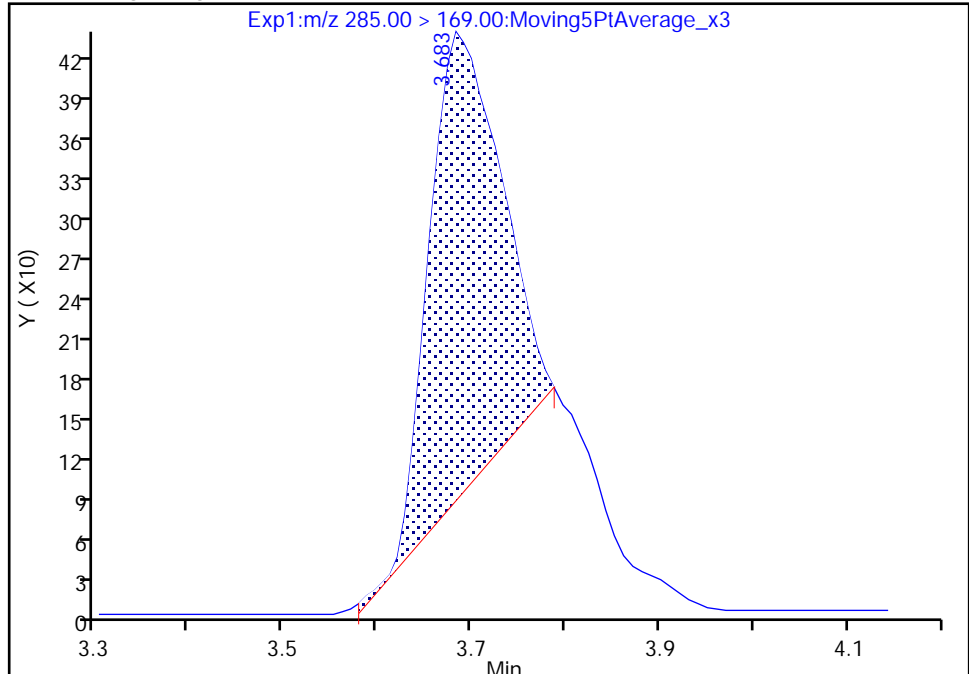
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

31 Perfluoro(2-propoxypropanoic) ac, CAS: 13252-13-6

Signal: 1

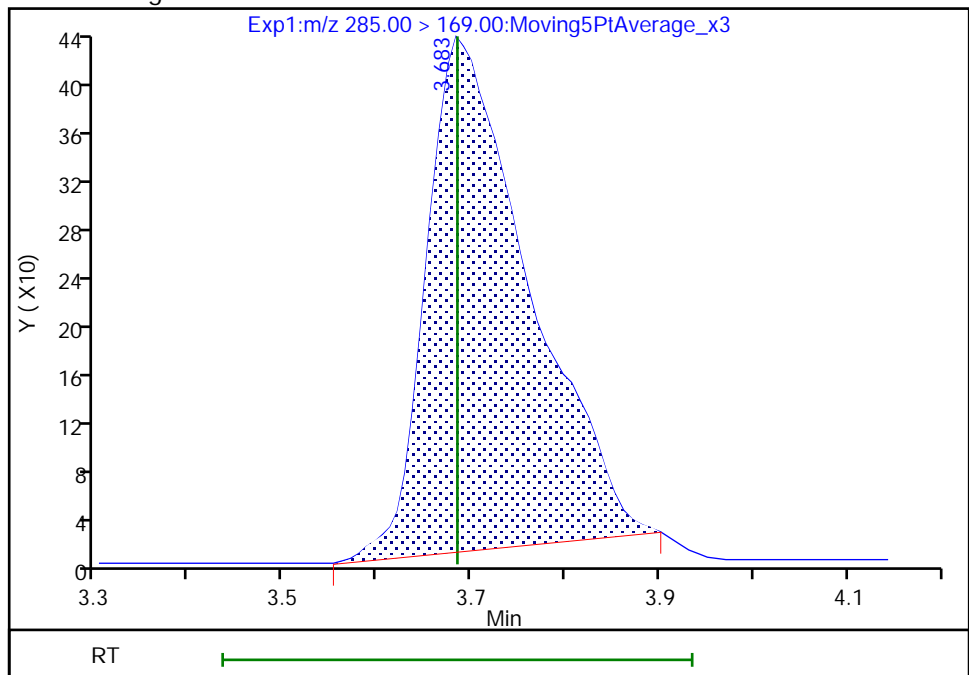
RT: 3.68
Area: 1859
Amount: 0.013734
Amount Units: ng/ml

Processing Integration Results



RT: 3.68
Area: 3234
Amount: 0.021642
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:23:26

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

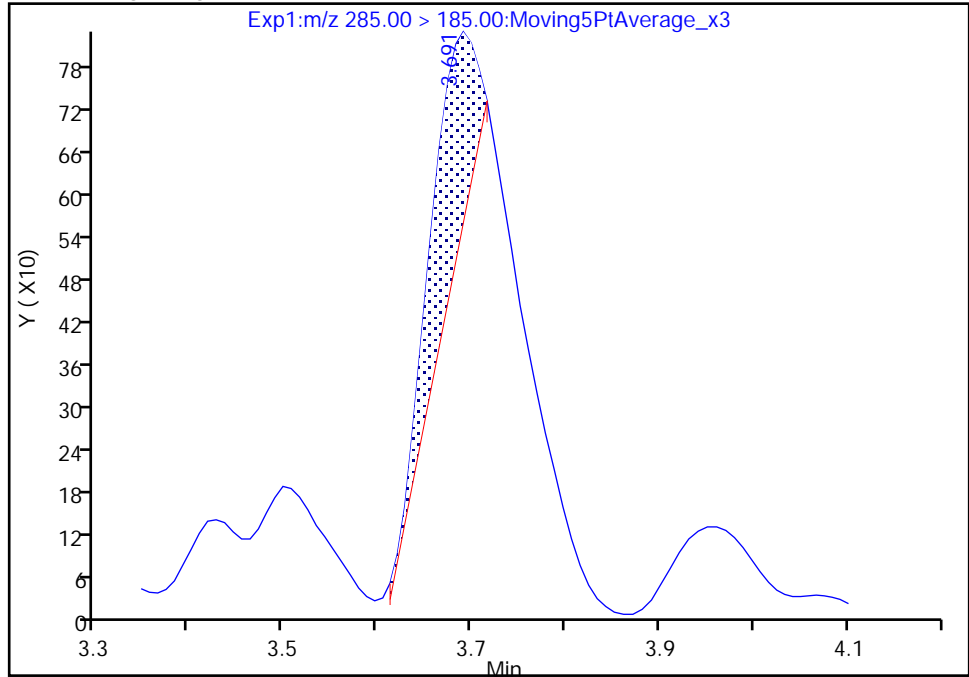
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

31 Perfluoro(2-propoxypropanoic) ac, CAS: 13252-13-6

Signal: 2

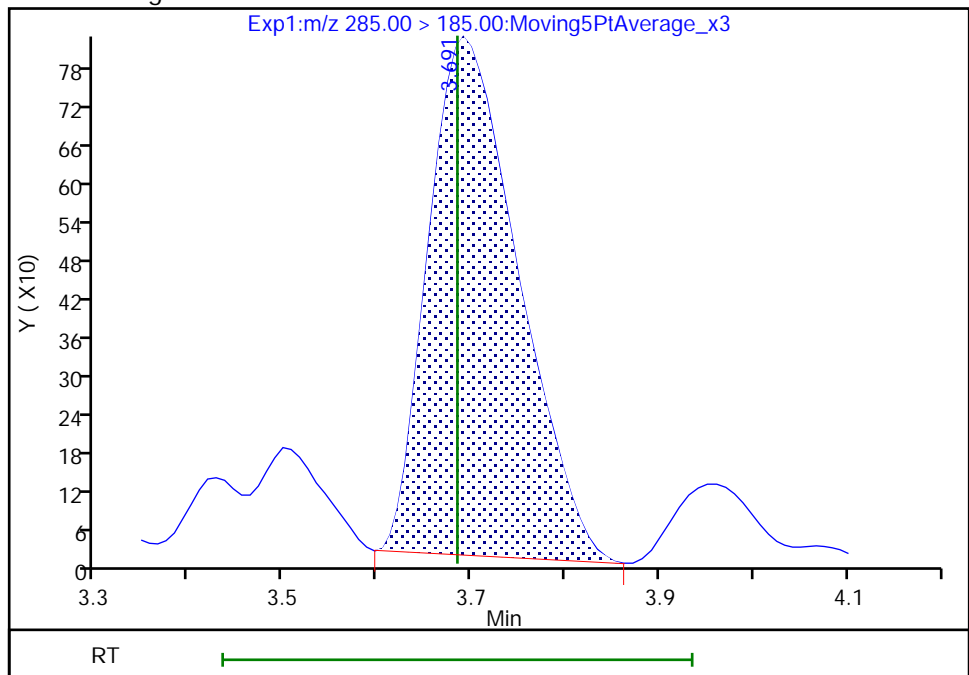
RT: 3.69
Area: 1028
Amount: 0.013734
Amount Units: ng/ml

Processing Integration Results



RT: 3.69
Area: 5392
Amount: 0.021642
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:23:33

Audit Action: Manually Integrated

Audit Reason: Baseline

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Eurofins Sacramento

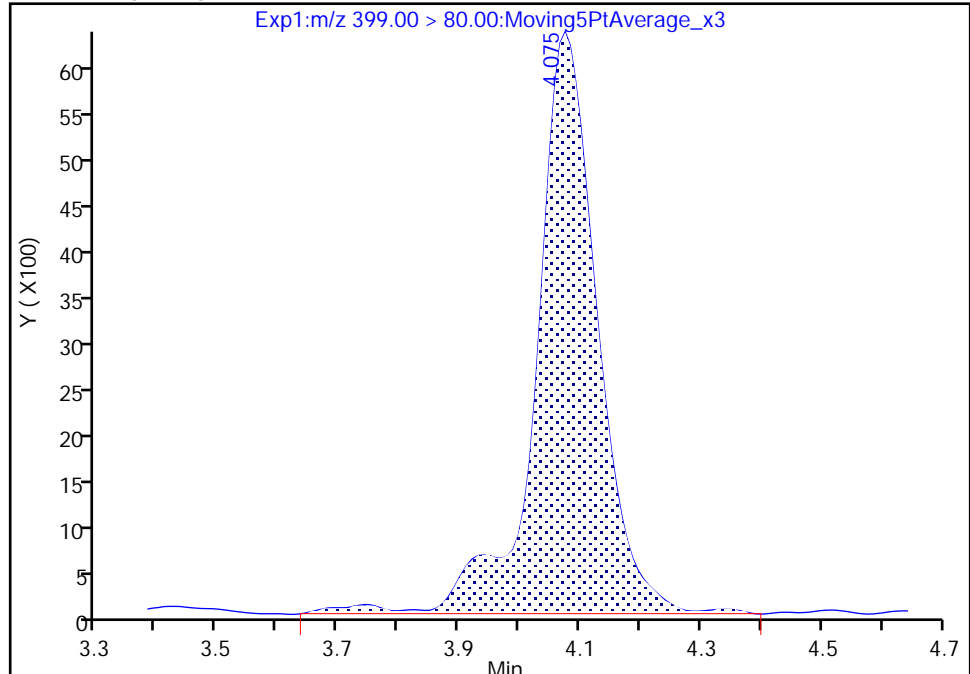
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

38 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

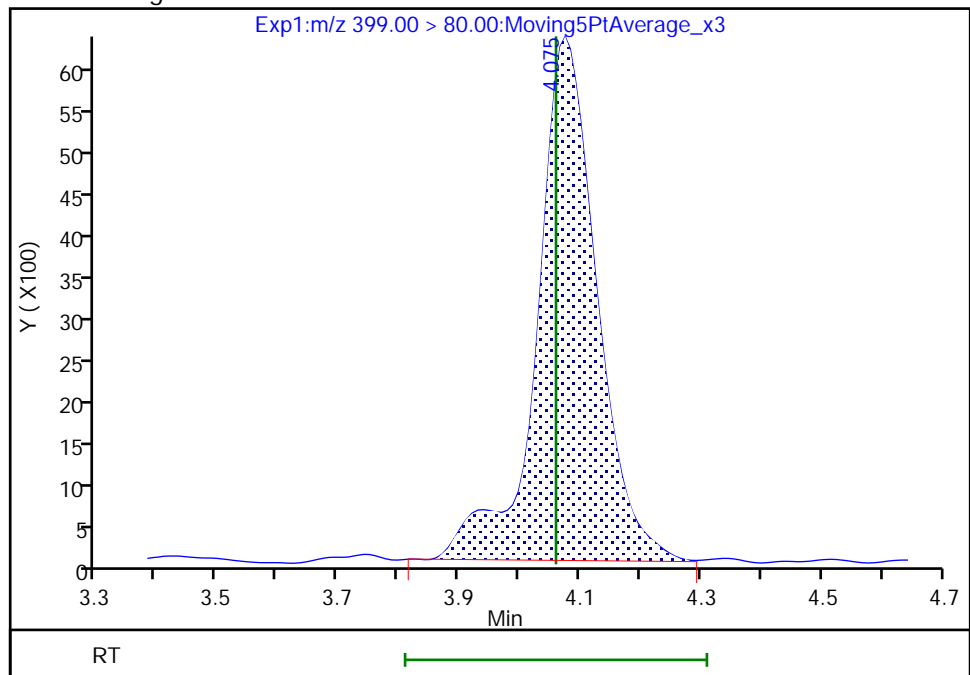
RT: 4.08
Area: 45322
Amount: 0.025811
Amount Units: ng/ml

Processing Integration Results



RT: 4.08
Area: 43419
Amount: 0.025086
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:23:57

Audit Action: Manually Integrated

Audit Reason: Isomers

Eurofins Sacramento

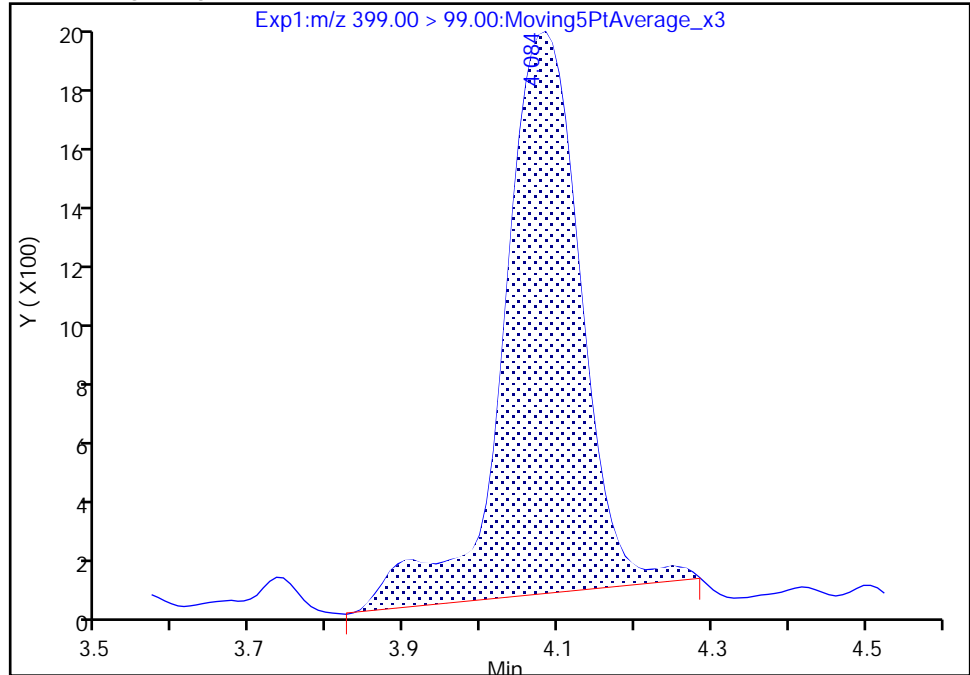
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

38 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

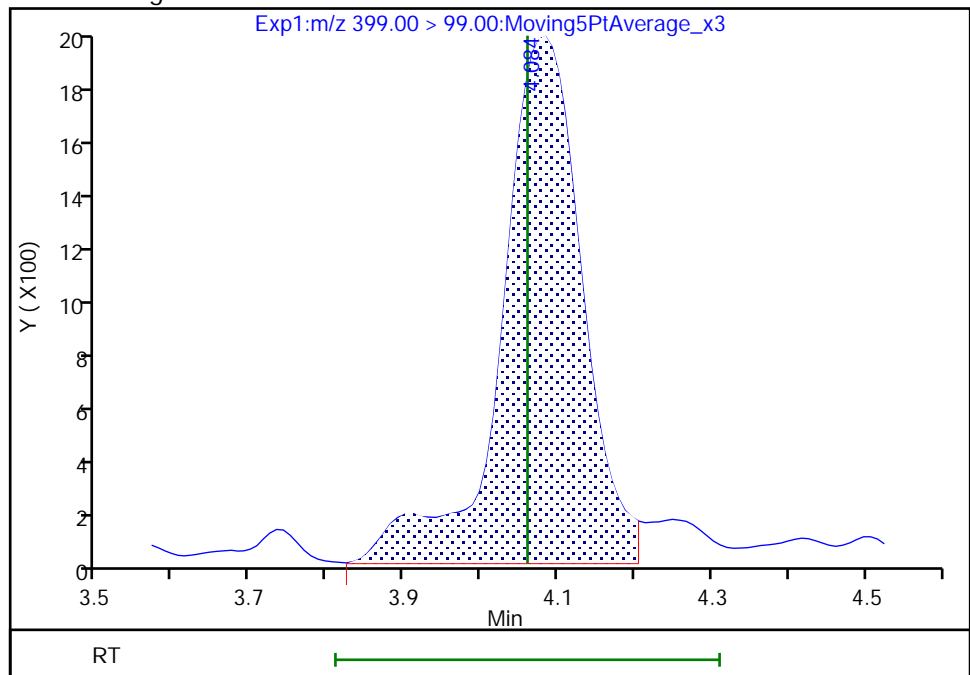
RT: 4.08
Area: 12815
Amount: 0.025811
Amount Units: ng/ml

Processing Integration Results



RT: 4.08
Area: 13770
Amount: 0.025086
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:24:46

Audit Action: Manually Integrated

Audit Reason: Isomers

Eurofins Sacramento

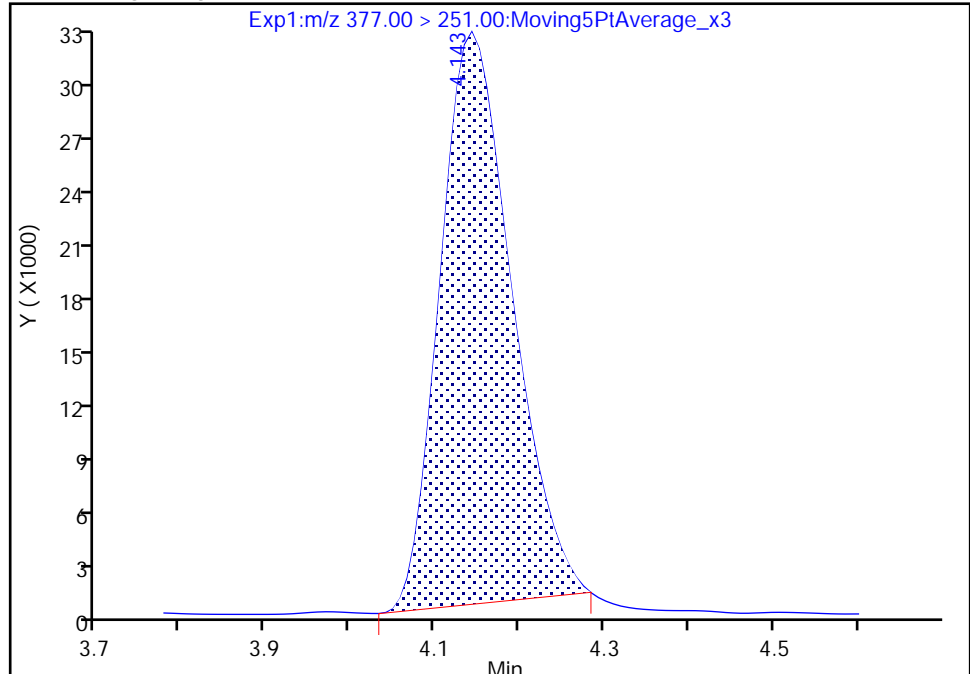
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

40 DONA, CAS: 919005-14-4

Signal: 1

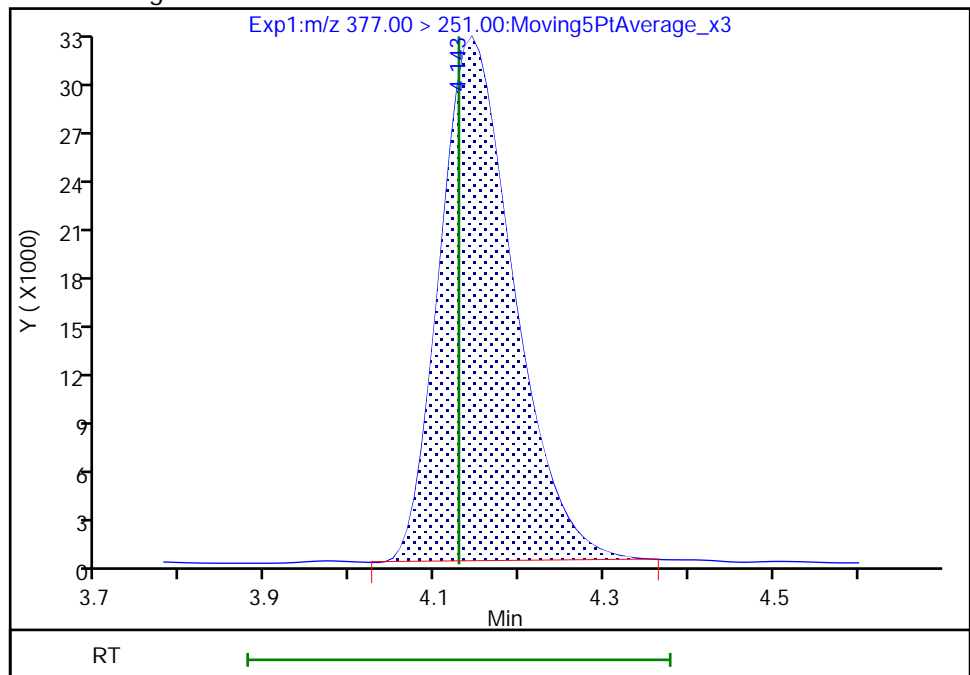
RT: 4.14
Area: 188607
Amount: 0.024148
Amount Units: ng/ml

Processing Integration Results



RT: 4.14
Area: 197765
Amount: 0.024966
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:25:09

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

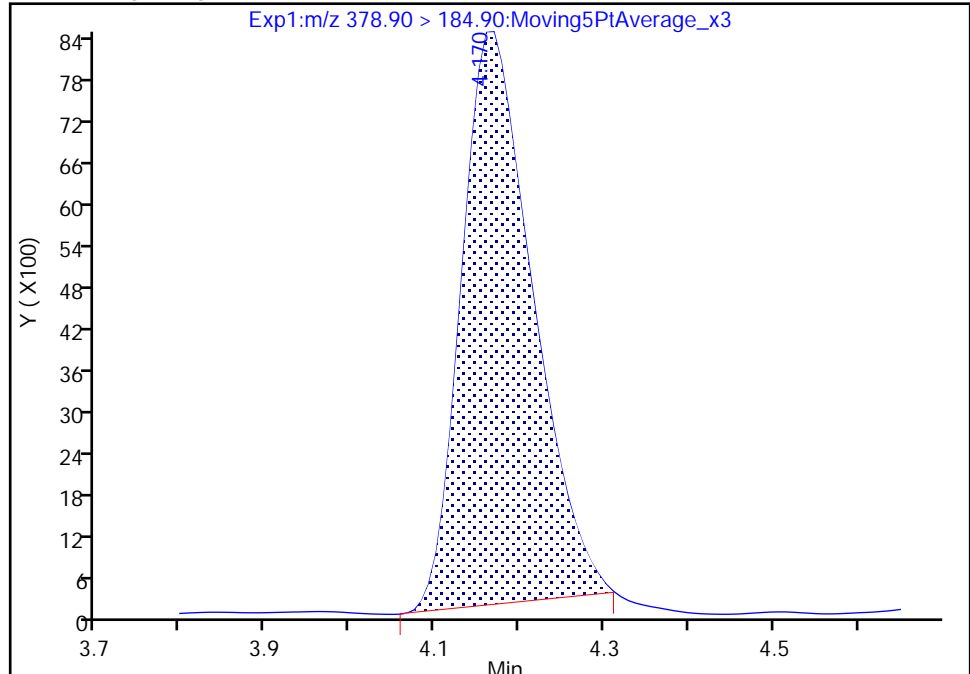
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

42 PFECA G, CAS: 801212-59-9

Signal: 1

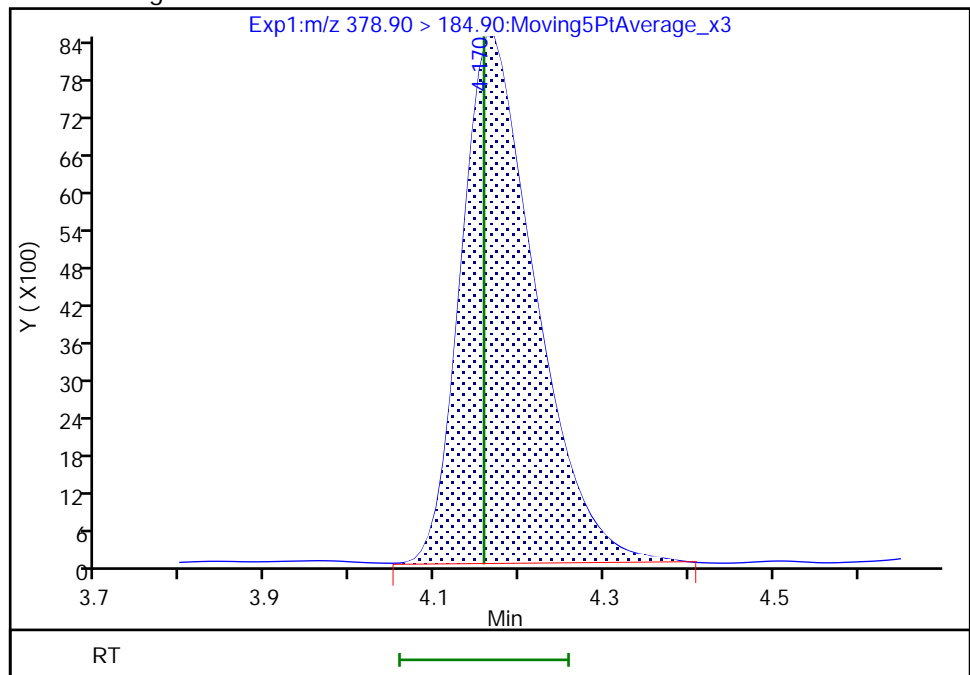
RT: 4.17
Area: 48788
Amount: 0.024873
Amount Units: ng/ml

Processing Integration Results



RT: 4.17
Area: 51891
Amount: 0.026481
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:25:21
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

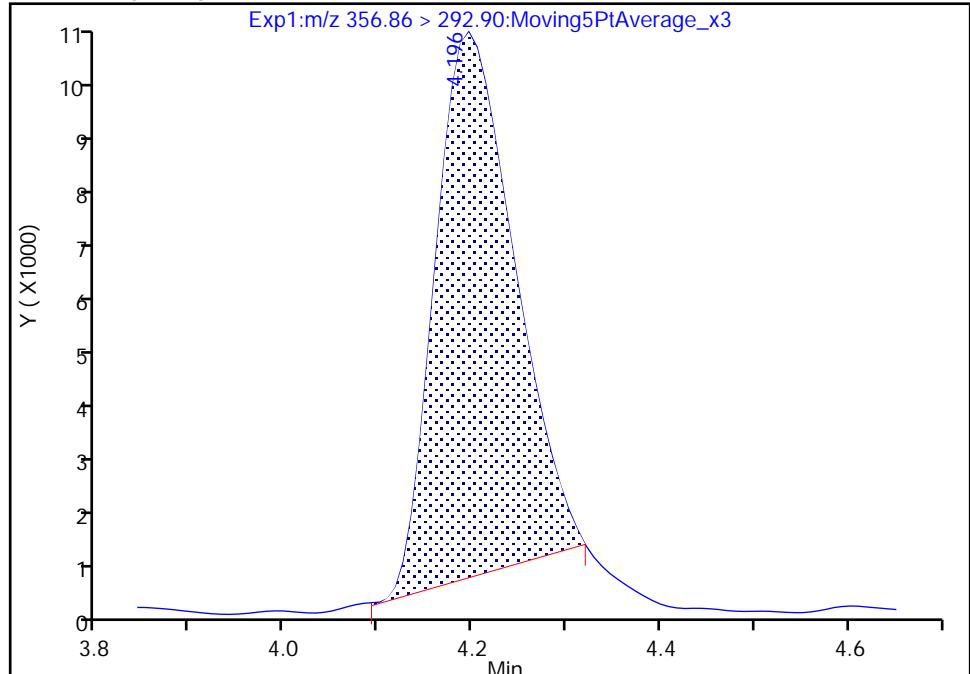
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

43 6:2 FTUCA, CAS: 70887-88-6

Signal: 1

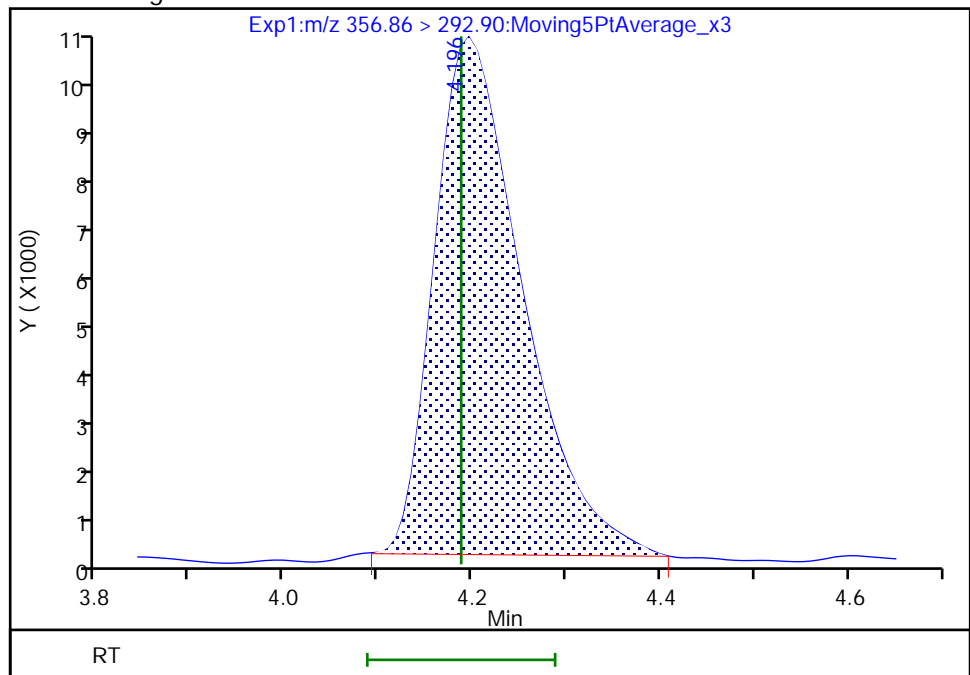
RT: 4.20
Area: 58829
Amount: 0.021895
Amount Units: ng/ml

Processing Integration Results



RT: 4.20
Area: 68490
Amount: 0.024023
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:25:35
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

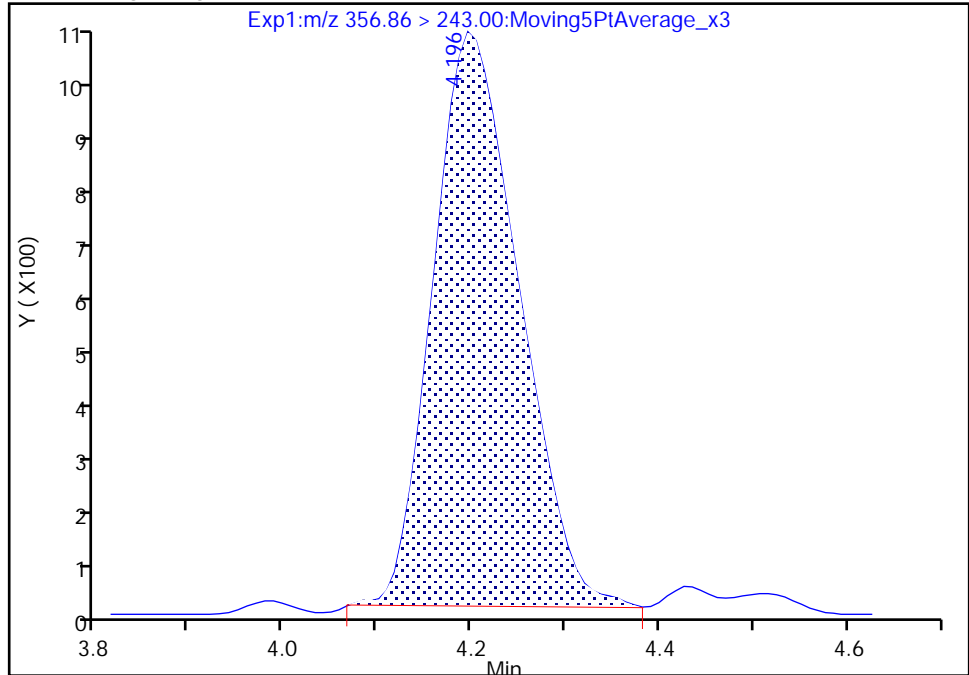
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

43 6:2 FTUCA, CAS: 70887-88-6

Signal: 2

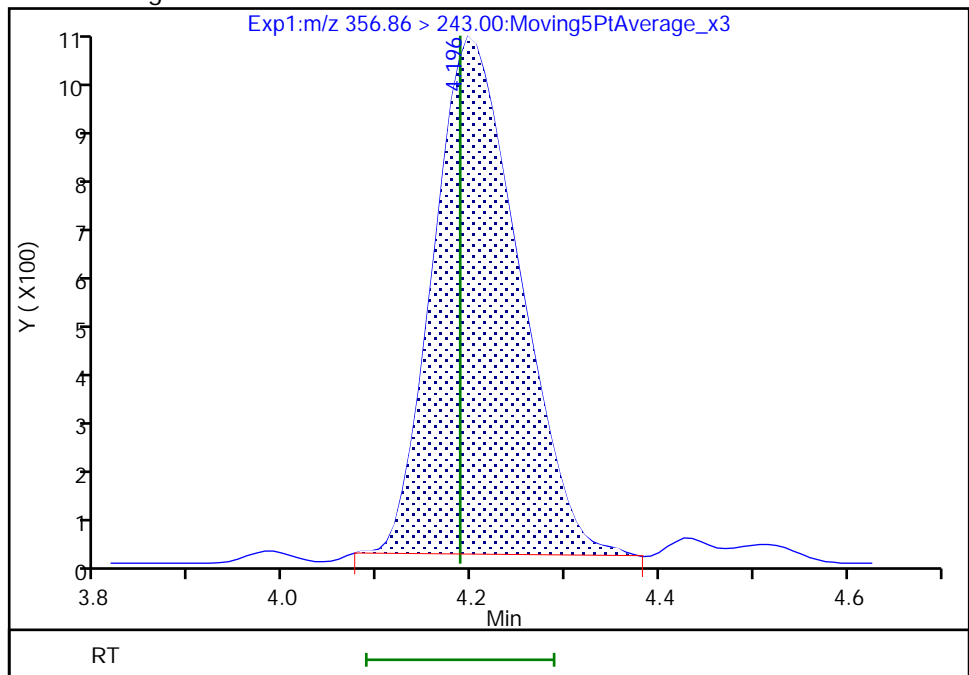
RT: 4.20
Area: 6557
Amount: 0.021895
Amount Units: ng/ml

Processing Integration Results



RT: 4.20
Area: 6509
Amount: 0.024023
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:25:43

Audit Action: Manually Integrated

Audit Reason: Baseline

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Eurofins Sacramento

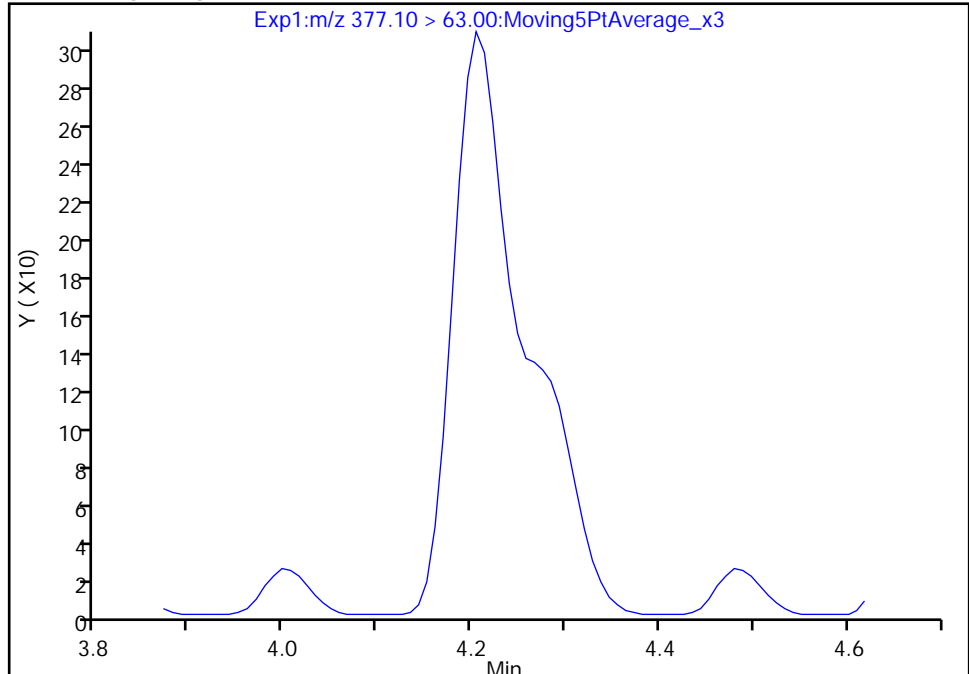
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

45 6:2 FTCA, CAS: 53826-12-3

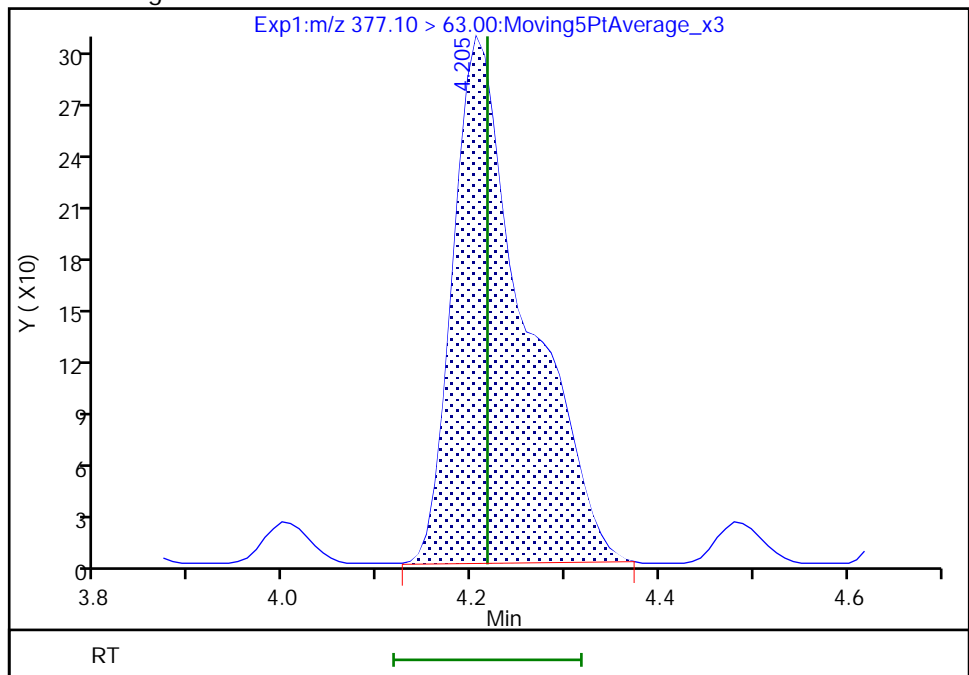
Signal: 2

Not Detected
Expected RT: 4.22

Processing Integration Results



Manual Integration Results



RT: 4.20
Area: 1637
Amount: 0.025340
Amount Units: ng/ml

Reviewer: YS2U, 21-Dec-2022 13:26:16
Audit Action: Manually Integrated

Audit Reason: Assign Peak
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Eurofins Sacramento

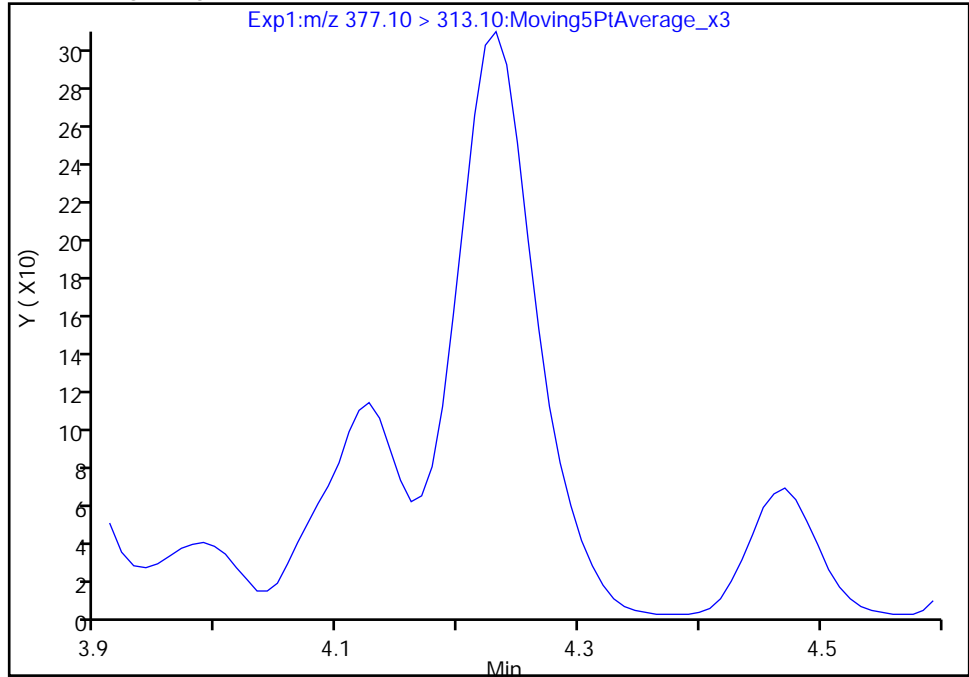
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

45 6:2 FTCA, CAS: 53826-12-3

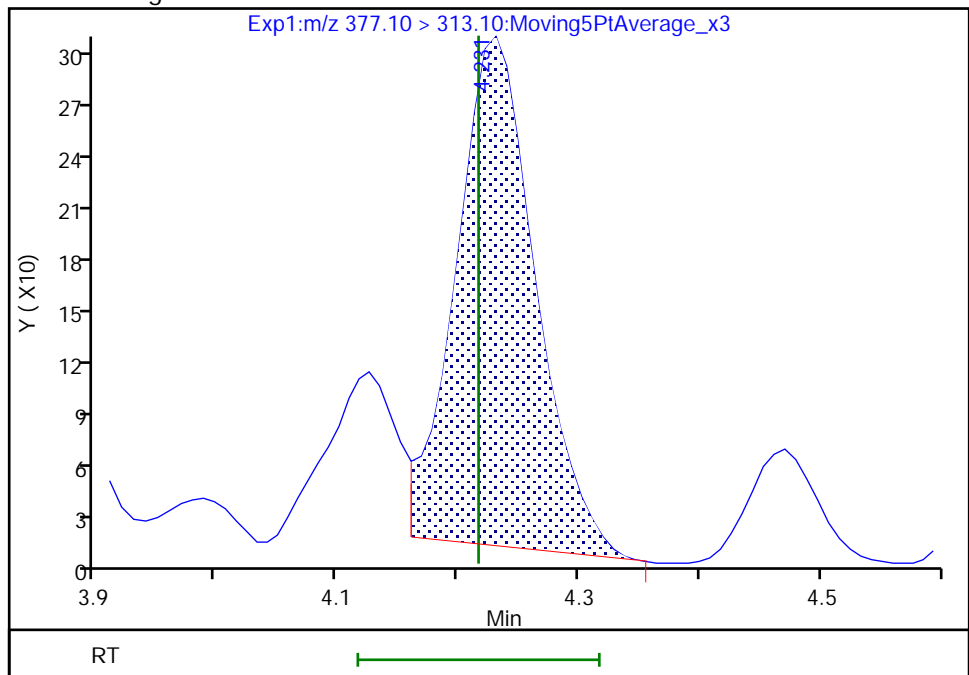
Signal: 1

Not Detected
Expected RT: 4.22

Processing Integration Results



Manual Integration Results



RT: 4.23
Area: 1328
Amount: 0.025340
Amount Units: ng/ml

Reviewer: YS2U, 21-Dec-2022 13:26:42

Audit Action: Manually Integrated

Audit Reason: Assign Peak
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Eurofins Sacramento

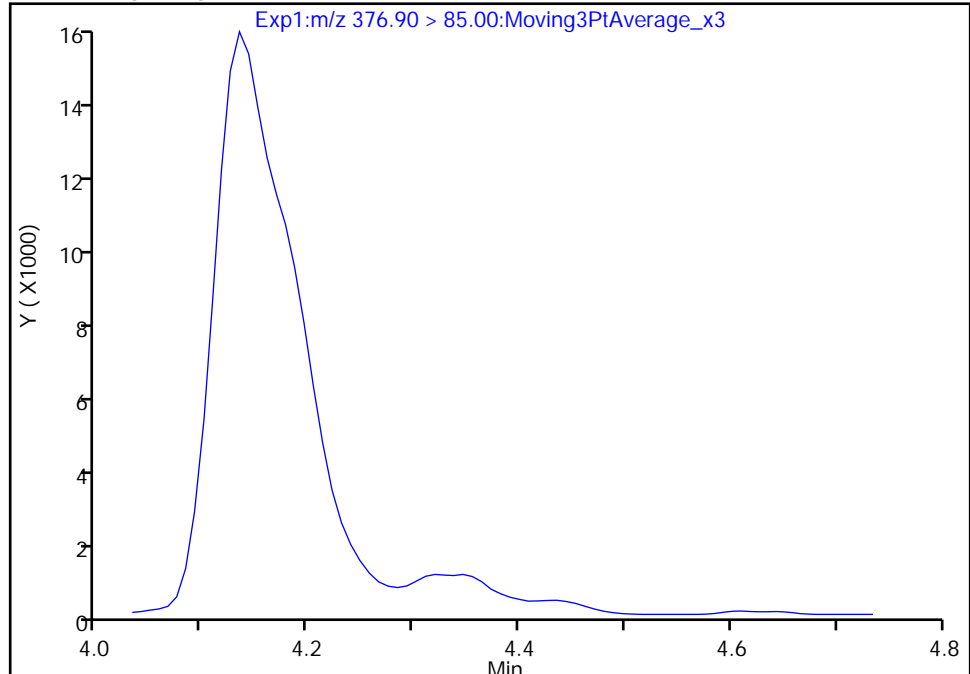
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

47 PFO4DA, CAS: 39492-90-5

Signal: 1

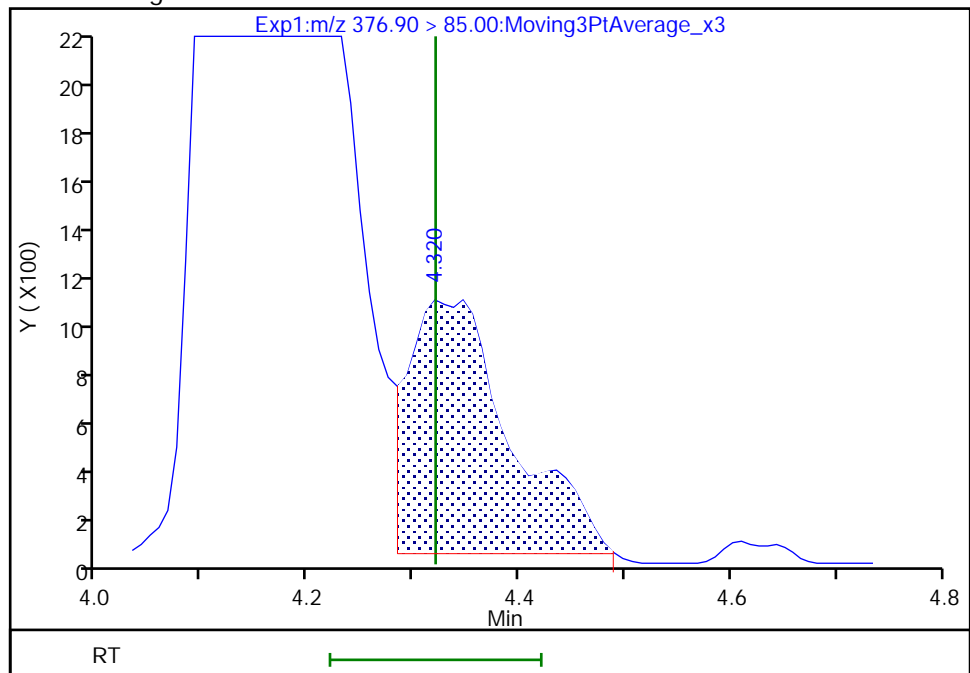
Not Detected
Expected RT: 4.32

Processing Integration Results



RT: 4.32
Area: 6795
Amount: 0.026077
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:27:28
Audit Action: Manually Integrated

Audit Reason: Assign Peak
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Eurofins Sacramento

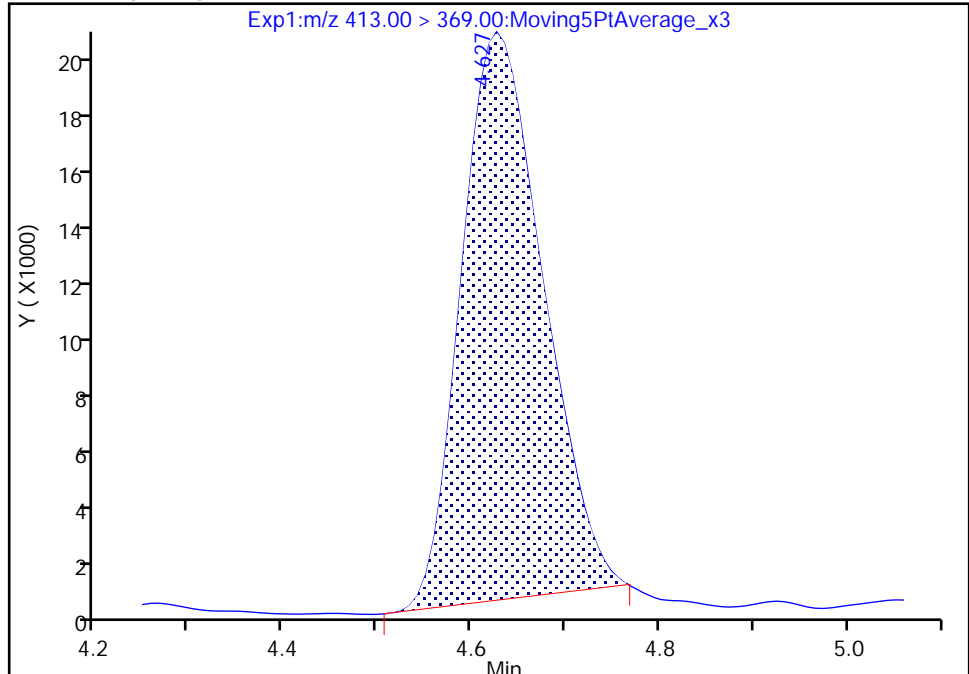
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

58 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

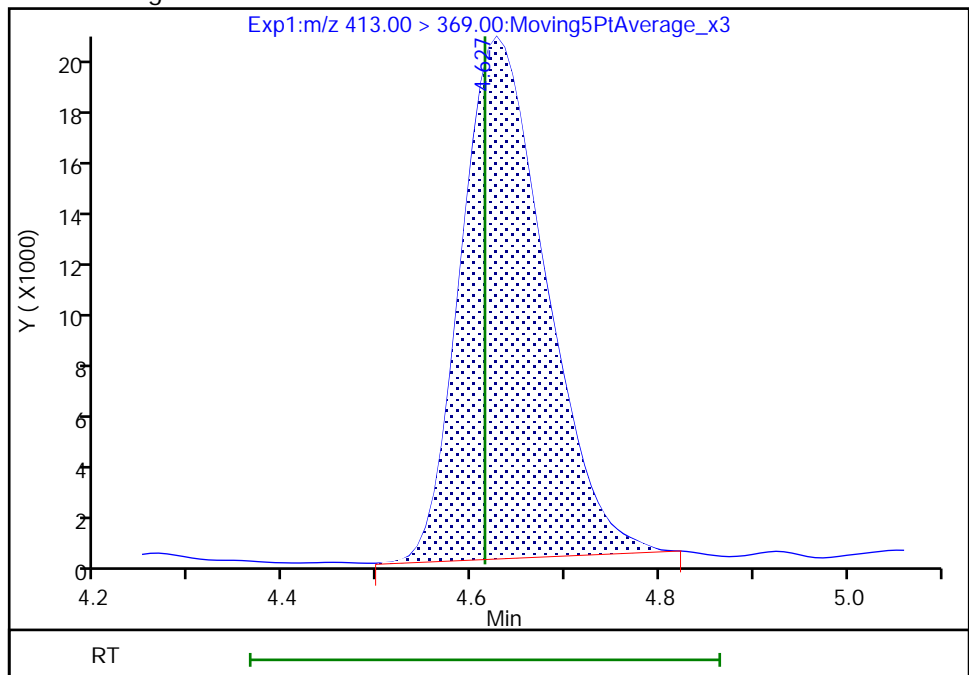
RT: 4.63
Area: 115463
Amount: 0.025036
Amount Units: ng/ml

Processing Integration Results



RT: 4.63
Area: 120607
Amount: 0.025769
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:27:59

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

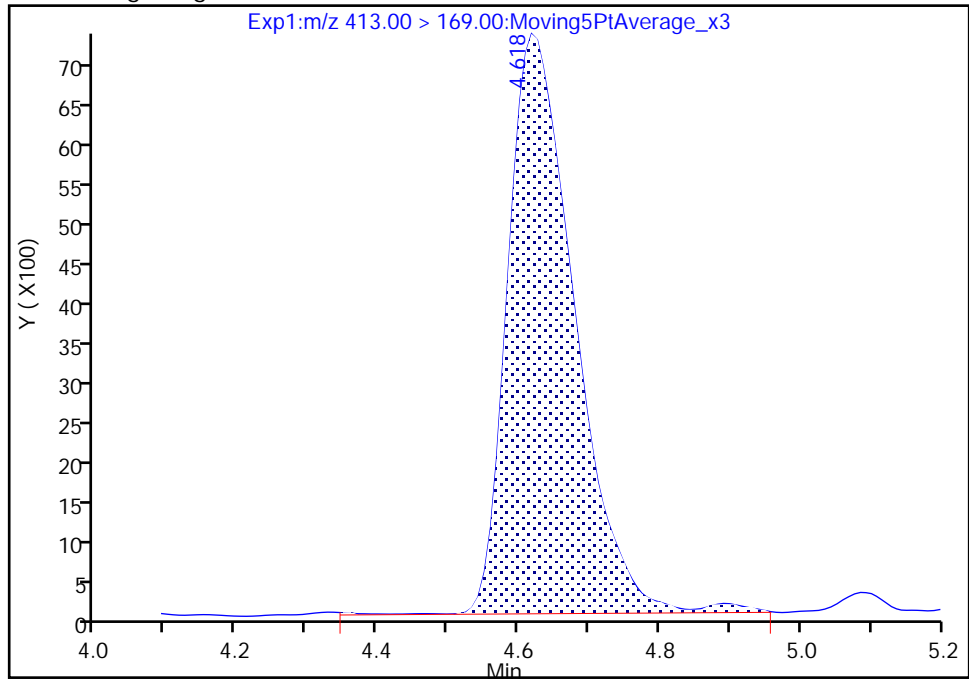
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

58 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

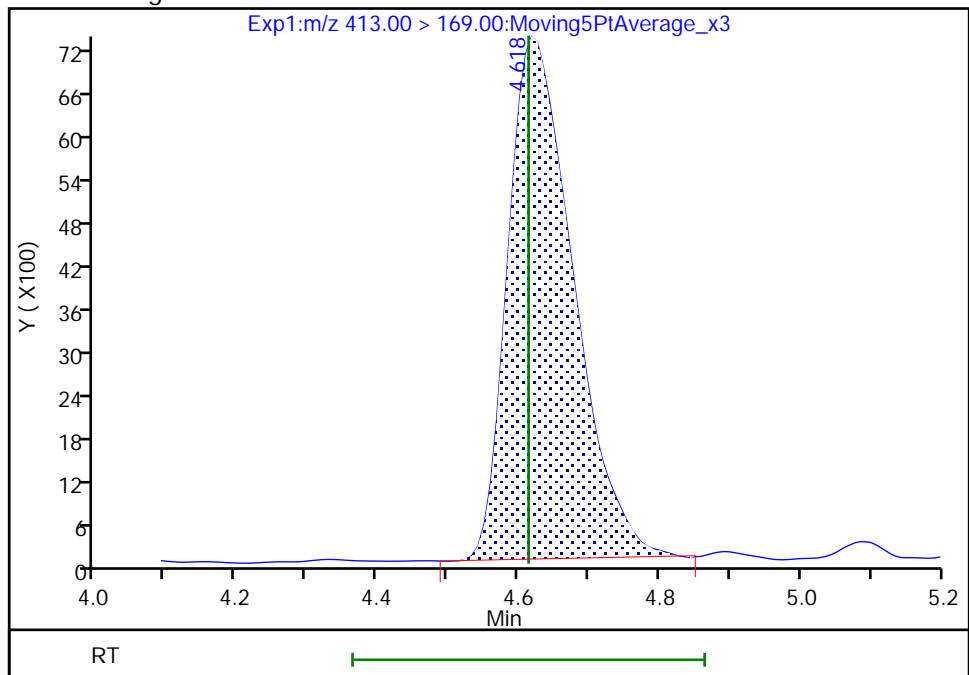
RT: 4.62
Area: 47700
Amount: 0.025036
Amount Units: ng/ml

Processing Integration Results



RT: 4.62
Area: 46821
Amount: 0.025769
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:28:05

Audit Action: Manually Integrated

Audit Reason: Baseline

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Eurofins Sacramento

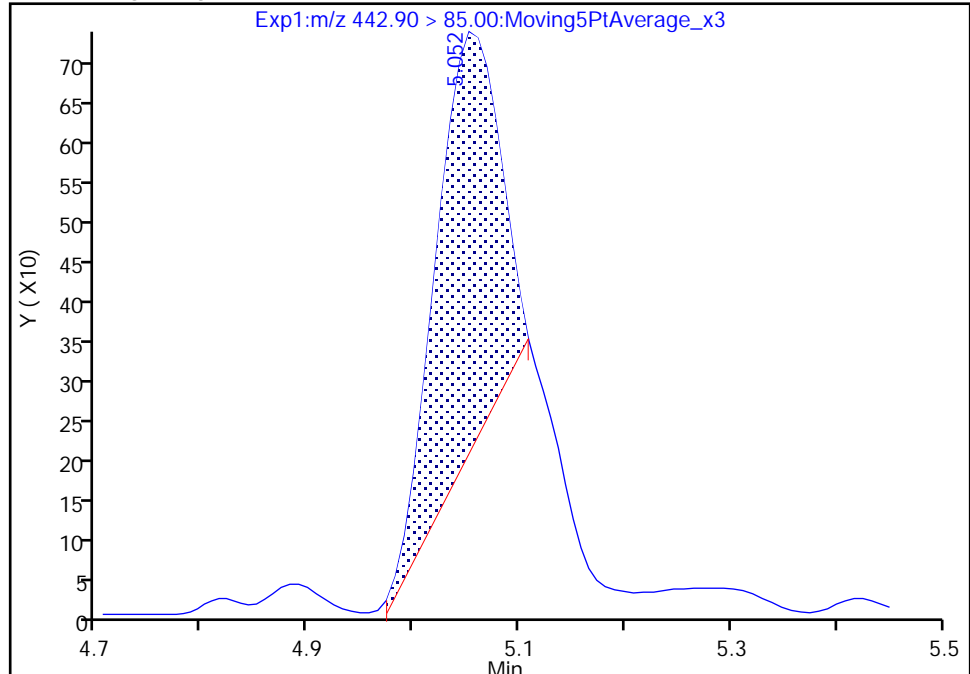
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

59 TAF, CAS: 39492-91-6

Signal: 1

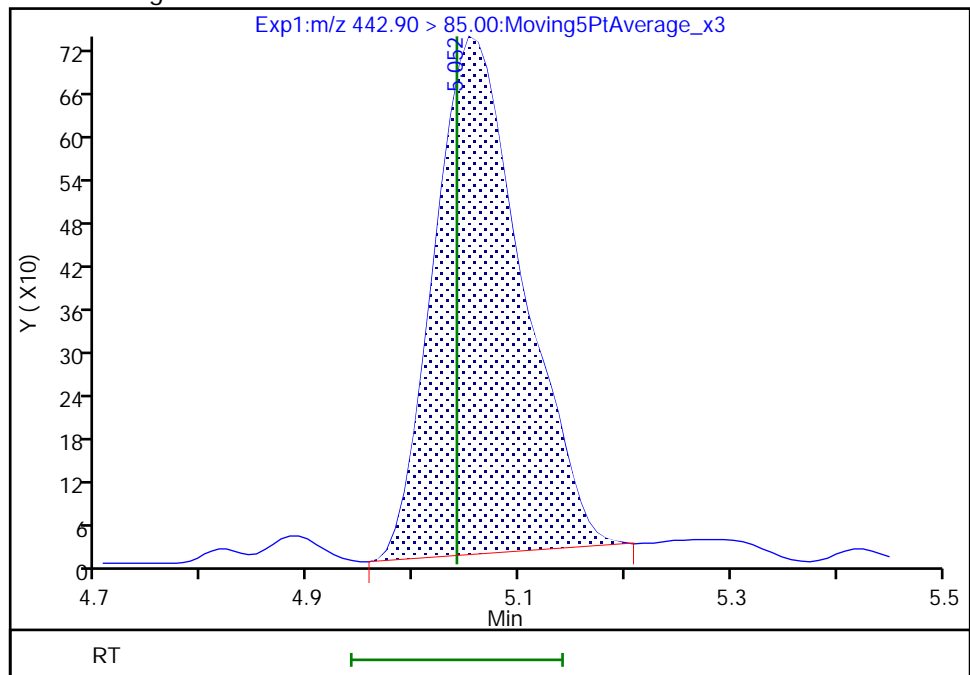
RT: 5.05
Area: 2221
Amount: 0.017047
Amount Units: ng/ml

Processing Integration Results



RT: 5.05
Area: 4208
Amount: 0.022432
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:28:25

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

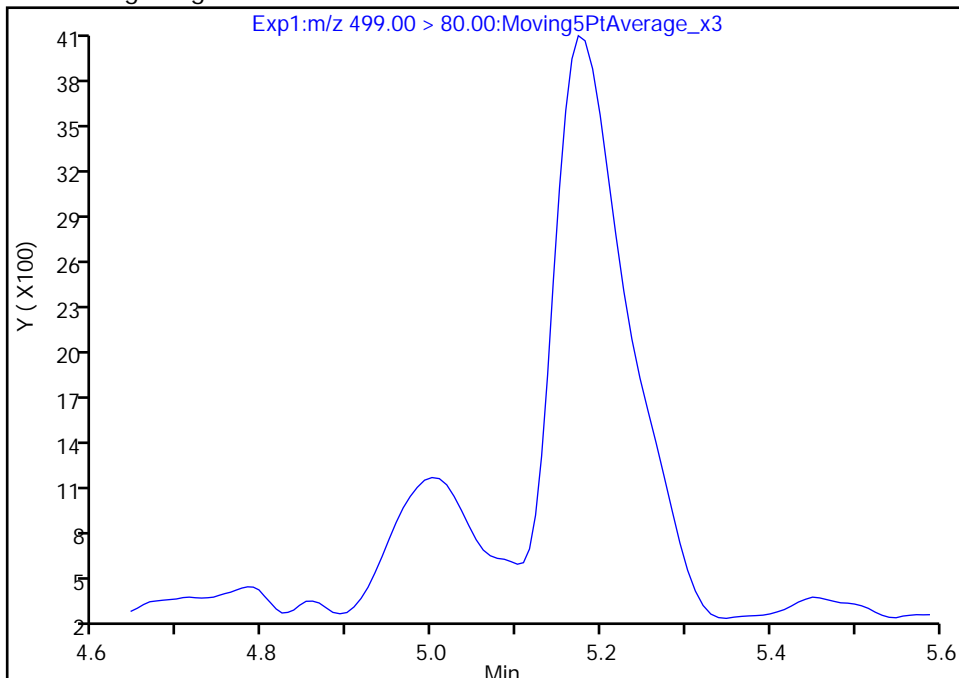
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

62 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

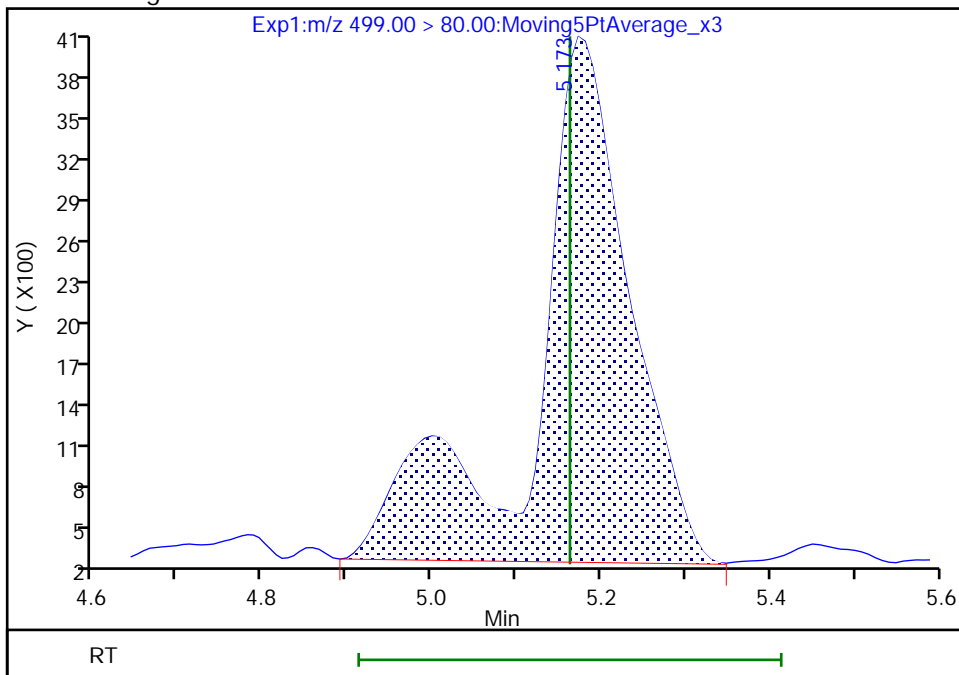
Not Detected
Expected RT: 5.16

Processing Integration Results



Manual Integration Results

RT: 5.17
Area: 29739
Amount: 0.024073
Amount Units: ng/ml



Reviewer: YS2U, 21-Dec-2022 13:28:42

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Eurofins Sacramento

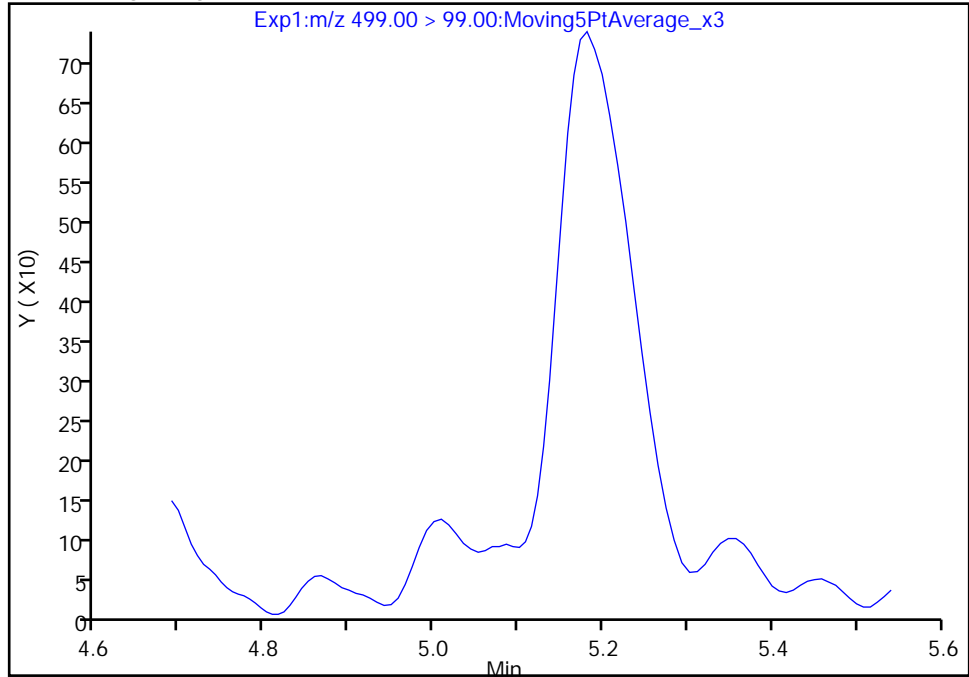
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

62 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

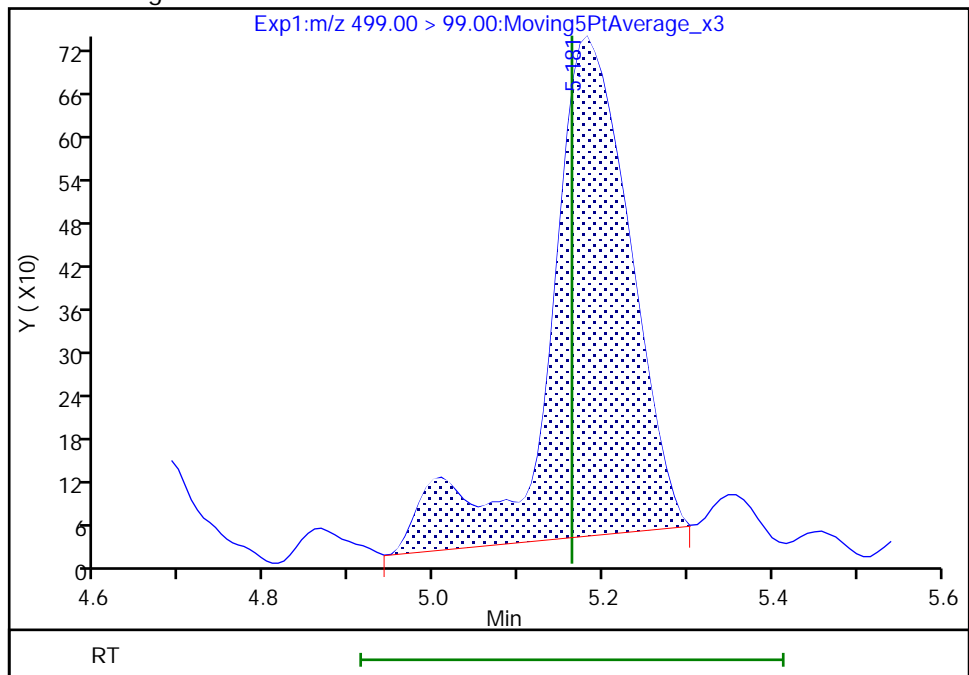
Not Detected
Expected RT: 5.16

Processing Integration Results



Manual Integration Results

RT: 5.18
Area: 4601
Amount: 0.024073
Amount Units: ng/ml



Reviewer: YS2U, 21-Dec-2022 13:28:54

Audit Action: Manually Integrated

Audit Reason: Assign Peak
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Eurofins Sacramento

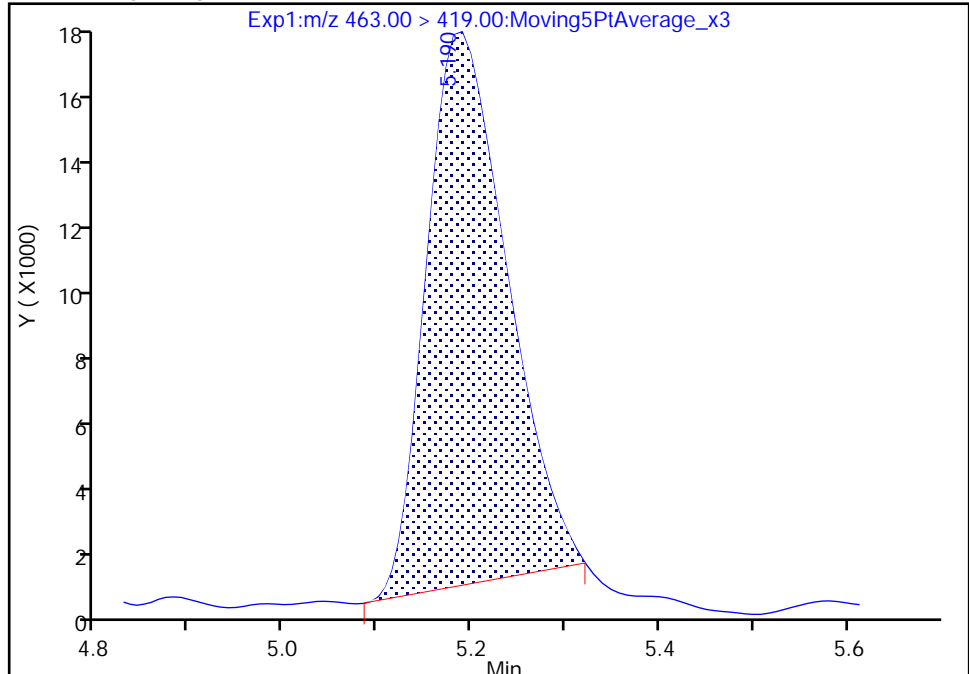
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

63 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

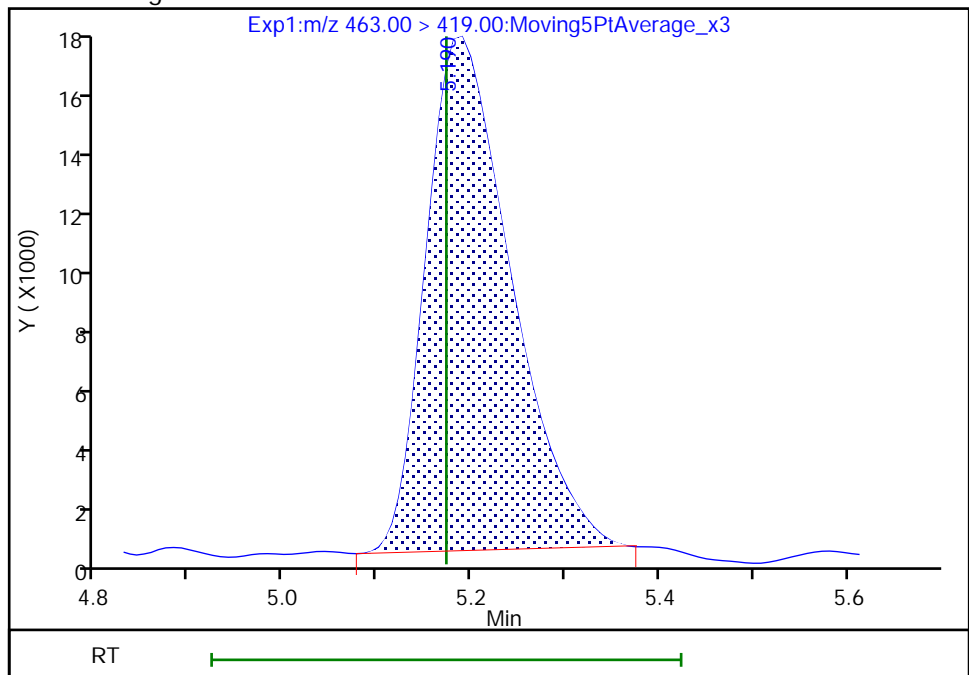
RT: 5.19
Area: 96261
Amount: 0.024258
Amount Units: ng/ml

Processing Integration Results



RT: 5.19
Area: 104467
Amount: 0.025410
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:29:09

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

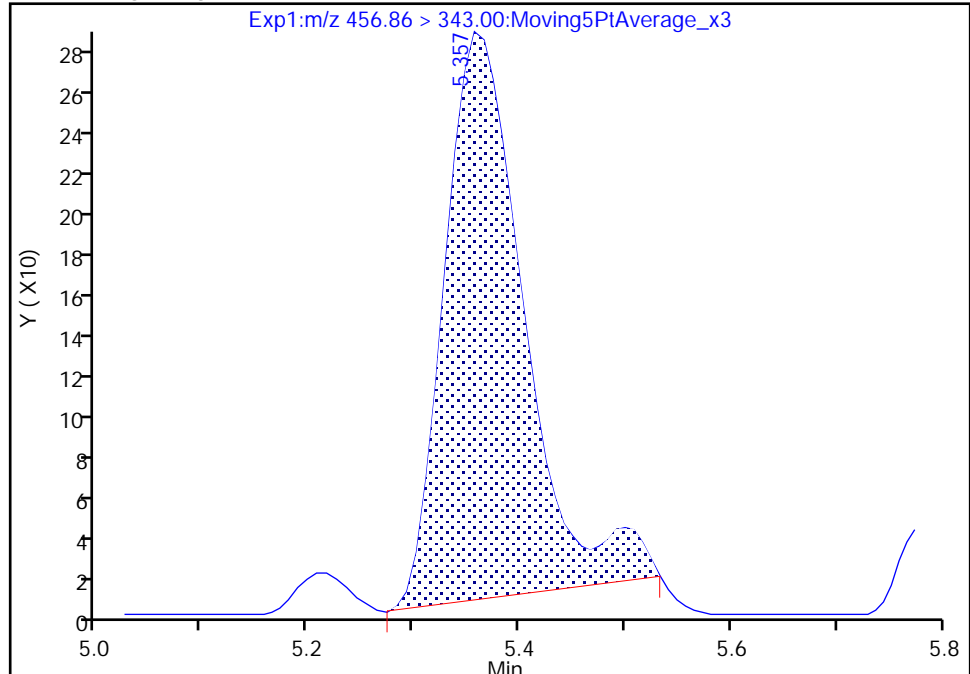
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

66 8:2 FTUCA, CAS: 70887-84-2

Signal: 2

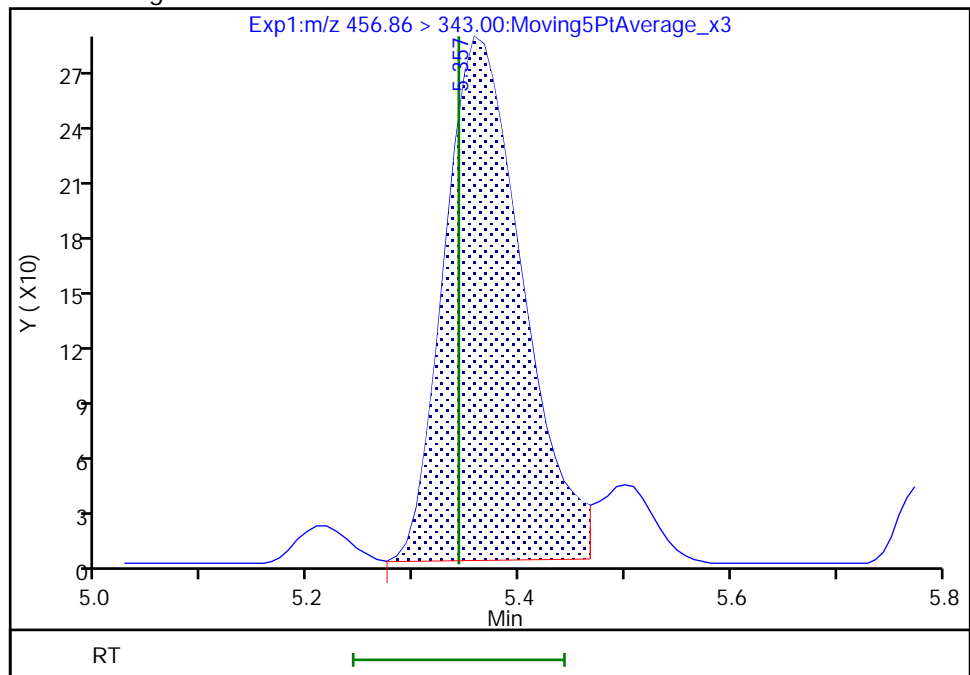
RT: 5.36
Area: 1444
Amount: 0.025667
Amount Units: ng/ml

Processing Integration Results



RT: 5.36
Area: 1443
Amount: 0.025627
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:29:37

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

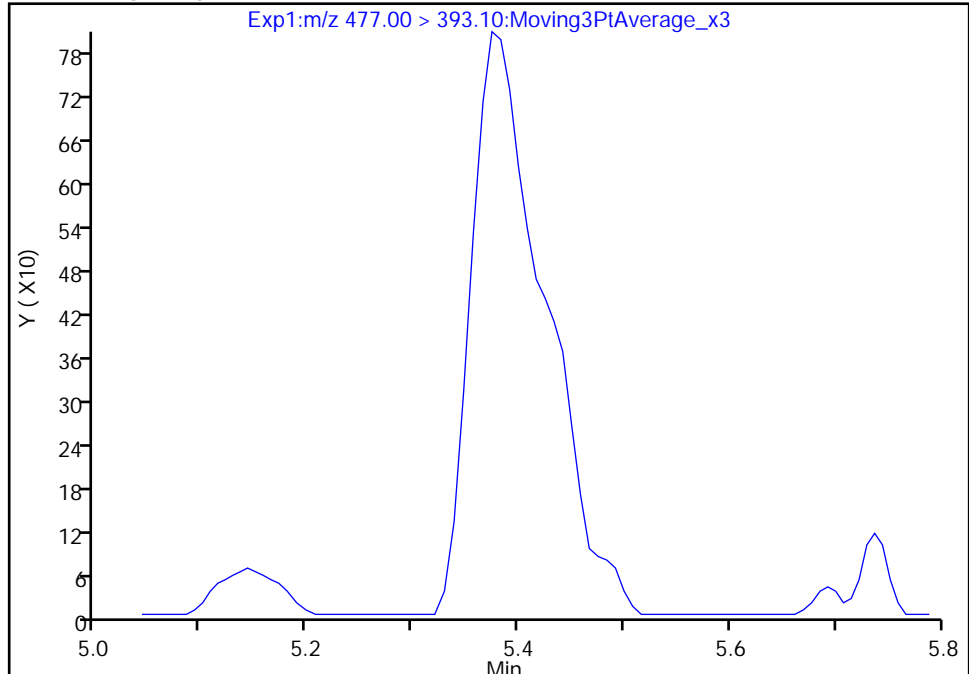
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

69 8:2 FTCA, CAS: 27854-31-5

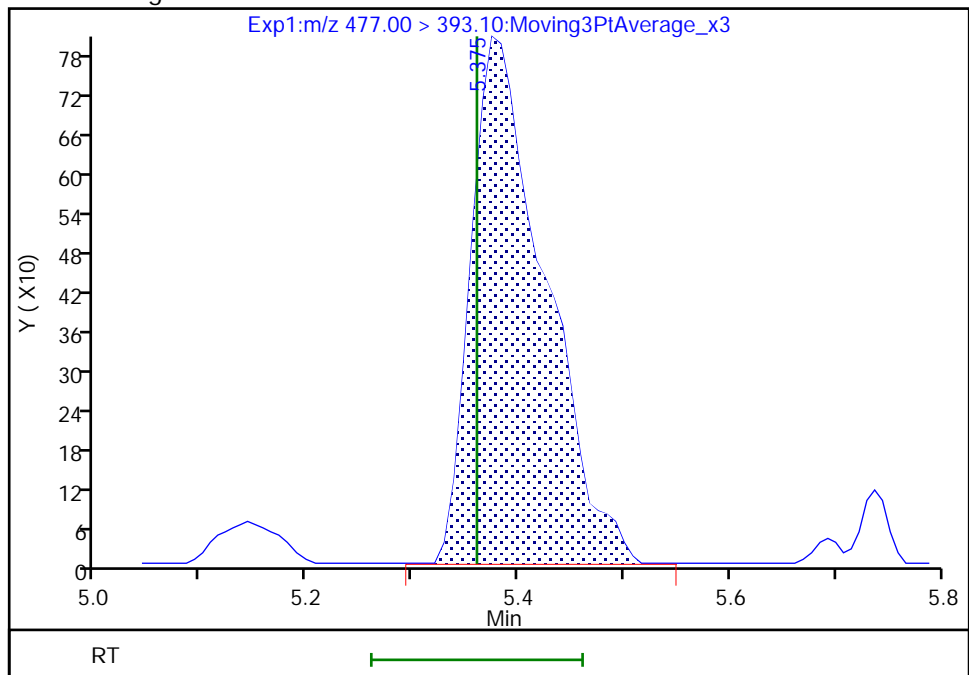
Signal: 1

Not Detected
Expected RT: 5.36

Processing Integration Results



Manual Integration Results



RT: 5.37
Area: 3896
Amount: 0.025724
Amount Units: ng/ml

Reviewer: YS2U, 21-Dec-2022 13:29:52
Audit Action: Manually Integrated

Audit Reason: Assign Peak
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Eurofins Sacramento

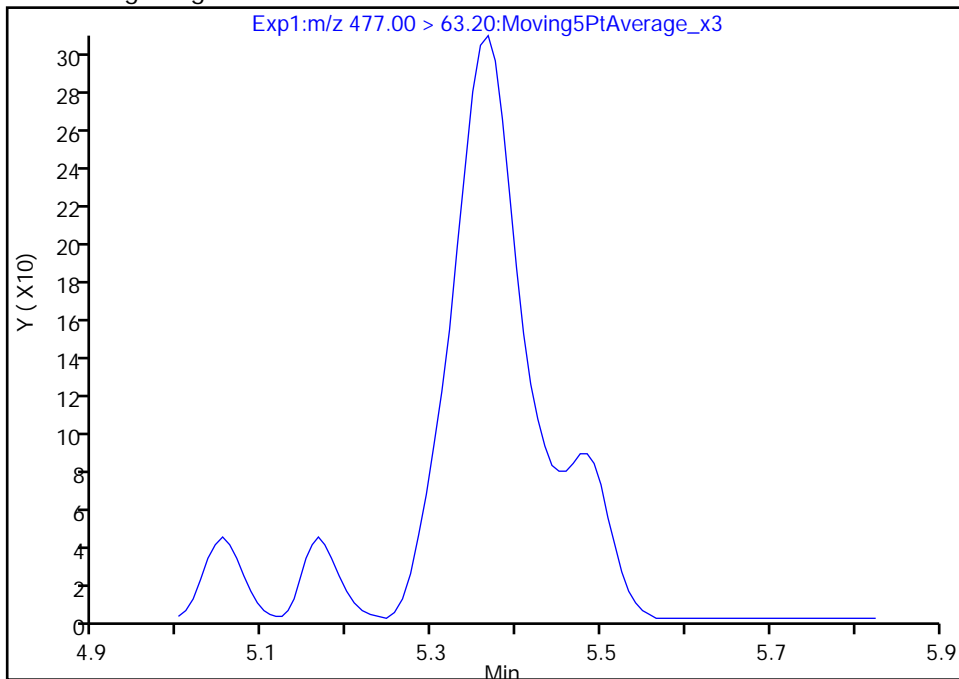
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

69 8:2 FTCA, CAS: 27854-31-5

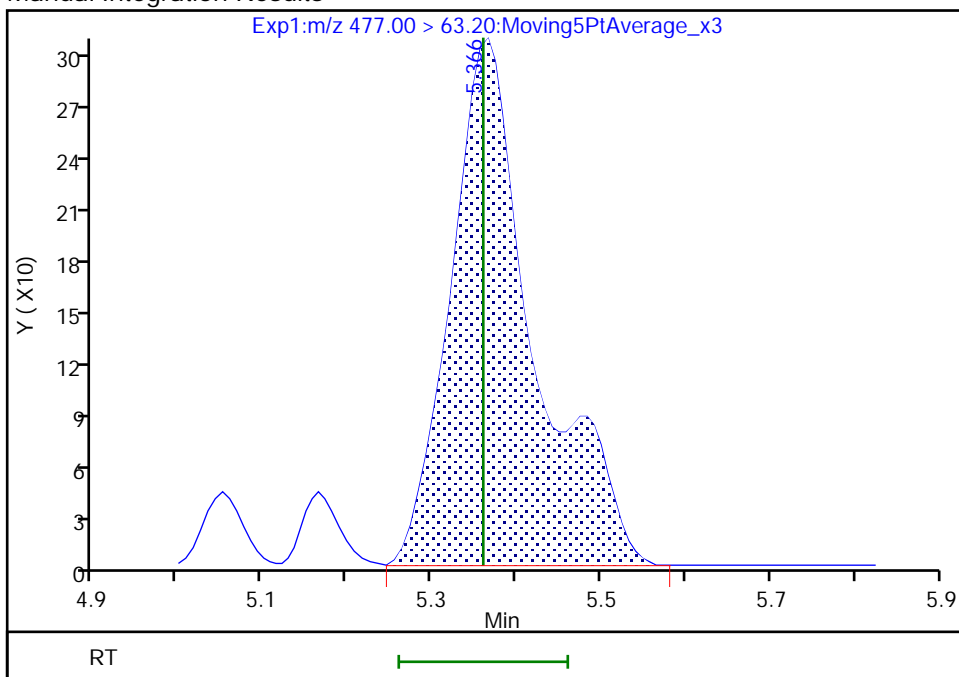
Signal: 2

Not Detected
Expected RT: 5.36

Processing Integration Results



Manual Integration Results



RT: 5.37
Area: 2068
Amount: 0.025724
Amount Units: ng/ml

Reviewer: YS2U, 21-Dec-2022 13:29:58

Audit Action: Manually Integrated

Audit Reason: Assign Peak
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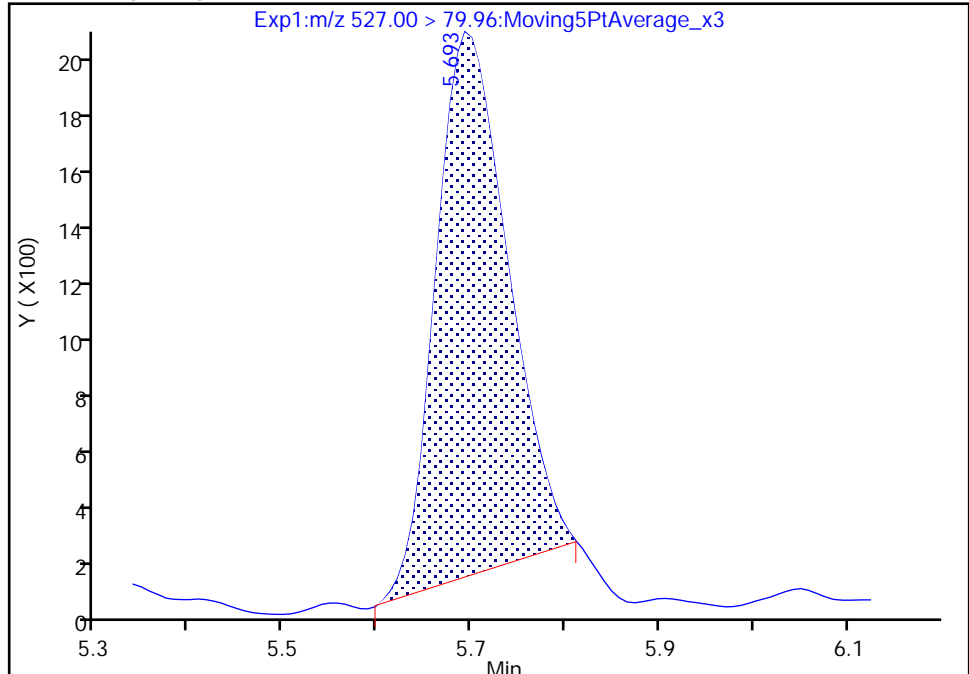
Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

75 1H,1H,2H,2H-perfluorodecanesulfo, CAS: 39108-34-4
Signal: 2

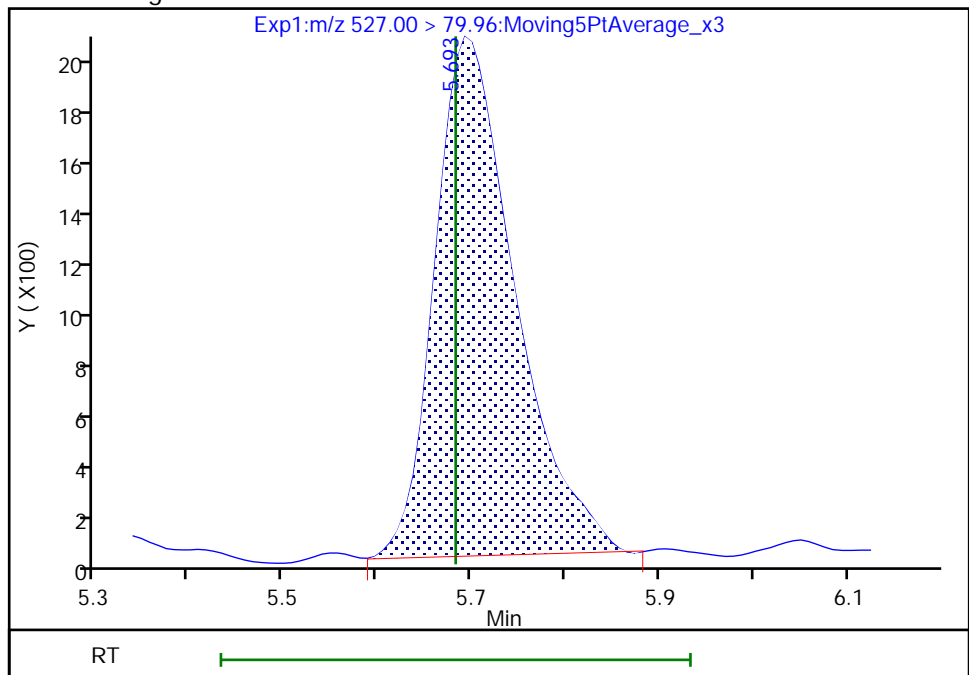
RT: 5.69
Area: 10026
Amount: 0.023278
Amount Units: ng/ml

Processing Integration Results



RT: 5.69
Area: 11773
Amount: 0.023578
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:30:10
Audit Action: Manually Integrated

Audit Reason: Assign Peak
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Eurofins Sacramento

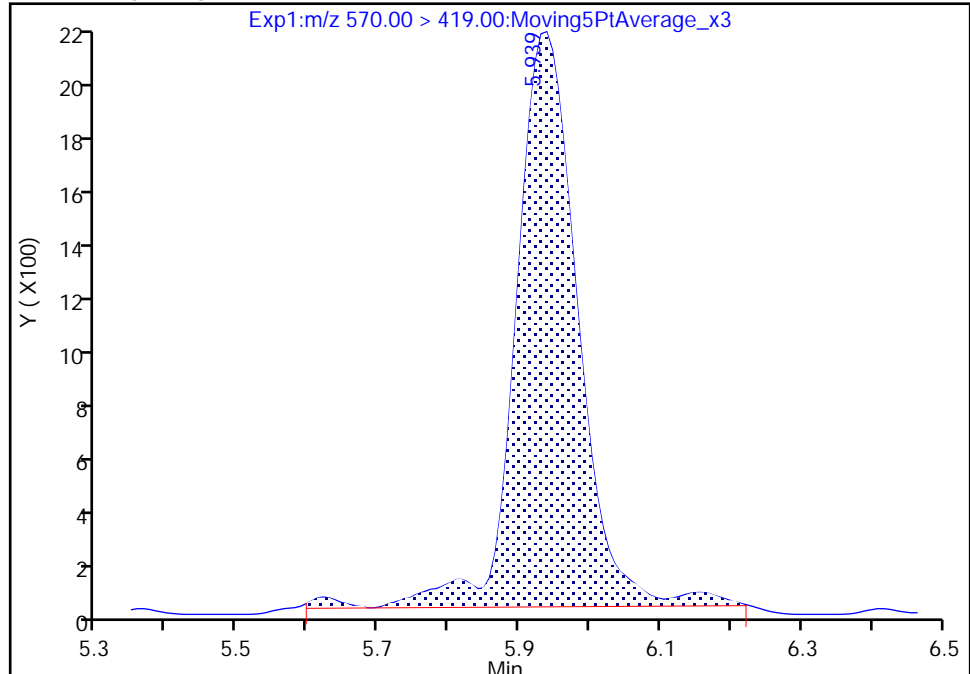
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

79 N-methylperfluorooctanesulfonami, CAS: 2355-31-9

Signal: 1

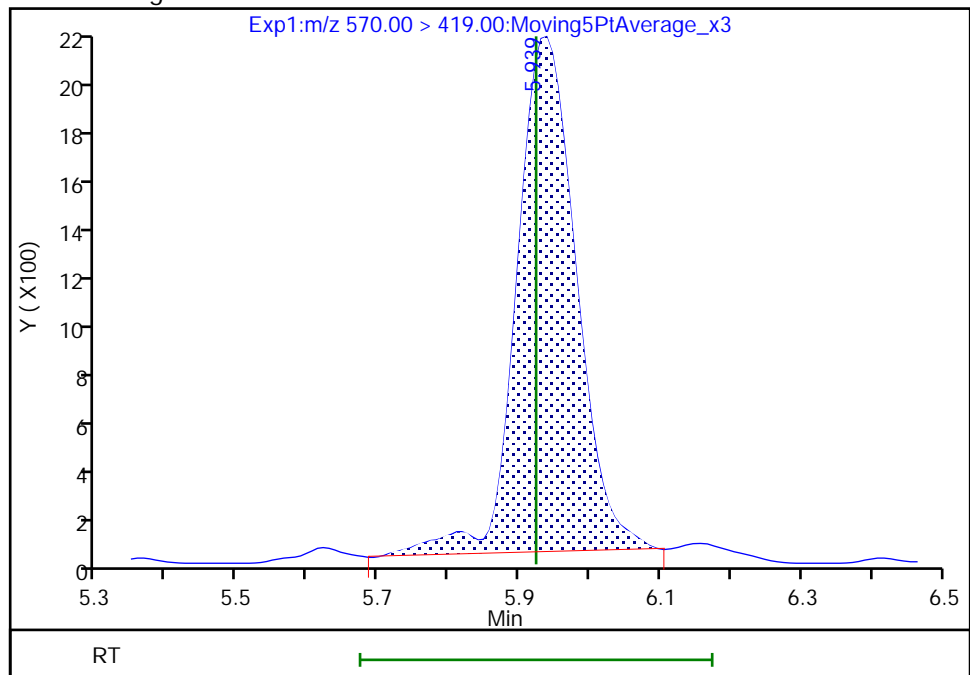
RT: 5.94
Area: 13070
Amount: 0.025094
Amount Units: ng/ml

Processing Integration Results



RT: 5.94
Area: 12477
Amount: 0.024723
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:30:28

Audit Action: Manually Integrated

Audit Reason: Isomers

Eurofins Sacramento

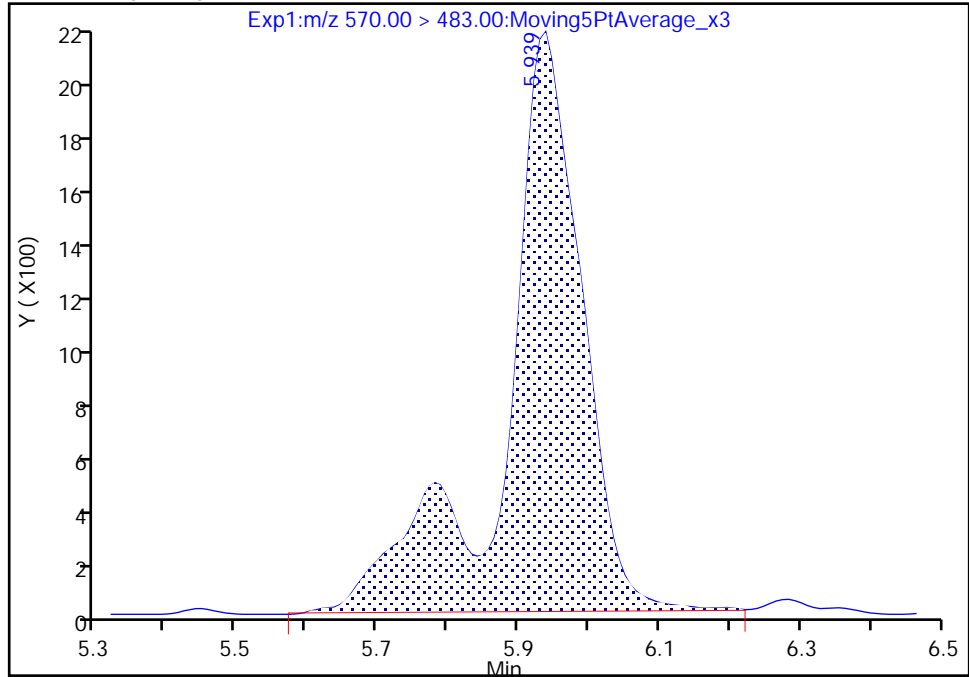
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

79 N-methylperfluorooctanesulfonami, CAS: 2355-31-9

Signal: 2

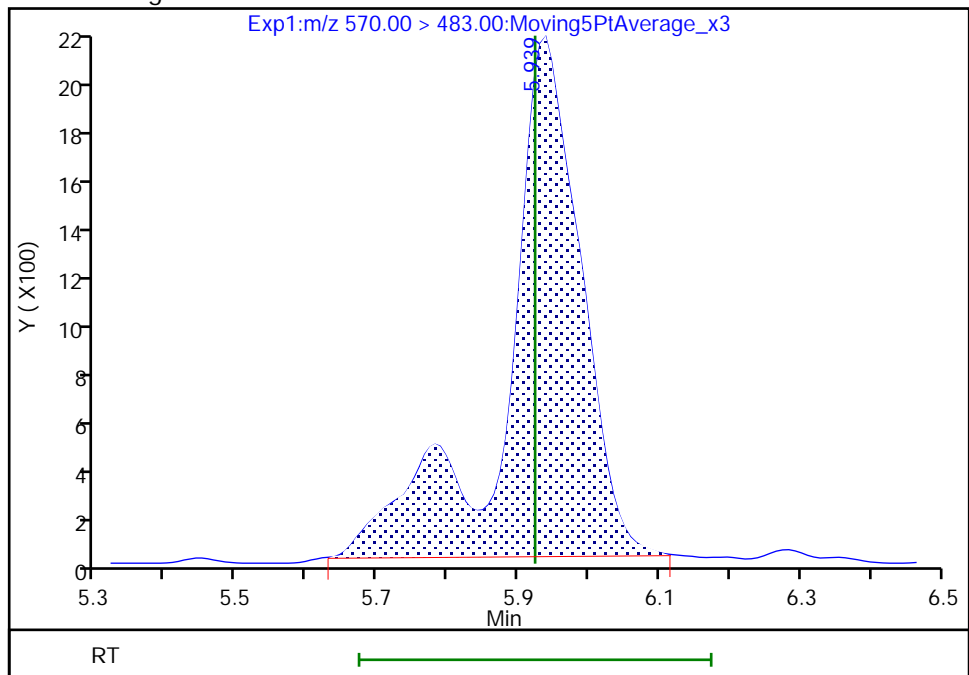
RT: 5.94
Area: 16361
Amount: 0.025094
Amount Units: ng/ml

Processing Integration Results



RT: 5.94
Area: 15617
Amount: 0.024723
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:30:35

Audit Action: Manually Integrated

Audit Reason: Isomers

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Eurofins Sacramento

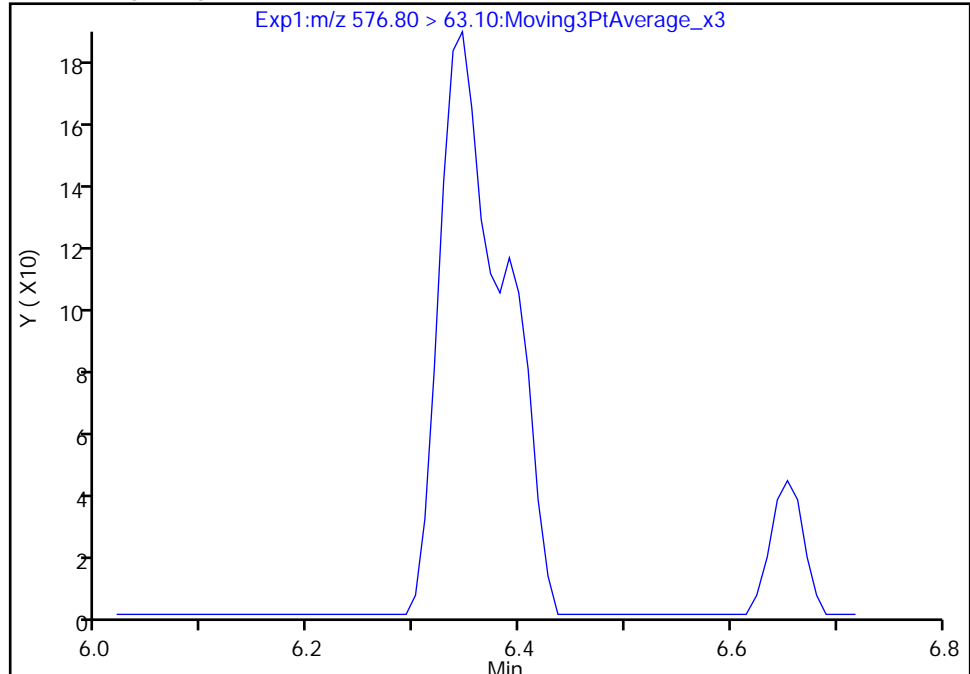
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

92 10:2 FTCA, CAS: 53826-13-4

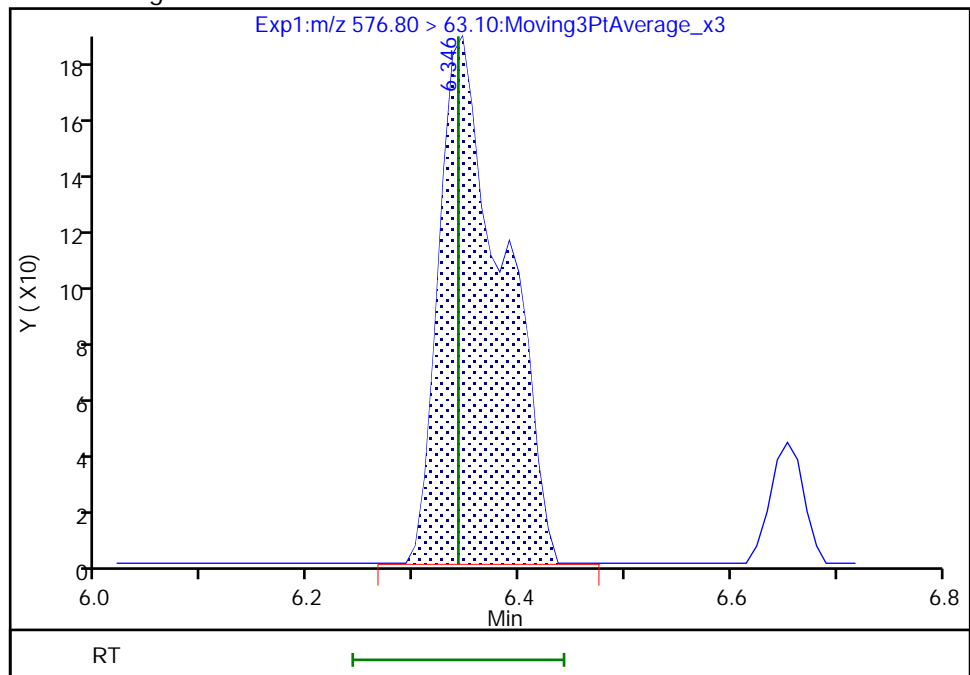
Signal: 2

Not Detected
Expected RT: 6.34

Processing Integration Results



Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:31:12
Audit Action: Manually Integrated

Audit Reason: Assign Peak
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Eurofins Sacramento

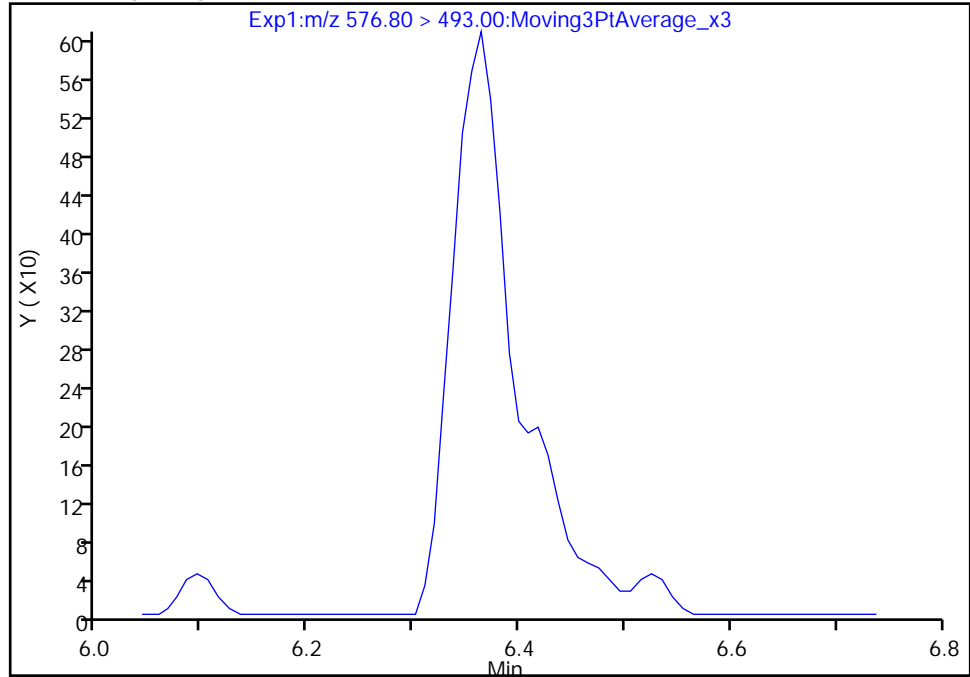
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

92 10:2 FTCA, CAS: 53826-13-4

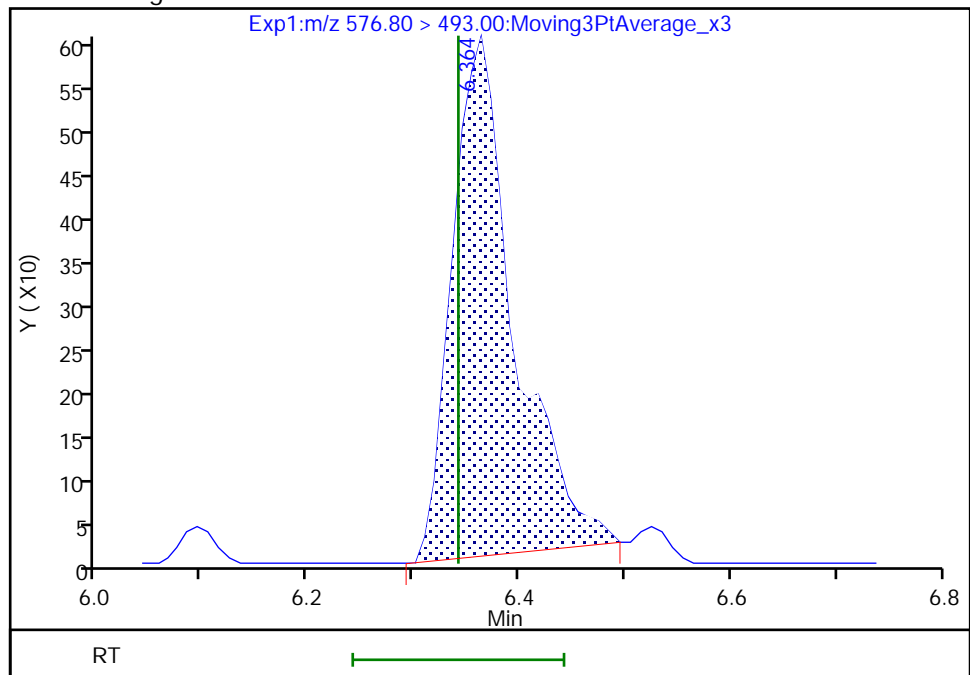
Signal: 1

Not Detected
Expected RT: 6.34

Processing Integration Results



Manual Integration Results



RT: 6.36
Area: 2419
Amount: 0.042415
Amount Units: ng/ml

Reviewer: YS2U, 21-Dec-2022 13:31:23

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Eurofins Sacramento

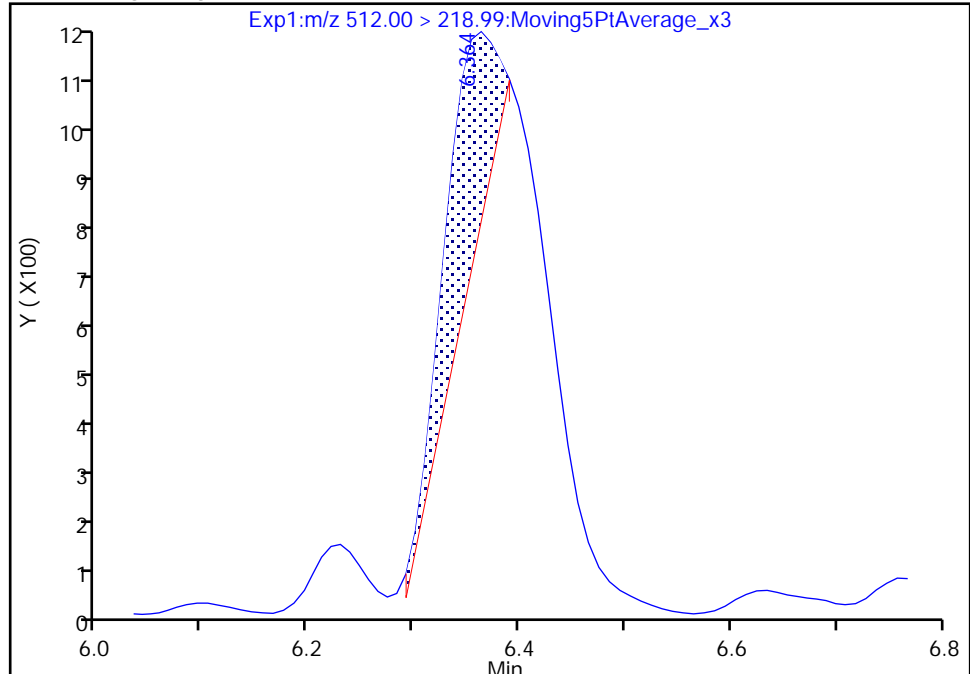
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

88 NMeFOSA, CAS: 31506-32-8

Signal: 2

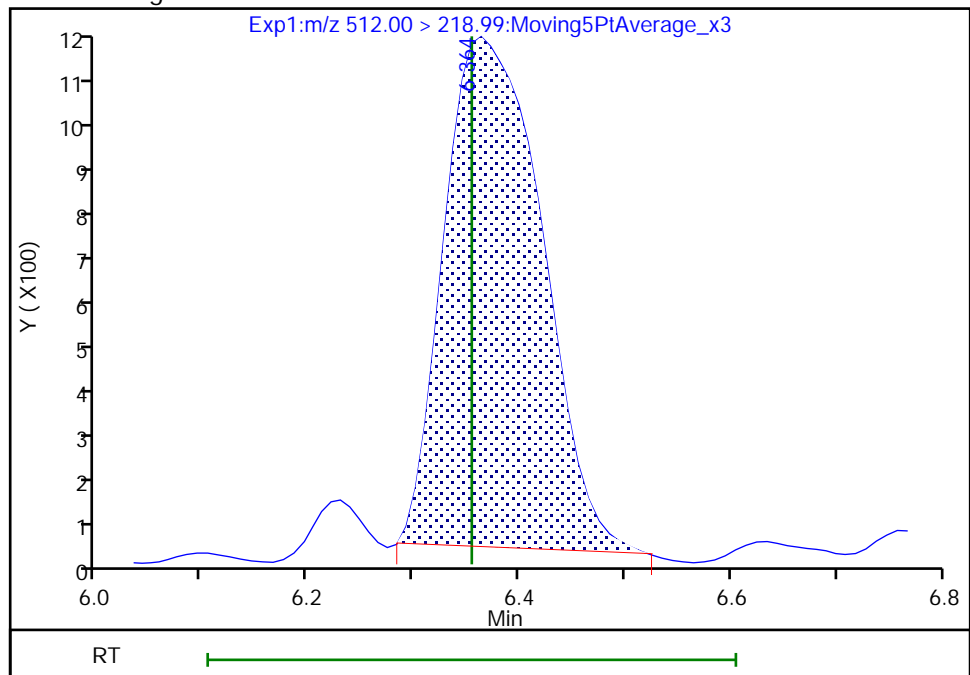
RT: 6.36
Area: 1437
Amount: 0.019966
Amount Units: ng/ml

Processing Integration Results



RT: 6.36
Area: 7162
Amount: 0.020244
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:31:44

Audit Action: Manually Integrated

Audit Reason: Baseline

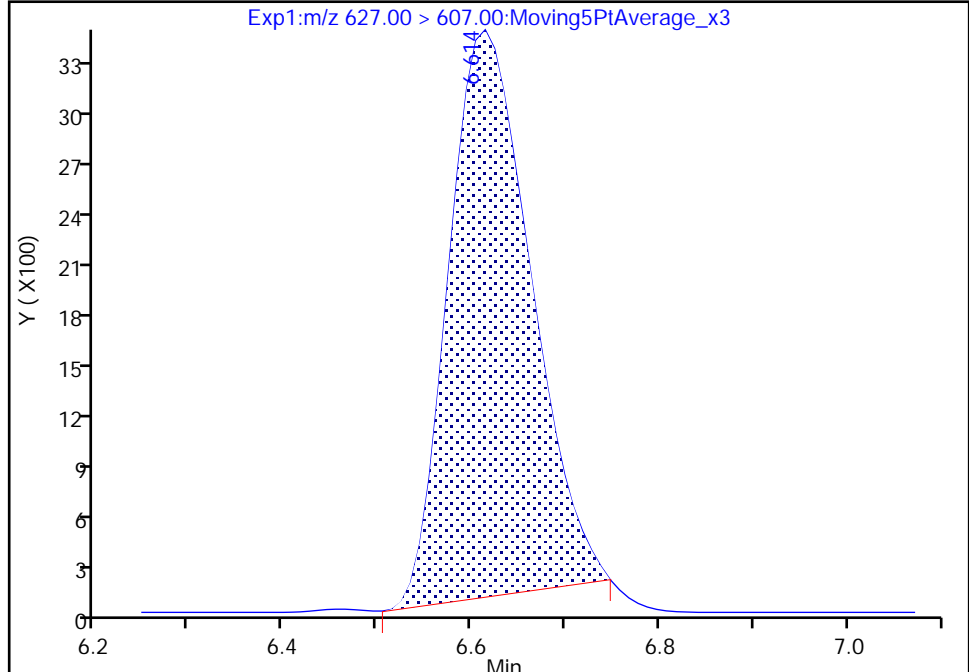
Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

101 1H,1H,2H,2H-perfluorododecanesul, CAS: 120226-60-0
Signal: 1

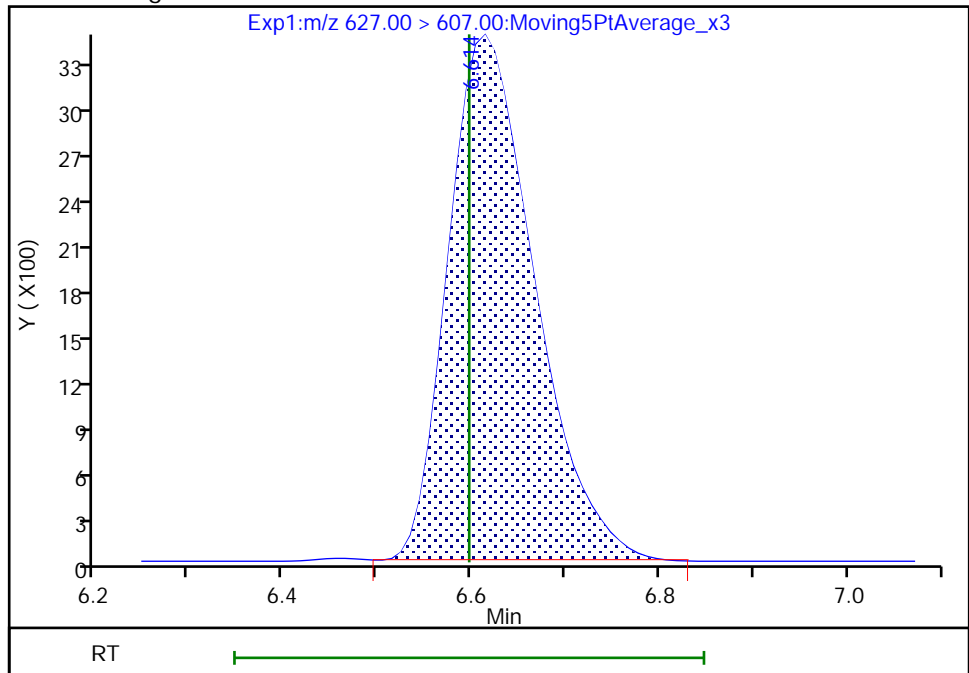
RT: 6.61
Area: 20710
Amount: 0.027266
Amount Units: ng/ml

Processing Integration Results



RT: 6.61
Area: 22360
Amount: 0.029276
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:31:59
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

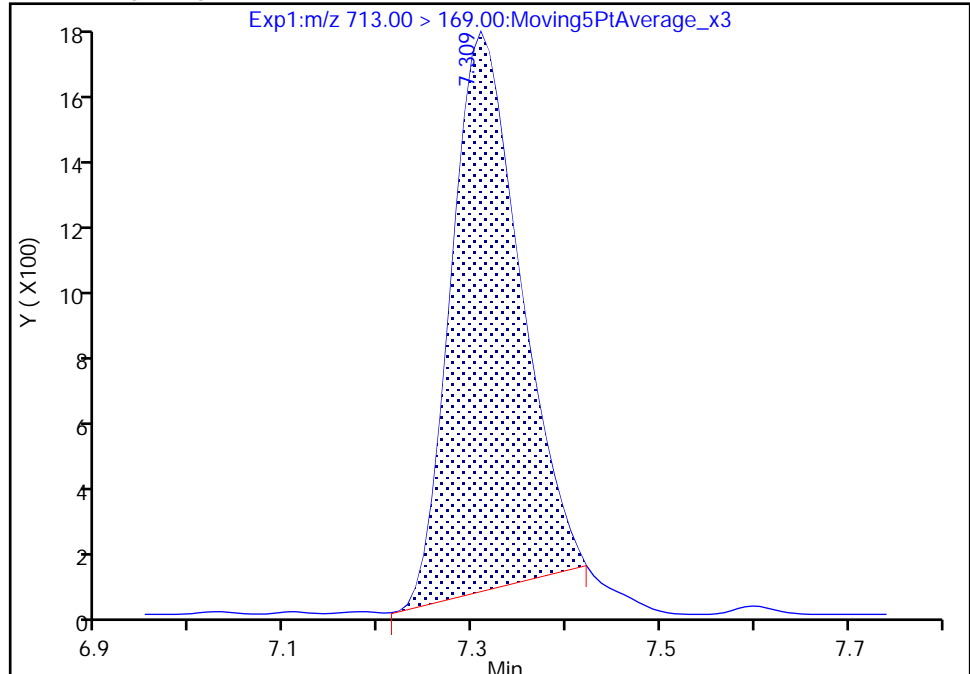
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

105 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

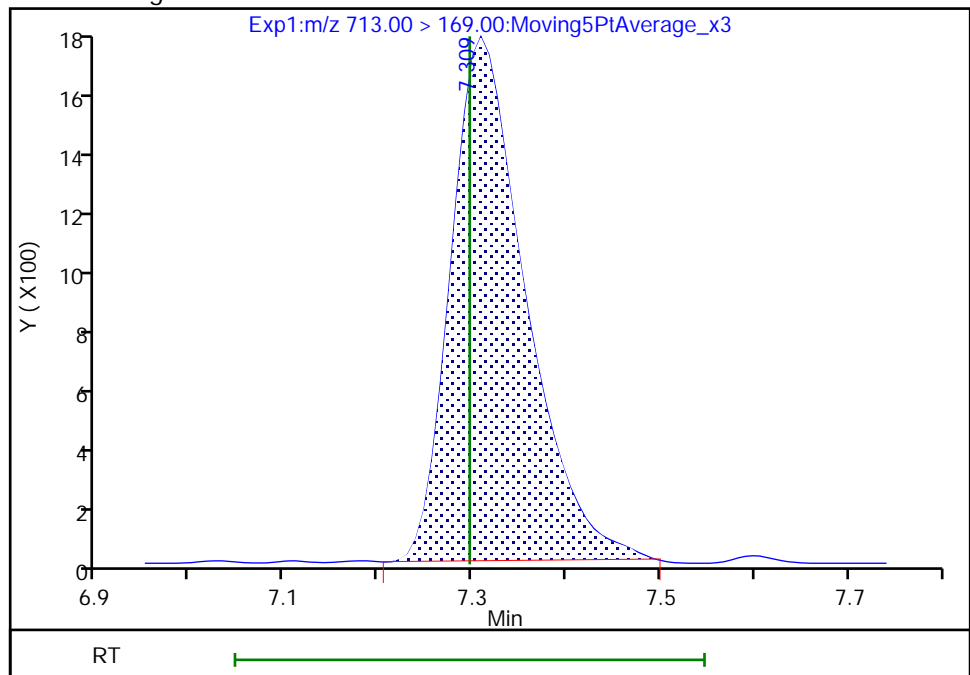
RT: 7.31
Area: 8591
Amount: 0.022093
Amount Units: ng/ml

Processing Integration Results



RT: 7.31
Area: 9714
Amount: 0.023751
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:32:14
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

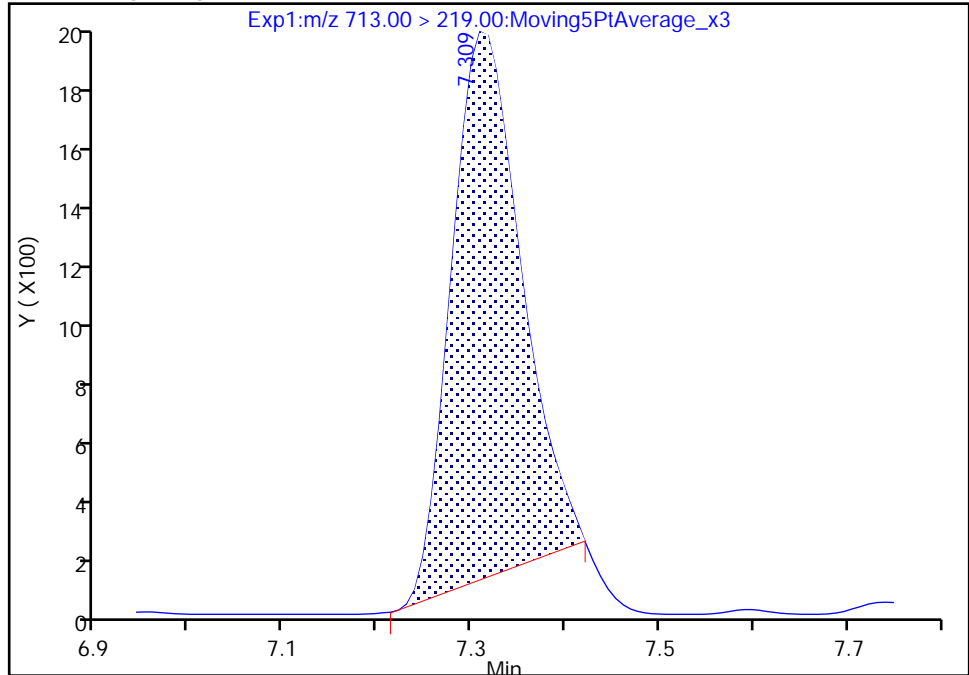
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

105 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 2

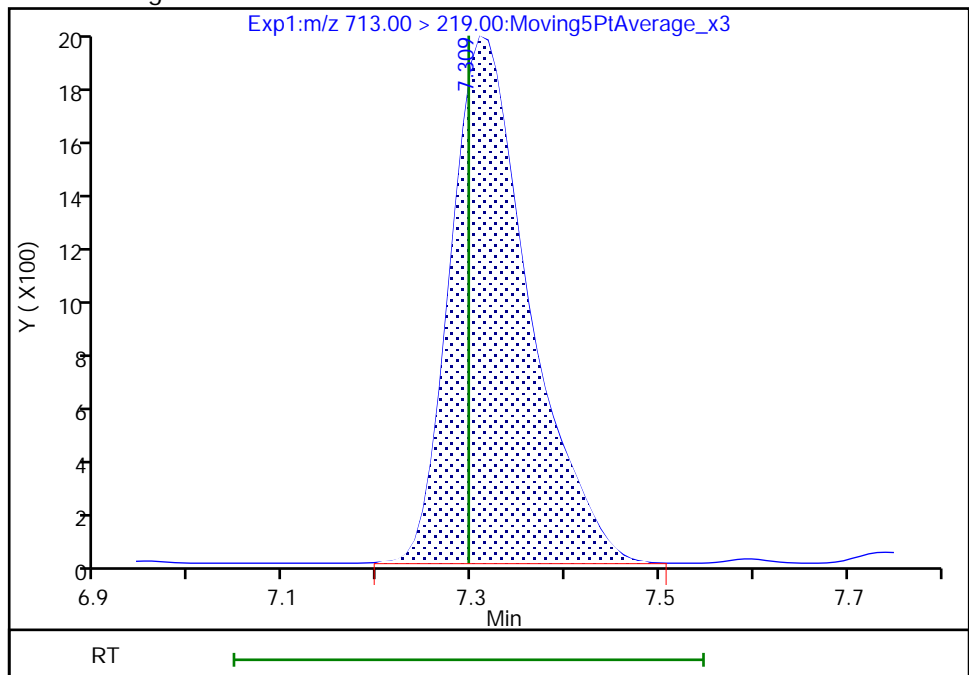
RT: 7.31
Area: 9667
Amount: 0.022093
Amount Units: ng/ml

Processing Integration Results



RT: 7.31
Area: 11496
Amount: 0.023751
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:32:20

Audit Action: Manually Integrated

Audit Reason: Baseline

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3:43 PM

Eurofins Sacramento

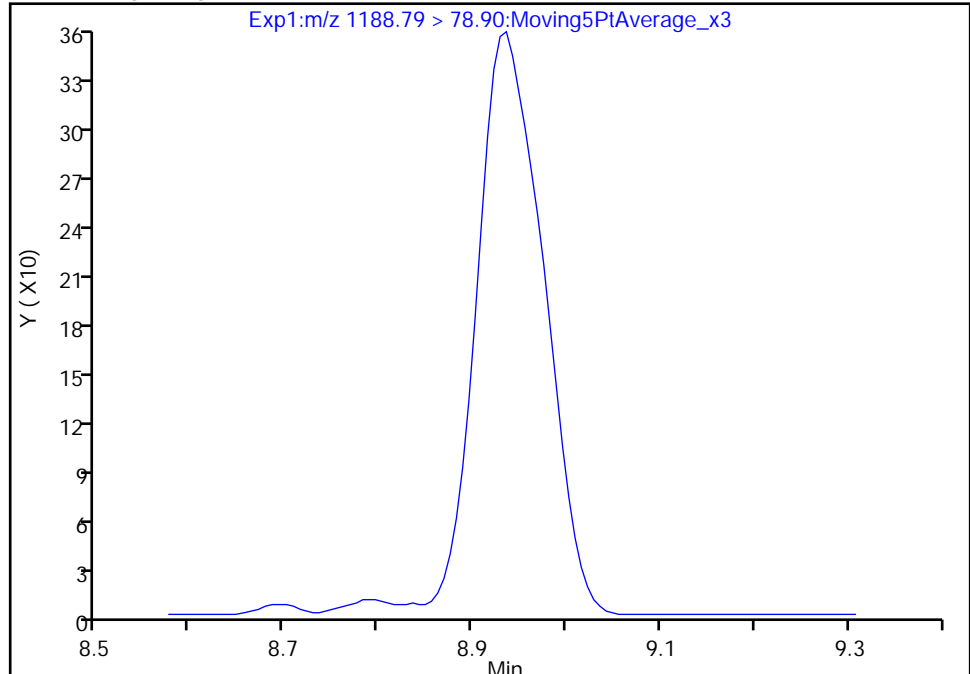
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_009.d
Injection Date: 21-Dec-2022 12:10:28 Instrument ID: A18
Lims ID: IC L1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

117 10:2 diPAP, CAS: 1895-26-7

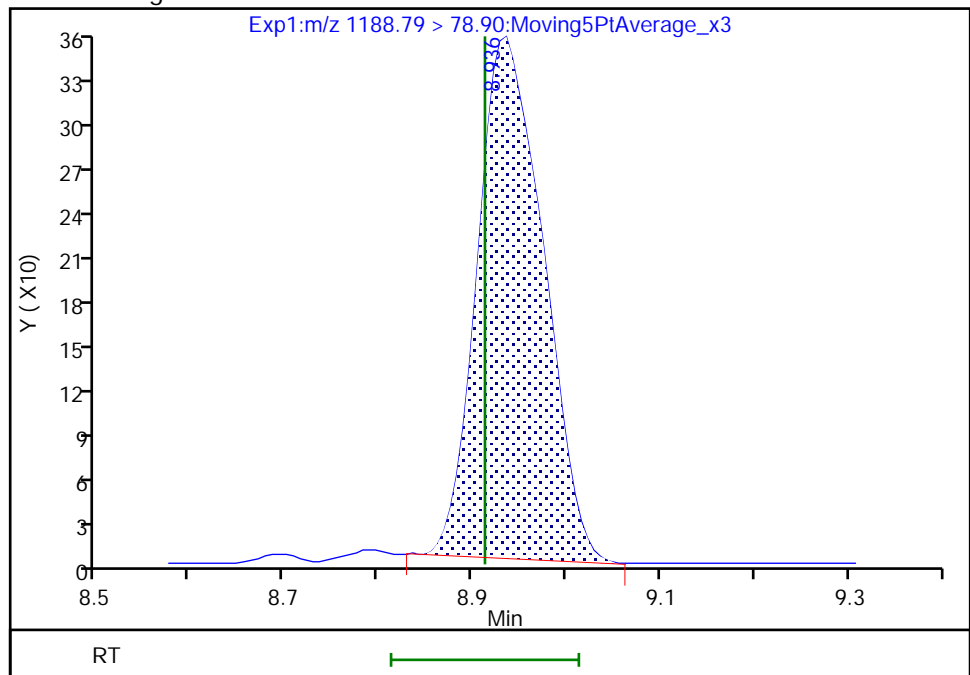
Signal: 1

Not Detected
Expected RT: 8.91

Processing Integration Results



Manual Integration Results



RT: 8.94
Area: 1726
Amount: 0.016187
Amount Units: ng/ml

Reviewer: YS2U, 22-Dec-2022 06:02:18

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
 Lims ID: IC L2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 21-Dec-2022 12:20:37 ALS Bottle#: 2 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD 2 (10)
 Misc. Info.: Plate: 2 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Sublist: chrom-PFAS+_A18*sub3
 Method: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Dec-2022 07:20:26 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1678

First Level Reviewer: YS2U

Date: 21-Dec-2022 13:42:53

Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 MTP										M
175.00 > 97.00	1.507	1.488	0.019	0.559	8865	0.0413		82.6	30.0	M
2 PPF Acid										
162.95 > 119.00	1.909	1.893	0.016	0.708	106721	0.0604		125	8.4	
3 PFMOAA										M
179.00 > 84.90	2.396	2.387	0.009	0.889	113904	0.0479		95.7	30.0	M
4 R-PSDA										
441.00 > 241.00	2.585	2.573	0.012	0.959	28809	0.0504		101	1093	
5 R-EVE										
405.00 > 217.00	2.585	2.577	0.008	0.959	71743	0.0494		98.9	2315	
6 Hydrolyzed PSDA										
439.10 > 342.90	2.593	2.581	0.012	0.961	86501	0.0476		95.1	1614	
D 8 13C4 PFBA										
217.00 > 172.00	2.696	2.688	0.008	0.582	5305834	1.29		103	15721	
7 Perfluorobutanoic acid										
212.90 > 169.00	2.696	2.690	0.006	1.000	258886	0.0549		110	8.5	
10 PMPA										
229.00 > 185.00	2.769	2.760	0.009	1.027	232172	0.0476		95.2	134	
11 PFPrS										
249.10 > 80.00	2.778	2.771	0.007	0.889	110770	0.0457		99.3	896	
12 NVHOS										M
297.00 > 135.00	2.796	2.790	0.006	1.037	5426	0.0443		88.5	104	M
13 PFCA F										M
229.00 > 85.00	2.843	2.829	0.014	0.924	118568	0.0498		99.6	1050	M
14 PFO2HxA										
245.00 > 85.00	2.991	2.976	0.015	0.972	24443	0.0491		98.3	111	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 16 13C5 PFPeA										
267.90 > 223.00	3.076	3.068	0.008	0.664	4525957	1.23		98.6	36700	
15 Perfluoropentanoic acid										
262.90 > 219.00	3.076	3.069	0.007	1.000	190715	0.0504		101	211	
17 3:3 FTCA										
241.00 > 177.10	3.095	3.075	0.020	0.991	9594	0.0481	Target=1.46	96.3	79.5	
241.00 > 116.90	3.085	3.075	0.010	0.988	5227		1.84(0.73-2.18)	96.3	29.5	
19 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.123	3.111	0.012	1.000	111734	0.0439	Target=2.33	98.8	544	
298.90 > 99.00	3.123	3.111	0.012	1.000	48673		2.30(1.16-3.49)	98.8	251	
D 18 13C3 PFBS										
301.90 > 80.00	3.123	3.111	0.012	0.675	3021473	1.19		103	18204	
20 PEPA										
278.90 > 234.90	3.191	3.178	0.013	1.037	206643	0.0514		103	28.2	
21 PFECA A										
278.95 > 84.90	3.211	3.198	0.013	1.044	203427	0.0506		101	3544	
22 PES										
314.80 > 135.00	3.306	3.292	0.014	1.058	366993	0.0433		97.2	4558	
23 FBSA										
297.90 > 78.00	3.351	3.338	0.013	0.594	27434	0.0490		98.1	485	
24 PFECA B										
295.20 > 201.00	3.449	3.438	0.011	0.980	33015	0.0471		94.3	651	
26 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.467	3.461	0.006	0.997	70217	0.0484	Target=1.98	103	2287	
327.00 > 79.96	3.467	3.461	0.006	0.997	33466		2.10(0.99-2.97)	103	334	
D 25 M2-4:2 FTS										
329.00 > 81.00	3.476	3.463	0.013	0.751	727484	1.23		105	4597	
D 27 13C2 PFHxA										
315.00 > 270.00	3.520	3.513	0.007	0.760	5056255	1.25		100	32928	
28 Perfluorohexanoic acid										
313.00 > 269.00	3.520	3.514	0.006	1.000	184422	0.0484	Target=13.54	96.8	227	
313.00 > 119.00	3.529	3.514	0.015	1.003	14115		13.07(6.77-20.31)	96.8	139	
29 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.556	3.545	0.011	1.138	94760	0.0454	Target=3.08	96.7	815	
349.00 > 99.00	3.556	3.545	0.011	1.138	33279		2.85(1.54-4.63)	96.7	579	
30 PFO3OA										
311.10 > 85.20	3.607	3.598	0.009	1.025	12421	0.0556		111	184	M
31 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.711	3.685	0.026	1.005	7246	0.0526	Target=0.84	105	436	
285.00 > 185.00	3.703	3.685	0.018	1.002	8050		0.90(0.42-1.25)	105	107	
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.694	3.685	0.009	0.798	162965	1.20		96.1	6571	
33 R-PSDCA										
397.00 > 217.00	4.010	4.000	0.010	0.987	67892	0.0558		112	2147	
36 Perfluoroheptanoic acid										
363.00 > 319.00	4.053	4.047	0.006	0.998	183256	0.0487	Target=3.56	97.4	251	
363.00 > 169.00	4.053	4.047	0.006	0.998	57159		3.21(1.78-5.34)	97.4	1103	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 35 13C4 PFHpA										
367.00 > 322.00	4.061	4.048	0.013	0.877	5167387	1.21		96.6	29351	
38 Perfluorohexanesulfonic acid										M
399.00 > 80.00	4.070	4.060	0.010	1.000	75422	0.0464	Target=3.26	102	523	M
399.00 > 99.00	4.087	4.060	0.027	1.004	24817		3.04(1.63-4.88)	102	123	M
D 37 18O2 PFHxS										
403.00 > 84.00	4.070	4.063	0.007	0.879	1993425	1.19		101	14998	
34 Hydro-EVE Acid										
427.00 > 282.90	4.045	4.078	-0.033	0.996	298442	0.0521		104	4083	
39 Hydro-PS Acid										
463.00 > 263.00	4.121	4.114	0.007	1.015	257193	0.0504		101	857	
41 5:3 FTCA										
340.88 > 236.90	4.129	4.127	0.002	0.977	35339	0.0523	Target=1.10	105	772	
340.88 > 216.90	4.138	4.127	0.011	0.979	29670		1.19(0.55-1.65)	105	263	
40 DONA										
377.00 > 251.00	4.138	4.128	0.010	0.800	346767	0.0461	Target=2.23	97.6	4511	
377.00 > 85.00	4.147	4.128	0.019	0.801	152754		2.27(1.11-3.34)	97.6	1488	
42 PFECA G										
378.90 > 184.90	4.164	4.158	0.006	0.985	96527	0.0490		98.0	1715	
D 44 13C-6:2 FTUCA										
358.86 > 293.90	4.199	4.185	0.014	0.907	3177503	1.25		100	21317	
43 6:2 FTUCA										
356.86 > 292.90	4.199	4.188	0.011	1.000	130071	0.0506	Target=12.98	101	1523	
356.86 > 243.00	4.199	4.188	0.011	1.000	9497		13.70(6.49-19.46)	101	266	
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.226	4.212	0.014	0.913	252103	1.28		103	1466	
45 6:2 FTCA										M
377.10 > 313.10	4.226	4.217	0.009	1.000	2456	0.0466	Target=0.65	93.2	73.6	M
377.10 > 63.00	4.226	4.217	0.009	1.000	4812		0.51(0.33-0.98)	93.2	159	M
47 PFO4DA										
376.90 > 85.00	4.341	4.320	0.021	1.069	10033	0.0438		87.5	0.5	
48 PS Acid										
442.80 > 146.80	4.429	4.418	0.011	0.958	105073	0.0526		105	472	
49 EVE Acid										
407.00 > 262.90	4.438	4.425	0.013	0.960	311638	0.0506		101	7838	
50 FHxSA										
397.90 > 78.00	4.528	4.515	0.013	0.803	151404	0.0502		100	2220	
51 PFECHS										
460.80 > 380.90	4.546	4.535	0.011	0.984	199805	0.0473	Target=2.05	102	894	
460.80 > 98.90	4.546	4.535	0.011	0.984	91875		2.17(1.03-3.08)	102	1559	
53 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.588	4.578	0.010	1.000	65730	0.0475	Target=2.31	99.7	1769	
427.00 > 79.96	4.588	4.578	0.010	1.000	26710		2.46(1.16-3.47)	99.7	217	
D 52 M2-6:2 FTS										
429.00 > 81.00	4.588	4.580	0.008	0.991	809811	1.30		110	11295	
\$ 54 13C8 PFOA										
421.00 > 376.00	4.630	4.613	0.017	1.000	7125345	1.28		103	17301	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 56 13C4 PFOA										
417.00 > 372.00	4.621	4.613	0.008	0.998	6004578	1.28		103	18916	
58 Perfluorooctanoic acid										M
413.00 > 369.00	4.621	4.614	0.007	1.000	222902	0.0497	Target=2.69	99.5	147	
413.00 > 169.00	4.630	4.614	0.016	1.002	83543		2.67(1.35-4.04)	99.5	713	M
* 55 13C2 PFOA										
415.00 > 370.00	4.630	4.615	0.015		5787639	1.25			23465	
57 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.638	4.620	0.018	0.896	68440	0.0504	Target=4.67	106	1321	
449.00 > 99.00	4.638	4.620	0.018	0.896	15386		4.45(2.33-7.00)	106	232	
59 TAF										M
442.90 > 85.00	5.055	5.041	0.014	1.094	9153	0.0510		102	276	M
\$ 60 13C8 PFOS										
507.00 > 99.00	5.175	5.161	0.014	1.118	597424	1.24		103	5573	
D 61 13C4 PFOS										
503.00 > 80.00	5.175	5.162	0.013	1.118	1353806	1.20		100	6560	
62 Perfluorooctanesulfonic acid										M
499.00 > 80.00	5.175	5.163	0.012	1.000	59636	0.0508	Target=5.09	109	71.5	M
499.00 > 99.00	5.175	5.163	0.012	1.000	11746		5.08(2.55-7.64)	109	121	M
D 64 13C5 PFNA										
468.00 > 423.00	5.183	5.170	0.013	1.120	6020708	1.32		105	28885	
63 Perfluorononanoic acid										
463.00 > 419.00	5.183	5.173	0.010	1.000	194512	0.0466	Target=7.64	93.1	206	
463.00 > 169.00	5.175	5.173	0.002	0.998	27578		7.05(3.82-11.46)	93.1	537	
65 7:3 FTCA										
441.00 > 337.00	5.305	5.297	0.008	0.987	39722	0.0487	Target=1.18	97.4	244	
441.00 > 317.00	5.314	5.297	0.017	0.988	37346		1.06(0.59-1.77)	97.4	307	
D 67 13C-8:2 FTUCA										
458.86 > 393.90	5.351	5.340	0.011	1.156	3608847	1.32		106	12578	
66 8:2 FTUCA										M
456.86 > 392.90	5.351	5.342	0.009	1.000	138449	0.0504	Target=39.03	101	2732	
456.86 > 343.00	5.377	5.342	0.035	1.005	3089		44.82(19.51-58.54)	101	87.8	M
69 8:2 FTCA										Ma
477.00 > 393.10	5.360	5.361	-0.001	0.997	8031	0.0515	Target=2.58	103	32.1	a
477.00 > 63.20	5.394	5.361	0.033	1.003	3179		2.53(1.29-3.87)	103	117	M
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.377	5.363	0.014	1.161	192610	1.31		105	1382	
70 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	5.477	5.470	0.007	1.058	133385	0.0472		101	3655	
71 Perfluorooctanesulfonamide										
498.00 > 78.00	5.639	5.628	0.011	1.000	73903	0.0514		103	2329	
D 72 13C8 FOSA										
506.00 > 78.00	5.639	5.628	0.011	1.218	1886081	1.26		101	9042	
73 Perfluorononanesulfonic acid										
549.00 > 80.00	5.687	5.672	0.015	1.099	40042	0.0456	Target=2.73	94.9	826	
549.00 > 99.00	5.687	5.672	0.015	1.099	15176		2.64(1.37-4.10)	94.9	390	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.694	5.681	0.013	1.230	760844	1.22		101	15518	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	5.694	5.683	0.011	1.000	55336	0.0530	Target=2.39	110	2288	
527.00 > 79.96	5.694	5.683	0.011	1.000	22800		2.43(1.19-3.58)	110	511	
D 76 13C2 PFDA										
515.00 > 470.00	5.702	5.690	0.012	1.232	5428601	1.23		98.3	62251	
77 Perfluorodecanoic acid										
513.00 > 469.00	5.702	5.691	0.011	1.000	138626	0.0485	Target=7.32	97.1	436	
513.00 > 169.00	5.702	5.691	0.011	1.000	21036		6.59(3.66-10.98)	97.1	463	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.931	5.917	0.014	1.281	766454	1.25		100	3991	
79 N-methylperfluorooctanesulfonami										
570.00 > 419.00	5.939	5.923	0.016	1.001	27599	0.0569	Target=0.78	114	394	
570.00 > 483.00	5.931	5.923	0.008	1.000	32789		0.84(0.39-1.18)	114	688	
80 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.147	6.133	0.014	1.188	42326	0.0529	Target=3.04	110	1615	
599.00 > 99.00	6.137	6.133	0.004	1.186	12313		3.44(1.52-4.56)	110	383	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.168	6.158	0.010	1.332	808849	1.32		105	3739	
D 82 13C2 PFUnA										
565.00 > 520.00	6.178	6.163	0.015	1.334	5173428	1.25		99.9	30625	
83 Perfluoroundecanoic acid										
563.00 > 519.00	6.178	6.163	0.015	1.000	133216	0.0471	Target=8.03	94.1	386	
563.00 > 169.00	6.178	6.163	0.015	1.000	19141		6.96(4.02-12.05)	94.1	559	
84 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	6.188	6.168	0.020	1.003	23047	0.0473	Target=0.76	94.7	542	M
584.00 > 526.10	6.178	6.168	0.010	1.002	29794		0.77(0.38-1.14)	94.7	467	M
90 10:2 FTUCA										
556.86 > 492.90	6.338	6.326	0.012	1.000	91725	0.0517		103	2366	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.338	6.327	0.011	1.369	894226	1.22		97.2	4156	
D 89 13C-10:2 FTUCA										
558.86 > 493.90	6.338	6.324	0.014	1.369	3137556	1.27		102	16950	
86 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	6.347	6.341	0.006	1.001	34482	0.0489		97.8	298	
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.356	6.342	0.014	1.373	109123	1.33		106	674	
92 10:2 FTCA										
576.80 > 493.00	6.356	6.342	0.014	1.000	2517	0.0441	Target=2.24	88.3	19.1	M
576.80 > 63.10	6.347	6.342	0.005	0.999	1845		1.36(1.12-3.36)	88.3	17.3	M
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.356	6.348	0.008	1.373	595910	1.22		97.8	1761	
88 NMeFOSA										
512.00 > 169.00	6.374	6.355	0.019	1.003	27890	0.0603	Target=1.97	121	595	M
512.00 > 218.99	6.356	6.355	0.001	1.000	12517		2.23(0.99-2.96)	121	327	M
93 11-Chloroeicosafuoro-3-oxaundec										
631.00 > 451.00	6.391	6.381	0.010	1.235	169823	0.0471		99.8	5205	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.586	6.580	0.006	1.422	1071457	1.26		101	7058	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
99 Perfluorododecanoic acid										
613.00 > 569.00	6.596	6.582	0.014	1.000	206927	0.0592	Target=7.94	118	794	
613.00 > 169.00	6.596	6.582	0.014	1.000	28347		7.30(3.97-11.90)	118	883	
D 98 13C2 PFDaA										
615.00 > 570.00	6.596	6.582	0.014	1.425	5060592	1.11		88.9	16233	
95 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	6.615	6.599	0.016	1.005	37537	0.0461		92.2	227	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.605	6.592	0.013	1.427	777382	1.33		110	24108	
101 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	6.605	6.597	0.008	1.000	39188	0.0466	Target=1.64	96.6	1230	
627.00 > 79.96	6.605	6.597	0.008	1.000	27037		1.45(0.82-2.46)	96.6	555	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.615	6.609	0.006	1.429	592841	1.31		105	1804	
97 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	6.625	6.619	0.006	1.002	20666	0.0467	Target=1.81	93.3	511	
526.00 > 218.99	6.625	6.619	0.006	1.002	9911		2.09(0.90-2.71)	93.3	254	
102 Perfluorododecanesulfonic acid (
699.00 > 80.00	6.933	6.918	0.015	1.340	13237	0.0468	Target=0.69	96.5	373	
699.00 > 99.00	6.933	6.918	0.015	1.340	21634		0.61(0.34-1.03)	96.5	916	
103 Perfluorotridecanoic acid										
663.00 > 619.00	6.967	6.959	0.008	1.056	187554	0.0590	Target=6.68	118	868	
663.00 > 169.00	6.975	6.959	0.016	1.058	30876		6.07(3.34-10.02)	118	876	
D 112 13C4-6:2 diPAP										
792.82 > 78.90	7.213	7.198	0.015	1.558	1683560	1.27		104	3271	
114 6:2 diPAP										
788.79 > 78.90	7.222	7.200	0.022	1.001	65887	0.0493	Target=1.92	101	204	
788.79 > 96.90	7.213	7.200	0.013	1.000	37263		1.77(0.96-2.88)	101	186	
105 Perfluorotetradecanoic acid										
713.00 > 169.00	7.309	7.297	0.012	1.000	20219	0.0478	Target=0.92	95.6	562	
713.00 > 219.00	7.309	7.297	0.012	1.000	22292		0.91(0.46-1.38)	95.6	750	
D 104 13C2 PFHxDA										
715.00 > 670.00	7.309	7.298	0.011	1.579	5384742	1.36		109	9160	
115 6:2/8:2 diPAP										
888.70 > 78.90	7.696	7.687	0.009	1.067	64723	0.0483	Target=1.37	99.1	642	
888.70 > 96.90	7.696	7.687	0.009	1.067	49571		1.31(0.69-2.06)	99.1	320	
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.887	7.873	0.014	1.000	176336	0.0493	Target=8.78	98.6	442	
813.00 > 169.00	7.879	7.873	0.006	0.999	20408		8.64(4.39-13.16)	98.6	489	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.887	7.873	0.014	1.704	4179814	1.22		97.7	4583	
116 8:2 diPAP										
988.74 > 78.90	8.112	8.102	0.010	1.000	48137	0.0489	Target=1.17	99.9	677	
988.74 > 96.90	8.112	8.102	0.010	1.000	40658		1.18(0.59-1.76)	99.9	409	
D 113 13C4-8:2 diPAP										
992.77 > 96.90	8.112	8.100	0.012	1.752	1287349	1.34		109	2912	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
108 Perfluorooctadecanoic acid										
913.00 > 869.00	8.396	8.378	0.018	1.065	71843	0.0450	Target=10.07	90.0	138	
913.00 > 169.00	8.387	8.378	0.009	1.063	7152		10.05(5.04-15.11)	90.0	194	
117 10:2 diPAP										
1188.79 > 78.90	8.923	8.913	0.010	1.100	2676	0.0262	Target=1.10	52.1	128	M
1188.79 > 96.90	8.930	8.913	0.017	1.101	2471		1.08(0.55-1.65)	52.1	71.5	M

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

LCPFC+6C_LL2_00010

Amount Added: 1.00

Units: mL

Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d

Injection Date: 21-Dec-2022 12:20:37

Instrument ID: A18

Lims ID: IC L2

Client ID:

Operator ID: TAISACA18-PC\A-18

ALS Bottle#: 2

Worklist Smp#: 3

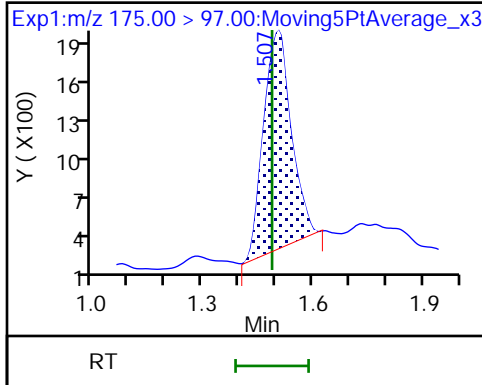
Injection Vol: 20.0 ul

Dil. Factor: 1.0000

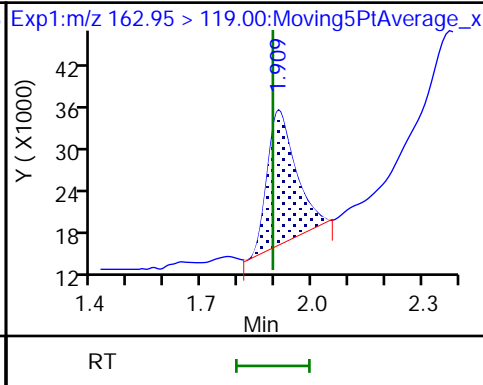
Method: PFAS+_A18

Limit Group: LC PFC ICAL

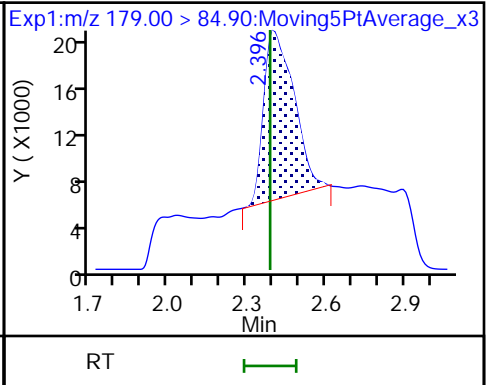
1 MTP (M)



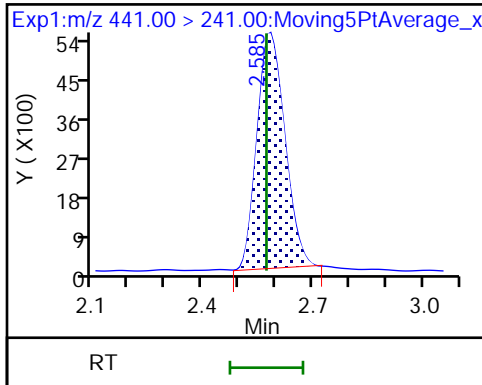
2 PPF Acid



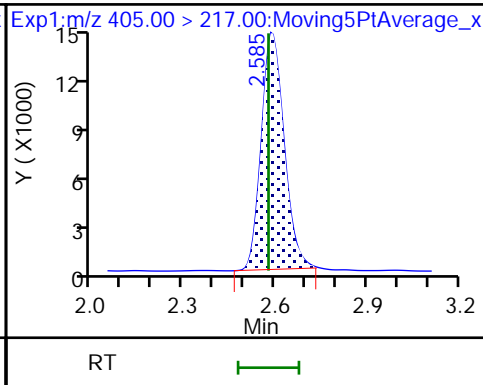
3 PFMOAA (M)



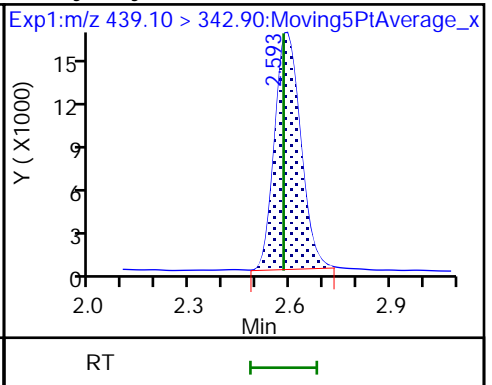
4 R-PSDA



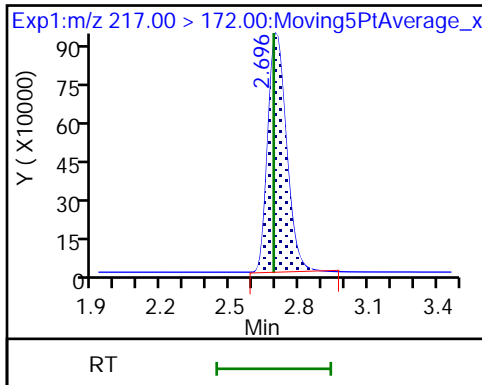
5 R-EVE



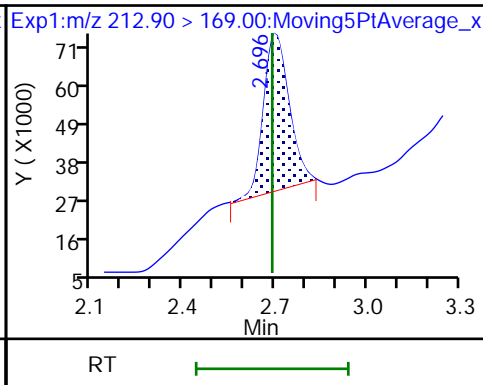
6 Hydrolyzed PSDA



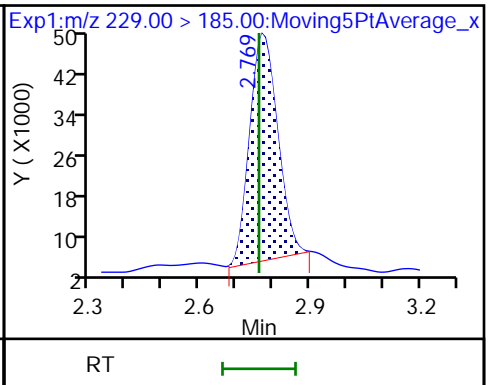
D 8 13C4 PFBA



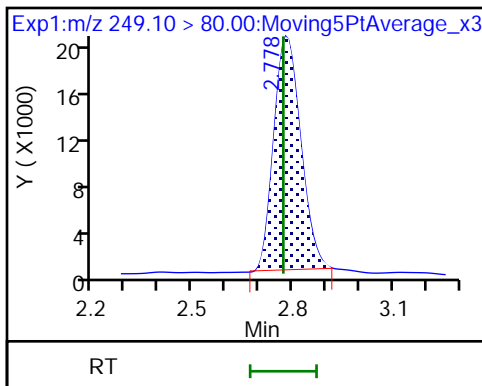
7 Perfluorobutanoic acid



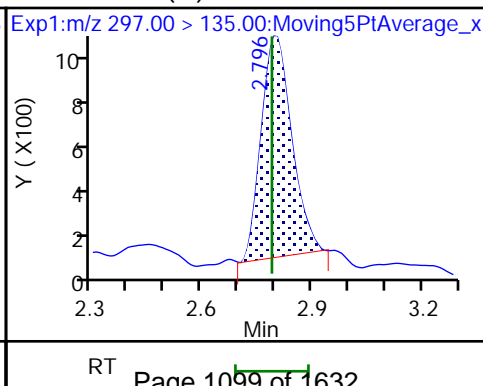
10 PMPA



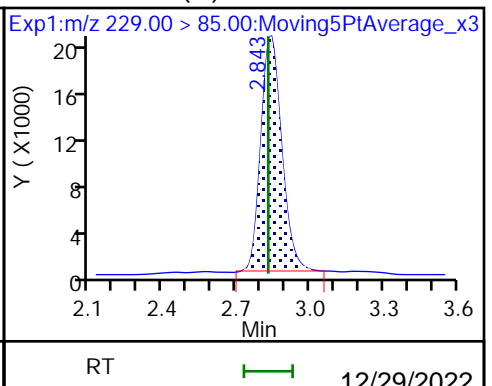
11 PFPrS



12 NVHOS (M)



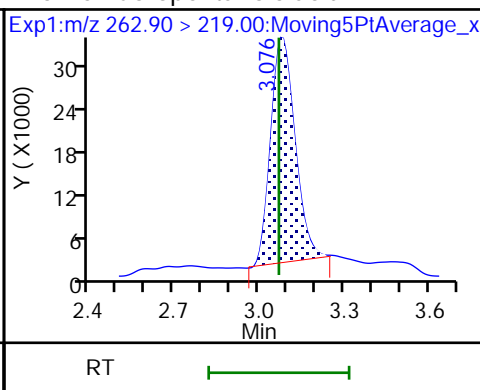
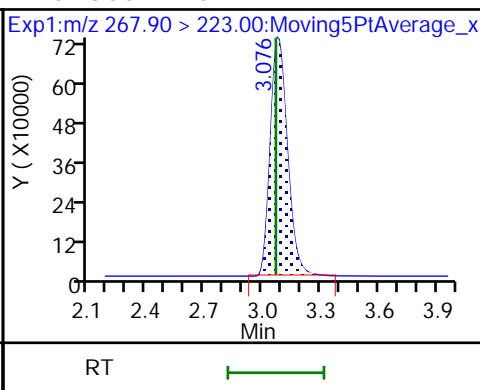
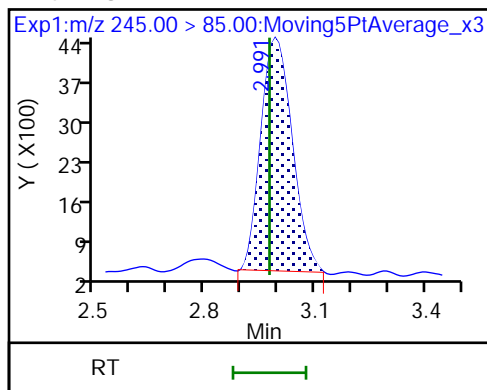
13 PFECA F (M)



14 PFO2HxA

D 16 13C5 PFPeA

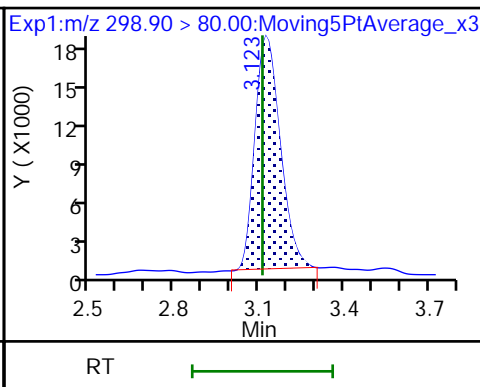
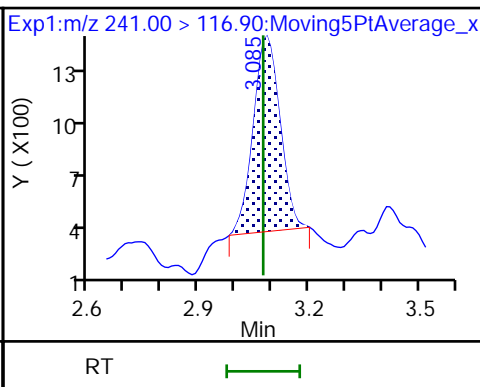
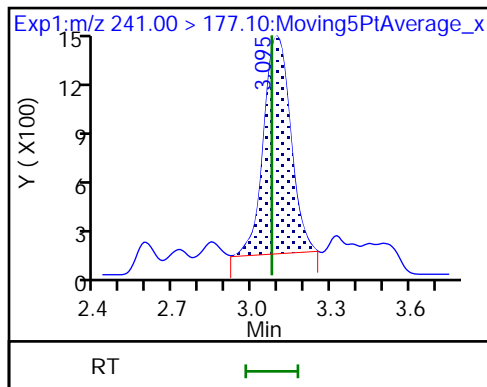
15 Perfluoropentanoic acid



17 3:3 FTCA

17 3:3 FTCA

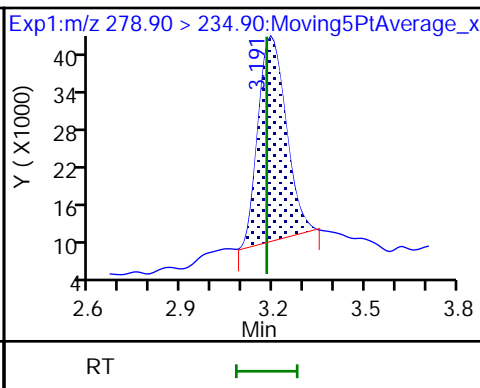
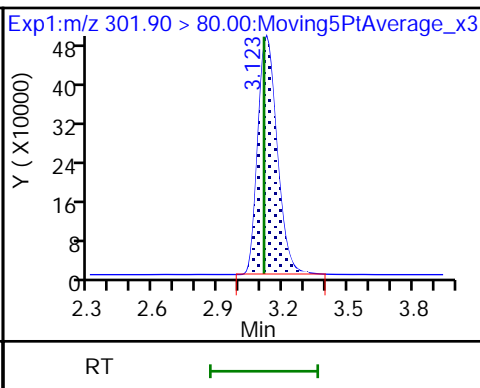
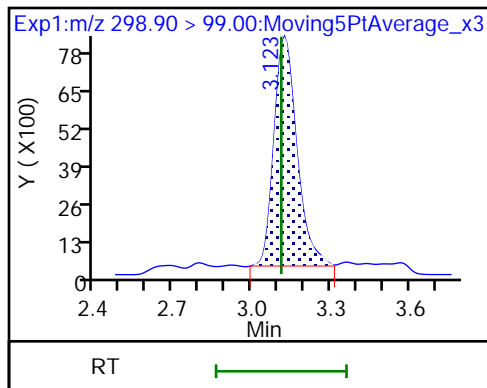
19 Perfluorobutanesulfonic acid



19 Perfluorobutanesulfonic acid

D 18 13C3 PFBS

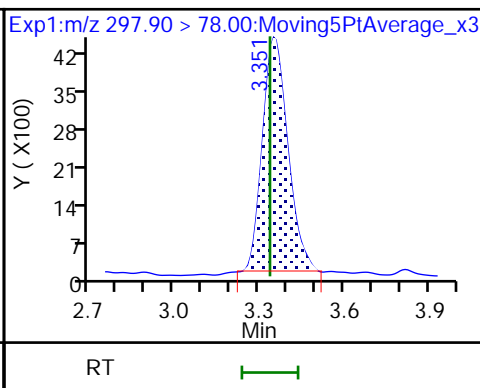
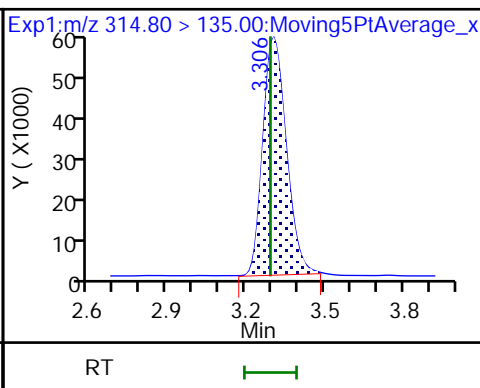
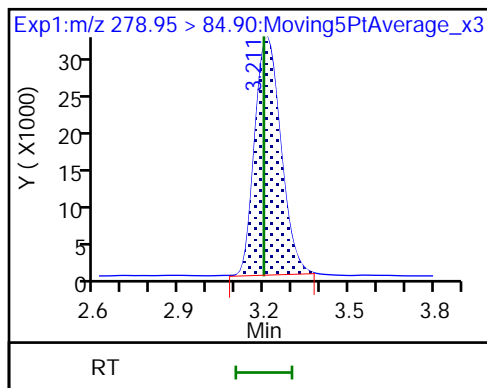
20 PEPA



21 PFCA A

22 PES

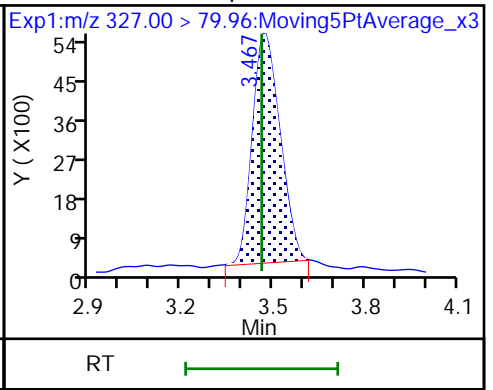
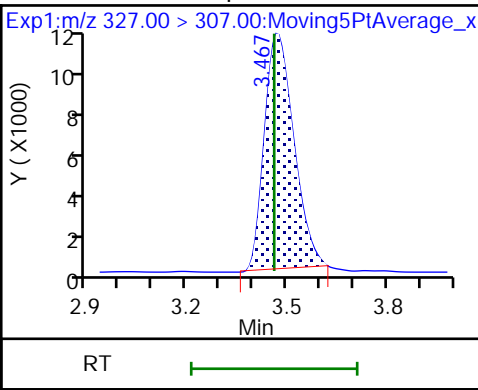
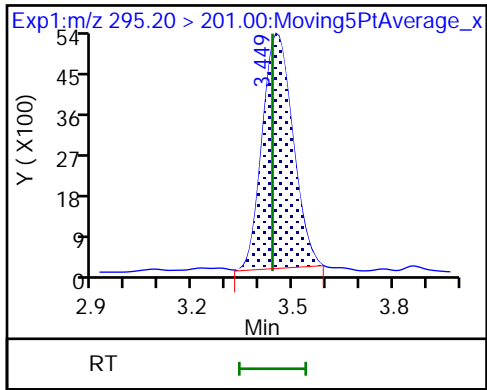
23 FBSA



24 PFECA B

26 1H,1H,2H,2H-perfluorohexanesulfo

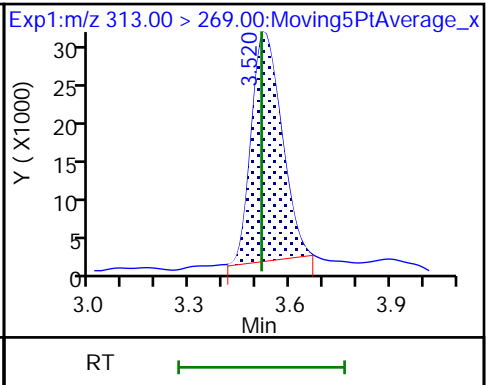
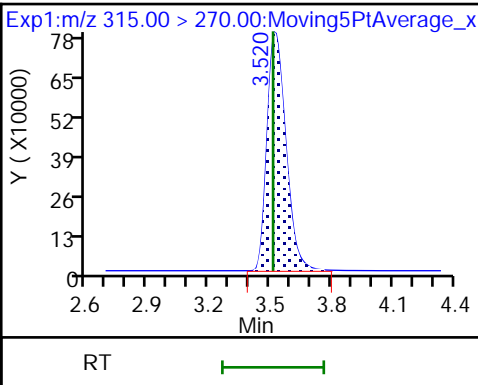
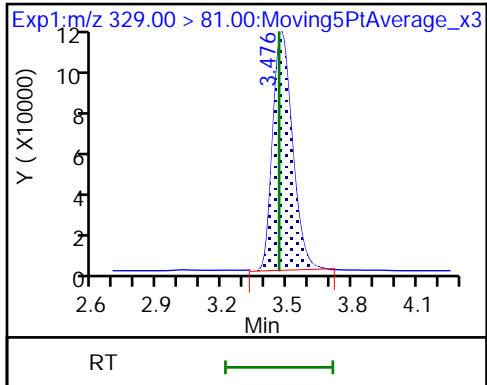
26 1H,1H,2H,2H-perfluorohexanesulfo



D 25 M2-4:2 FTS

D 27 13C2 PFHxA

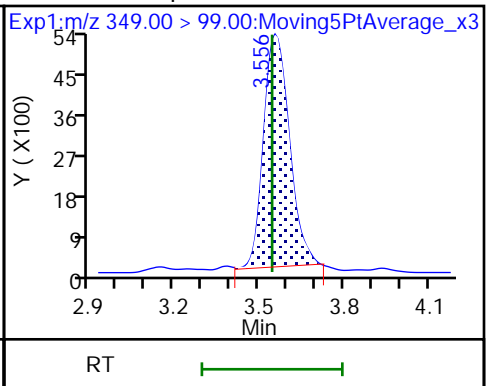
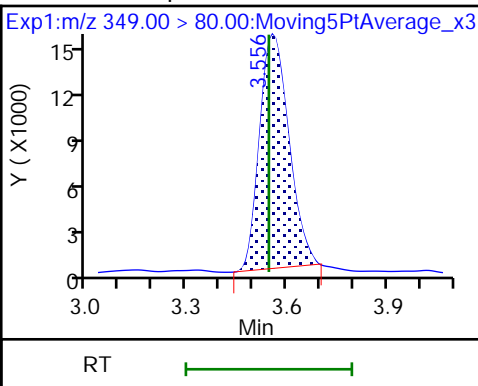
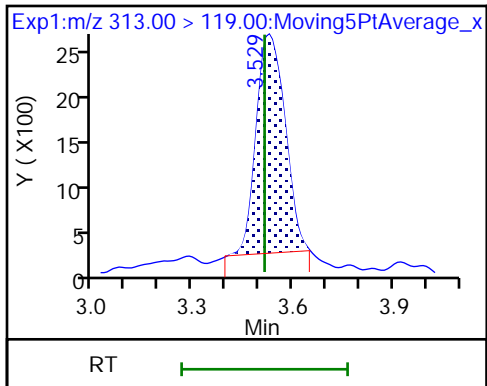
28 Perfluorohexanoic acid



28 Perfluorohexanoic acid

29 Perfluoropentanesulfonic acid

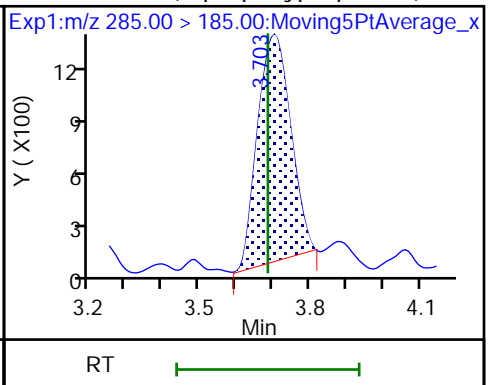
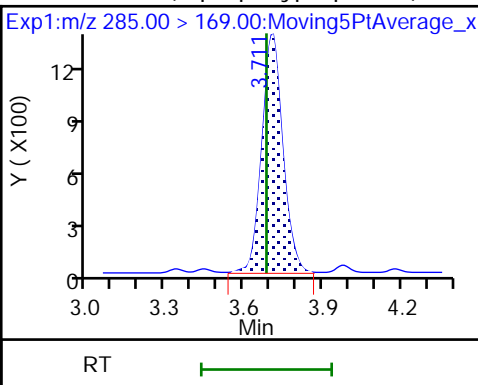
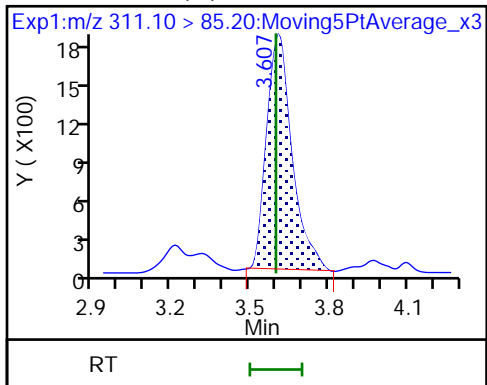
29 Perfluoropentanesulfonic acid



30 PFO3OA (M)

31 Perfluoro(2-propoxypropanoic) ac

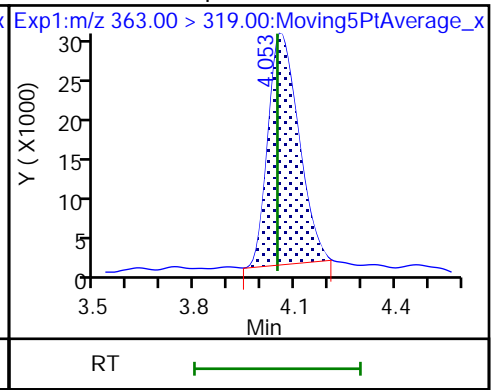
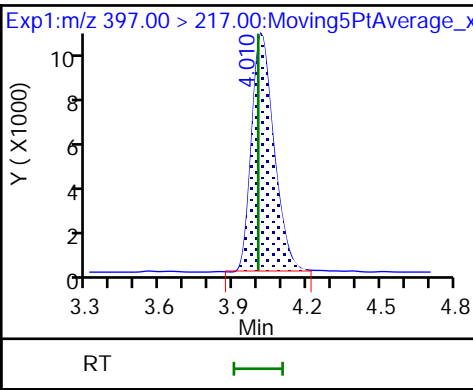
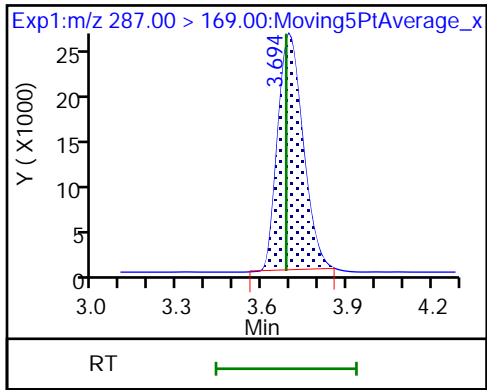
31 Perfluoro(2-propoxypropanoic) ac



D 32 13C3 HFPO-DA

33 R-PSDCA

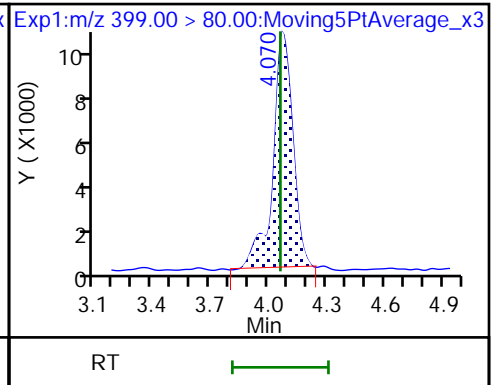
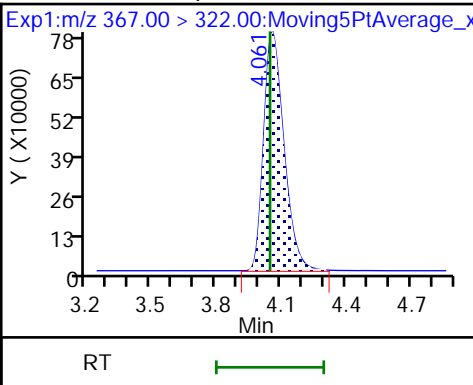
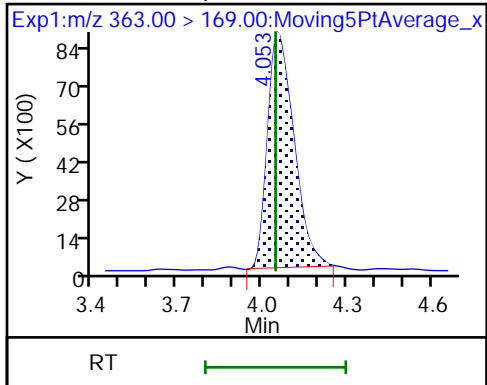
36 Perfluoroheptanoic acid



36 Perfluoroheptanoic acid

D 35 13C4 PFHpA

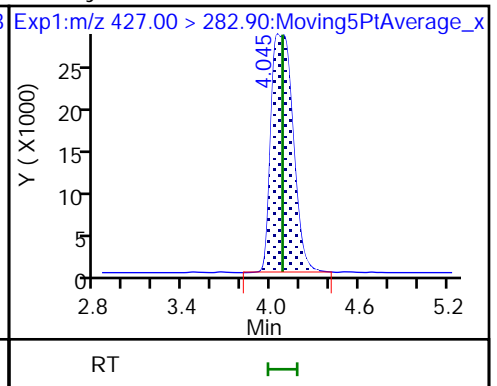
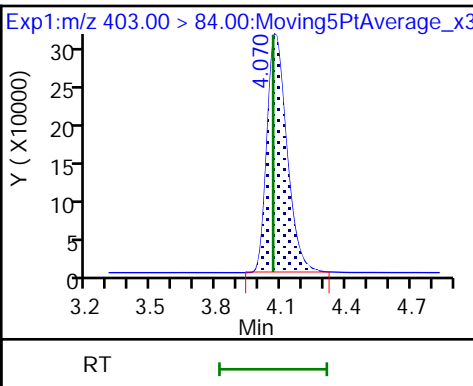
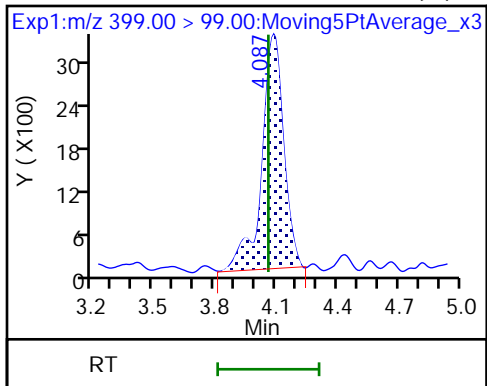
38 Perfluorohexanesulfonic acid (M)



38 Perfluorohexanesulfonic acid (M)

D 37 18O2 PFHxS

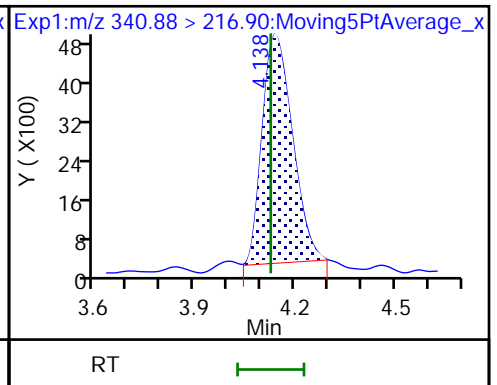
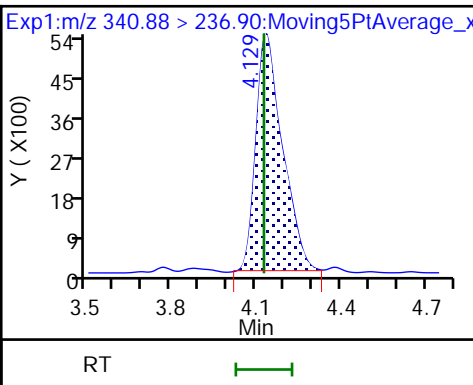
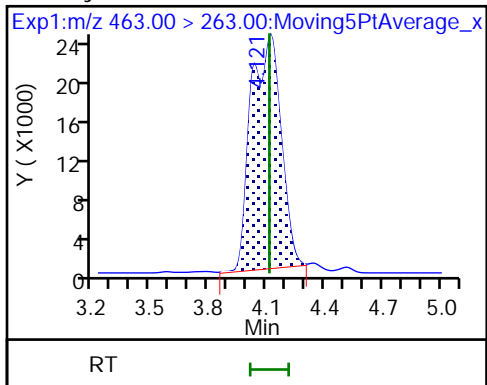
34 Hydro-EVE Acid

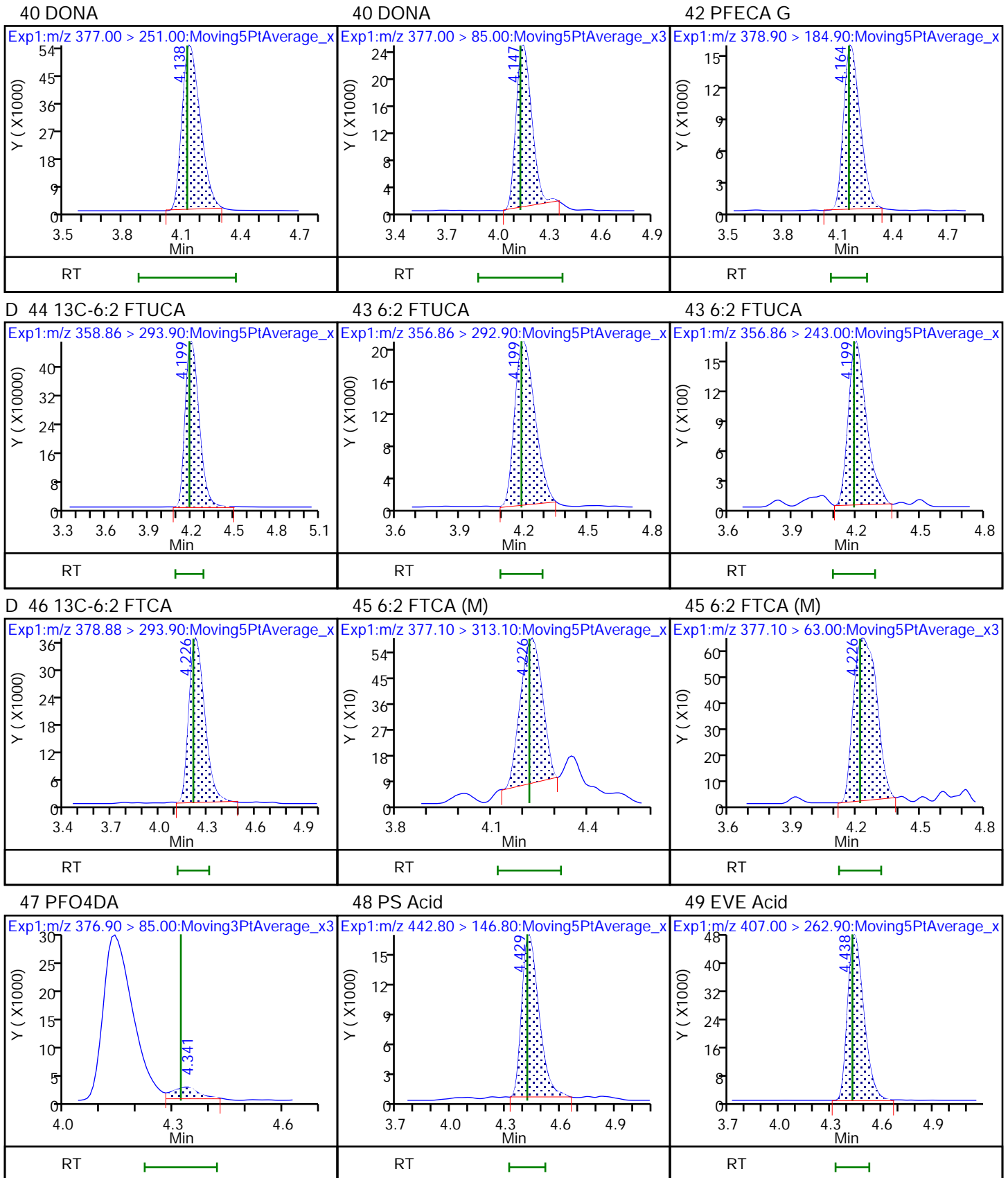


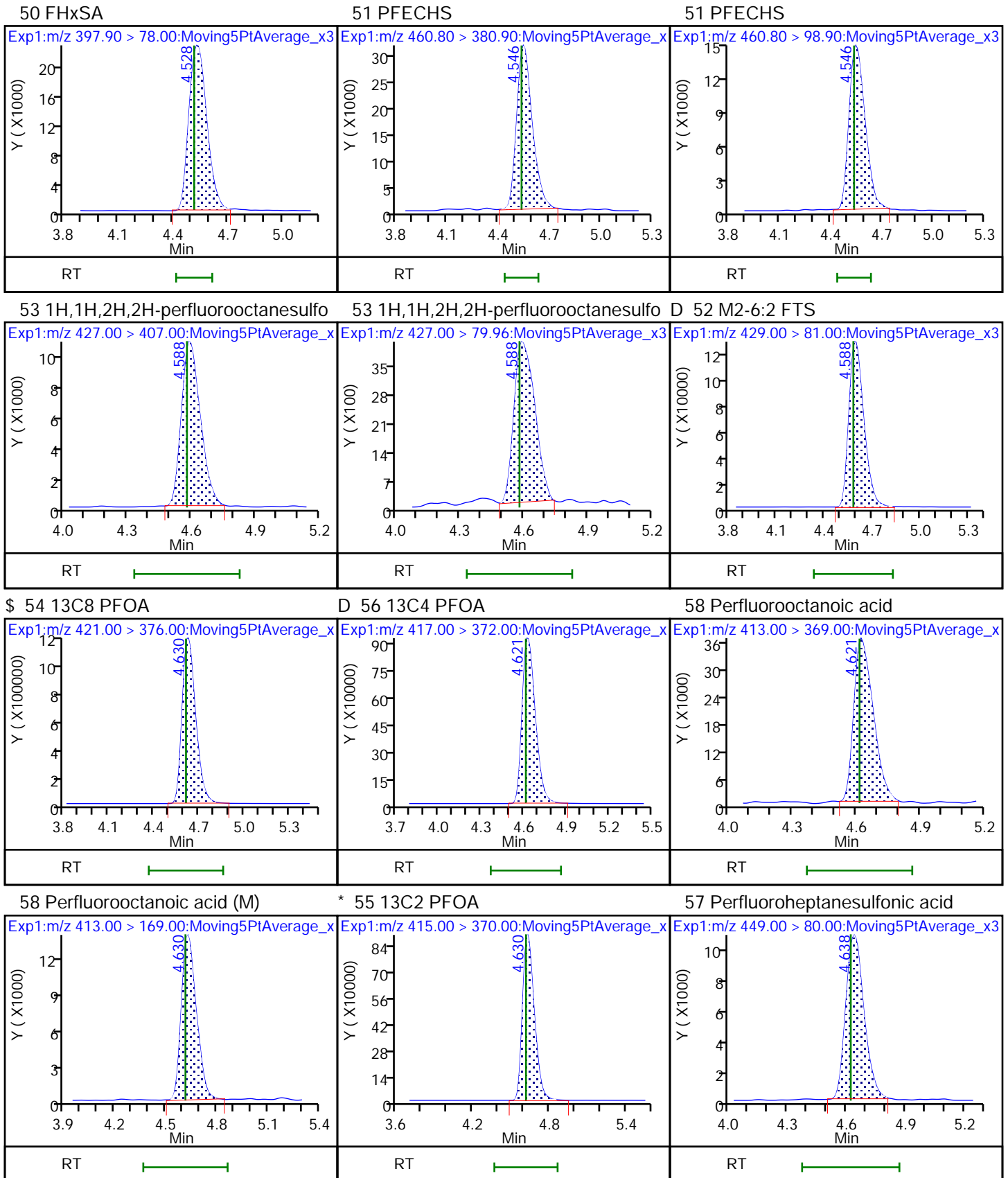
39 Hydro-PS Acid

41 5:3 FTCA

41 5:3 FTCA



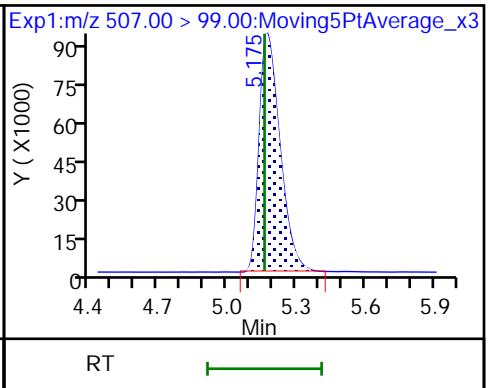
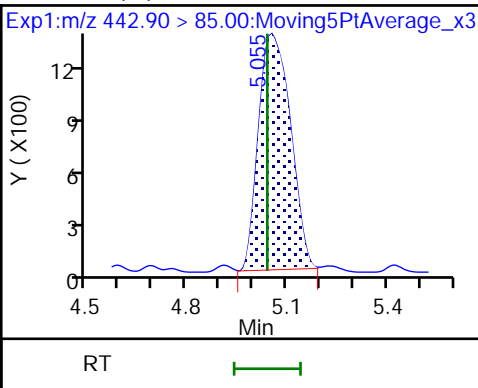
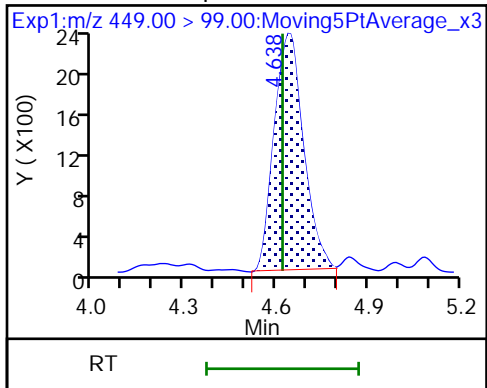




57 Perfluoroheptanesulfonic acid

59 TAF (M)

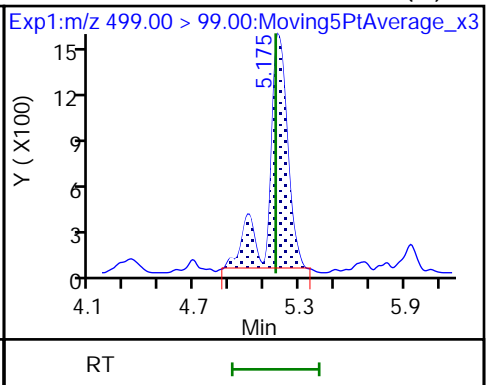
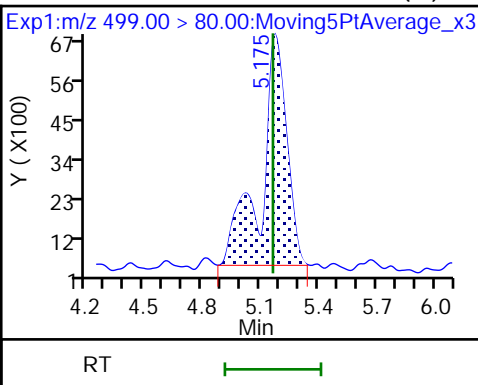
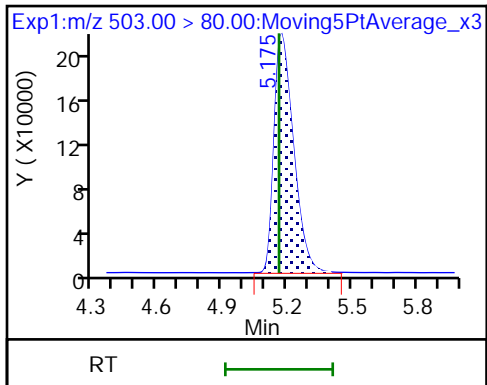
\$ 60 13C8 PFOS



D 61 13C4 PFOS

62 Perfluorooctanesulfonic acid (M)

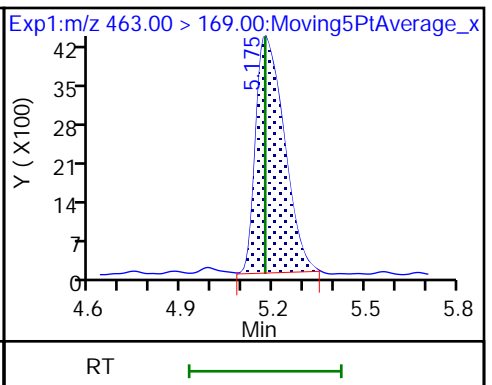
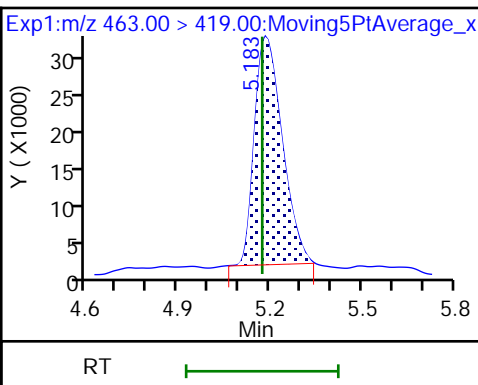
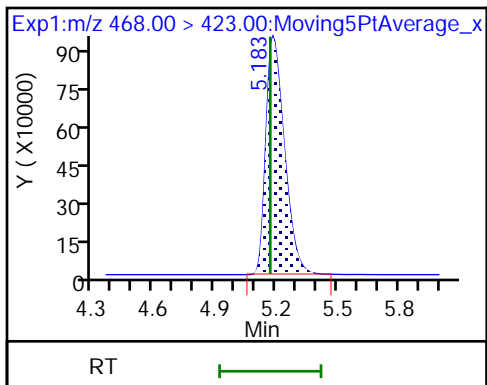
62 Perfluorooctanesulfonic acid (M)



D 64 13C5 PFNA

63 Perfluorononanoic acid

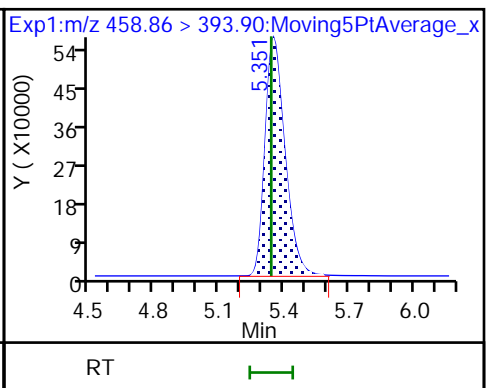
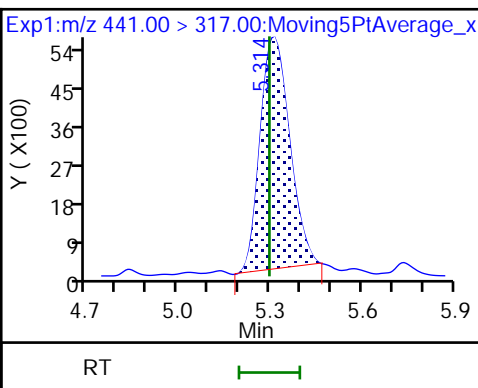
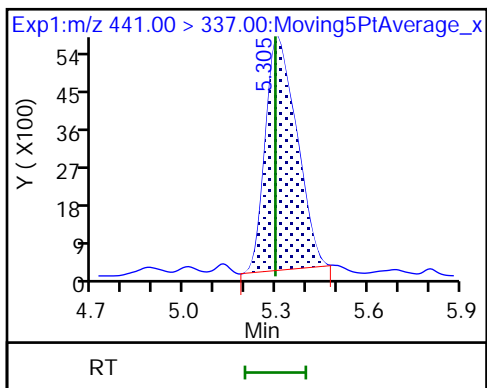
63 Perfluorononanoic acid

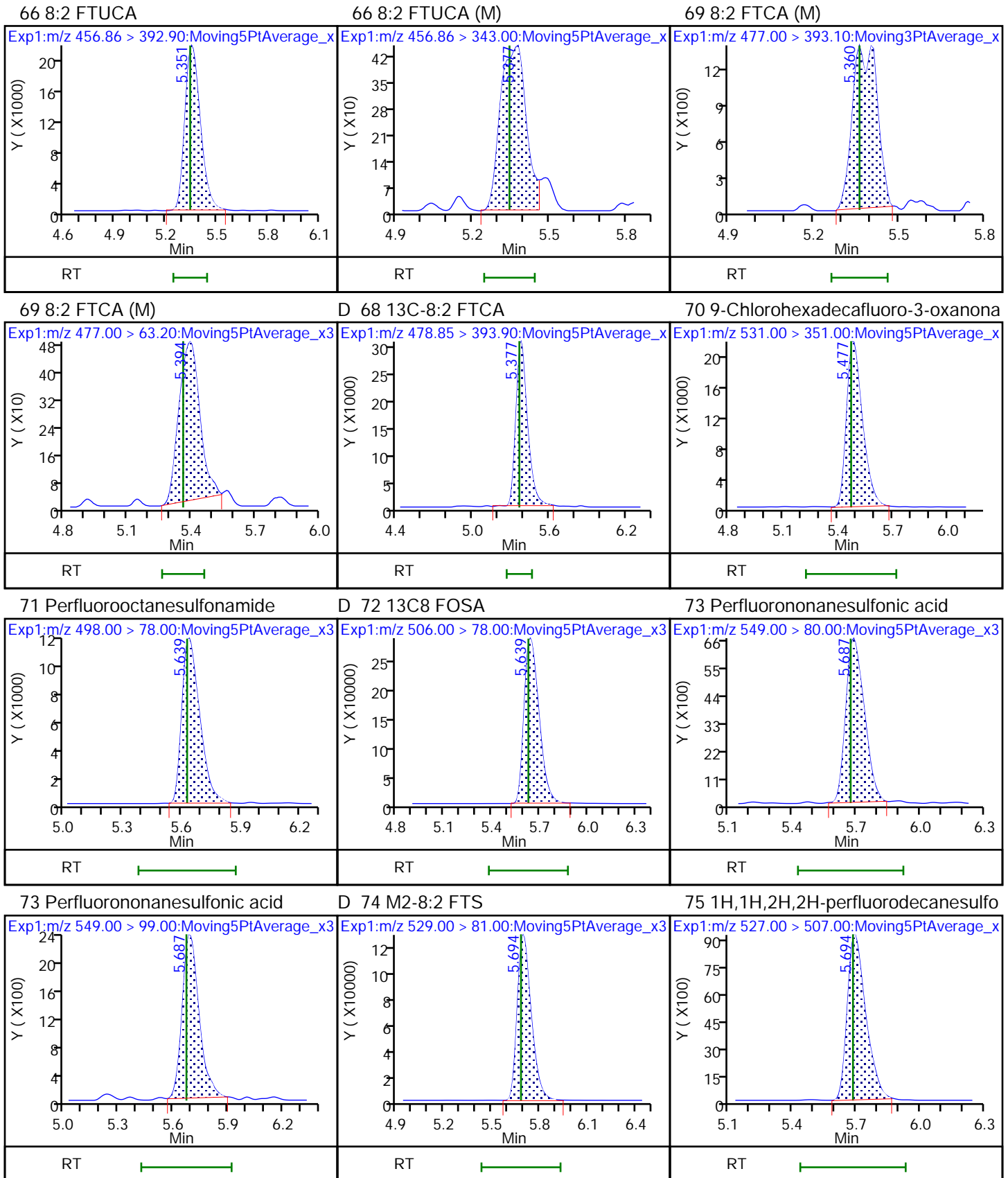


65 7:3 FTCA

65 7:3 FTCA

D 67 13C-8:2 FTUCA

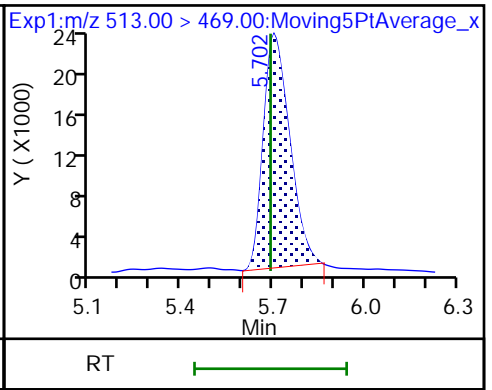
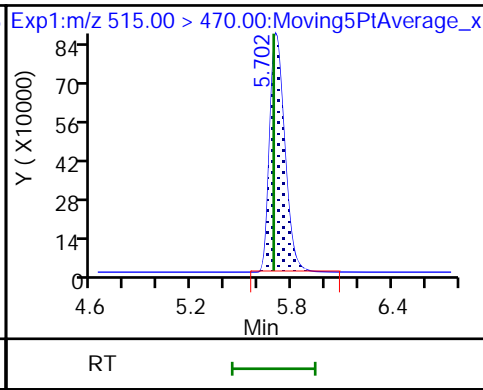
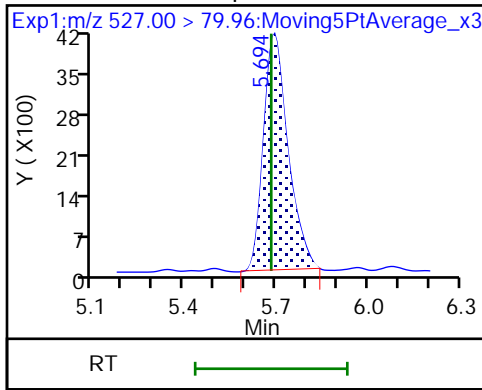




75 1H,1H,2H,2H-perfluorodecanesulfo D

76 13C2 PFDA

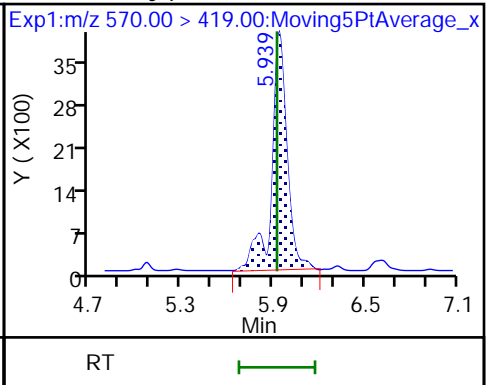
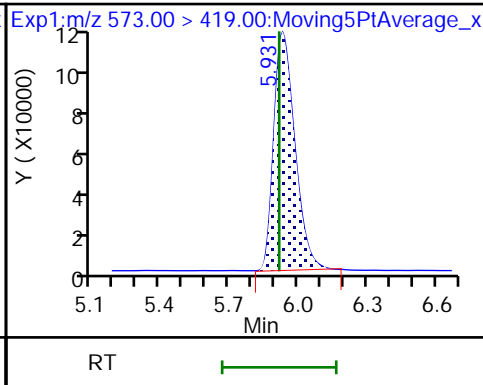
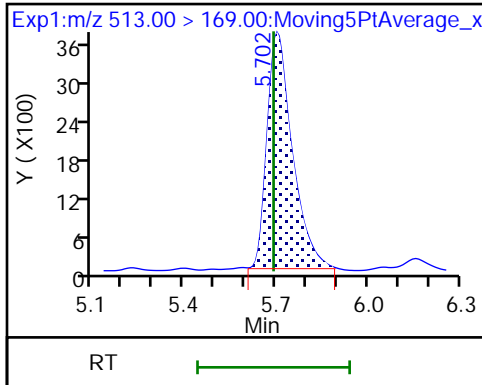
77 Perfluorodecanoic acid



77 Perfluorodecanoic acid

D 78 d3-NMeFOSAA

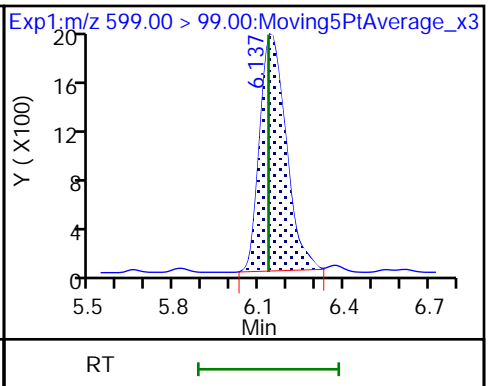
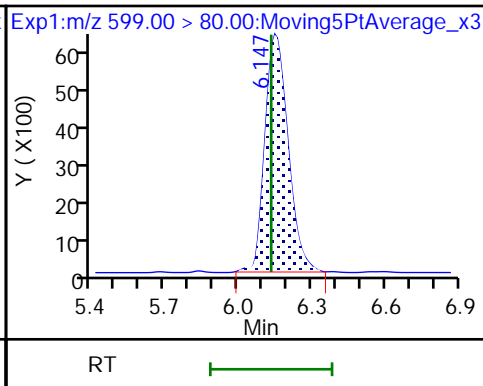
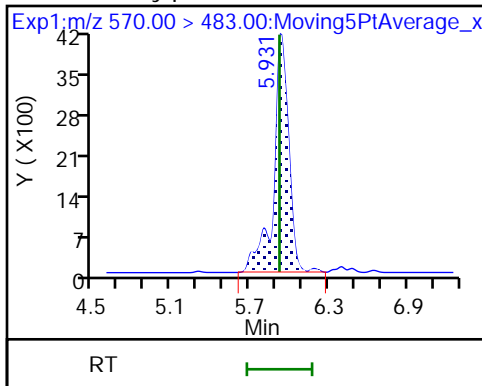
79 N-methylperfluorooctanesulfonami



79 N-methylperfluorooctanesulfonami

80 Perfluorodecanesulfonic acid

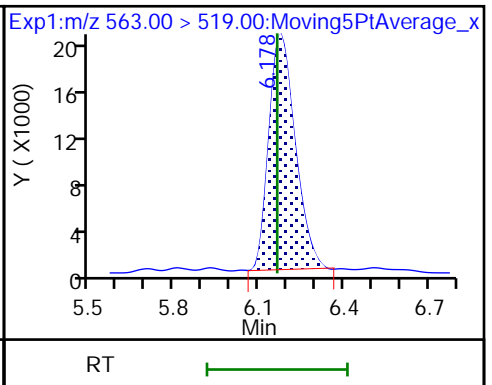
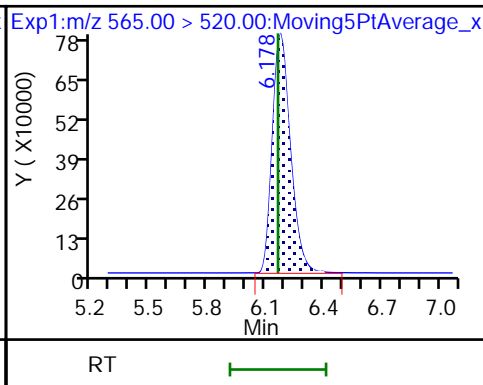
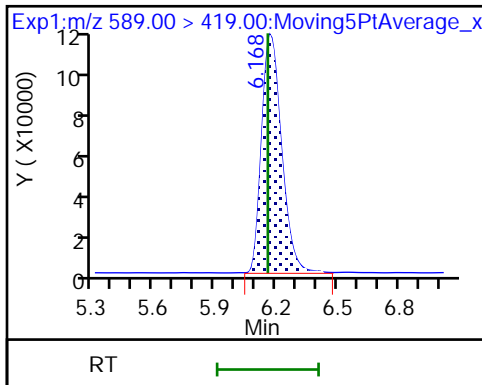
80 Perfluorodecanesulfonic acid



D 81 d5-NEtFOSAA

D 82 13C2 PFUnA

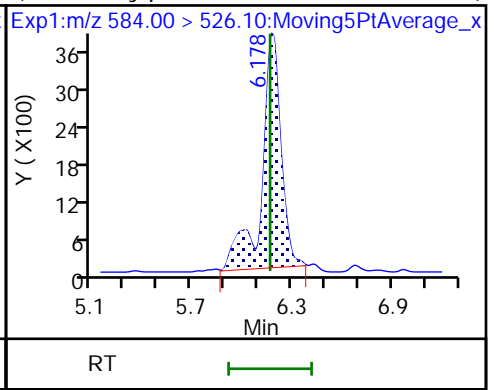
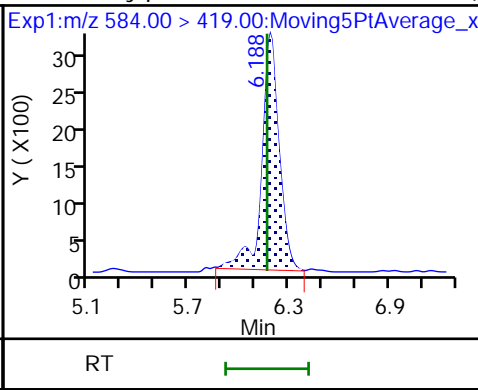
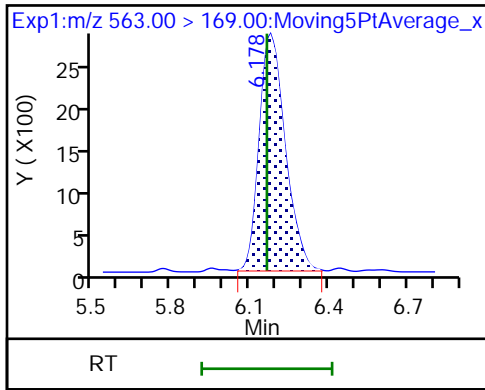
83 Perfluoroundecanoic acid



83 Perfluoroundecanoic acid

84 N-ethylperfluorooctanesulfonamid (M)

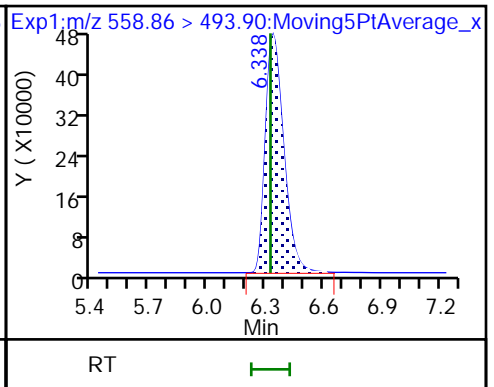
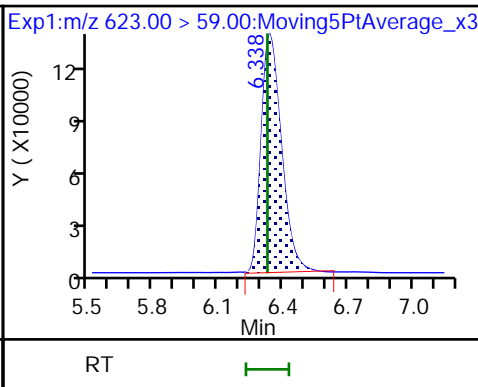
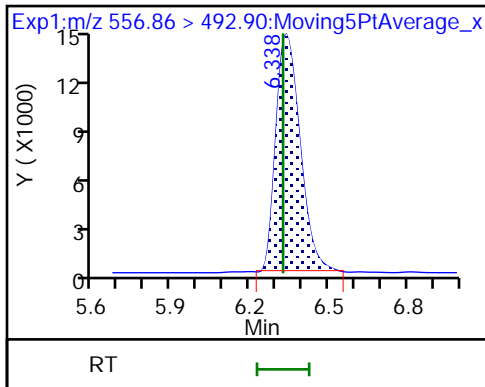
84 N-ethylperfluorooctanesulfonamid (M)



90 10:2 FTUCA

D 85 d7-N-MeFOSE-M

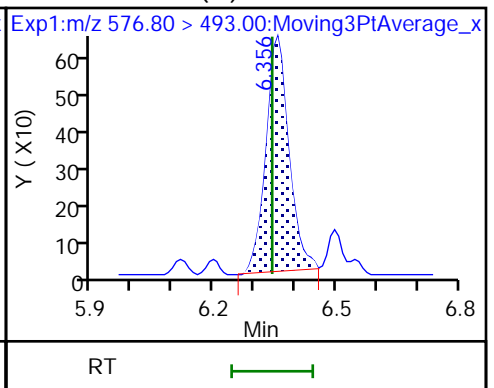
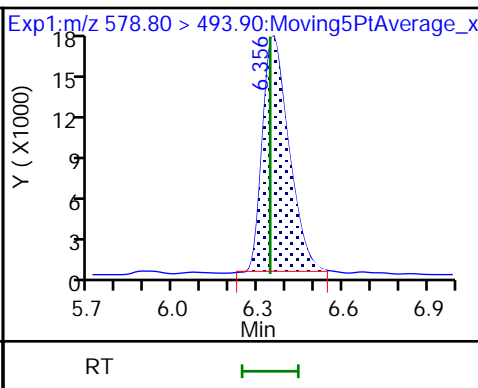
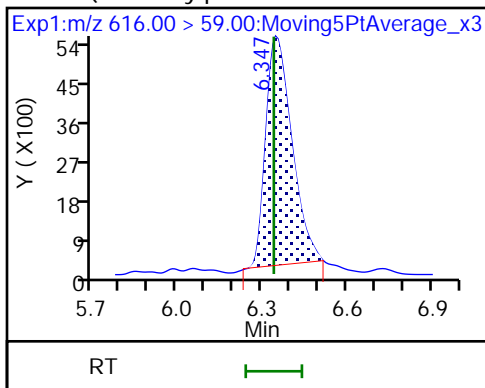
D 89 13C-10:2 FTUCA



86 2-(N-methylperfluoro-1-octanesul

D 91 13C-10:2 FTCA

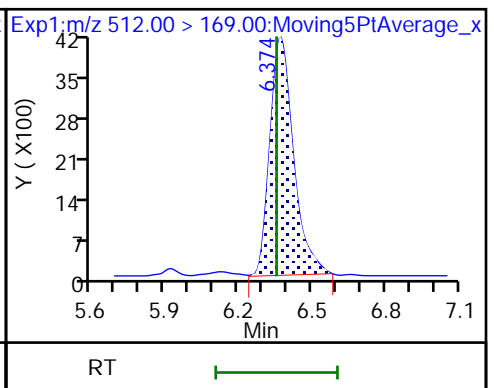
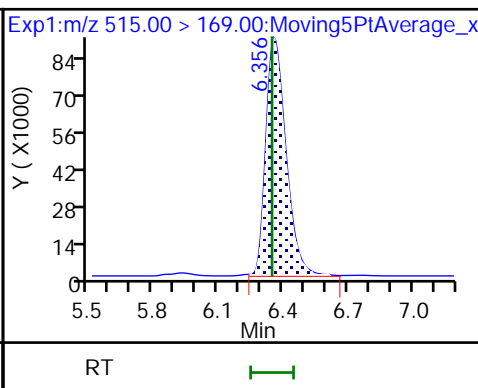
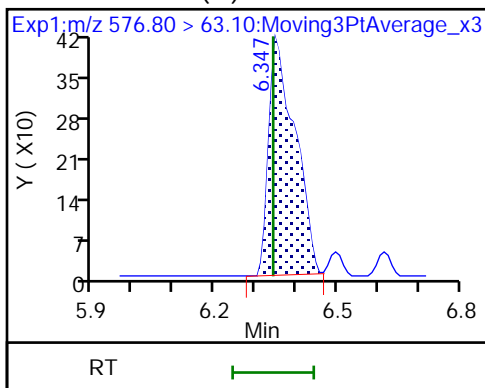
92 10:2 FTCA (M)



92 10:2 FTCA (M)

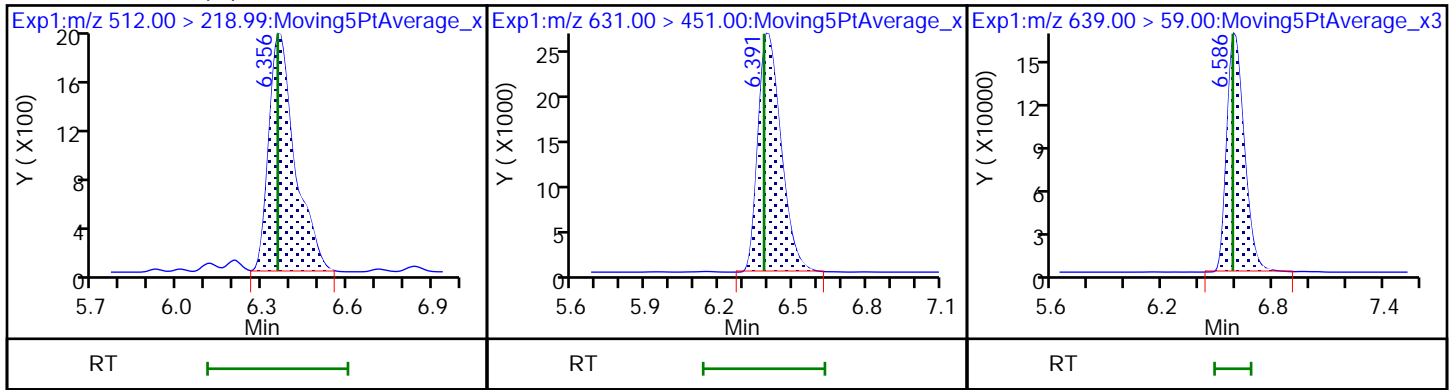
D 87 d-N-MeFOSA-M

88 NMeFOSA



88 NMeFOSA (M)

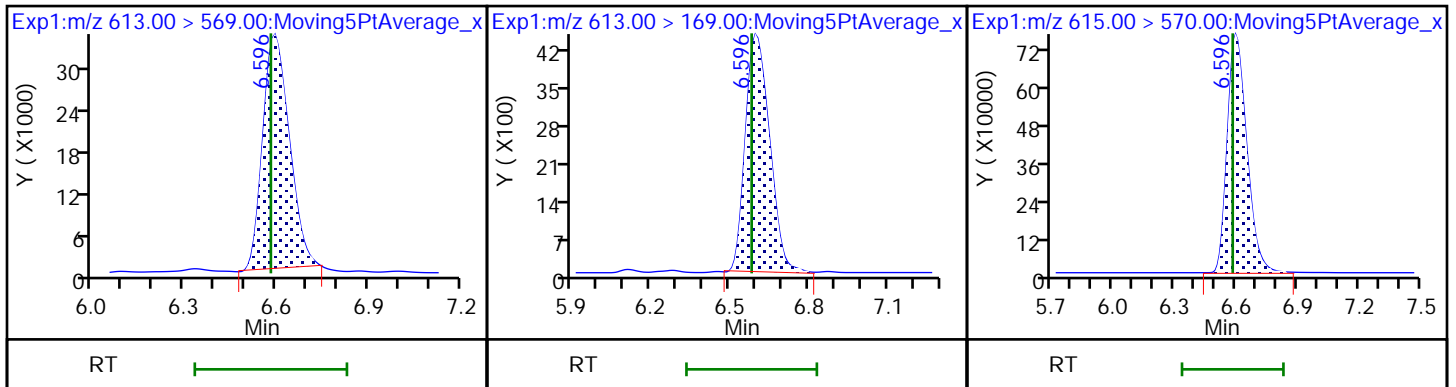
93 11-Chloroeicosafuoro-3-oxaundec D 94 d9-N-EtFOSE-M



99 Perfluorododecanoic acid

99 Perfluorododecanoic acid

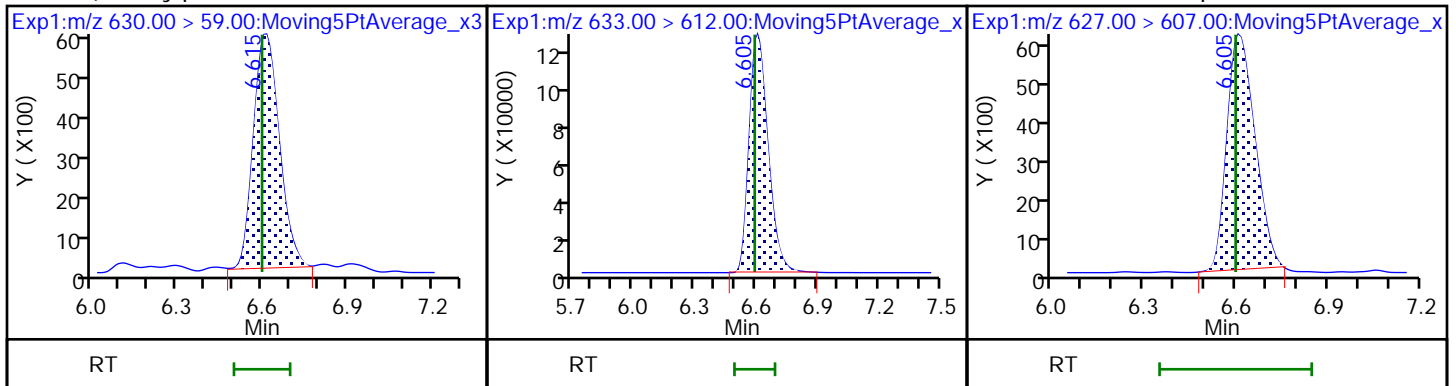
D 98 13C2 PFDa



95 2-(N-ethylperfluoro-1-octanesulf

D 100 13C2 10:2 FTS

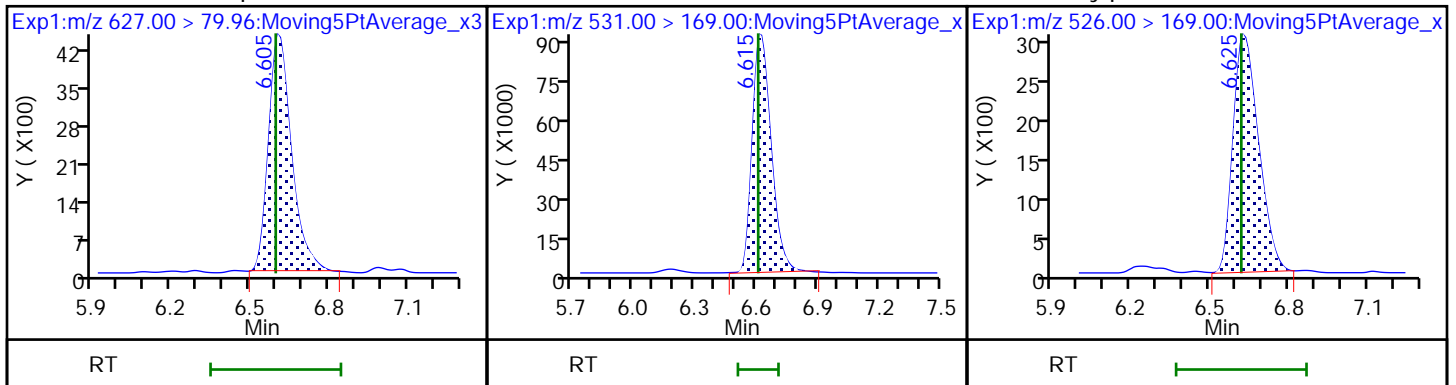
101 1H,1H,2H,2H-perfluorododecanesul



101 1H,1H,2H,2H-perfluorododecanesul

D 96 d-N-EtFOSE-M

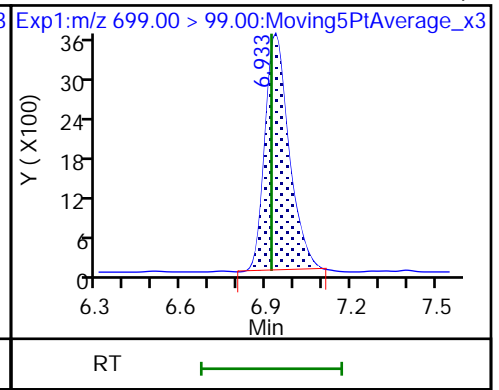
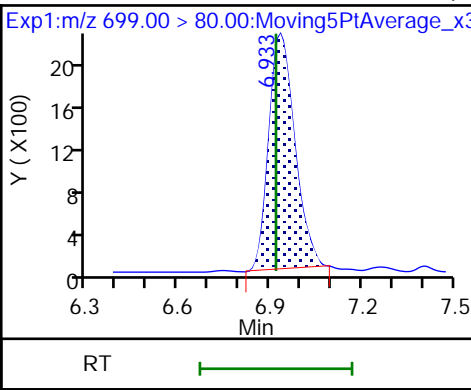
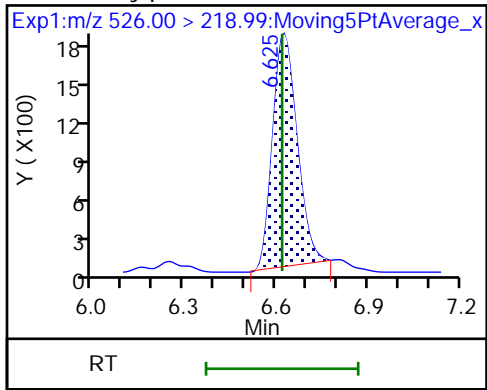
97 N-ethylperfluoro-1-octanesulfona



97 N-ethylperfluoro-1-octanesulfona

102 Perfluorododecanesulfonic acid (

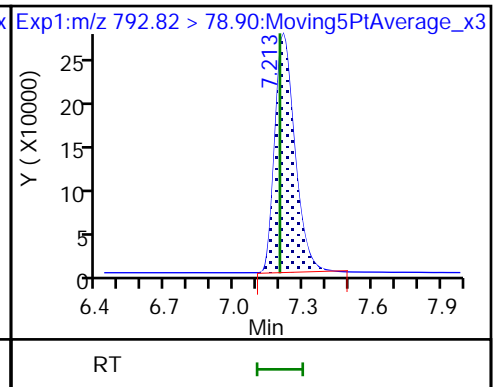
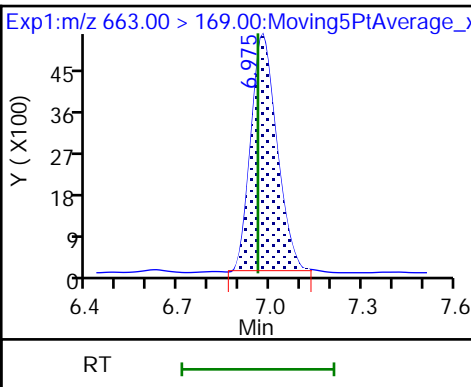
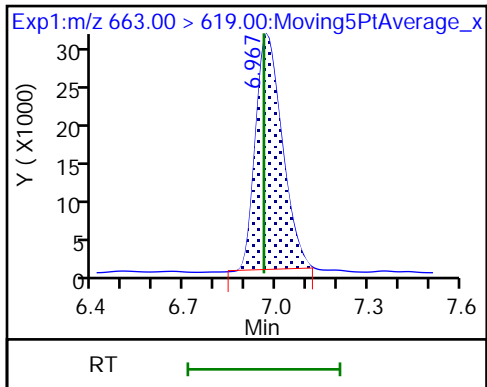
102 Perfluorododecanesulfonic acid (



103 Perfluorotridecanoic acid

103 Perfluorotridecanoic acid

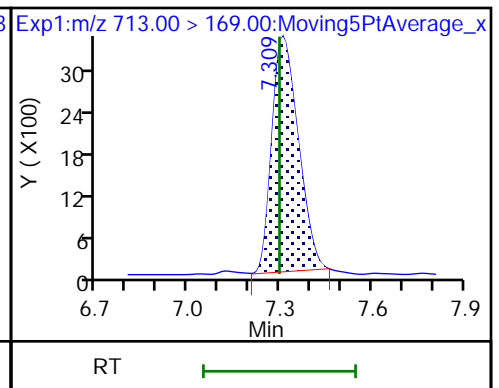
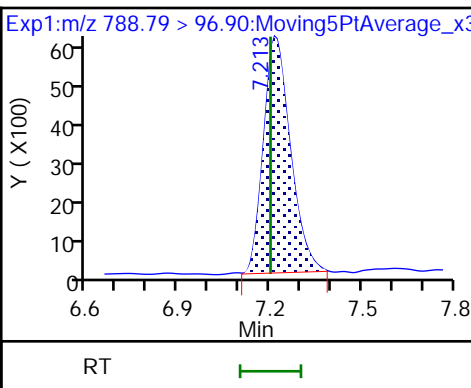
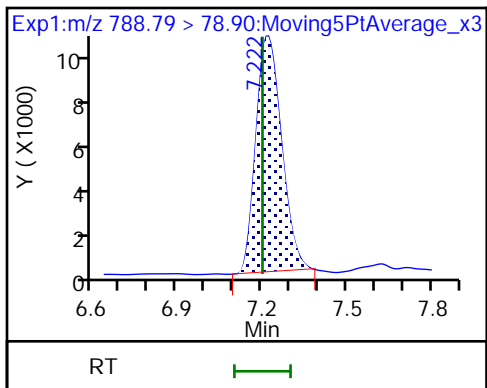
D 112 13C4-6:2 diPAP



114 6:2 diPAP

114 6:2 diPAP

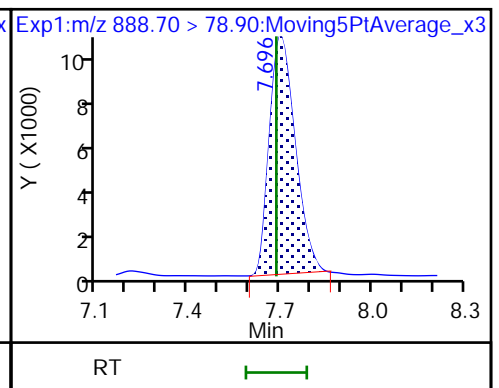
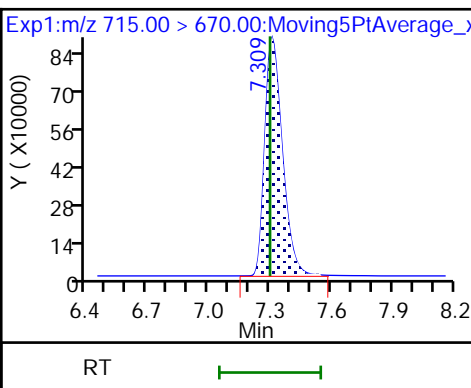
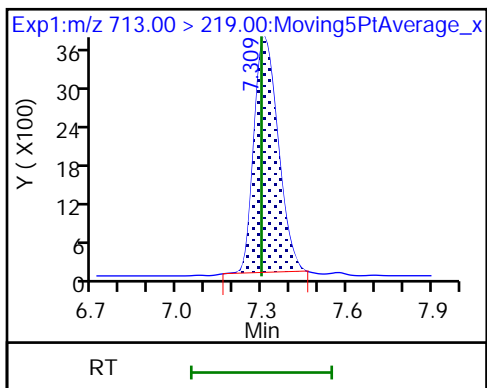
105 Perfluorotetradecanoic acid



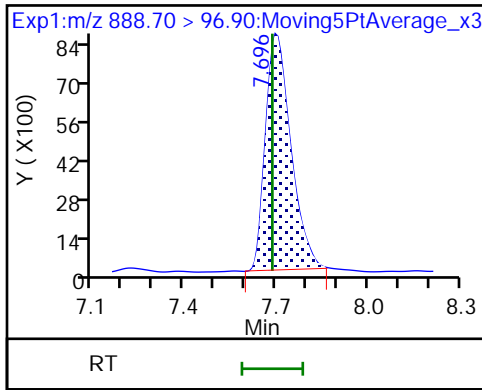
105 Perfluorotetradecanoic acid

D 104 13C2 PFTeDA

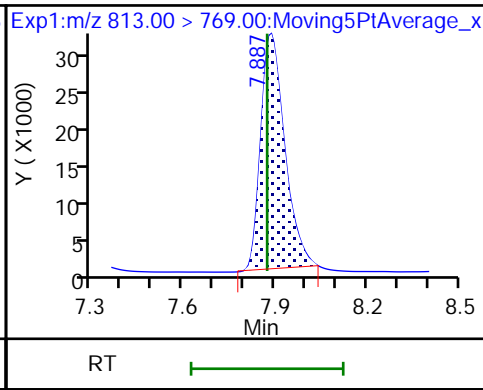
115 6:2/8:2 diPAP



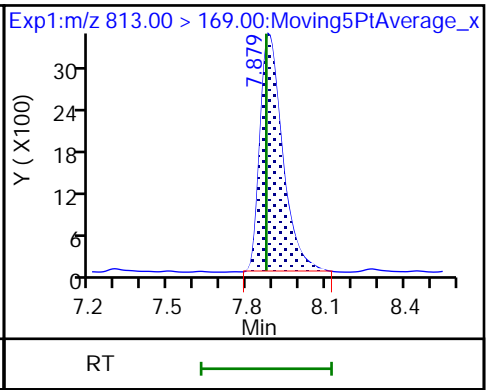
115 6:2/8:2 diPAP



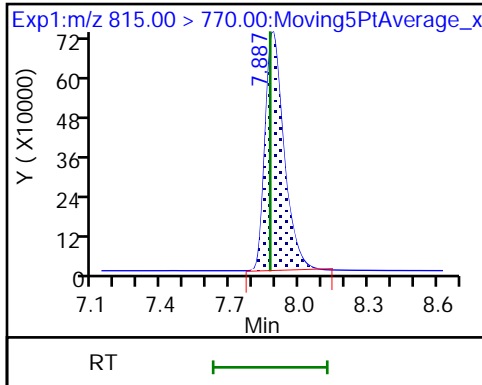
107 Perfluorohexadecanoic acid



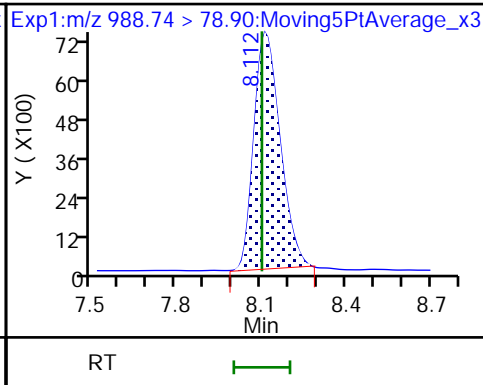
107 Perfluorohexadecanoic acid



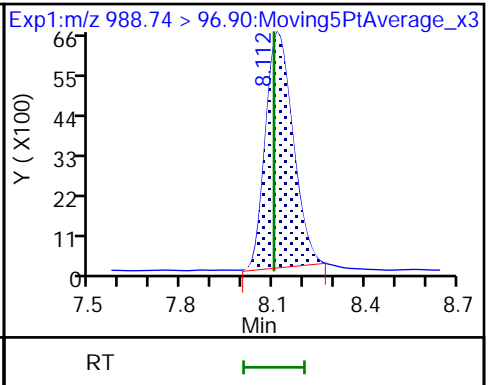
D 106 13C2 PFHxDA



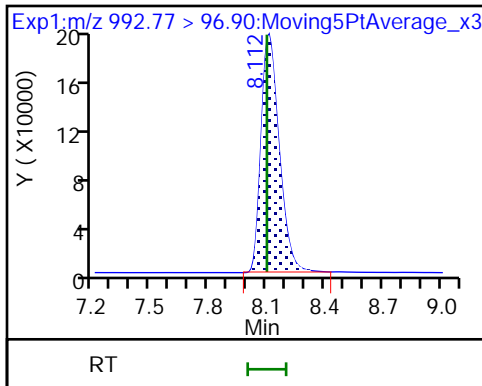
116 8:2 diPAP



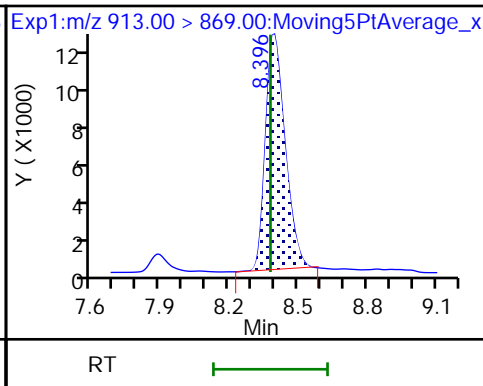
116 8:2 diPAP



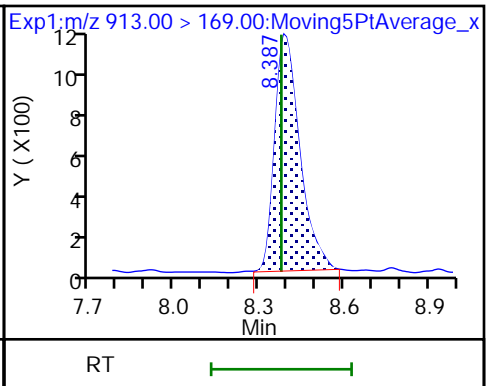
D 113 13C4-8:2 diPAP



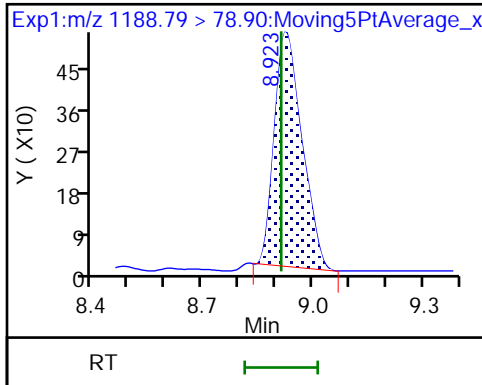
108 Perfluorooctadecanoic acid



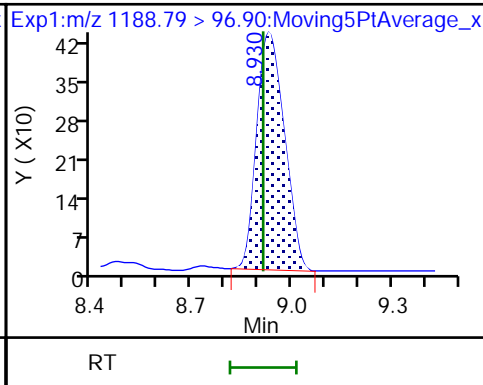
108 Perfluorooctadecanoic acid



117 10:2 diPAP (M)



117 10:2 diPAP



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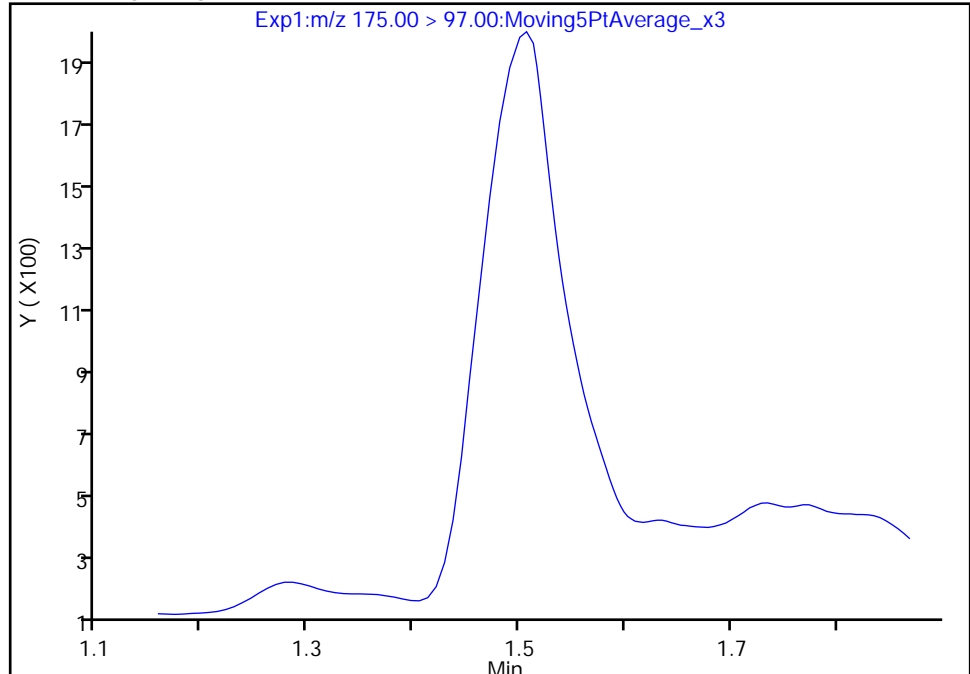
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

1 MTP, CAS: 93449-21-9

Signal: 1

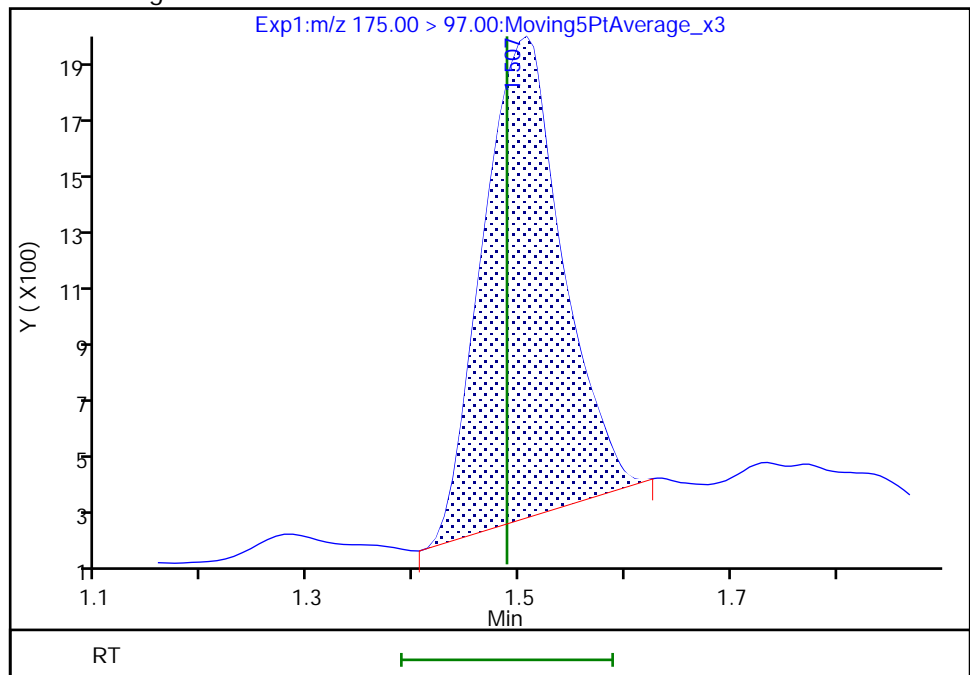
Not Detected
Expected RT: 1.49

Processing Integration Results



RT: 1.51
Area: 8865
Amount: 0.041320
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:34:06
Audit Action: Manually Integrated

Audit Reason: Assign Peak
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Eurofins Sacramento

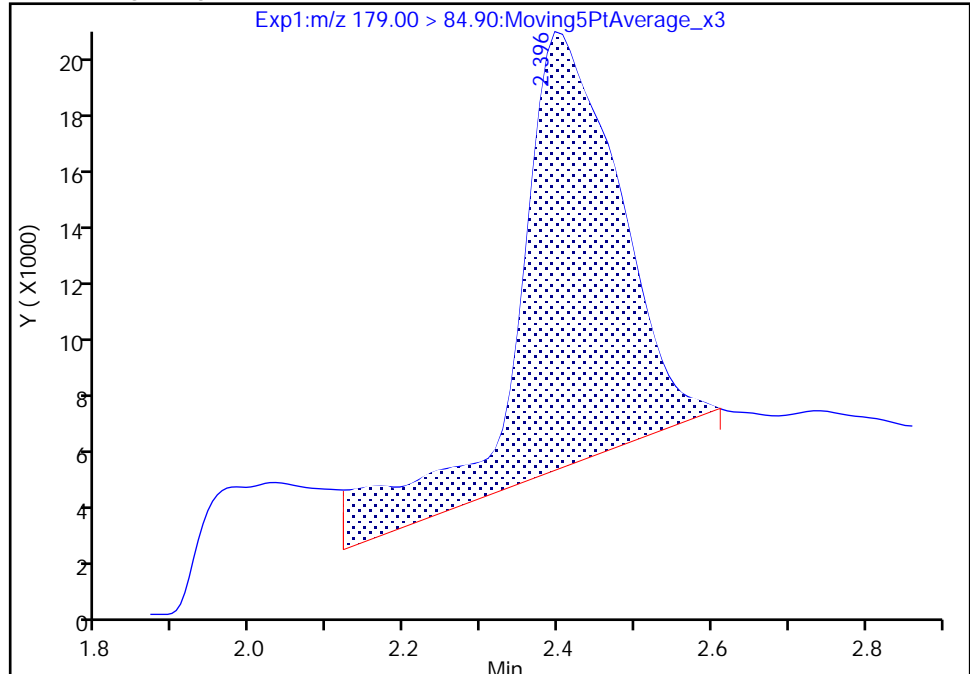
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

3 PFMOAA, CAS: 674-13-5

Signal: 1

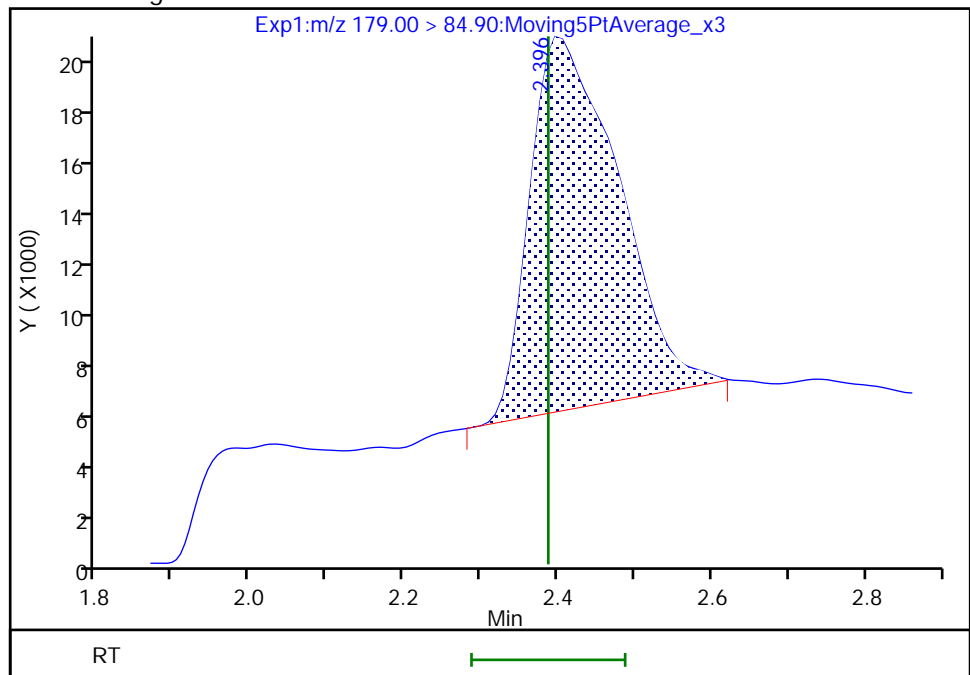
RT: 2.40
Area: 140750
Amount: 0.056209
Amount Units: ng/ml

Processing Integration Results



RT: 2.40
Area: 113904
Amount: 0.047867
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:34:25
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

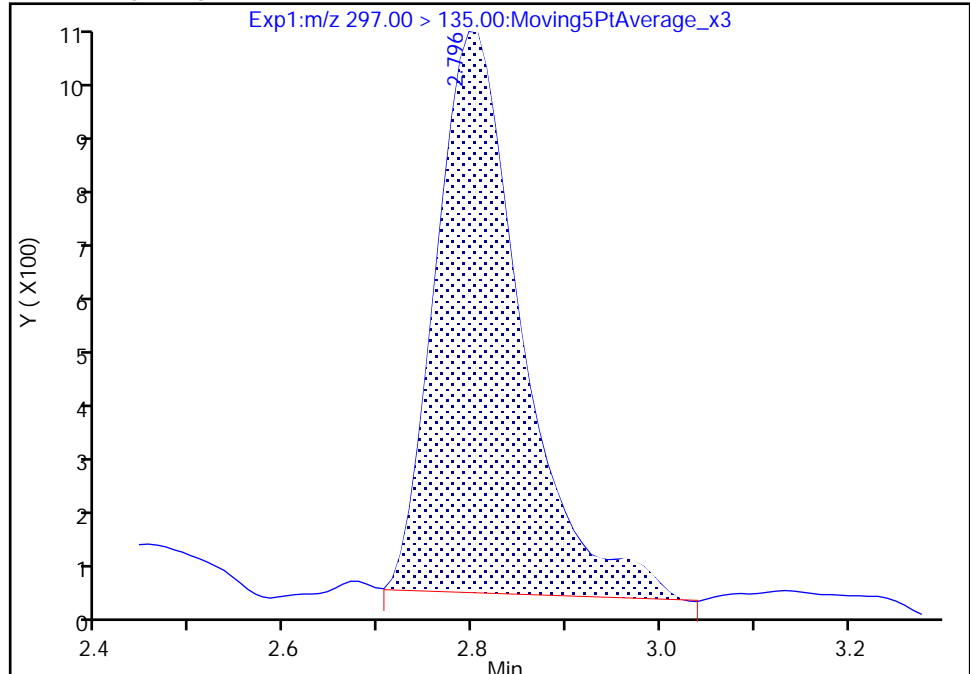
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

12 NVHOS, CAS: 801209-99-4

Signal: 1

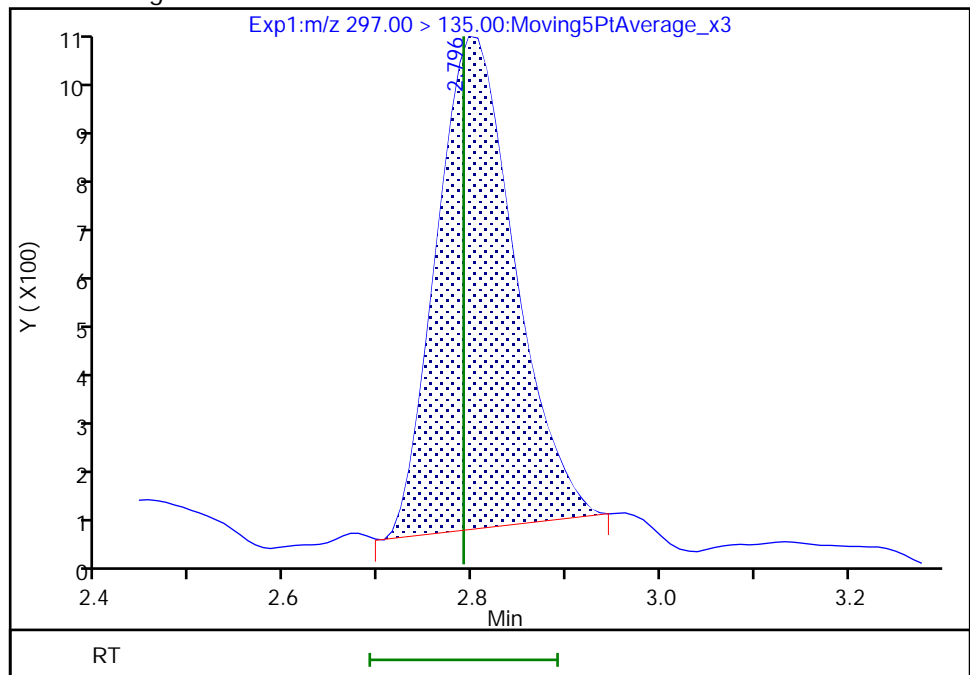
RT: 2.80
Area: 6138
Amount: 0.048784
Amount Units: ng/ml

Processing Integration Results



RT: 2.80
Area: 5426
Amount: 0.044256
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:35:44
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

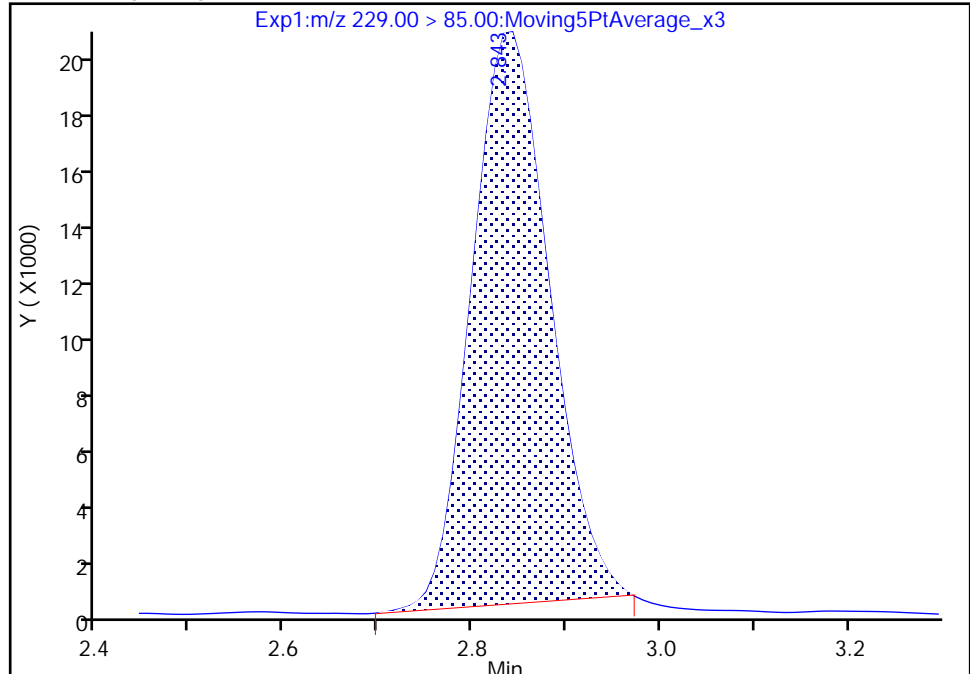
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

13 PFECA F, CAS: 377-73-1

Signal: 1

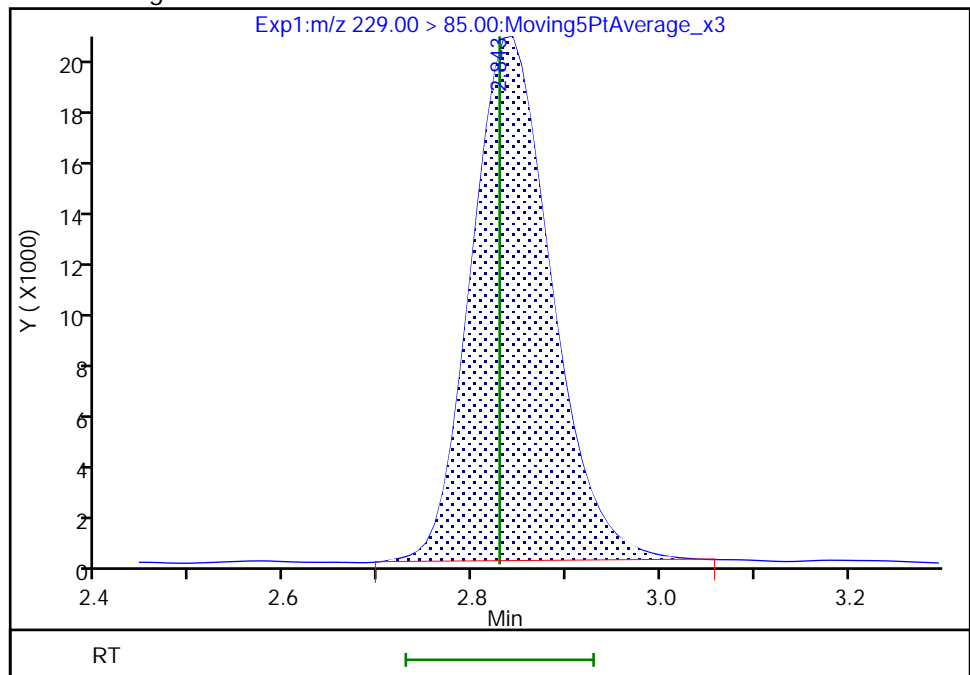
RT: 2.84
Area: 113518
Amount: 0.049098
Amount Units: ng/ml

Processing Integration Results



RT: 2.84
Area: 118568
Amount: 0.049783
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:35:58
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

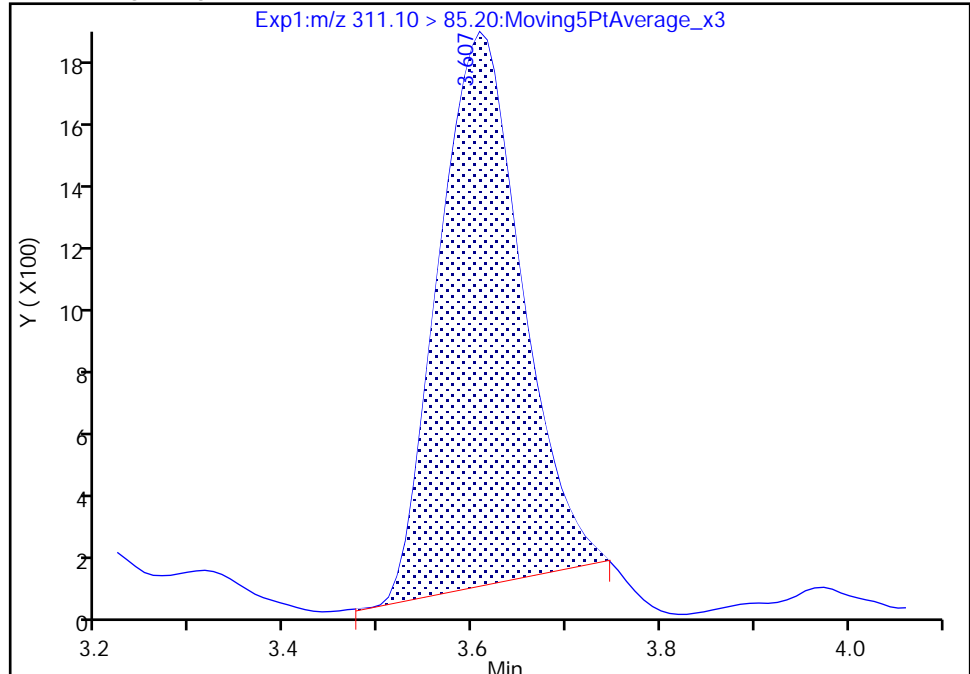
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

30 PFO3OA, CAS: 39492-89-2

Signal: 1

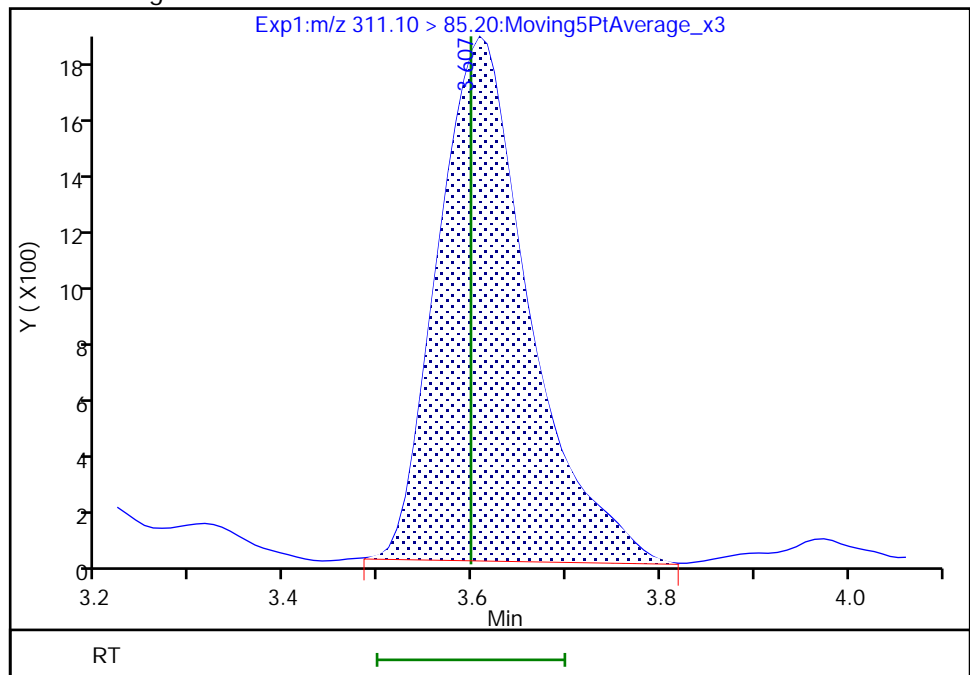
RT: 3.61
Area: 10920
Amount: 0.049032
Amount Units: ng/ml

Processing Integration Results



RT: 3.61
Area: 12421
Amount: 0.055607
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:36:17
Audit Action: Manually Integrated

Audit Reason: Baseline
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3:43 PM

Eurofins Sacramento

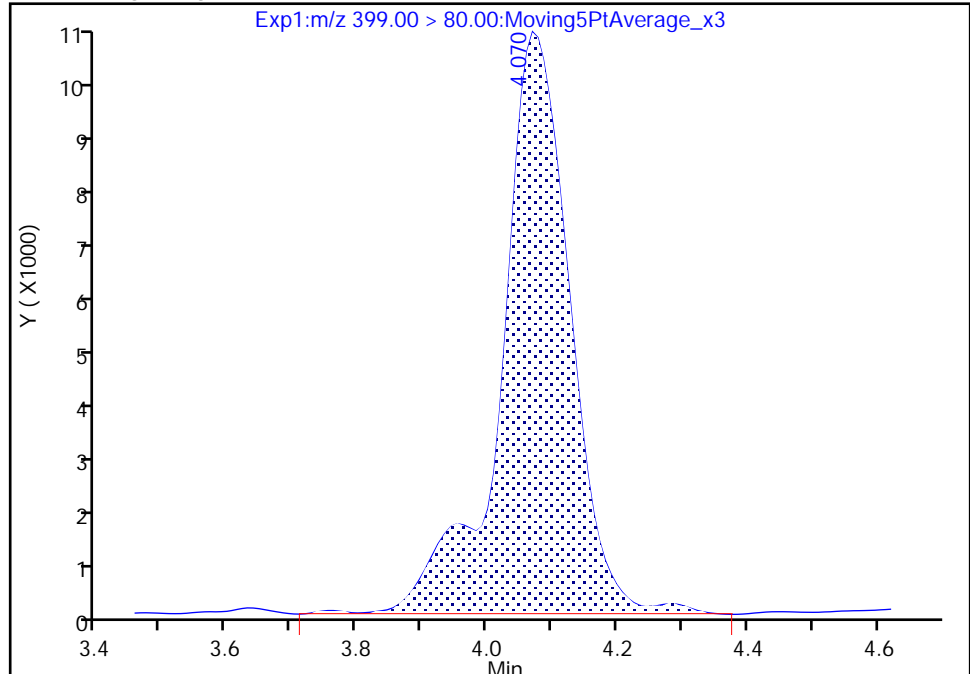
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

38 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

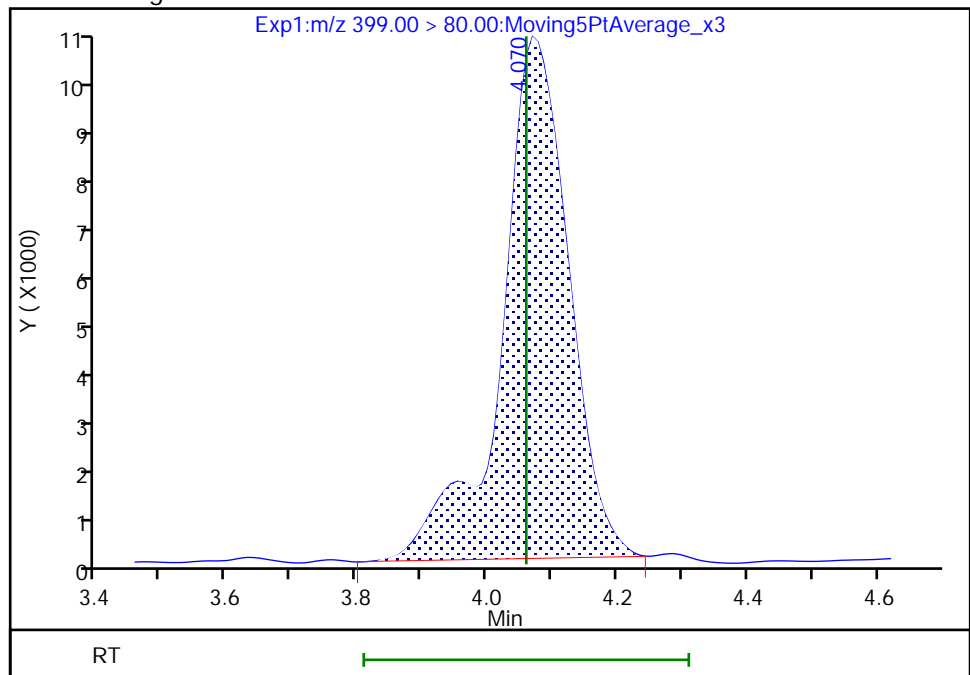
RT: 4.07
Area: 78567
Amount: 0.048184
Amount Units: ng/ml

Processing Integration Results



RT: 4.07
Area: 75422
Amount: 0.046368
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:36:44

Audit Action: Manually Integrated

Audit Reason: Isomers

Eurofins Sacramento

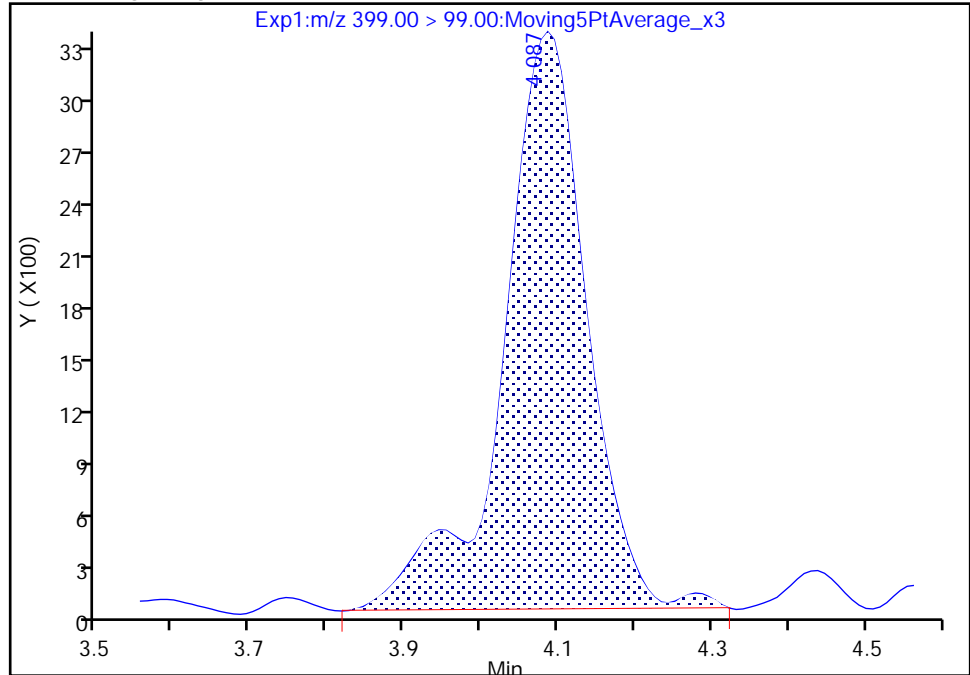
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

38 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

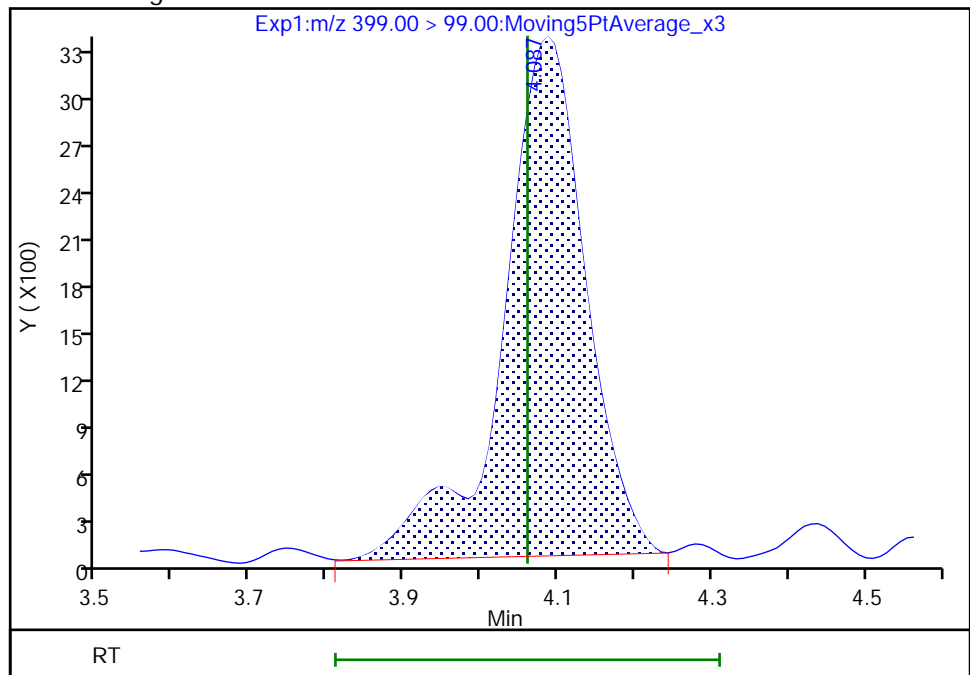
RT: 4.09
Area: 25537
Amount: 0.048184
Amount Units: ng/ml

Processing Integration Results



RT: 4.09
Area: 24817
Amount: 0.046368
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:36:51

Audit Action: Manually Integrated

Audit Reason: Isomers

Eurofins Sacramento

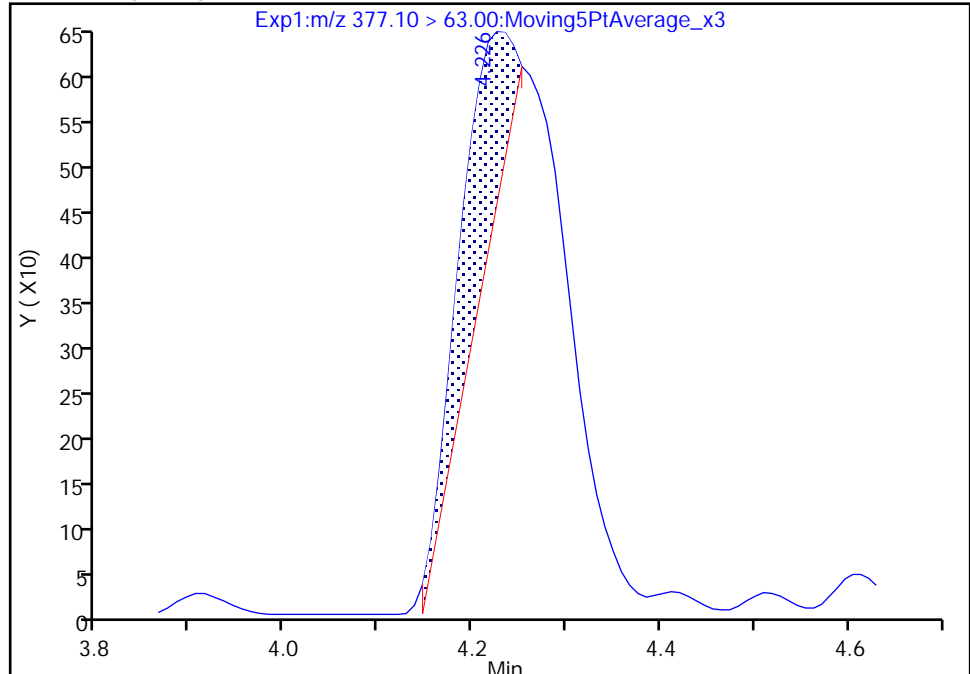
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

45 6:2 FTCA, CAS: 53826-12-3

Signal: 2

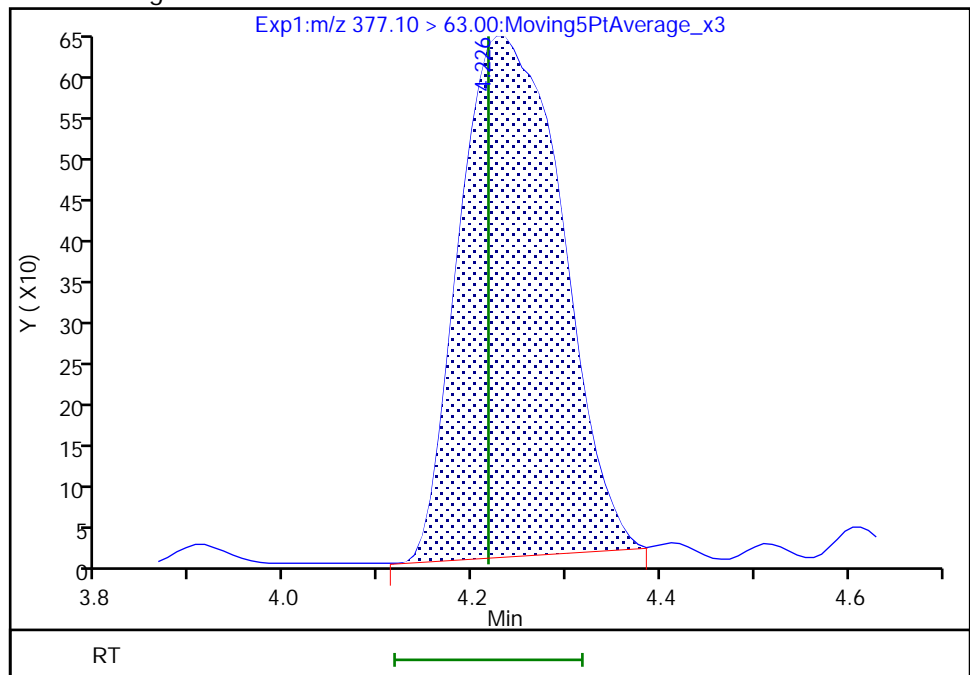
RT: 4.23
Area: 875
Amount: 0.049309
Amount Units: ng/ml

Processing Integration Results



RT: 4.23
Area: 4812
Amount: 0.046617
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:37:15
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

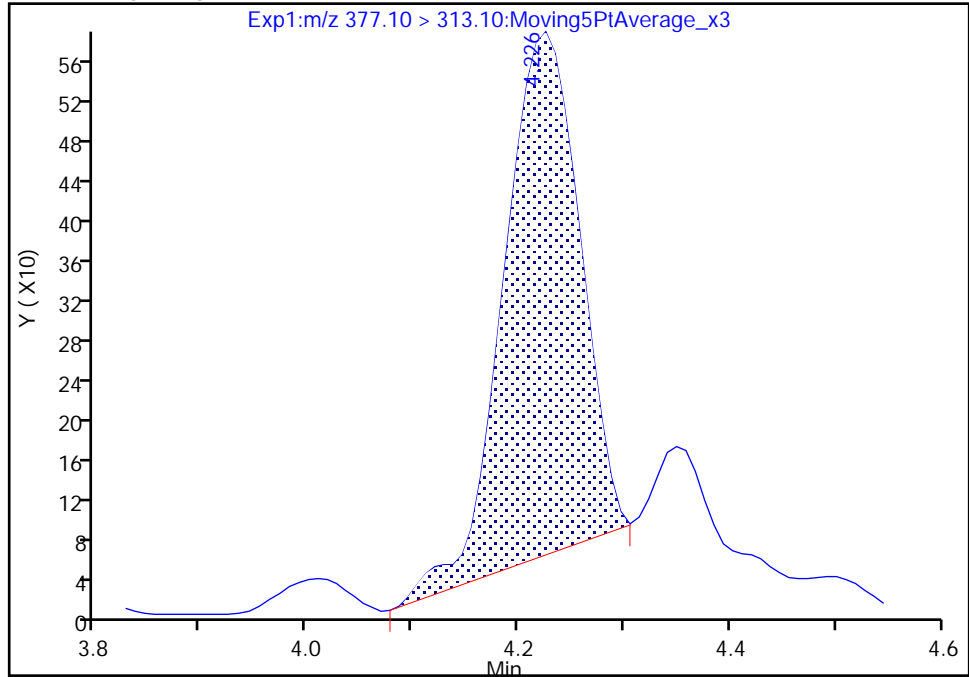
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

45 6:2 FTCA, CAS: 53826-12-3

Signal: 1

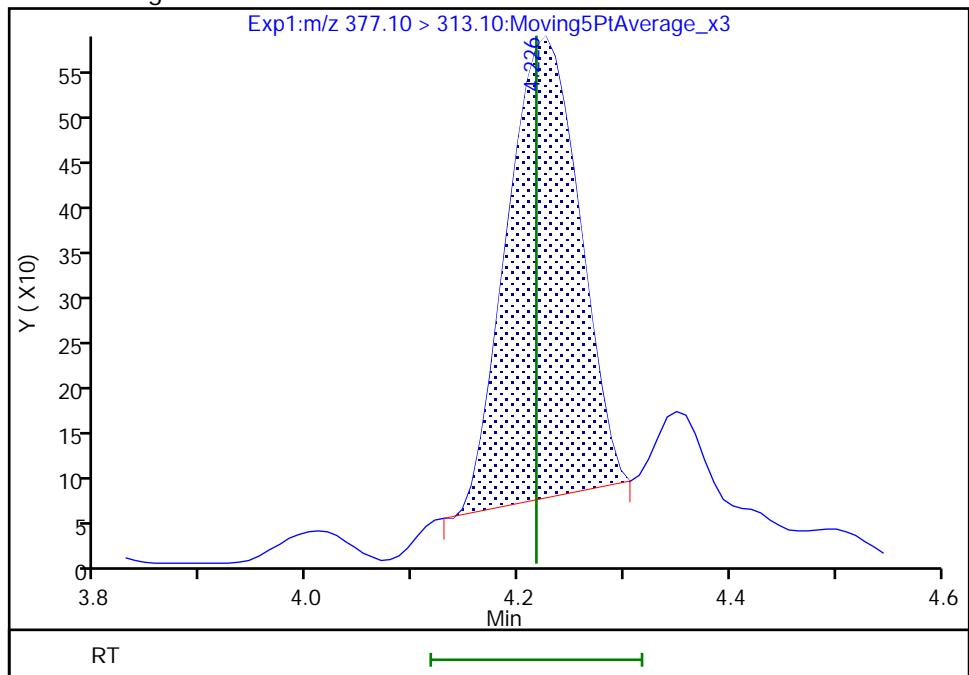
RT: 4.23
Area: 2648
Amount: 0.049309
Amount Units: ng/ml

Processing Integration Results



RT: 4.23
Area: 2456
Amount: 0.046617
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:38:22

Audit Action: Manually Integrated

Audit Reason: Baseline

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Eurofins Sacramento

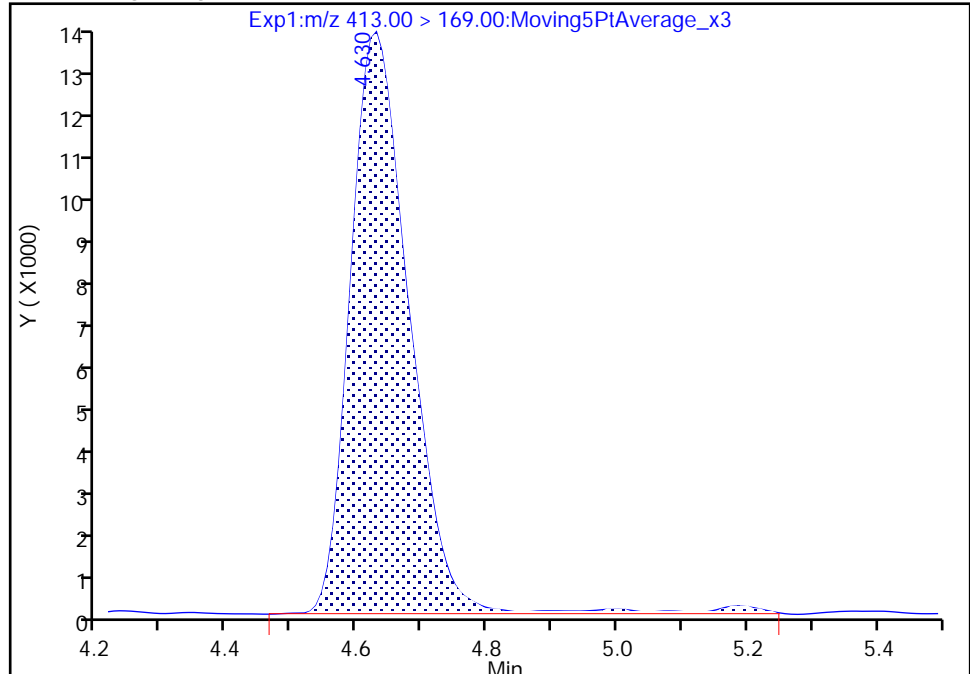
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

58 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

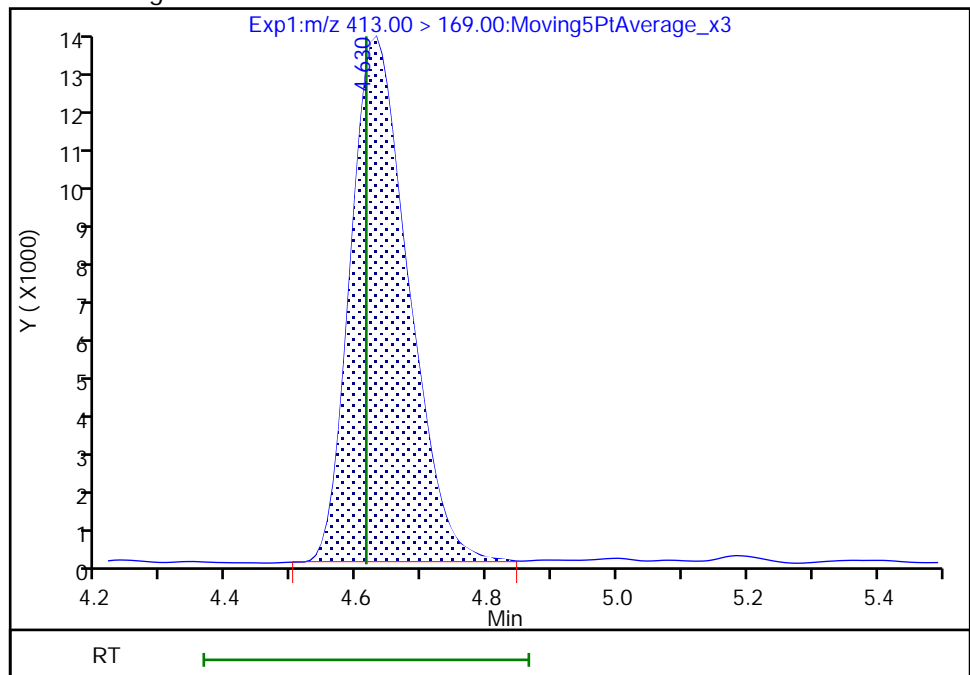
RT: 4.63
Area: 85742
Amount: 0.049927
Amount Units: ng/ml

Processing Integration Results



RT: 4.63
Area: 83543
Amount: 0.049745
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:38:51

Audit Action: Manually Integrated

Audit Reason: Peak Tail

Eurofins Sacramento

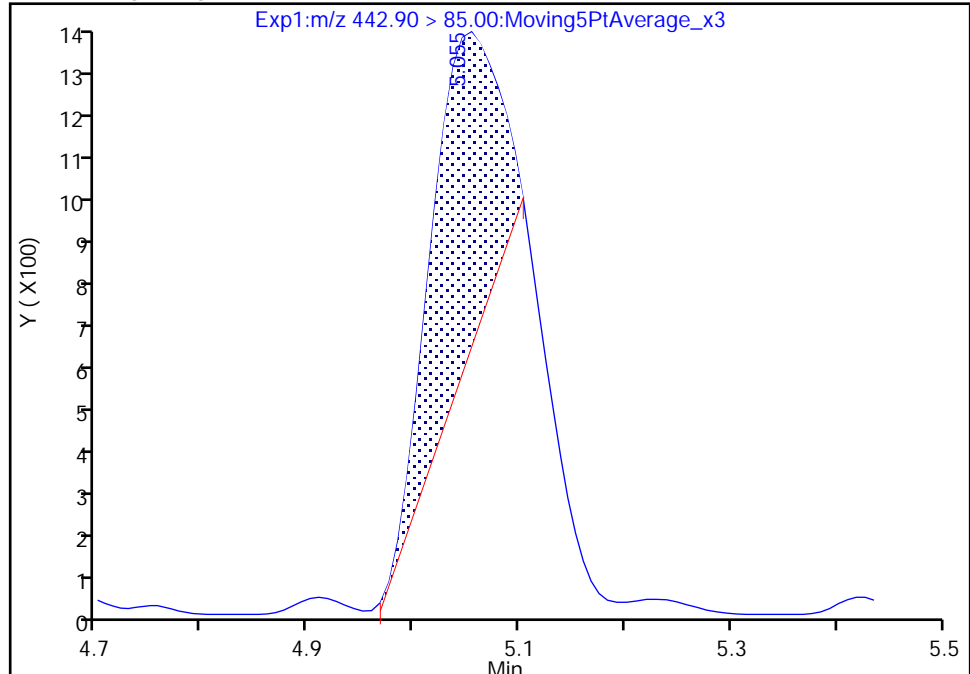
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

59 TAF, CAS: 39492-91-6

Signal: 1

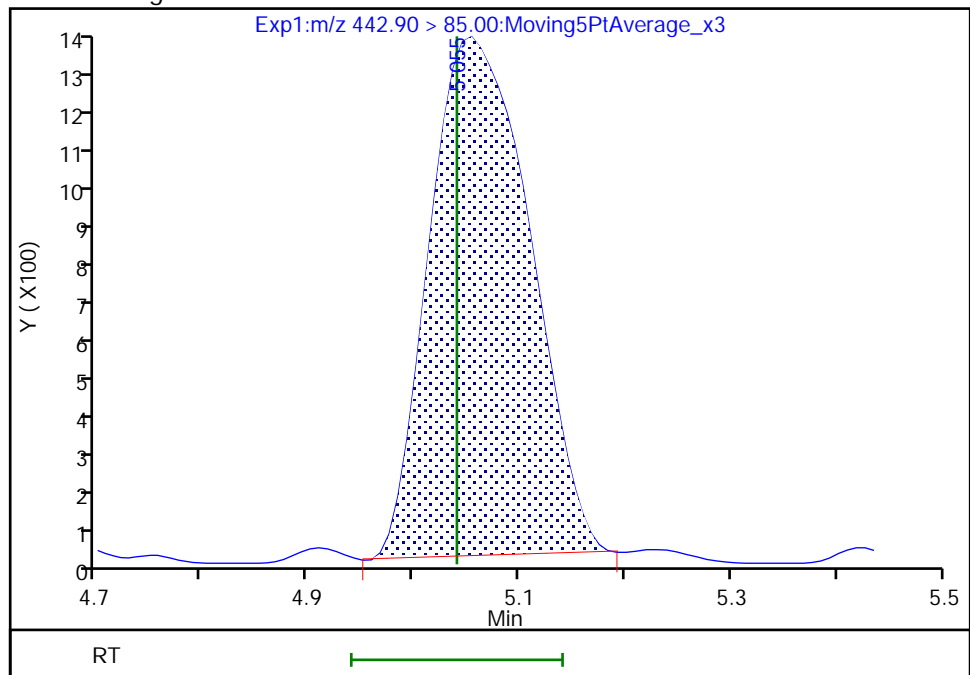
RT: 5.05
Area: 3467
Amount: 0.024117
Amount Units: ng/ml

Processing Integration Results



RT: 5.05
Area: 9153
Amount: 0.050965
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:39:05
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

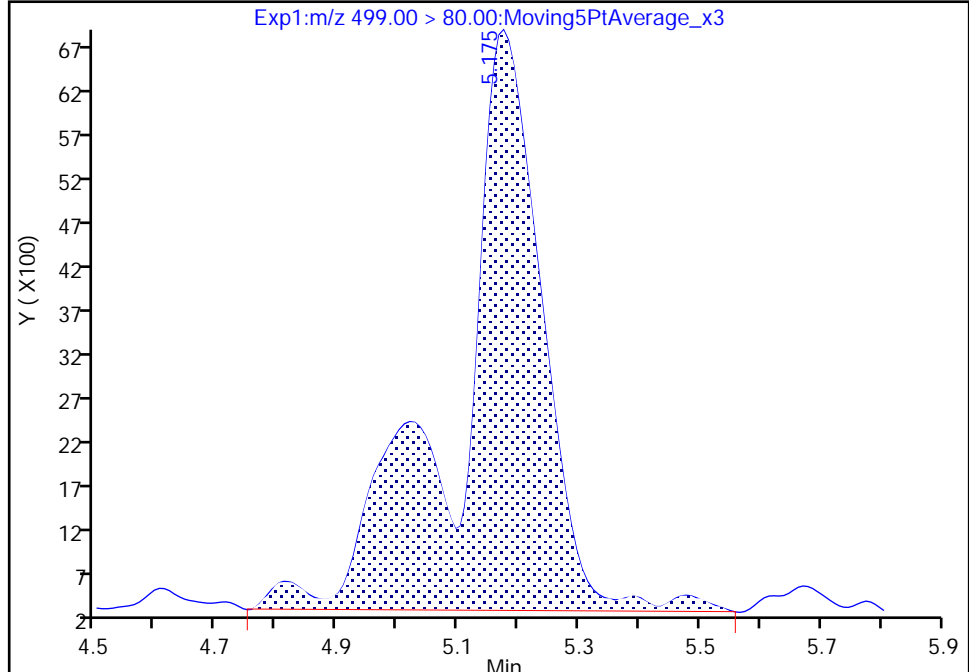
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

62 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

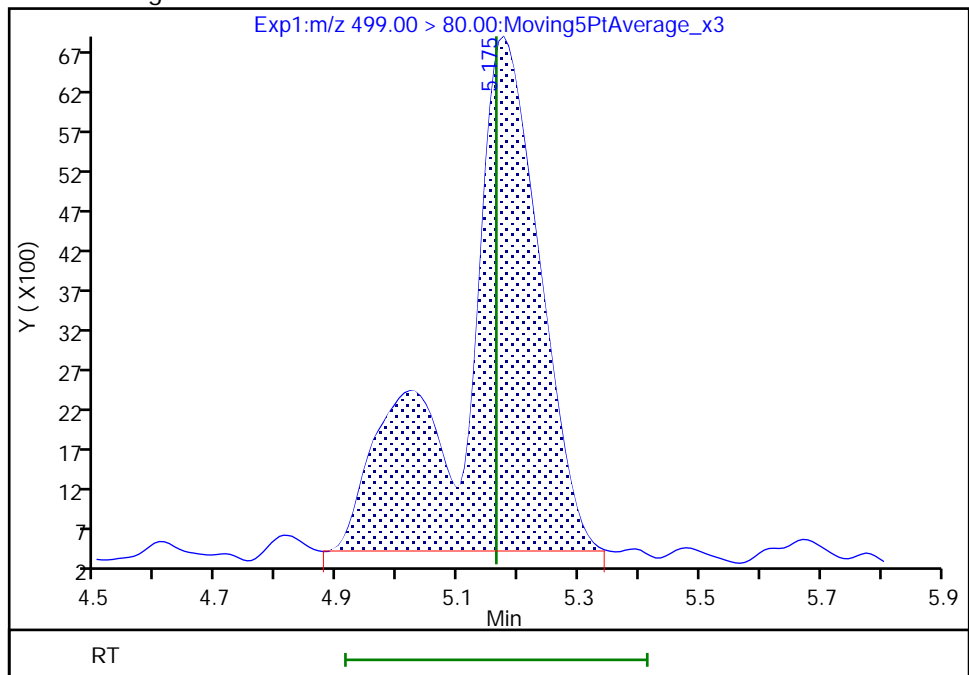
RT: 5.18
Area: 66517
Amount: 0.054679
Amount Units: ng/ml

Processing Integration Results



RT: 5.18
Area: 59636
Amount: 0.050786
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:39:26

Audit Action: Manually Integrated

Audit Reason: Isomers

Eurofins Sacramento

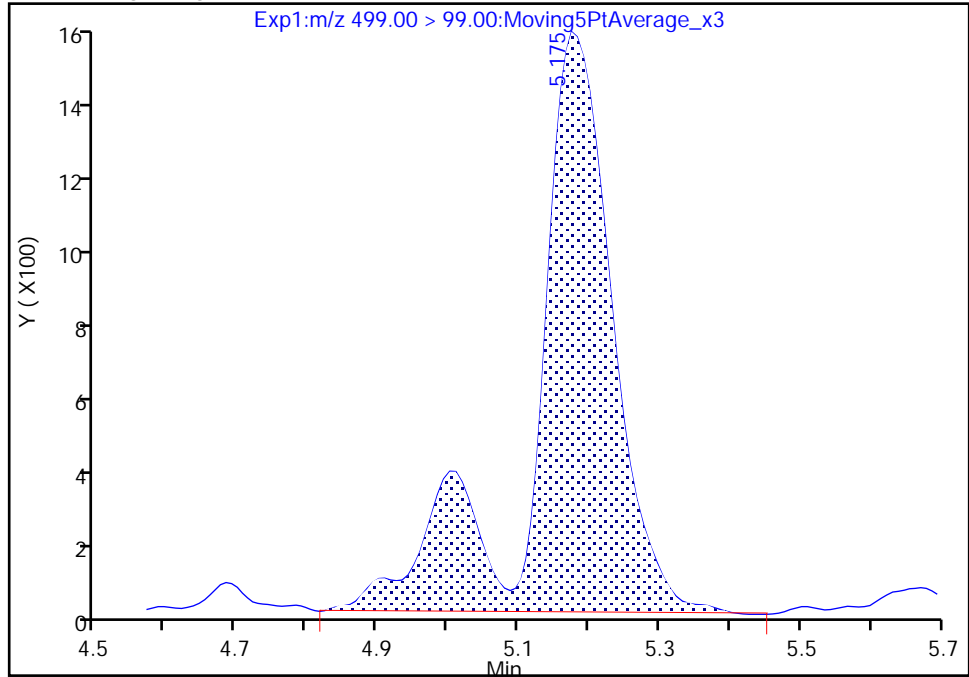
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

62 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

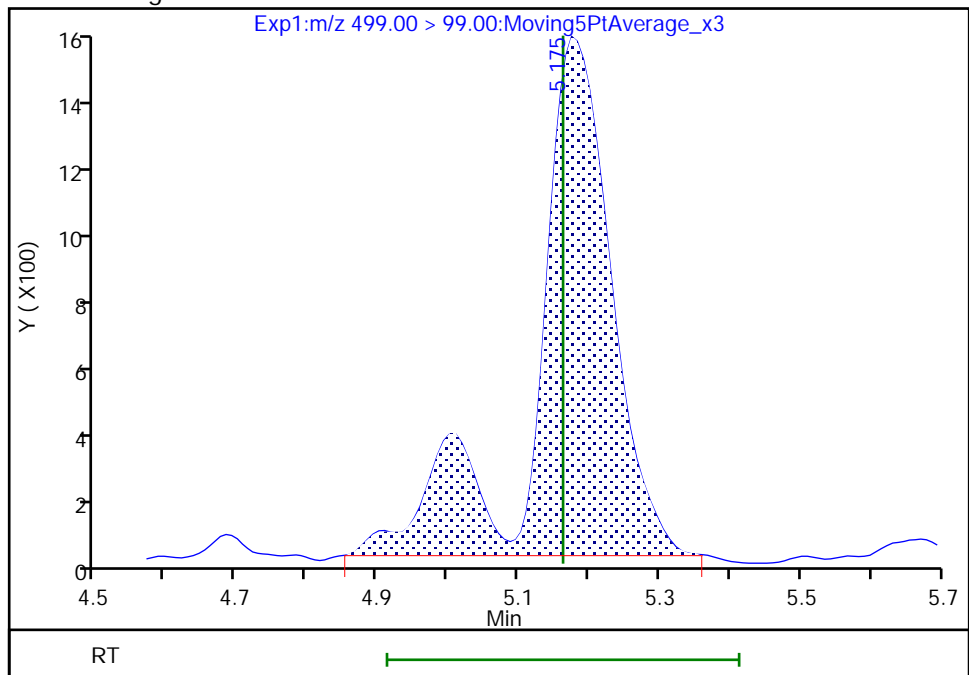
RT: 5.18
Area: 12434
Amount: 0.054679
Amount Units: ng/ml

Processing Integration Results



RT: 5.18
Area: 11746
Amount: 0.050786
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:39:33

Audit Action: Manually Integrated

Audit Reason: Isomers

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Eurofins Sacramento

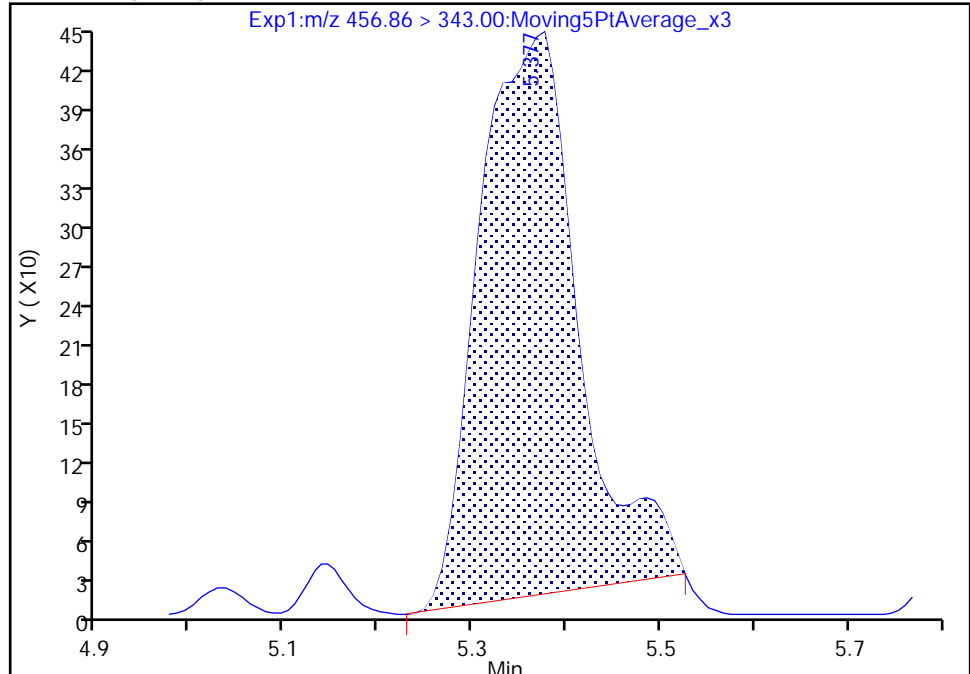
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

66 8:2 FTUCA, CAS: 70887-84-2

Signal: 2

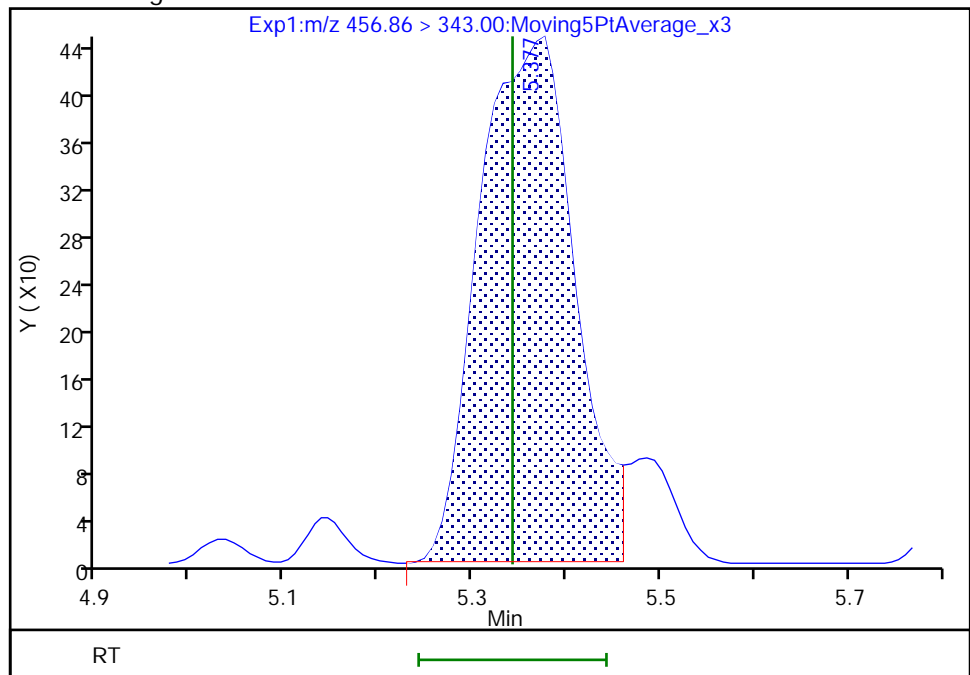
RT: 5.38
Area: 3125
Amount: 0.050433
Amount Units: ng/ml

Processing Integration Results



RT: 5.38
Area: 3089
Amount: 0.050355
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:40:18
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

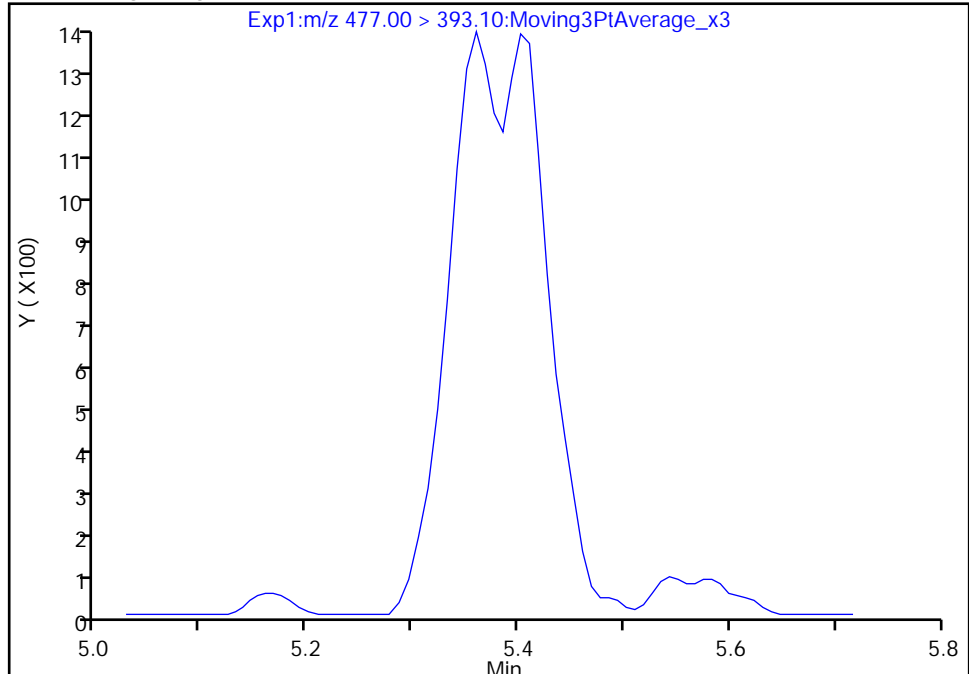
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

69 8:2 FTCA, CAS: 27854-31-5

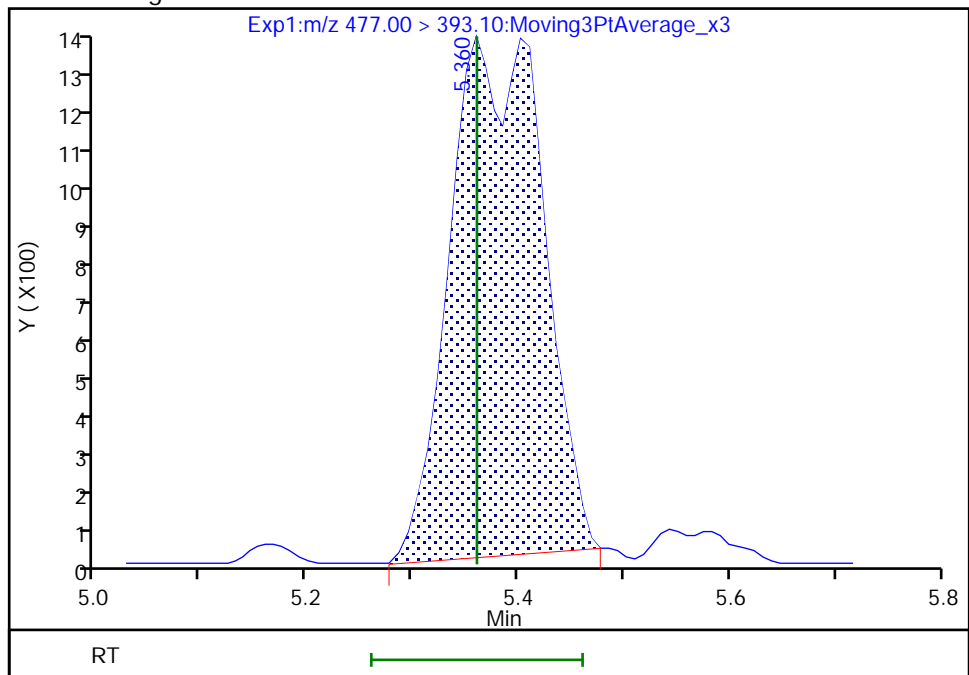
Signal: 1

Not Detected
Expected RT: 5.36

Processing Integration Results



Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:40:36
Audit Action: Assigned Compound ID

Audit Reason: Assign Peak
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Eurofins Sacramento

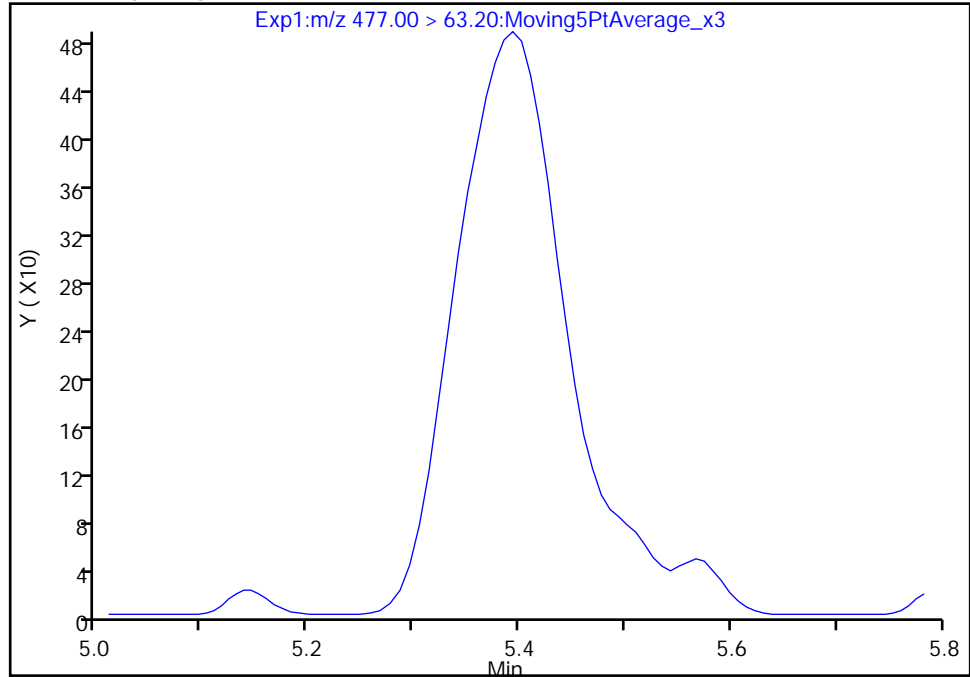
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

69 8:2 FTCA, CAS: 27854-31-5

Signal: 2

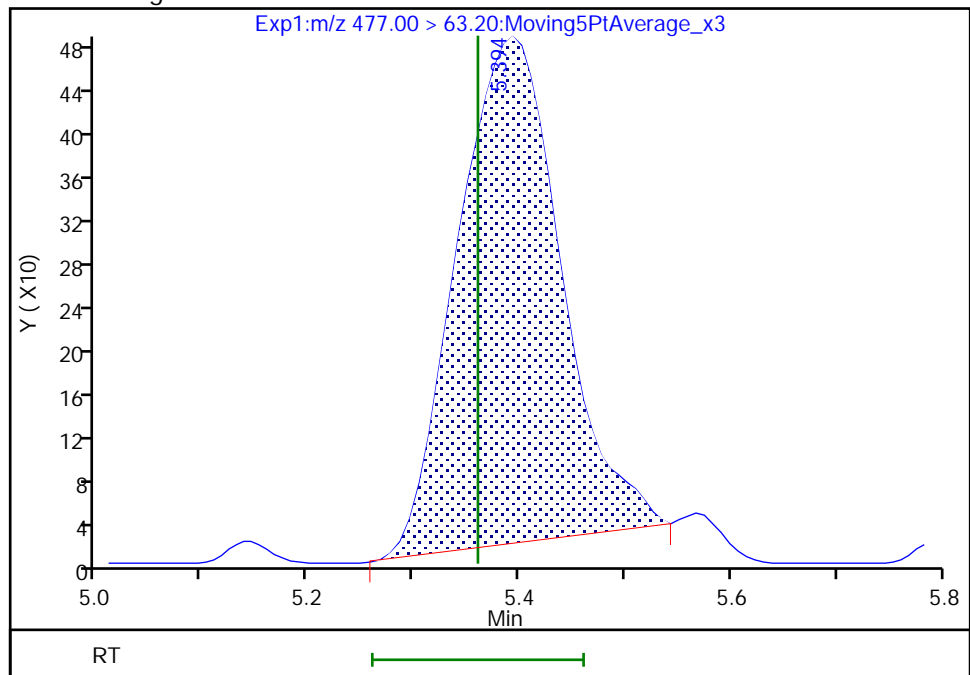
Not Detected
Expected RT: 5.36

Processing Integration Results



Manual Integration Results

RT: 5.39
Area: 3179
Amount: 0.051471
Amount Units: ng/ml



Reviewer: YS2U, 21-Dec-2022 13:40:47

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Eurofins Sacramento

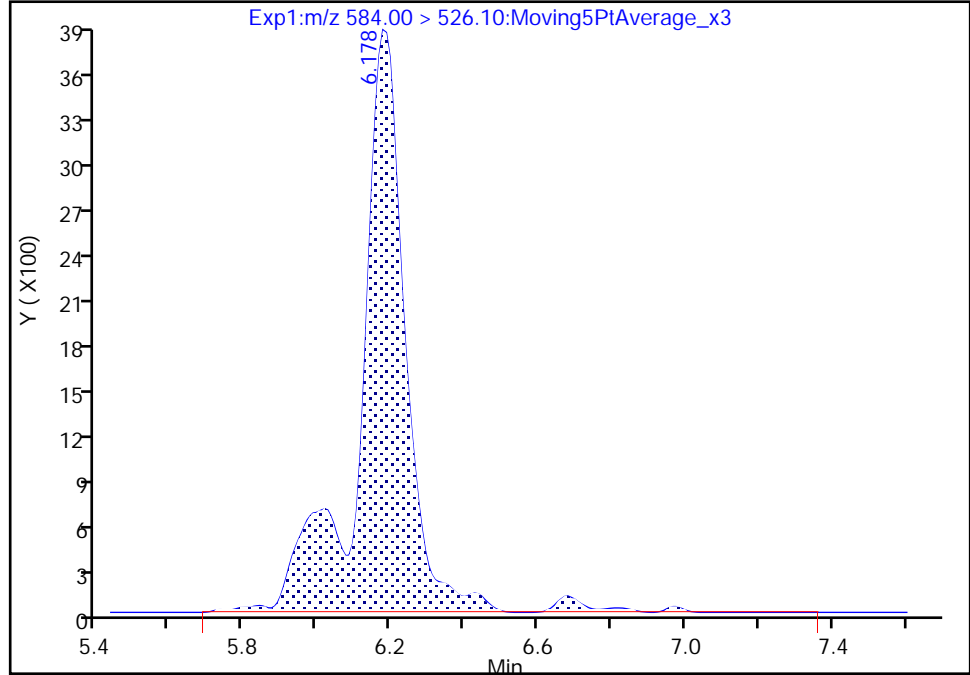
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

84 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 2

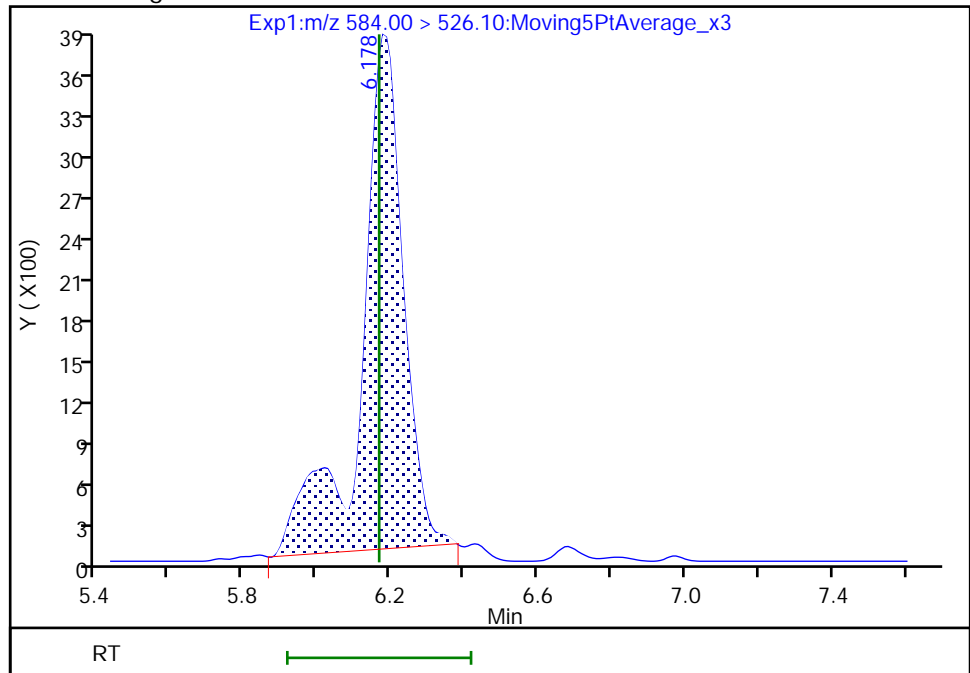
RT: 6.18
Area: 33769
Amount: 0.049098
Amount Units: ng/ml

Processing Integration Results



RT: 6.18
Area: 29794
Amount: 0.047349
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:41:28
Audit Action: Manually Integrated

Audit Reason: Peak Tail

Eurofins Sacramento

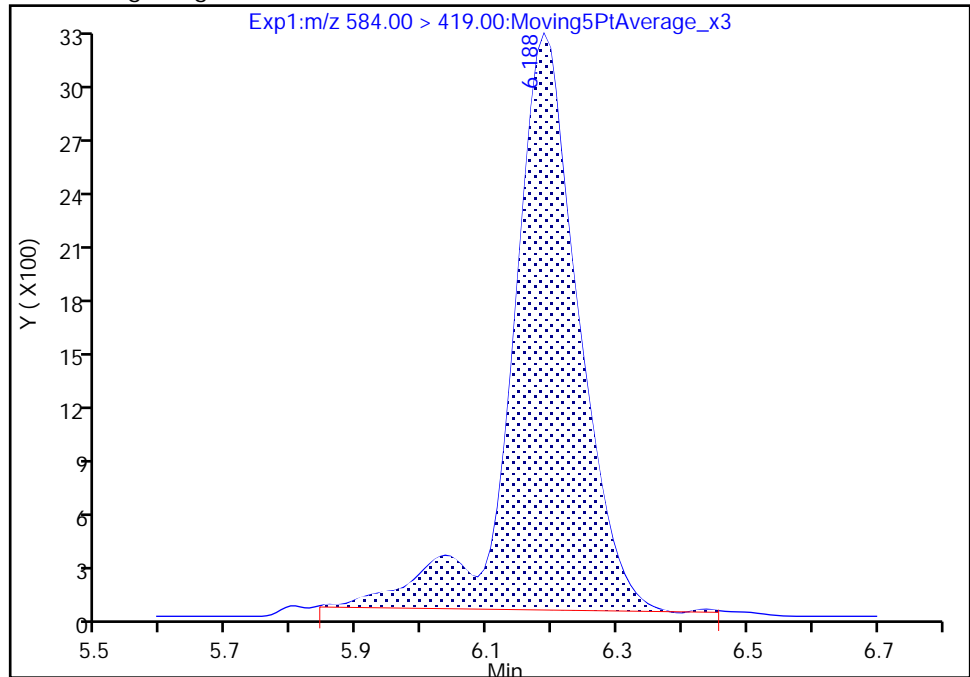
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

84 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 1

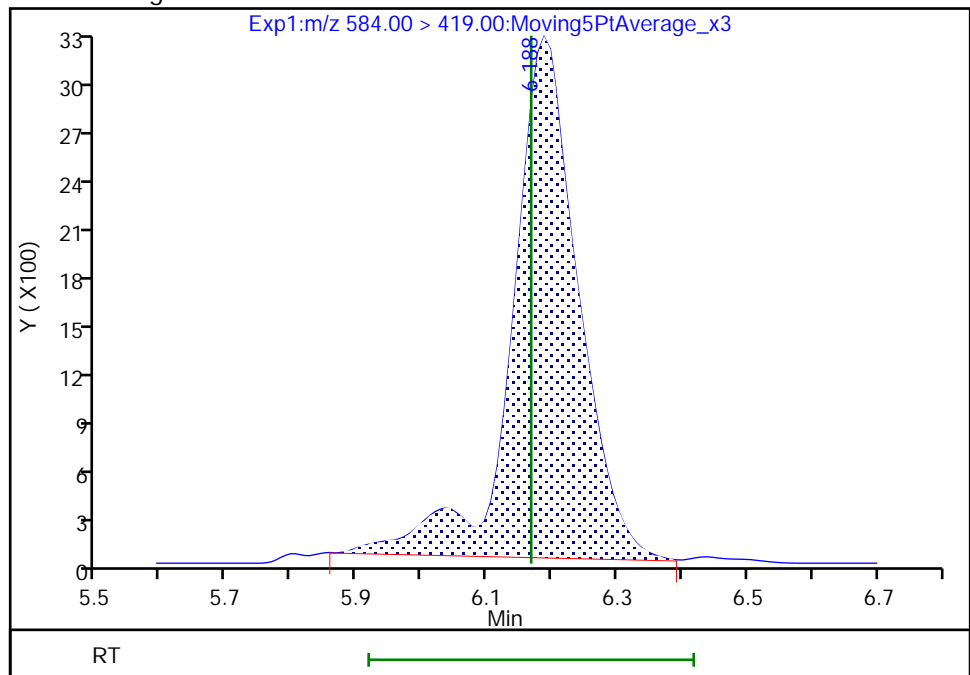
RT: 6.19
Area: 23219
Amount: 0.049098
Amount Units: ng/ml

Processing Integration Results



RT: 6.19
Area: 23047
Amount: 0.047349
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:41:37

Audit Action: Manually Integrated

Audit Reason: Peak Tail

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Eurofins Sacramento

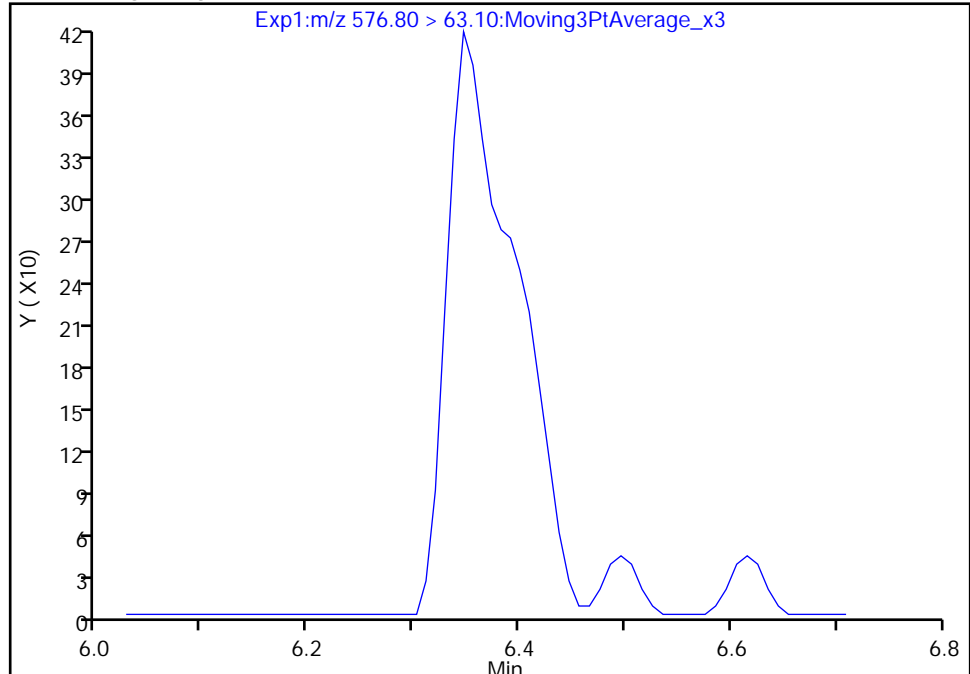
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

92 10:2 FTCA, CAS: 53826-13-4

Signal: 2

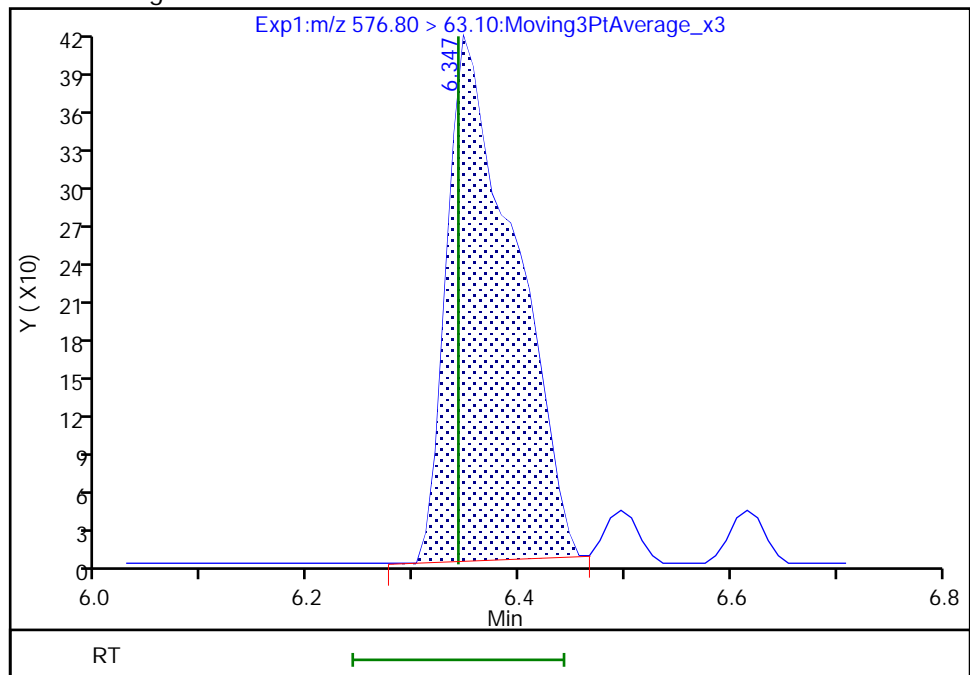
Not Detected
Expected RT: 6.34

Processing Integration Results



Manual Integration Results

RT: 6.35
Area: 1845
Amount: 0.044143
Amount Units: ng/ml



Reviewer: YS2U, 21-Dec-2022 13:42:04

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Eurofins Sacramento

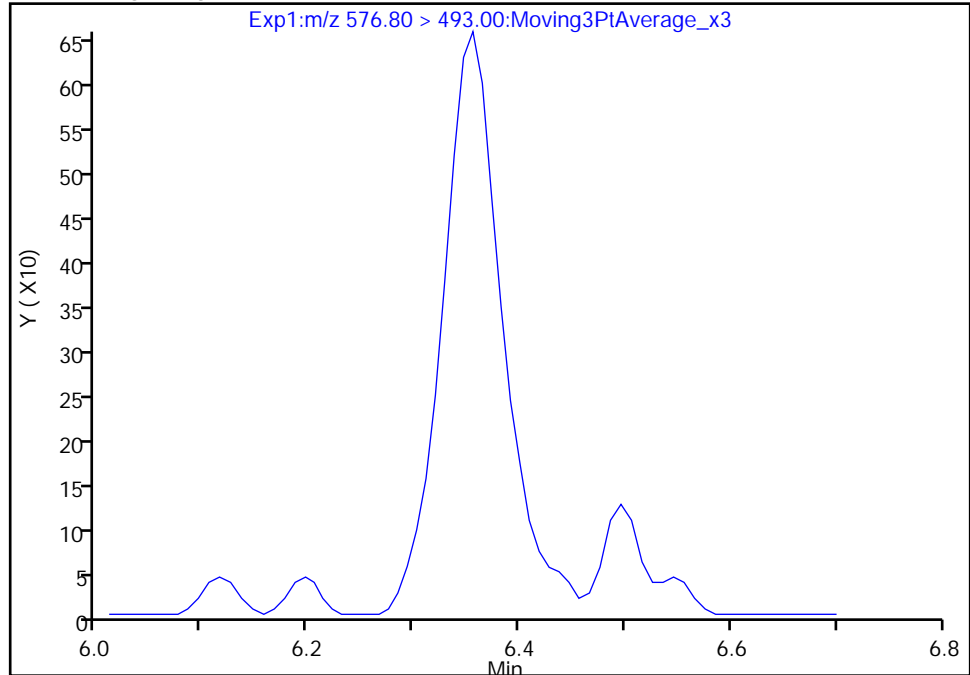
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

92 10:2 FTCA, CAS: 53826-13-4

Signal: 1

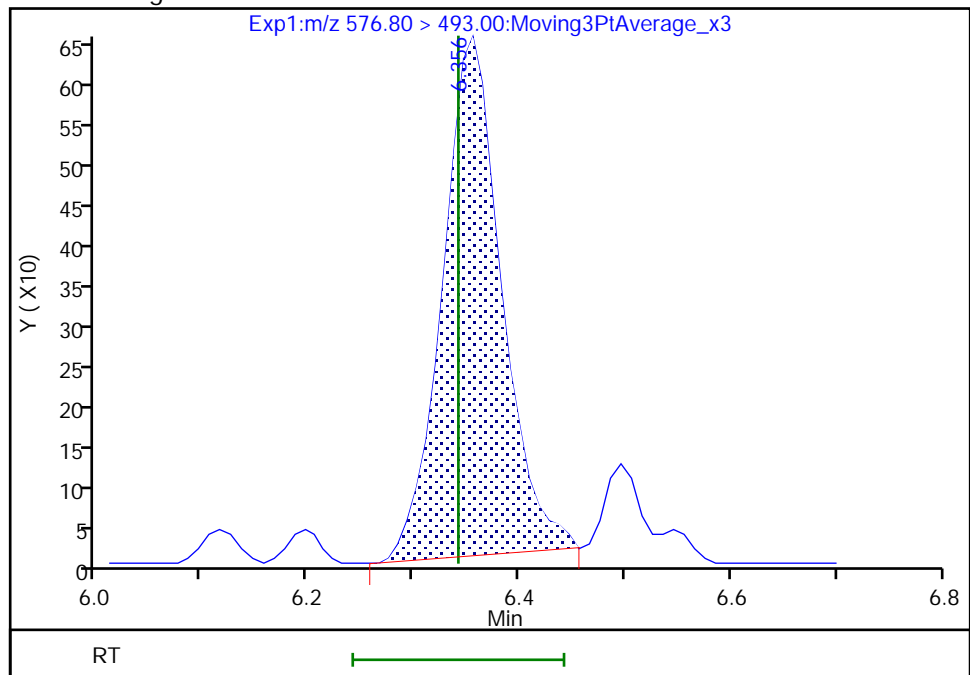
Not Detected
Expected RT: 6.34

Processing Integration Results



Manual Integration Results

RT: 6.36
Area: 2517
Amount: 0.044143
Amount Units: ng/ml



Reviewer: YS2U, 21-Dec-2022 13:42:12

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Eurofins Sacramento

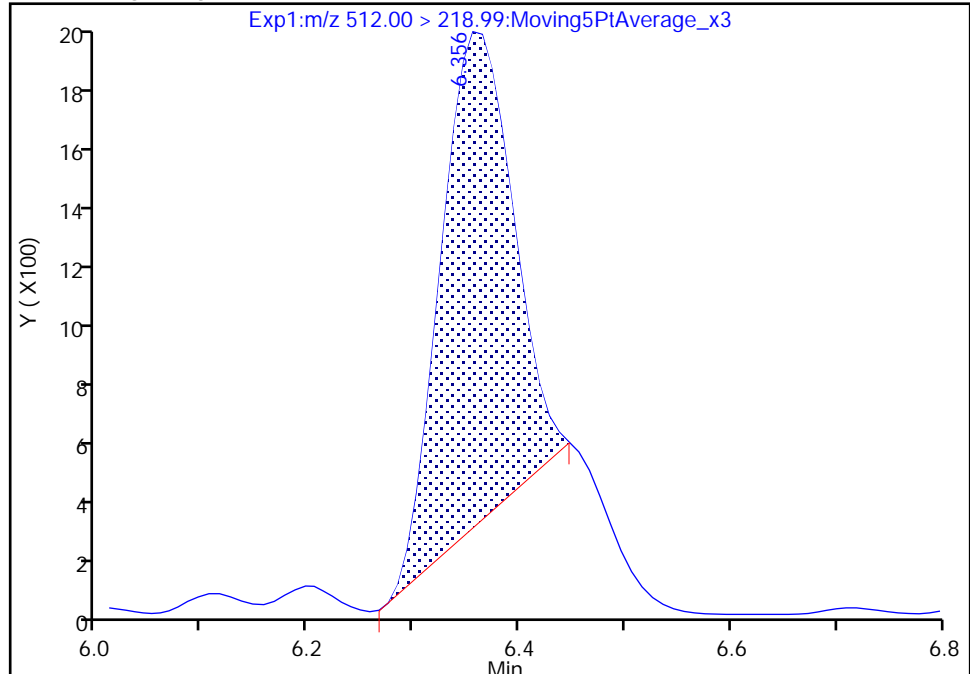
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

88 NMeFOSA, CAS: 31506-32-8

Signal: 2

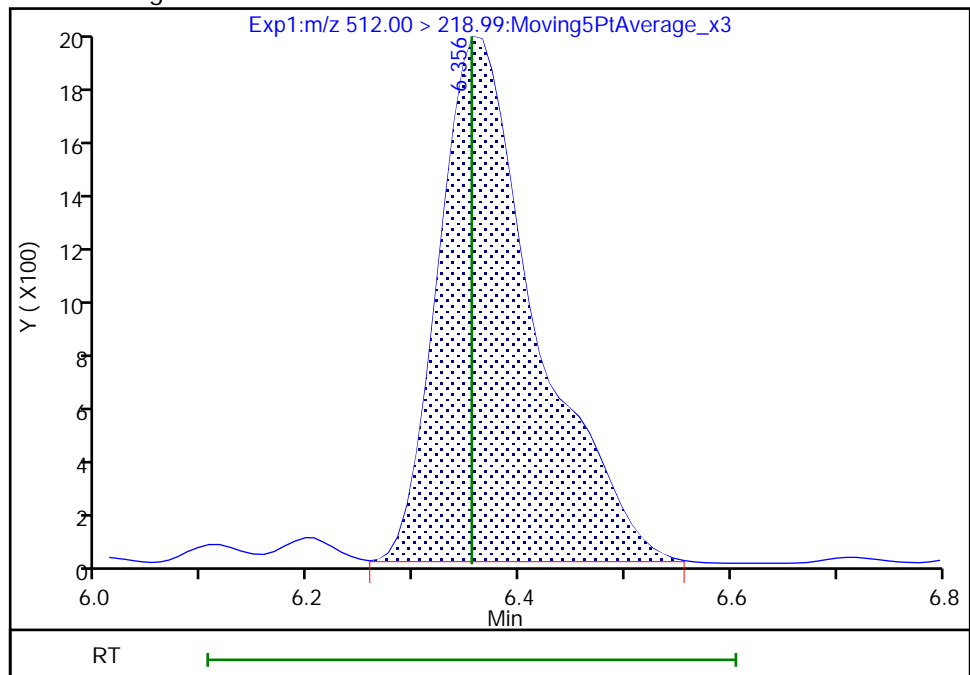
RT: 6.36
Area: 7946
Amount: 0.059487
Amount Units: ng/ml

Processing Integration Results



RT: 6.36
Area: 12517
Amount: 0.060315
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:42:26
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

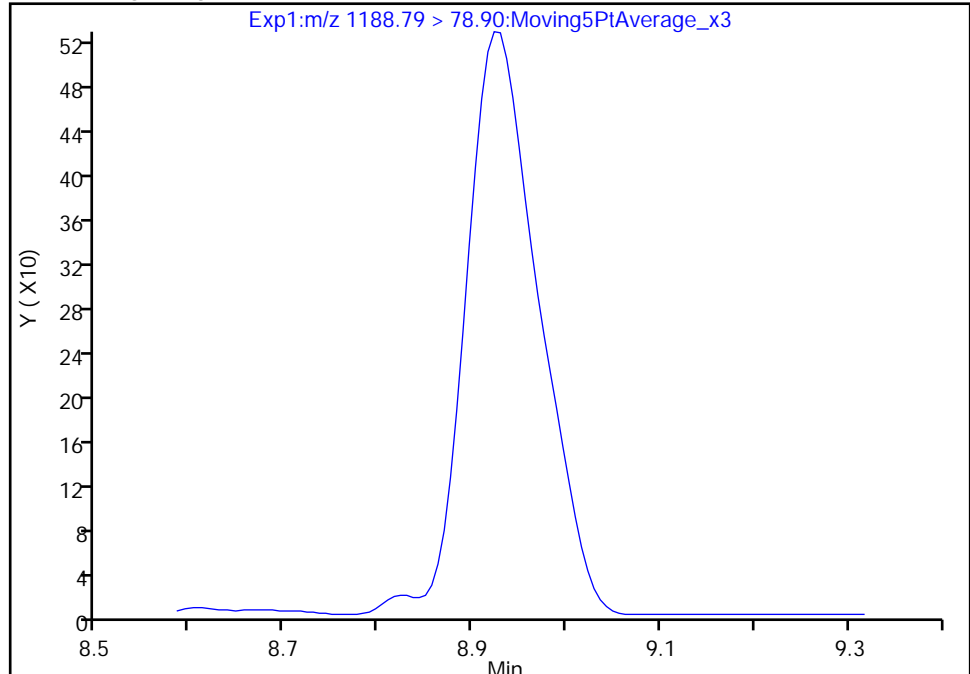
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_010.d
Injection Date: 21-Dec-2022 12:20:37 Instrument ID: A18
Lims ID: IC L2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

117 10:2 diPAP, CAS: 1895-26-7

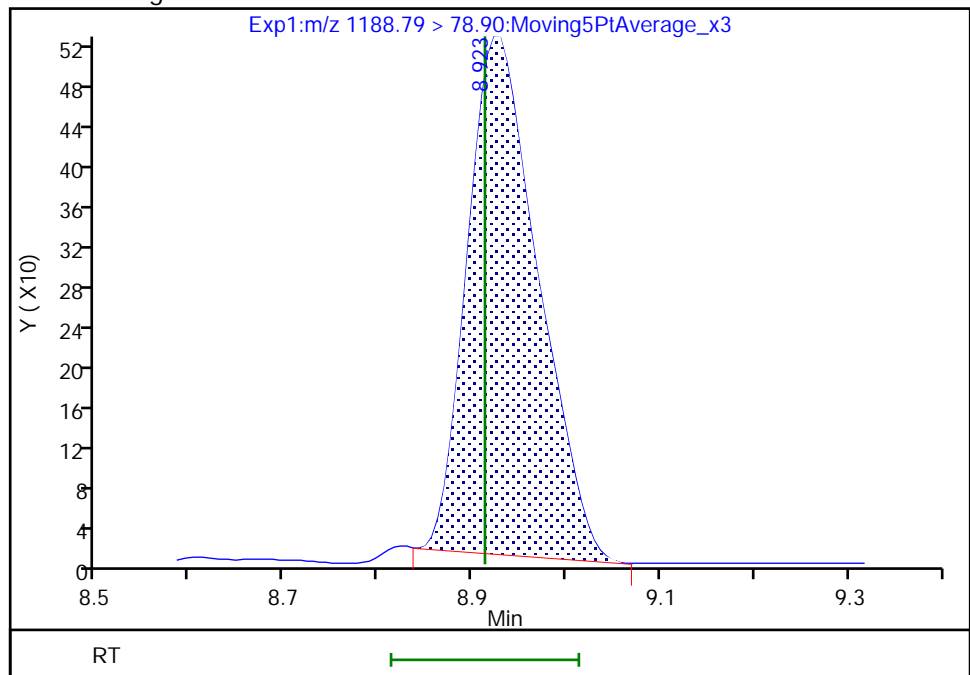
Signal: 1

Not Detected
Expected RT: 8.91

Processing Integration Results



Manual Integration Results



RT: 8.92
Area: 2676
Amount: 0.026201
Amount Units: ng/ml

Reviewer: YS2U, 22-Dec-2022 06:01:37

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_011.d
 Lims ID: IC L3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 21-Dec-2022 12:30:46 ALS Bottle#: 3 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD 3 (06)
 Misc. Info.: Plate: 2 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Sublist: chrom-PFAS+_A18*sub3
 Method: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Dec-2022 07:21:05 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1678

First Level Reviewer: YS2U

Date: 21-Dec-2022 13:46:56

Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 MTP										M
175.00 > 97.00	1.513	1.488	0.025	0.559	70241	0.2488		99.5	241	M
2 PPF Acid										M
162.95 > 119.00	1.914	1.893	0.021	0.708	538300	0.1939		80.0	46.9	M
3 PFMOAA										
179.00 > 84.90	2.406	2.387	0.019	0.889	553666	0.2436		97.5	173	
4 R-PSDA										
441.00 > 241.00	2.585	2.573	0.012	0.955	138397	0.2537		101	3454	
5 R-EVE										
405.00 > 217.00	2.593	2.577	0.016	0.958	345490	0.2493		99.7	6708	
6 Hydrolyzed PSDA										
439.10 > 342.90	2.593	2.581	0.012	0.958	407011	0.2344		93.8	5940	
D 8 13C4 PFBA										
217.00 > 172.00	2.706	2.688	0.018	0.584	5066845	1.24		98.9	15919	
7 Perfluorobutanoic acid										
212.90 > 169.00	2.706	2.690	0.016	1.000	1106755	0.2456		98.2	41.6	
10 PMPA										
229.00 > 185.00	2.778	2.760	0.018	1.027	1223325	0.2626		105	780	
11 PFPrS										
249.10 > 80.00	2.787	2.771	0.016	0.892	532061	0.2224		96.7	3536	
12 NVHOS										
297.00 > 135.00	2.806	2.790	0.016	1.037	30999	0.2648		106	781	
13 PFCA F										
229.00 > 85.00	2.843	2.829	0.014	0.921	572763	0.2394		95.8	3844	
14 PFO2HxA										
245.00 > 85.00	2.991	2.976	0.015	0.969	112410	0.2249		90.0	505	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 16 13C5 PFPeA										
267.90 > 223.00	3.085	3.068	0.017	0.666	4546088	1.24		99.2	26338	
15 Perfluoropentanoic acid										
262.90 > 219.00	3.085	3.069	0.016	1.000	911458	0.2399		96.0	1196	
17 3:3 FTCA										
241.00 > 177.10	3.085	3.075	0.010	0.988	47081	0.2395	Target=1.46	95.8	478	
241.00 > 116.90	3.085	3.075	0.010	0.988	37340		1.26(0.73-2.18)	95.8	162	
19 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.123	3.111	0.012	1.000	531914	0.2117	Target=2.33	95.4	2549	
298.90 > 99.00	3.133	3.111	0.022	1.003	228685		2.33(1.16-3.49)	95.4	1316	
D 18 13C3 PFBS										
301.90 > 80.00	3.123	3.111	0.012	0.675	2980714	1.18		101	13703	
20 PEPA										
278.90 > 234.90	3.191	3.178	0.013	1.034	1009362	0.2499		100.0	155	
21 PFECA A										
278.95 > 84.90	3.212	3.198	0.014	1.041	990677	0.2454		98.2	9329	
22 PES										
314.80 > 135.00	3.306	3.292	0.014	1.058	1841311	0.2204		98.8	19652	
23 FBSA										
297.90 > 78.00	3.351	3.338	0.013	0.594	124813	0.2196		87.8	2216	
24 PFECA B										
295.20 > 201.00	3.458	3.438	0.020	0.980	169872	0.2363		94.5	3825	
26 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.484	3.461	0.023	1.003	335456	0.2389	Target=1.98	102	9156	
327.00 > 79.96	3.476	3.461	0.015	1.000	158165		2.12(0.99-2.97)	102	1206	
D 25 M2-4:2 FTS										
329.00 > 81.00	3.476	3.463	0.013	0.751	704703	1.20		102	3787	
D 27 13C2 PFHxA										
315.00 > 270.00	3.529	3.513	0.016	0.762	5187930	1.29		103	38625	
28 Perfluorohexanoic acid										
313.00 > 269.00	3.529	3.514	0.015	1.000	898628	0.2298	Target=13.54	91.9	1196	
313.00 > 119.00	3.529	3.514	0.015	1.000	65181		13.79(6.77-20.31)	91.9	557	
29 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.566	3.545	0.021	1.142	453374	0.2204	Target=3.08	93.8	3617	
349.00 > 99.00	3.556	3.545	0.011	1.138	150119		3.02(1.54-4.63)	93.8	2389	
30 PFO3OA										
311.10 > 85.20	3.608	3.598	0.010	1.023	54635	0.2384		95.4	799	
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.695	3.685	0.010	0.798	178139	1.31		105	4802	
31 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.703	3.685	0.018	1.002	42236	0.2804	Target=0.84	112	2114	
285.00 > 185.00	3.703	3.685	0.018	1.002	41967		1.01(0.42-1.25)	112	465	
33 R-PSDCA										
397.00 > 217.00	4.019	4.000	0.019	0.990	321468	0.2473		98.9	10242	
34 Hydro-EVE Acid										
427.00 > 282.90	4.104	4.078	0.026	1.010	1443299	0.2357		94.3	12349	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
36 Perfluoroheptanoic acid										
363.00 > 319.00	4.062	4.047	0.015	1.000	1015299	0.2525	Target=3.56	101	1490	
363.00 > 169.00	4.062	4.047	0.015	1.000	289542		3.51(1.78-5.34)	101	6377	
D 35 13C4 PFHpA										
367.00 > 322.00	4.062	4.048	0.014	0.877	5522379	1.29		103	27684	
38 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.078	4.060	0.018	1.000	347847	0.2096	Target=3.26	91.9	2545	
399.00 > 99.00	4.078	4.060	0.018	1.000	113235		3.07(1.63-4.88)	91.9	1031	
D 37 18O2 PFHxS										
403.00 > 84.00	4.078	4.063	0.015	0.881	2033754	1.22		103	21420	
39 Hydro-PS Acid										
463.00 > 263.00	4.130	4.114	0.016	1.017	1307850	0.2397		95.9	3115	
41 5:3 FTCA										
340.88 > 236.90	4.147	4.127	0.020	0.981	173515	0.2620	Target=1.10	105	2697	
340.88 > 216.90	4.147	4.127	0.020	0.981	170630		1.02(0.55-1.65)	105	1614	
40 DONA										
377.00 > 251.00	4.147	4.128	0.019	0.801	1779139	0.2297	Target=2.23	97.3	13134	
377.00 > 85.00	4.147	4.128	0.019	0.801	810905		2.19(1.11-3.34)	97.3	906	
42 PFECA G										
378.90 > 184.90	4.173	4.158	0.015	0.987	490502	0.2540		102	6277	
D 44 13C-6:2 FTUCA										
358.86 > 293.90	4.199	4.185	0.014	0.907	3406633	1.34		107	26011	
43 6:2 FTUCA										
356.86 > 292.90	4.208	4.188	0.020	1.002	624645	0.2265	Target=12.98	90.6	3963	
356.86 > 243.00	4.199	4.188	0.011	1.000	50391		12.40(6.49-19.46)	90.6	1354	
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.226	4.212	0.014	0.913	247177	1.26		101	1084	
45 6:2 FTCA										
377.10 > 313.10	4.235	4.217	0.018	1.002	13427	0.2599	Target=0.65	104	407	
377.10 > 63.00	4.235	4.217	0.018	1.002	21444		0.63(0.33-0.98)	104	652	
47 PFO4DA										
376.90 > 85.00	4.332	4.320	0.012	1.067	44856	0.1831		73.2	0.5	
48 PS Acid										
442.80 > 146.80	4.430	4.418	0.012	0.957	463468	0.2307		92.3	1493	
49 EVE Acid										
407.00 > 262.90	4.438	4.425	0.013	0.959	1502374	0.2428		97.1	25945	
50 FHxSA										
397.90 > 78.00	4.528	4.515	0.013	0.803	699013	0.2282		91.3	5674	
51 PFECHS										
460.80 > 380.90	4.546	4.535	0.011	0.982	931019	0.2190	Target=2.05	94.8	4884	
460.80 > 98.90	4.555	4.535	0.019	0.984	441993		2.11(1.03-3.08)	94.8	6478	
53 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.597	4.578	0.019	1.000	296332	0.2238	Target=2.31	94.0	5644	
427.00 > 79.96	4.597	4.578	0.019	1.000	132442		2.24(1.16-3.47)	94.0	1370	
D 52 M2-6:2 FTS										
429.00 > 81.00	4.597	4.580	0.017	0.993	774362	1.25		105	9294	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 Perfluorooctanoic acid										
413.00 > 369.00	4.630	4.614	0.016	1.000	1074913	0.2385	Target=2.69	95.4	714	
413.00 > 169.00	4.630	4.614	0.016	1.000	404394		2.66(1.35-4.04)	95.4	4266	
D 56 13C4 PFOA										
417.00 > 372.00	4.630	4.613	0.017	1.000	6038830	1.29		103	19797	
\$ 54 13C8 PFOA										
421.00 > 376.00	4.630	4.613	0.017	1.000	7243095	1.30		104	19900	
* 55 13C2 PFOA										
415.00 > 370.00	4.630	4.615	0.015		5781446	1.25			21160	
57 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.638	4.620	0.018	0.896	297084	0.2129	Target=4.67	89.3	4215	
449.00 > 99.00	4.638	4.620	0.018	0.896	63527		4.68(2.33-7.00)	89.3	1026	
59 TAF										
442.90 > 85.00	5.063	5.041	0.022	1.094	42512	0.2354		94.1	1759	
\$ 60 13C8 PFOS										
507.00 > 99.00	5.175	5.161	0.014	1.118	590205	1.22		102	5279	
D 61 13C4 PFOS										
503.00 > 80.00	5.175	5.162	0.013	1.118	1392450	1.24		103	8256	
62 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.175	5.163	0.012	1.000	244252	0.2022	Target=5.09	87.0	284	M
499.00 > 99.00	5.183	5.163	0.020	1.002	53628		4.55(2.55-7.64)	87.0	620	M
D 64 13C5 PFNA										
468.00 > 423.00	5.183	5.170	0.013	1.120	5627096	1.23		98.4	27168	
63 Perfluorononanoic acid										
463.00 > 419.00	5.183	5.173	0.010	1.000	962229	0.2465	Target=7.64	98.6	1001	
463.00 > 169.00	5.183	5.173	0.010	1.000	126222		7.62(3.82-11.46)	98.6	1824	
65 7:3 FTCA										
441.00 > 337.00	5.314	5.297	0.017	0.988	178333	0.2121	Target=1.18	84.8	961	
441.00 > 317.00	5.314	5.297	0.017	0.988	153981		1.16(0.59-1.77)	84.8	1024	
D 67 13C-8:2 FTUCA										
458.86 > 393.90	5.351	5.340	0.011	1.156	3455886	1.27		101	12880	
66 8:2 FTUCA										
456.86 > 392.90	5.360	5.342	0.018	1.002	617990	0.2347	Target=39.03	93.9	6373	
456.86 > 343.00	5.369	5.342	0.027	1.003	15279		40.45(19.51-58.54)	93.9	540	
69 8:2 FTCA										
477.00 > 393.10	5.377	5.361	0.016	1.000	33725	0.2097	Target=2.58	83.9	153	
477.00 > 63.20	5.369	5.361	0.008	0.998	13470		2.50(1.29-3.87)	83.9	536	
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.377	5.363	0.014	1.161	198577	1.35		108	1249	
70 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	5.486	5.470	0.016	1.060	616243	0.2122		90.9	9128	
D 72 13C8 FOSA										
506.00 > 78.00	5.640	5.628	0.012	1.218	1916740	1.28		102	14587	
71 Perfluorooctanesulfonamide										
498.00 > 78.00	5.640	5.628	0.012	1.000	337367	0.2308		92.3	6640	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
73 Perfluorononanesulfonic acid										
549.00 > 80.00	5.687	5.672	0.015	1.099	193768	0.2148	Target=2.73	89.3	2955	
549.00 > 99.00	5.687	5.672	0.015	1.099	74191		2.61(1.37-4.10)	89.3	1481	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.694	5.681	0.013	1.230	766962	1.23		102	15537	
75 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	5.702	5.683	0.019	1.001	245067	0.2329	Target=2.39	97.0	8037	
527.00 > 79.96	5.702	5.683	0.019	1.001	97741		2.51(1.19-3.58)	97.0	1911	
D 76 13C2 PFDA										
515.00 > 470.00	5.702	5.690	0.012	1.232	5538643	1.26		100	35263	
77 Perfluorodecanoic acid										
513.00 > 469.00	5.709	5.691	0.018	1.001	686184	0.2355	Target=7.32	94.2	2607	
513.00 > 169.00	5.709	5.691	0.018	1.001	91208		7.52(3.66-10.98)	94.2	2687	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.931	5.917	0.014	1.281	729447	1.19		95.5	4719	
79 N-methylperfluorooctanesulfonami										
570.00 > 419.00	5.939	5.923	0.016	1.001	112348	0.2435	Target=0.78	97.4	1846	
570.00 > 483.00	5.939	5.923	0.016	1.001	148654		0.76(0.39-1.18)	97.4	3632	
80 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.147	6.133	0.014	1.188	185257	0.2207	Target=3.04	91.6	4751	
599.00 > 99.00	6.147	6.133	0.014	1.188	65070		2.85(1.52-4.56)	91.6	2041	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.168	6.158	0.010	1.332	763789	1.25		99.6	3832	
D 82 13C2 PFUnA										
565.00 > 520.00	6.178	6.163	0.015	1.334	5059809	1.22		97.8	42334	
83 Perfluoroundecanoic acid										
563.00 > 519.00	6.178	6.163	0.015	1.000	702006	0.2536	Target=8.03	101	3052	
563.00 > 169.00	6.178	6.163	0.015	1.000	88389		7.94(4.02-12.05)	101	2207	
84 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	6.178	6.168	0.010	1.002	115316	0.2509	Target=0.76	100	2195	
584.00 > 526.10	6.187	6.168	0.019	1.003	152321		0.76(0.38-1.14)	100	3710	
90 10:2 FTUCA										
556.86 > 492.90	6.338	6.326	0.012	1.000	415592	0.2441		97.6	9317	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.338	6.327	0.011	1.369	898476	1.22		97.8	5529	
D 89 13C-10:2 FTUCA										
558.86 > 493.90	6.338	6.324	0.014	1.369	3011646	1.22		97.9	13316	
86 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	6.356	6.341	0.015	1.003	171546	0.2422		96.9	1376	
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.356	6.342	0.014	1.373	105148	1.28		102	618	
92 10:2 FTCA										
576.80 > 493.00	6.347	6.342	0.005	0.999	21537	0.2788	Target=2.24	112	180	
576.80 > 63.10	6.356	6.342	0.014	1.000	8219		2.62(1.12-3.36)	112	51.0	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.365	6.348	0.016	1.375	587805	1.21		96.6	1793	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
88 NMeFOSA										
512.00 > 169.00	6.365	6.355	0.009	1.000	116137	0.2546	Target=1.97	102	951	
512.00 > 218.99	6.365	6.355	0.009	1.000	53652		2.16(0.99-2.96)	102	680	
93 11-Chloroeicosafuoro-3-oxaundec										
631.00 > 451.00	6.400	6.381	0.019	1.237	802771	0.2164		91.7	25336	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.595	6.580	0.015	1.425	1063135	1.25		100.0	7519	
99 Perfluorododecanoic acid										
613.00 > 569.00	6.595	6.582	0.013	1.000	950924	0.2446	Target=7.94	97.8	2911	
613.00 > 169.00	6.595	6.582	0.013	1.000	107102		8.88(3.97-11.90)	97.8	2881	
D 98 13C2 PFDaA										
615.00 > 570.00	6.595	6.582	0.013	1.425	5631274	1.24		99.0	19378	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.605	6.592	0.013	1.427	691905	1.19		98.4	8969	
101 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	6.615	6.597	0.018	1.002	160988	0.2153	Target=1.64	89.1	3383	
627.00 > 79.96	6.605	6.597	0.008	1.000	93666		1.72(0.82-2.46)	89.1	1617	
95 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	6.615	6.599	0.016	1.003	187348	0.2320		92.8	1226	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.625	6.609	0.016	1.431	544076	1.20		96.0	1601	
97 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	6.635	6.619	0.016	1.002	94779	0.2332	Target=1.81	93.3	1113	
526.00 > 218.99	6.635	6.619	0.016	1.002	54194		1.75(0.90-2.71)	93.3	872	
102 Perfluorododecanesulfonic acid (
699.00 > 80.00	6.933	6.918	0.015	1.340	60384	0.2076	Target=0.69	85.6	1605	
699.00 > 99.00	6.933	6.918	0.015	1.340	82926		0.73(0.34-1.03)	85.6	3441	
103 Perfluorotridecanoic acid										
663.00 > 619.00	6.975	6.959	0.016	1.058	871048	0.2462	Target=6.68	98.5	3459	
663.00 > 169.00	6.975	6.959	0.016	1.058	119398		7.30(3.34-10.02)	98.5	2775	
D 112 13C4-6:2 diPAP										
792.82 > 78.90	7.213	7.198	0.015	1.558	1783673	1.35		111	3694	
114 6:2 diPAP										
788.79 > 78.90	7.213	7.200	0.013	1.000	342918	0.2423	Target=1.92	99.6	951	
788.79 > 96.90	7.213	7.200	0.013	1.000	170039		2.02(0.96-2.88)	99.6	788	
105 Perfluorotetradecanoic acid										
713.00 > 169.00	7.309	7.297	0.012	1.000	95844	0.2399	Target=0.92	96.0	2073	
713.00 > 219.00	7.309	7.297	0.012	1.000	108451		0.88(0.46-1.38)	96.0	3093	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.309	7.298	0.011	1.579	5087560	1.29		103	8503	
115 6:2/8:2 diPAP										
888.70 > 78.90	7.703	7.687	0.016	1.068	326267	0.2300	Target=1.37	94.3	2436	
888.70 > 96.90	7.703	7.687	0.016	1.068	238882		1.37(0.69-2.06)	94.3	1404	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.885	7.873	0.012	1.703	4405212	1.29		103	7019	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.885	7.873	0.012	1.000	732541	0.2303	Target=8.78	92.1	1608	
813.00 > 169.00	7.885	7.873	0.012	1.000	80904		9.05(4.39-13.16)	92.1	1714	
D 113 13C4-8:2 diPAP										
992.77 > 96.90	8.120	8.100	0.020	1.754	1309386	1.36		111	3684	
116 8:2 diPAP										
988.74 > 78.90	8.120	8.102	0.018	1.000	233532	0.2330	Target=1.17	95.3	1814	
988.74 > 96.90	8.120	8.102	0.018	1.000	199889		1.17(0.59-1.76)	95.3	1742	
108 Perfluorooctadecanoic acid										
913.00 > 869.00	8.394	8.378	0.016	1.065	358161	0.2130	Target=10.07	85.2	600	
913.00 > 169.00	8.394	8.378	0.016	1.065	34593		10.35(5.04-15.11)	85.2	815	
117 10:2 diPAP										
1188.79 > 78.90	8.934	8.913	0.021	1.100	14035	0.1351	Target=1.10	53.8	640	a
1188.79 > 96.90	8.934	8.913	0.021	1.100	12037		1.17(0.55-1.65)	53.8	373	a

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

LCPFC+6C_LL3_00006

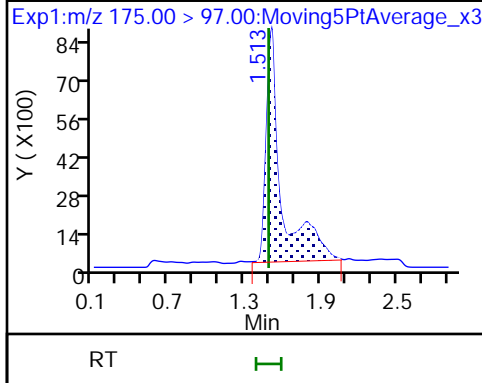
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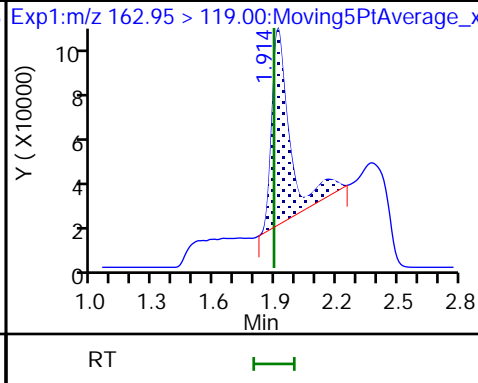
Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_011.d
Injection Date: 21-Dec-2022 12:30:46 Instrument ID: A18
Lims ID: IC L3
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL

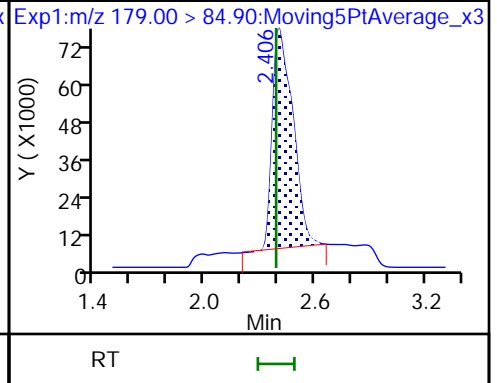
1 MTP (M)



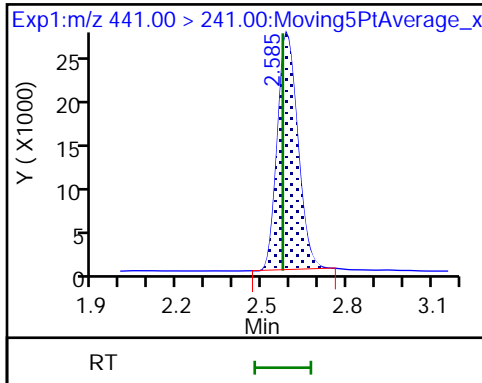
2 PPF Acid (M)



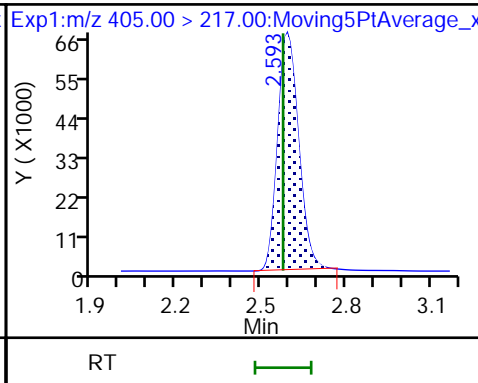
3 PFMOAA



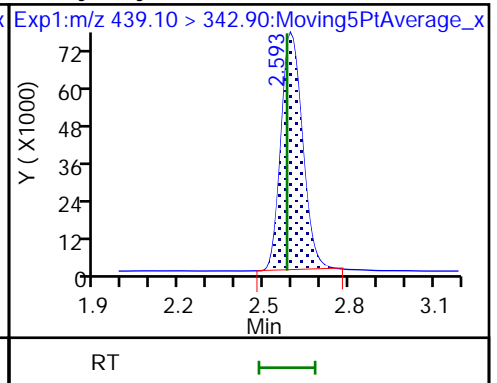
4 R-PSDA



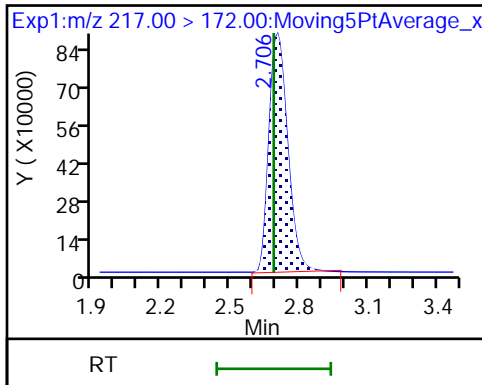
5 R-EVE



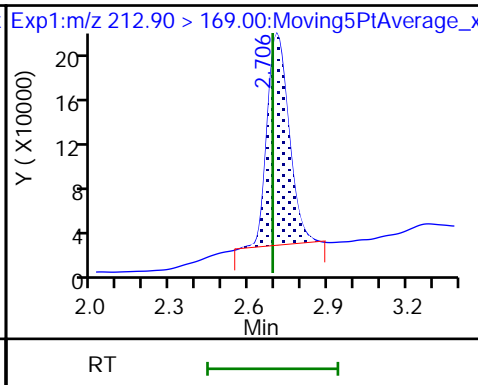
6 Hydrolyzed PSDA



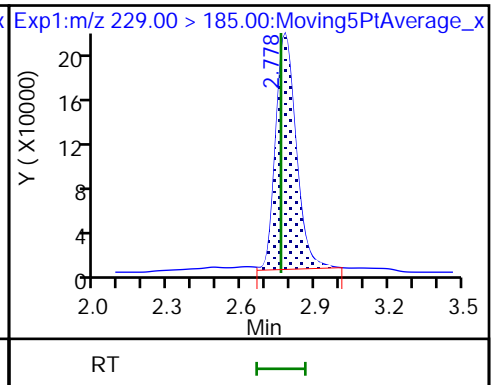
D 8 13C4 PFBA



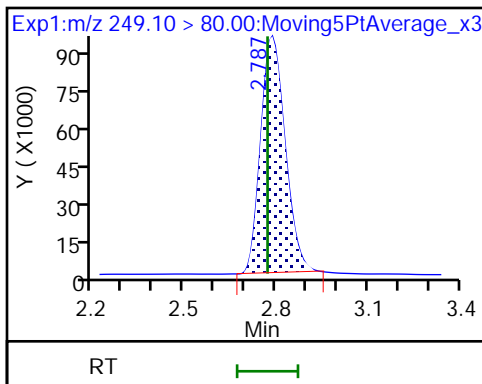
7 Perfluorobutanoic acid



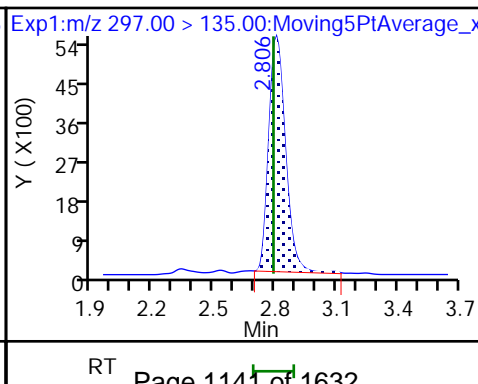
10 PMPA



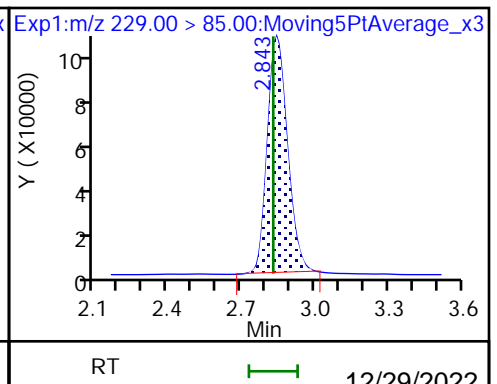
11 PFPrS

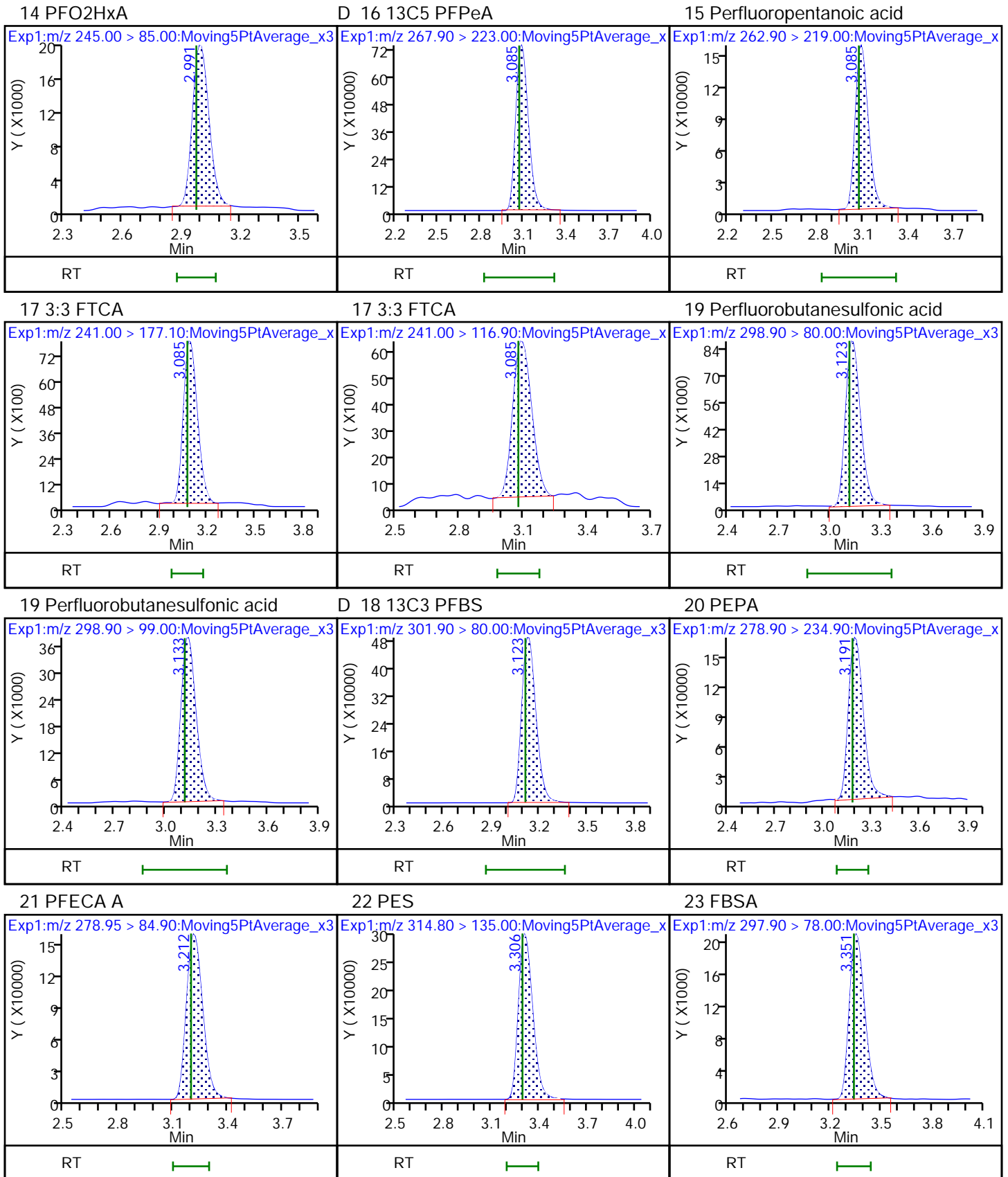


12 NVHOS



13 PFECA F

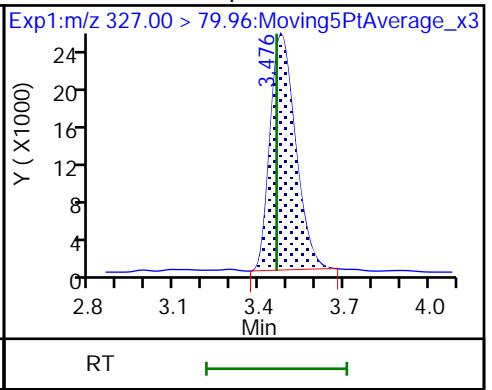
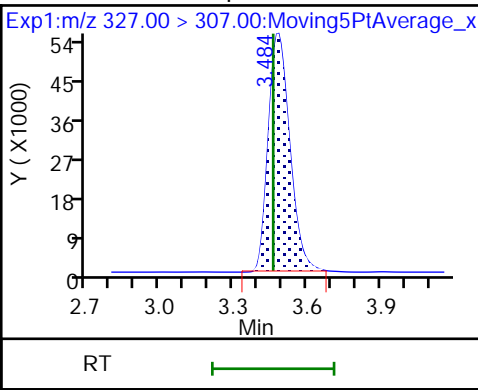
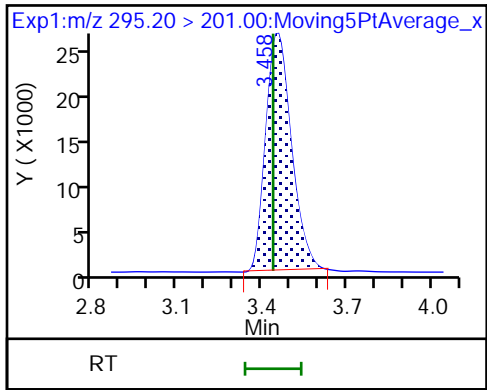




24 PFECA B

26 1H,1H,2H,2H-perfluorohexanesulfo

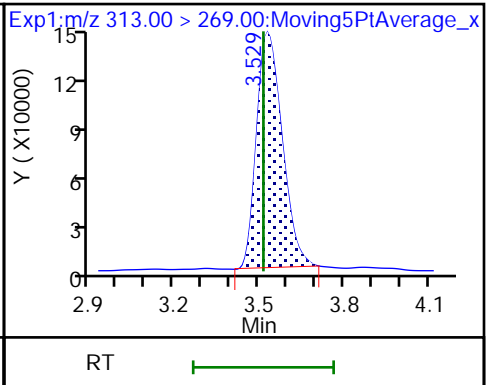
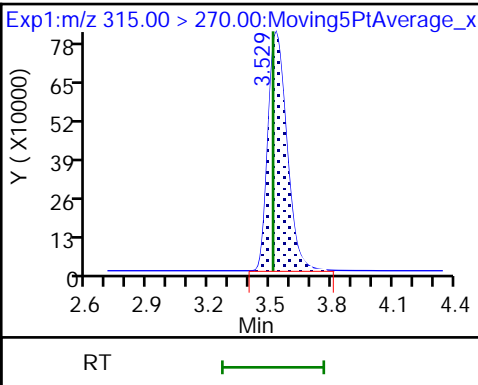
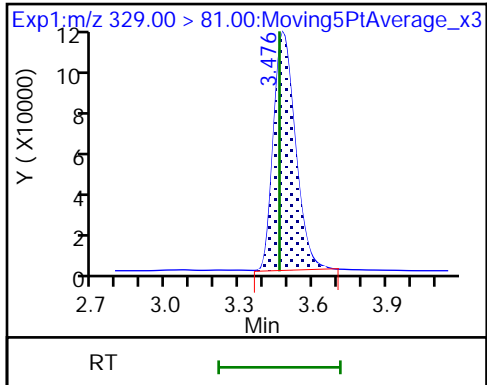
26 1H,1H,2H,2H-perfluorohexanesulfo



D 25 M2-4:2 FTS

D 27 13C2 PFHxA

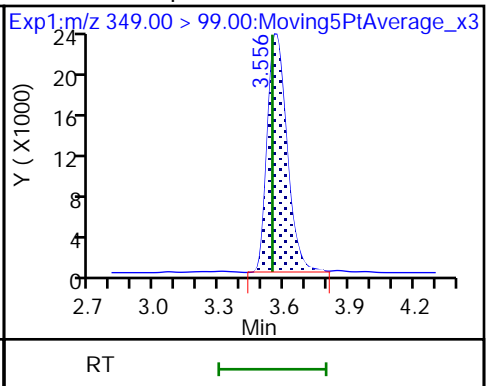
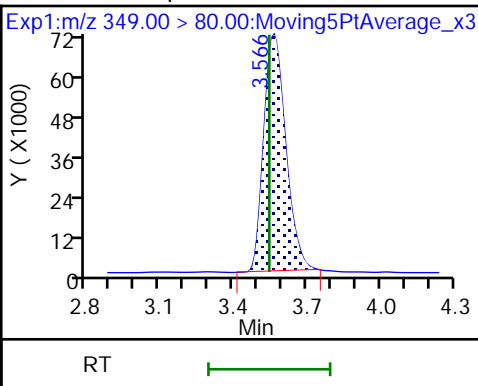
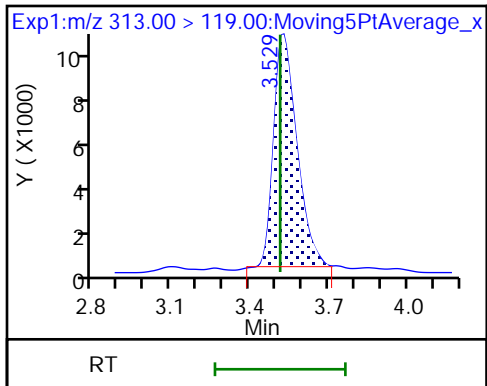
28 Perfluorohexanoic acid



28 Perfluorohexanoic acid

29 Perfluoropentanesulfonic acid

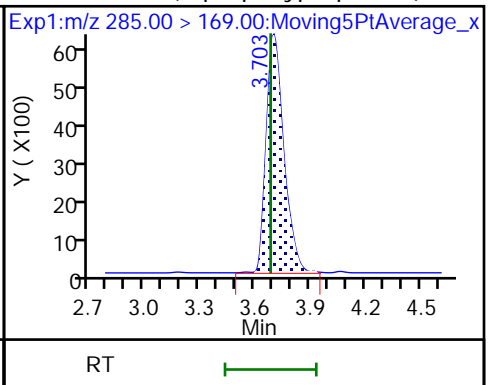
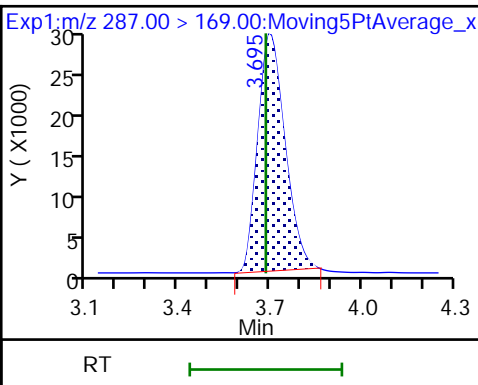
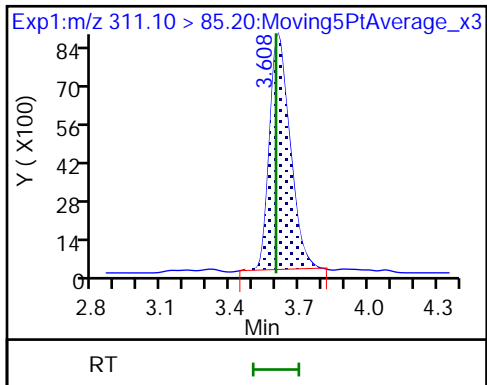
29 Perfluoropentanesulfonic acid



30 PFO3OA

D 32 13C3 HFPO-DA

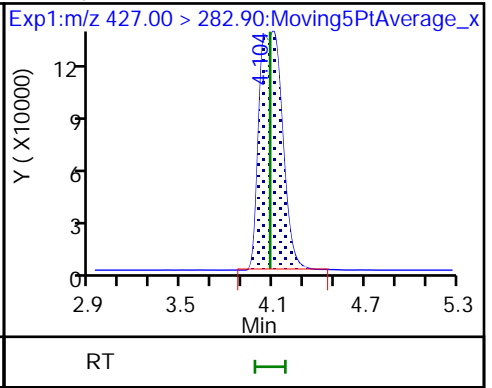
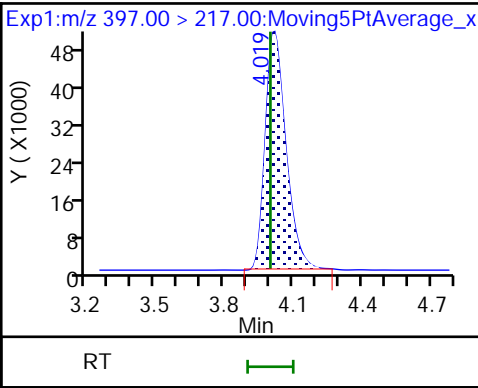
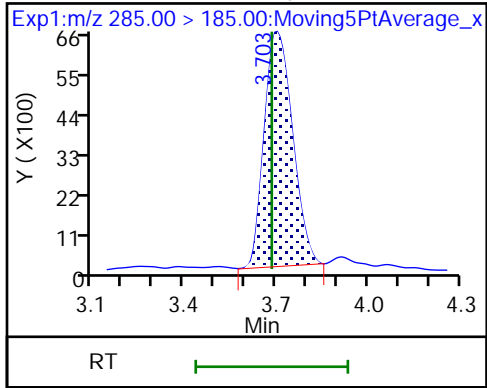
31 Perfluoro(2-propoxypropanoic) ac



31 Perfluoro(2-propoxypropanoic) ac

33 R-PSDCA

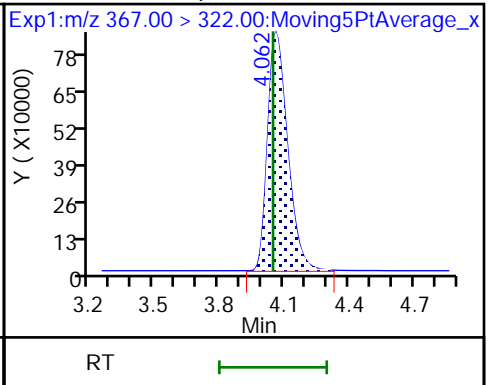
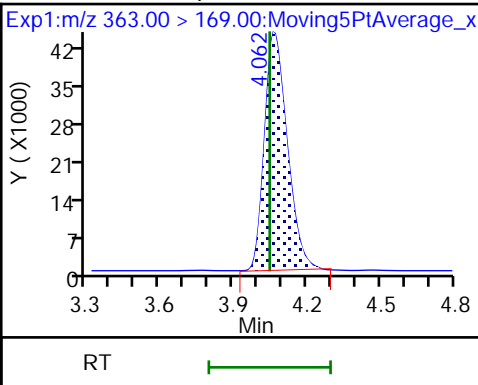
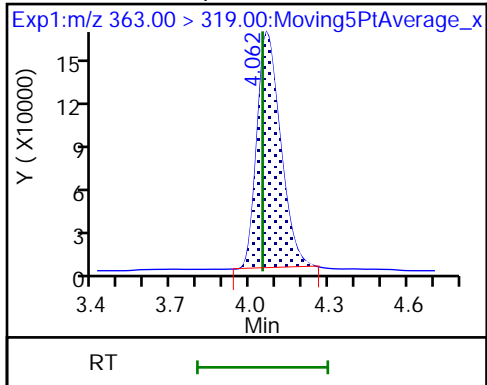
34 Hydro-EVE Acid



36 Perfluoroheptanoic acid

36 Perfluoroheptanoic acid

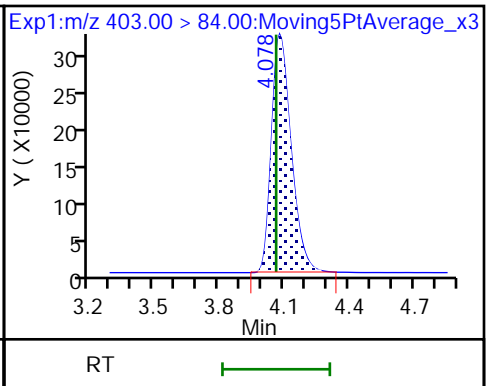
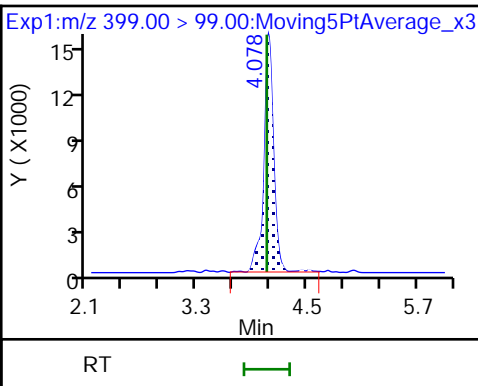
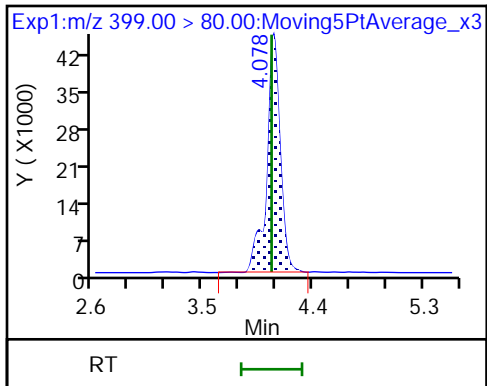
D 35 13C4 PFHpA



38 Perfluorohexanesulfonic acid

38 Perfluorohexanesulfonic acid

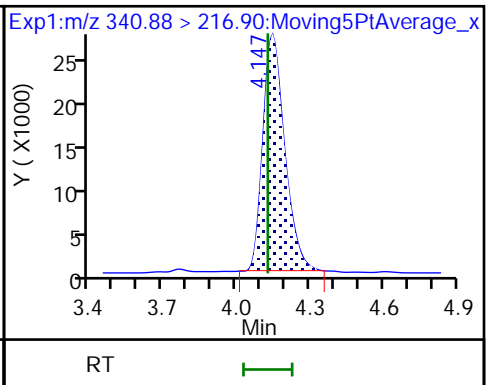
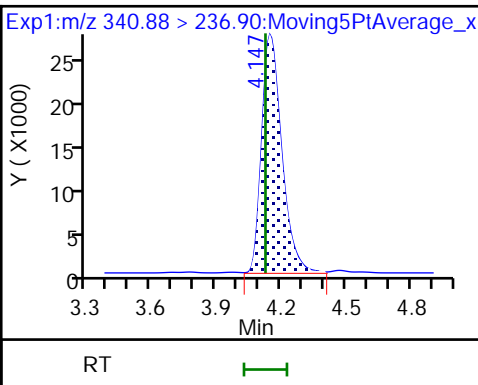
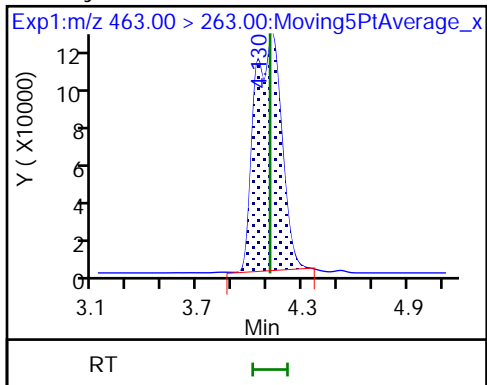
D 37 18O2 PFHxS

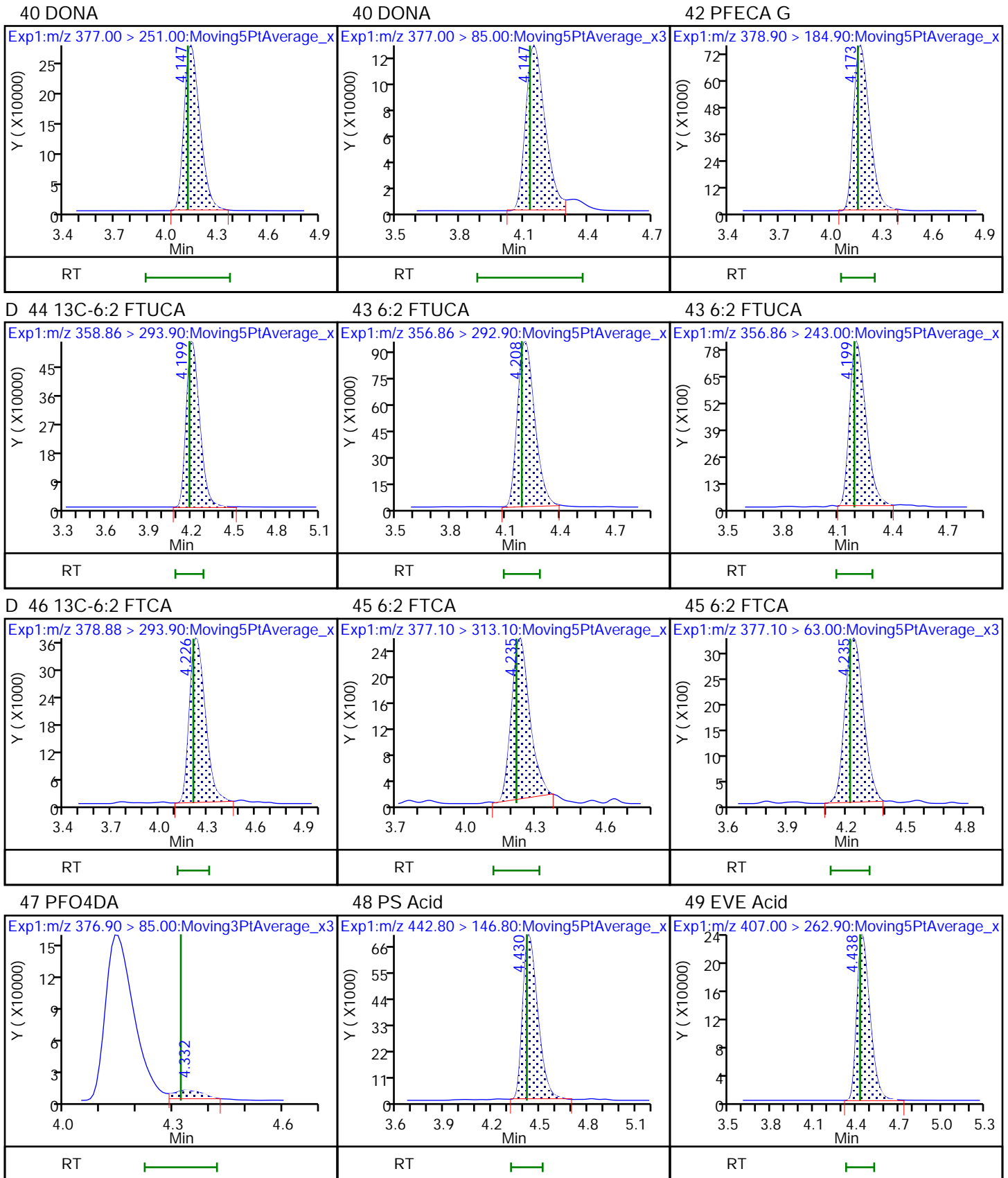


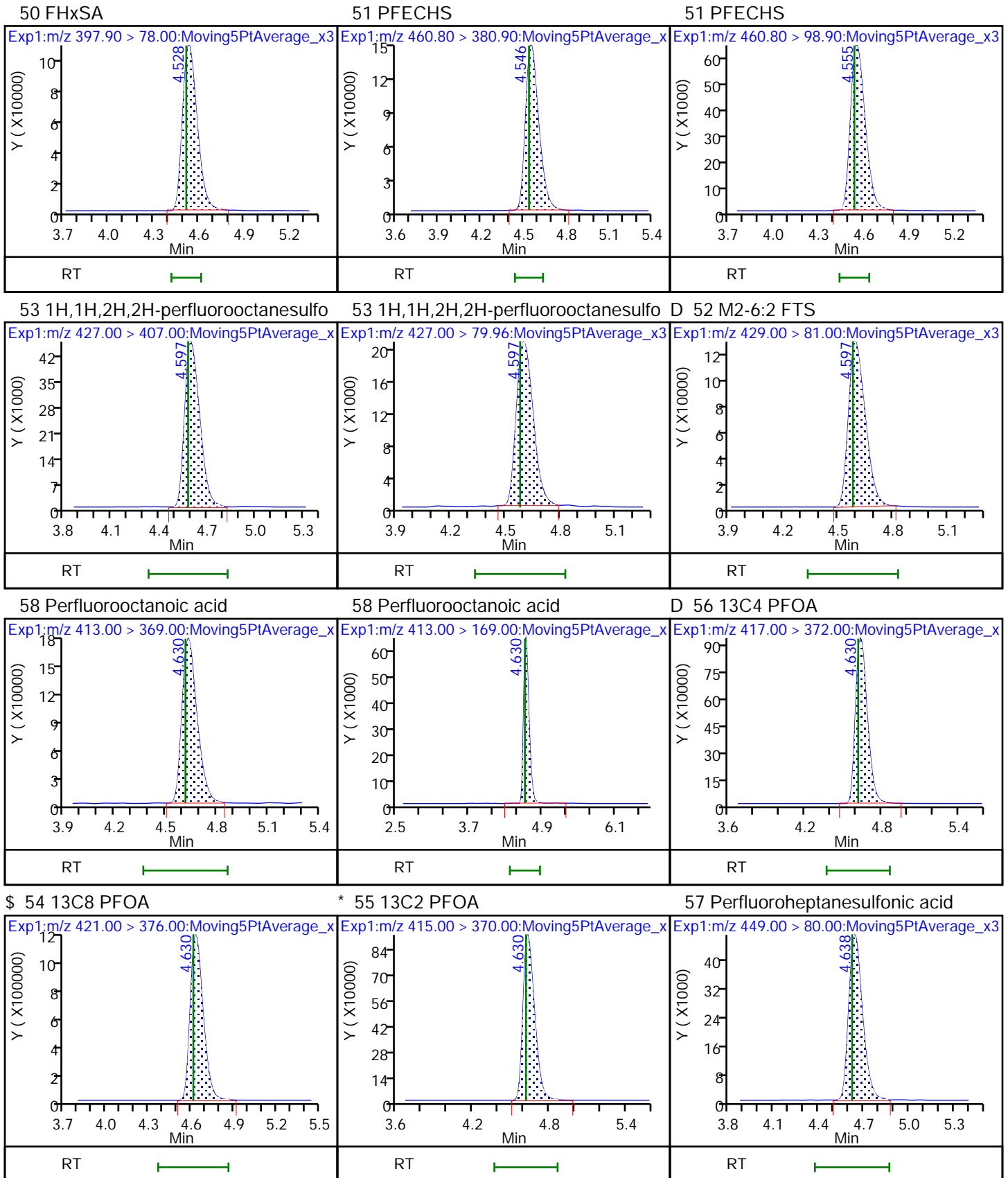
39 Hydro-PS Acid

41 5:3 FTCA

41 5:3 FTCA



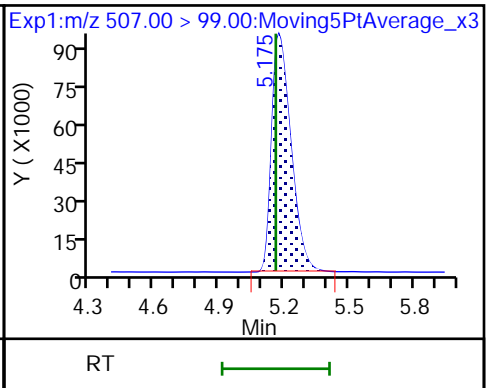
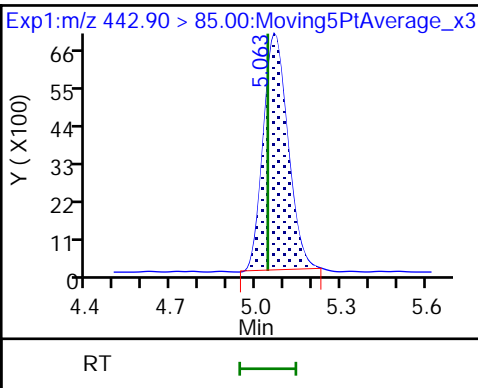
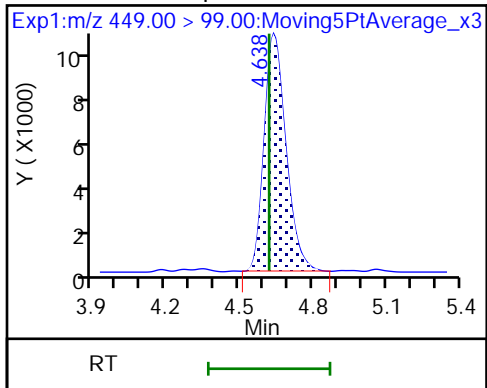




57 Perfluoroheptanesulfonic acid

59 TAF

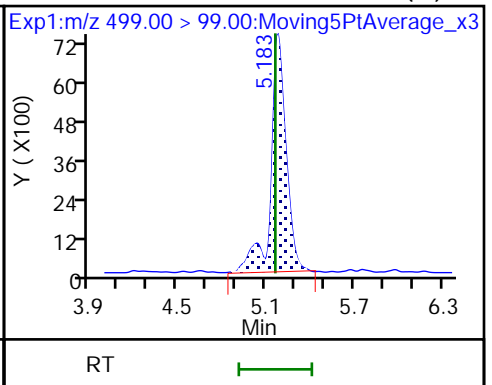
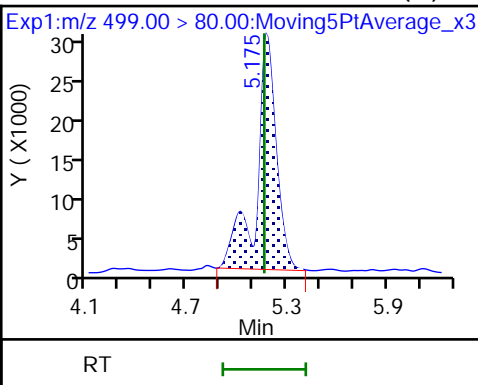
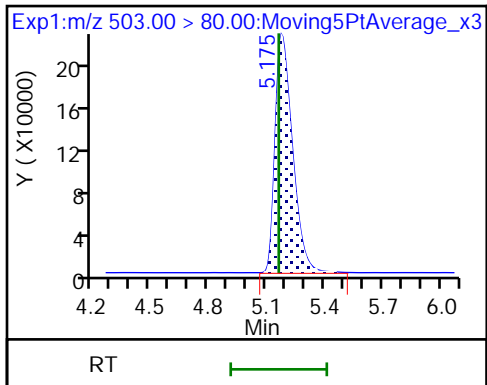
\$ 60 13C8 PFOS



D 61 13C4 PFOS

62 Perfluorooctanesulfonic acid (M)

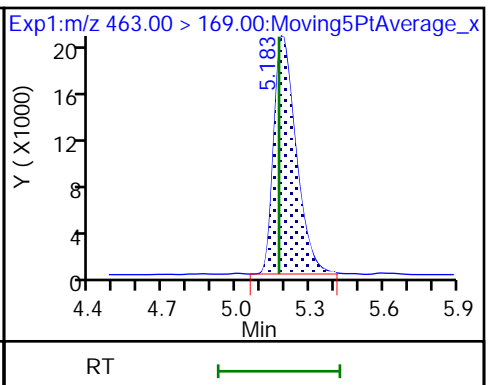
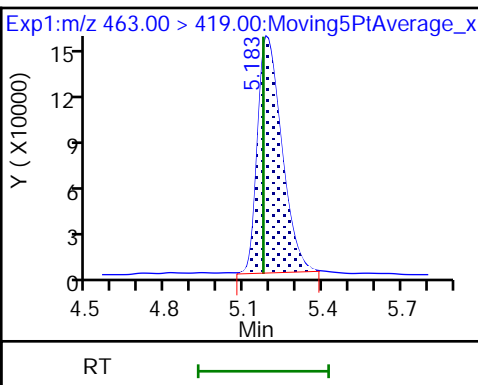
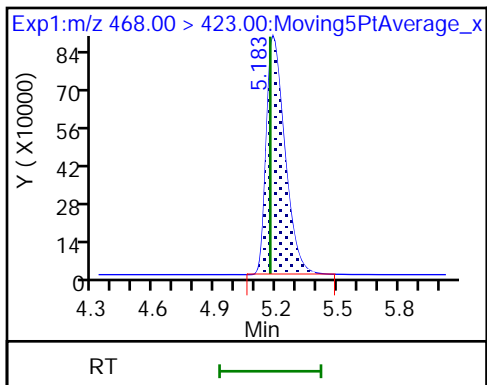
62 Perfluorooctanesulfonic acid (M)



D 64 13C5 PFNA

63 Perfluorononanoic acid

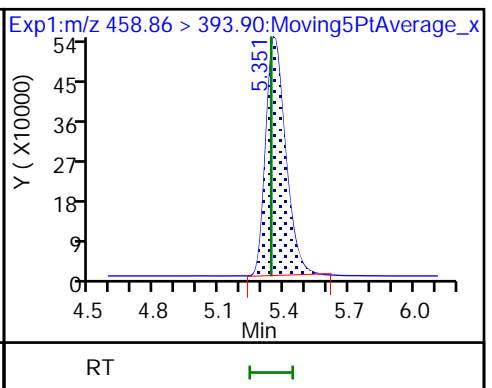
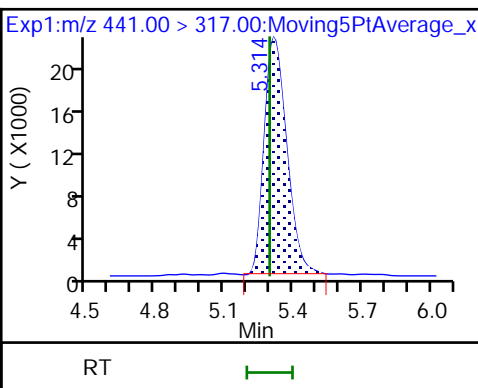
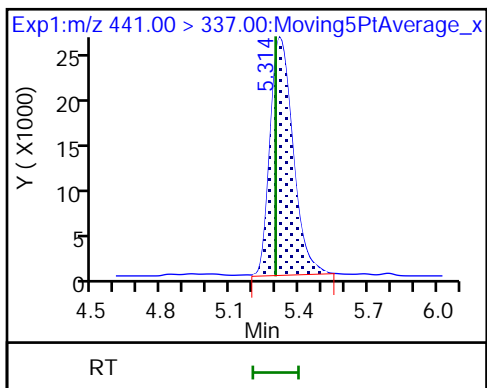
63 Perfluorononanoic acid

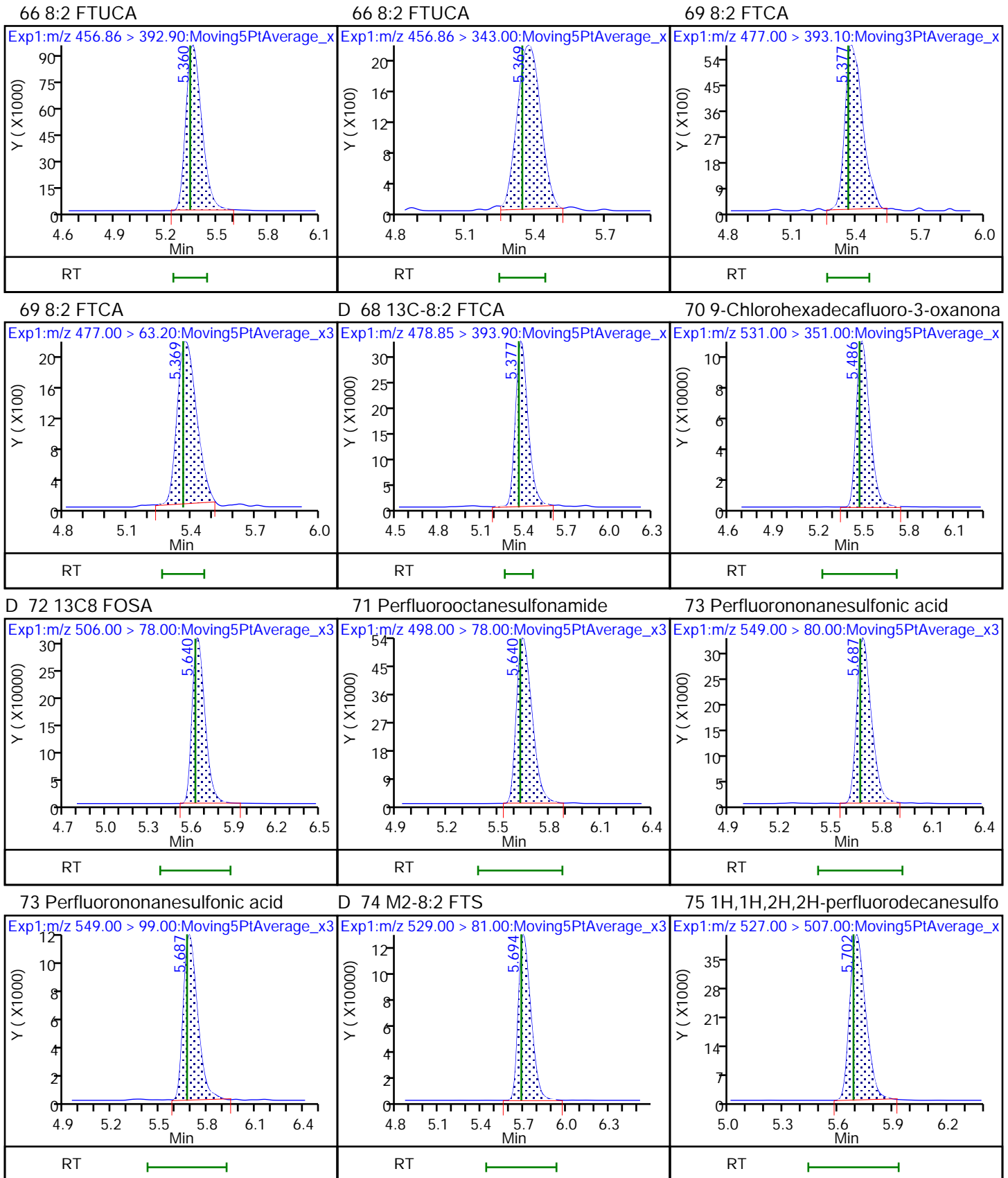


65 7:3 FTCA

65 7:3 FTCA

D 67 13C-8:2 FTUCA

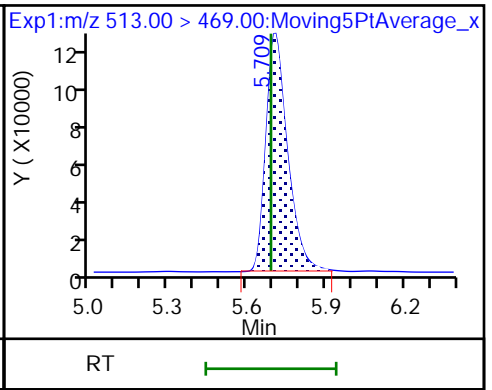
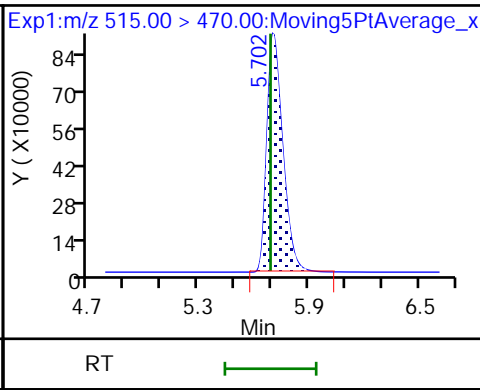
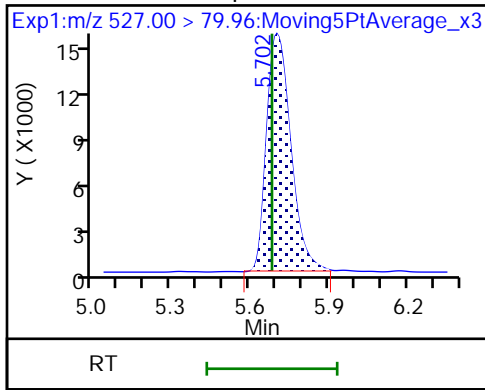




75 1H,1H,2H,2H-perfluorodecanesulfo D

76 13C2 PFDA

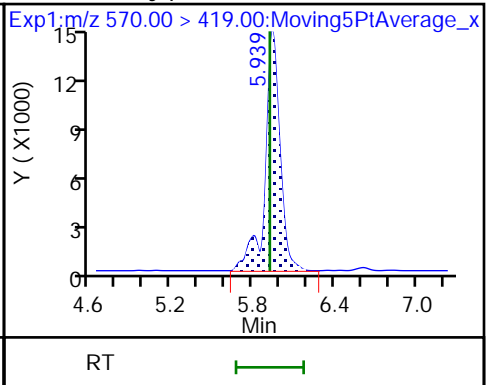
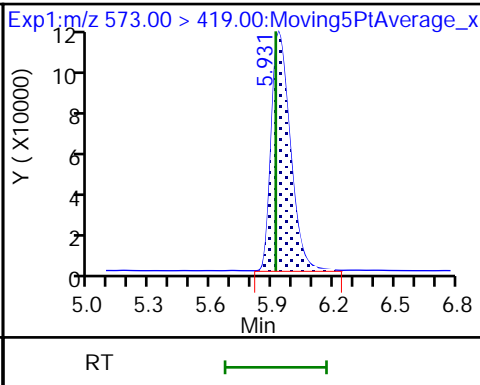
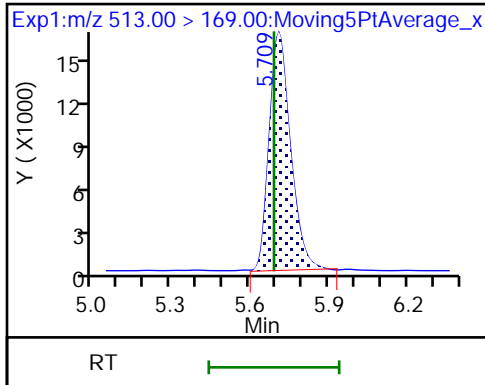
77 Perfluorodecanoic acid



77 Perfluorodecanoic acid

D 78 d3-NMeFOSAA

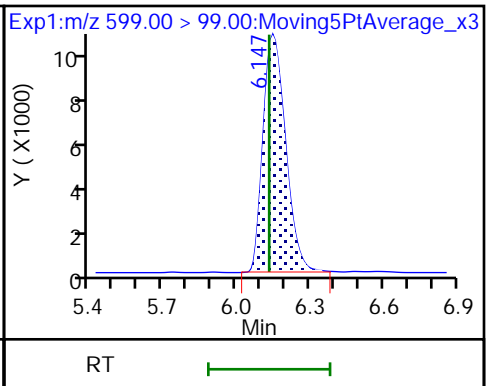
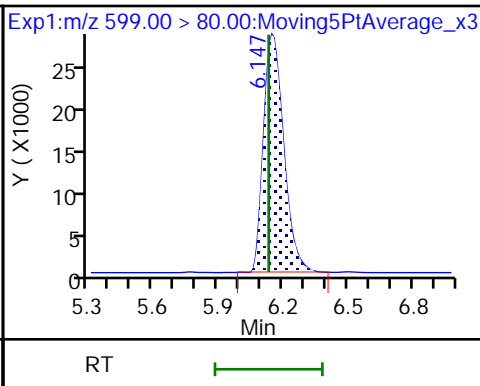
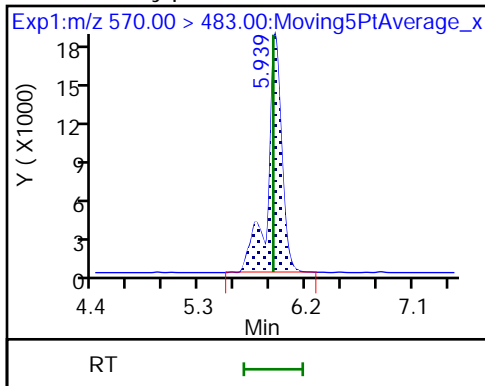
79 N-methylperfluorooctanesulfonami



79 N-methylperfluorooctanesulfonami

80 Perfluorodecanesulfonic acid

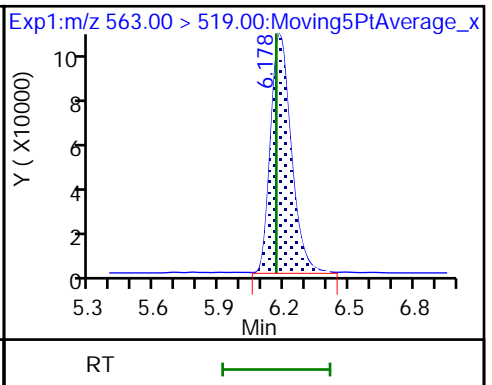
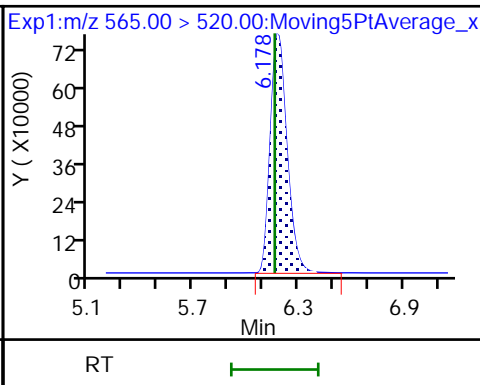
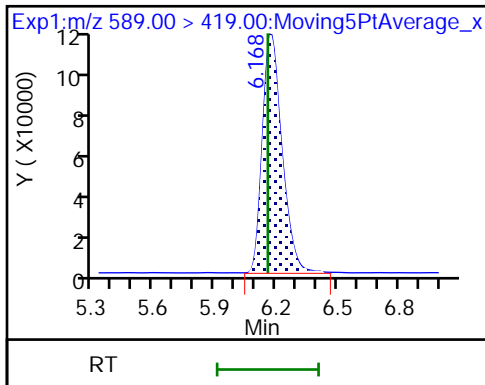
80 Perfluorodecanesulfonic acid

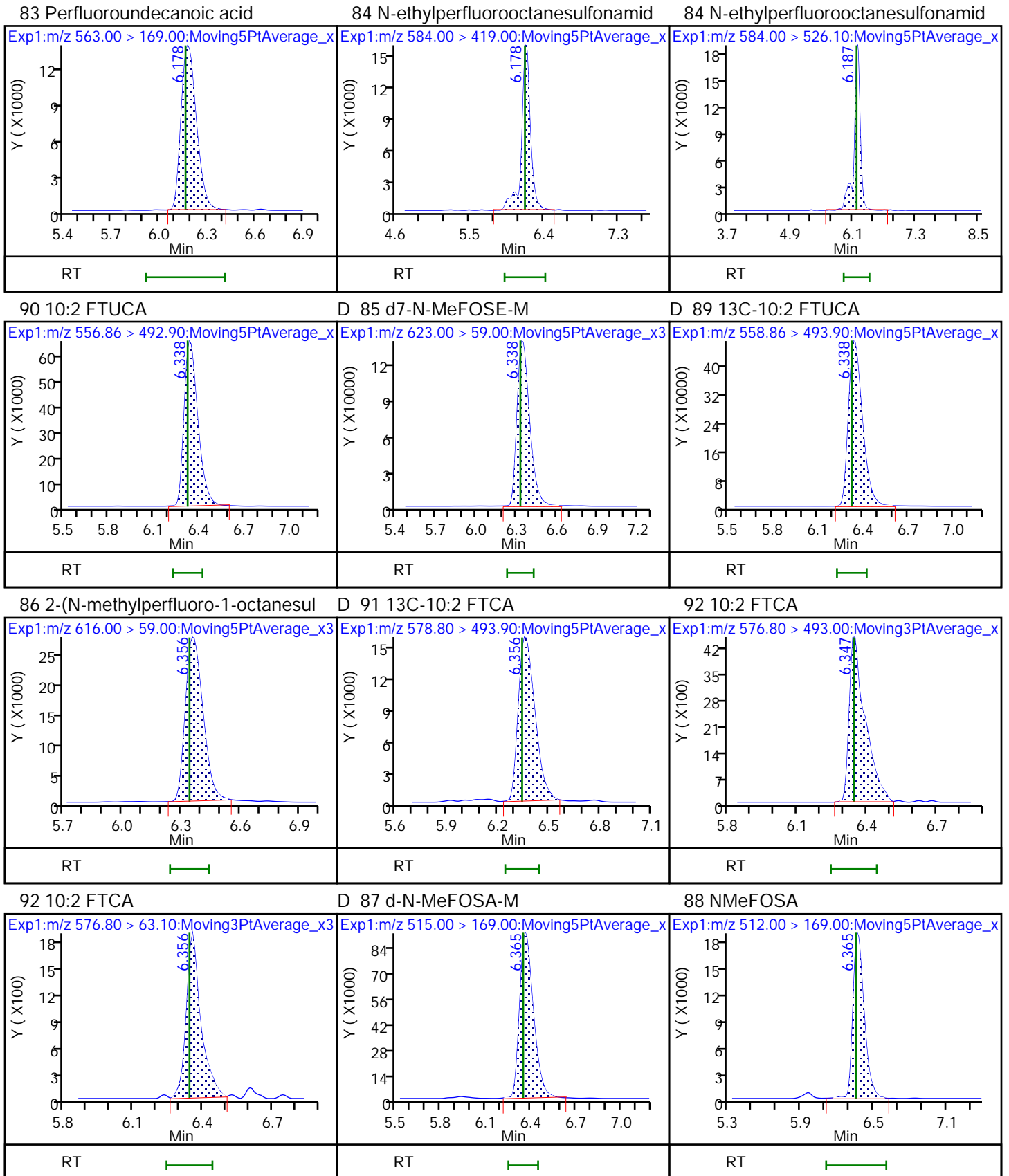


D 81 d5-NEtFOSAA

D 82 13C2 PFUnA

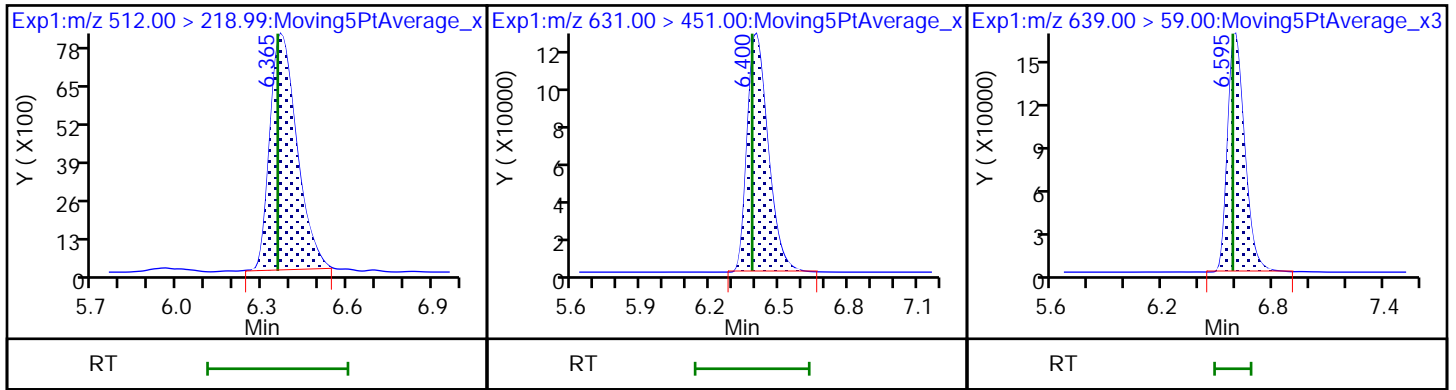
83 Perfluoroundecanoic acid





88 NMeFOSA

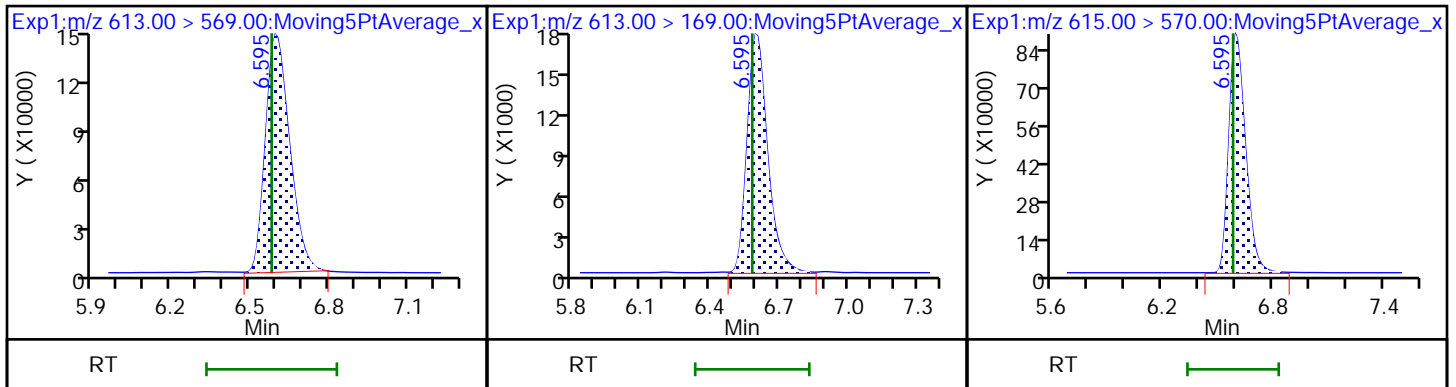
93 11-Chloroeicosafuoro-3-oxaundec D 94 d9-N-EtFOSE-M



99 Perfluorododecanoic acid

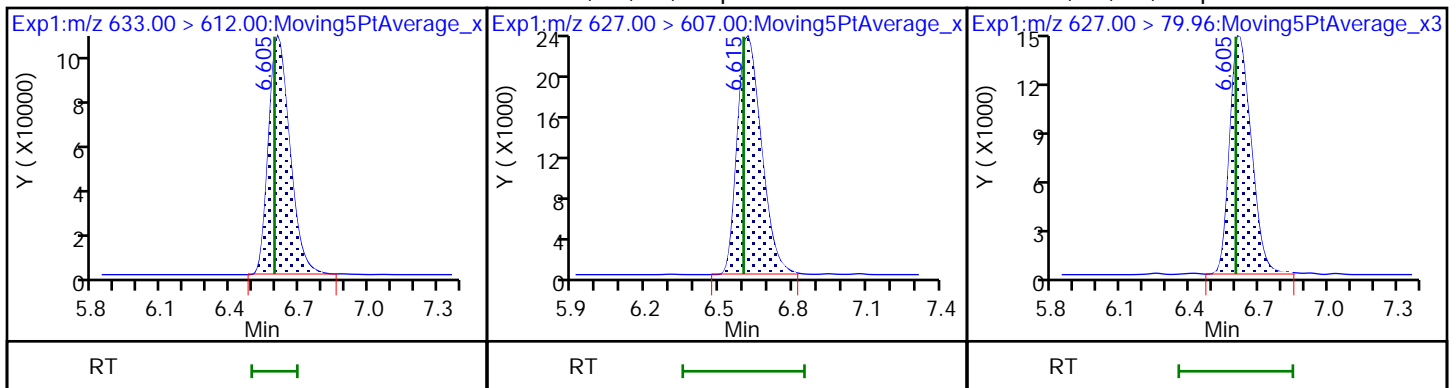
99 Perfluorododecanoic acid

D 98 13C2 PFDa



D 100 13C2 10:2 FTS

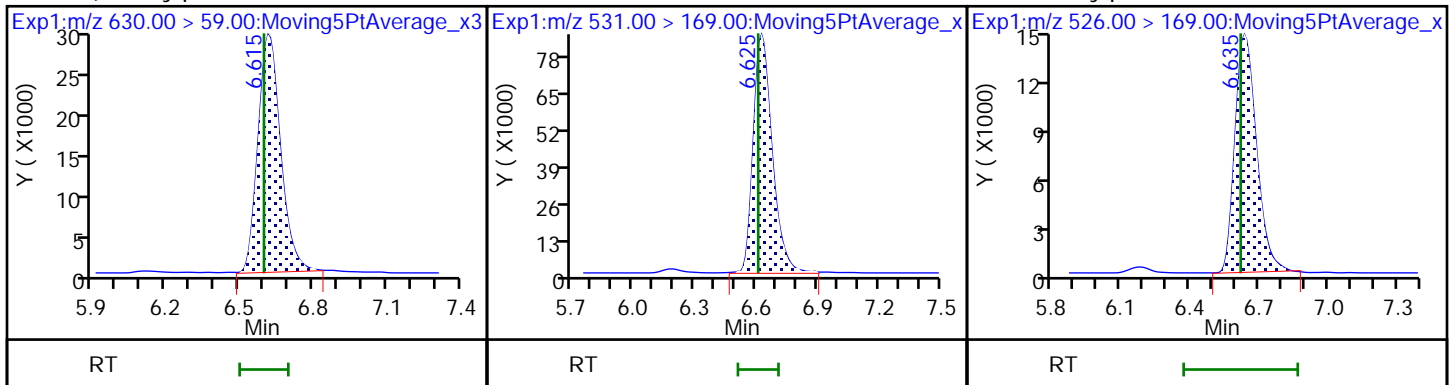
101 1H,1H,2H,2H-perfluorododecanesul 101 1H,1H,2H,2H-perfluorododecanesul

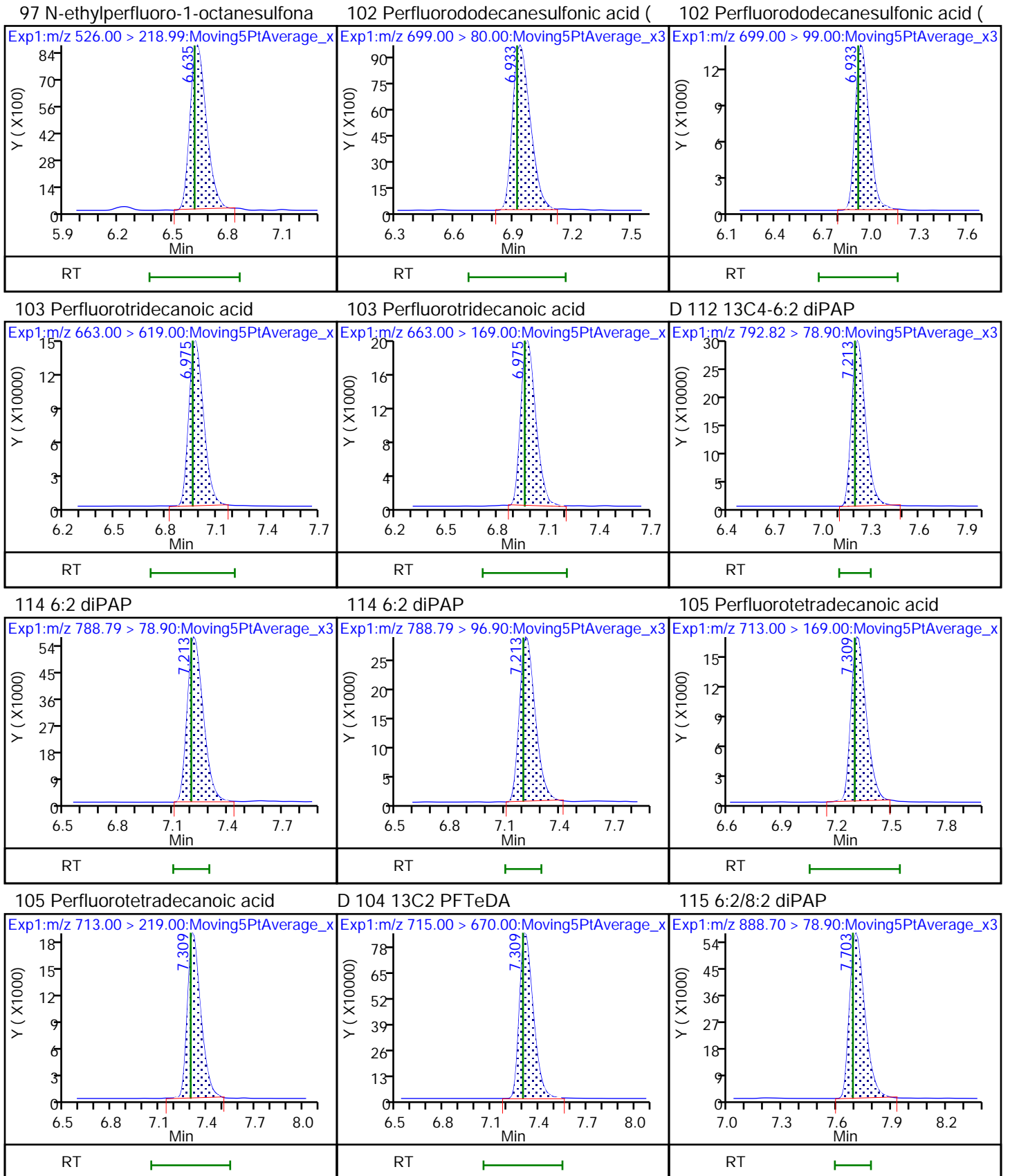


95 2-(N-ethylperfluoro-1-octanesulf

D 96 d-N-EtFOSE-M

97 N-ethylperfluoro-1-octanesulfona

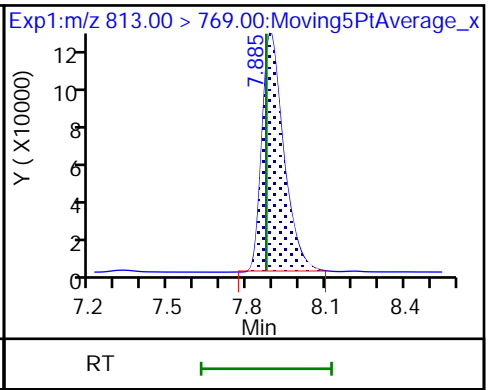
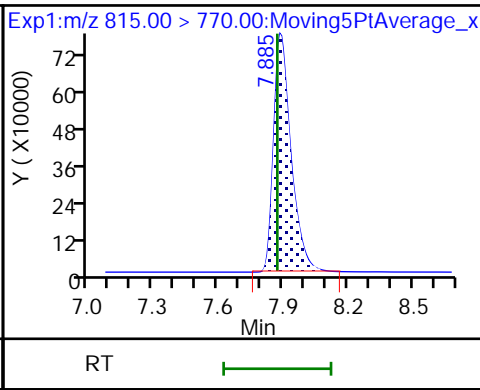
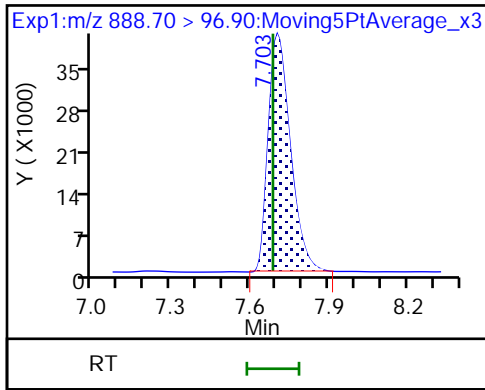




115 6:2/8:2 diPAP

D 106 13C2 PFHxDA

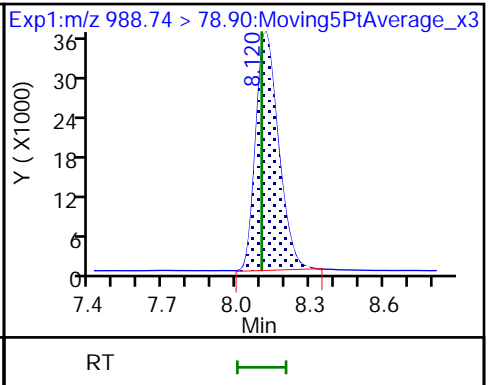
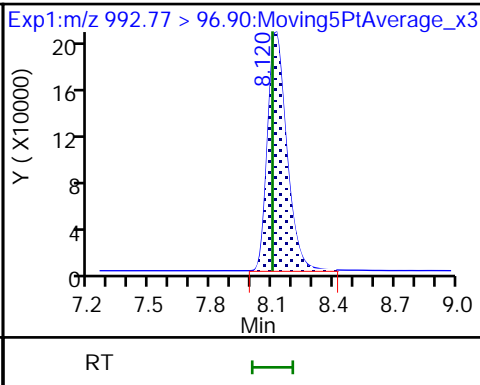
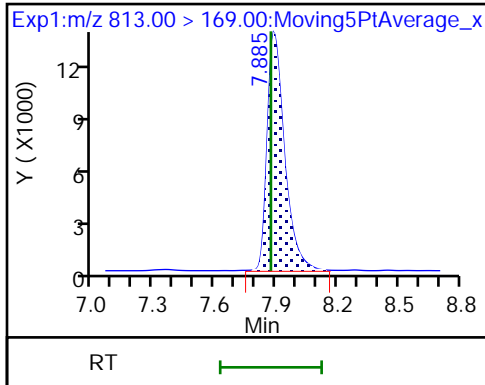
107 Perfluorohexadecanoic acid



107 Perfluorohexadecanoic acid

D 113 13C4-8:2 diPAP

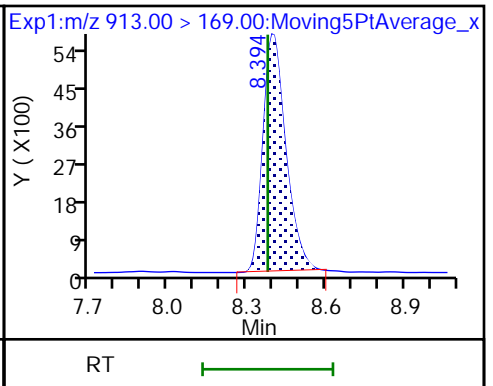
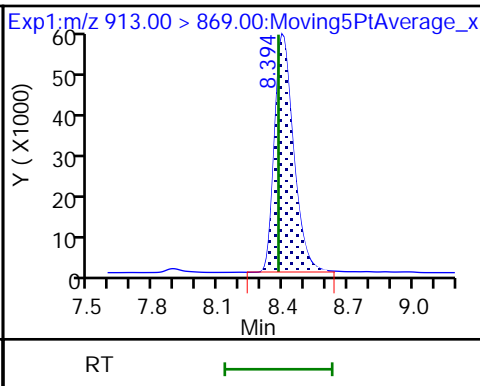
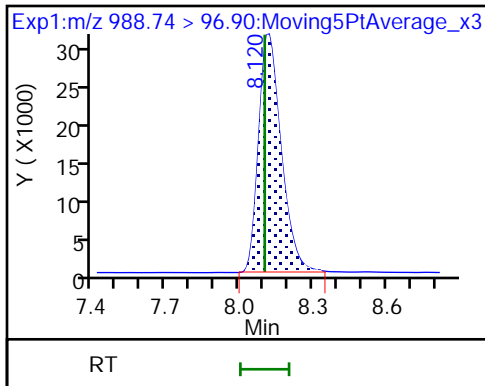
116 8:2 diPAP



116 8:2 diPAP

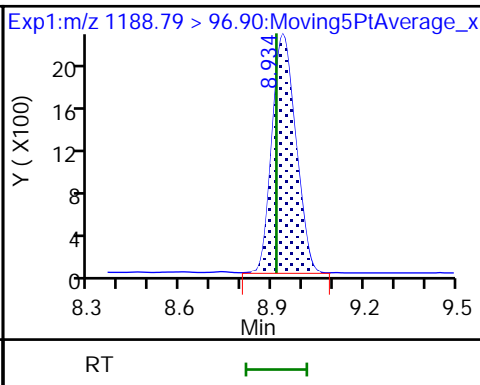
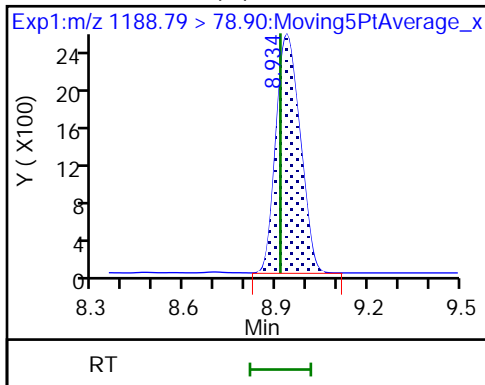
108 Perfluorooctadecanoic acid

108 Perfluorooctadecanoic acid



117 10:2 diPAP (M)

117 10:2 diPAP



Eurofins Sacramento

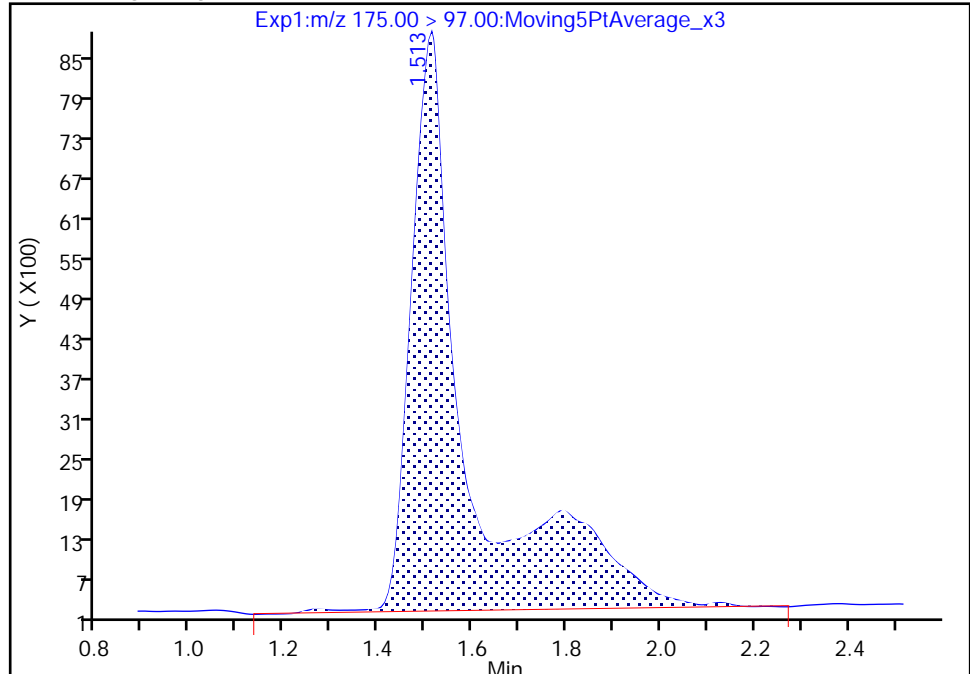
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Injection Date: 21-Dec-2022 12:30:46 Instrument ID: A18
Lims ID: IC L3
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

1 MTP, CAS: 93449-21-9

Signal: 1

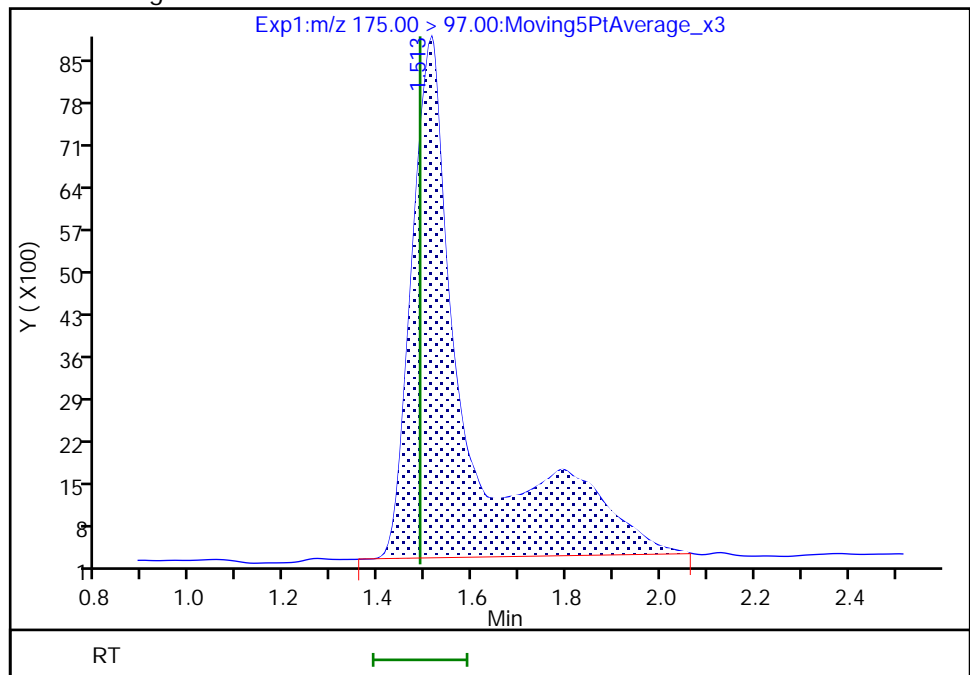
RT: 1.51
Area: 73582
Amount: 0.311332
Amount Units: ng/ml

Processing Integration Results



RT: 1.51
Area: 70241
Amount: 0.248813
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:48:03
Audit Action: Manually Integrated

Audit Reason: Baseline
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12/29/2022
3:43 PM

Eurofins Sacramento

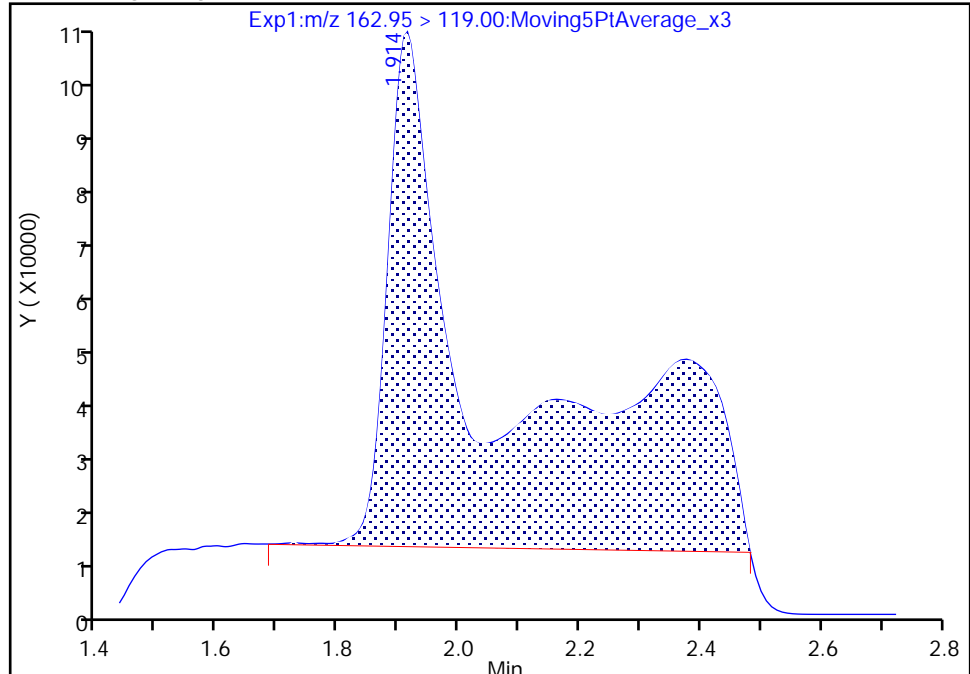
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Injection Date: 21-Dec-2022 12:30:46 Instrument ID: A18
Lims ID: IC L3
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

2 PPF Acid, CAS: 422-64-0

Signal: 1

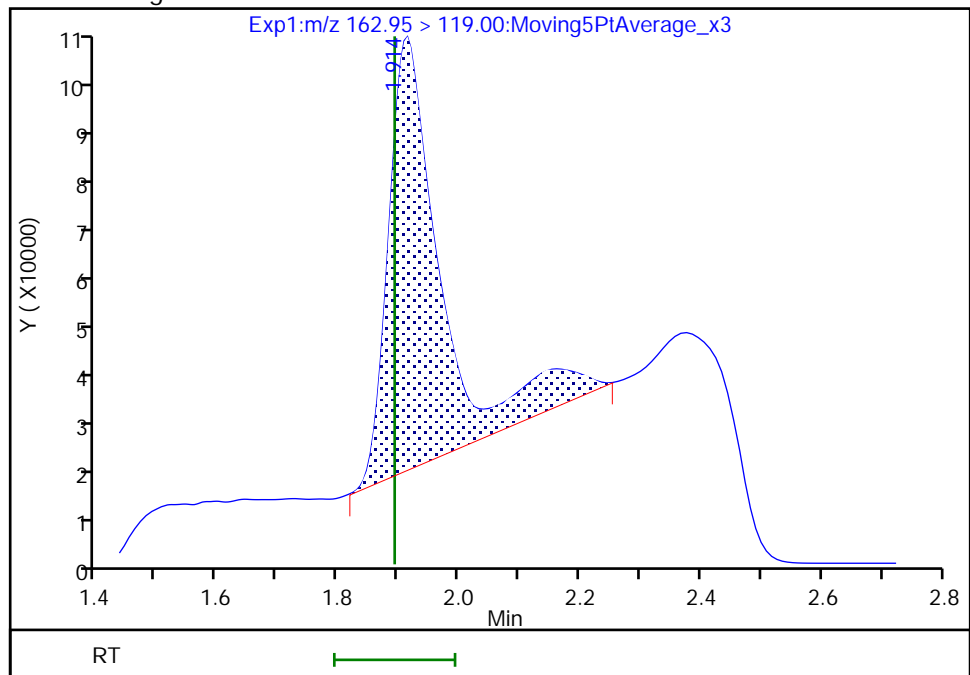
RT: 1.91
Area: 1277074
Amount: 0.415585
Amount Units: ng/ml

Processing Integration Results



RT: 1.91
Area: 538300
Amount: 0.193936
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:49:09
Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

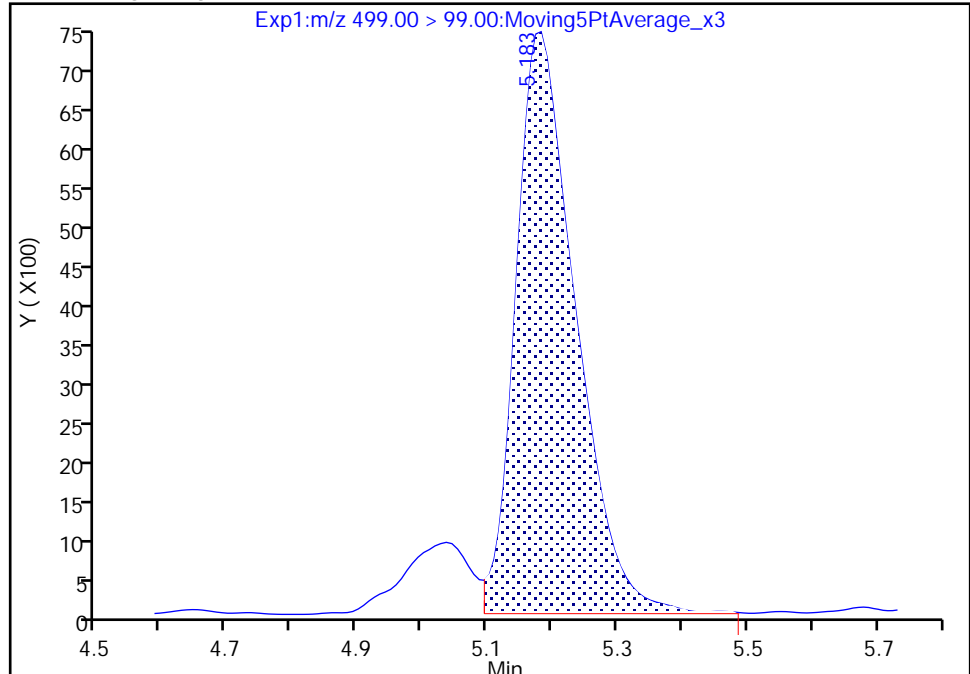
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Injection Date: 21-Dec-2022 12:30:46 Instrument ID: A18
Lims ID: IC L3
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

62 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

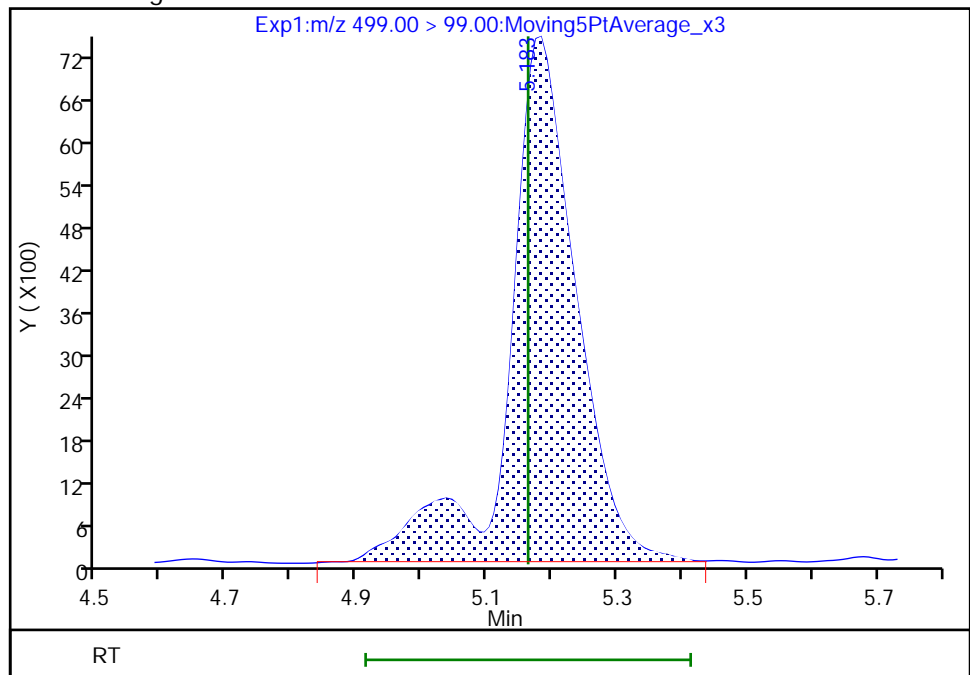
RT: 5.18
Area: 47427
Amount: 0.212148
Amount Units: ng/ml

Processing Integration Results



RT: 5.18
Area: 53628
Amount: 0.202230
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:49:36

Audit Action: Manually Integrated

Audit Reason: Isomers

Eurofins Sacramento

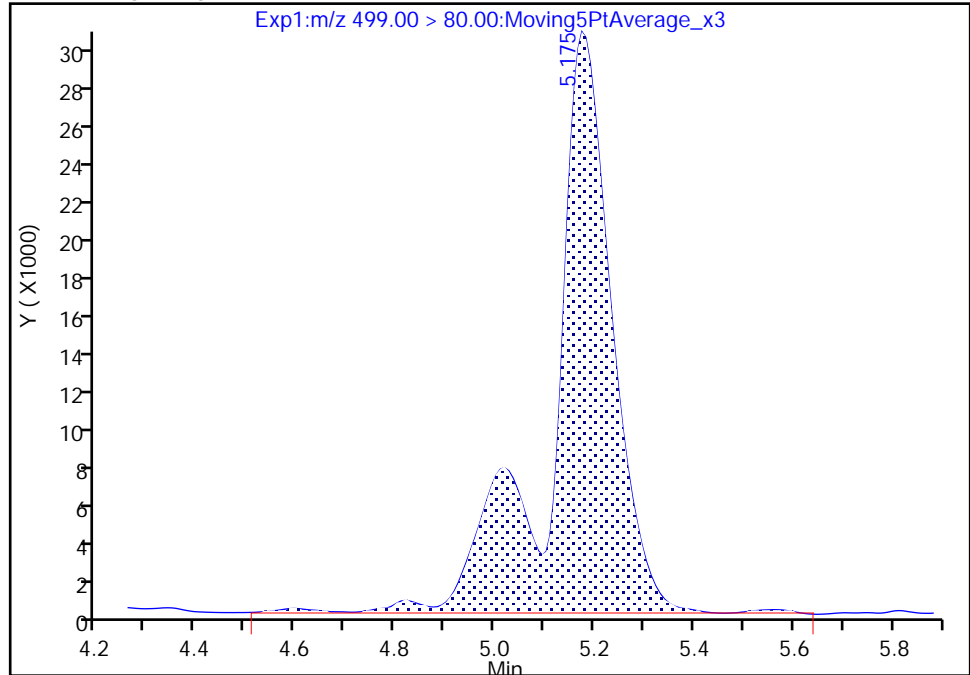
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Injection Date: 21-Dec-2022 12:30:46 Instrument ID: A18
Lims ID: IC L3
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

62 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

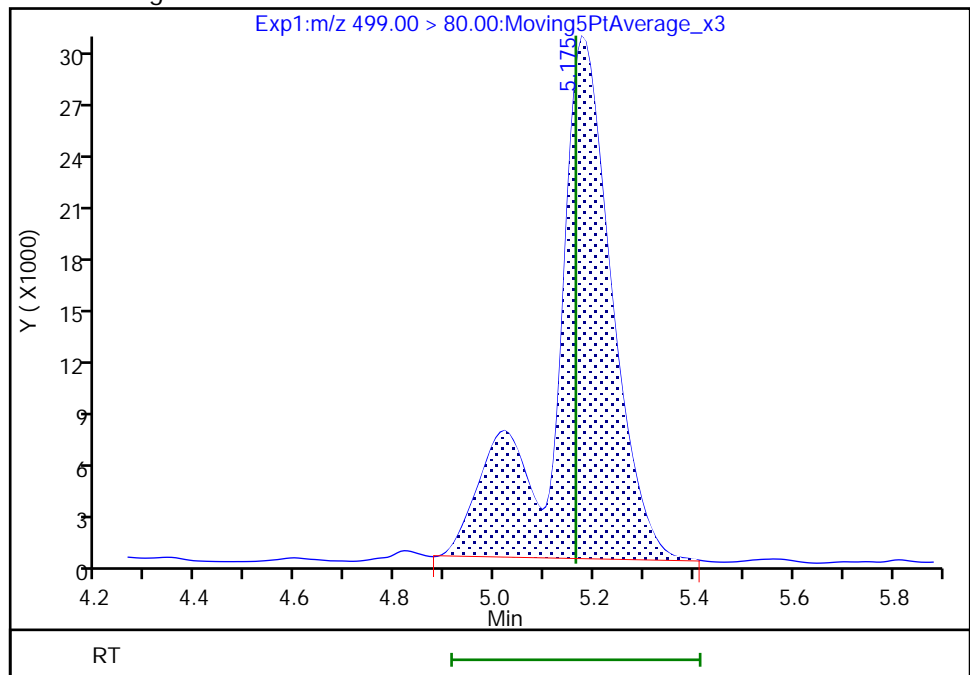
RT: 5.18
Area: 257370
Amount: 0.212148
Amount Units: ng/ml

Processing Integration Results



RT: 5.18
Area: 244252
Amount: 0.202230
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:49:46

Audit Action: Manually Integrated

Audit Reason: Isomers

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12/29/2022
3:43 PM

Eurofins Sacramento

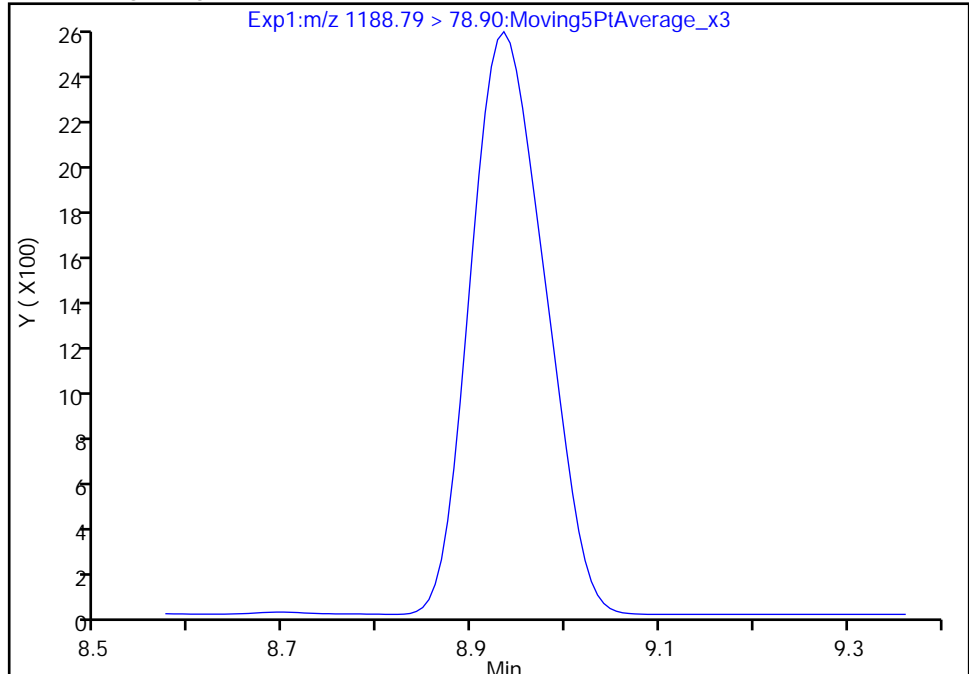
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Injection Date: 21-Dec-2022 12:30:46 Instrument ID: A18
Lims ID: IC L3
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

117 10:2 diPAP, CAS: 1895-26-7

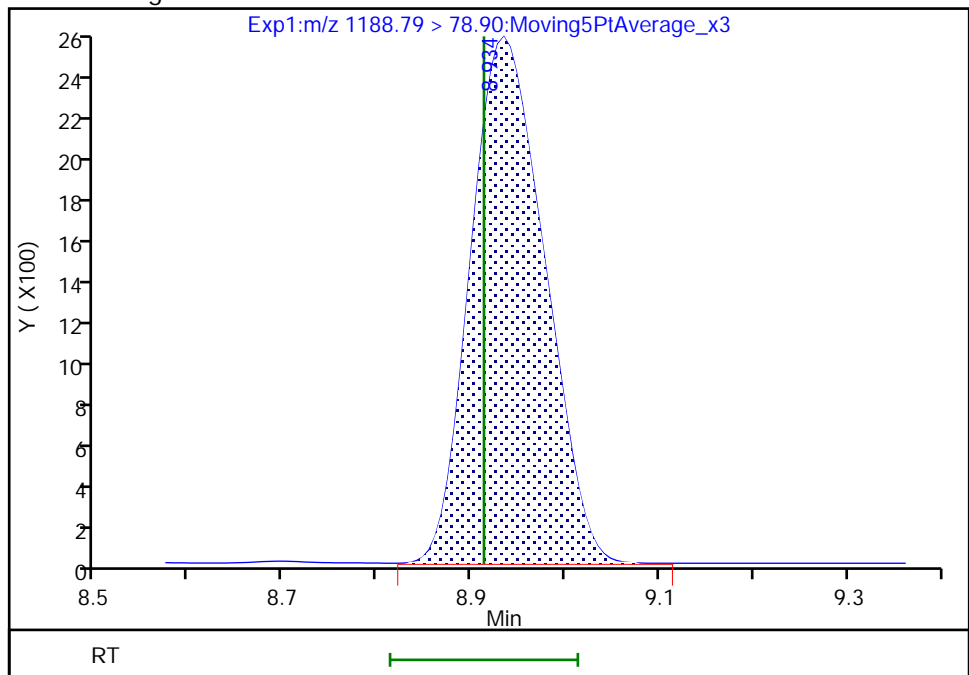
Signal: 1

Not Detected
Expected RT: 8.91

Processing Integration Results



Manual Integration Results



RT: 8.93
Area: 14035
Amount: 0.135105
Amount Units: ng/ml

Reviewer: YS2U, 22-Dec-2022 06:02:54

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_012.d
 Lims ID: ICIS
 Client ID:
 Sample Type: ICIS Calib Level: 4
 Inject. Date: 21-Dec-2022 12:40:55 ALS Bottle#: 4 Worklist Smp#: 5
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD 4 (08)
 Misc. Info.: Plate: 2 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Sublist: chrom-PFAS+_A18*sub3
 Method: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Dec-2022 07:21:49 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1678

First Level Reviewer: YS2U

Date: 21-Dec-2022 13:19:05

Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 MTP										
175.00 > 97.00	1.472	1.488	-0.016	0.550	312483	1.01		101	995	
2 PPF Acid										
162.95 > 119.00	1.881	1.893	-0.013	0.702	3003146	0.9059		93.4	301	
3 PFMOAA										
179.00 > 84.90	2.377	2.387	-0.010	0.887	2290451	0.9616		96.2	689	
4 R-PSDA										
441.00 > 241.00	2.569	2.573	-0.004	0.959	555629	0.9716		97.2	9585	
5 R-EVE										
405.00 > 217.00	2.569	2.577	-0.008	0.959	1419875	0.9773		97.7	26922	
6 Hydrolyzed PSDA										
439.10 > 342.90	2.577	2.581	-0.004	0.962	1760280	0.9671		96.7	26944	
D 8 13C4 PFBA										
217.00 > 172.00	2.678	2.688	-0.010	0.581	5311179	1.30		104	16810	
7 Perfluorobutanoic acid										
212.90 > 169.00	2.678	2.690	-0.012	1.000	4432266	0.9383		93.8	142	
10 PMPA										
229.00 > 185.00	2.751	2.760	-0.009	1.027	5155624	1.06		106	3330	
11 PFPrS										
249.10 > 80.00	2.760	2.771	-0.011	0.889	2161789	0.9329		101	10807	
12 NVHOS										
297.00 > 135.00	2.778	2.790	-0.012	1.037	131289	1.07		107	3262	
13 PFECA F										
229.00 > 85.00	2.824	2.829	-0.005	0.924	2562254	1.03		103	12791	
14 PFO2HxA										
245.00 > 85.00	2.972	2.976	-0.004	0.972	529014	1.02		102	2321	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 16 13C5 PFPeA										
267.90 > 223.00	3.058	3.068	-0.010	0.663	4725710	1.30		104	30967	
15 Perfluoropentanoic acid										
262.90 > 219.00	3.058	3.069	-0.011	1.000	3708927	0.9390		93.9	5401	
17 3:3 FTCA										
241.00 > 177.10	3.067	3.075	-0.008	0.988	198613	1.04	Target=1.46	104	1956	
241.00 > 116.90	3.067	3.075	-0.008	0.988	154332		1.29(0.73-2.18)	104	815	
19 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.104	3.111	-0.007	1.000	2192016	0.9006	Target=2.33	101	8226	
298.90 > 99.00	3.104	3.111	-0.007	1.000	942592		2.33(1.16-3.49)	101	4800	
D 18 13C3 PFBS										
301.90 > 80.00	3.104	3.111	-0.007	0.673	2887646	1.15		98.6	16769	
20 PEPA										
278.90 > 234.90	3.171	3.178	-0.007	1.037	4211151	1.00		100	773	
21 PFECA A										
278.95 > 84.90	3.191	3.198	-0.007	1.044	4118333	0.9814		98.1	34008	
22 PES										
314.80 > 135.00	3.287	3.292	-0.005	1.059	7204857	0.8903		99.8	71243	
23 FBSA										
297.90 > 78.00	3.333	3.338	-0.005	0.593	535406	0.9549		95.5	6886	
24 PFECA B										
295.20 > 201.00	3.431	3.438	-0.007	0.977	677355	0.9670		96.7	13251	
D 25 M2-4:2 FTS										
329.00 > 81.00	3.458	3.463	-0.005	0.750	688975	1.18		100	4075	
26 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.458	3.461	-0.003	1.000	1255344	0.9146	Target=1.98	97.5	28411	
327.00 > 79.96	3.458	3.461	-0.003	1.000	659830		1.90(0.99-2.97)	97.5	6964	
D 27 13C2 PFHxA										
315.00 > 270.00	3.511	3.513	-0.002	0.761	5056091	1.26		101	36039	
28 Perfluorohexanoic acid										
313.00 > 269.00	3.511	3.514	-0.003	1.000	3921540	1.03	Target=13.54	103	5163	
313.00 > 119.00	3.511	3.514	-0.003	1.000	290655		13.49(6.77-20.31)	103	2392	
29 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.538	3.545	-0.007	1.140	1838444	0.9224	Target=3.08	98.1	14833	
349.00 > 99.00	3.538	3.545	-0.007	1.140	610965		3.01(1.54-4.63)	98.1	8728	
30 PFO3OA										
311.10 > 85.20	3.591	3.598	-0.007	1.023	241552	1.08		108	4476	
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.678	3.685	-0.007	0.797	179051	1.33		106	4646	
31 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.678	3.685	-0.007	1.000	144171	0.9523	Target=0.84	95.2	7365	
285.00 > 185.00	3.678	3.685	-0.007	1.000	164740		0.88(0.42-1.25)	95.2	2067	
33 R-PSDCA										
397.00 > 217.00	3.992	4.000	-0.008	0.987	1147862	0.9020		90.2	19531	
36 Perfluoroheptanoic acid										
363.00 > 319.00	4.045	4.047	-0.002	1.000	3946695	1.00	Target=3.56	100	5692	
363.00 > 169.00	4.045	4.047	-0.002	1.000	1125783		3.51(1.78-5.34)	100	13350	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 35 13C4 PFHpA										
367.00 > 322.00	4.045	4.048	-0.003	0.877	5405324	1.27		102	31752	
38 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.053	4.060	-0.007	0.998	1369794	0.8490	Target=3.26	93.1	9314	
399.00 > 99.00	4.061	4.060	0.001	1.000	416813		3.29(1.63-4.88)	93.1	2234	
D 37 18O2 PFHxS										
403.00 > 84.00	4.061	4.063	-0.002	0.880	1977270	1.19		101	15395	
34 Hydro-EVE Acid										
427.00 > 282.90	4.078	4.078	0.0	1.008	6130947	1.02		102	34652	
39 Hydro-PS Acid										
463.00 > 263.00	4.104	4.114	-0.010	1.015	5383069	1.01		101	5305	
41 5:3 FTCA										
340.88 > 236.90	4.121	4.127	-0.006	0.979	662006	1.00	Target=1.10	100	6153	
340.88 > 216.90	4.121	4.127	-0.006	0.979	587546		1.13(0.55-1.65)	100	3463	
40 DONA										
377.00 > 251.00	4.121	4.128	-0.007	0.799	6979330	0.9308	Target=2.23	98.6	23559	
377.00 > 85.00	4.121	4.128	-0.007	0.799	3210040		2.17(1.11-3.34)	98.6	763	
42 PFECA G										
378.90 > 184.90	4.155	4.158	-0.003	0.987	1952986	1.01		101	18660	
D 44 13C-6:2 FTUCA										
358.86 > 293.90	4.181	4.185	-0.004	0.906	3156625	1.25		100	32099	
43 6:2 FTUCA										
356.86 > 292.90	4.181	4.188	-0.007	1.000	2625569	1.03	Target=12.98	103	13275	
356.86 > 243.00	4.181	4.188	-0.007	1.000	185777		14.13(6.49-19.46)	103	4757	
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.208	4.212	-0.004	0.912	246937	1.26		101	1023	
45 6:2 FTCA										
377.10 > 313.10	4.217	4.217	0.0	1.002	50100	0.9708	Target=0.65	97.1	1133	
377.10 > 63.00	4.208	4.217	-0.009	1.000	78080		0.64(0.33-0.98)	97.1	1711	
47 PFO4DA										
376.90 > 85.00	4.323	4.320	0.003	1.069	259809	1.08		108	0.5	
48 PS Acid										
442.80 > 146.80	4.411	4.418	-0.007	0.958	1953502	1.02		102	6015	
49 EVE Acid										
407.00 > 262.90	4.420	4.425	-0.005	0.960	6127163	1.03		103	54824	
50 FHxSA										
397.90 > 78.00	4.510	4.515	-0.005	0.802	2900157	0.9598		96.0	12581	
51 PFECHS										
460.80 > 380.90	4.528	4.535	-0.007	0.983	3887665	0.9552	Target=2.05	103	24317	
460.80 > 98.90	4.528	4.535	-0.007	0.983	1817847		2.14(1.03-3.08)	103	30374	
53 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.572	4.578	-0.006	1.000	1187597	0.9714	Target=2.31	102	15276	
427.00 > 79.96	4.572	4.578	-0.006	1.000	518000		2.29(1.16-3.47)	102	5112	
D 52 M2-6:2 FTS										
429.00 > 81.00	4.572	4.580	-0.008	0.991	714883	1.16		97.6	16043	
\$ 54 13C8 PFOA										
421.00 > 376.00	4.605	4.613	-0.008	0.998	6918984	1.25		100	13627	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 56 13C4 PFOA										
417.00 > 372.00	4.605	4.613	-0.008	0.998	5782654	1.24		99.6	16382	
58 Perfluorooctanoic acid										
413.00 > 369.00	4.613	4.614	-0.001	1.002	4339534	1.01	Target=2.69	101	2898	
413.00 > 169.00	4.613	4.614	-0.001	1.002	1572529		2.76(1.35-4.04)	101	7587	
* 55 13C2 PFOA										
415.00 > 370.00	4.613	4.615	-0.002		5748994	1.25			17916	
57 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.613	4.620	-0.007	0.894	1241411	0.9188	Target=4.67	96.3	14068	
449.00 > 99.00	4.613	4.620	-0.007	0.894	262936		4.72(2.33-7.00)	96.3	4075	
59 TAF										
442.90 > 85.00	5.029	5.041	-0.012	1.092	168971	0.9770		97.7	4138	
\$ 60 13C8 PFOS										
507.00 > 99.00	5.153	5.161	-0.008	1.117	561872	1.17		97.9	6938	
D 61 13C4 PFOS										
503.00 > 80.00	5.160	5.162	-0.002	1.119	1348079	1.20		100	6526	
62 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.160	5.163	-0.003	1.000	1058849	0.9055	Target=5.09	97.4	2089	
499.00 > 99.00	5.153	5.163	-0.010	0.999	217497		4.87(2.55-7.64)	97.4	2299	
D 64 13C5 PFNA										
468.00 > 423.00	5.168	5.170	-0.002	1.120	5870061	1.29		103	25956	
63 Perfluorononanoic acid										
463.00 > 419.00	5.168	5.173	-0.005	1.000	4102406	1.01	Target=7.64	101	4351	
463.00 > 169.00	5.168	5.173	-0.005	1.000	522264		7.86(3.82-11.46)	101	5505	
65 7:3 FTCA										
441.00 > 337.00	5.287	5.297	-0.010	0.988	783070	1.06	Target=1.18	106	4131	
441.00 > 317.00	5.296	5.297	-0.001	0.990	629676		1.24(0.59-1.77)	106	3036	
D 67 13C-8:2 FTUCA										
458.86 > 393.90	5.333	5.340	-0.007	1.156	3398407	1.25		100	13705	
66 8:2 FTUCA										
456.86 > 392.90	5.333	5.342	-0.009	1.000	2648023	1.02	Target=39.03	102	17527	
456.86 > 343.00	5.333	5.342	-0.009	1.000	73583		35.99(19.51-58.54)	102	2910	
69 8:2 FTCA										
477.00 > 393.10	5.351	5.361	-0.010	1.000	146890	1.04	Target=2.58	104	315	
477.00 > 63.20	5.351	5.361	-0.010	1.000	52738		2.79(1.29-3.87)	104	1760	
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.351	5.363	-0.012	1.160	174753	1.20		95.9	888	
70 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	5.461	5.470	-0.009	1.058	2633729	0.9366		100	21144	
71 Perfluorooctanesulfonamide										
498.00 > 78.00	5.623	5.628	-0.005	1.000	1452346	1.01		101	10972	
D 72 13C8 FOSA										
506.00 > 78.00	5.623	5.628	-0.005	1.219	1890673	1.27		102	10294	
73 Perfluorononanesulfonic acid										
549.00 > 80.00	5.663	5.672	-0.009	1.097	846657	0.9693	Target=2.73	101	13759	
549.00 > 99.00	5.663	5.672	-0.009	1.097	293725		2.88(1.37-4.10)	101	6787	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.679	5.681	-0.002	1.231	757758	1.22		102	8694	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	5.679	5.683	-0.004	1.000	992850	0.9549	Target=2.39	99.5	26216	
527.00 > 79.96	5.679	5.683	-0.004	1.000	416548		2.38(1.19-3.58)	99.5	9256	
D 76 13C2 PFDA										
515.00 > 470.00	5.687	5.690	-0.003	1.233	5802988	1.32		106	49047	
77 Perfluorodecanoic acid										
513.00 > 469.00	5.687	5.691	-0.004	1.000	3075188	1.01	Target=7.32	101	9728	
513.00 > 169.00	5.687	5.691	-0.004	1.000	415171		7.41(3.66-10.98)	101	11045	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.908	5.917	-0.009	1.281	783120	1.29		103	4727	
79 N-methylperfluorooctanesulfonami										
570.00 > 419.00	5.916	5.923	-0.007	1.001	485240	0.9796	Target=0.78	98.0	4777	
570.00 > 483.00	5.916	5.923	-0.007	1.001	619751		0.78(0.39-1.18)	98.0	7257	
80 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.128	6.133	-0.005	1.187	774535	0.9482	Target=3.04	98.4	16980	
599.00 > 99.00	6.128	6.133	-0.005	1.187	274733		2.82(1.52-4.56)	98.4	5254	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.149	6.158	-0.009	1.333	809200	1.33		106	3722	
D 82 13C2 PFUnA										
565.00 > 520.00	6.159	6.163	-0.004	1.335	5346327	1.30		104	25464	
83 Perfluoroundecanoic acid										
563.00 > 519.00	6.159	6.163	-0.004	1.000	2978749	1.02	Target=8.03	102	12864	
563.00 > 169.00	6.159	6.163	-0.004	1.000	377500		7.89(4.02-12.05)	102	7049	
84 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	6.159	6.168	-0.009	1.002	482908	0.99	Target=0.76	99.2	4722	
584.00 > 526.10	6.159	6.168	-0.009	1.002	642133		0.75(0.38-1.14)	99.2	18407	
90 10:2 FTUCA										
556.86 > 492.90	6.321	6.326	-0.005	1.000	1745695	0.9801		98.0	9749	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.321	6.327	-0.006	1.370	950291	1.30		104	5550	
D 89 13C-10:2 FTUCA										
558.86 > 493.90	6.321	6.324	-0.003	1.370	3150416	1.29		103	12312	
92 10:2 FTCA										
576.80 > 493.00	6.339	6.342	-0.003	1.000	70591	0.8983	Target=2.24	89.8	145	
576.80 > 63.10	6.339	6.342	-0.003	1.000	29327		2.41(1.12-3.36)	89.8	161	
86 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	6.339	6.341	-0.002	1.003	761000	1.02		102	4364	
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.339	6.342	-0.003	1.374	103109	1.26		101	594	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.339	6.348	-0.009	1.374	622195	1.29		103	1776	
88 NMeFOSA										
512.00 > 169.00	6.348	6.355	-0.007	1.001	493005	1.02	Target=1.97	102	1351	
512.00 > 218.99	6.348	6.355	-0.007	1.001	238988		2.06(0.99-2.96)	102	2022	
93 11-Chloroeicosafuoro-3-oxaundec										
631.00 > 451.00	6.375	6.381	-0.006	1.235	3438384	0.9575		101	42145	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.578	6.580	-0.002	1.426	444466	1.36		109	4479	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
99 Perfluorododecanoic acid										
613.00 > 569.00	6.578	6.582	-0.004	1.000	4127612	1.00	Target=7.94	100	7944	
613.00 > 169.00	6.578	6.582	-0.004	1.000	527284		7.83(3.97-11.90)	100	10151	
D 98 13C2 PFDaA										
615.00 > 570.00	6.578	6.582	-0.004	1.426	5968570	1.32		106	24389	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.587	6.592	-0.005	1.428	747337	1.29		107	9437	
101 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	6.587	6.597	-0.010	1.000	778925	0.9643	Target=1.64	99.8	10233	
627.00 > 79.96	6.587	6.597	-0.010	1.000	433219		1.80(0.82-2.46)	99.8	10876	
95 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	6.587	6.599	-0.012	1.002	913324	1.05		105	5703	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.607	6.609	-0.002	1.432	587666	1.30		104	1570	
97 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	6.617	6.619	-0.002	1.002	453389	1.03	Target=1.81	103	1788	
526.00 > 218.99	6.617	6.619	-0.002	1.002	247382		1.83(0.90-2.71)	103	1506	
102 Perfluorododecanesulfonic acid (
699.00 > 80.00	6.911	6.918	-0.007	1.339	251411	0.8926	Target=0.69	92.0	6764	
699.00 > 99.00	6.911	6.918	-0.007	1.339	379890		0.66(0.34-1.03)	92.0	8991	
103 Perfluorotridecanoic acid										
663.00 > 619.00	6.955	6.959	-0.004	1.057	3365179	0.8974	Target=6.68	89.7	8317	
663.00 > 169.00	6.955	6.959	-0.004	1.057	505060		6.66(3.34-10.02)	89.7	4863	
D 112 13C4-6:2 diPAP										
792.82 > 78.90	7.190	7.198	-0.008	1.559	1490851	1.13		93.0	3153	
114 6:2 diPAP										
788.79 > 78.90	7.190	7.200	-0.010	1.000	1121844	0.9486	Target=1.92	97.5	1832	
788.79 > 96.90	7.190	7.200	-0.010	1.000	593355		1.89(0.96-2.88)	97.5	1640	
105 Perfluorotetradecanoic acid										
713.00 > 169.00	7.294	7.297	-0.003	1.000	385185	1.05	Target=0.92	105	4919	
713.00 > 219.00	7.294	7.297	-0.003	1.000	418420		0.92(0.46-1.38)	105	3741	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.294	7.298	-0.004	1.581	4686411	1.19		95.5	7827	
115 6:2/8:2 diPAP										
888.70 > 78.90	7.681	7.687	-0.006	1.068	1278763	1.08	Target=1.37	111	3023	
888.70 > 96.90	7.681	7.687	-0.006	1.068	946854		1.35(0.69-2.06)	111	2669	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.867	7.873	-0.006	1.705	4467876	1.31		105	6174	
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.867	7.873	-0.006	1.000	3015244	0.9719	Target=8.78	97.2	3344	
813.00 > 169.00	7.867	7.873	-0.006	1.000	343284		8.78(4.39-13.16)	97.2	5064	
D 113 13C4-8:2 diPAP										
992.77 > 96.90	8.097	8.100	-0.003	1.755	1230960	1.29		105	2629	
116 8:2 diPAP										
988.74 > 78.90	8.097	8.102	-0.005	1.000	945769	1.00	Target=1.17	103	2912	
988.74 > 96.90	8.097	8.102	-0.005	1.000	802123		1.18(0.59-1.76)	103	2589	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
108 Perfluorooctadecanoic acid										
913.00 > 869.00	8.373	8.378	-0.005	1.064	1816861	1.07	Target=10.07	107	1805	
913.00 > 169.00	8.373	8.378	-0.005	1.064	180863		10.05(5.04-15.11)	107	1689	
117 10:2 diPAP										
1188.79 > 78.90	8.905	8.913	-0.008	1.100	102291	1.05	Target=1.10	104	3061	a
1188.79 > 96.90	8.912	8.913	-0.001	1.101	90182		1.13(0.55-1.65)	104	2658	a

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

LCPFC+6C_LL4_00008

Amount Added: 1.00

Units: mL

Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_012.d

Injection Date: 21-Dec-2022 12:40:55

Instrument ID: A18

Lims ID: ICIS

Client ID:

Operator ID: TAISACA18-PC\A-18

ALS Bottle#: 4

Worklist Smp#: 5

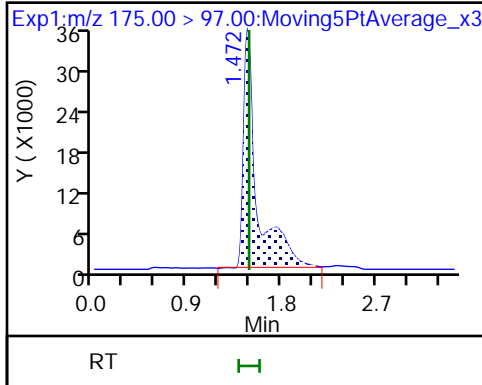
Injection Vol: 20.0 ul

Dil. Factor: 1.0000

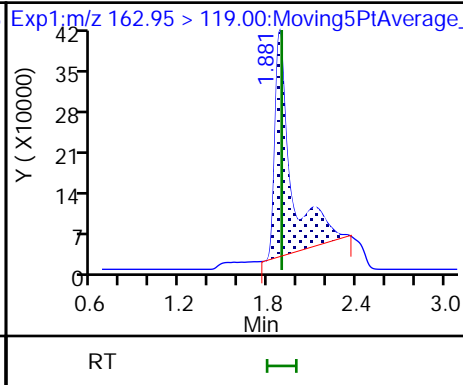
Method: PFAS+_A18

Limit Group: LC PFC ICAL

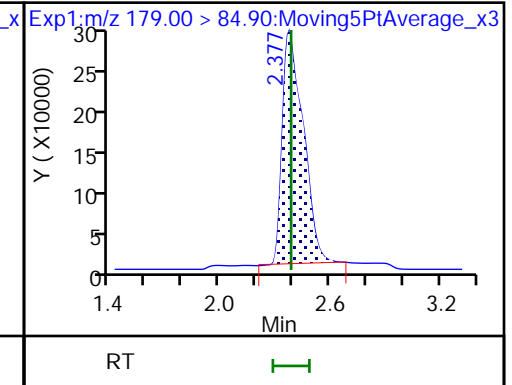
1 MTP



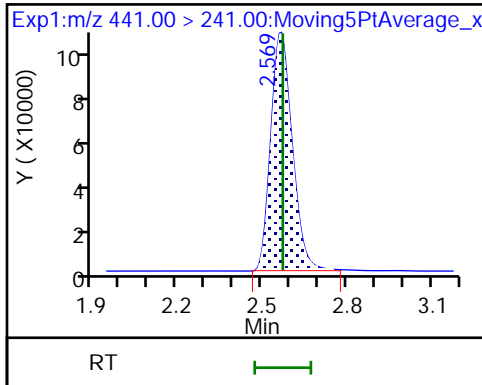
2 PPF Acid



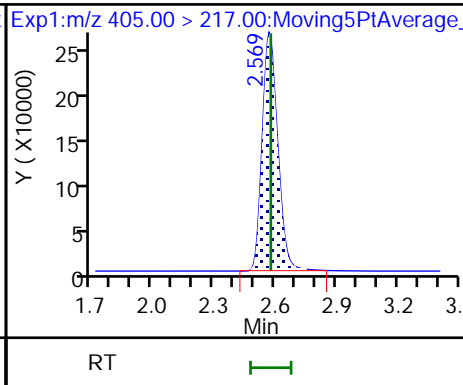
3 PFMOAA



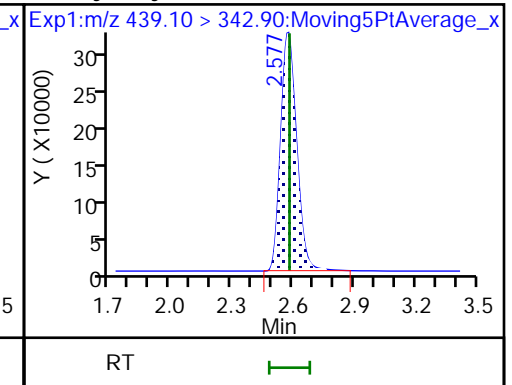
4 R-PSDA



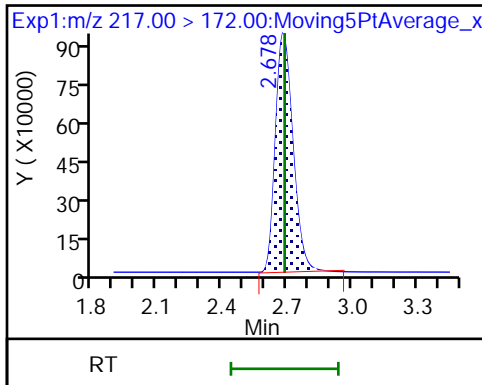
5 R-EVE



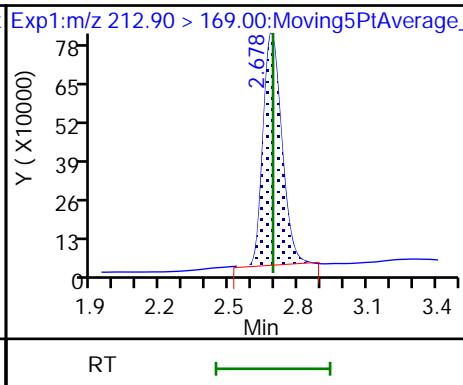
6 Hydrolyzed PSDA



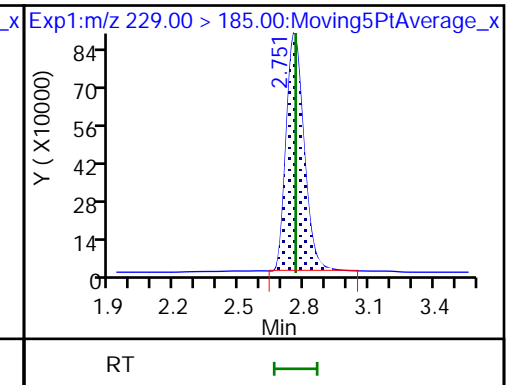
D 8 13C4 PFBA



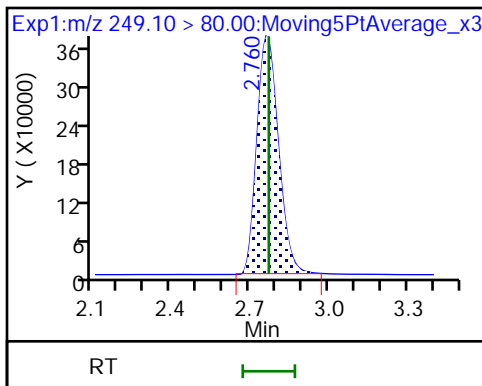
7 Perfluorobutanoic acid



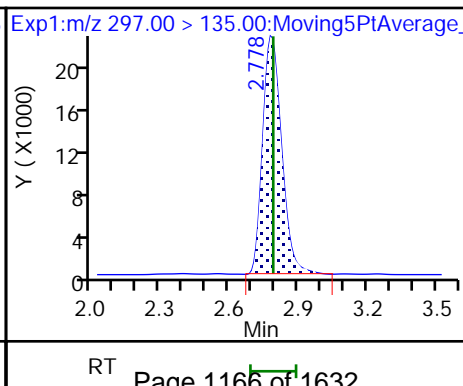
10 PMPA



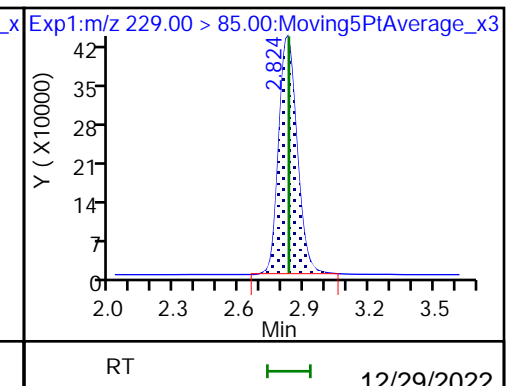
11 PFPrS

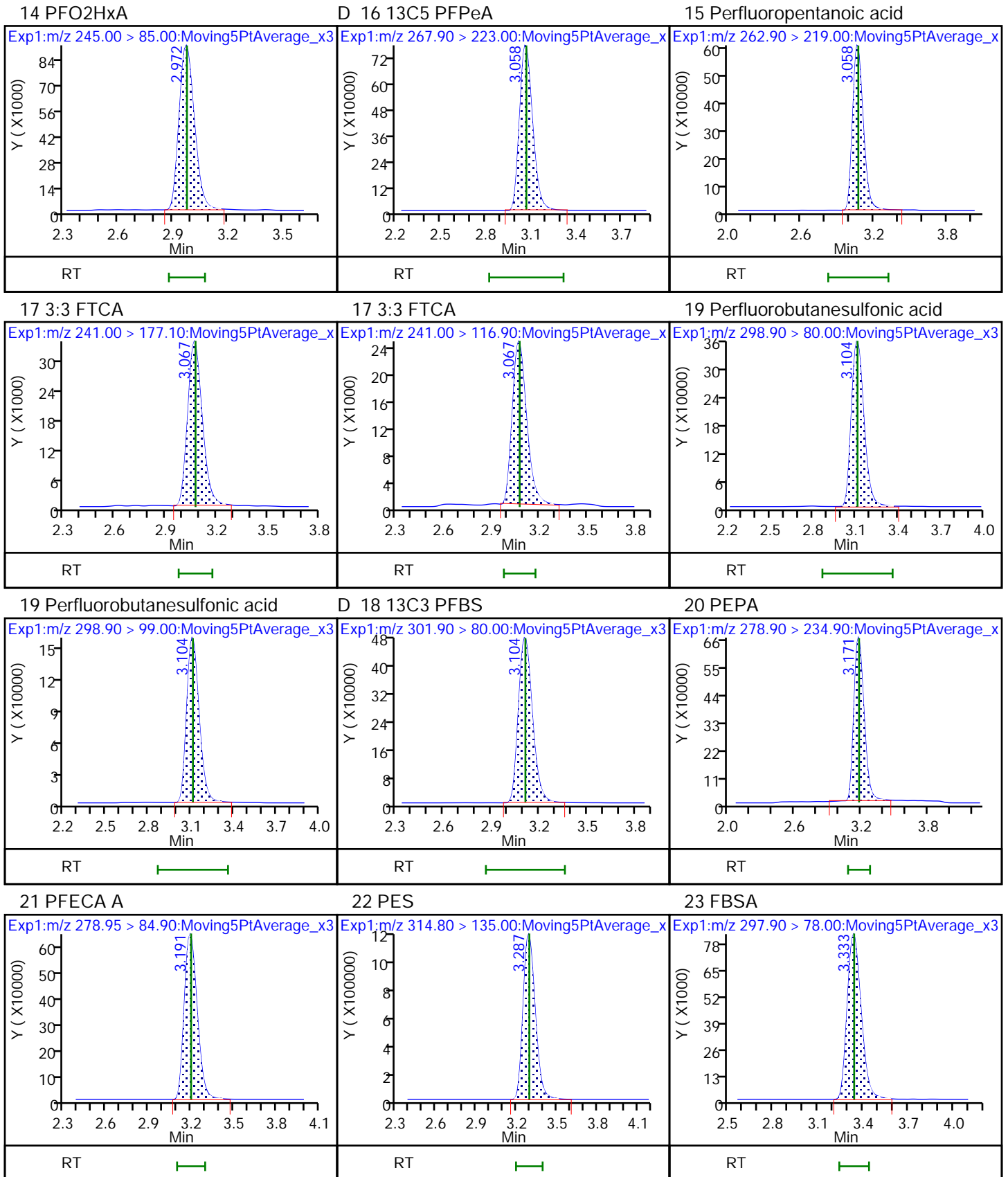


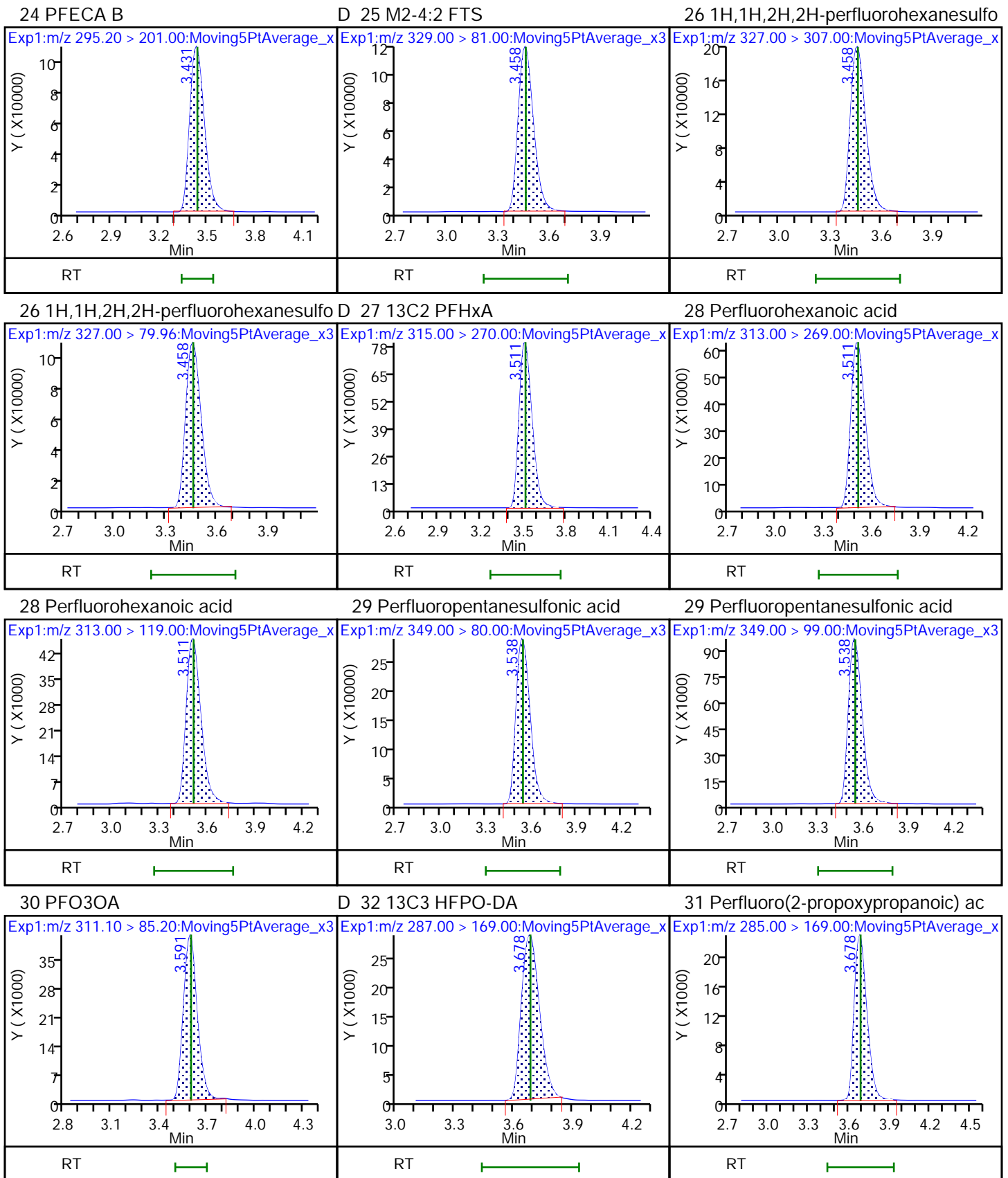
12 NVHOS



13 PFECA F



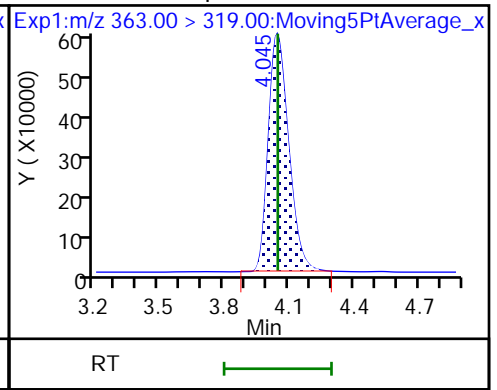
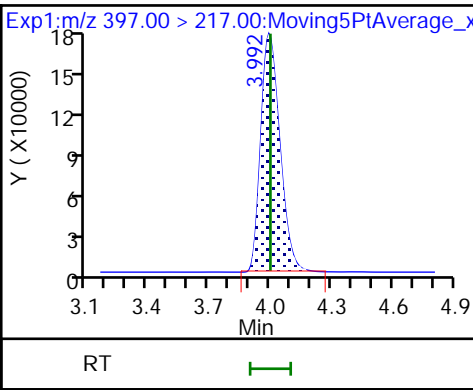
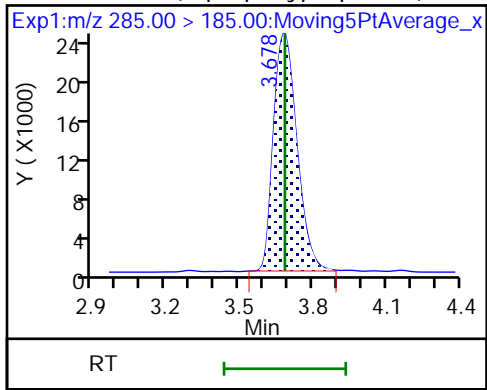




31 Perfluoro(2-propoxypropanoic) ac

33 R-PSDCA

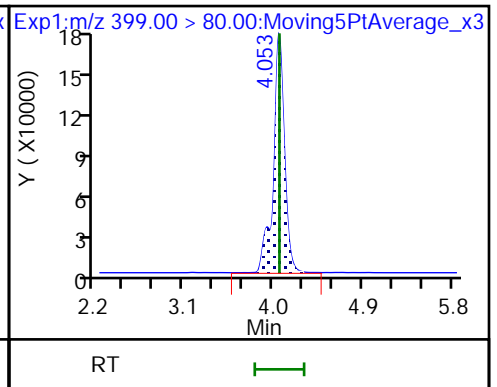
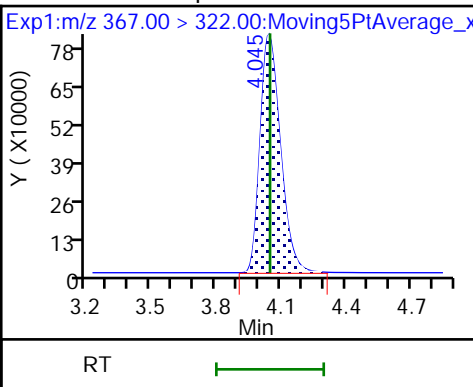
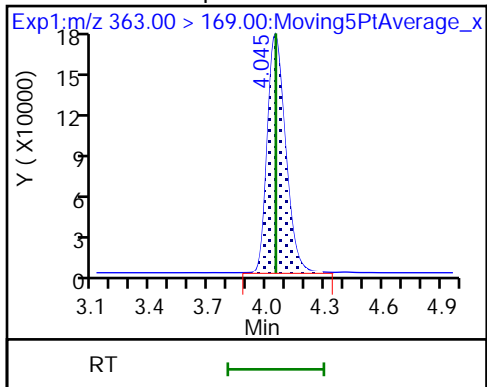
36 Perfluoroheptanoic acid



36 Perfluoroheptanoic acid

D 35 13C4 PFHpA

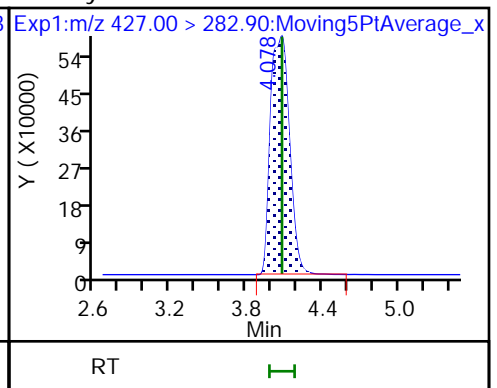
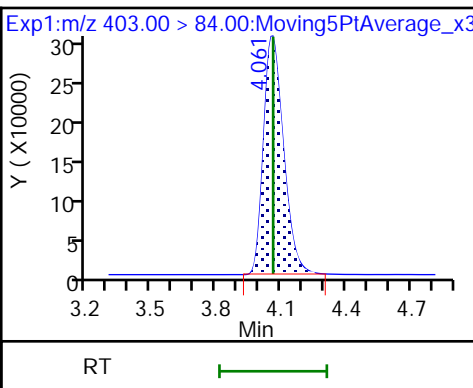
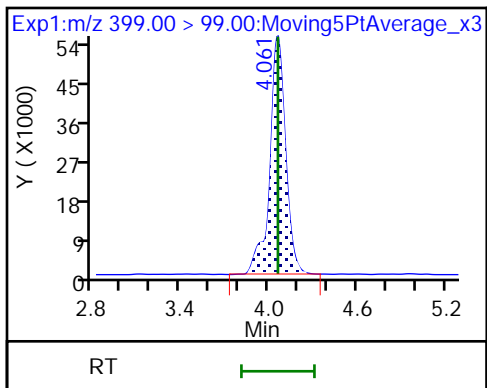
38 Perfluorohexanesulfonic acid



38 Perfluorohexanesulfonic acid

D 37 18O2 PFHxS

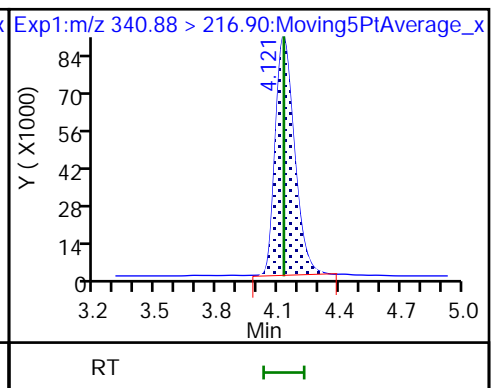
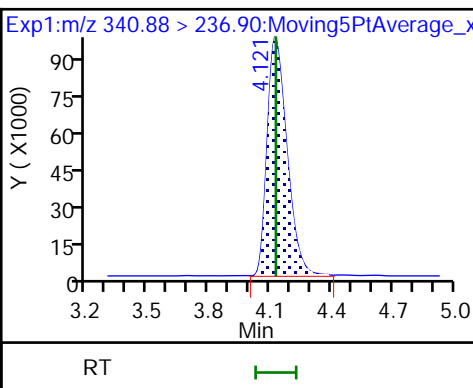
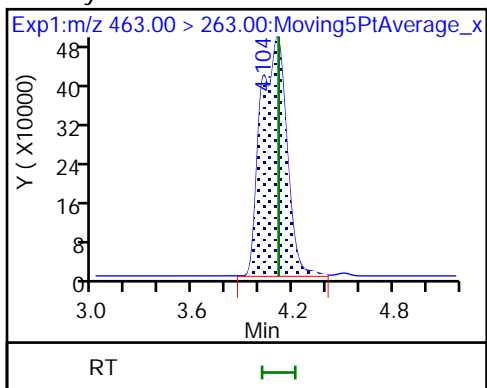
34 Hydro-EVE Acid

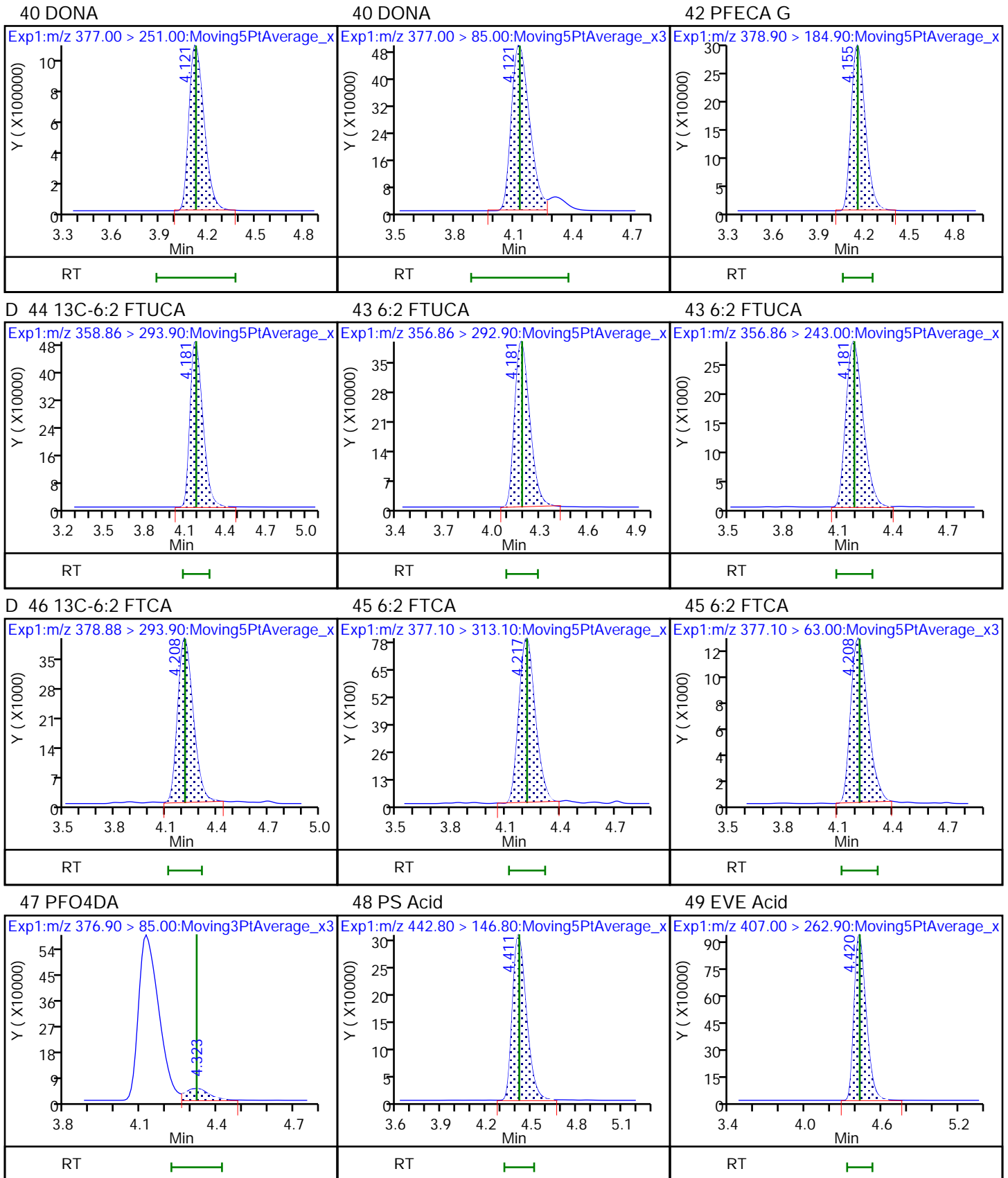


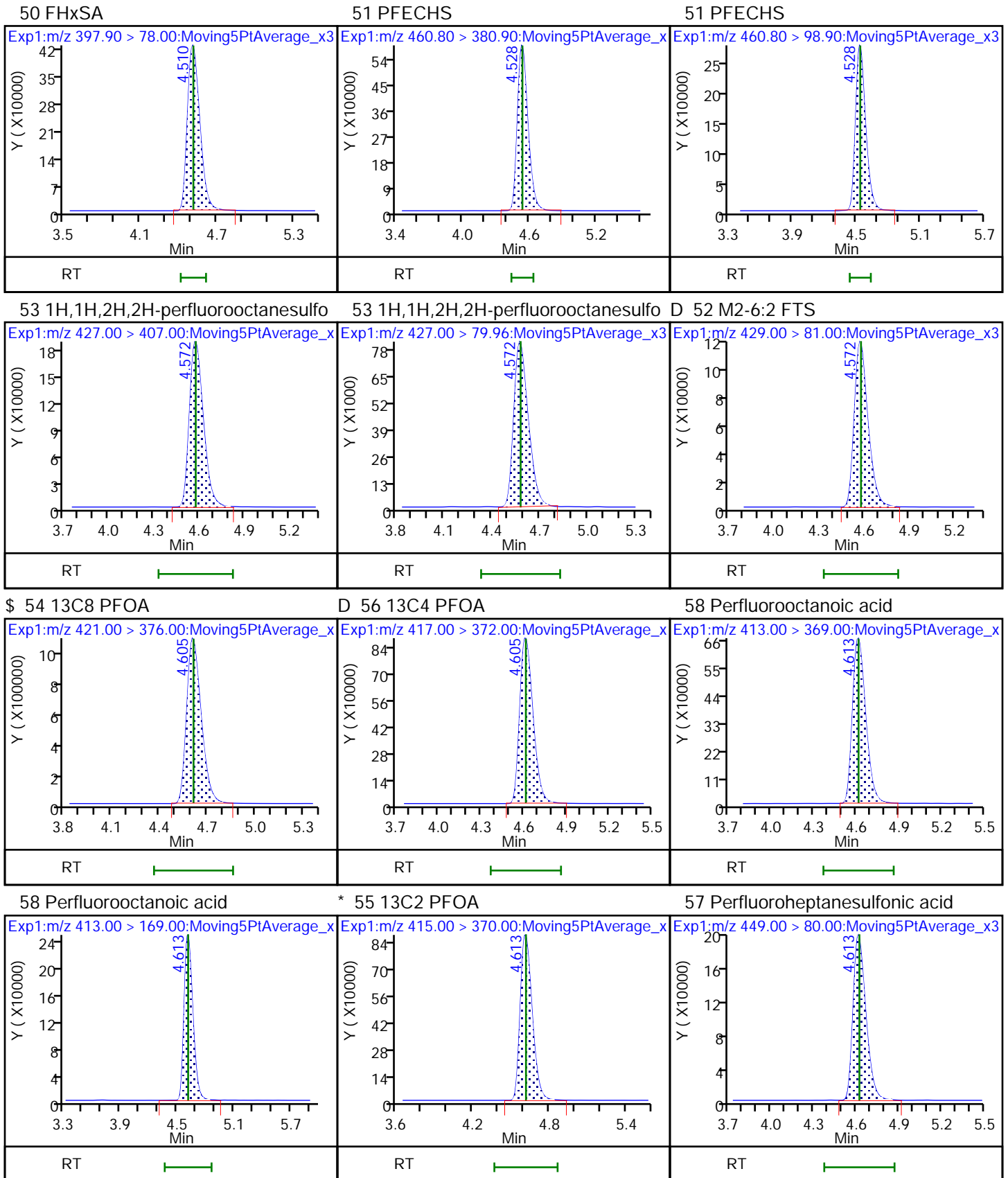
39 Hydro-PS Acid

41 5:3 FTCA

41 5:3 FTCA



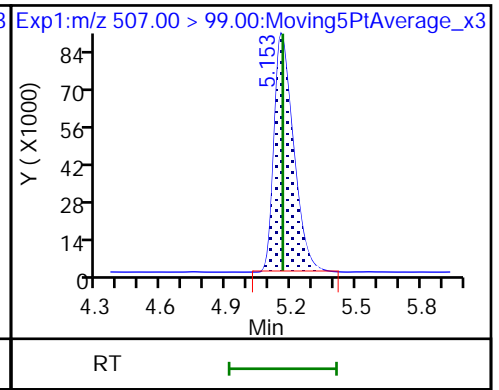
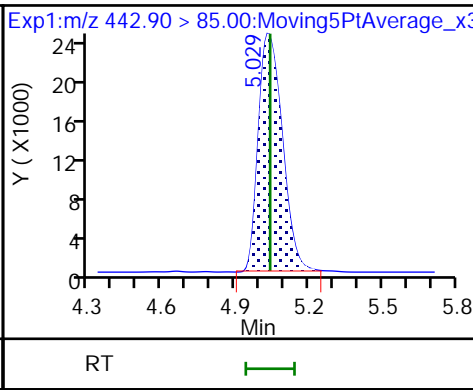
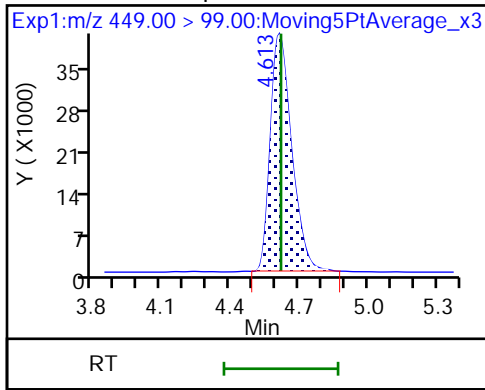




57 Perfluoroheptanesulfonic acid

59 TAF

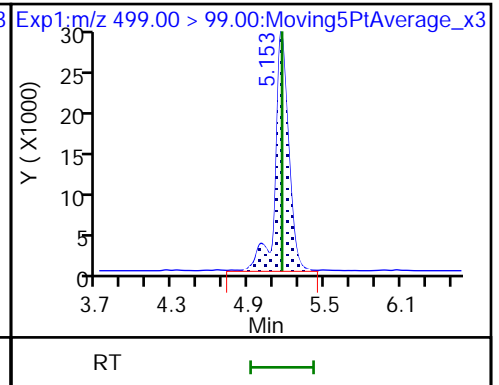
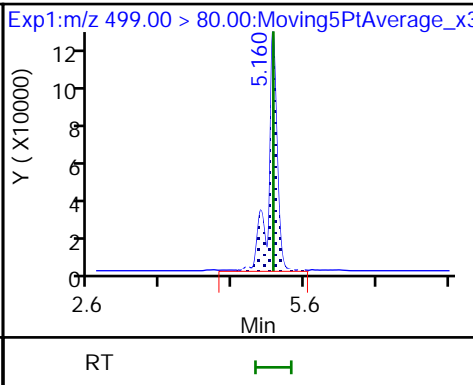
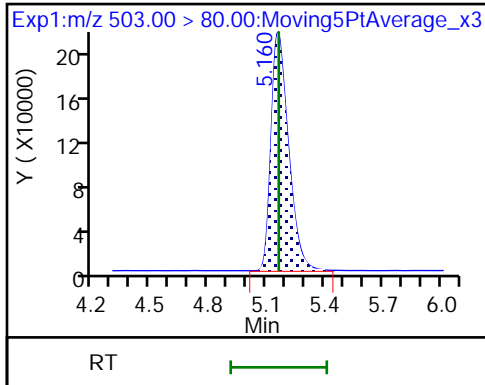
\$ 60 13C8 PFOS



D 61 13C4 PFOS

62 Perfluorooctanesulfonic acid

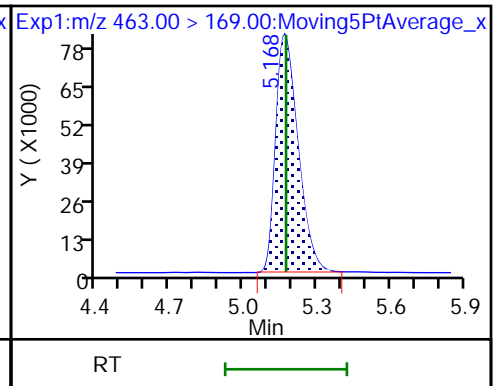
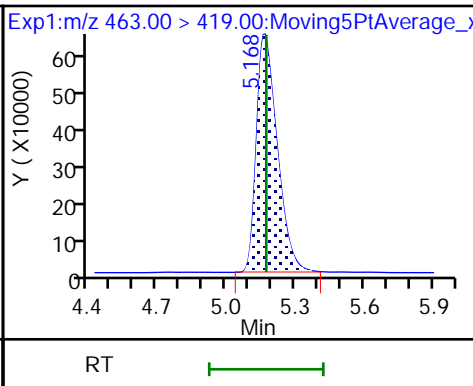
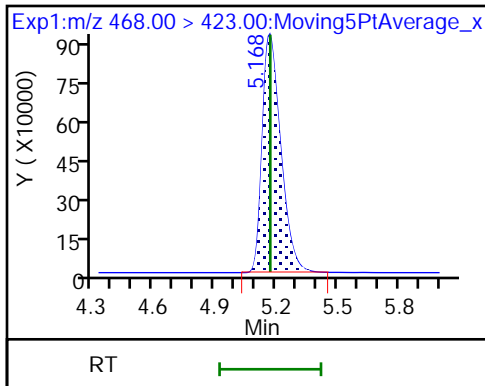
62 Perfluorooctanesulfonic acid



D 64 13C5 PFNA

63 Perfluorononanoic acid

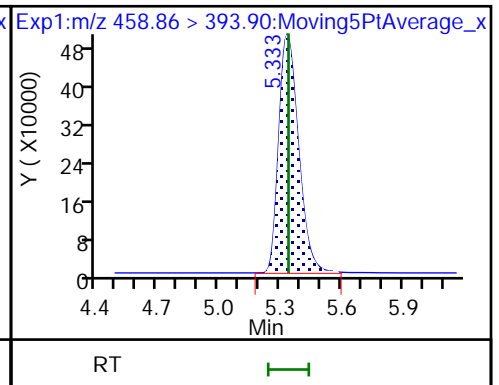
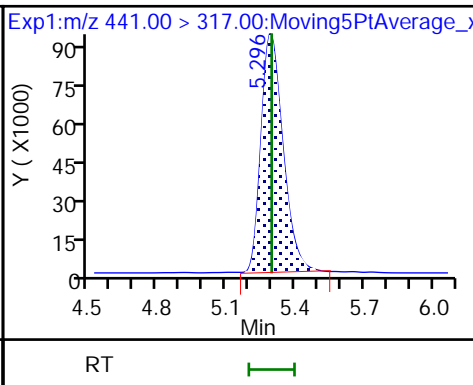
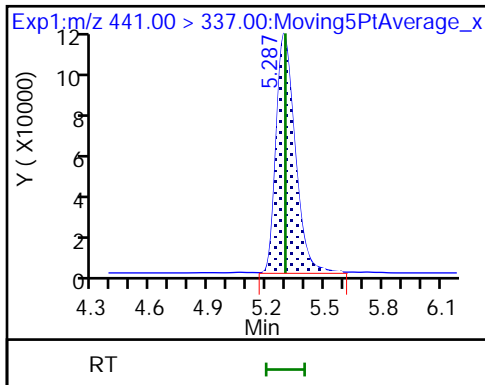
63 Perfluorononanoic acid

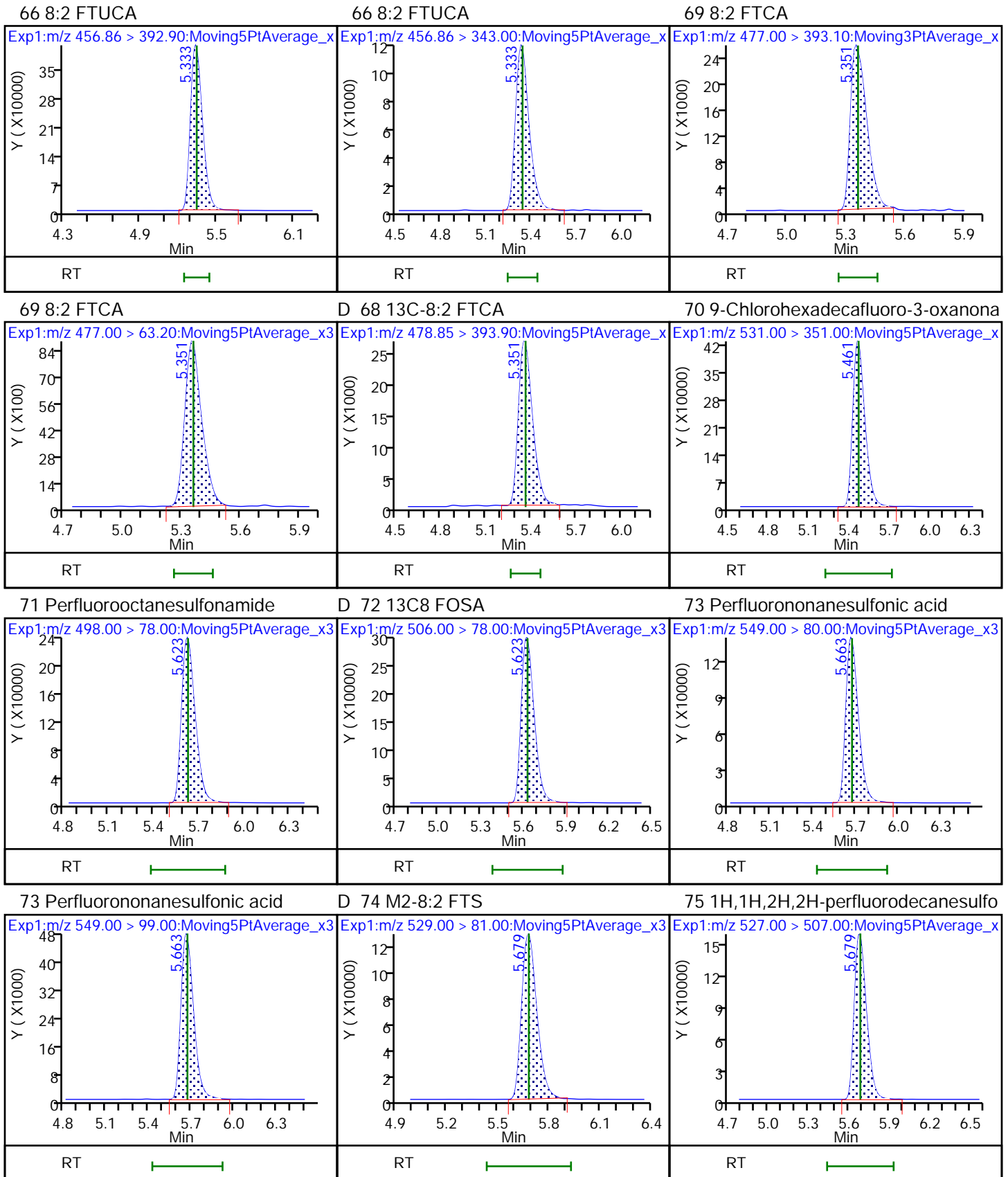


65 7:3 FTCA

65 7:3 FTCA

D 67 13C-8:2 FTUCA

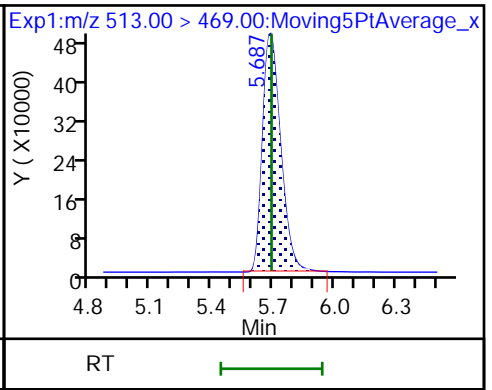
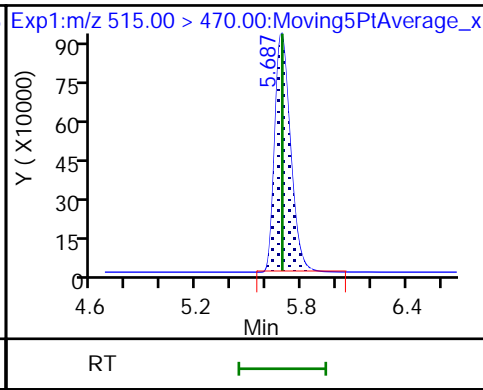
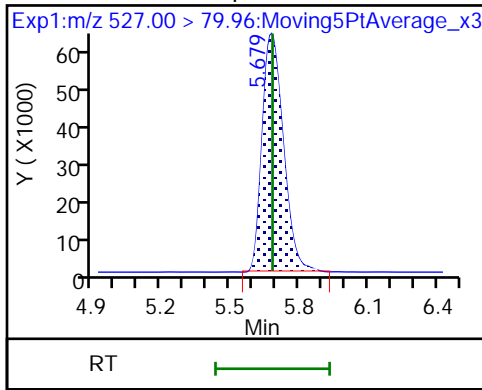




75 1H,1H,2H,2H-perfluorodecanesulfo D

76 13C2 PFDA

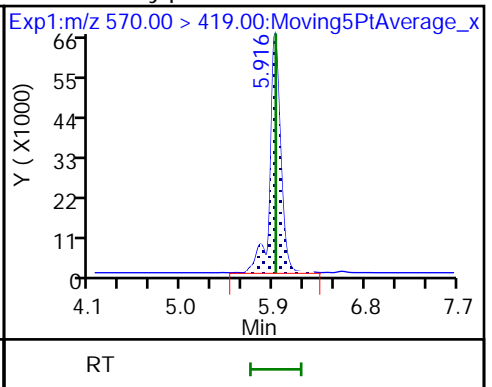
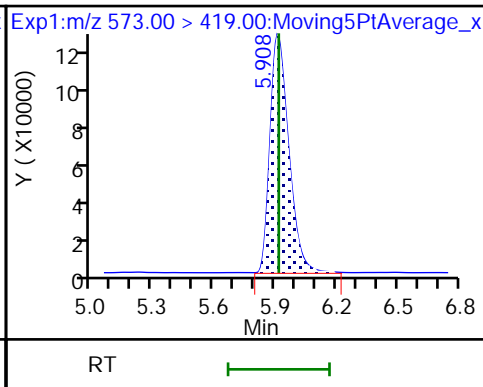
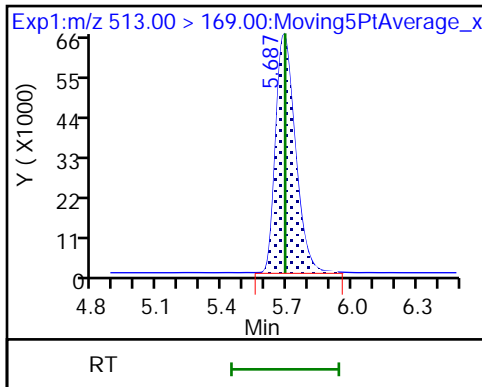
77 Perfluorodecanoic acid



77 Perfluorodecanoic acid

D 78 d3-NMeFOSAA

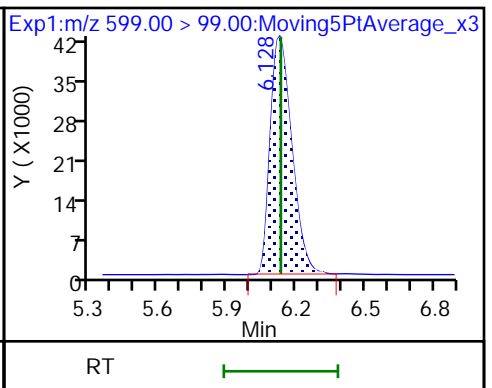
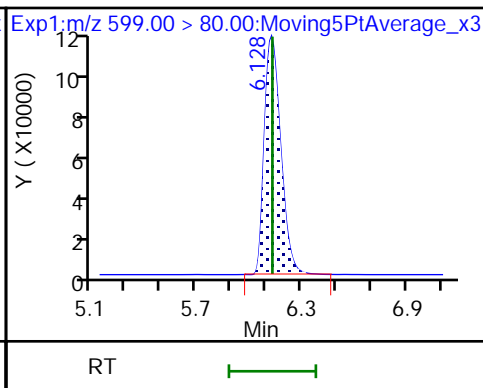
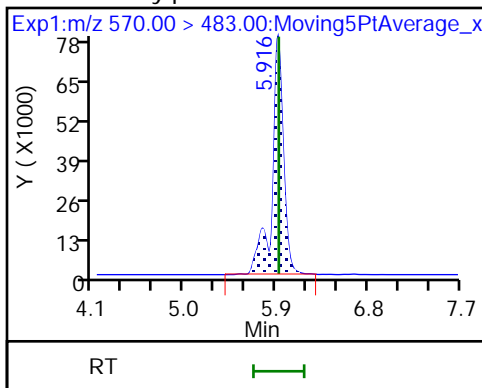
79 N-methylperfluorooctanesulfonami



79 N-methylperfluorooctanesulfonami

80 Perfluorodecanesulfonic acid

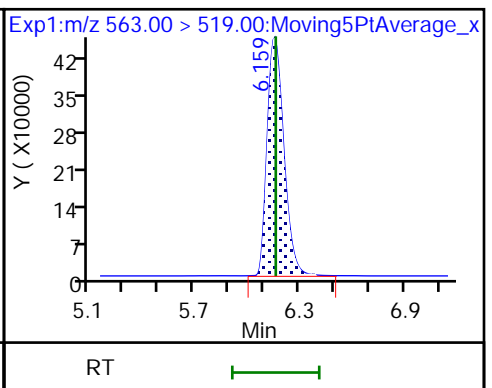
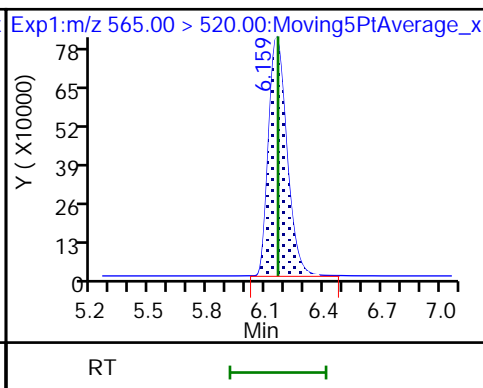
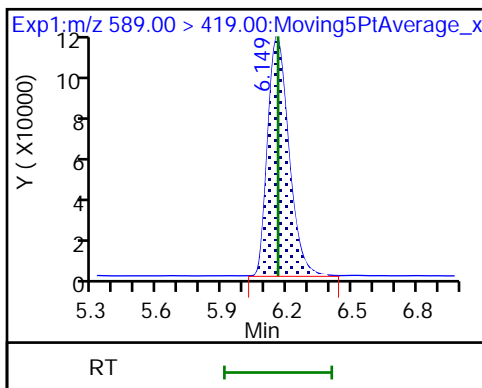
80 Perfluorodecanesulfonic acid



D 81 d5-NEtFOSAA

D 82 13C2 PFUnA

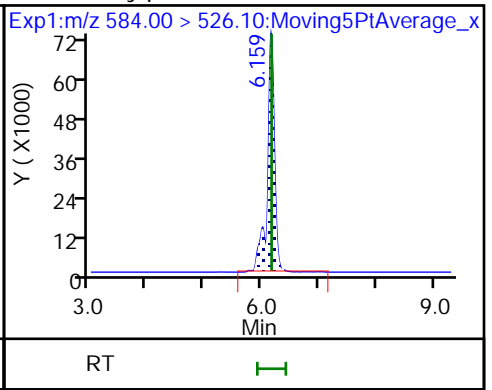
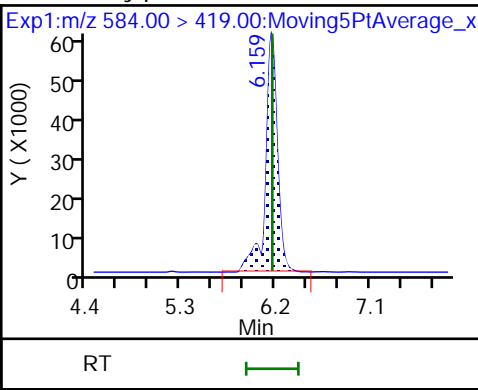
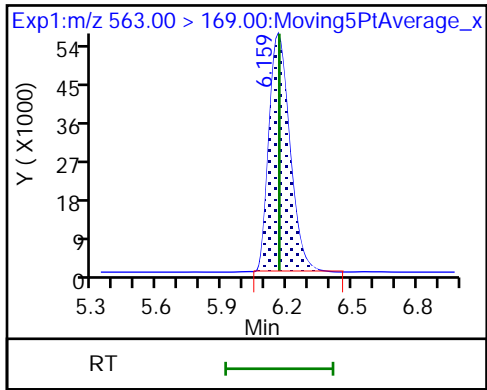
83 Perfluoroundecanoic acid



83 Perfluoroundecanoic acid

84 N-ethylperfluorooctanesulfonamid

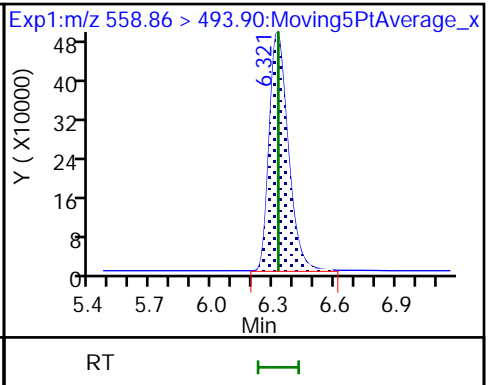
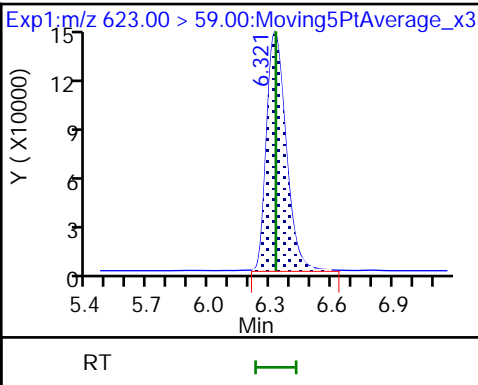
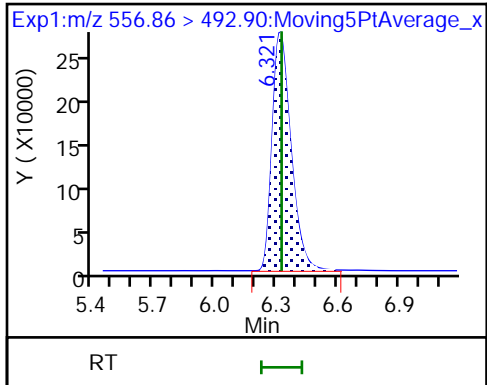
84 N-ethylperfluorooctanesulfonamid



90 10:2 FTUCA

D 85 d7-N-MeFOSE-M

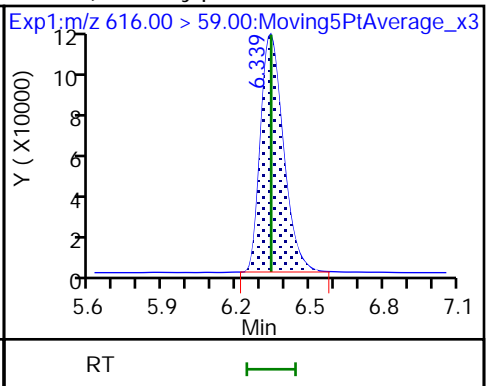
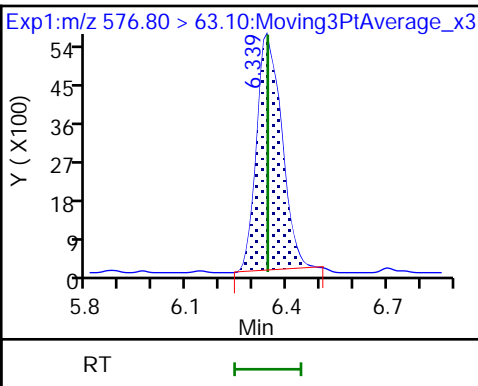
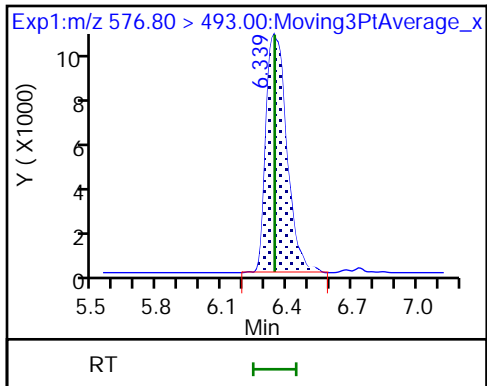
D 89 13C-10:2 FTUCA



92 10:2 FTCA

92 10:2 FTCA

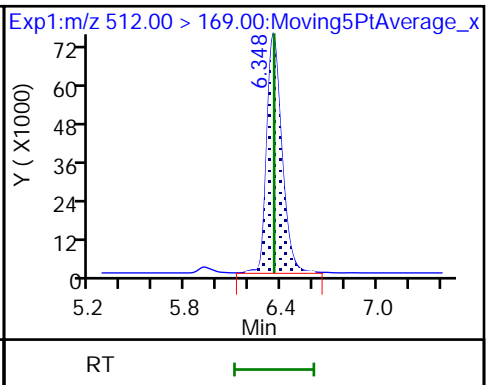
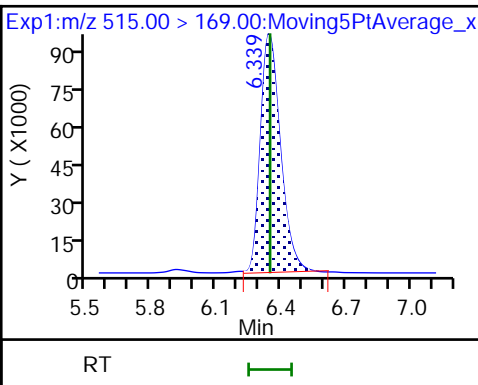
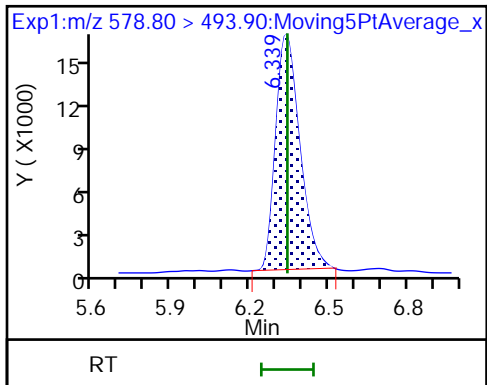
86 2-(N-methylperfluoro-1-octanesul



D 91 13C-10:2 FTCA

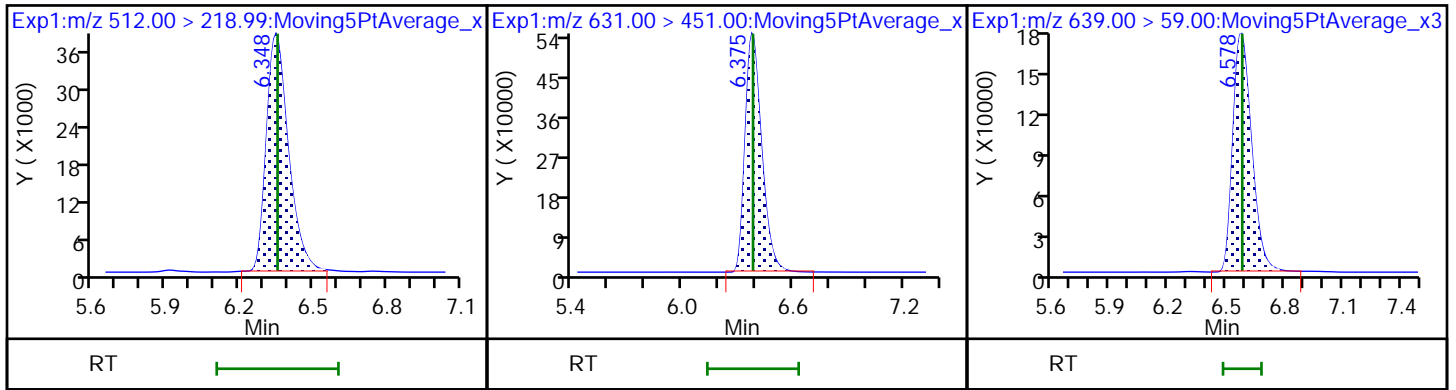
D 87 d-N-MeFOSA-M

88 NMeFOSA



88 NMeFOSA

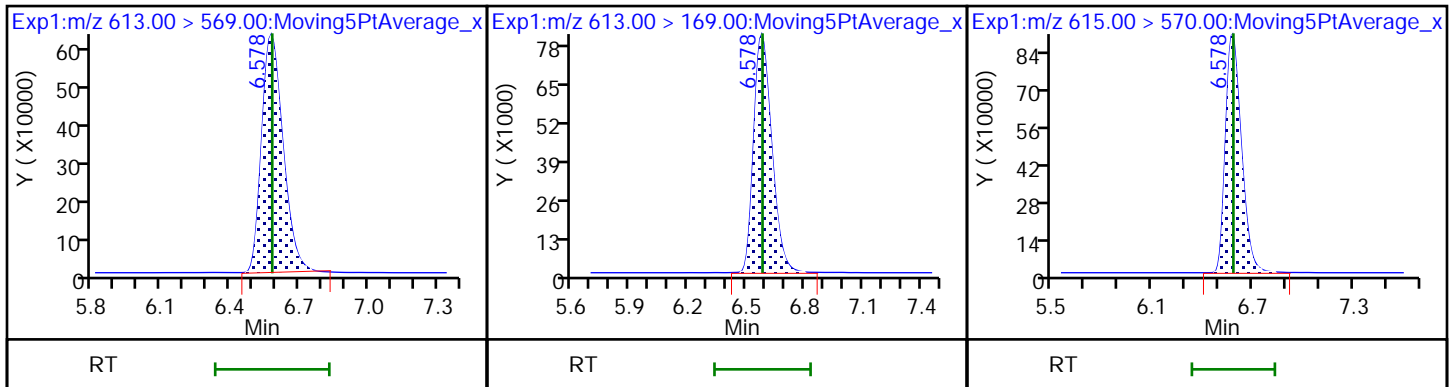
93 11-Chloroeicosafuoro-3-oxaundec D 94 d9-N-EtFOSE-M



99 Perfluorododecanoic acid

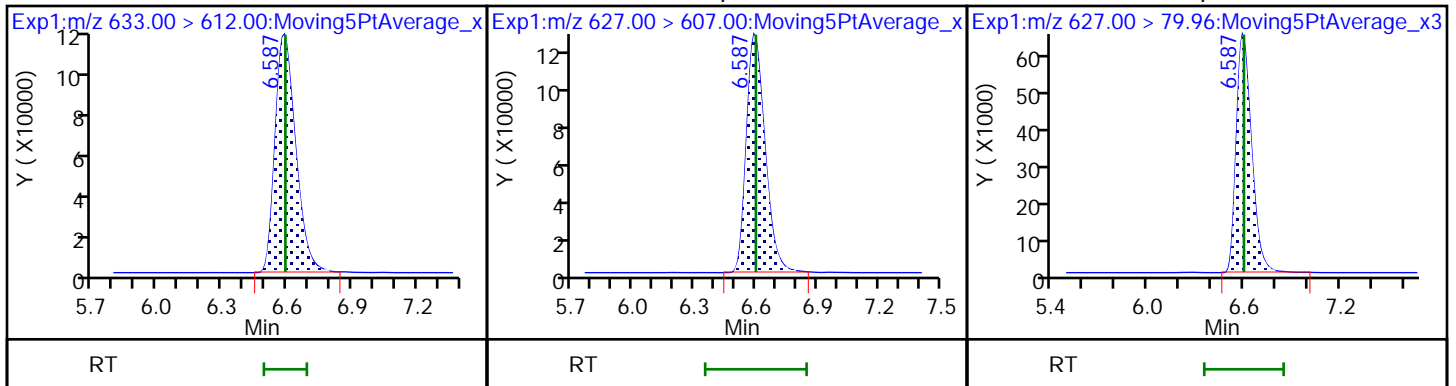
99 Perfluorododecanoic acid

D 98 13C2 PFDa



D 100 13C2 10:2 FTS

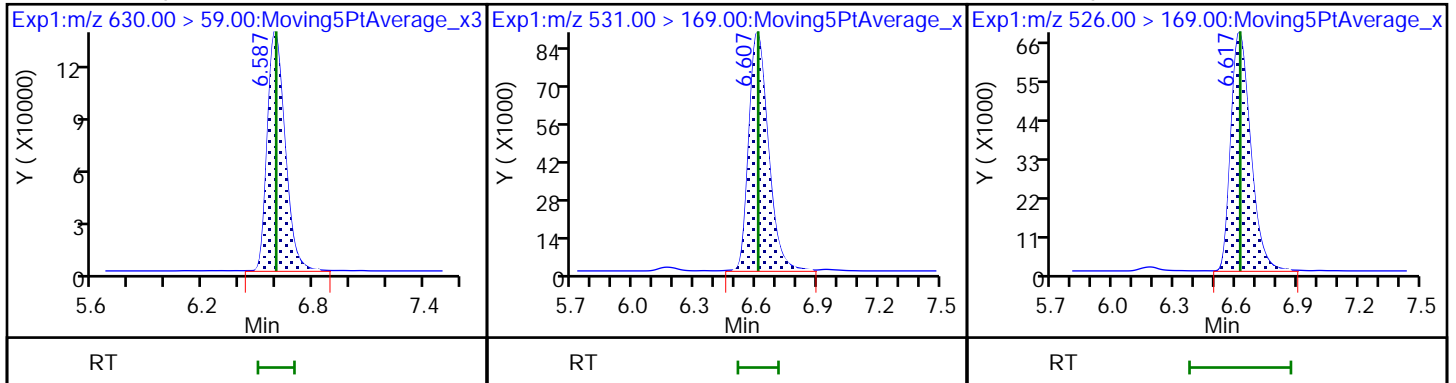
101 1H,1H,2H,2H-perfluorododecanesul 101 1H,1H,2H,2H-perfluorododecanesul



95 2-(N-ethylperfluoro-1-octanesulf

D 96 d-N-EtFOSA-M

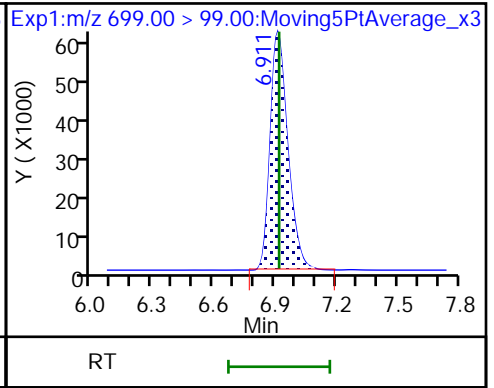
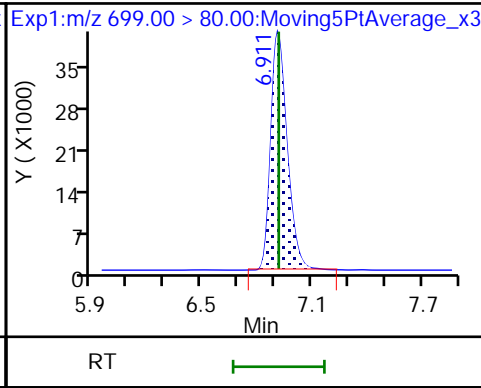
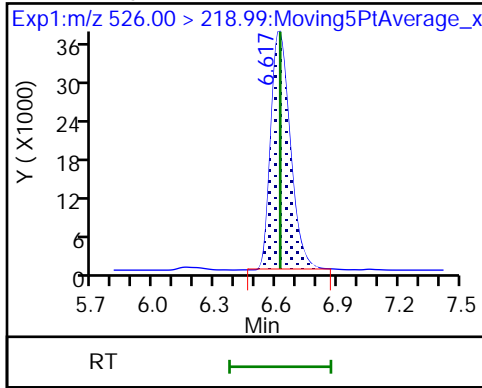
97 N-ethylperfluoro-1-octanesulfona



97 N-ethylperfluoro-1-octanesulfona

102 Perfluorododecanesulfonic acid (

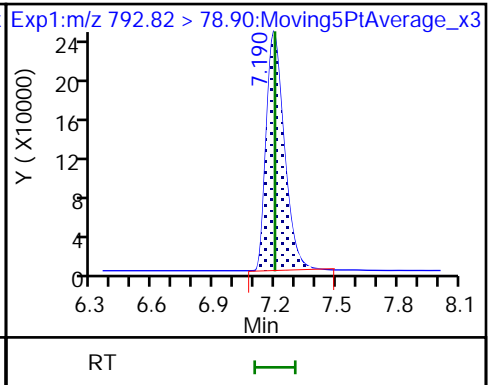
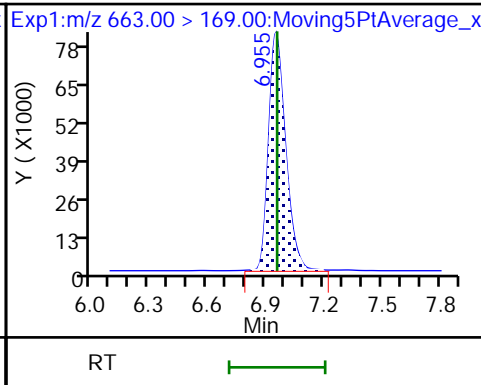
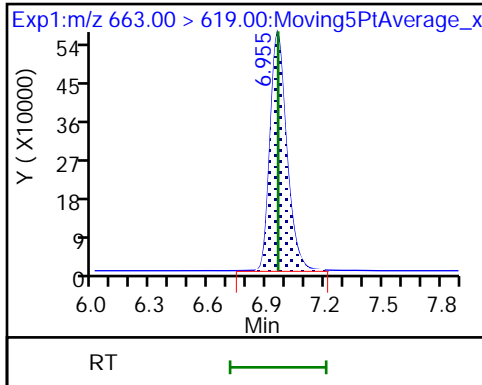
102 Perfluorododecanesulfonic acid (



103 Perfluorotridecanoic acid

103 Perfluorotridecanoic acid

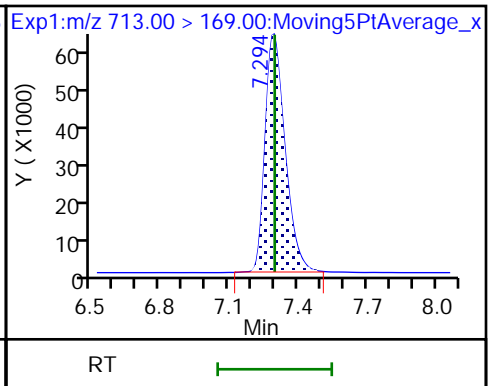
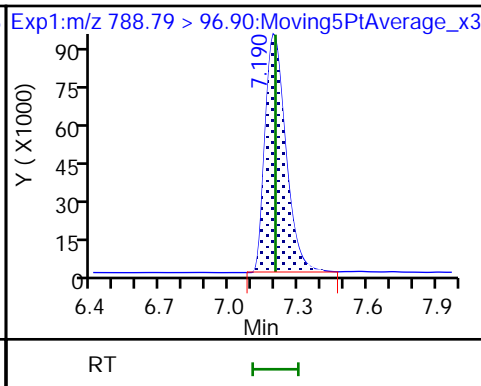
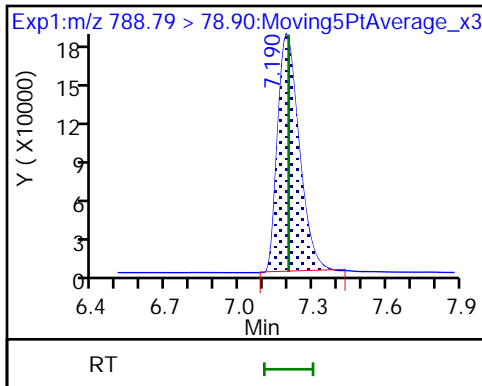
D 112 13C4-6:2 diPAP



114 6:2 diPAP

114 6:2 diPAP

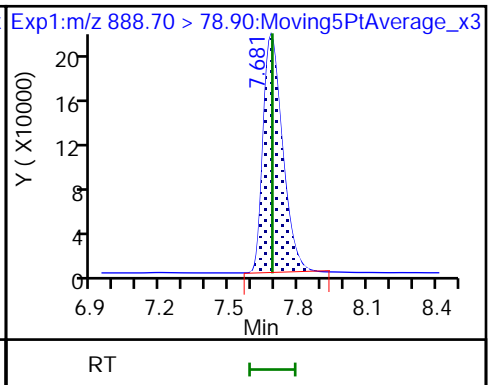
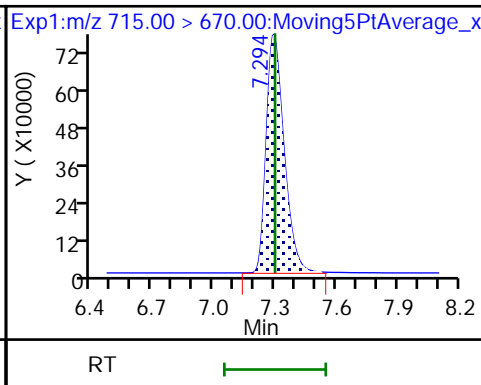
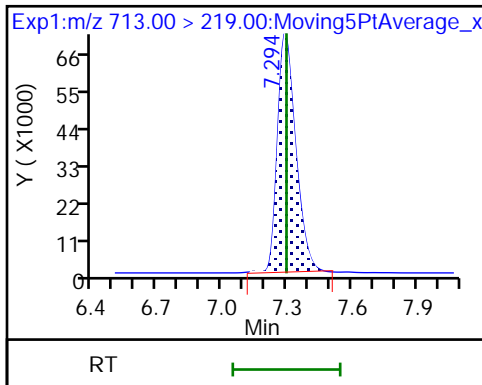
105 Perfluorotetradecanoic acid



105 Perfluorotetradecanoic acid

D 104 13C2 PFTeDA

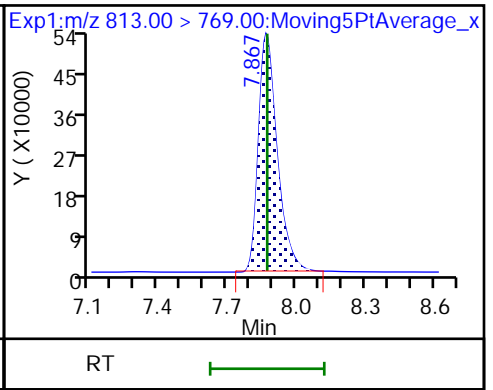
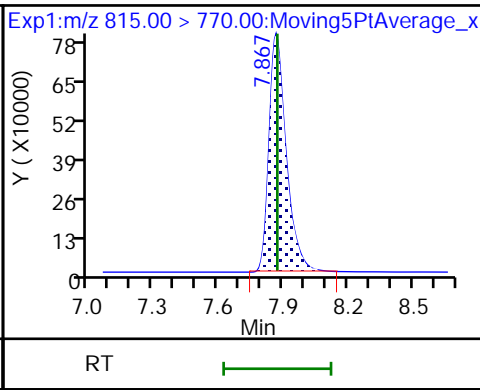
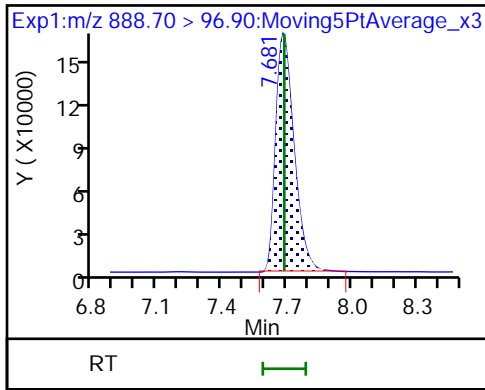
115 6:2/8:2 diPAP



115 6:2/8:2 diPAP

D 106 13C2 PFHxDA

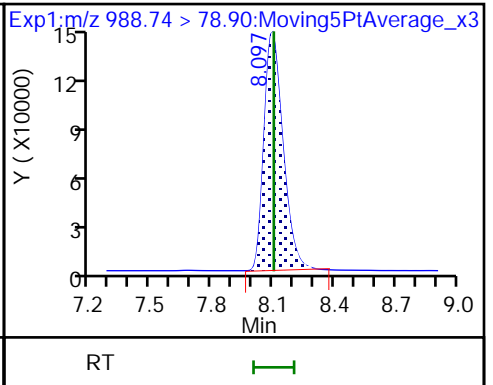
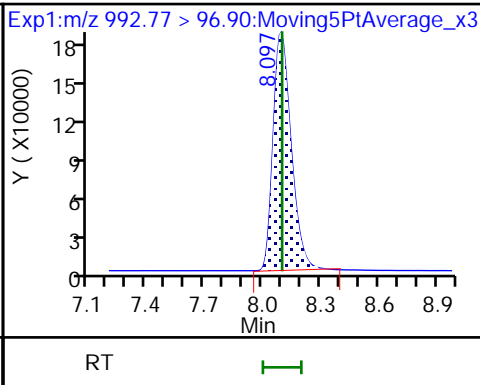
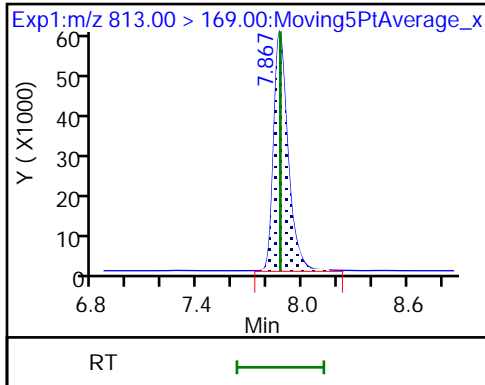
107 Perfluorohexadecanoic acid



107 Perfluorohexadecanoic acid

D 113 13C4-8:2 diPAP

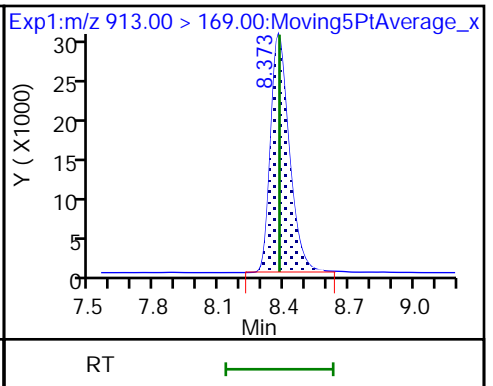
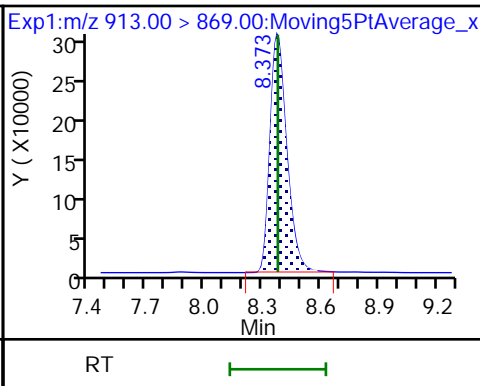
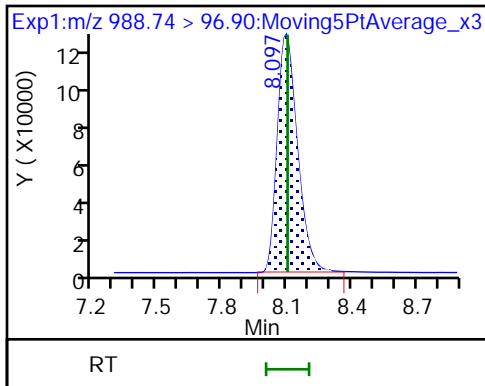
116 8:2 diPAP



116 8:2 diPAP

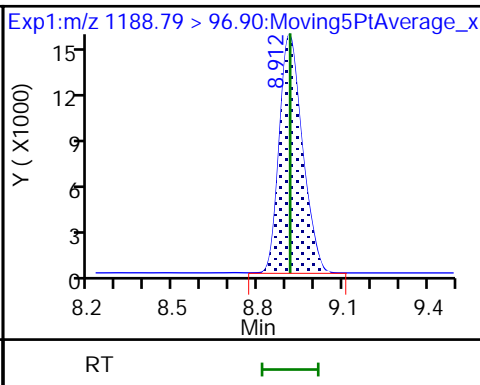
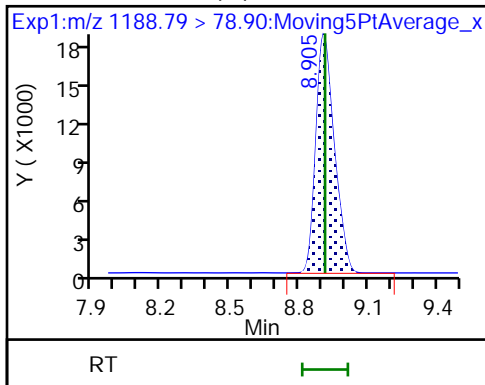
108 Perfluorooctadecanoic acid

108 Perfluorooctadecanoic acid



117 10:2 diPAP (M)

117 10:2 diPAP



Eurofins Sacramento

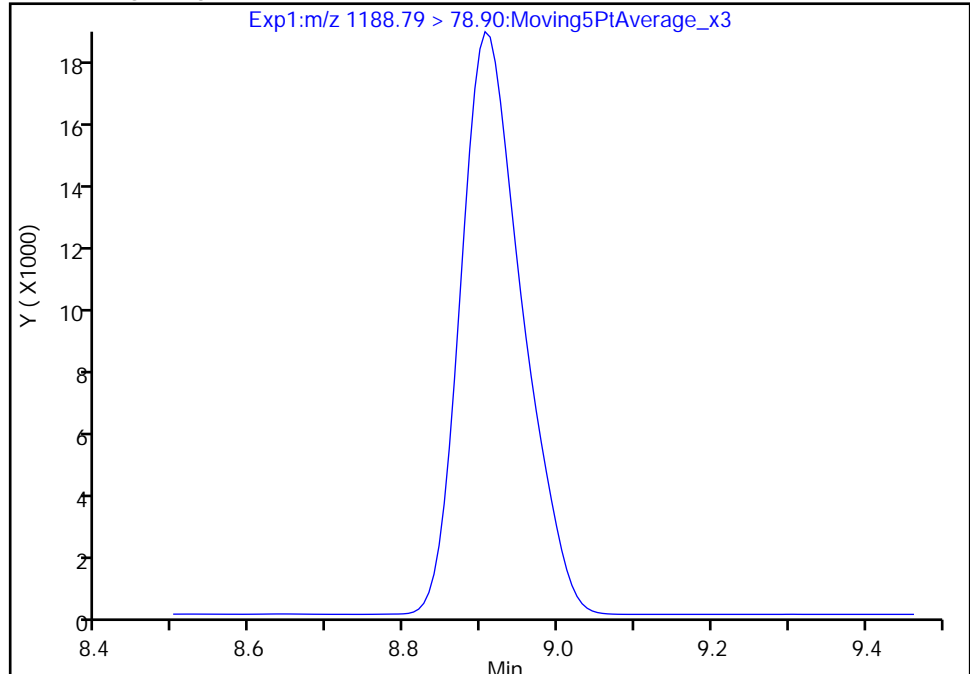
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_012.d
Injection Date: 21-Dec-2022 12:40:55 Instrument ID: A18
Lims ID: ICIS
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 4 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

117 10:2 diPAP, CAS: 1895-26-7

Signal: 1

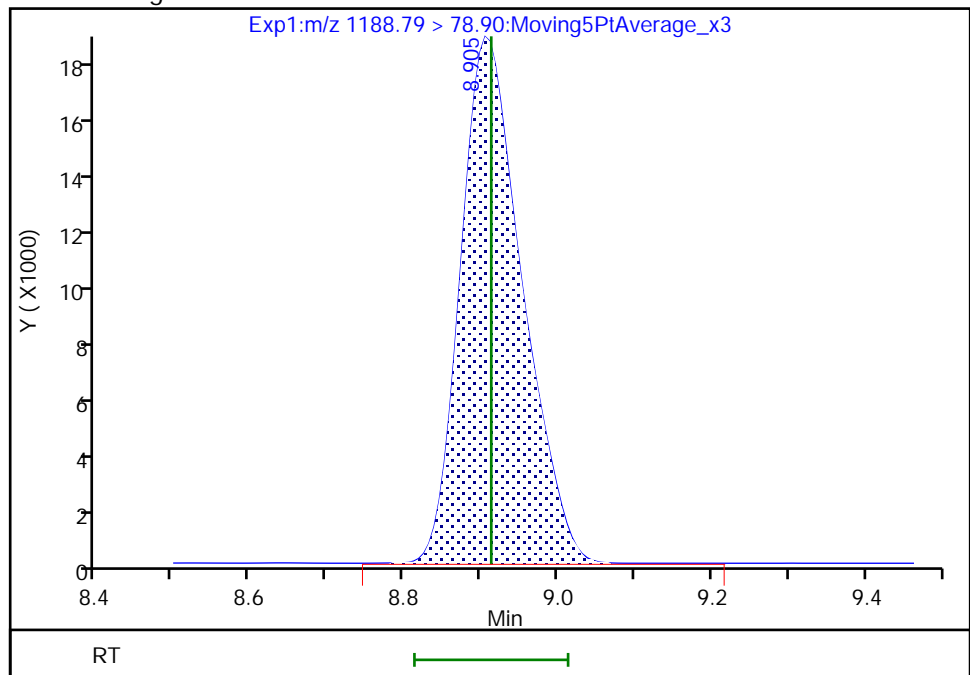
Not Detected
Expected RT: 8.91

Processing Integration Results



RT: 8.91
Area: 102291
Amount: 1.047420
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 22-Dec-2022 06:03:33

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_013.d
 Lims ID: IC L5
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 21-Dec-2022 12:51:01 ALS Bottle#: 5 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD 5 (09)
 Misc. Info.: Plate: 2 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Sublist: chrom-PFAS+_A18*sub3
 Method: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Dec-2022 07:22:31 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1678

First Level Reviewer: YS2U

Date: 21-Dec-2022 13:56:12

Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 MTP										
175.00 > 97.00	1.453	1.488	-0.035	0.544	767944	2.63		105	1661	
2 PPF Acid										
162.95 > 119.00	1.857	1.893	-0.036	0.696	7727891	2.43		100	565	
3 PFMOAA										
179.00 > 84.90	2.357	2.387	-0.030	0.883	5712893	2.55		102	1836	
4 R-PSDA										
441.00 > 241.00	2.552	2.573	-0.021	0.956	1405069	2.61		104	22101	
5 R-EVE										
405.00 > 217.00	2.560	2.577	-0.017	0.959	3470098	2.54		101	49631	
6 Hydrolyzed PSDA										
439.10 > 342.90	2.560	2.581	-0.021	0.959	4479780	2.61		105	55485	
D 8 13C4 PFBA										
217.00 > 172.00	2.670	2.688	-0.018	0.582	4999599	1.23		98.0	15688	
7 Perfluorobutanoic acid										
212.90 > 169.00	2.670	2.690	-0.020	1.000	11097322	2.50		99.8	298	
10 PMPA										
229.00 > 185.00	2.741	2.760	-0.019	1.027	12063658	2.62		105	7835	
11 PFPrS										
249.10 > 80.00	2.750	2.771	-0.021	0.889	5377367	2.31		100	25707	
12 NVHOS										
297.00 > 135.00	2.768	2.790	-0.022	1.037	308696	2.67		107	6786	
13 PFECA F										
229.00 > 85.00	2.805	2.829	-0.024	0.920	6202101	2.64		106	20404	
14 PFO2HxA										
245.00 > 85.00	2.953	2.976	-0.023	0.969	1319068	2.69		107	5009	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 16 13C5 PFPeA										
267.90 > 223.00	3.048	3.068	-0.020	0.664	4465695	1.22		97.8	30370	
15 Perfluoropentanoic acid										
262.90 > 219.00	3.048	3.069	-0.021	1.000	9355171	2.51		100	16788	
17 3:3 FTCA										
241.00 > 177.10	3.058	3.075	-0.017	0.988	502851	2.63	Target=1.46	105	4794	
241.00 > 116.90	3.058	3.075	-0.017	0.988	387146		1.30(0.73-2.18)	105	2467	
19 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.095	3.111	-0.016	1.000	5603815	2.29	Target=2.33	103	16518	
298.90 > 99.00	3.095	3.111	-0.016	1.000	2359707		2.37(1.16-3.49)	103	11194	
D 18 13C3 PFBS										
301.90 > 80.00	3.095	3.111	-0.016	0.674	2899206	1.15		98.9	17453	
20 PEPA										
278.90 > 234.90	3.161	3.178	-0.017	1.037	10356479	2.61		104	1986	
21 PFECA A										
278.95 > 84.90	3.181	3.198	-0.017	1.043	10404283	2.62		105	54693	
22 PES										
314.80 > 135.00	3.269	3.292	-0.023	1.056	18913470	2.33		104	107343	
23 FBSA										
297.90 > 78.00	3.315	3.338	-0.023	0.591	1413302	2.57		103	11564	
24 PFECA B										
295.20 > 201.00	3.422	3.438	-0.016	0.980	1722749	2.47		98.9	21627	
26 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.440	3.461	-0.021	1.000	3184643	2.41	Target=1.98	103	46507	
327.00 > 79.96	3.440	3.461	-0.021	1.000	1630922		1.95(0.99-2.97)	103	14420	
D 25 M2-4:2 FTS										
329.00 > 81.00	3.440	3.463	-0.023	0.749	662219	1.13		96.3	3741	
D 27 13C2 PFHxA										
315.00 > 270.00	3.493	3.513	-0.020	0.761	5028123	1.25		100	35498	
28 Perfluorohexanoic acid										
313.00 > 269.00	3.493	3.514	-0.021	1.000	9388581	2.48	Target=13.54	99.1	10908	
313.00 > 119.00	3.493	3.514	-0.021	1.000	700802		13.40(6.77-20.31)	99.1	6180	
29 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.520	3.545	-0.025	1.137	4861309	2.43	Target=3.08	103	31208	
349.00 > 99.00	3.529	3.545	-0.016	1.140	1549106		3.14(1.54-4.63)	103	27094	
30 PFO3OA										
311.10 > 85.20	3.583	3.598	-0.015	1.026	554129	2.49		99.8	7880	
31 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.660	3.685	-0.025	0.997	352018	2.55	Target=0.84	102	13778	
285.00 > 185.00	3.670	3.685	-0.015	1.000	404107		0.87(0.42-1.25)	102	4336	
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.670	3.685	-0.015	0.800	162996	1.21		96.6	5180	
33 R-PSDCA										
397.00 > 217.00	3.976	4.000	-0.024	0.987	3362349	2.72		109	46414	
36 Perfluoroheptanoic acid										
363.00 > 319.00	4.029	4.047	-0.018	1.000	9719521	2.54	Target=3.56	102	13261	
363.00 > 169.00	4.029	4.047	-0.018	1.000	2716515		3.58(1.78-5.34)	102	12289	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 35 13C4 PFHpA										
367.00 > 322.00	4.029	4.048	-0.019	0.878	5250843	1.23		98.6	34969	
38 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.037	4.060	-0.023	0.998	3637958	2.28	Target=3.26	100	22783	
399.00 > 99.00	4.037	4.060	-0.023	0.998	1045580		3.48(1.63-4.88)	100	5613	
D 37 18O2 PFHxS										
403.00 > 84.00	4.046	4.063	-0.017	0.882	1955429	1.17		99.3	17880	
34 Hydro-EVE Acid										
427.00 > 282.90	4.063	4.078	-0.015	1.008	14830278	2.55		102	63257	
39 Hydro-PS Acid										
463.00 > 263.00	4.096	4.114	-0.018	1.017	13476928	2.60		104	180792	
41 5:3 FTCA										
340.88 > 236.90	4.105	4.127	-0.022	0.979	1633097	2.50	Target=1.10	100	22066	
340.88 > 216.90	4.105	4.127	-0.022	0.979	1477632		1.11(0.55-1.65)	100	10715	
40 DONA										
377.00 > 251.00	4.105	4.128	-0.023	0.799	17713495	2.45	Target=2.23	104	42462	
377.00 > 85.00	4.114	4.128	-0.014	0.800	7902268		2.24(1.11-3.34)	104	790	
42 PFECA G										
378.90 > 184.90	4.131	4.158	-0.027	0.985	5191315	2.73		109	22493	
D 44 13C-6:2 FTUCA										
358.86 > 293.90	4.165	4.185	-0.020	0.908	3013717	1.19		95.4	27645	
43 6:2 FTUCA										
356.86 > 292.90	4.165	4.188	-0.023	1.000	6265675	2.57	Target=12.98	103	22447	
356.86 > 243.00	4.165	4.188	-0.023	1.000	468032		13.39(6.49-19.46)	103	14234	
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.192	4.212	-0.020	0.913	243796	1.25		99.7	1367	
45 6:2 FTCA										
377.10 > 313.10	4.192	4.217	-0.025	1.000	121929	2.39	Target=0.65	95.7	3550	
377.10 > 63.00	4.192	4.217	-0.025	1.000	198293		0.61(0.33-0.98)	95.7	5060	
47 PFO4DA										
376.90 > 85.00	4.307	4.320	-0.013	1.069	643652	2.76		111	0.6	
48 PS Acid										
442.80 > 146.80	4.395	4.418	-0.023	0.956	5014718	2.69		108	21569	
49 EVE Acid										
407.00 > 262.90	4.404	4.425	-0.021	0.958	15183952	2.65		106	43757	
50 FHxSA										
397.90 > 78.00	4.493	4.515	-0.022	0.801	7384003	2.49		99.5	18770	
51 PFECHS										
460.80 > 380.90	4.520	4.535	-0.015	0.983	9572203	2.43	Target=2.05	105	33612	
460.80 > 98.90	4.511	4.535	-0.024	0.981	4751934		2.01(1.03-3.08)	105	50374	
53 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.555	4.578	-0.023	0.998	2945376	2.50	Target=2.31	105	22583	
427.00 > 79.96	4.555	4.578	-0.023	0.998	1291125		2.28(1.16-3.47)	105	8669	
D 52 M2-6:2 FTS										
429.00 > 81.00	4.564	4.580	-0.016	0.995	688289	1.11		93.8	8813	
\$ 54 13C8 PFOA										
421.00 > 376.00	4.589	4.613	-0.024	1.000	6696405	1.21		96.8	18035	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 56 13C4 PFOA										
417.00 > 372.00	4.598	4.613	-0.015	1.002	5597131	1.20		96.2	23373	
58 Perfluorooctanoic acid										
413.00 > 369.00	4.589	4.614	-0.025	0.998	10525136	2.52	Target=2.69	101	6600	
413.00 > 169.00	4.598	4.614	-0.016	1.000	3839462		2.74(1.35-4.04)	101	20497	
* 55 13C2 PFOA										
415.00 > 370.00	4.589	4.615	-0.026		5758465	1.25			21047	
57 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.598	4.620	-0.022	0.895	3341193	2.56	Target=4.67	107	21949	
449.00 > 99.00	4.598	4.620	-0.022	0.895	687029		4.86(2.33-7.00)	107	13377	
59 TAF										
442.90 > 85.00	5.012	5.041	-0.029	1.090	439405	2.62		105	7597	
\$ 60 13C8 PFOS										
507.00 > 99.00	5.139	5.161	-0.022	1.120	575383	1.20		100	7043	
D 61 13C4 PFOS										
503.00 > 80.00	5.139	5.162	-0.023	1.120	1301599	1.16		96.8	6189	
62 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.146	5.163	-0.017	1.001	2749473	2.44	Target=5.09	105	4521	
499.00 > 99.00	5.139	5.163	-0.024	1.000	560219		4.91(2.55-7.64)	105	5702	
D 64 13C5 PFNA										
468.00 > 423.00	5.146	5.170	-0.024	1.121	5467050	1.20		96.0	30372	
63 Perfluorononanoic acid										
463.00 > 419.00	5.153	5.173	-0.020	1.001	9814873	2.59	Target=7.64	103	10078	
463.00 > 169.00	5.153	5.173	-0.020	1.001	1312433		7.48(3.82-11.46)	103	20830	
65 7:3 FTCA										
441.00 > 337.00	5.277	5.297	-0.020	0.988	1886301	2.60	Target=1.18	104	4548	
441.00 > 317.00	5.277	5.297	-0.020	0.988	1581039		1.19(0.59-1.77)	104	5556	
D 67 13C-8:2 FTUCA										
458.86 > 393.90	5.314	5.340	-0.026	1.158	3229578	1.19		95.1	12949	
66 8:2 FTUCA										
456.86 > 392.90	5.324	5.342	-0.018	1.002	6228684	2.53	Target=39.03	101	22079	
456.86 > 343.00	5.314	5.342	-0.028	1.000	179713		34.66(19.51-58.54)	101	3772	
69 8:2 FTCA										
477.00 > 393.10	5.342	5.361	-0.019	1.000	381714	2.75	Target=2.58	110	845	
477.00 > 63.20	5.342	5.361	-0.019	1.000	128499		2.97(1.29-3.87)	110	3464	
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.342	5.363	-0.021	1.164	171395	1.17		93.9	1134	
70 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	5.452	5.470	-0.018	1.061	6563064	2.42		104	80742	
D 72 13C8 FOSA										
506.00 > 78.00	5.607	5.628	-0.021	1.222	1857541	1.25		99.6	15382	
71 Perfluorooctanesulfonamide										
498.00 > 78.00	5.607	5.628	-0.021	1.000	3608992	2.55		102	13415	
73 Perfluorononanesulfonic acid										
549.00 > 80.00	5.648	5.672	-0.024	1.099	2188334	2.59	Target=2.73	108	20983	
549.00 > 99.00	5.648	5.672	-0.024	1.099	747277		2.93(1.37-4.10)	108	8603	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.655	5.681	-0.026	1.232	724408	1.16		97.1	11524	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	5.655	5.683	-0.028	1.000	2449746	2.46	Target=2.39	103	49128	
527.00 > 79.96	5.663	5.683	-0.020	1.001	1032656		2.37(1.19-3.58)	103	9268	
D 76 13C2 PFDA										
515.00 > 470.00	5.663	5.690	-0.027	1.234	5434160	1.24		98.9	48228	
77 Perfluorodecanoic acid										
513.00 > 469.00	5.663	5.691	-0.028	1.000	7411363	2.59	Target=7.32	104	19869	
513.00 > 169.00	5.671	5.691	-0.020	1.001	1027831		7.21(3.66-10.98)	104	16717	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.892	5.917	-0.025	1.284	755309	1.24		99.2	3020	
79 N-methylperfluorooctanesulfonami										
570.00 > 419.00	5.900	5.923	-0.023	1.001	1172422	2.45	Target=0.78	98.2	4521	M
570.00 > 483.00	5.900	5.923	-0.023	1.001	1521485		0.77(0.39-1.18)	98.2	4521	M
80 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.107	6.133	-0.026	1.188	2099043	2.66	Target=3.04	110	27242	
599.00 > 99.00	6.107	6.133	-0.026	1.188	704353		2.98(1.52-4.56)	110	10058	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.138	6.158	-0.020	1.338	756881	1.24		99.1	2988	
D 82 13C2 PFUnA										
565.00 > 520.00	6.138	6.163	-0.025	1.338	5124120	1.24		99.5	36787	
83 Perfluoroundecanoic acid										
563.00 > 519.00	6.138	6.163	-0.025	1.000	6995780	2.50	Target=8.03	99.8	23022	
563.00 > 169.00	6.138	6.163	-0.025	1.000	891086		7.85(4.02-12.05)	99.8	16907	
84 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	6.149	6.168	-0.019	1.002	1195968	2.63	Target=0.76	105	5940	
584.00 > 526.10	6.138	6.168	-0.030	1.000	1511241		0.79(0.38-1.14)	105	6762	
D 89 13C-10:2 FTUCA										
558.86 > 493.90	6.304	6.324	-0.020	1.374	3027785	1.24		98.8	10879	
90 10:2 FTUCA										
556.86 > 492.90	6.304	6.326	-0.022	1.000	4517554	2.64		106	39863	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.304	6.327	-0.023	1.374	913617	1.25		99.8	5244	
86 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	6.322	6.341	-0.019	1.003	1889290	2.62		105	9475	
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.313	6.342	-0.029	1.376	97732	1.19		95.4	869	
92 10:2 FTCA										
576.80 > 493.00	6.322	6.342	-0.020	1.001	201176	2.67	Target=2.24	107	565	
576.80 > 63.10	6.313	6.342	-0.029	1.000	74754		2.69(1.12-3.36)	107	310	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.331	6.348	-0.017	1.379	622786	1.28		103	1821	
88 NMeFOSA										
512.00 > 169.00	6.331	6.355	-0.024	1.000	1188411	2.46	Target=1.97	98.4	1440	
512.00 > 218.99	6.331	6.355	-0.024	1.000	588582		2.02(0.99-2.96)	98.4	2706	
93 11-Chloroeicosafuoro-3-oxaundec										
631.00 > 451.00	6.357	6.381	-0.024	1.237	8896761	2.57		109	42264	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.558	6.580	-0.022	1.429	1048354	1.24		99.0	5194	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
99 Perfluorododecanoic acid										
613.00 > 569.00	6.558	6.582	-0.024	1.000	10014790	2.51	Target=7.94	100	17233	
613.00 > 169.00	6.558	6.582	-0.024	1.000	1248143		8.02(3.97-11.90)	100	21118	
D 98 13C2 PFDaA										
615.00 > 570.00	6.558	6.582	-0.024	1.429	5788906	1.28		102	21570	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.568	6.592	-0.024	1.431	700116	1.21		100.0	13304	
101 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	6.578	6.597	-0.019	1.002	1805724	2.39	Target=1.64	98.8	11775	
627.00 > 79.96	6.578	6.597	-0.019	1.002	1089238		1.66(0.82-2.46)	98.8	18442	
95 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	6.578	6.599	-0.021	1.003	2211695	2.78		111	16010	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.588	6.609	-0.021	1.435	569194	1.26		101	1304	
97 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	6.598	6.619	-0.021	1.002	1149582	2.70	Target=1.81	108	2465	
526.00 > 218.99	6.598	6.619	-0.021	1.002	625261		1.84(0.90-2.71)	108	2312	
102 Perfluorododecanesulfonic acid (
699.00 > 80.00	6.894	6.918	-0.024	1.341	785495	2.89	Target=0.69	119	11310	
699.00 > 99.00	6.894	6.918	-0.024	1.341	1130871		0.69(0.34-1.03)	119	13955	
103 Perfluorotridecanoic acid										
663.00 > 619.00	6.938	6.959	-0.021	1.058	9848838	2.71	Target=6.68	108	16443	
663.00 > 169.00	6.938	6.959	-0.021	1.058	1409095		6.99(3.34-10.02)	108	10296	
D 112 13C4-6:2 diPAP										
792.82 > 78.90	7.171	7.198	-0.027	1.563	1421678	1.08		88.6	3136	
114 6:2 diPAP										
788.79 > 78.90	7.180	7.200	-0.020	1.001	2848794	2.53	Target=1.92	104	3585	
788.79 > 96.90	7.180	7.200	-0.020	1.001	1602721		1.78(0.96-2.88)	104	3663	
105 Perfluorotetradecanoic acid										
713.00 > 169.00	7.276	7.297	-0.021	1.000	874377	2.51	Target=0.92	100	5568	
713.00 > 219.00	7.276	7.297	-0.021	1.000	933561		0.94(0.46-1.38)	100	6780	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.276	7.298	-0.022	1.585	4445136	1.13		90.5	8073	
115 6:2/8:2 diPAP										
888.70 > 78.90	7.661	7.687	-0.026	1.068	3084577	2.73	Target=1.37	112	6296	
888.70 > 96.90	7.661	7.687	-0.026	1.068	2215692		1.39(0.69-2.06)	112	5389	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.850	7.873	-0.023	1.711	4399767	1.29		103	7316	
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.850	7.873	-0.023	1.000	7649456	2.52	Target=8.78	101	6822	
813.00 > 169.00	7.850	7.873	-0.023	1.000	900773		8.49(4.39-13.16)	101	11779	
D 113 13C4-8:2 diPAP										
992.77 > 96.90	8.071	8.100	-0.029	1.759	1108137	1.16		94.7	2418	
116 8:2 diPAP										
988.74 > 78.90	8.082	8.102	-0.020	1.001	2090344	2.46	Target=1.17	101	3494	
988.74 > 96.90	8.082	8.102	-0.020	1.001	1857473		1.13(0.59-1.76)	101	3847	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
108 Perfluorooctadecanoic acid										
913.00 > 869.00	8.352	8.378	-0.026	1.064	4471764	2.66	Target=10.07	106	3487	
913.00 > 169.00	8.352	8.378	-0.026	1.064	456193		9.80(5.04-15.11)	106	4145	
117 10:2 diPAP										
1188.79 > 78.90	8.890	8.913	-0.023	1.101	317686	3.61	Target=1.10	144	7874	a
1188.79 > 96.90	8.890	8.913	-0.023	1.101	294274		1.08(0.55-1.65)	144	7376	a

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

LCPFC+6C_LL5_00009

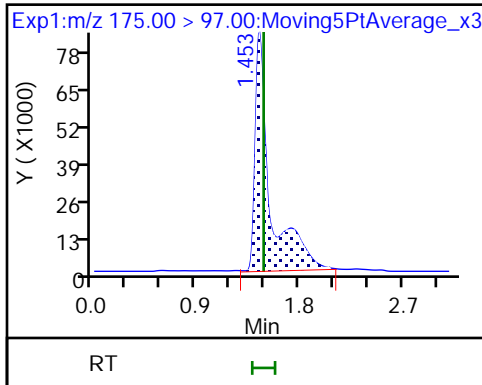
Amount Added: 1.00

Units: mL

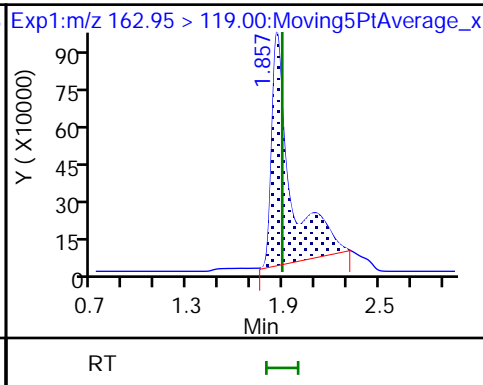
Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_013.d
Injection Date: 21-Dec-2022 12:51:01 Instrument ID: A18
Lims ID: IC L5
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL

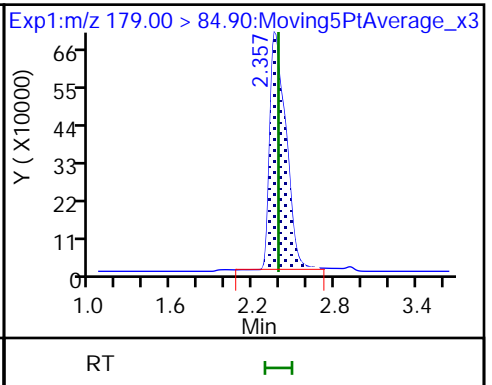
1 MTP



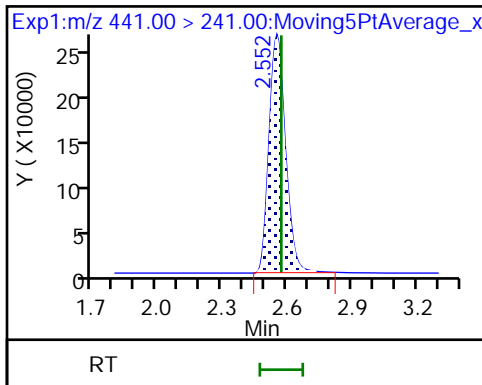
2 PPF Acid



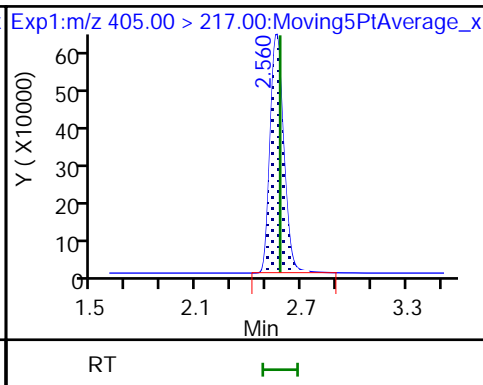
3 PFMOAA



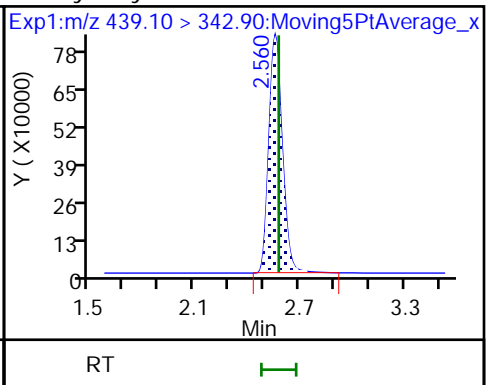
4 R-PSDA



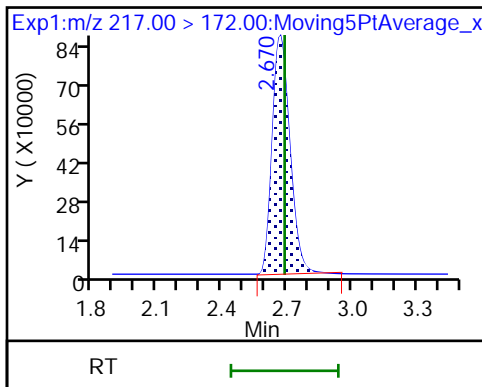
5 R-EVE



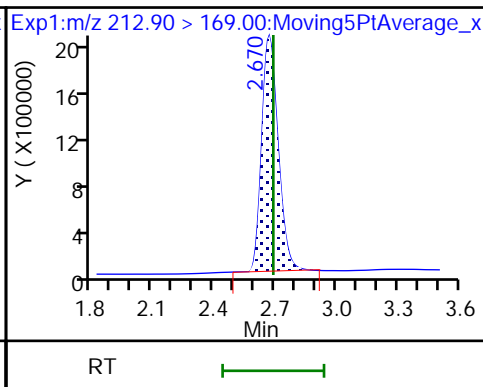
6 Hydrolyzed PSDA



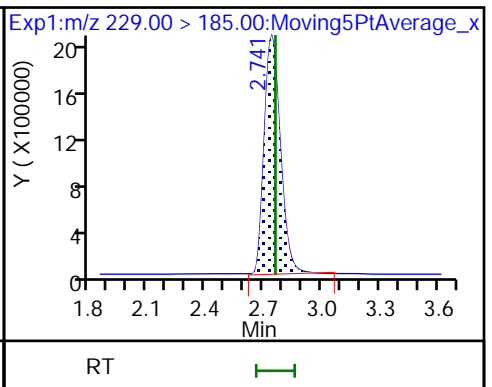
D 8 13C4 PFBA



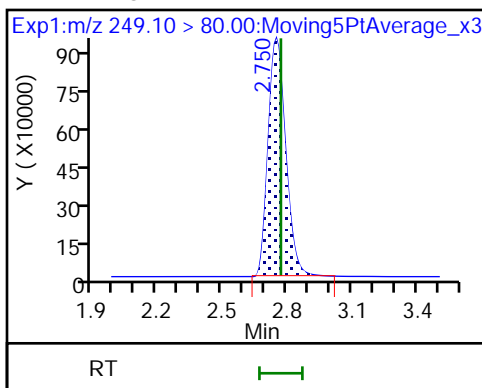
7 Perfluorobutanoic acid



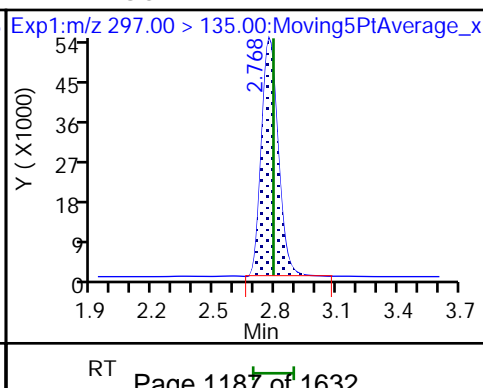
10 PMPA



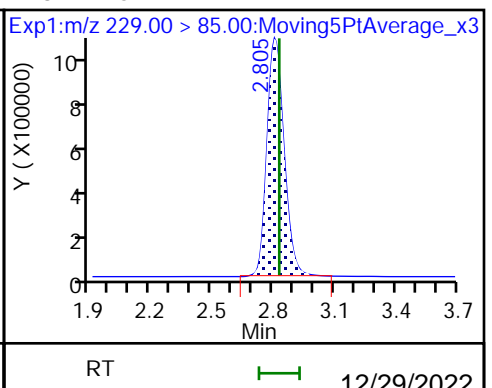
11 PFPrS

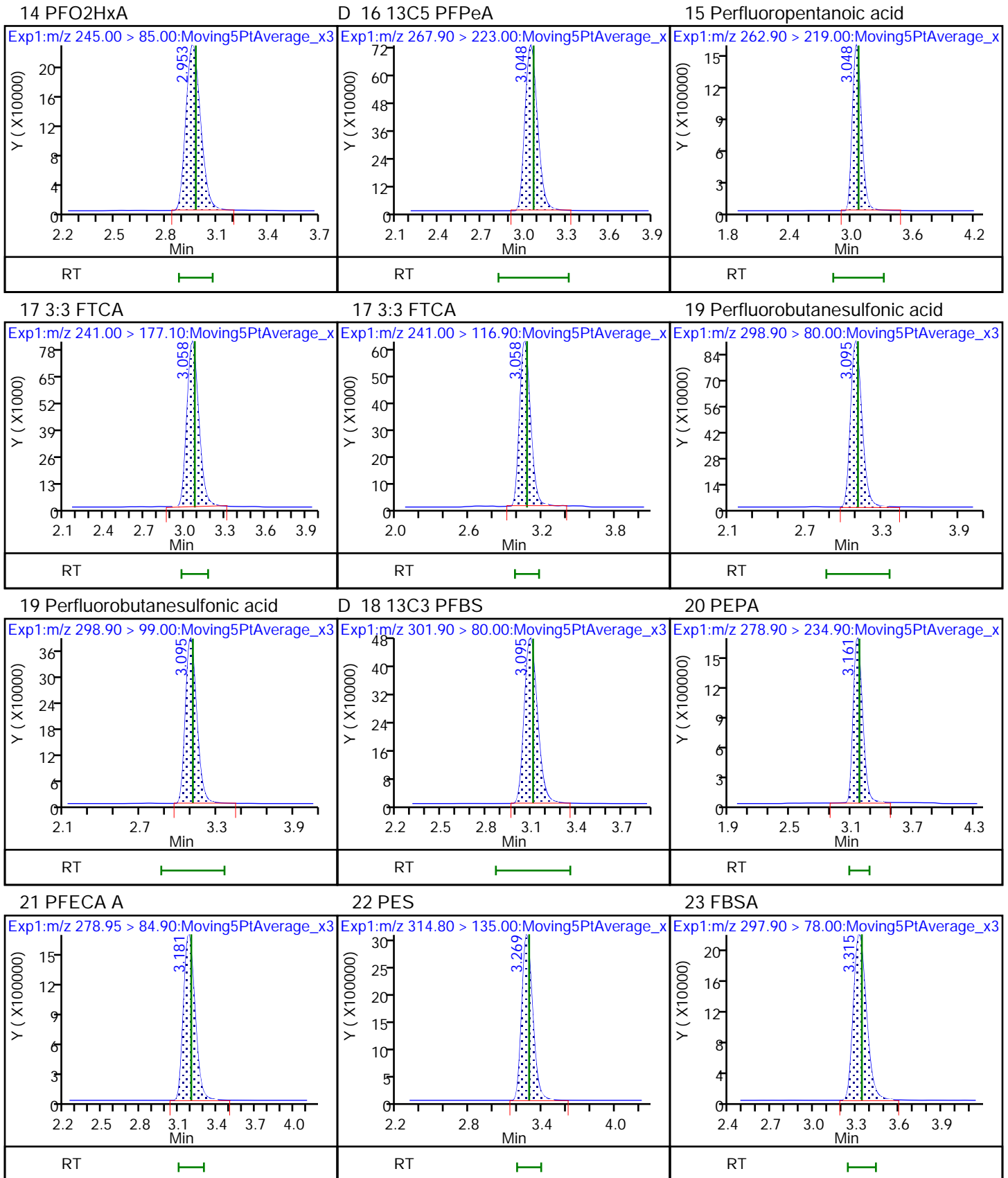


12 NVHOS



13 PFECA F

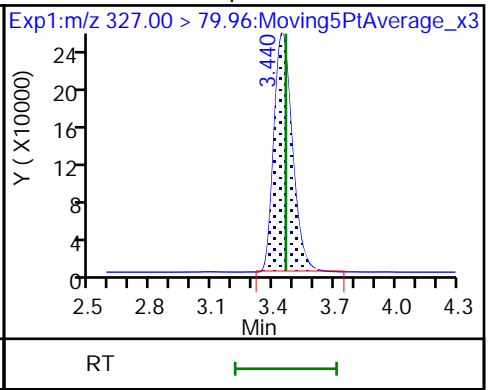
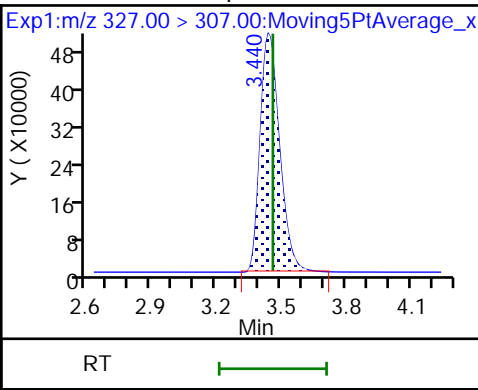
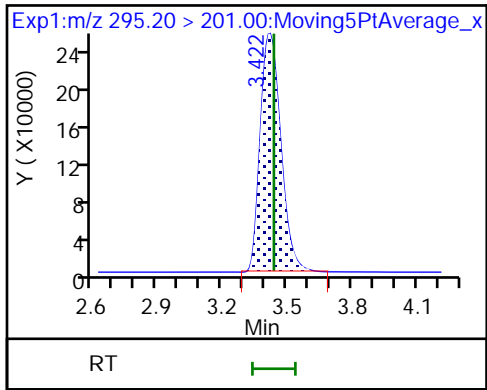




24 PFECA B

26 1H,1H,2H,2H-perfluorohexanesulfo

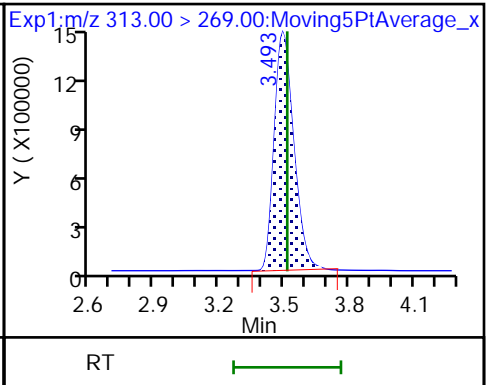
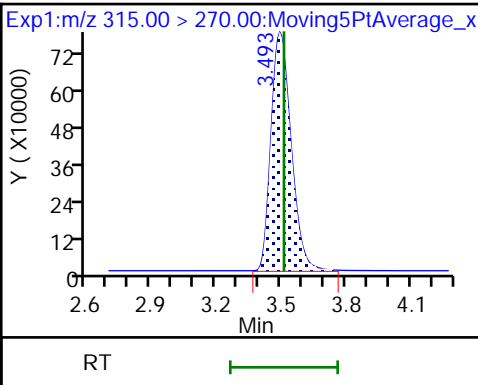
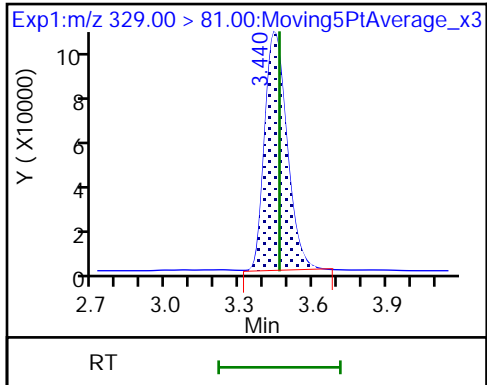
26 1H,1H,2H,2H-perfluorohexanesulfo



D 25 M2-4:2 FTS

D 27 13C2 PFHxA

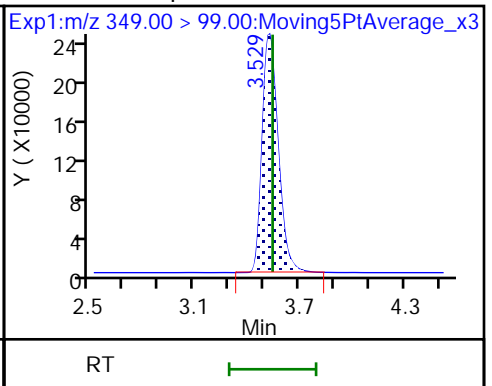
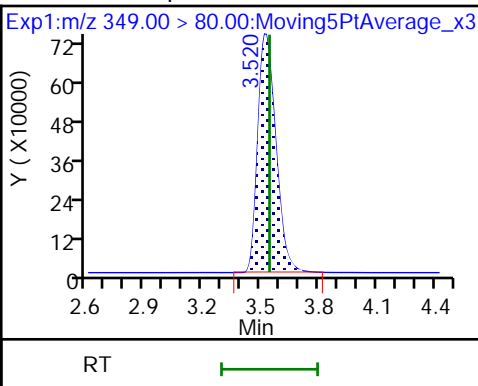
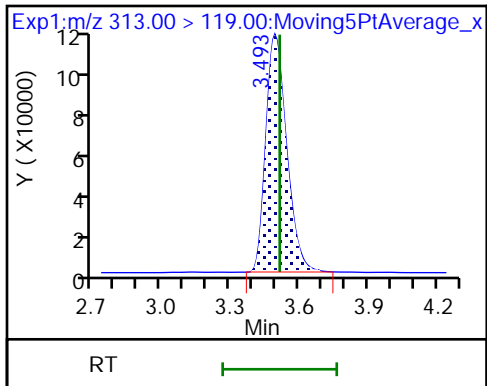
28 Perfluorohexanoic acid



28 Perfluorohexanoic acid

29 Perfluoropentanesulfonic acid

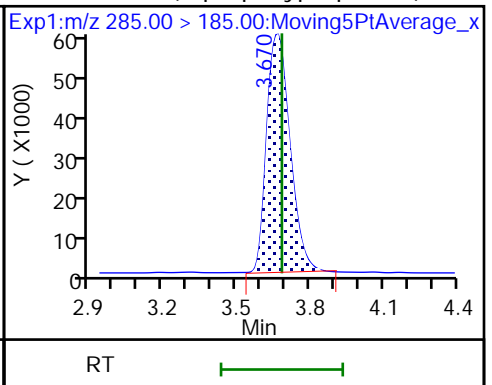
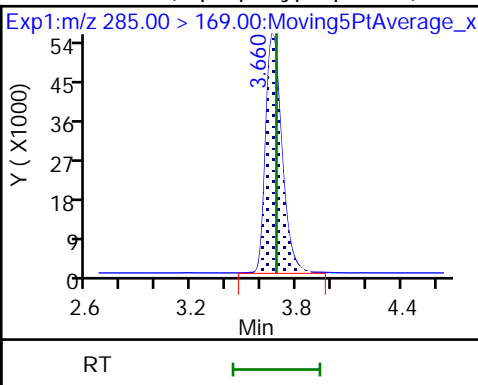
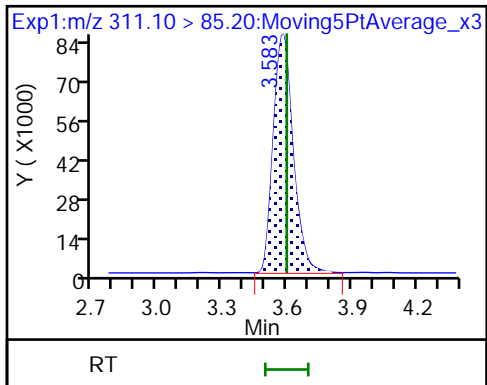
29 Perfluoropentanesulfonic acid



30 PFO3OA

31 Perfluoro(2-propoxypropanoic) ac

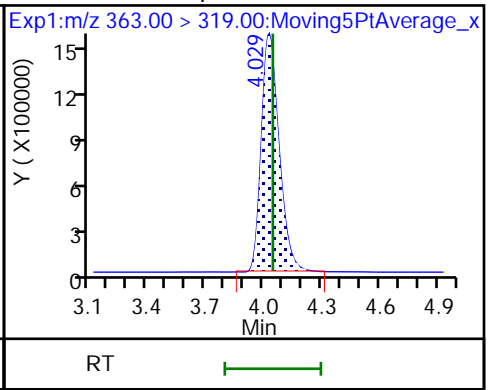
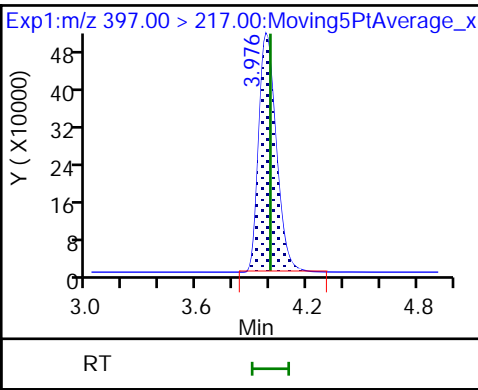
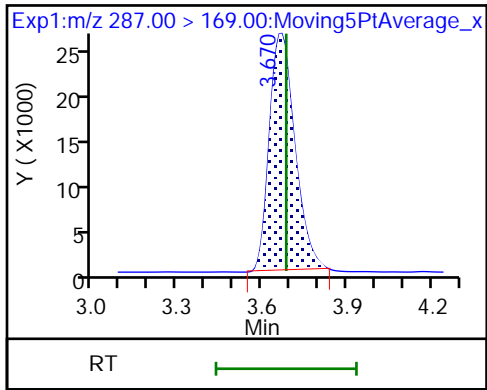
31 Perfluoro(2-propoxypropanoic) ac



D 32 13C3 HFPO-DA

33 R-PSDCA

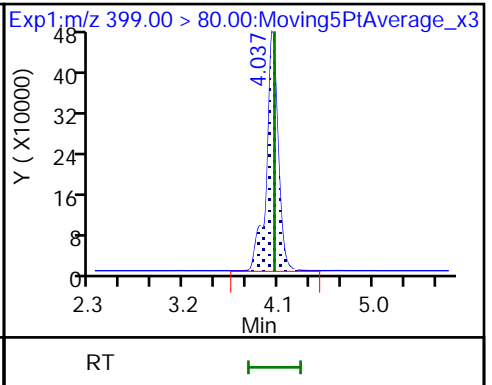
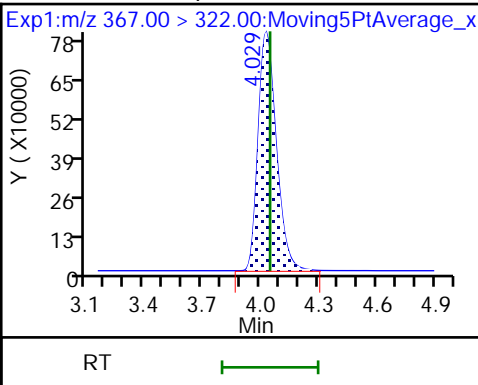
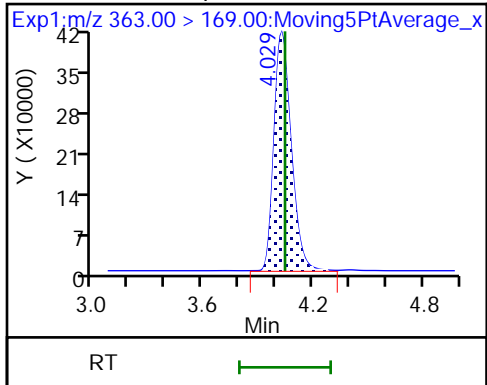
36 Perfluoroheptanoic acid



36 Perfluoroheptanoic acid

D 35 13C4 PFHpA

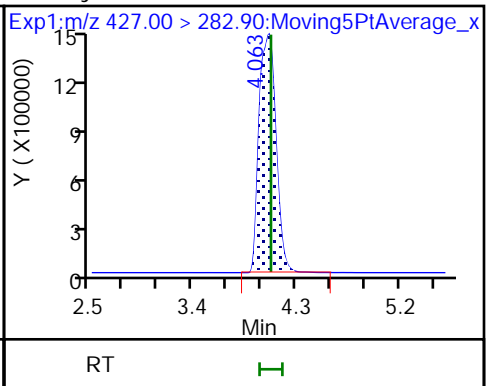
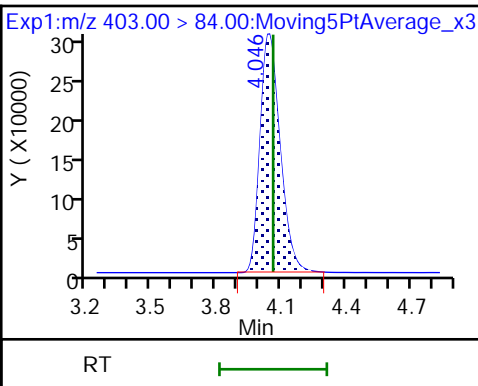
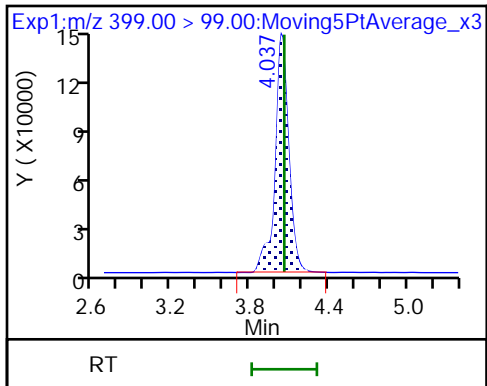
38 Perfluorohexanesulfonic acid



38 Perfluorohexanesulfonic acid

D 37 18O2 PFHxS

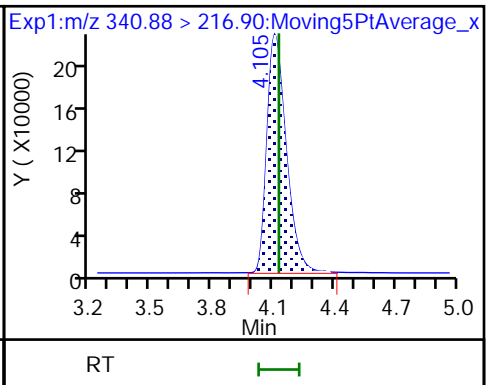
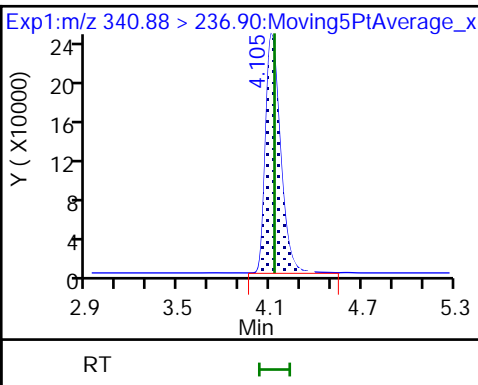
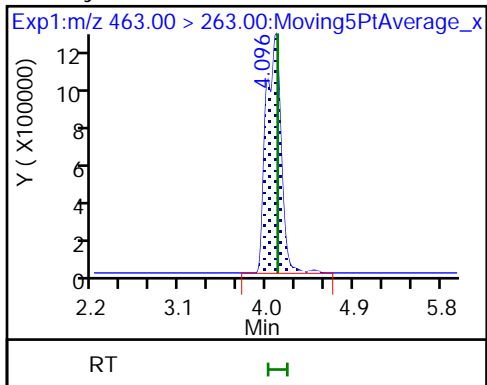
34 Hydro-EVE Acid

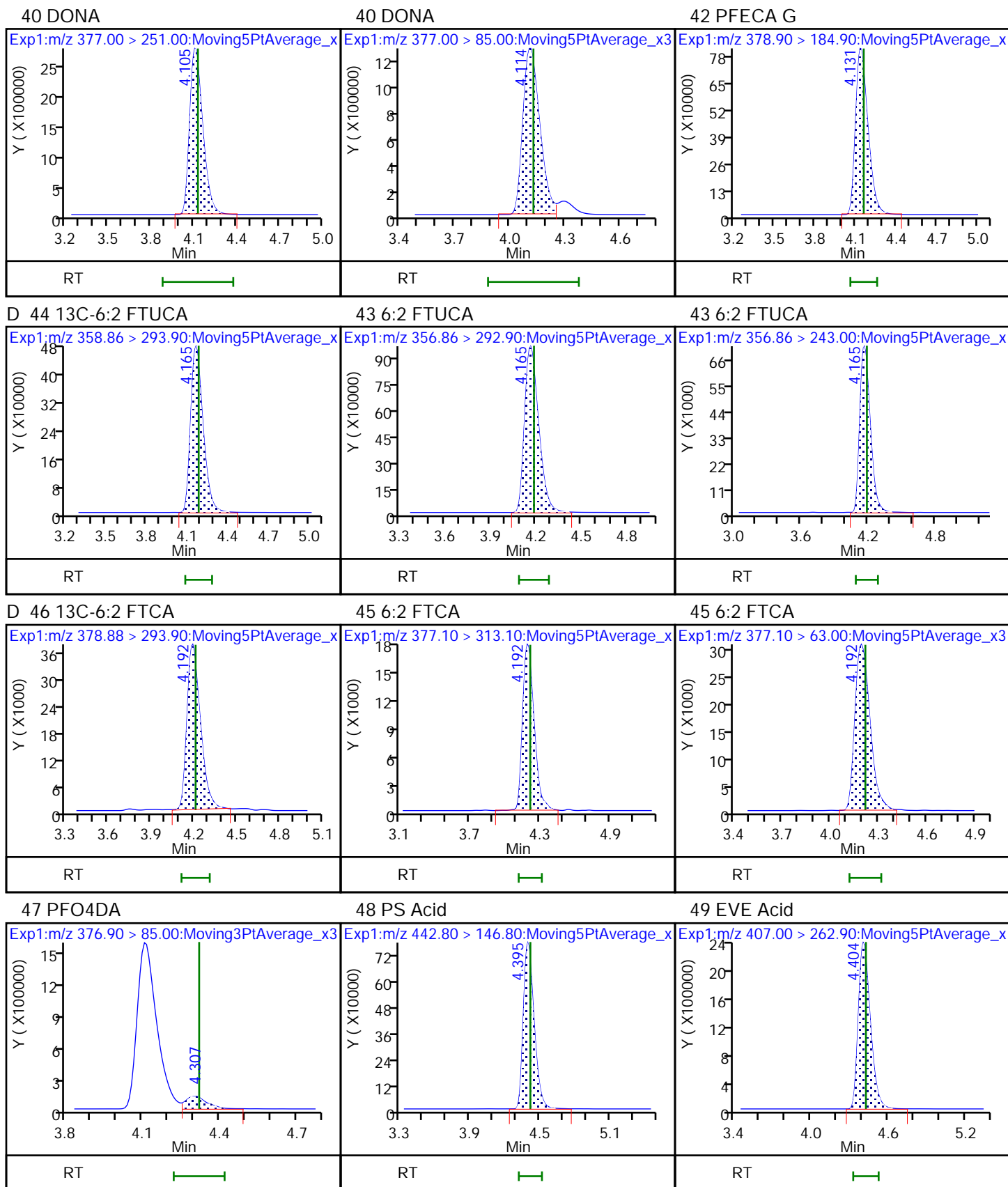


39 Hydro-PS Acid

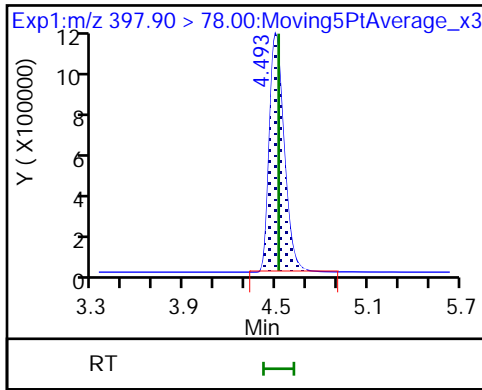
41 5:3 FTCA

41 5:3 FTCA

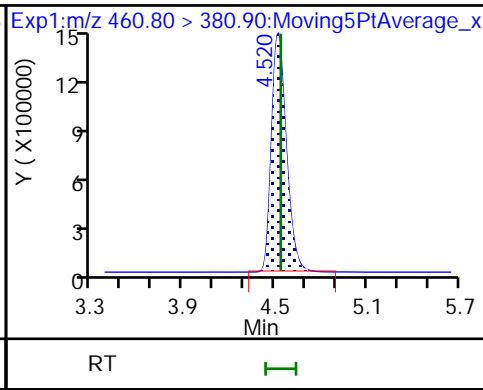




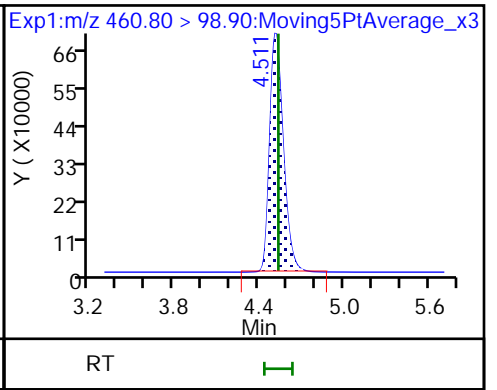
50 FHxSA



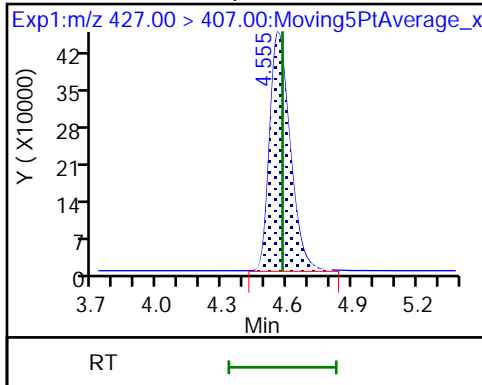
51 PFECHS



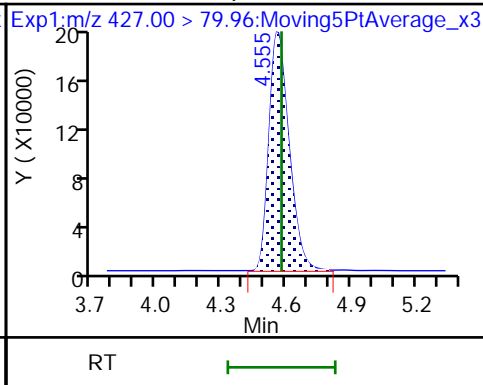
51 PFECHS



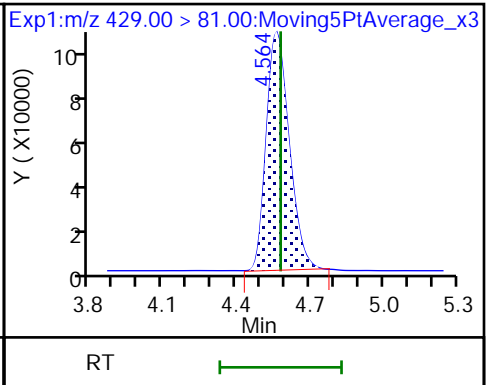
53 1H,1H,2H,2H-perfluorooctanesulfo



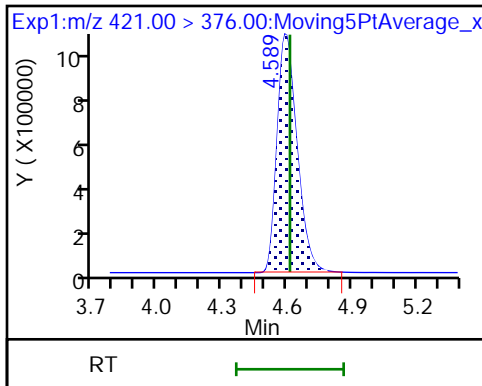
53 1H,1H,2H,2H-perfluorooctanesulfo



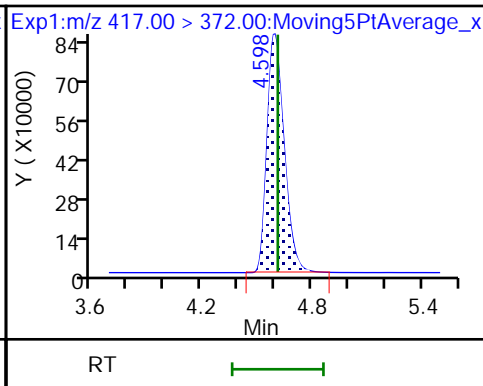
D 52 M2-6:2 FTS



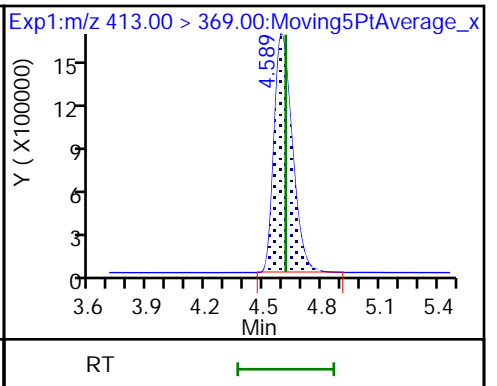
\$ 54 13C8 PFOA



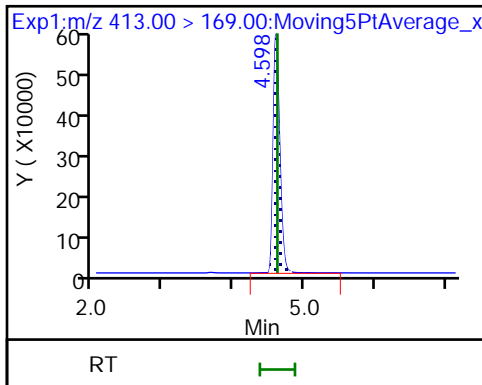
D 56 13C4 PFOA



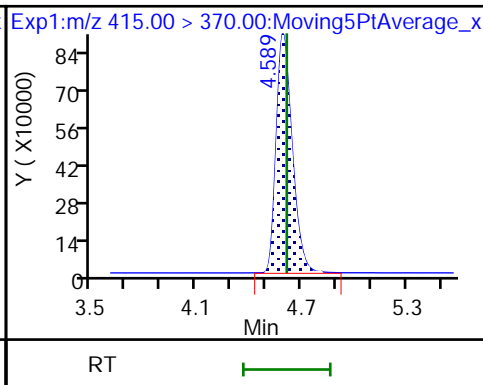
58 Perfluorooctanoic acid



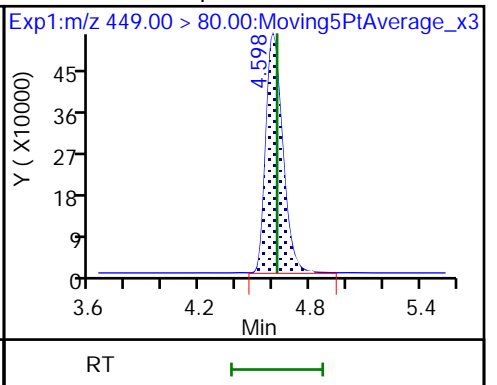
58 Perfluorooctanoic acid



* 55 13C2 PFOA



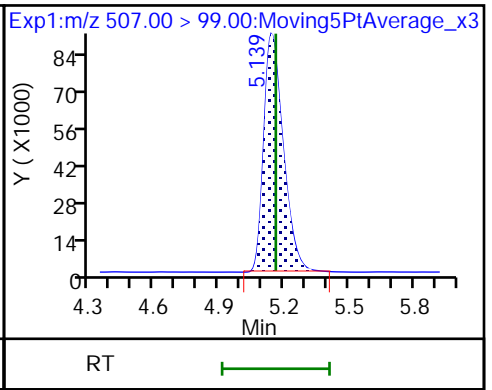
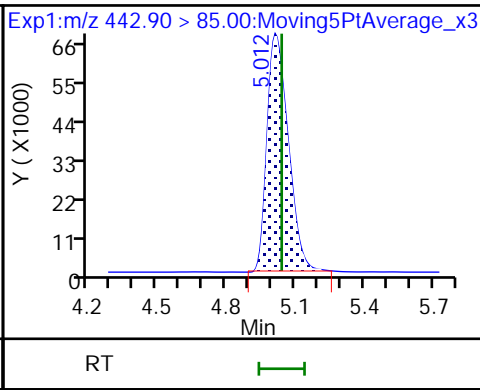
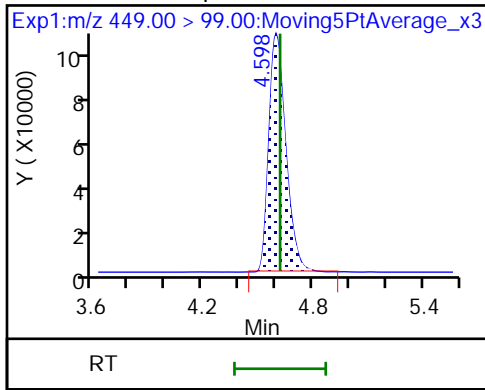
57 Perfluoroheptanesulfonic acid



57 Perfluoroheptanesulfonic acid

59 TAF

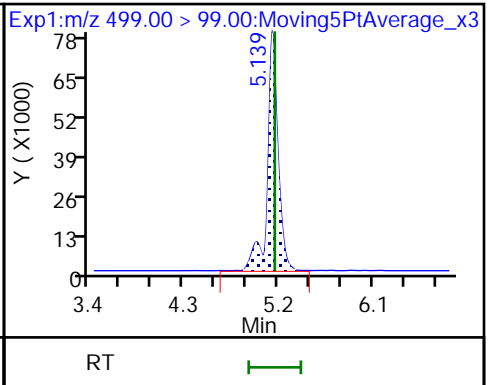
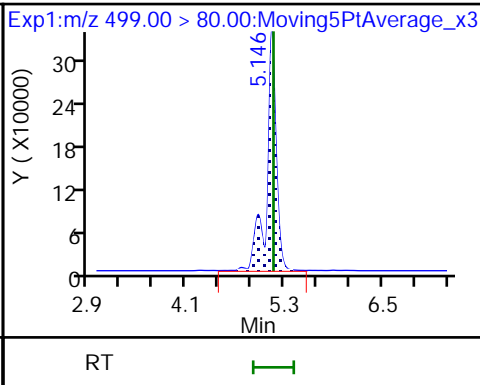
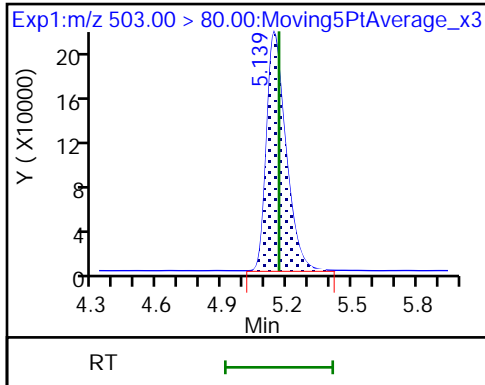
\$ 60 13C8 PFOS



D 61 13C4 PFOS

62 Perfluorooctanesulfonic acid

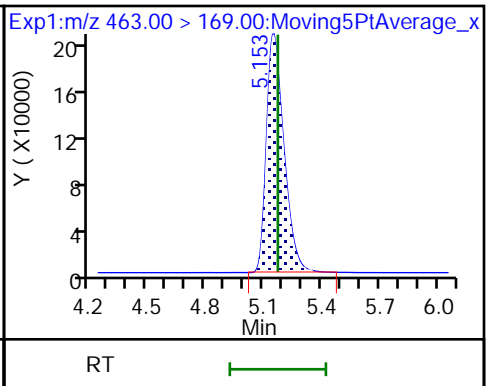
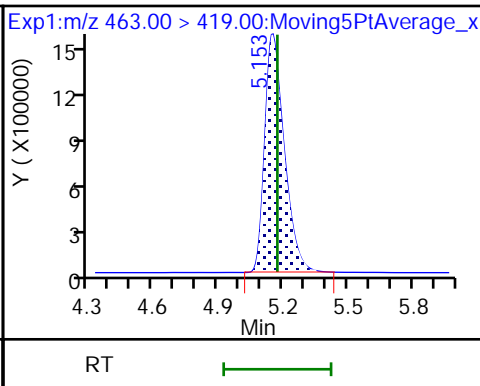
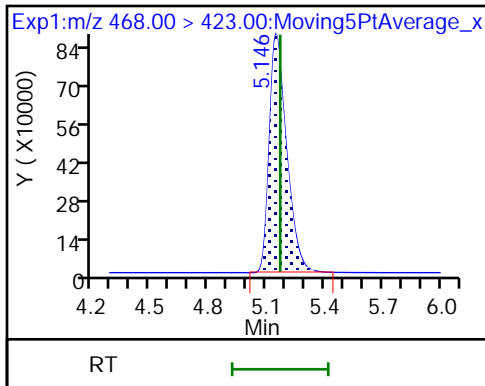
62 Perfluorooctanesulfonic acid



D 64 13C5 PFNA

63 Perfluorononanoic acid

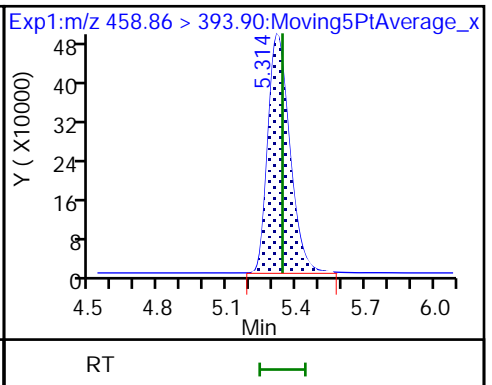
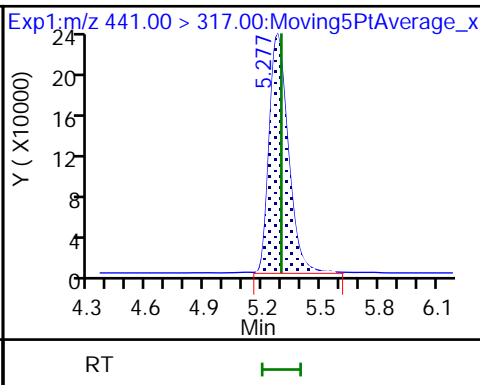
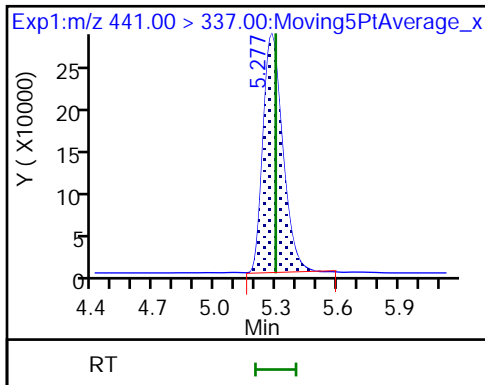
63 Perfluorononanoic acid

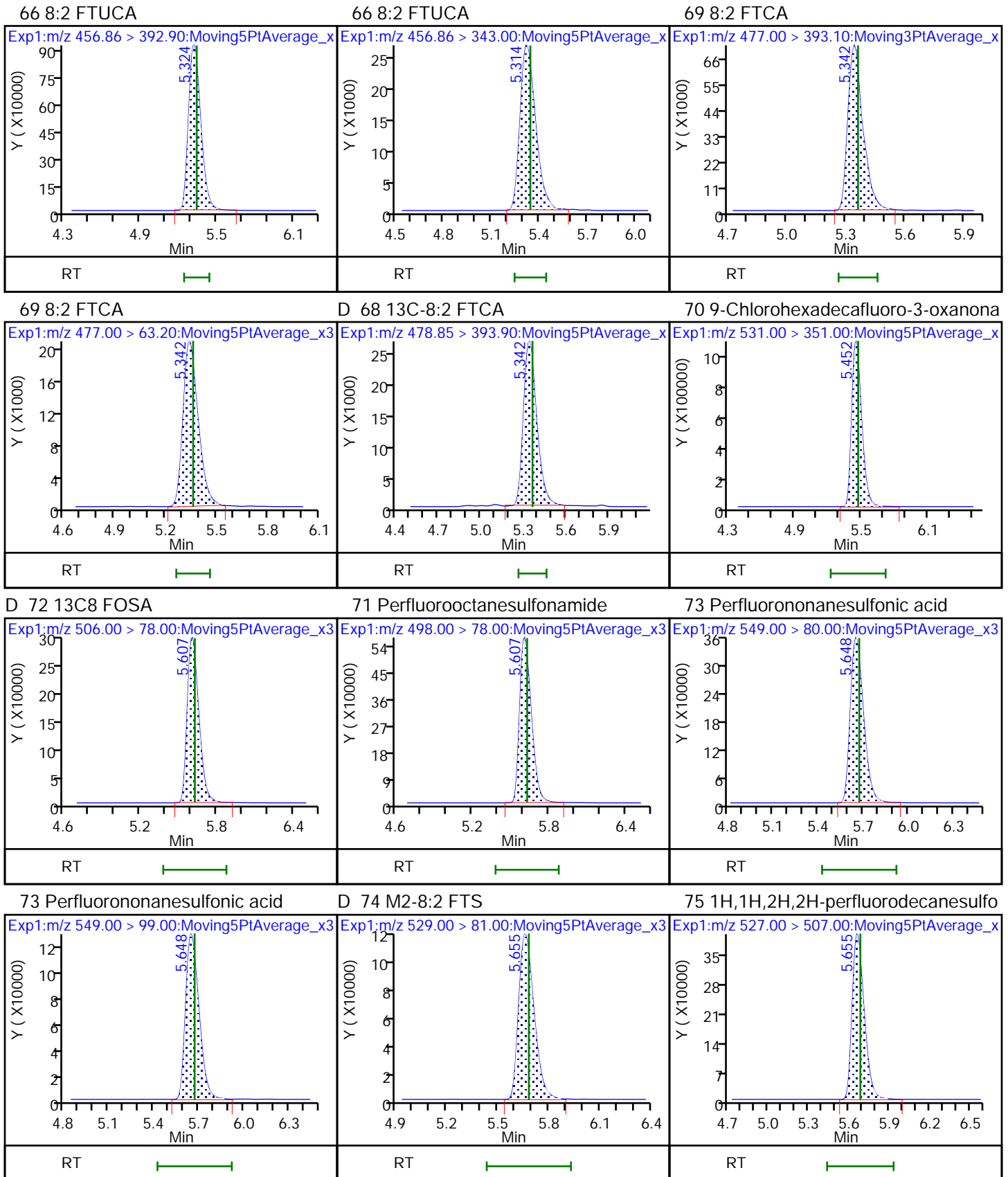


65 7:3 FTCA

65 7:3 FTCA

D 67 13C-8:2 FTUCA

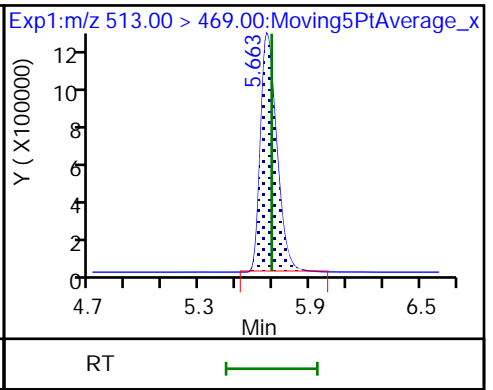
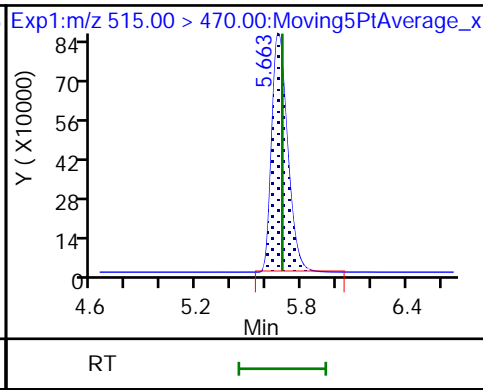
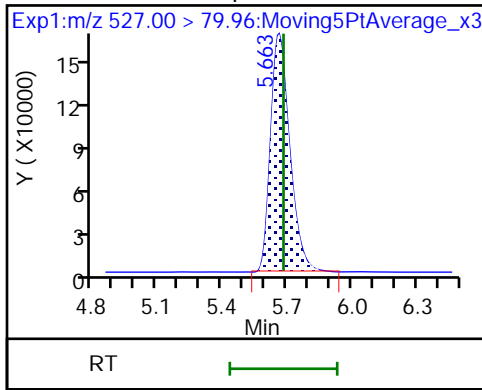




75 1H,1H,2H,2H-perfluorodecanesulfo D

76 13C2 PFDA

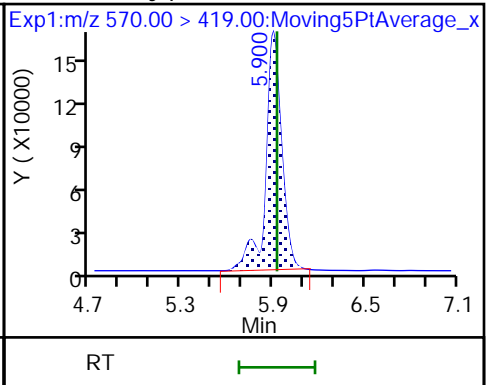
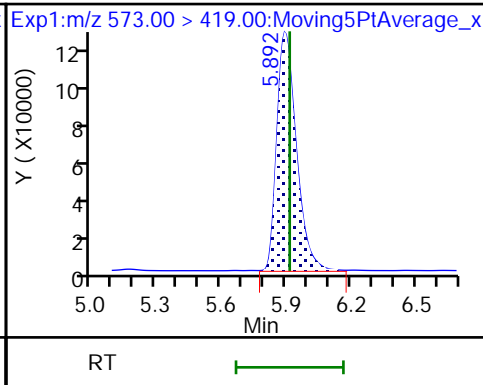
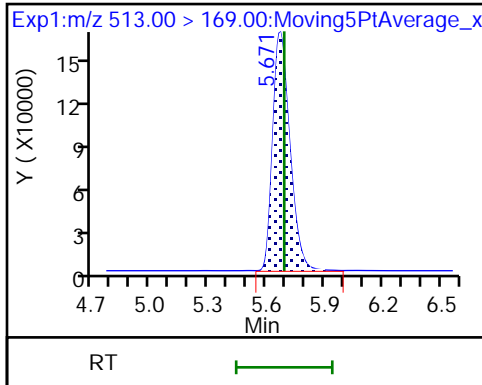
77 Perfluorodecanoic acid



77 Perfluorodecanoic acid

D 78 d3-NMeFOSAA

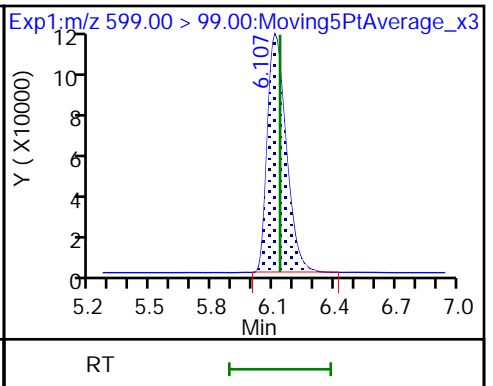
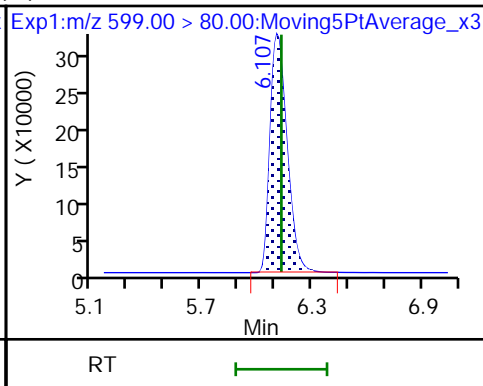
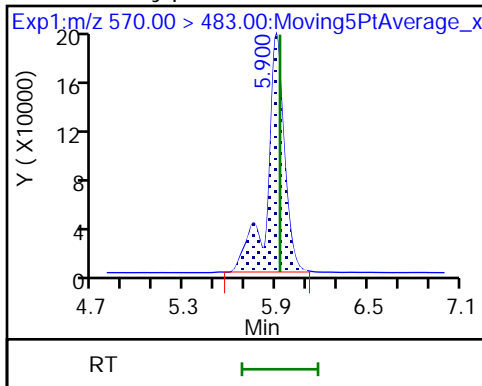
79 N-methylperfluorooctanesulfonami (M)



79 N-methylperfluorooctanesulfonami (M)

80 Perfluorodecanesulfonic acid

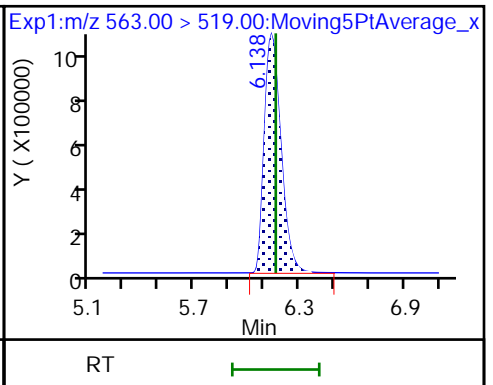
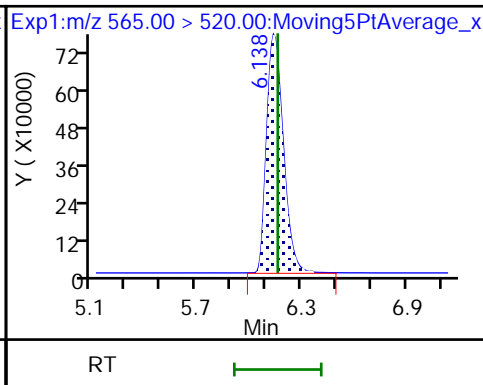
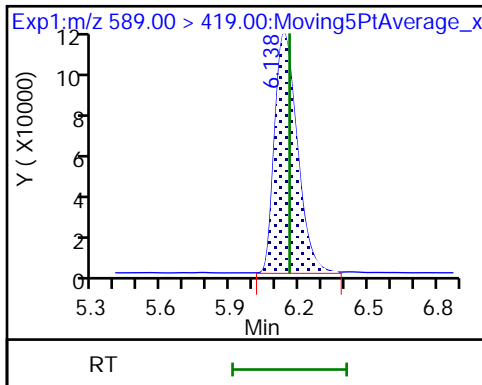
80 Perfluorodecanesulfonic acid



D 81 d5-NEtFOSAA

D 82 13C2 PFUnA

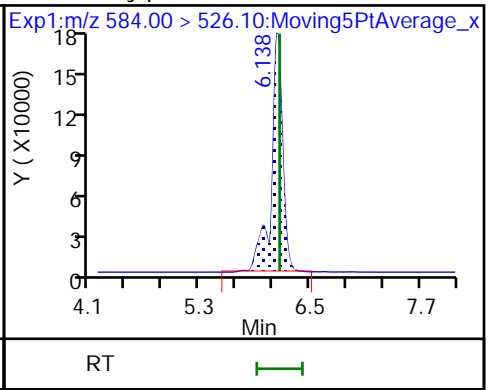
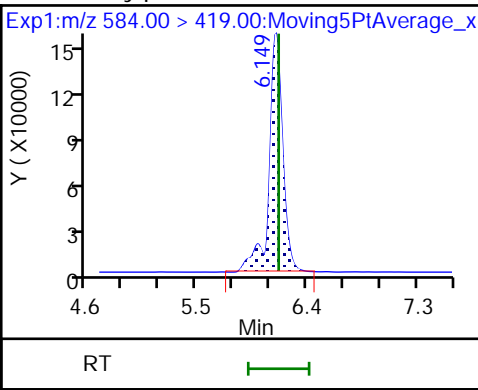
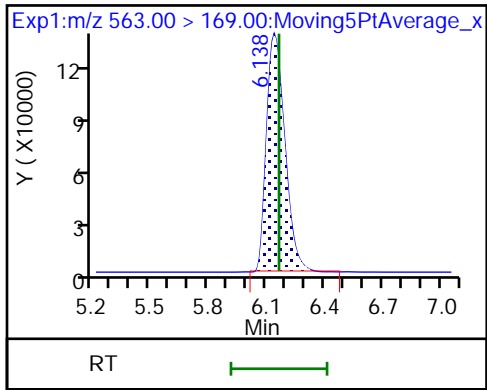
83 Perfluoroundecanoic acid



83 Perfluoroundecanoic acid

84 N-ethylperfluorooctanesulfonamid

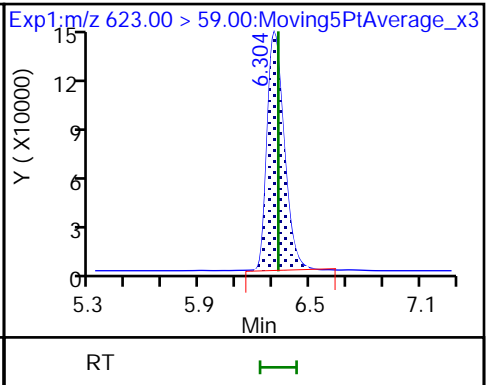
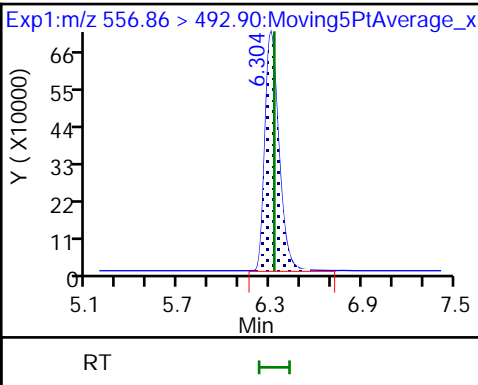
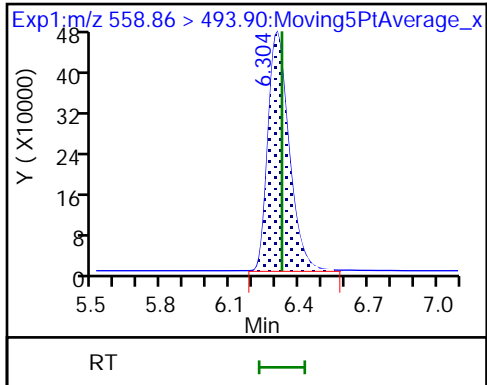
84 N-ethylperfluorooctanesulfonamid



D 89 13C-10:2 FTUCA

90 10:2 FTUCA

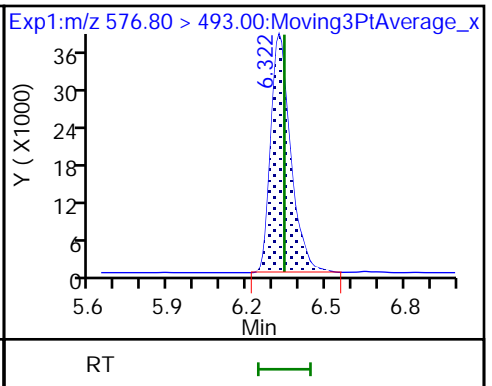
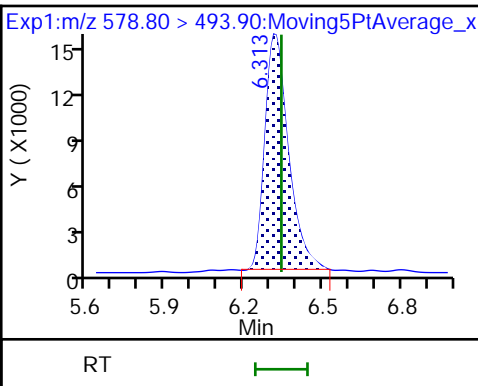
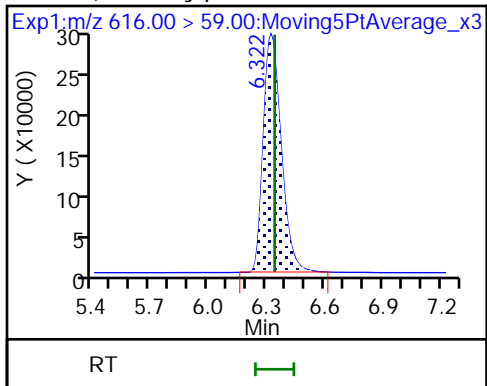
D 85 d7-N-MeFOSE-M



86 2-(N-methylperfluoro-1-octanesul

D 91 13C-10:2 FTCA

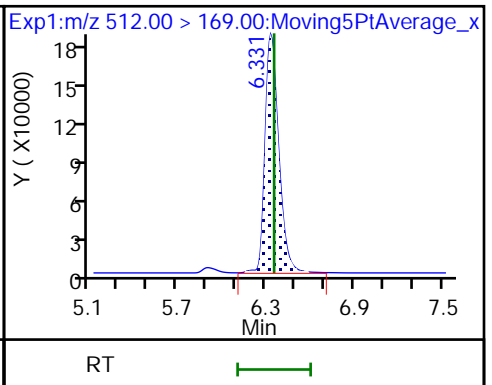
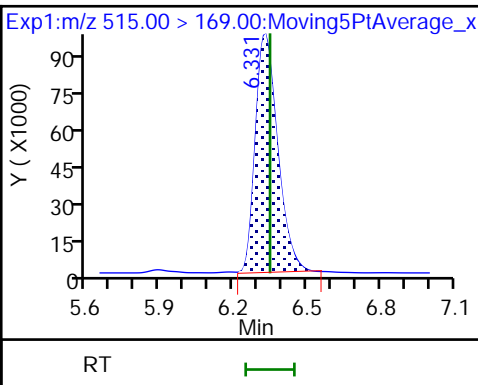
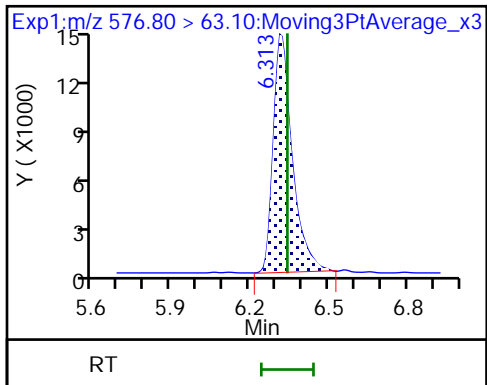
92 10:2 FTCA



92 10:2 FTCA

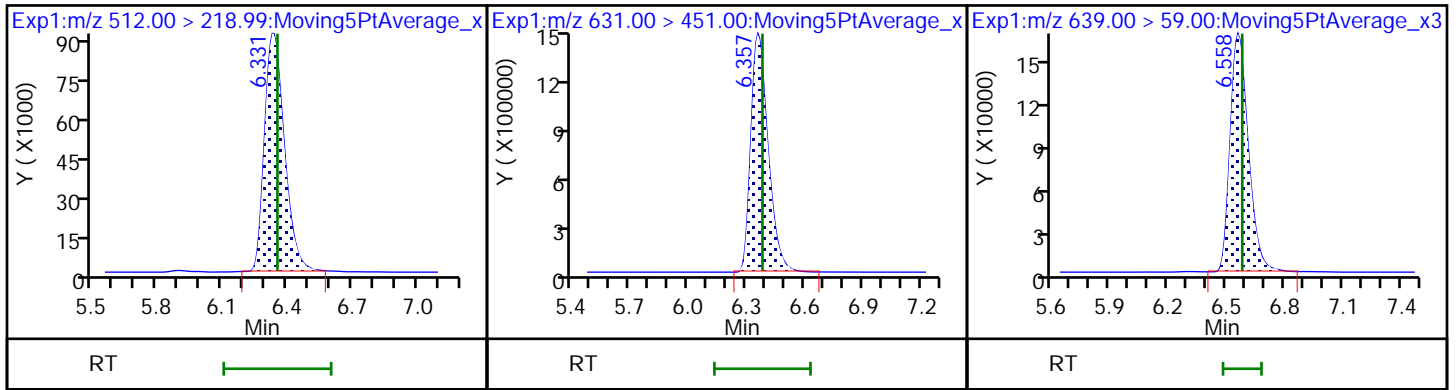
D 87 d-N-MeFOSA-M

88 NMeFOSA



88 NMeFOSA

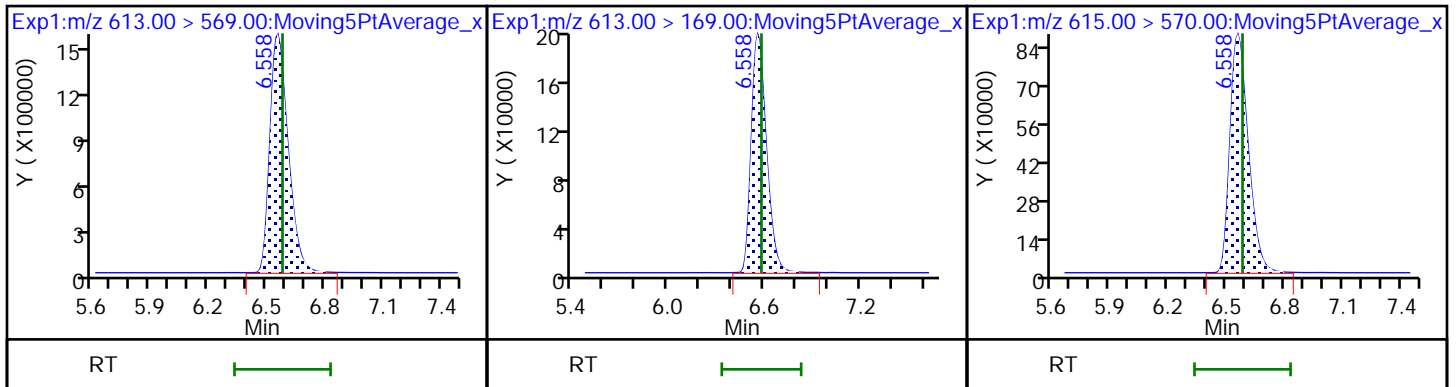
93 11-Chloroeicosafuoro-3-oxaundec D 94 d9-N-EtFOSE-M



99 Perfluorododecanoic acid

99 Perfluorododecanoic acid

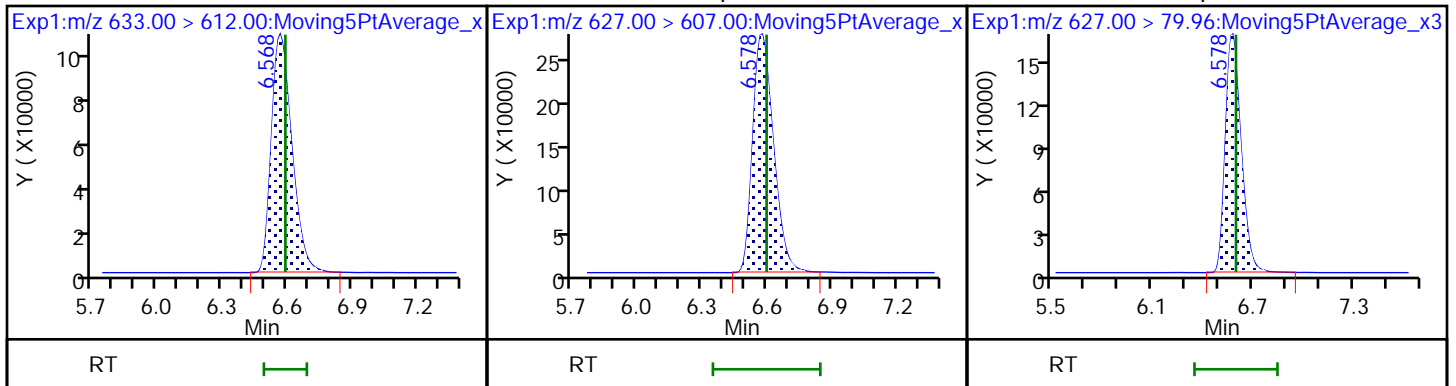
D 98 13C2 PFDa



D 100 13C2 10:2 FTS

101 1H,1H,2H,2H-perfluorododecanesul

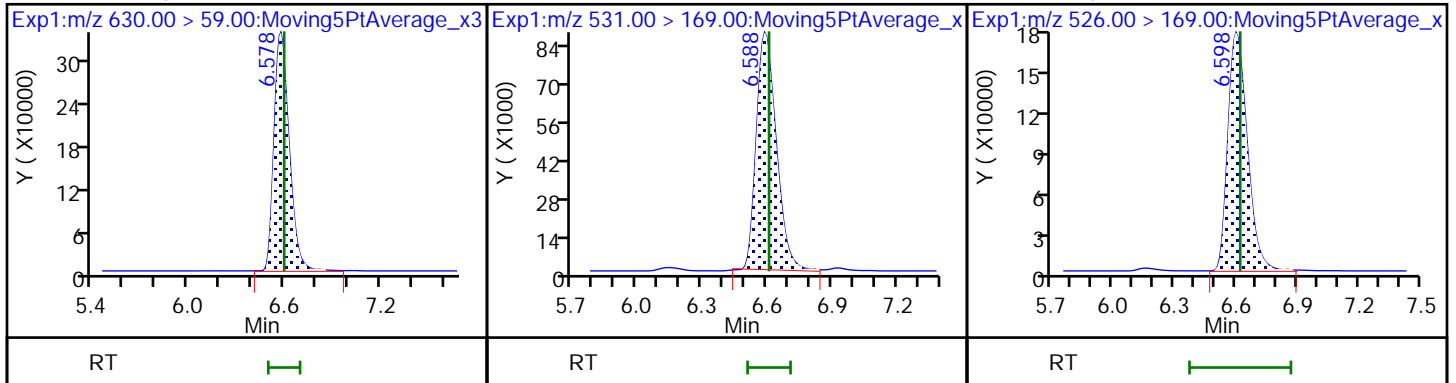
101 1H,1H,2H,2H-perfluorododecanesul



95 2-(N-ethylperfluoro-1-octanesulf

D 96 d-N-EtFOSE-M

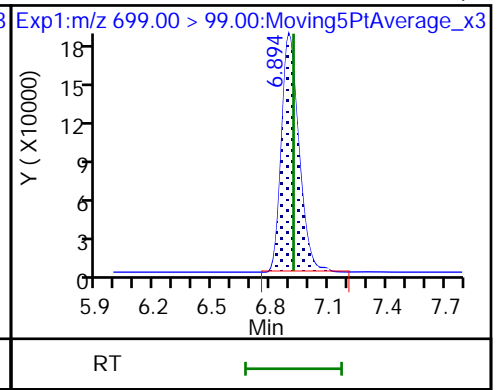
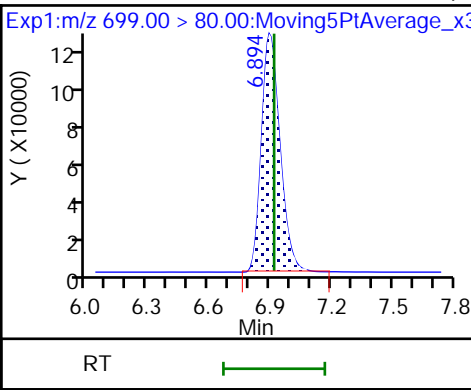
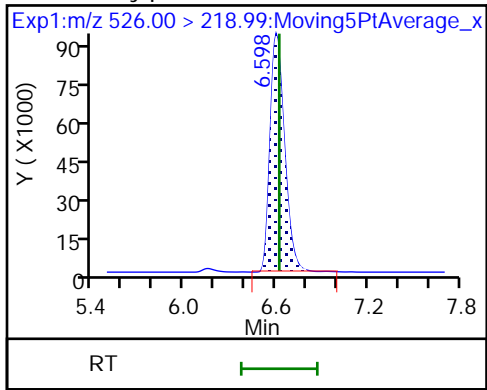
97 N-ethylperfluoro-1-octanesulfona



97 N-ethylperfluoro-1-octanesulfona

102 Perfluorododecanesulfonic acid (

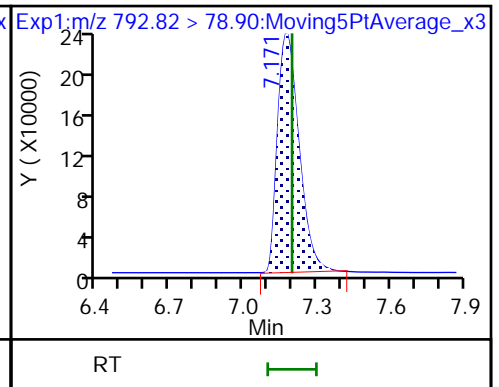
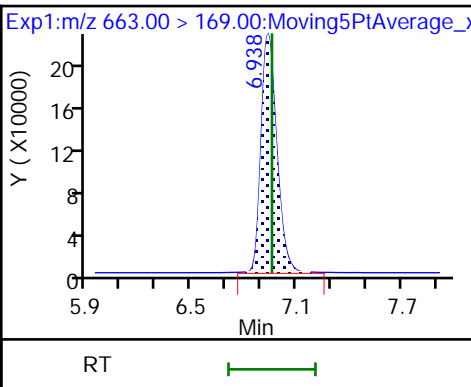
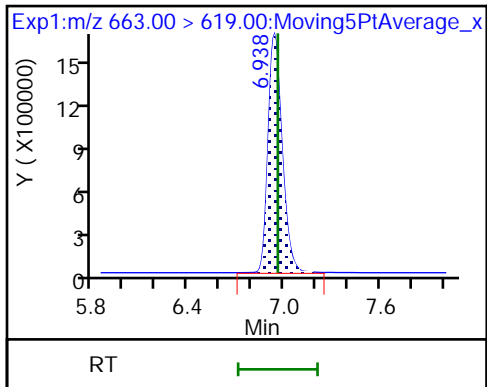
102 Perfluorododecanesulfonic acid (



103 Perfluorotridecanoic acid

103 Perfluorotridecanoic acid

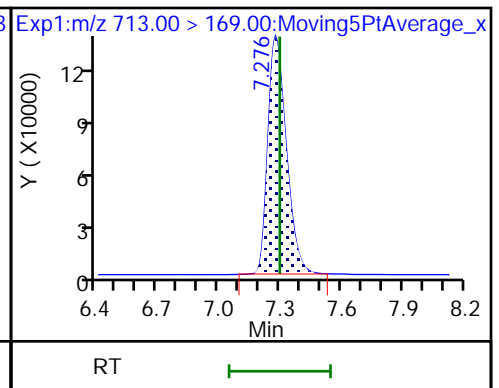
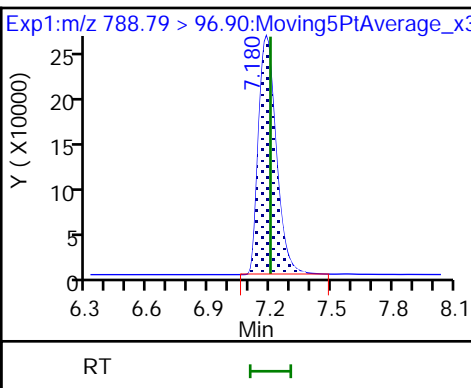
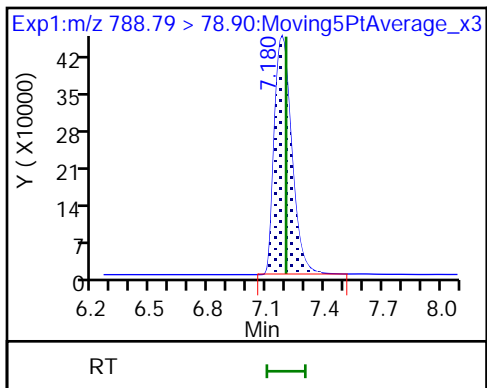
D 112 13C4-6:2 diPAP



114 6:2 diPAP

114 6:2 diPAP

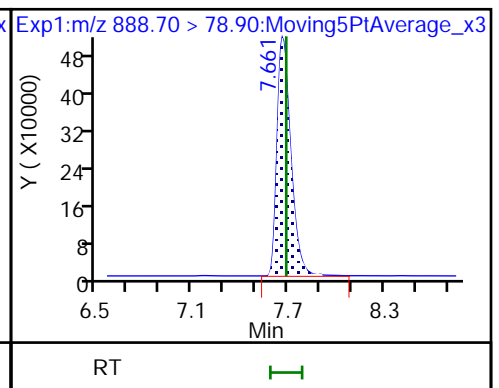
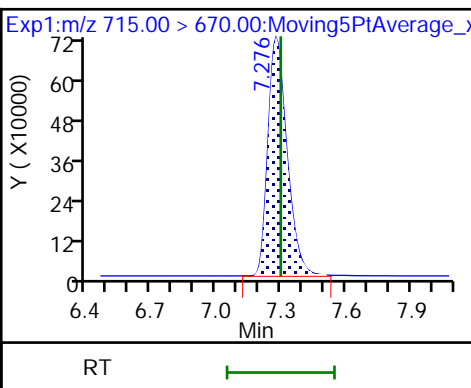
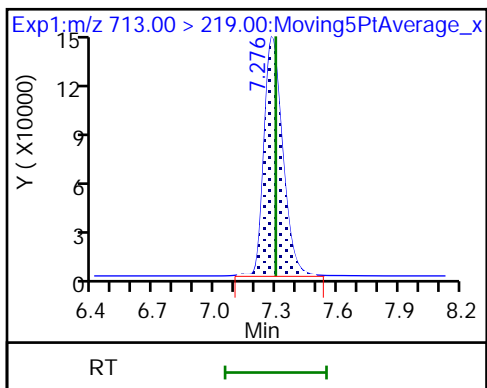
105 Perfluorotetradecanoic acid



105 Perfluorotetradecanoic acid

D 104 13C2 PFTeDA

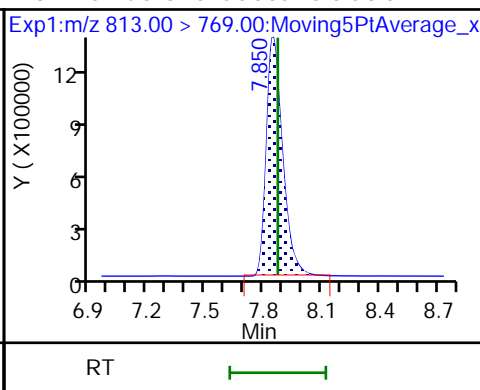
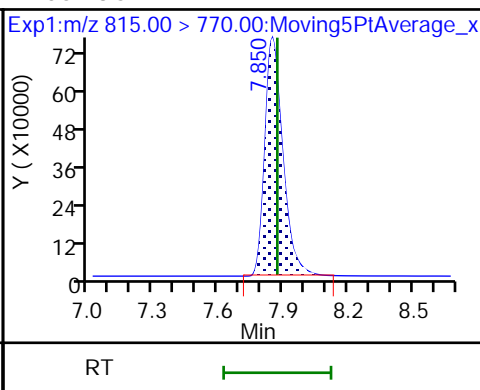
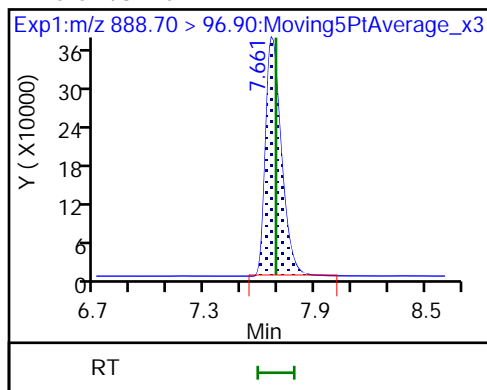
115 6:2/8:2 diPAP



115 6:2/8:2 diPAP

D 106 13C2 PFHxDA

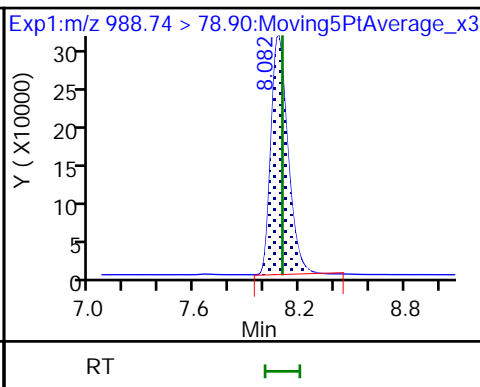
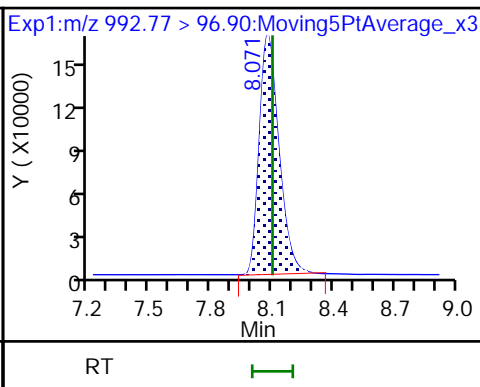
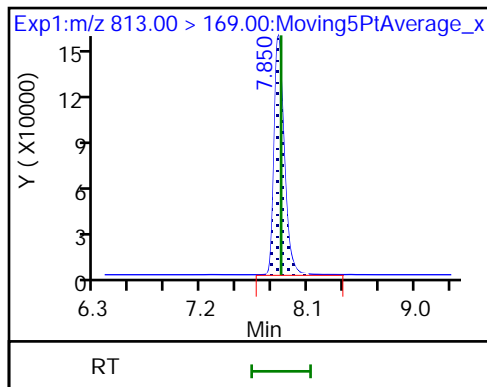
107 Perfluorohexadecanoic acid



107 Perfluorohexadecanoic acid

D 113 13C4-8:2 diPAP

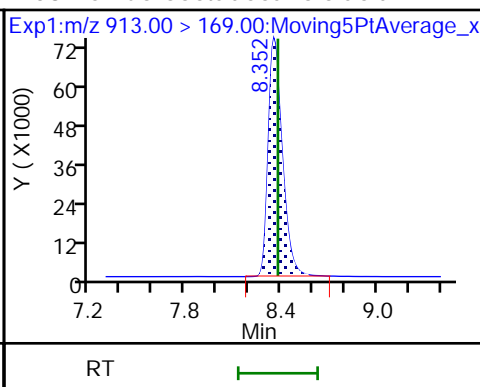
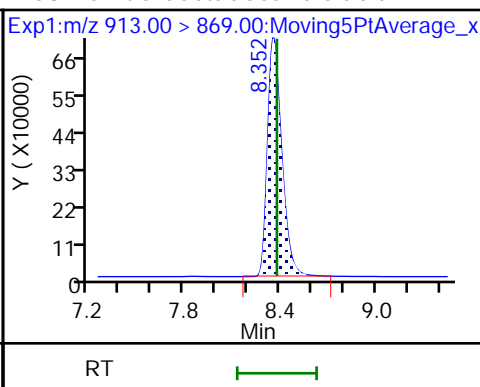
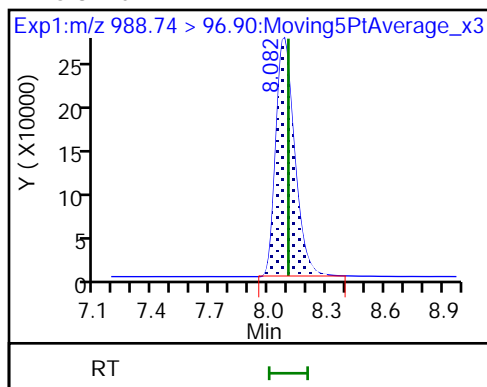
116 8:2 diPAP



116 8:2 diPAP

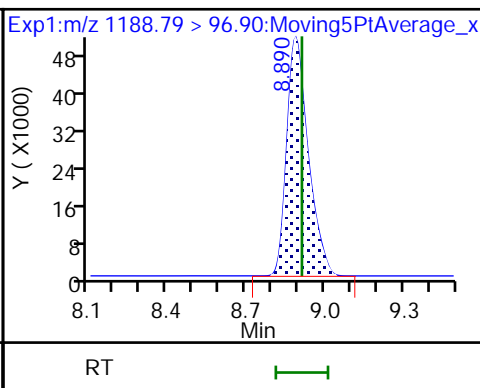
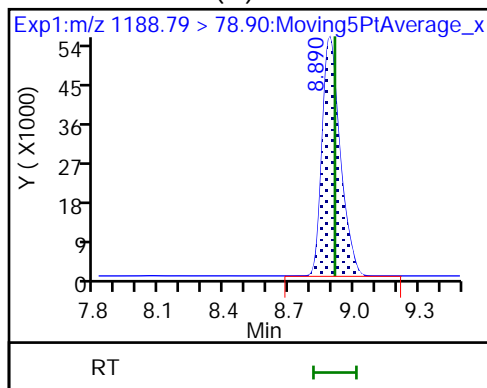
108 Perfluorooctadecanoic acid

108 Perfluorooctadecanoic acid



117 10:2 diPAP (M)

117 10:2 diPAP



Eurofins Sacramento

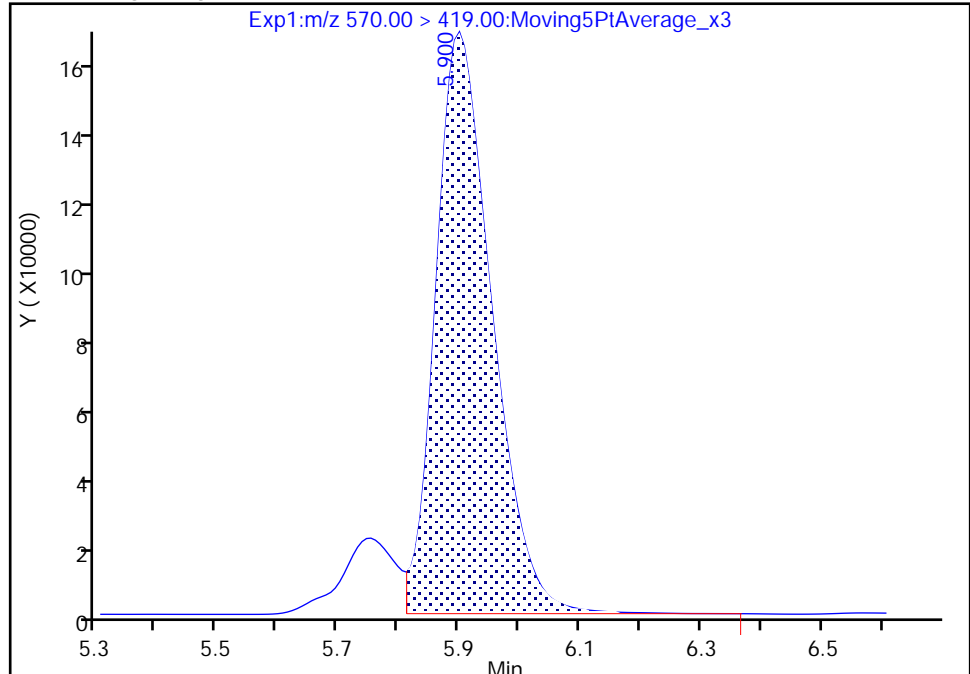
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_013.d
Injection Date: 21-Dec-2022 12:51:01 Instrument ID: A18
Lims ID: IC L5
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

79 N-methylperfluorooctanesulfonami, CAS: 2355-31-9

Signal: 1

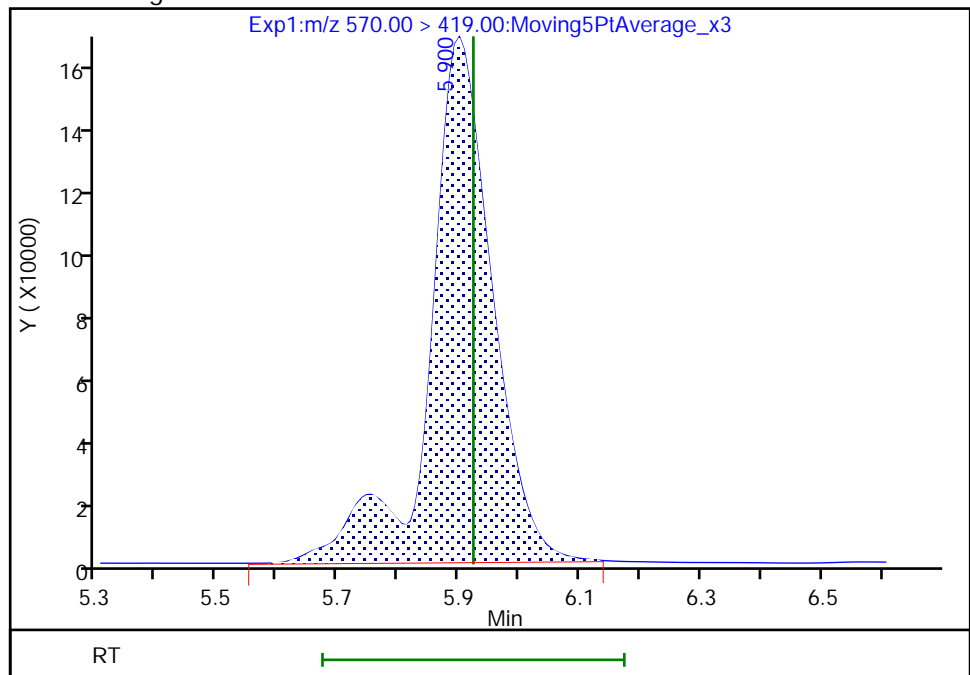
RT: 5.90
Area: 1055430
Amount: 2.224847
Amount Units: ng/ml

Processing Integration Results



RT: 5.90
Area: 1172422
Amount: 2.454034
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:55:42
Audit Action: Manually Integrated

Audit Reason: Isomers

Eurofins Sacramento

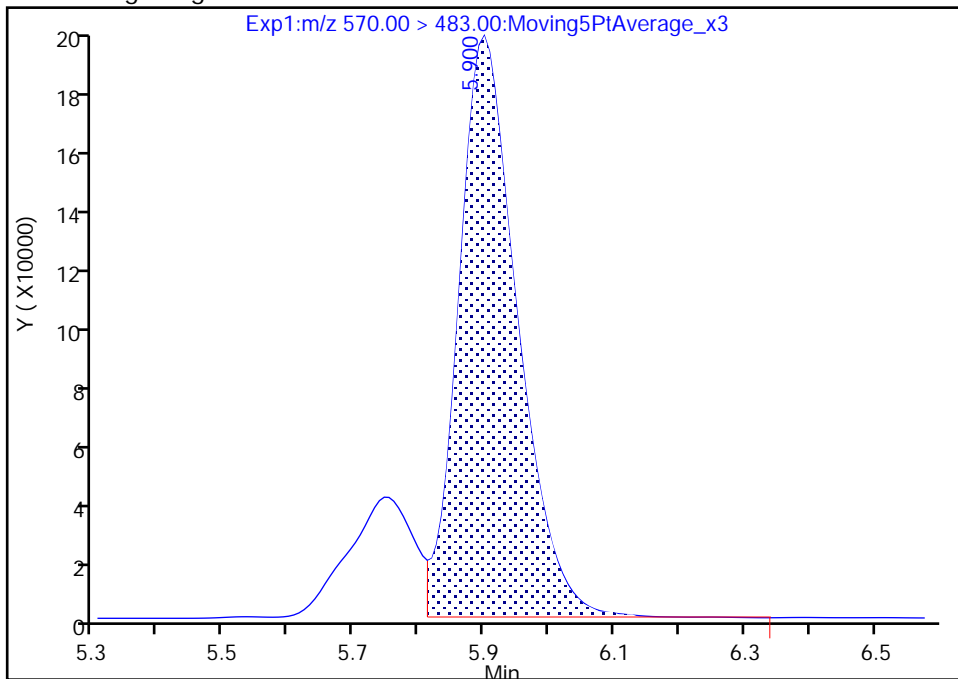
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_013.d
Injection Date: 21-Dec-2022 12:51:01 Instrument ID: A18
Lims ID: IC L5
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

79 N-methylperfluorooctanesulfonami, CAS: 2355-31-9

Signal: 2

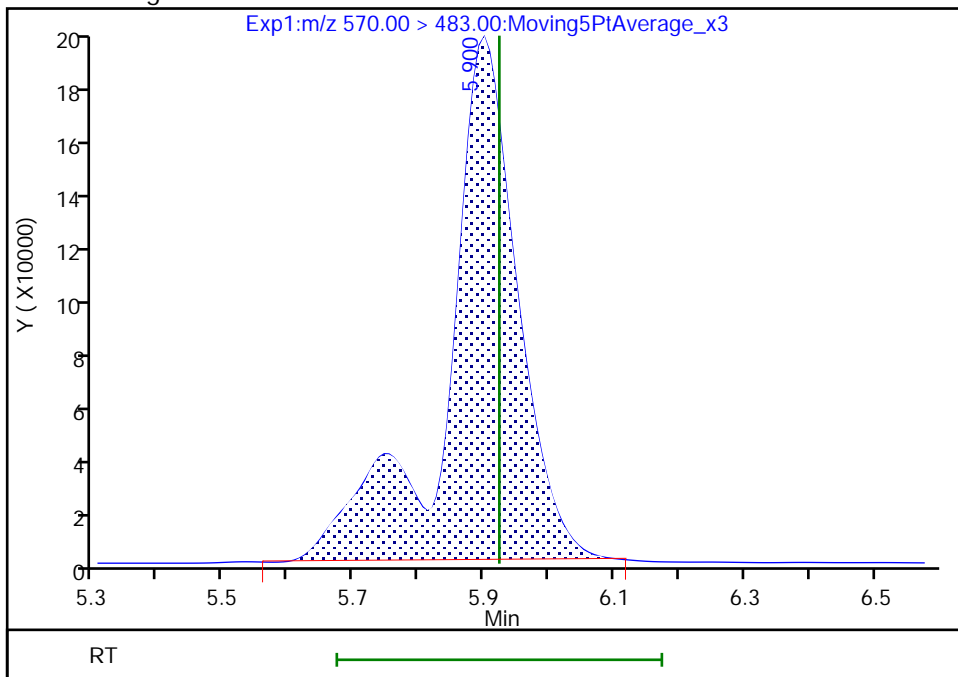
RT: 5.90
Area: 1262373
Amount: 2.224847
Amount Units: ng/ml

Processing Integration Results



RT: 5.90
Area: 1521485
Amount: 2.454034
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:55:48

Audit Action: Manually Integrated

Audit Reason: Isomers

Eurofins Sacramento

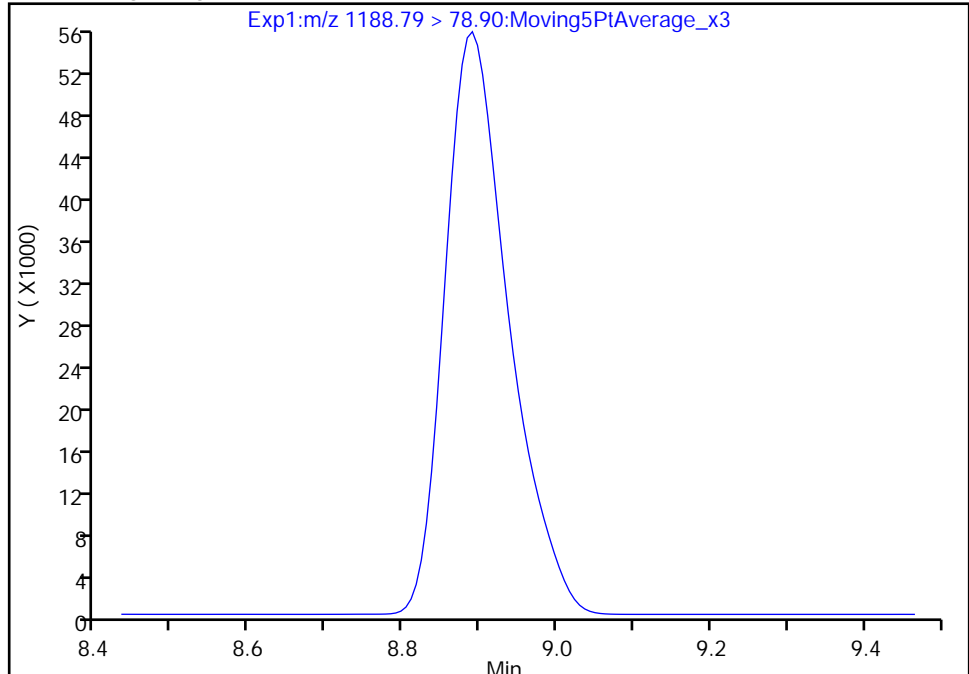
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_013.d
Injection Date: 21-Dec-2022 12:51:01 Instrument ID: A18
Lims ID: IC L5
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

117 10:2 diPAP, CAS: 1895-26-7

Signal: 1

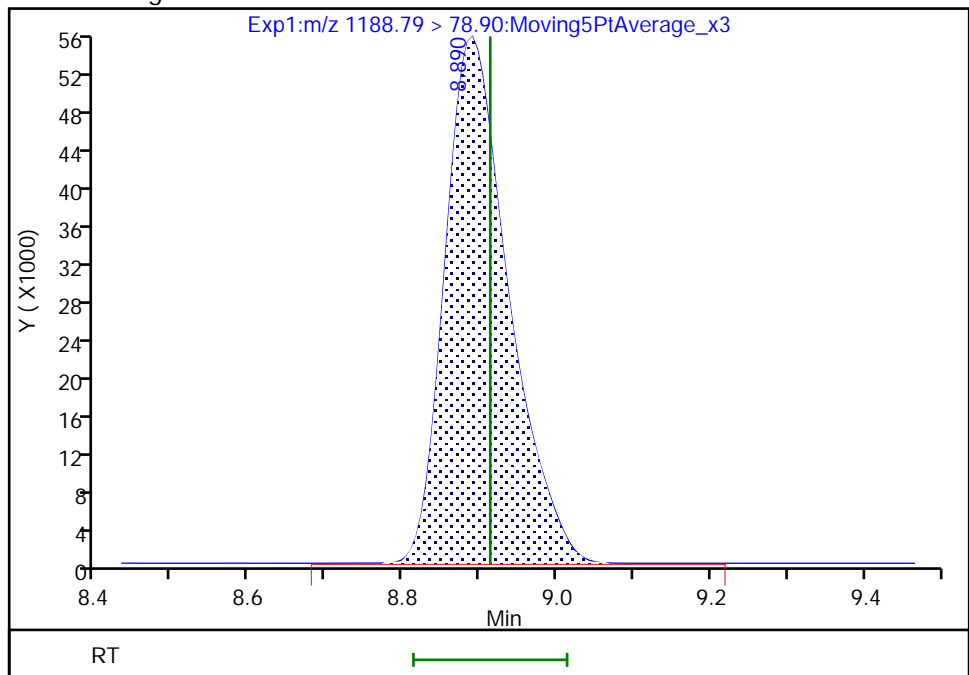
Not Detected
Expected RT: 8.91

Processing Integration Results



Manual Integration Results

RT: 8.89
Area: 317686
Amount: 3.613534
Amount Units: ng/ml



Reviewer: YS2U, 22-Dec-2022 06:05:22

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_014.d
 Lims ID: IC L6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 21-Dec-2022 13:01:11 ALS Bottle#: 6 Worklist Smp#: 7
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD 6 (06)
 Misc. Info.: Plate: 2 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Sublist: chrom-PFAS+_A18*sub3
 Method: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Dec-2022 07:23:09 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1678

First Level Reviewer: YS2U

Date: 21-Dec-2022 13:57:37

Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 MTP										
175.00 > 97.00	1.481	1.488	-0.007	0.551	1444316	4.95		98.9	2789	
2 PPF Acid										
162.95 > 119.00	1.887	1.893	-0.007	0.702	15812724	4.95		102	1171	
3 PFMOAA										
179.00 > 84.90	2.387	2.387	-0.001	0.888	10757290	4.81		96.3	3560	
4 R-PSDA										
441.00 > 241.00	2.569	2.573	-0.004	0.956	2857369	5.33		107	48696	
5 R-EVE										
405.00 > 217.00	2.577	2.577	0.0	0.959	6808187	5.00		99.9	74069	
6 Hydrolyzed PSDA										
439.10 > 342.90	2.577	2.581	-0.004	0.959	8915603	5.22		104	82221	
D 8 13C4 PFBA										
217.00 > 172.00	2.688	2.688	0.0	0.583	4982225	1.21		96.6	15411	
7 Perfluorobutanoic acid										
212.90 > 169.00	2.688	2.690	-0.002	1.000	21896850	4.94		98.8	626	
10 PMPA										
229.00 > 185.00	2.760	2.760	0.0	1.027	22708548	4.96		99.2	15732	
11 PFPrS										
249.10 > 80.00	2.769	2.771	-0.002	0.892	10732437	4.74		103	46648	
12 NVHOS										
297.00 > 135.00	2.787	2.790	-0.003	1.037	572522	4.97		99.5	11959	
13 PFECA F										
229.00 > 85.00	2.824	2.829	-0.005	0.920	11831214	5.07		101	34575	
14 PFO2HxA										
245.00 > 85.00	2.972	2.976	-0.004	0.969	2445617	5.01		100	9617	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 16 13C5 PFPeA										
267.90 > 223.00	3.068	3.068	0.0	0.665	4436348	1.20		96.1	29734	
15 Perfluoropentanoic acid										
262.90 > 219.00	3.068	3.069	-0.001	1.000	18496501	4.99		99.8	35016	
17 3:3 FTCA										
241.00 > 177.10	3.068	3.075	-0.007	0.988	978892	5.26	Target=1.46	105	9659	
241.00 > 116.90	3.068	3.075	-0.007	0.988	779765		1.26(0.73-2.18)	105	4969	
19 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.106	3.111	-0.005	1.000	11033889	4.64	Target=2.33	104	22922	
298.90 > 99.00	3.106	3.111	-0.005	1.000	4646588		2.37(1.16-3.49)	104	17799	
D 18 13C3 PFBS										
301.90 > 80.00	3.106	3.111	-0.005	0.673	2821528	1.11		95.2	13547	
20 PEPA										
278.90 > 234.90	3.172	3.178	-0.006	1.034	19727243	5.01		100	3906	
21 PFECA A										
278.95 > 84.90	3.192	3.198	-0.006	1.041	20203303	5.13		103	71220	
22 PES										
314.80 > 135.00	3.288	3.292	-0.004	1.059	35592918	4.50		101	198669	
23 FBSA										
297.90 > 78.00	3.334	3.338	-0.004	0.593	2819947	5.26		105	19622	
24 PFECA B										
295.20 > 201.00	3.431	3.438	-0.007	0.977	3830153	5.69		114	46174	
26 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.459	3.461	-0.002	1.000	6275641	4.58	Target=1.98	97.7	98402	
327.00 > 79.96	3.459	3.461	-0.002	1.000	3101071		2.02(0.99-2.97)	97.7	31954	
D 25 M2-4:2 FTS										
329.00 > 81.00	3.459	3.463	-0.004	0.750	687123	1.16		98.9	4429	
28 Perfluorohexanoic acid										
313.00 > 269.00	3.511	3.514	-0.003	1.000	18084525	4.93	Target=13.54	98.7	18243	
313.00 > 119.00	3.511	3.514	-0.003	1.000	1388422		13.03(6.77-20.31)	98.7	14247	
D 27 13C2 PFHxA										
315.00 > 270.00	3.511	3.513	-0.002	0.761	4862283	1.20		95.7	39345	
29 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.538	3.545	-0.007	1.139	9638754	4.95	Target=3.08	105	53085	
349.00 > 99.00	3.538	3.545	-0.007	1.139	3042793		3.17(1.54-4.63)	105	39295	
30 PFO3OA										
311.10 > 85.20	3.600	3.598	0.002	1.025	1029546	4.79		95.9	11827	
31 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.678	3.685	-0.007	0.998	694589	5.05	Target=0.84	101	25896	
285.00 > 185.00	3.678	3.685	-0.007	0.998	866482		0.80(0.42-1.25)	101	11105	
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.687	3.685	0.002	0.799	162765	1.19		95.4	4221	
33 R-PSDCA										
397.00 > 217.00	3.993	4.000	-0.008	0.987	5732420	4.61		92.1	48678	
36 Perfluoroheptanoic acid										
363.00 > 319.00	4.045	4.047	-0.002	1.000	20321592	5.28	Target=3.56	106	25036	
363.00 > 169.00	4.045	4.047	-0.002	1.000	5435376		3.74(1.78-5.34)	106	12522	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 35 13C4 PFHpA										
367.00 > 322.00	4.045	4.048	-0.003	0.877	5286047	1.23		98.2	27672	
38 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.053	4.060	-0.007	1.000	7247209	4.59	Target=3.26	101	30291	
399.00 > 99.00	4.053	4.060	-0.007	1.000	2185334		3.32(1.63-4.88)	101	12821	
D 37 18O2 PFHxS										
403.00 > 84.00	4.053	4.063	-0.010	0.879	1933548	1.15		97.1	22736	
34 Hydro-EVE Acid										
427.00 > 282.90	4.087	4.078	0.009	1.010	29445906	5.02		100	81371	
39 Hydro-PS Acid										
463.00 > 263.00	4.113	4.114	-0.001	1.017	26399096	5.05		101	377286	
40 DONA										
377.00 > 251.00	4.121	4.128	-0.007	0.799	34640245	4.61	Target=2.23	97.7	59678	
377.00 > 85.00	4.121	4.128	-0.007	0.799	16273801		2.13(1.11-3.34)	97.7	889	
41 5:3 FTCA										
340.88 > 236.90	4.130	4.127	0.003	0.981	3278502	4.90	Target=1.10	98.0	26645	
340.88 > 216.90	4.130	4.127	0.003	0.981	3005807		1.09(0.55-1.65)	98.0	15564	
42 PFECA G										
378.90 > 184.90	4.156	4.158	-0.002	0.987	8829678	4.52		90.5	32957	
43 6:2 FTUCA										
356.86 > 292.90	4.182	4.188	-0.006	1.000	12668318	5.03	Target=12.98	101	33319	
356.86 > 243.00	4.182	4.188	-0.006	1.000	999911		12.67(6.49-19.46)	101	29186	
D 44 13C-6:2 FTUCA										
358.86 > 293.90	4.182	4.185	-0.003	0.907	3111763	1.22		97.5	18544	
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.208	4.212	-0.004	0.912	249850	1.26		101	898	
45 6:2 FTCA										
377.10 > 313.10	4.208	4.217	-0.009	1.000	268834	5.15	Target=0.65	103	8471	
377.10 > 63.00	4.208	4.217	-0.009	1.000	388871		0.69(0.33-0.98)	103	8149	
47 PFO4DA										
376.90 > 85.00	4.314	4.320	-0.006	1.067	1195996	5.10		102	0.6	
48 PS Acid										
442.80 > 146.80	4.412	4.418	-0.006	0.958	9633569	5.12		102	29504	
49 EVE Acid										
407.00 > 262.90	4.421	4.425	-0.004	0.960	28603832	4.94		98.8	168274	
50 FHxSA										
397.90 > 78.00	4.510	4.515	-0.005	0.802	15903608	5.51		110	17759	
51 PFECHS										
460.80 > 380.90	4.528	4.535	-0.007	0.983	19418185	4.88	Target=2.05	106	94654	
460.80 > 98.90	4.537	4.535	0.002	0.985	9456616		2.05(1.03-3.08)	106	125508	
53 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.572	4.578	-0.006	1.000	5989352	5.01	Target=2.31	105	47116	
427.00 > 79.96	4.572	4.578	-0.006	1.000	2592153		2.31(1.16-3.47)	105	19071	
D 52 M2-6:2 FTS										
429.00 > 81.00	4.572	4.580	-0.008	0.991	698908	1.12		94.2	14791	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 Perfluorooctanoic acid										
413.00 > 369.00	4.613	4.614	-0.001	1.002	21956034	5.21	Target=2.69	104	10431	
413.00 > 169.00	4.613	4.614	-0.001	1.002	7878790		2.79(1.35-4.04)	104	11964	
* 55 13C2 PFOA										
415.00 > 370.00	4.613	4.615	-0.002		5820495	1.25			19907	
\$ 54 13C8 PFOA										
421.00 > 376.00	4.605	4.613	-0.008	0.998	6760789	1.21		96.7	14200	
D 56 13C4 PFOA										
417.00 > 372.00	4.605	4.613	-0.008	0.998	5651966	1.20		96.1	19169	
57 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.613	4.620	-0.007	0.894	6588994	4.87	Target=4.67	102	33114	
449.00 > 99.00	4.613	4.620	-0.007	0.894	1340794		4.91(2.33-7.00)	102	34385	
59 TAF										
442.90 > 85.00	5.037	5.041	-0.004	1.094	924294	5.47		109	14045	
\$ 60 13C8 PFOS										
507.00 > 99.00	5.160	5.161	-0.001	1.119	539220	1.11		92.8	5919	
D 61 13C4 PFOS										
503.00 > 80.00	5.160	5.162	-0.002	1.119	1350075	1.19		99.4	7615	
62 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.160	5.163	-0.003	1.000	5393926	4.61	Target=5.09	99.1	2210	
499.00 > 99.00	5.152	5.163	-0.011	0.999	1102129		4.89(2.55-7.64)	99.1	12792	
D 64 13C5 PFNA										
468.00 > 423.00	5.167	5.170	-0.003	1.120	5797989	1.26		101	27412	
63 Perfluorononanoic acid										
463.00 > 419.00	5.167	5.173	-0.006	1.000	20114046	5.00	Target=7.64	100	17984	
463.00 > 169.00	5.167	5.173	-0.006	1.000	2654859		7.58(3.82-11.46)	100	21871	
65 7:3 FTCA										
441.00 > 337.00	5.295	5.297	-0.002	0.988	3743662	4.96	Target=1.18	99.2	6480	
441.00 > 317.00	5.295	5.297	-0.002	0.988	3272465		1.14(0.59-1.77)	99.2	6079	
D 67 13C-8:2 FTUCA										
458.86 > 393.90	5.341	5.340	0.001	1.158	3388615	1.23		98.7	14502	
66 8:2 FTUCA										
456.86 > 392.90	5.341	5.342	-0.001	1.000	12719905	4.93	Target=39.03	98.5	42264	
456.86 > 343.00	5.341	5.342	-0.001	1.000	375564		33.87(19.51-58.54)	98.5	18548	
69 8:2 FTCA										
477.00 > 393.10	5.359	5.361	-0.002	1.000	718107	4.97	Target=2.58	99.5	855	
477.00 > 63.20	5.359	5.361	-0.002	1.000	288488		2.49(1.29-3.87)	99.5	4929	
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.359	5.363	-0.004	1.162	178265	1.21		96.6	1017	
70 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	5.469	5.470	-0.001	1.060	13140579	4.67		99.9	96016	
D 72 13C8 FOSA										
506.00 > 78.00	5.623	5.628	-0.005	1.219	1806938	1.20		95.9	17691	
71 Perfluorooctanesulfonamide										
498.00 > 78.00	5.623	5.628	-0.005	1.000	6948494	5.04		101	16686	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
73 Perfluorononanesulfonic acid										
549.00 > 80.00	5.671	5.672	-0.001	1.099	4357422	4.98	Target=2.73	104	26199	
549.00 > 99.00	5.663	5.672	-0.009	1.097	1463361		2.98(1.37-4.10)	104	17959	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.679	5.681	-0.002	1.231	702421	1.12		93.1	10974	
75 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	5.679	5.683	-0.004	1.000	4557728	4.73	Target=2.39	98.5	37144	
527.00 > 79.96	5.679	5.683	-0.004	1.000	1917346		2.38(1.19-3.58)	98.5	24250	
D 76 13C2 PFDA										
515.00 > 470.00	5.687	5.690	-0.003	1.233	5327115	1.20		95.9	46993	
77 Perfluorodecanoic acid										
513.00 > 469.00	5.687	5.691	-0.004	1.000	14816220	5.29	Target=7.32	106	26880	
513.00 > 169.00	5.687	5.691	-0.004	1.000	1907205		7.77(3.66-10.98)	106	23140	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.915	5.917	-0.002	1.282	729840	1.19		94.9	1945	
79 N-methylperfluorooctanesulfonami										
570.00 > 419.00	5.915	5.923	-0.008	1.000	2274221	4.93	Target=0.78	98.5	10627	
570.00 > 483.00	5.923	5.923	0.0	1.001	2928680		0.78(0.39-1.18)	98.5	6189	
80 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.126	6.133	-0.007	1.187	3692463	4.51	Target=3.04	93.5	109787	
599.00 > 99.00	6.126	6.133	-0.007	1.187	1287594		2.87(1.52-4.56)	93.5	27900	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.158	6.158	0.0	1.335	708804	1.15		91.8	3278	
D 82 13C2 PFUnA										
565.00 > 520.00	6.158	6.163	-0.005	1.335	5097277	1.22		97.9	68778	
83 Perfluoroundecanoic acid										
563.00 > 519.00	6.158	6.163	-0.005	1.000	13618108	4.88	Target=8.03	97.7	40194	
563.00 > 169.00	6.158	6.163	-0.005	1.000	1741566		7.82(4.02-12.05)	97.7	15996	
84 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	6.167	6.168	-0.001	1.002	2156668	5.06	Target=0.76	101	7304	
584.00 > 526.10	6.167	6.168	-0.001	1.002	2804505		0.77(0.38-1.14)	101	107003	
90 10:2 FTUCA										
556.86 > 492.90	6.320	6.326	-0.006	1.000	8252861	4.93		98.5	126713	
D 89 13C-10:2 FTUCA										
558.86 > 493.90	6.320	6.324	-0.004	1.370	2962874	1.20		95.7	15203	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.329	6.327	0.002	1.372	893540	1.21		96.6	5334	
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.338	6.342	-0.004	1.374	91688	1.11		88.6	582	
86 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	6.338	6.341	-0.003	1.001	3568654	5.07		101	16982	
92 10:2 FTCA										
576.80 > 493.00	6.338	6.342	-0.004	1.000	385414	5.44	Target=2.24	109	1609	
576.80 > 63.10	6.338	6.342	-0.004	1.000	175403		2.20(1.12-3.36)	109	810	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.347	6.348	-0.001	1.376	578889	1.18		94.5	1902	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
88 NMeFOSA										
512.00 > 169.00	6.347	6.355	-0.008	1.000	2211769	4.92	Target=1.97	98.5	1304	
512.00 > 218.99	6.356	6.355	0.001	1.001	1136846		1.95(0.99-2.96)	98.5	2407	
93 11-Chloroeicosafuoro-3-oxaundec										
631.00 > 451.00	6.374	6.381	-0.007	1.235	16608797	4.62		97.8	287955	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.586	6.580	0.006	1.428	943499	1.10		88.1	3339	
99 Perfluorododecanoic acid										
613.00 > 569.00	6.576	6.582	-0.006	1.000	18739640	4.83	Target=7.94	96.6	24036	
613.00 > 169.00	6.576	6.582	-0.006	1.000	2411412		7.77(3.97-11.90)	96.6	32824	
D 98 13C2 PFDaA										
615.00 > 570.00	6.576	6.582	-0.006	1.425	5617808	1.23		98.1	23346	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.586	6.592	-0.006	1.428	622362	1.06		87.9	11846	
95 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	6.596	6.599	-0.003	1.002	3626119	5.06		101	18078	
101 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	6.596	6.597	-0.001	1.002	3284195	4.88	Target=1.64	101	22887	
627.00 > 79.96	6.596	6.597	-0.001	1.002	1956285		1.68(0.82-2.46)	101	33169	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.606	6.609	-0.003	1.432	473811	1.04		83.1	810	
97 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	6.616	6.619	-0.003	1.002	2102659	5.94	Target=1.81	119	2244	
526.00 > 218.99	6.616	6.619	-0.003	1.002	1172876		1.79(0.90-2.71)	119	2441	
102 Perfluorododecanesulfonic acid (
699.00 > 80.00	6.916	6.918	-0.002	1.340	1198872	4.25	Target=0.69	87.6	26034	
699.00 > 99.00	6.916	6.918	-0.002	1.340	1848175		0.65(0.34-1.03)	87.6	29896	
103 Perfluorotridecanoic acid										
663.00 > 619.00	6.959	6.959	0.0	1.058	16773129	4.75	Target=6.68	95.0	20456	
663.00 > 169.00	6.951	6.959	-0.008	1.057	2698209		6.22(3.34-10.02)	95.0	21880	
D 112 13C4-6:2 diPAP										
792.82 > 78.90	7.196	7.198	-0.002	1.560	1705249	1.28		105	4384	
114 6:2 diPAP										
788.79 > 78.90	7.196	7.200	-0.004	1.000	6612353	4.89	Target=1.92	100	5771	
788.79 > 96.90	7.196	7.200	-0.004	1.000	3530857		1.87(0.96-2.88)	100	5317	
105 Perfluorotetradecanoic acid										
713.00 > 169.00	7.291	7.297	-0.006	1.000	1990497	5.12	Target=0.92	102	10827	
713.00 > 219.00	7.291	7.297	-0.006	1.000	2098706		0.95(0.46-1.38)	102	12083	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.291	7.298	-0.007	1.581	4952271	1.25		99.7	8943	
115 6:2/8:2 diPAP										
888.70 > 78.90	7.685	7.687	-0.002	1.068	5785265	4.27	Target=1.37	87.4	6409	
888.70 > 96.90	7.685	7.687	-0.002	1.068	4216646		1.37(0.69-2.06)	87.4	5918	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.863	7.873	-0.010	1.705	4189416	1.22		97.3	4631	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.870	7.873	-0.003	1.001	14688865	5.10	Target=8.78	102	7811	
813.00 > 169.00	7.863	7.873	-0.010	1.000	1668057		8.81(4.39-13.16)	102	12569	
D 113 13C4-8:2 diPAP										
992.77 > 96.90	8.090	8.100	-0.010	1.754	1042281	1.08		88.1	2088	
116 8:2 diPAP										
988.74 > 78.90	8.100	8.102	-0.002	1.001	3984109	4.99	Target=1.17	102	3544	
988.74 > 96.90	8.100	8.102	-0.002	1.001	3464475		1.15(0.59-1.76)	102	4641	
108 Perfluorooctadecanoic acid										
913.00 > 869.00	8.368	8.378	-0.010	1.064	8365597	5.23	Target=10.07	105	4397	
913.00 > 169.00	8.368	8.378	-0.010	1.064	846508		9.88(5.04-15.11)	105	3911	
117 10:2 diPAP										
1188.79 > 78.90	8.902	8.913	-0.011	1.100	640319	7.74	Target=1.10	154	10140	a
1188.79 > 96.90	8.909	8.913	-0.004	1.101	574073		1.12(0.55-1.65)	154	9122	a

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

LCPFC+6C_LL6_00006

Amount Added: 1.00

Units: mL

Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_014.d

Injection Date: 21-Dec-2022 13:01:11

Instrument ID: A18

Lims ID: IC L6

Client ID:

Operator ID: TAISACA18-PC\A-18

ALS Bottle#: 6

Worklist Smp#: 7

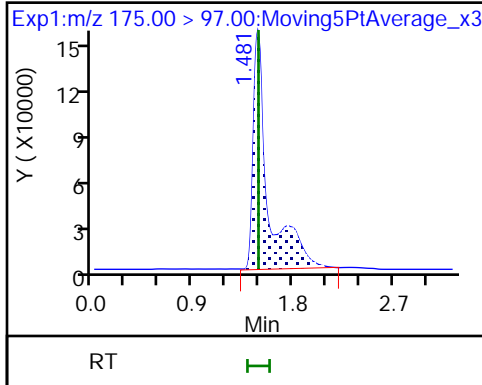
Injection Vol: 20.0 ul

Dil. Factor: 1.0000

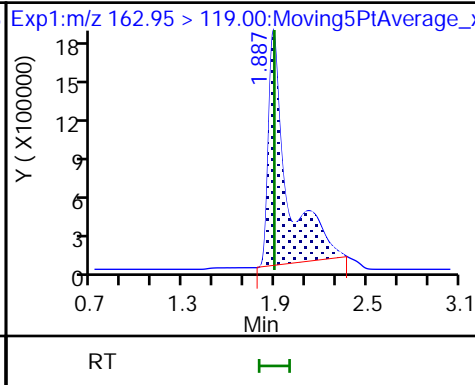
Method: PFAS+_A18

Limit Group: LC PFC ICAL

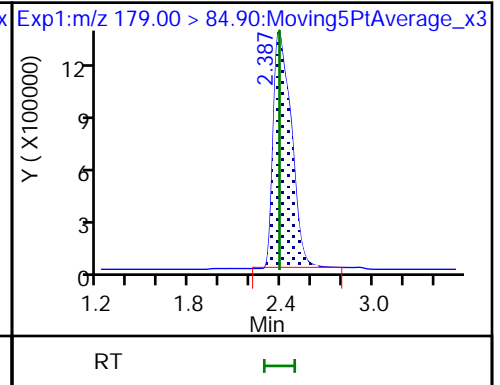
1 MTP



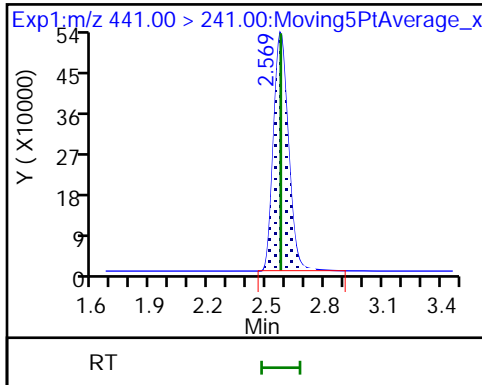
2 PPF Acid



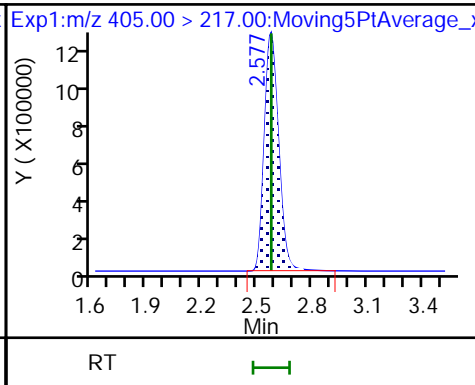
3 PFMOAA



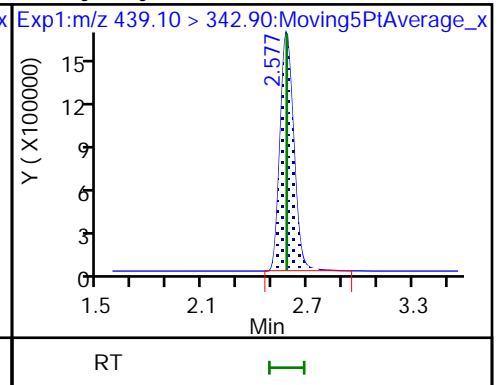
4 R-PSDA



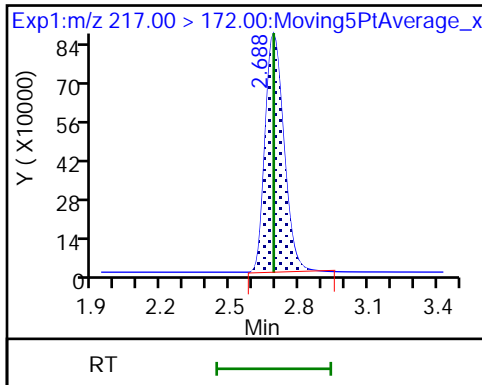
5 R-EVE



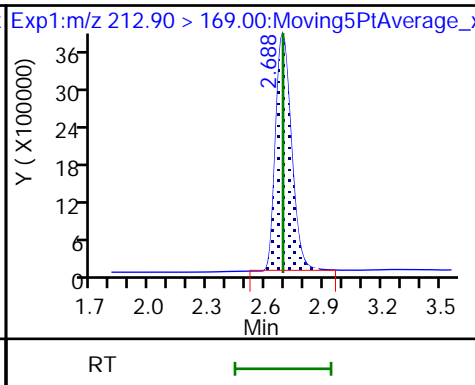
6 Hydrolyzed PSDA



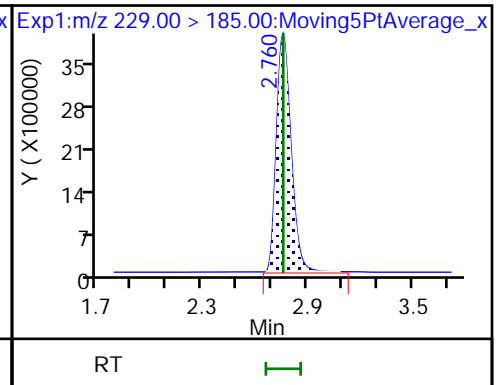
D 8 13C4 PFBA



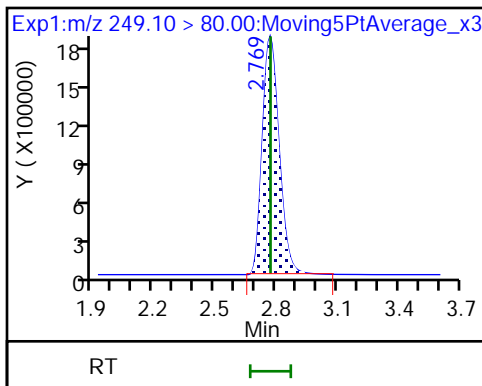
7 Perfluorobutanoic acid



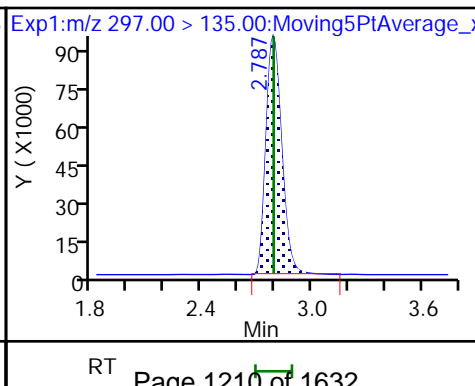
10 PMPA



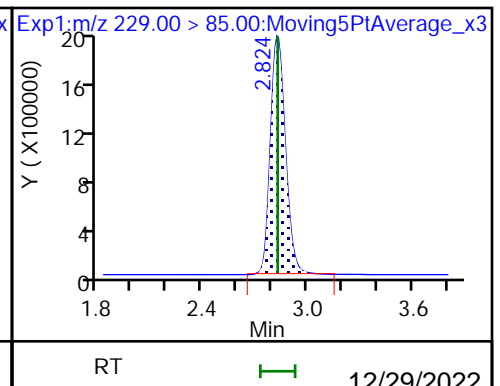
11 PFPrS

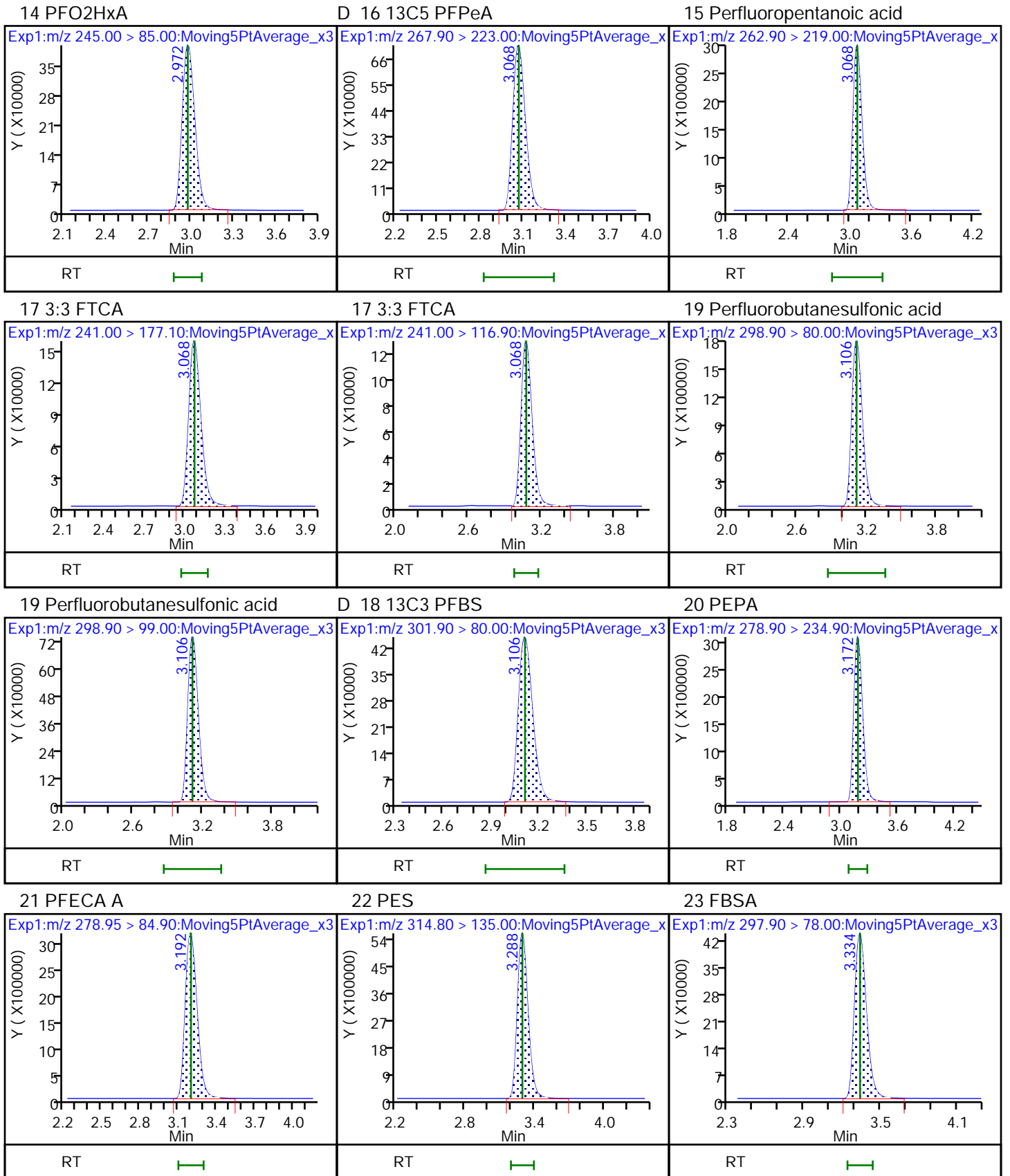


12 NVHOS



13 PFECA F

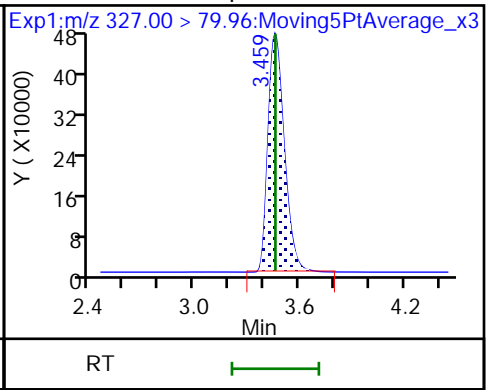
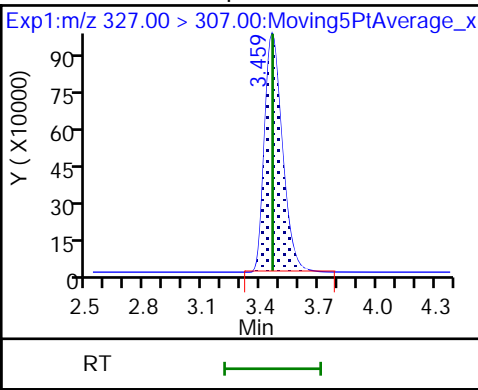
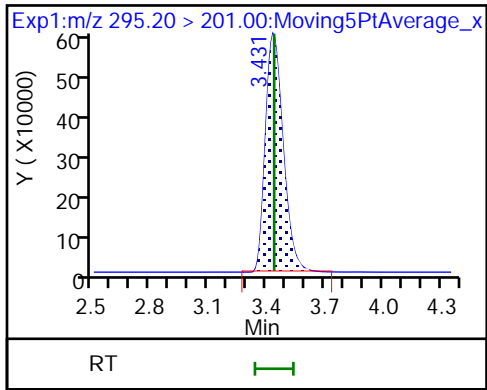




24 PFECAB

26 1H,1H,2H,2H-perfluorohexanesulfo

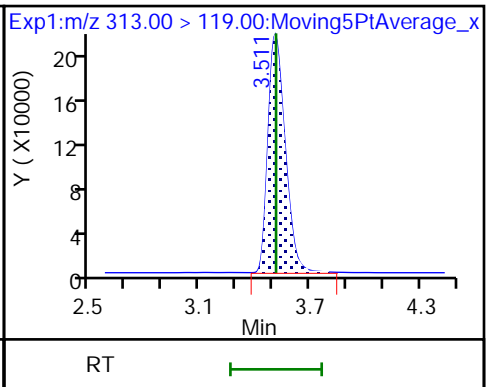
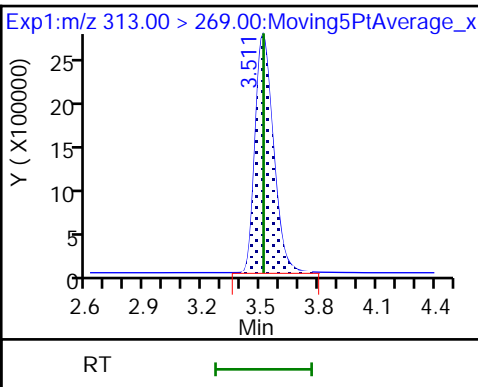
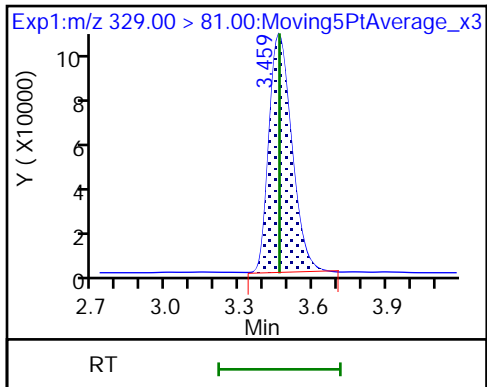
26 1H,1H,2H,2H-perfluorohexanesulfo



D 25 M2-4:2 FTS

28 Perfluorohexanoic acid

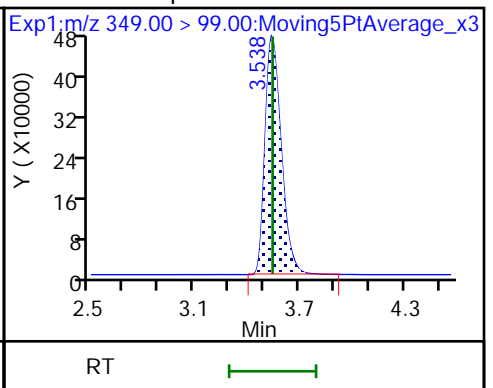
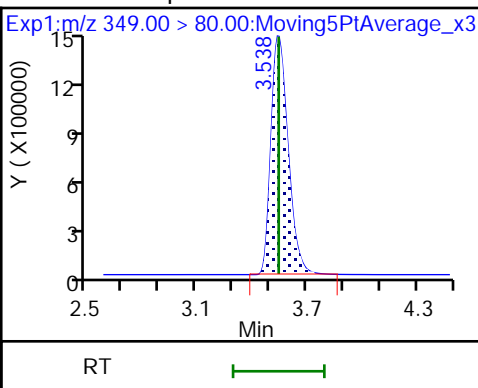
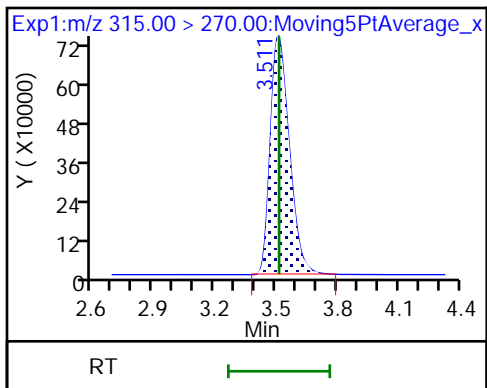
28 Perfluorohexanoic acid



D 27 13C2 PFHxA

29 Perfluoropentanesulfonic acid

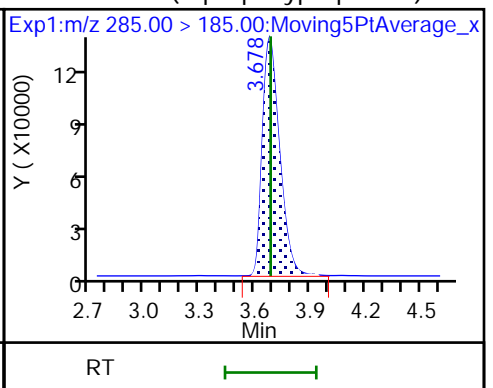
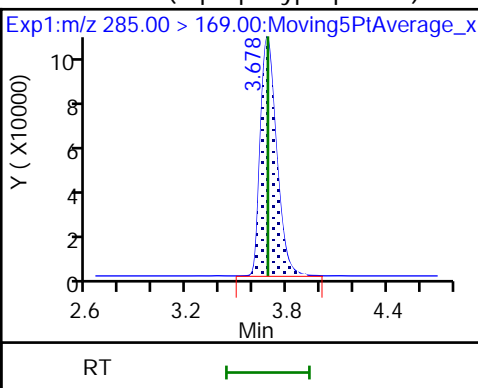
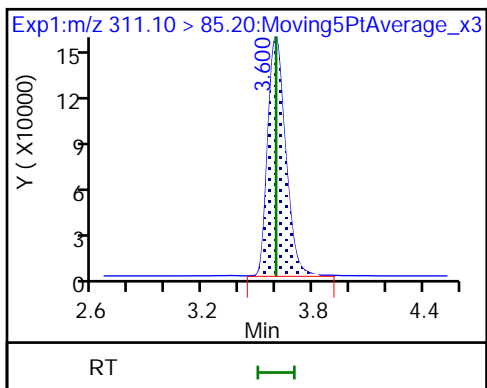
29 Perfluoropentanesulfonic acid



30 PFO3OA

31 Perfluoro(2-propoxypropanoic) ac

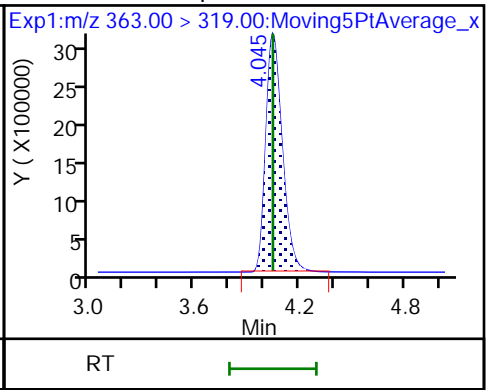
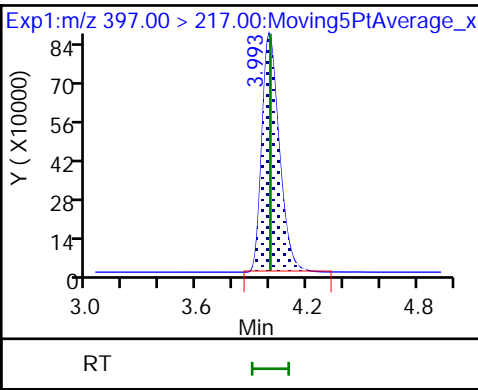
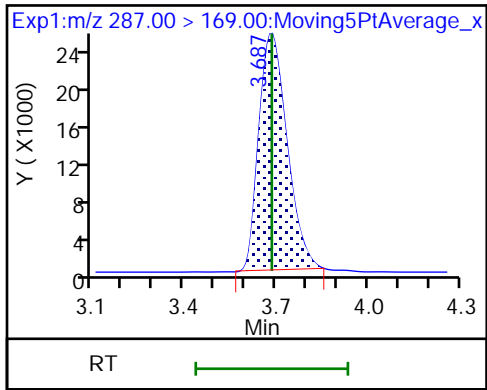
31 Perfluoro(2-propoxypropanoic) ac



D 32 13C3 HFPO-DA

33 R-PSDCA

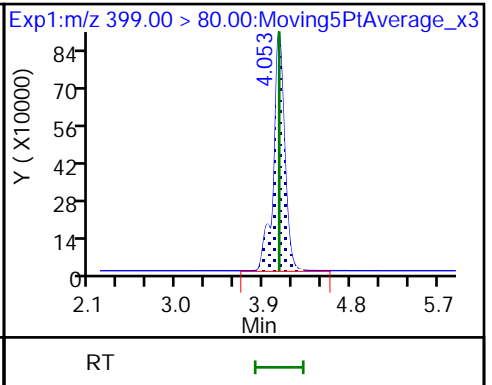
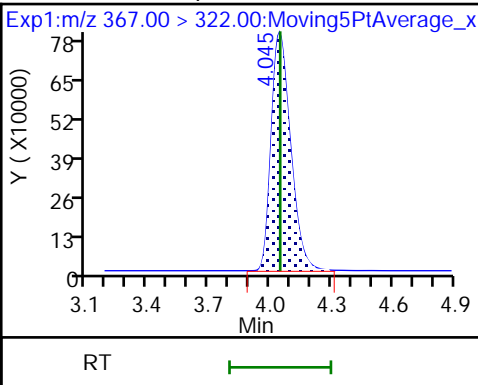
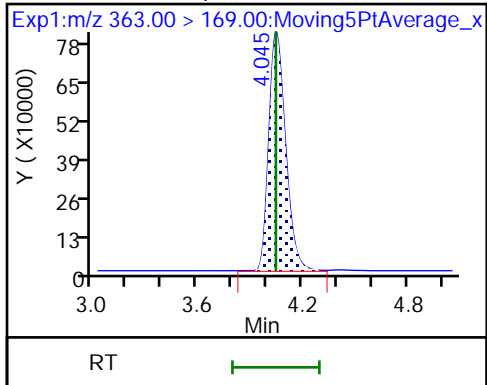
36 Perfluoroheptanoic acid



36 Perfluoroheptanoic acid

D 35 13C4 PFHpA

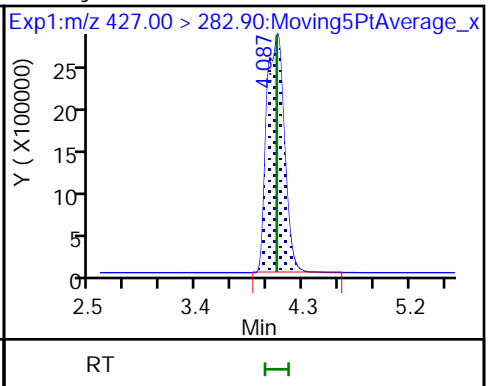
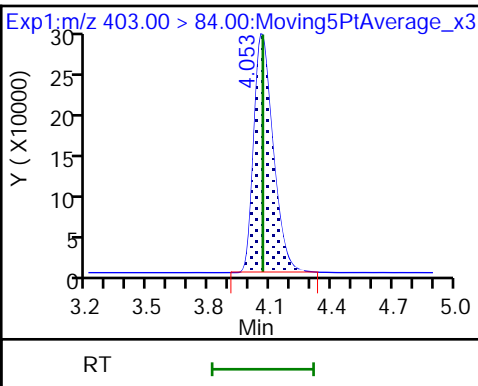
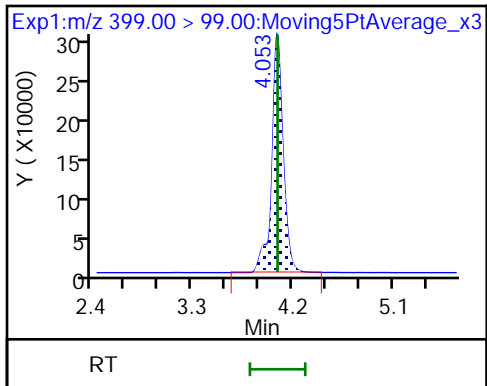
38 Perfluorohexanesulfonic acid



38 Perfluorohexanesulfonic acid

D 37 18O2 PFHxS

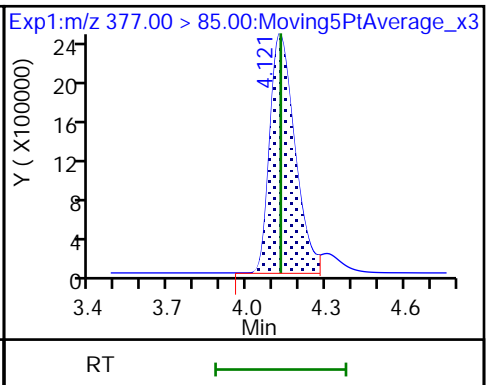
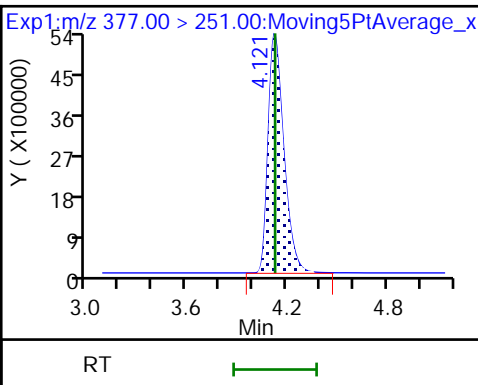
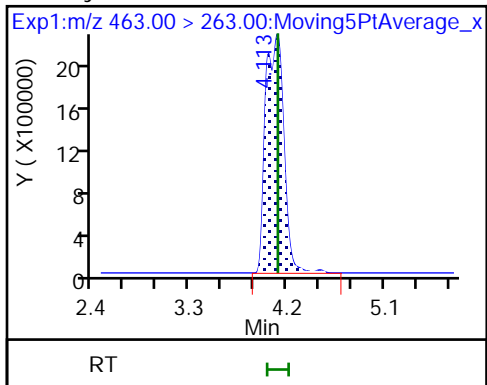
34 Hydro-EVE Acid

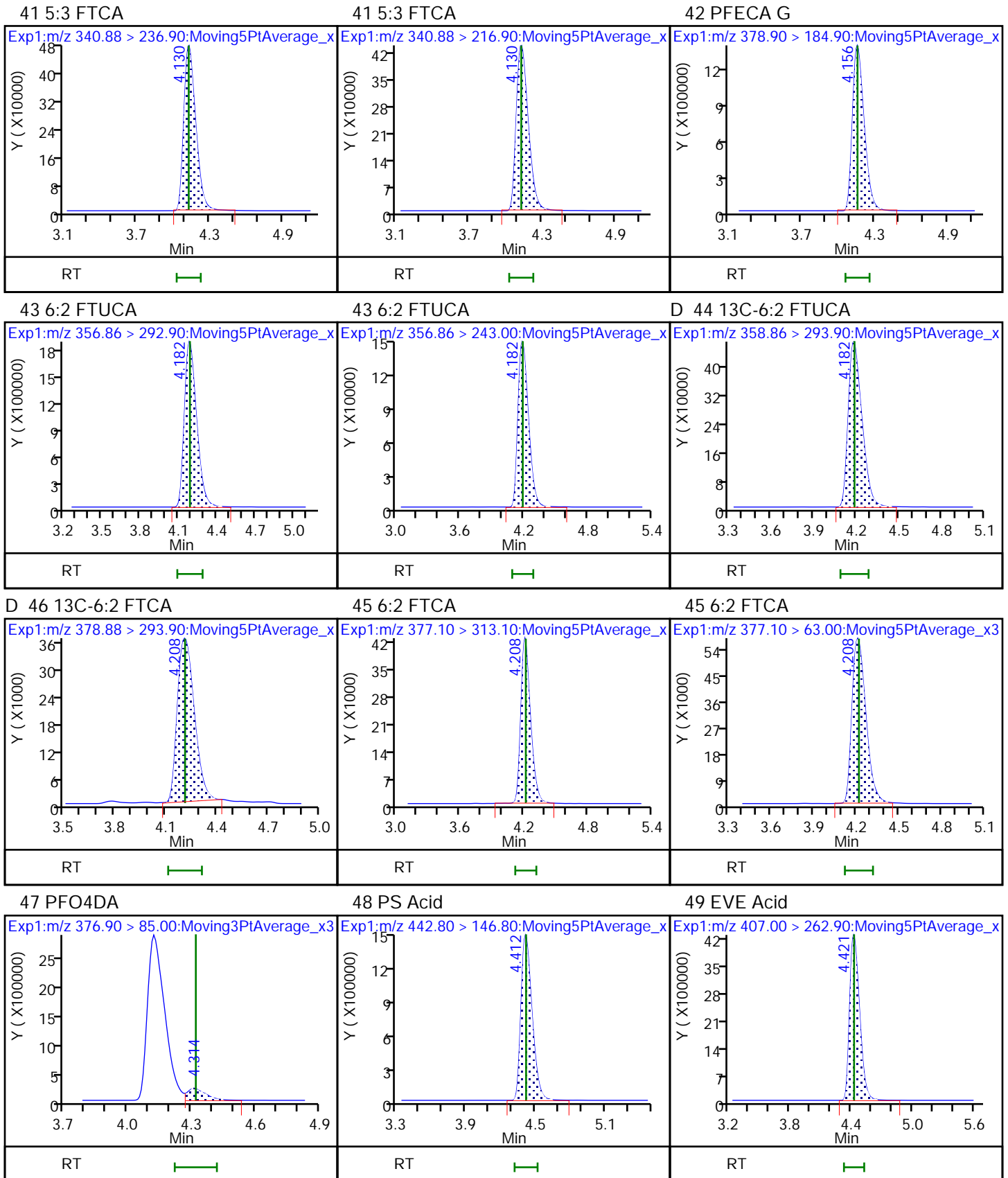


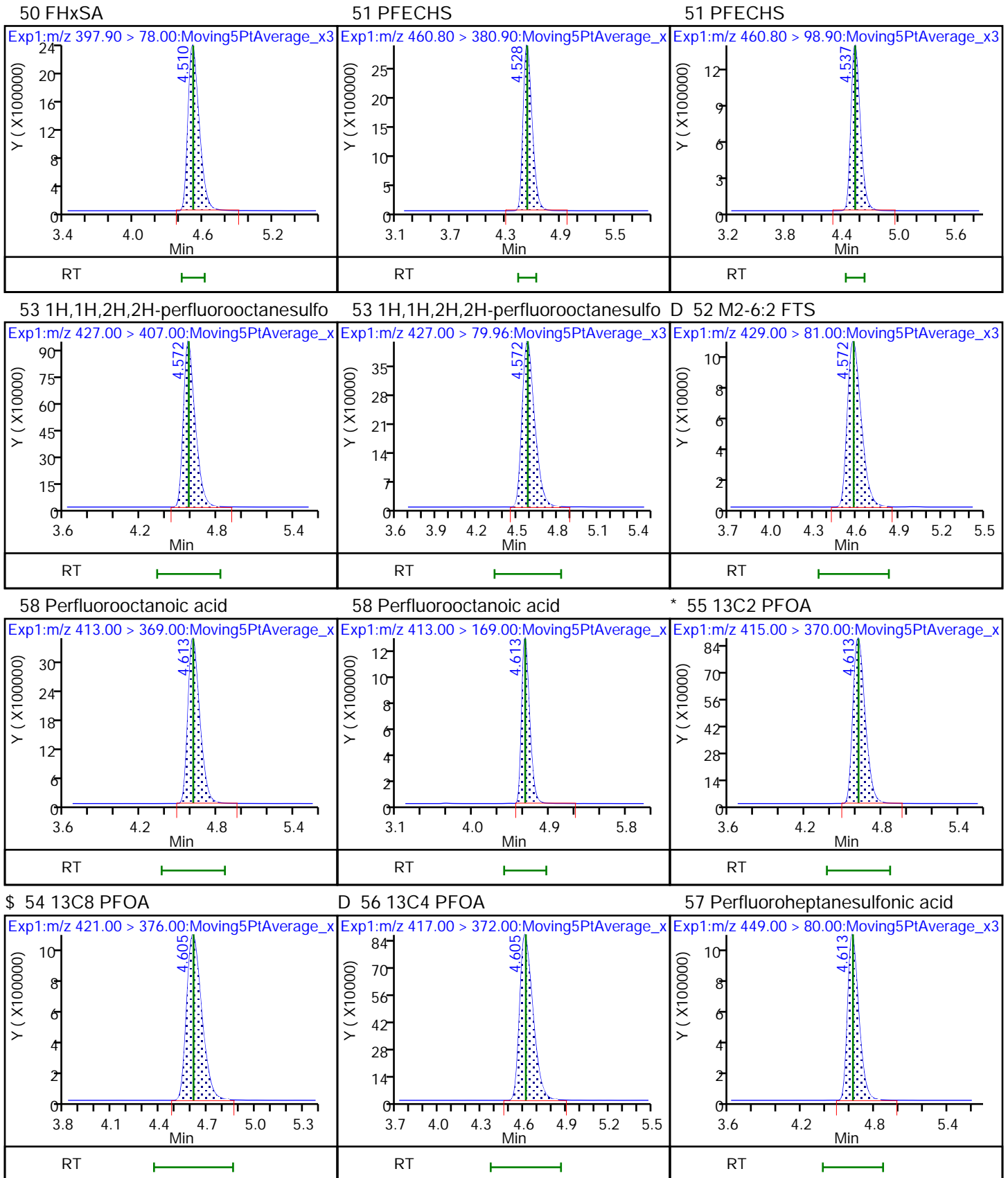
39 Hydro-PS Acid

40 DONA

40 DONA



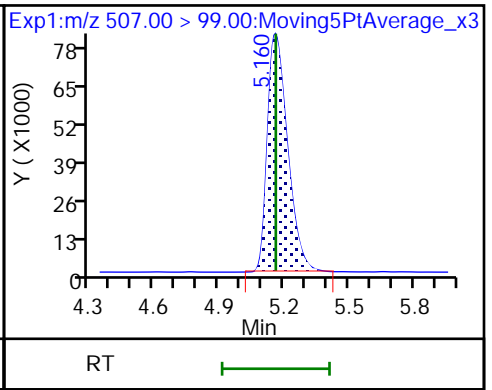
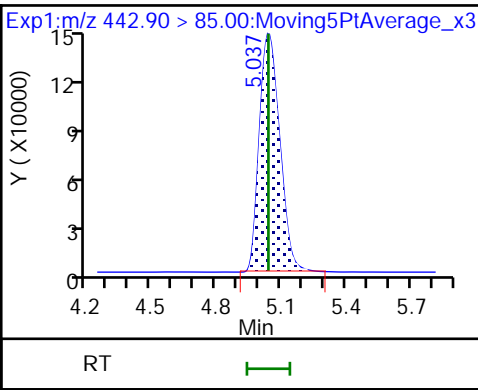
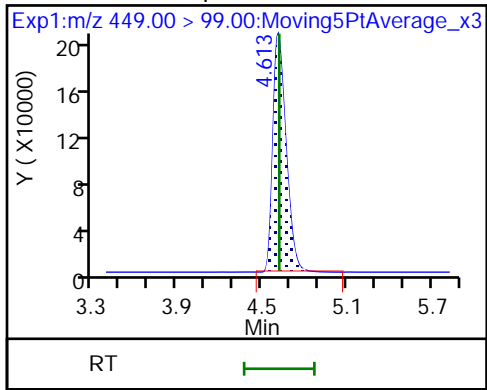




57 Perfluoroheptanesulfonic acid

59 TAF

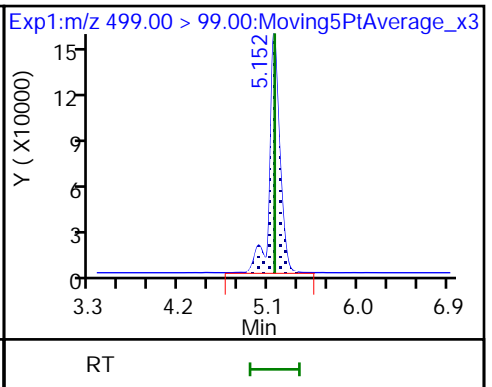
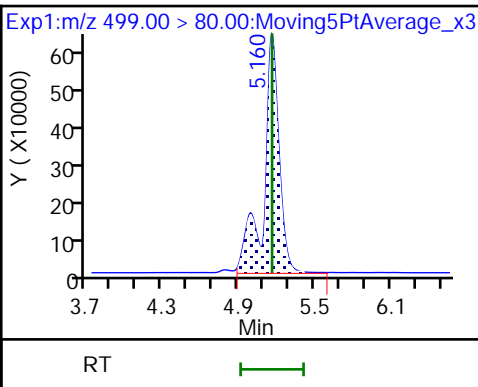
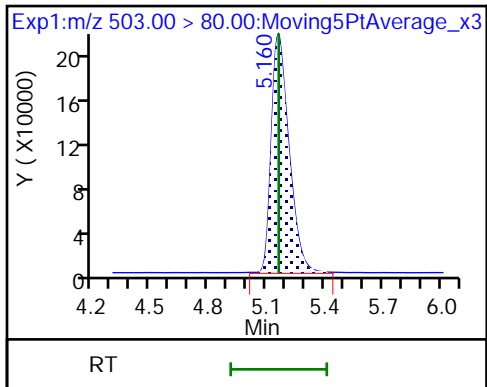
\$ 60 13C8 PFOS



D 61 13C4 PFOS

62 Perfluorooctanesulfonic acid

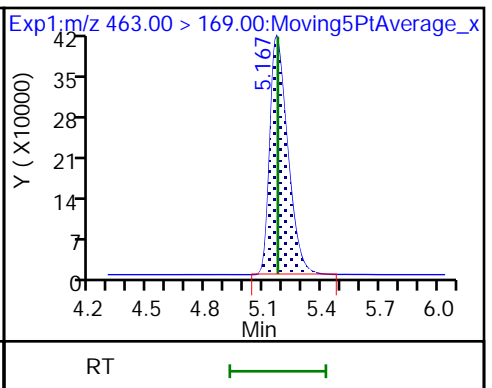
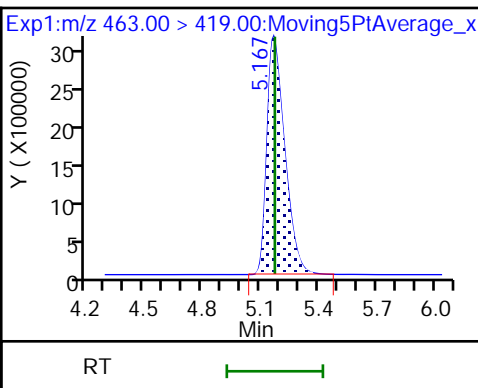
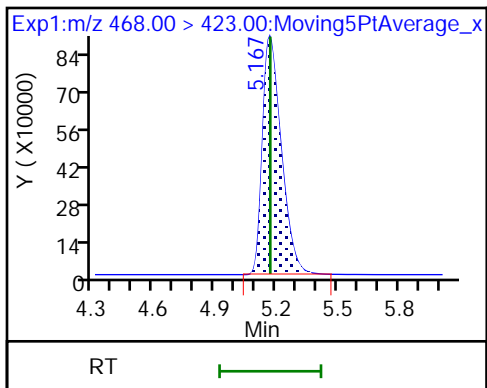
62 Perfluorooctanesulfonic acid



D 64 13C5 PFNA

63 Perfluorononanoic acid

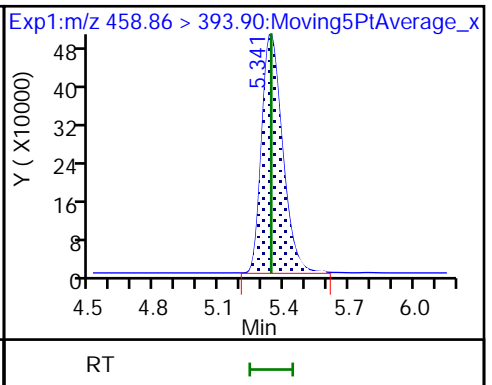
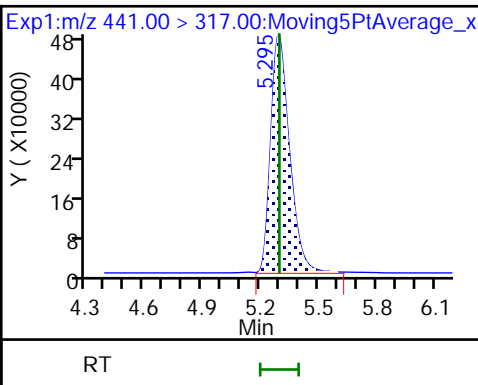
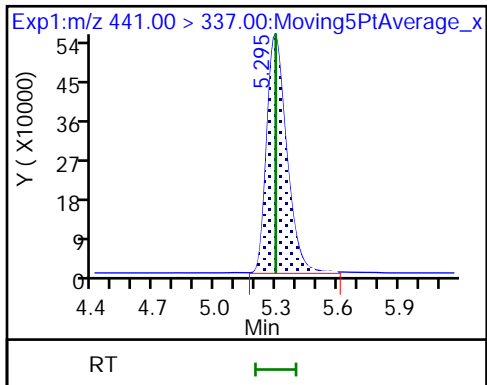
63 Perfluorononanoic acid

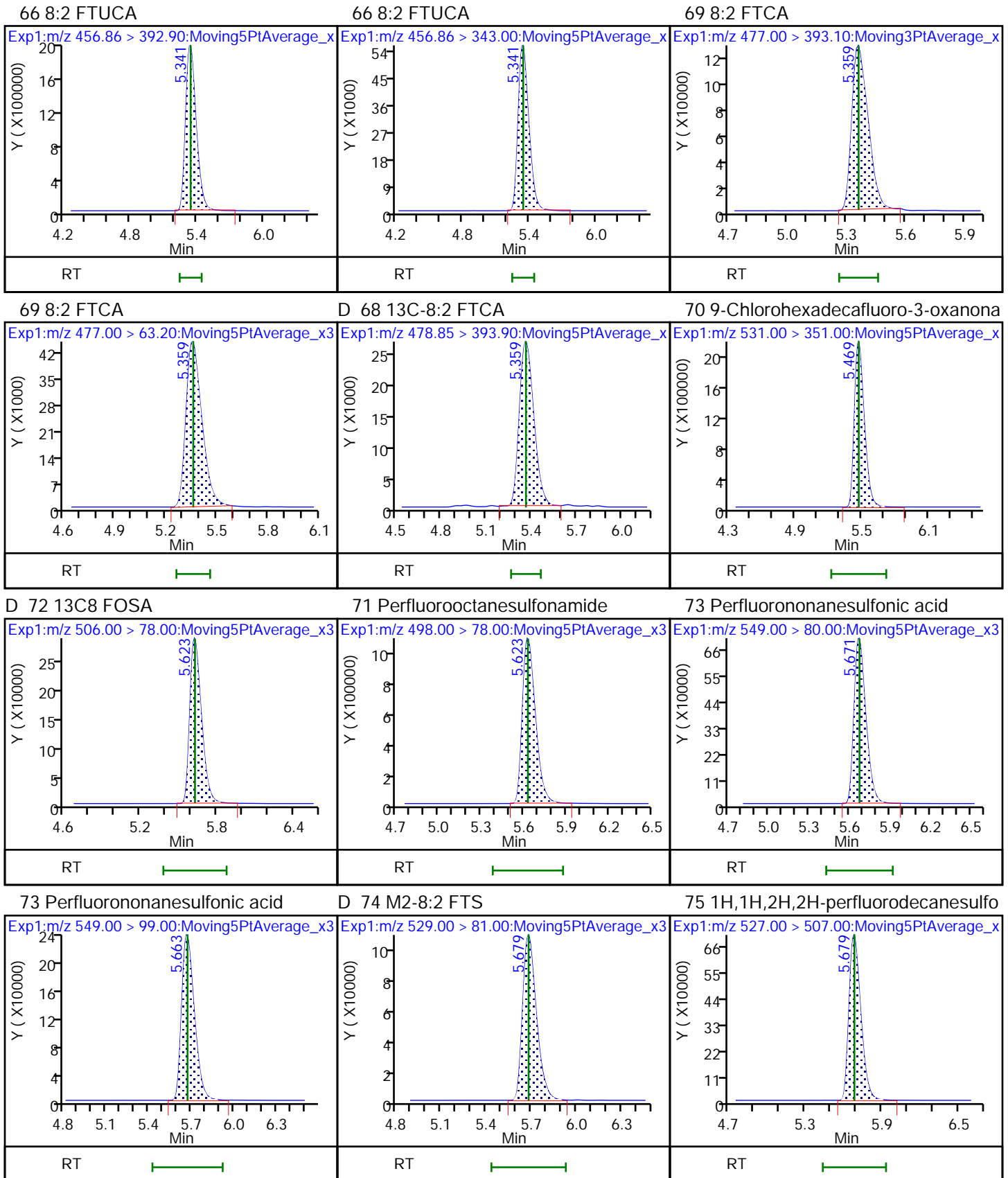


65 7:3 FTCA

65 7:3 FTCA

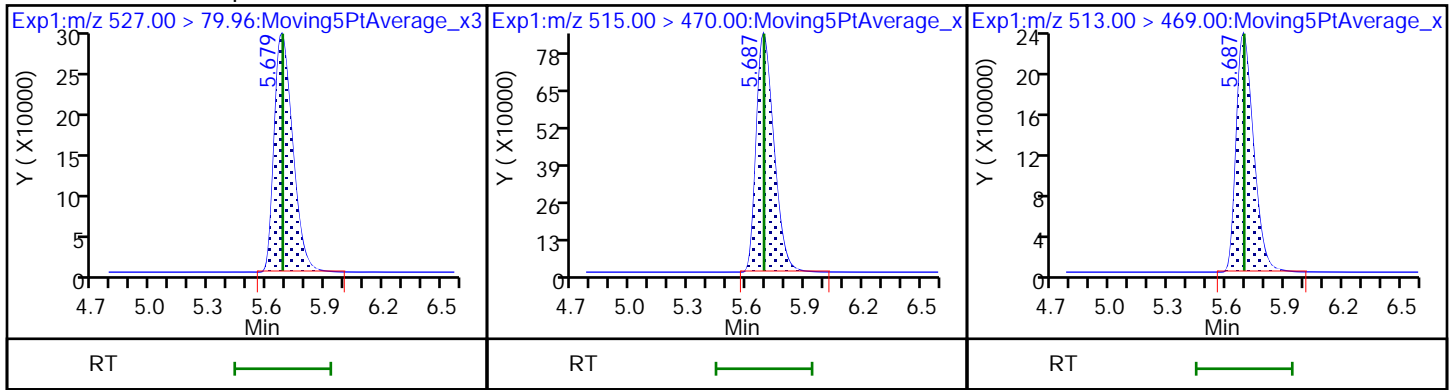
D 67 13C-8:2 FTUCA





75 1H,1H,2H,2H-perfluorodecanesulfo D 76 13C2 PFDA

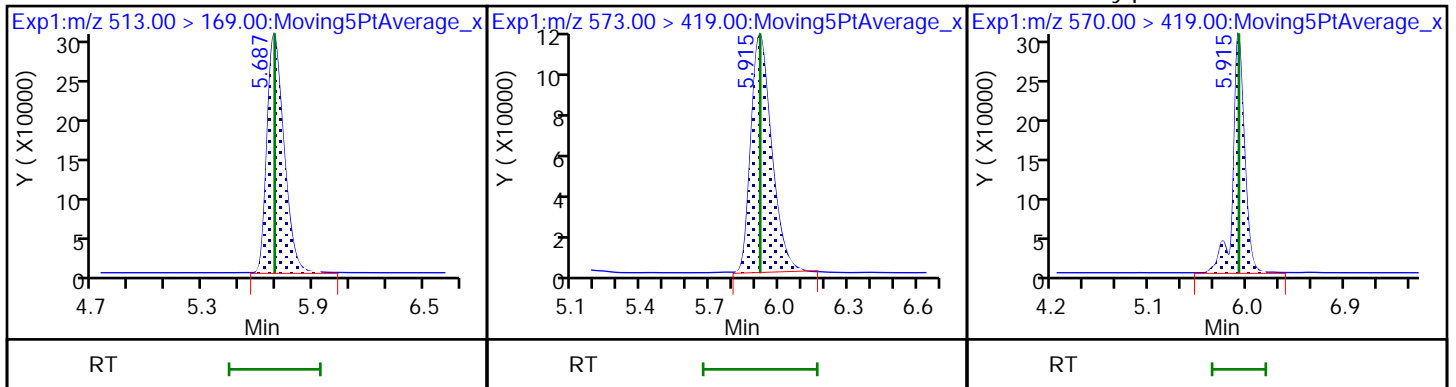
77 Perfluorodecanoic acid



77 Perfluorodecanoic acid

D 78 d3-NMeFOSAA

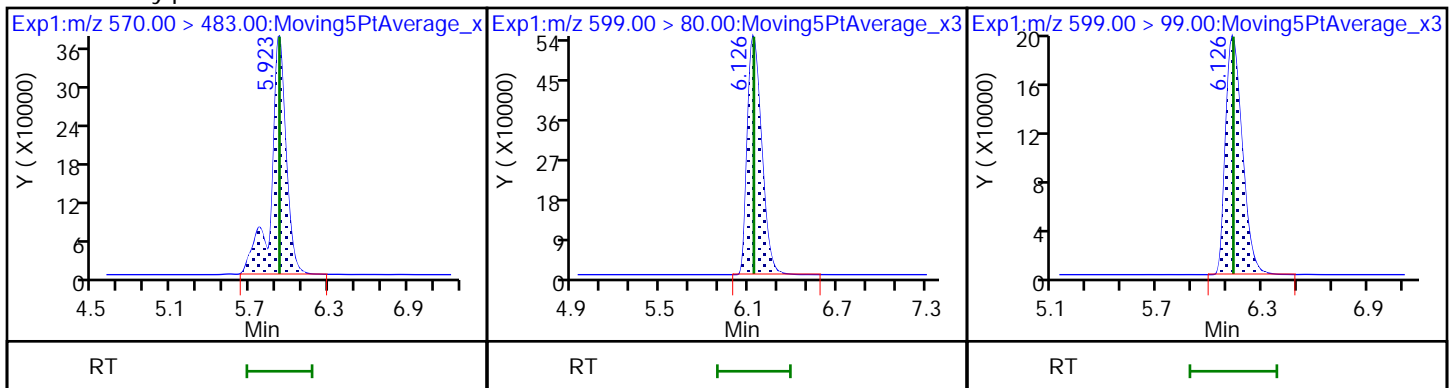
79 N-methylperfluorooctanesulfonami



79 N-methylperfluorooctanesulfonami

80 Perfluorodecanesulfonic acid

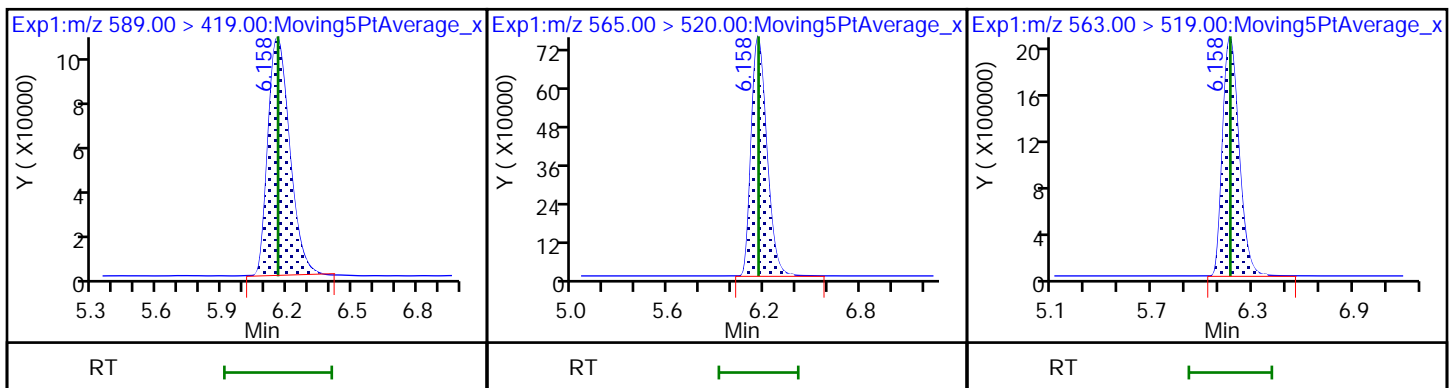
80 Perfluorodecanesulfonic acid

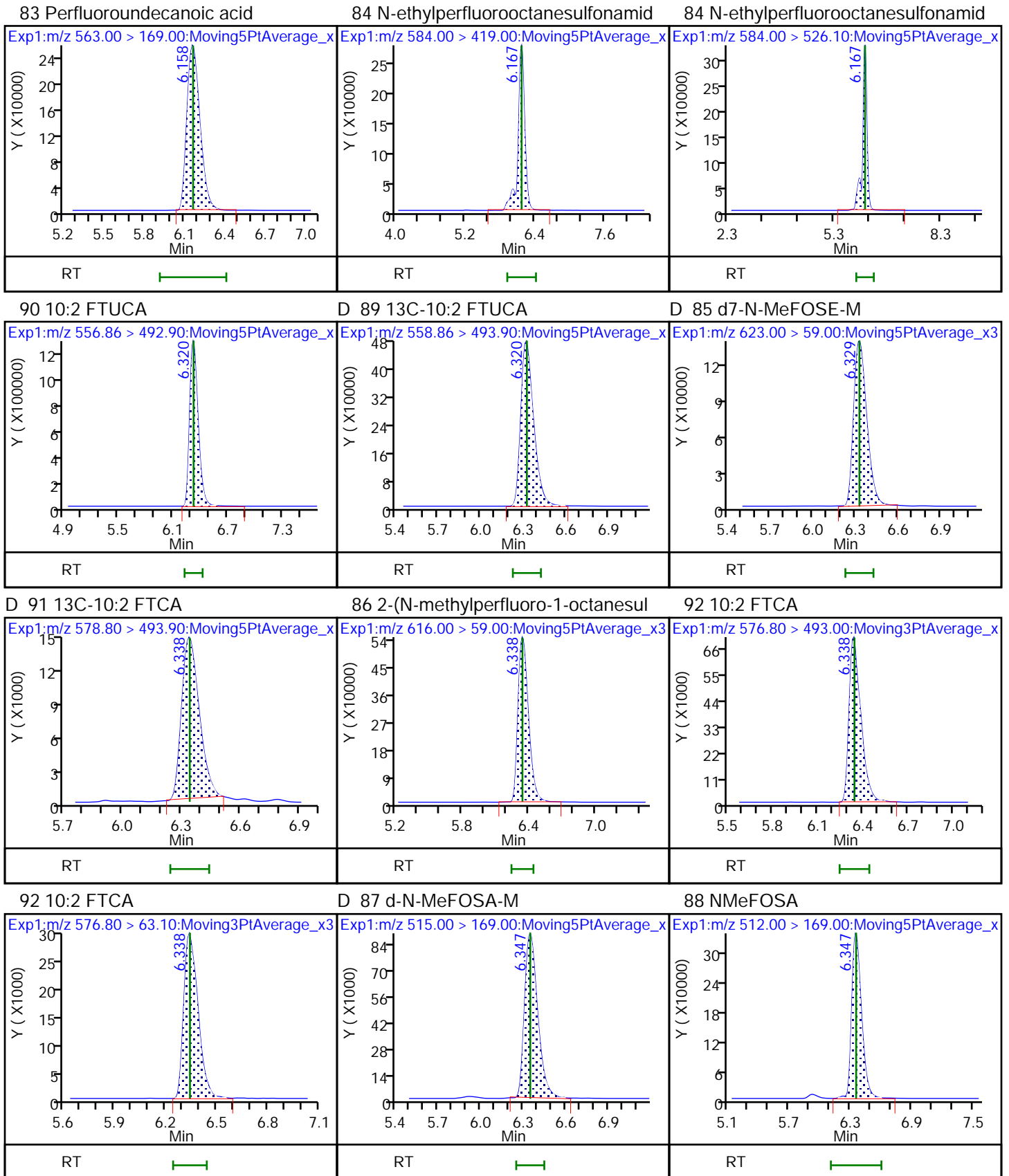


D 81 d5-NEtFOSAA

D 82 13C2 PFUnA

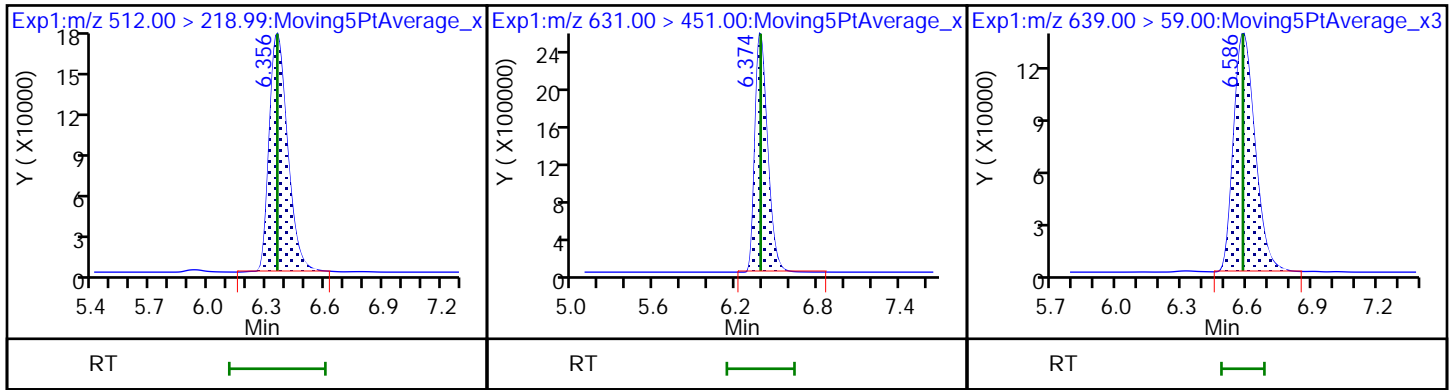
83 Perfluoroundecanoic acid





88 NMeFOSA

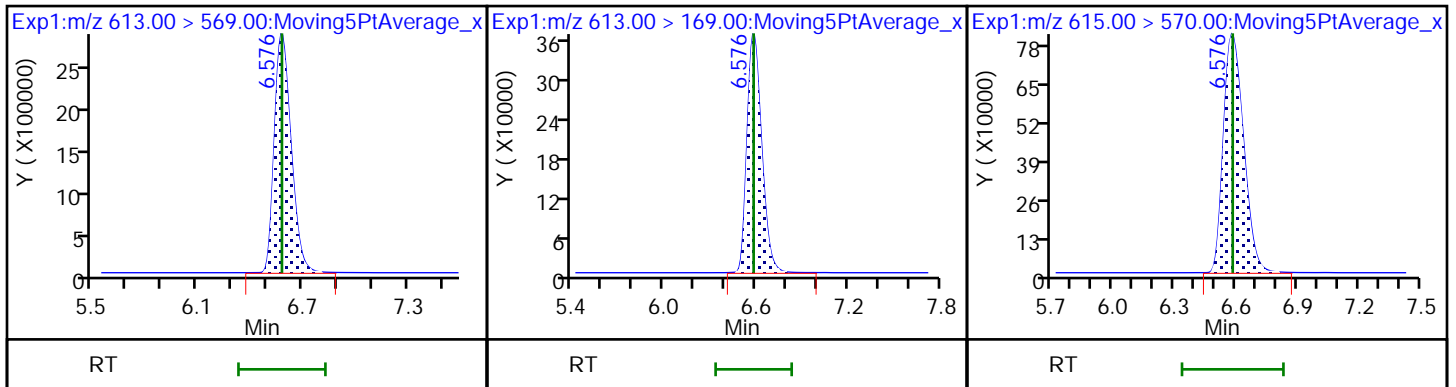
93 11-Chloroeicosafluoro-3-oxaundec D 94 d9-N-EtFOSE-M



99 Perfluorododecanoic acid

99 Perfluorododecanoic acid

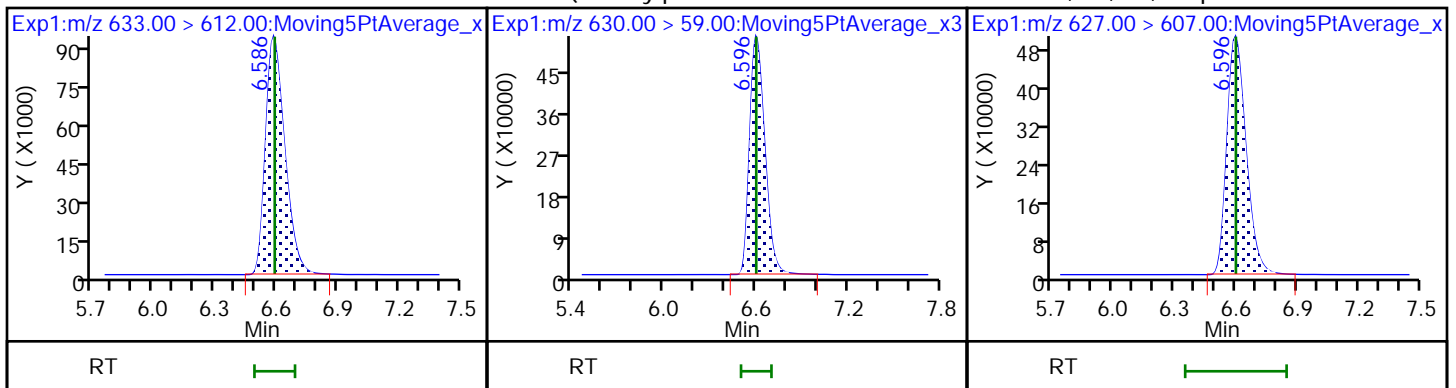
D 98 13C2 PFDa



D 100 13C2 10:2 FTS

95 2-(N-ethylperfluoro-1-octanesulf

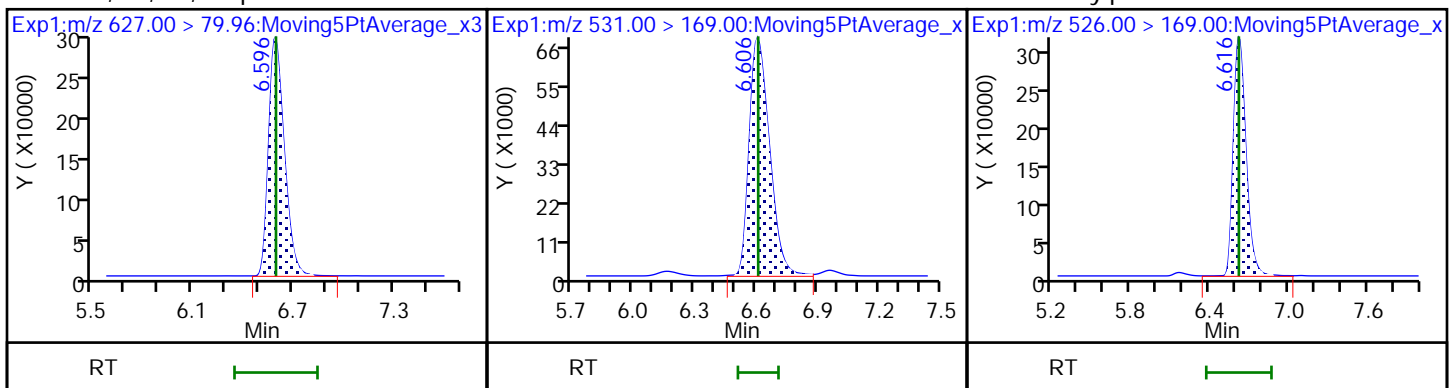
101 1H,1H,2H,2H-perfluorododecanesul



101 1H,1H,2H,2H-perfluorododecanesul

D 96 d-N-EtFOSE-M

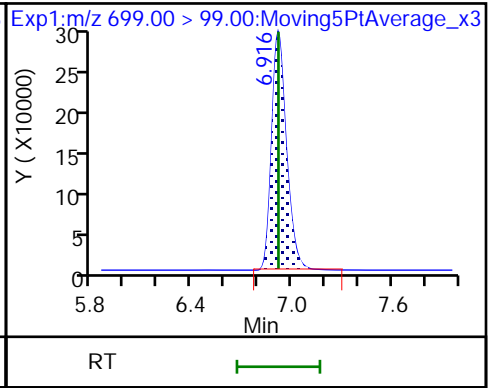
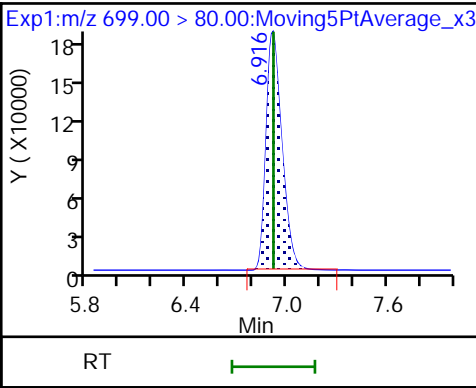
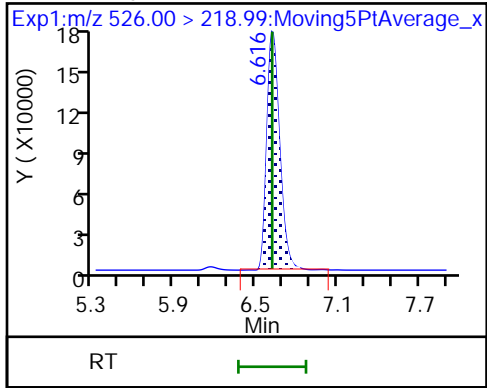
97 N-ethylperfluoro-1-octanesulfona



97 N-ethylperfluoro-1-octanesulfona

102 Perfluorododecanesulfonic acid (

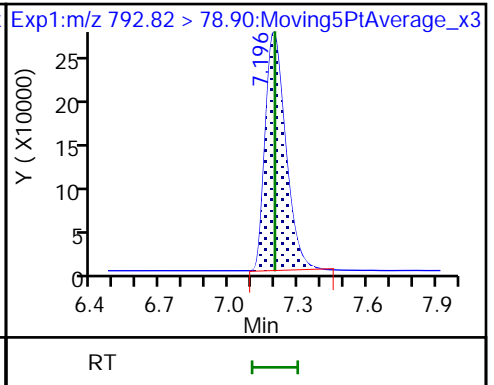
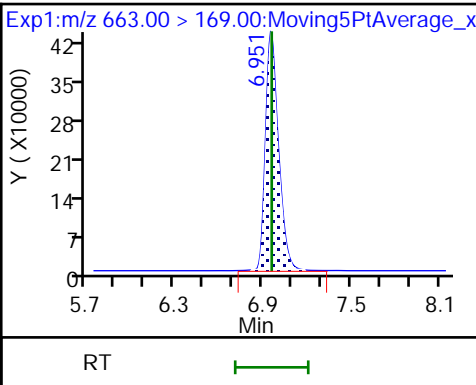
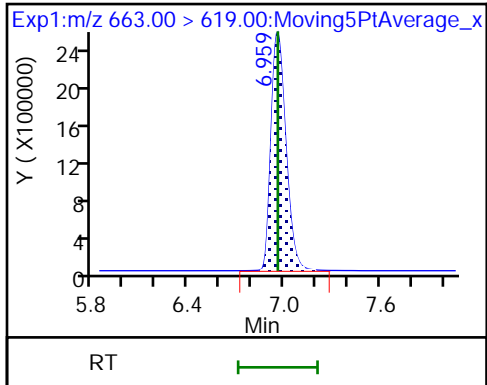
102 Perfluorododecanesulfonic acid (



103 Perfluorotridecanoic acid

103 Perfluorotridecanoic acid

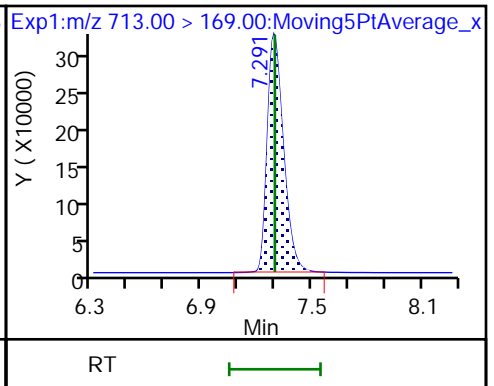
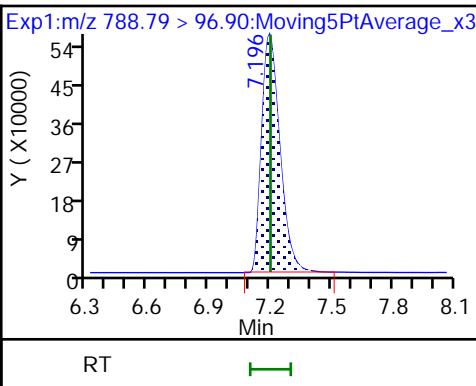
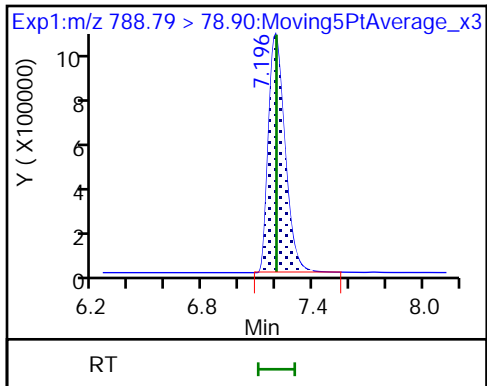
D 112 13C4-6:2 diPAP



114 6:2 diPAP

114 6:2 diPAP

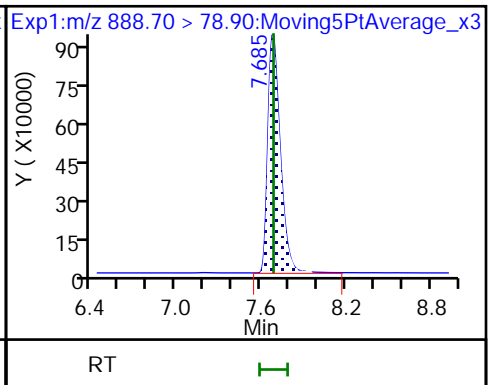
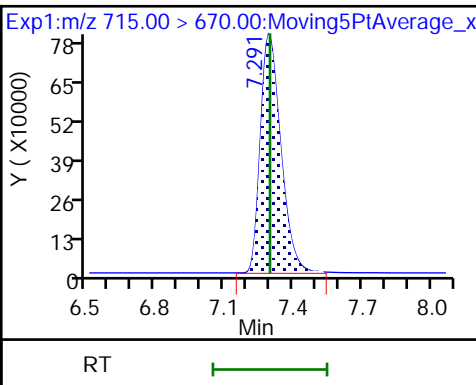
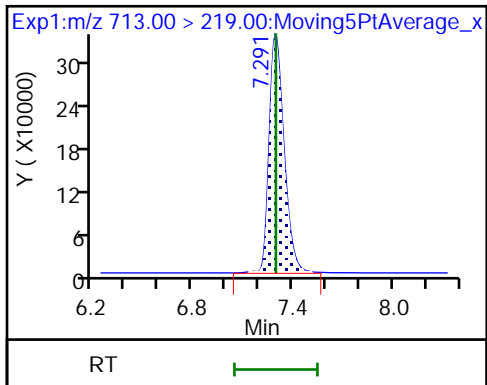
105 Perfluorotetradecanoic acid



105 Perfluorotetradecanoic acid

D 104 13C2 PFTeDA

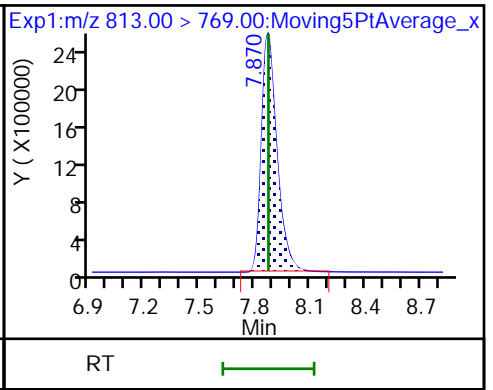
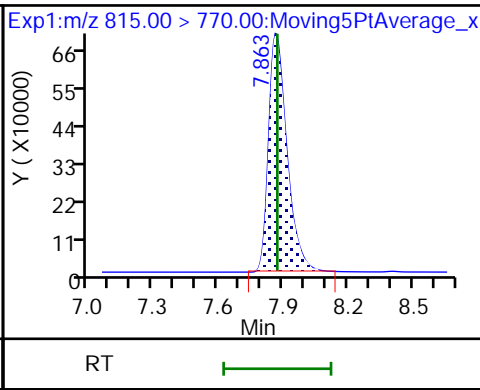
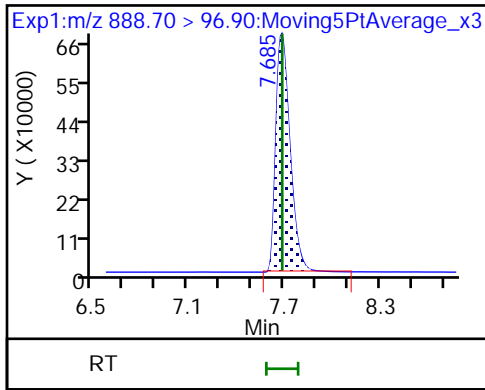
115 6:2/8:2 diPAP



115 6:2/8:2 diPAP

D 106 13C2 PFHxDA

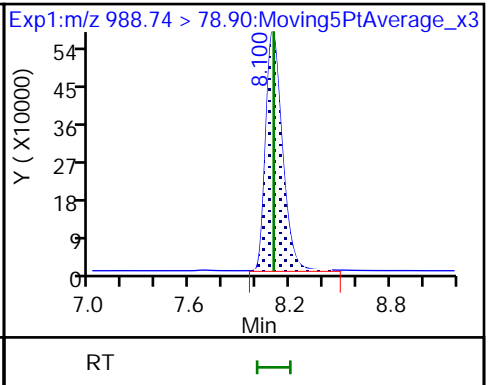
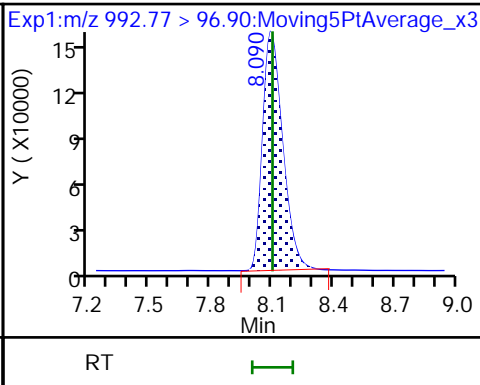
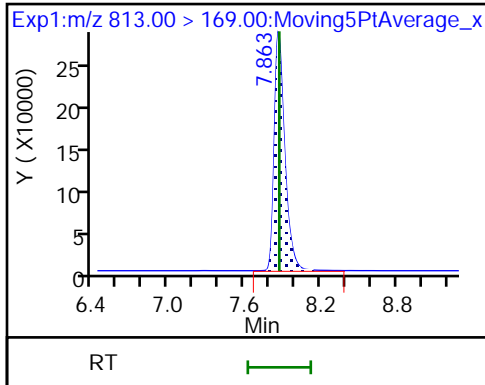
107 Perfluorohexadecanoic acid



107 Perfluorohexadecanoic acid

D 113 13C4-8:2 diPAP

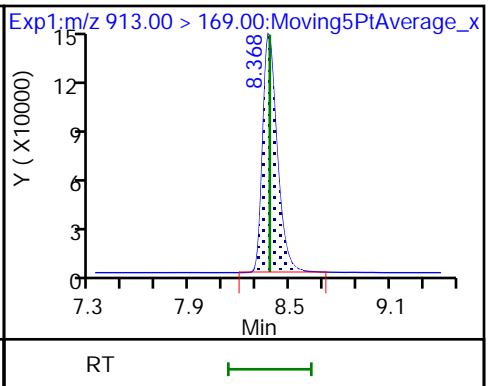
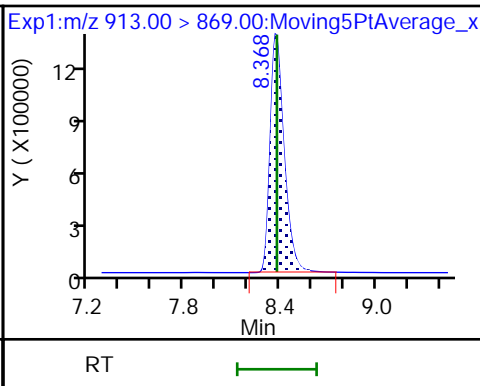
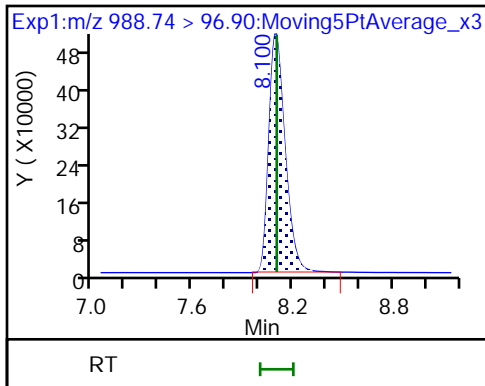
116 8:2 diPAP



116 8:2 diPAP

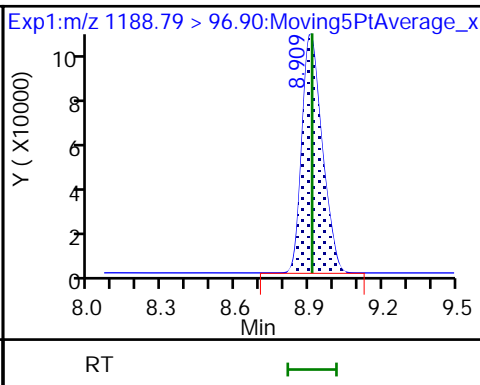
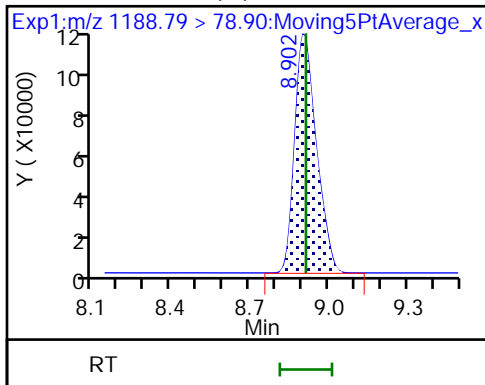
108 Perfluorooctadecanoic acid

108 Perfluorooctadecanoic acid



117 10:2 diPAP (M)

117 10:2 diPAP



Eurofins Sacramento

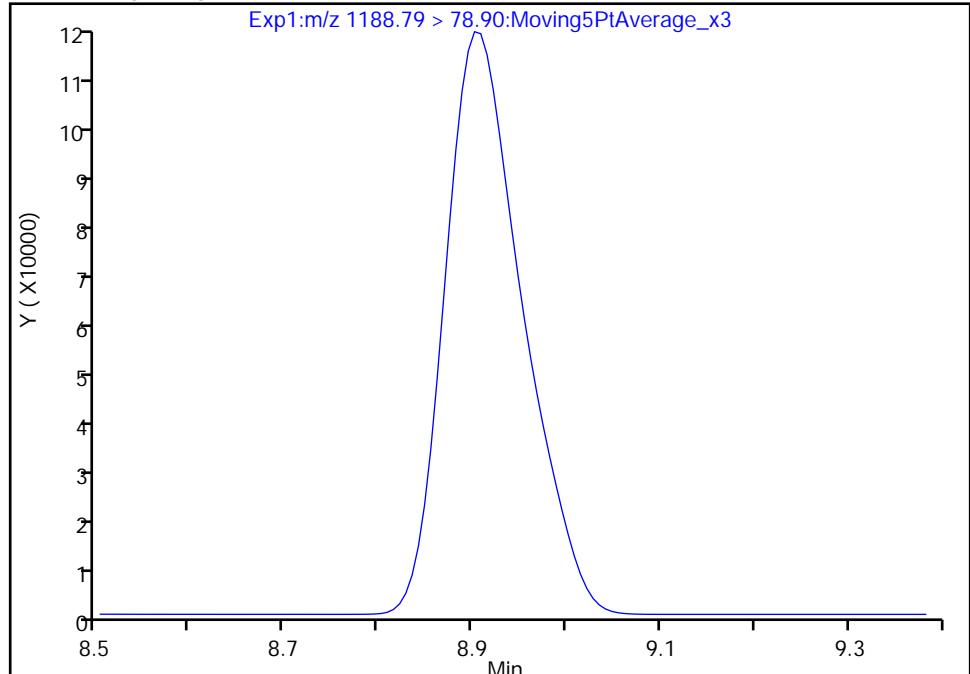
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_014.d
Injection Date: 21-Dec-2022 13:01:11 Instrument ID: A18
Lims ID: IC L6
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 6 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

117 10:2 diPAP, CAS: 1895-26-7

Signal: 1

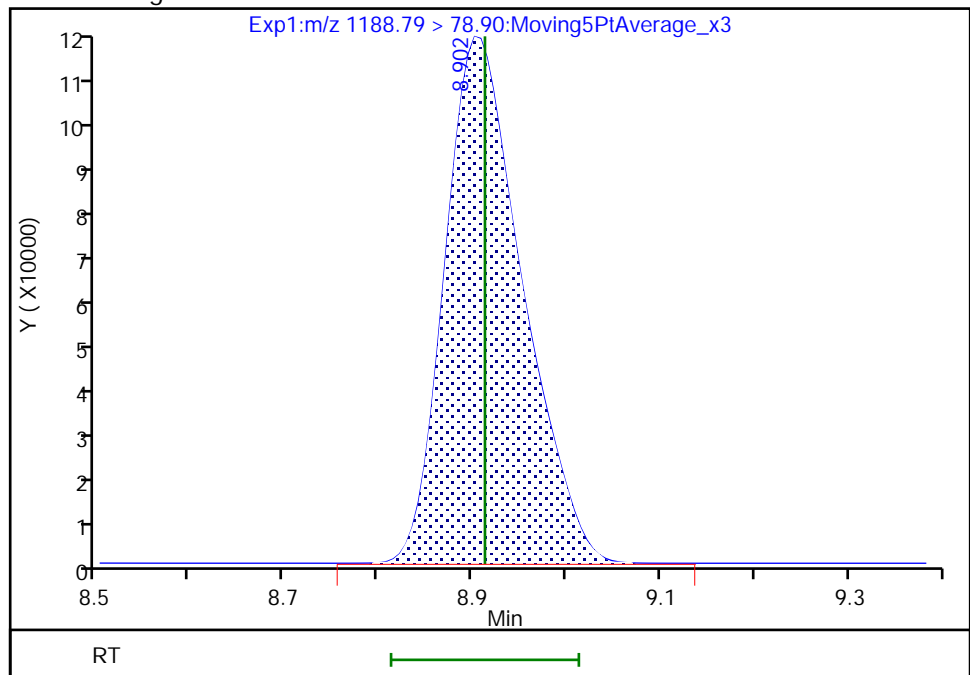
Not Detected
Expected RT: 8.91

Processing Integration Results



RT: 8.90
Area: 640319
Amount: 7.743533
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 22-Dec-2022 06:06:30
Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Lims ID: IC L7
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 21-Dec-2022 13:11:20 ALS Bottle#: 7 Worklist Smp#: 8
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD 7 (06)
 Misc. Info.: Plate: 2 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Sublist: chrom-PFAS+_A18*sub3
 Method: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Dec-2022 07:23:46 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1678

First Level Reviewer: YS2U

Date: 21-Dec-2022 13:59:24

Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 MTP										M
175.00 > 97.00	1.481	1.488	-0.007	0.553	2684293	9.92		99.2	2261	M
2 PPF Acid										
162.95 > 119.00	1.886	1.893	-0.007	0.704	30447165	10.3		106	1920	
3 PFMOAA										
179.00 > 84.90	2.386	2.387	-0.001	0.891	21394563	10.3		103	7414	
4 R-PSDA										
441.00 > 241.00	2.569	2.573	-0.004	0.959	5101615	10.3		103	72804	
5 R-EVE										
405.00 > 217.00	2.569	2.577	-0.008	0.959	12761090	10.1		101	589516	
6 Hydrolyzed PSDA										
439.10 > 342.90	2.577	2.581	-0.004	0.962	16734493	10.6		106	617116	
D 8 13C4 PFBA										
217.00 > 172.00	2.679	2.688	-0.010	0.582	4611646	1.29		103	14305	
7 Perfluorobutanoic acid										
212.90 > 169.00	2.688	2.690	-0.002	1.003	40821406	9.95		99.5	786	
10 PMPA										
229.00 > 185.00	2.751	2.760	-0.009	1.027	44561556	10.5		105	32078	
11 PFPrS										
249.10 > 80.00	2.769	2.771	-0.002	0.892	19474699	8.84		96.1	72140	
12 NVHOS										
297.00 > 135.00	2.787	2.790	-0.003	1.041	1010112	9.48		94.8	19049	
13 PFECA F										
229.00 > 85.00	2.824	2.829	-0.005	0.923	22632055	10.1		101	52335	
14 PFO2HxA										
245.00 > 85.00	2.963	2.976	-0.013	0.969	4751670	10.1		101	17755	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 16 13C5 PFPeA										
267.90 > 223.00	3.059	3.068	-0.009	0.664	4278195	1.34		107	34331	
15 Perfluoropentanoic acid										
262.90 > 219.00	3.068	3.069	-0.001	1.003	35363238	9.89		98.9	70973	
17 3:3 FTCA										
241.00 > 177.10	3.068	3.075	-0.007	0.988	1898204	10.5	Target=1.46	105	21920	
241.00 > 116.90	3.068	3.075	-0.007	0.988	1432772		1.32(0.73-2.18)	105	9623	
19 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.105	3.111	-0.006	1.000	21173366	9.15	Target=2.33	103	32068	
298.90 > 99.00	3.105	3.111	-0.006	1.000	8739344		2.42(1.16-3.49)	103	24441	
D 18 13C3 PFBS										
301.90 > 80.00	3.105	3.111	-0.006	0.674	2744823	1.24		107	17403	
20 PEPA										
278.90 > 234.90	3.172	3.178	-0.006	1.037	38654364	10.2		102	7790	
21 PFECA A										
278.95 > 84.90	3.192	3.198	-0.006	1.044	37733865	9.93		99.3	99510	
22 PES										
314.80 > 135.00	3.288	3.292	-0.004	1.059	69477853	9.03		101	378721	
23 FBSA										
297.90 > 78.00	3.334	3.338	-0.004	0.593	5062726	10.1		101	23688	
24 PFECA B										
295.20 > 201.00	3.422	3.438	-0.016	0.977	6210272	9.70		97.0	39252	
26 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.458	3.461	-0.003	1.000	10909716	9.57	Target=1.98	102	107588	
327.00 > 79.96	3.458	3.461	-0.003	1.000	5552091		1.96(0.99-2.97)	102	54350	
D 25 M2-4:2 FTS										
329.00 > 81.00	3.458	3.463	-0.005	0.751	572256	1.11		94.9	3132	
D 27 13C2 PFHxA										
315.00 > 270.00	3.502	3.513	-0.011	0.760	4621814	1.31		105	29980	
28 Perfluorohexanoic acid										
313.00 > 269.00	3.511	3.514	-0.003	1.003	34797665	9.99	Target=13.54	99.9	36257	
313.00 > 119.00	3.502	3.514	-0.012	1.000	2524405		13.78(6.77-20.31)	99.9	22699	
29 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.538	3.545	-0.007	1.139	17891547	9.44	Target=3.08	100	84992	
349.00 > 99.00	3.538	3.545	-0.007	1.139	5429354		3.30(1.54-4.63)	100	69512	
30 PFO3OA										
311.10 > 85.20	3.592	3.598	-0.006	1.026	1880458	9.21		92.1	26582	
31 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.679	3.685	-0.006	1.000	1269709	9.77	Target=0.84	97.7	48858	
285.00 > 185.00	3.679	3.685	-0.006	1.000	1611527		0.79(0.42-1.25)	97.7	22448	
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.679	3.685	-0.006	0.799	153654	1.30		104	3442	
33 R-PSDCA										
397.00 > 217.00	3.994	4.000	-0.006	0.989	10558154	9.61		96.1	88379	
36 Perfluoroheptanoic acid										
363.00 > 319.00	4.037	4.047	-0.010	1.000	34616695	10.2	Target=3.56	102	35425	
363.00 > 169.00	4.037	4.047	-0.010	1.000	9670958		3.58(1.78-5.34)	102	17666	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 35 13C4 PFHpA										
367.00 > 322.00	4.037	4.048	-0.011	0.877	4666051	1.25		99.9	25715	
38 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.054	4.060	-0.006	1.000	13190799	9.35	Target=3.26	103	42292	
399.00 > 99.00	4.054	4.060	-0.006	1.000	3830405		3.44(1.63-4.88)	103	16832	
D 37 18O2 PFHxS										
403.00 > 84.00	4.054	4.063	-0.009	0.880	1728897	1.18		100	12938	
34 Hydro-EVE Acid										
427.00 > 282.90	4.071	4.078	-0.007	1.008	53685526	10.4		104	661136	
39 Hydro-PS Acid										
463.00 > 263.00	4.105	4.114	-0.009	1.017	48863947	10.6		106	757990	
40 DONA										
377.00 > 251.00	4.122	4.128	-0.006	0.800	62873239	9.37	Target=2.23	99.3	81385	
377.00 > 85.00	4.122	4.128	-0.006	0.800	28616220		2.20(1.11-3.34)	99.3	866	
41 5:3 FTCA										
340.88 > 236.90	4.122	4.127	-0.005	0.981	5851847	10.2	Target=1.10	102	96369	
340.88 > 216.90	4.122	4.127	-0.005	0.981	5160432		1.13(0.55-1.65)	102	28419	
42 PFECA G										
378.90 > 184.90	4.157	4.158	-0.001	0.990	15721252	9.38		93.8	33052	
D 44 13C-6:2 FTUCA										
358.86 > 293.90	4.174	4.185	-0.011	0.906	2674693	1.21		96.5	20634	
43 6:2 FTUCA										
356.86 > 292.90	4.183	4.188	-0.005	1.002	23001214	10.6	Target=12.98	106	37759	
356.86 > 243.00	4.183	4.188	-0.005	1.002	1640481		14.02(6.49-19.46)	106	17232	
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.200	4.212	-0.012	0.912	214455	1.25		100	1094	
45 6:2 FTCA										
377.10 > 313.10	4.209	4.217	-0.008	1.002	473467	10.6	Target=0.65	106	9759	
377.10 > 63.00	4.200	4.217	-0.017	1.000	699698		0.68(0.33-0.98)	106	20783	
47 PFO4DA										
376.90 > 85.00	4.307	4.320	-0.013	1.067	2362094	11.4		114	0.7	
48 PS Acid										
442.80 > 146.80	4.413	4.418	-0.005	0.958	17279343	9.92		99.2	46460	
49 EVE Acid										
407.00 > 262.90	4.422	4.425	-0.003	0.960	51552254	9.60		96.0	1527917	
50 FHxSA										
397.90 > 78.00	4.511	4.515	-0.004	0.802	26572256	9.86		98.6	20575	
51 PFECHS										
460.80 > 380.90	4.529	4.535	-0.006	0.983	34555975	9.37	Target=2.05	101	636647	
460.80 > 98.90	4.529	4.535	-0.006	0.983	16667992		2.07(1.03-3.08)	101	244876	
53 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.572	4.578	-0.006	1.000	10117176	9.64	Target=2.31	101	73899	
427.00 > 79.96	4.572	4.578	-0.006	1.000	4303770		2.35(1.16-3.47)	101	34909	
D 52 M2-6:2 FTS										
429.00 > 81.00	4.572	4.580	-0.008	0.993	613639	1.13		95.3	9407	
\$ 54 13C8 PFOA										
421.00 > 376.00	4.606	4.613	-0.007	1.000	6070302	1.25		100	16533	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 56 13C4 PFOA										
417.00 > 372.00	4.606	4.613	-0.007	1.000	5237620	1.28		103	16289	
58 Perfluorooctanoic acid										
413.00 > 369.00	4.606	4.614	-0.008	1.000	37740925	9.66	Target=2.69	96.6	16346	
413.00 > 169.00	4.606	4.614	-0.008	1.000	14144905		2.67(1.35-4.04)	96.6	17612	
* 55 13C2 PFOA										
415.00 > 370.00	4.606	4.615	-0.009		5052051	1.25			20817	
57 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.606	4.620	-0.014	0.894	11265901	9.32	Target=4.67	97.7	43254	
449.00 > 99.00	4.614	4.620	-0.006	0.895	2339537		4.82(2.33-7.00)	97.7	25266	
59 TAF										
442.90 > 85.00	5.038	5.041	-0.003	1.094	1600208	10.2		102	17695	
\$ 60 13C8 PFOS										
507.00 > 99.00	5.153	5.161	-0.008	1.119	503120	1.19		99.7	5247	
D 61 13C4 PFOS										
503.00 > 80.00	5.153	5.162	-0.009	1.119	1206062	1.22		102	6352	
62 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.153	5.163	-0.010	1.000	9640352	9.22	Target=5.09	99.1	2458	
499.00 > 99.00	5.153	5.163	-0.010	1.000	1977525		4.87(2.55-7.64)	99.1	14642	
D 64 13C5 PFNA										
468.00 > 423.00	5.160	5.170	-0.010	1.120	5015471	1.25		100	26668	
63 Perfluorononanoic acid										
463.00 > 419.00	5.167	5.173	-0.006	1.001	35644768	10.2	Target=7.64	102	29547	
463.00 > 169.00	5.160	5.173	-0.013	1.000	4755724		7.50(3.82-11.46)	102	61539	
65 7:3 FTCA										
441.00 > 337.00	5.287	5.297	-0.010	0.986	7008185	9.78	Target=1.18	97.8	12236	
441.00 > 317.00	5.287	5.297	-0.010	0.986	5966244		1.17(0.59-1.77)	97.8	11130	
D 67 13C-8:2 FTUCA										
458.86 > 393.90	5.333	5.340	-0.007	1.158	3026054	1.27		102	10825	
66 8:2 FTUCA										
456.86 > 392.90	5.333	5.342	-0.009	1.000	23243416	10.1	Target=39.03	101	41632	
456.86 > 343.00	5.333	5.342	-0.009	1.000	668114		34.79(19.51-58.54)	101	16961	
69 8:2 FTCA										
477.00 > 393.10	5.360	5.361	-0.001	1.000	1331255	9.71	Target=2.58	97.1	960	
477.00 > 63.20	5.360	5.361	-0.001	1.000	455191		2.92(1.29-3.87)	97.1	6786	
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.360	5.363	-0.003	1.164	169228	1.32		106	838	
70 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	5.461	5.470	-0.010	1.060	24613739	9.78		105	88491	
71 Perfluorooctanesulfonamide										
498.00 > 78.00	5.623	5.628	-0.005	1.000	13198398	10.3		103	40867	
D 72 13C8 FOSA										
506.00 > 78.00	5.623	5.628	-0.005	1.221	1685839	1.29		103	12168	
73 Perfluorononanesulfonic acid										
549.00 > 80.00	5.663	5.672	-0.009	1.099	8011435	10.3	Target=2.73	107	38159	
549.00 > 99.00	5.663	5.672	-0.009	1.099	2738347		2.93(1.37-4.10)	107	63035	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.671	5.681	-0.010	1.231	666127	1.22		102	14949	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	5.679	5.683	-0.004	1.001	8220358	8.99	Target=2.39	93.6	62591	
527.00 > 79.96	5.671	5.683	-0.012	1.000	3481878		2.36(1.19-3.58)	93.6	23888	
D 76 13C2 PFDA										
515.00 > 470.00	5.687	5.690	-0.003	1.235	5095868	1.32		106	27583	
77 Perfluorodecanoic acid										
513.00 > 469.00	5.679	5.691	-0.012	0.999	28503226	10.6	Target=7.32	106	40116	
513.00 > 169.00	5.687	5.691	-0.004	1.000	3685567		7.73(3.66-10.98)	106	36646	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.907	5.917	-0.010	1.283	737397	1.38		110	1534	
79 N-methylperfluorooctanesulfonami										
570.00 > 419.00	5.915	5.923	-0.008	1.001	4440545	9.52	Target=0.78	95.2	13427	
570.00 > 483.00	5.915	5.923	-0.008	1.001	5854366		0.76(0.39-1.18)	95.2	9162	
80 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.126	6.133	-0.007	1.189	7123758	9.74	Target=3.04	101	118923	
599.00 > 99.00	6.126	6.133	-0.007	1.189	2405518		2.96(1.52-4.56)	101	30223	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.147	6.158	-0.011	1.335	672383	1.25		100	3185	
D 82 13C2 PFUnA										
565.00 > 520.00	6.158	6.163	-0.005	1.337	4825909	1.33		107	25296	
83 Perfluoroundecanoic acid										
563.00 > 519.00	6.158	6.163	-0.005	1.000	27161903	10.3	Target=8.03	103	149803	
563.00 > 169.00	6.158	6.163	-0.005	1.000	3450061		7.87(4.02-12.05)	103	36514	
84 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	6.158	6.168	-0.010	1.002	4285807	10.6	Target=0.76	106	9313	
584.00 > 526.10	6.158	6.168	-0.010	1.002	5369299		0.80(0.38-1.14)	106	199807	
D 89 13C-10:2 FTUCA										
558.86 > 493.90	6.311	6.324	-0.013	1.370	2919338	1.36		109	10983	
90 10:2 FTUCA										
556.86 > 492.90	6.320	6.326	-0.006	1.001	16749300	10.1		101	290587	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.320	6.327	-0.007	1.372	908186	1.41		113	4319	
86 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	6.338	6.341	-0.003	1.003	7165196	10.0		100	15565	
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.338	6.342	-0.004	1.376	95821	1.33		107	542	
92 10:2 FTCA										
576.80 > 493.00	6.329	6.342	-0.013	0.999	701424	9.47	Target=2.24	94.7	1300	
576.80 > 63.10	6.329	6.342	-0.013	0.999	324817		2.16(1.12-3.36)	94.7	690	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.338	6.348	-0.010	1.376	588140	1.38		111	2074	
88 NMeFOSA										
512.00 > 169.00	6.347	6.355	-0.008	1.001	4453737	9.76	Target=1.97	97.6	1462	
512.00 > 218.99	6.347	6.355	-0.008	1.001	2229135		2.00(0.99-2.96)	97.6	2889	
93 11-Chloroeicosafuoro-3-oxaundec										
631.00 > 451.00	6.373	6.381	-0.008	1.237	32404058	10.1		107	1712638	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
99 Perfluorododecanoic acid										
613.00 > 569.00	6.575	6.582	-0.007	1.000	36859311	9.68	Target=7.94	96.8	41653	
613.00 > 169.00	6.575	6.582	-0.007	1.000	4758078		7.75(3.97-11.90)	96.8	60950	
D 98 13C2 PFDaA										
615.00 > 570.00	6.575	6.582	-0.007	1.428	5516531	1.39		111	18577	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.575	6.580	-0.005	1.428	1047626	1.41		113	2317	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.585	6.592	-0.007	1.430	635276	1.25		103	8030	
101 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	6.585	6.597	-0.012	1.000	6193282	9.02	Target=1.64	93.4	20008	
627.00 > 79.96	6.585	6.597	-0.012	1.000	3706923		1.67(0.82-2.46)	93.4	22868	
95 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	6.595	6.599	-0.004	1.003	8528259	10.7		107	105765	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.605	6.609	-0.004	1.434	566557	1.43		114	739	
97 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	6.615	6.619	-0.004	1.002	4357169	10.3	Target=1.81	103	2921	
526.00 > 218.99	6.615	6.619	-0.004	1.002	2369741		1.84(0.90-2.71)	103	2693	
102 Perfluorododecanesulfonic acid (
699.00 > 80.00	6.907	6.918	-0.011	1.340	2613042	10.4	Target=0.69	107	86938	
699.00 > 99.00	6.907	6.918	-0.011	1.340	3742953		0.70(0.34-1.03)	107	4298	
103 Perfluorotridecanoic acid										
663.00 > 619.00	6.950	6.959	-0.009	1.057	33041960	9.53	Target=6.68	95.3	32127	
663.00 > 169.00	6.950	6.959	-0.009	1.057	4800120		6.88(3.34-10.02)	95.3	12081	
D 112 13C4-6:2 diPAP										
792.82 > 78.90	7.187	7.198	-0.011	1.560	1403184	1.21		99.6	2863	
114 6:2 diPAP										
788.79 > 78.90	7.187	7.200	-0.013	1.000	10533014	9.46	Target=1.92	97.3	5129	
788.79 > 96.90	7.187	7.200	-0.013	1.000	5425813		1.94(0.96-2.88)	97.3	5538	
105 Perfluorotetradecanoic acid										
713.00 > 169.00	7.291	7.297	-0.006	1.000	3747000	10.6	Target=0.92	106	13338	
713.00 > 219.00	7.291	7.297	-0.006	1.000	3773540		0.99(0.46-1.38)	106	5910	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.291	7.298	-0.007	1.583	4495946	1.30		104	7385	
115 6:2/8:2 diPAP										
888.70 > 78.90	7.675	7.687	-0.012	1.068	10023183	8.98	Target=1.37	92.0	5726	
888.70 > 96.90	7.675	7.687	-0.012	1.068	7222503		1.39(0.69-2.06)	92.0	7172	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.863	7.873	-0.010	1.707	3741509	1.25		100	6542	
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.863	7.873	-0.010	1.000	25488462	9.92	Target=8.78	99.2	9452	
813.00 > 169.00	7.863	7.873	-0.010	1.000	2899989		8.79(4.39-13.16)	99.2	16021	
D 113 13C4-8:2 diPAP										
992.77 > 96.90	8.090	8.100	-0.010	1.756	870185	1.04		84.8	1542	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
116 8:2 diPAP										
988.74 > 78.90	8.090	8.102	-0.012	1.000	6702117	10.1	Target=1.17	103	3297	
988.74 > 96.90	8.090	8.102	-0.012	1.000	5619432		1.19(0.59-1.76)	103	3396	
108 Perfluorooctadecanoic acid										
913.00 > 869.00	8.368	8.378	-0.010	1.064	14443907	10.1	Target=10.07	101	6646	
913.00 > 169.00	8.368	8.378	-0.010	1.064	1440052		10.03(5.04-15.11)	101	4808	
117 10:2 diPAP										
1188.79 > 78.90	8.902	8.913	-0.011	1.100	884641	12.8	Target=1.10	128	9603	a
1188.79 > 96.90	8.902	8.913	-0.011	1.100	806453		1.10(0.55-1.65)	128	7417	a

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

LCPFC+6C_LL7_00006

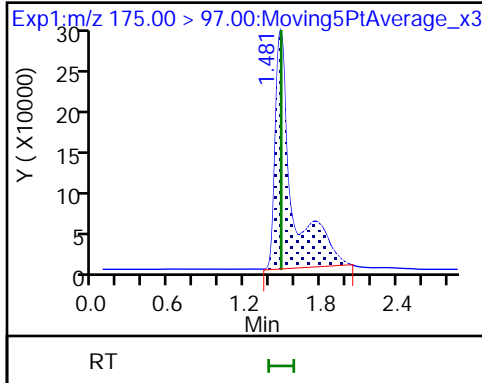
Amount Added: 1.00

Units: mL

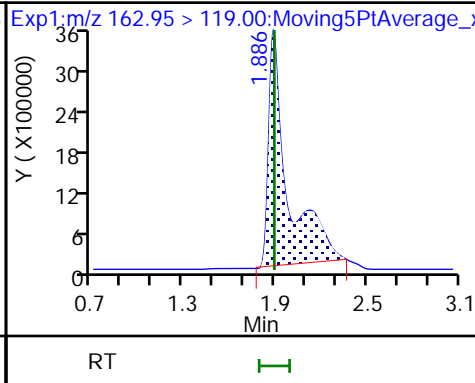
Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
Injection Date: 21-Dec-2022 13:11:20 Instrument ID: A18
Lims ID: IC L7
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 7 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL

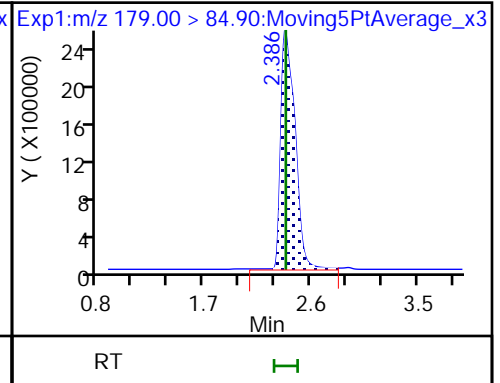
1 MTP (M)



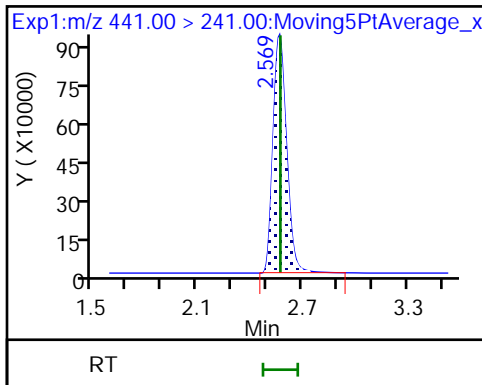
2 PPF Acid



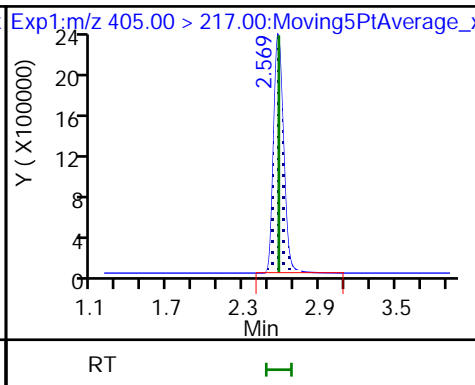
3 PFMOAA



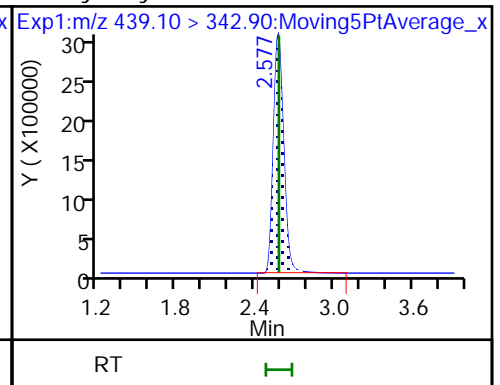
4 R-PSDA



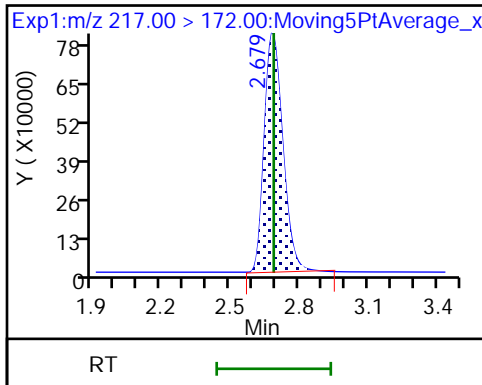
5 R-EVE



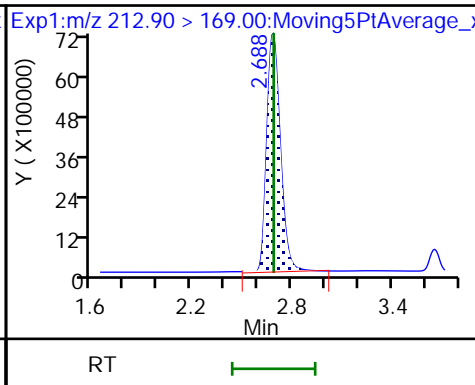
6 Hydrolyzed PSDA



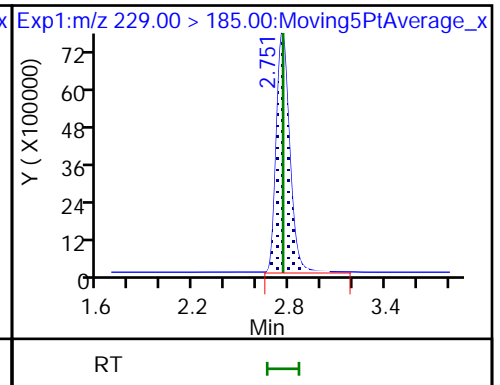
D 8 13C4 PFBA



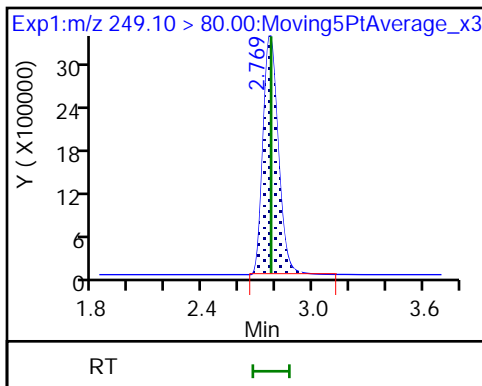
7 Perfluorobutanoic acid



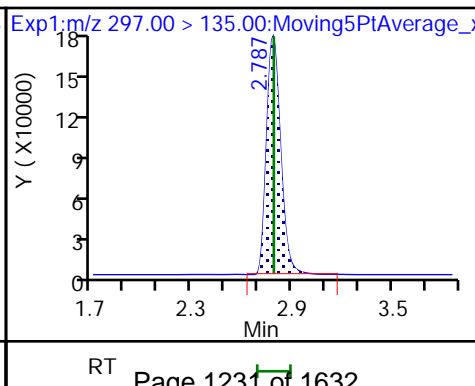
10 PMPA



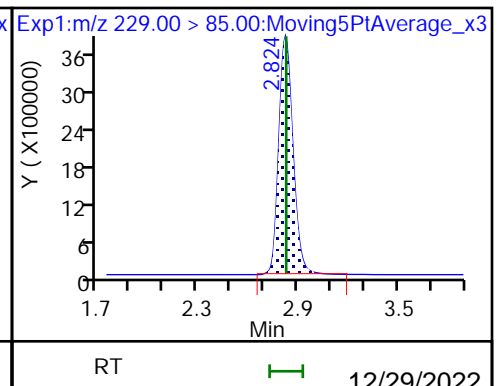
11 PFPrS

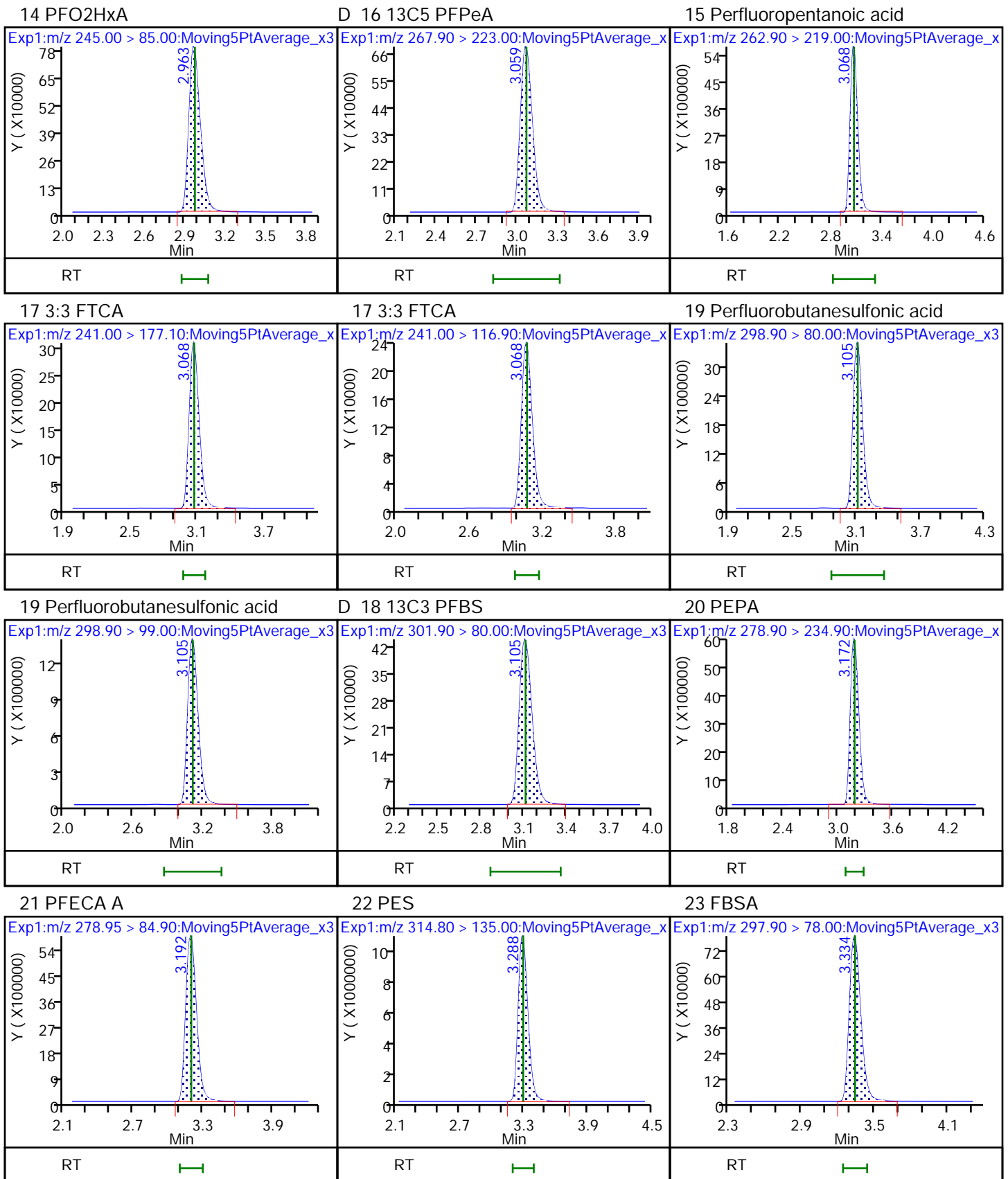


12 NVHOS



13 PFECA F

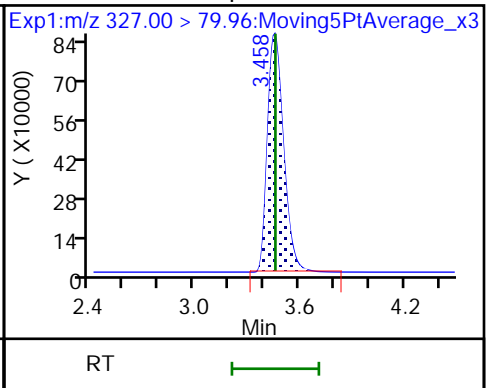
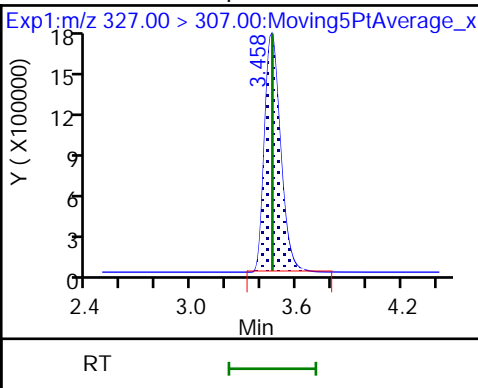
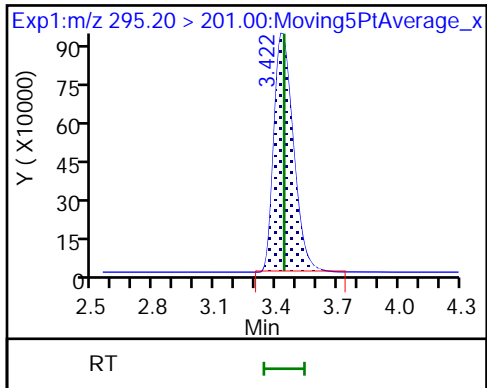




24 PFECA B

26 1H,1H,2H,2H-perfluorohexanesulfo

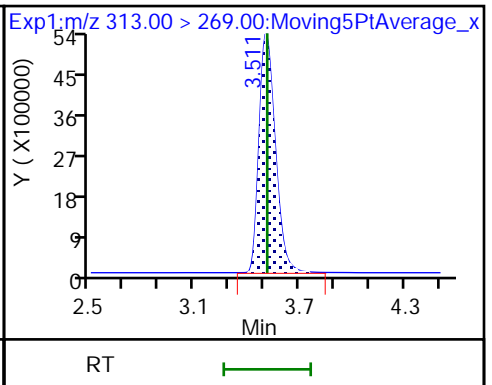
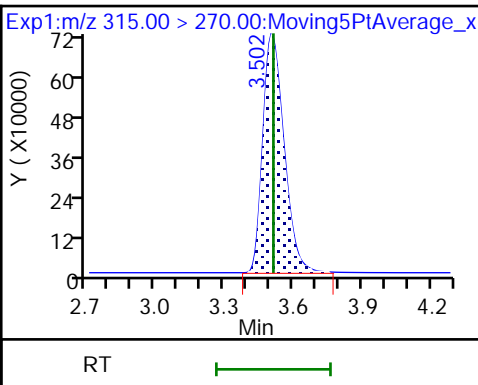
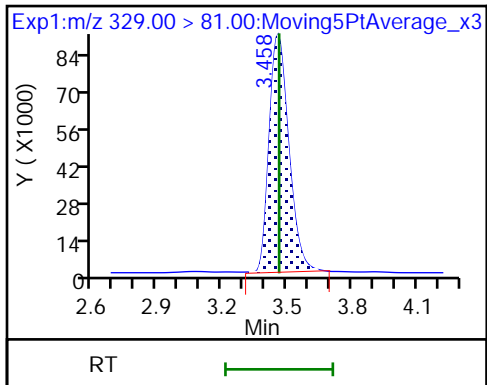
26 1H,1H,2H,2H-perfluorohexanesulfo



D 25 M2-4:2 FTS

D 27 13C2 PFHxA

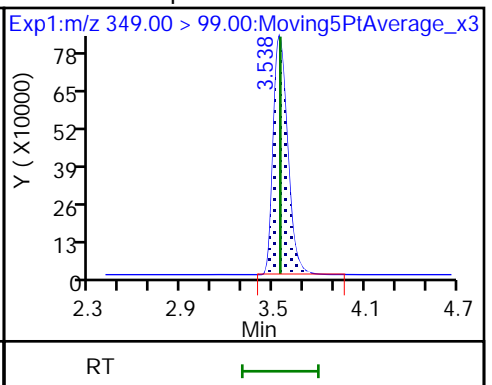
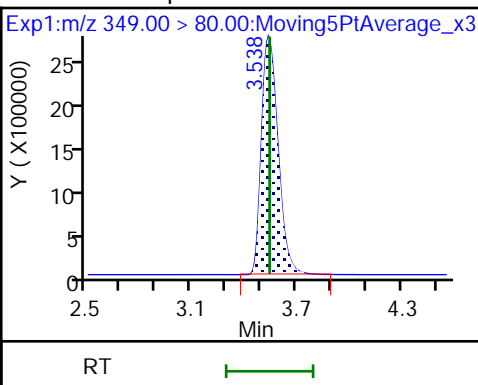
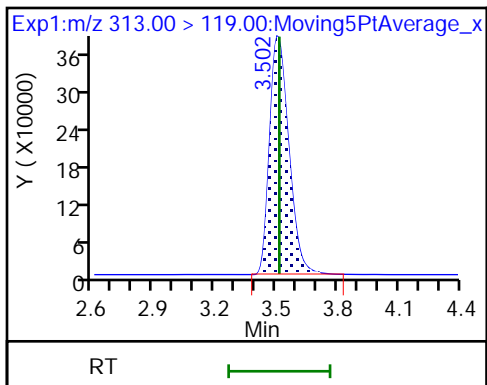
28 Perfluorohexanoic acid



28 Perfluorohexanoic acid

29 Perfluoropentanesulfonic acid

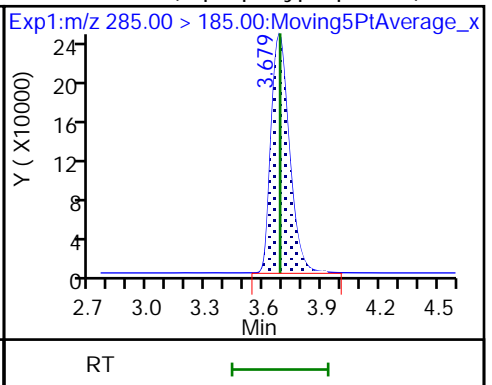
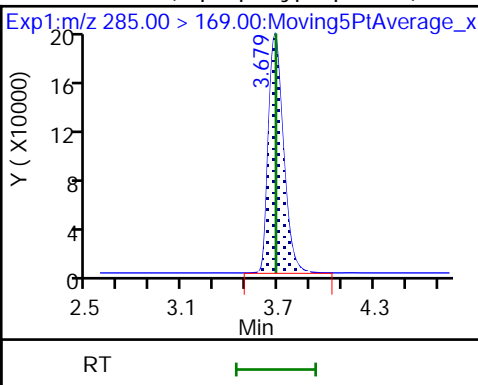
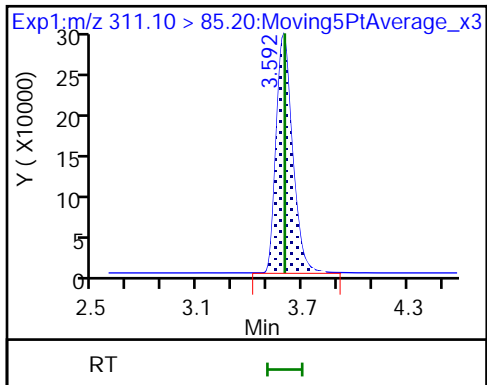
29 Perfluoropentanesulfonic acid



30 PFO3OA

31 Perfluoro(2-propoxypropanoic) ac

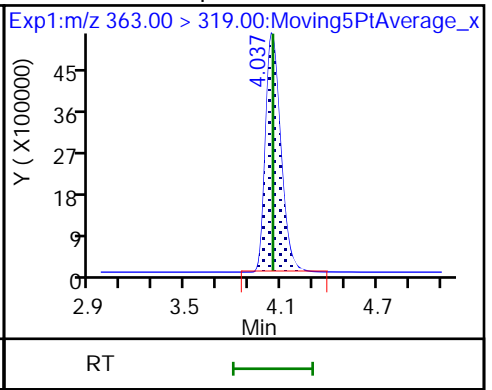
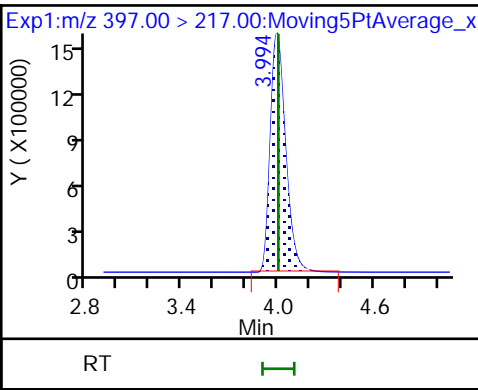
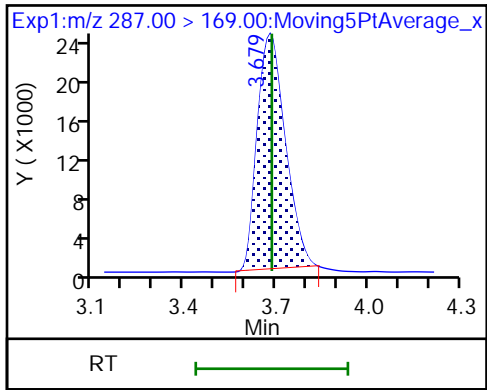
31 Perfluoro(2-propoxypropanoic) ac



D 32 13C3 HFPO-DA

33 R-PSDCA

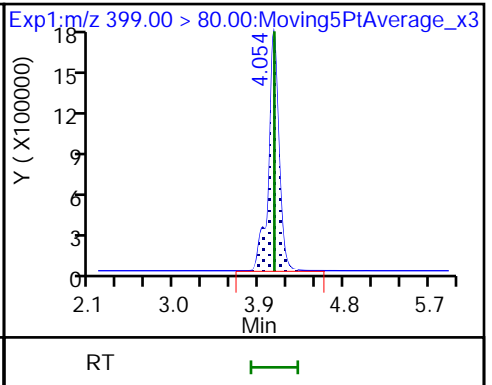
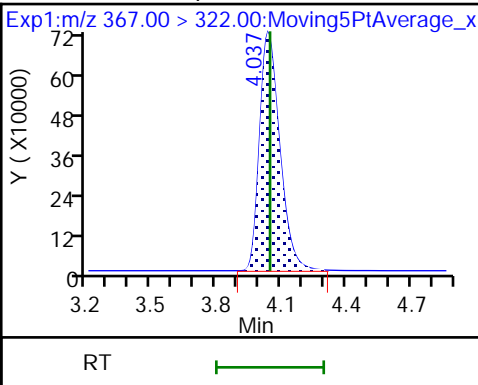
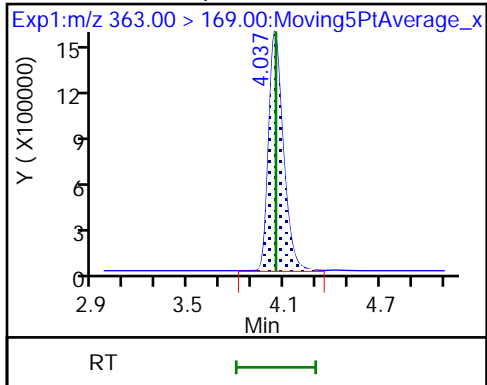
36 Perfluoroheptanoic acid



36 Perfluoroheptanoic acid

D 35 13C4 PFHpA

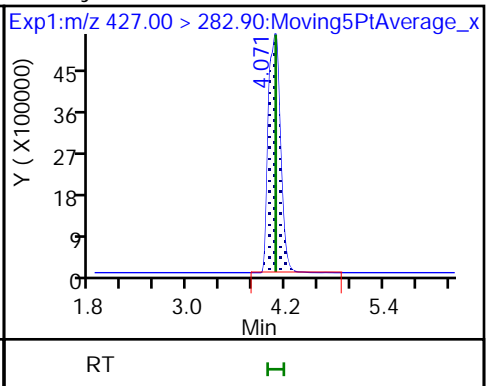
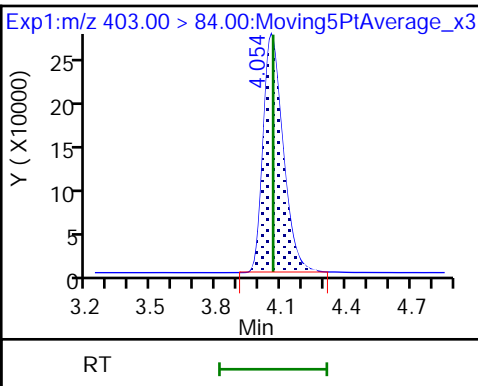
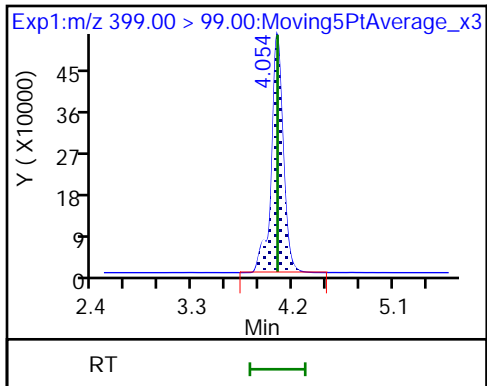
38 Perfluorohexanesulfonic acid



38 Perfluorohexanesulfonic acid

D 37 18O2 PFHxS

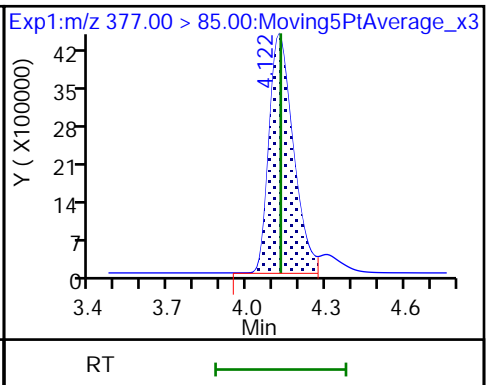
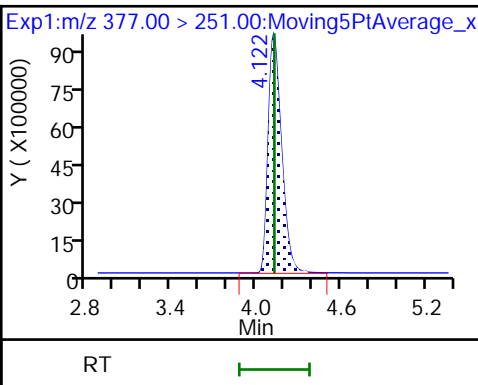
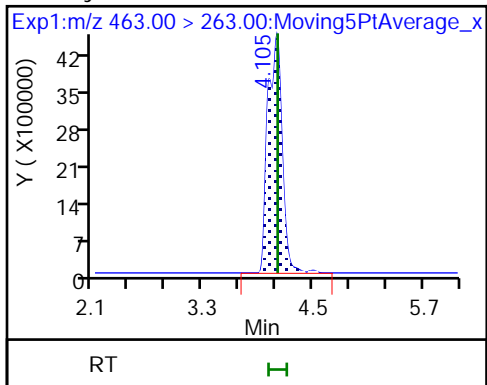
34 Hydro-EVE Acid



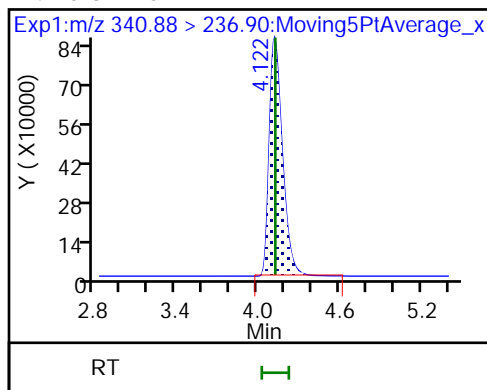
39 Hydro-PS Acid

40 DONA

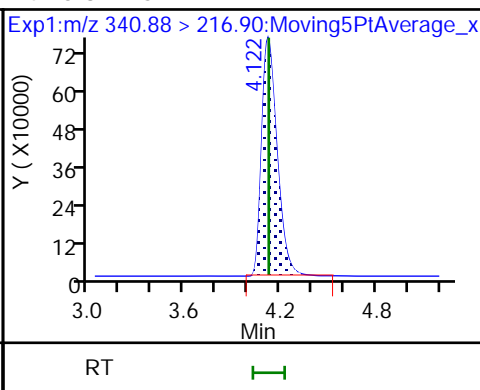
40 DONA



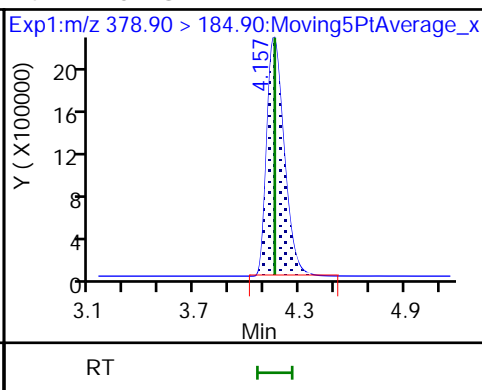
41 5:3 FTCA



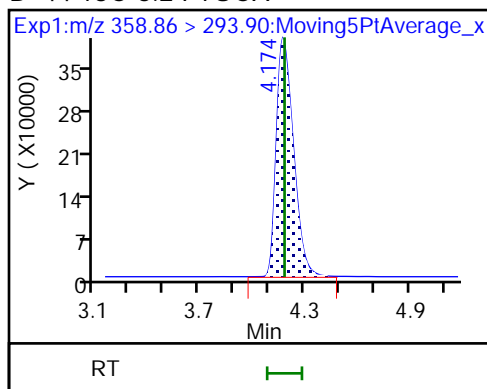
41 5:3 FTCA



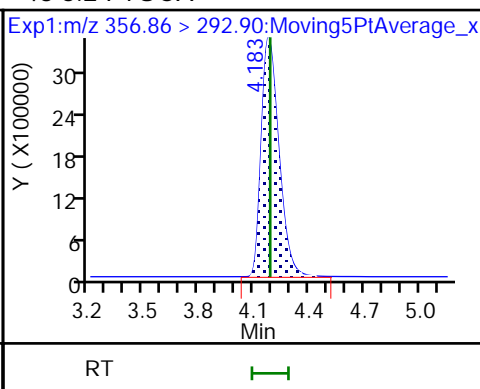
42 PFECA G



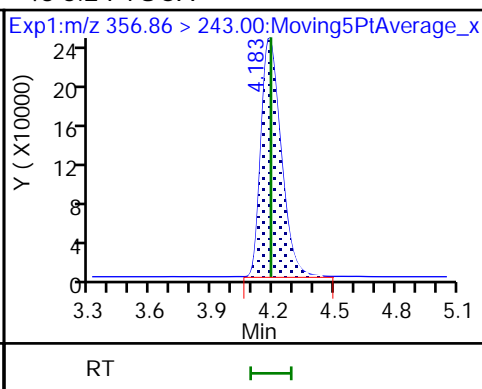
D 44 13C-6:2 FTUCA



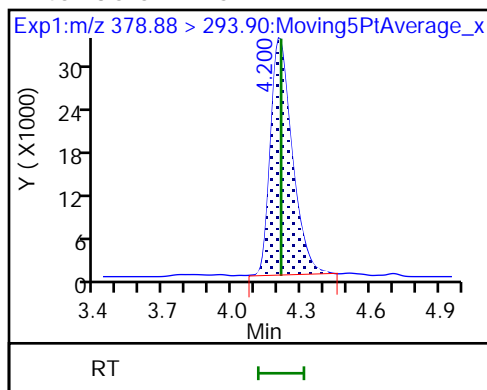
43 6:2 FTUCA



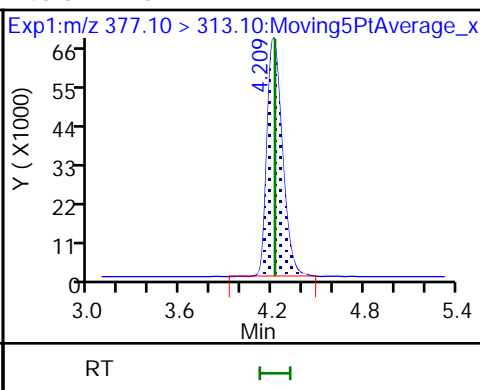
43 6:2 FTUCA



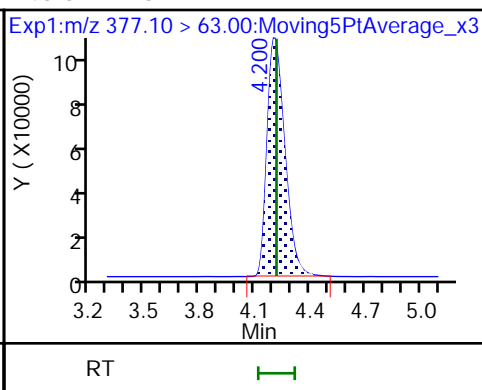
D 46 13C-6:2 FTCA



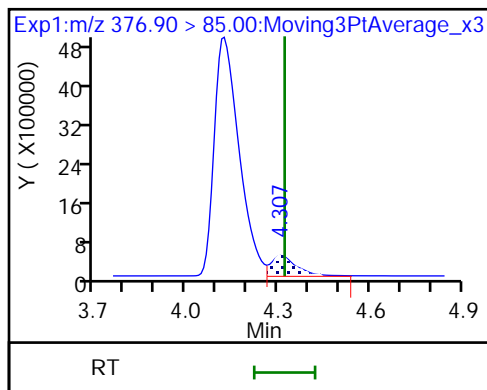
45 6:2 FTCA



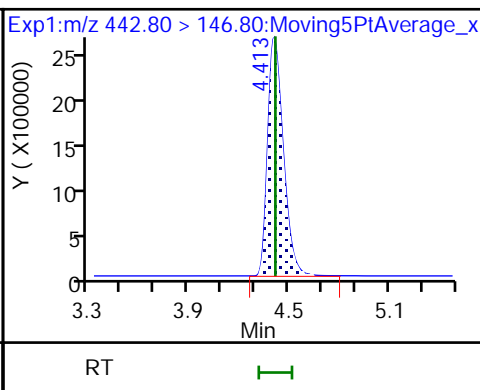
45 6:2 FTCA



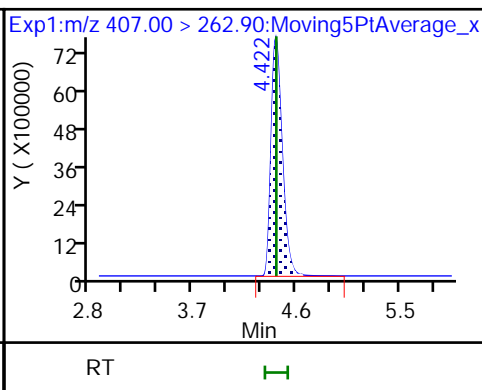
47 PFO4DA

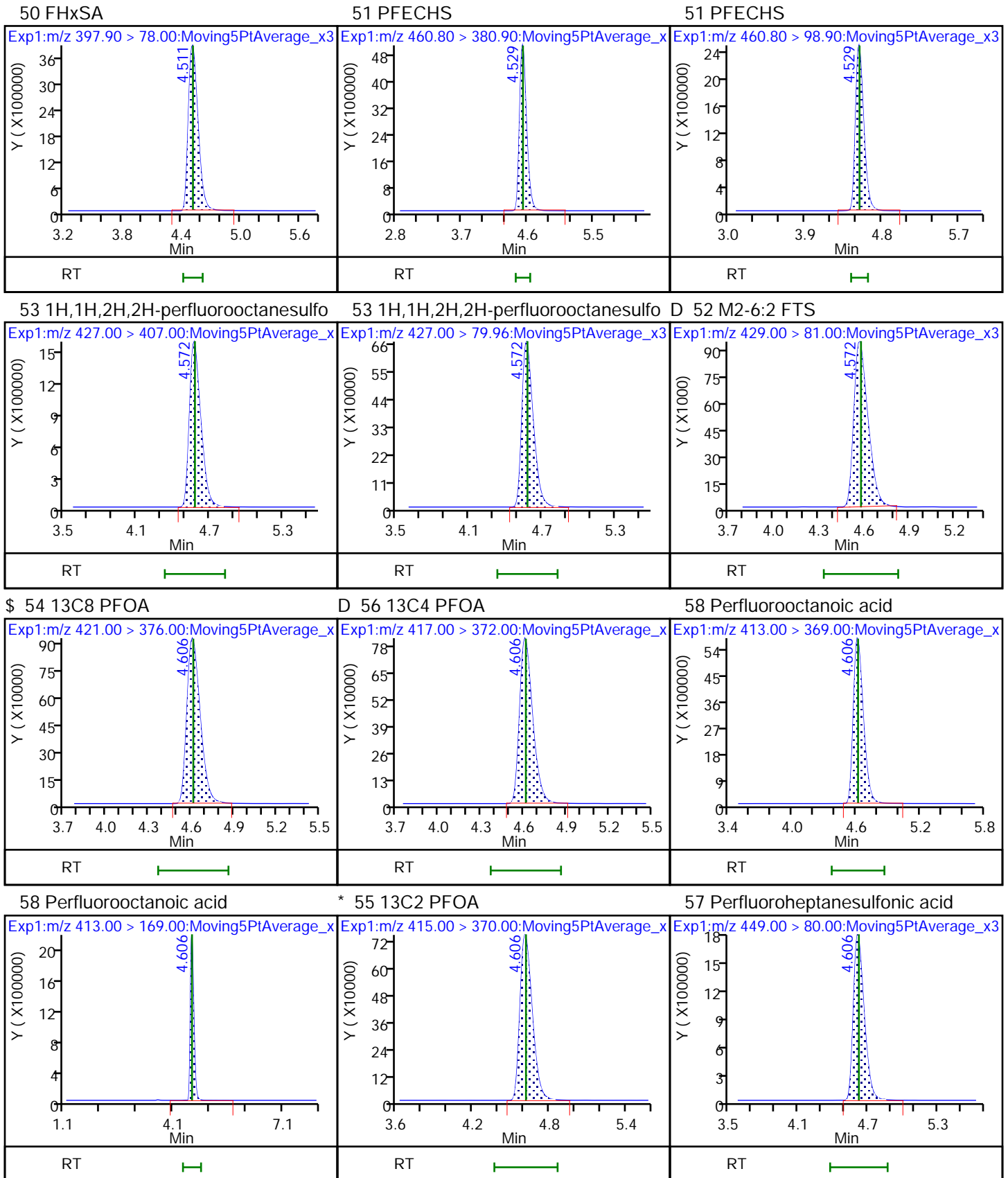


48 PS Acid



49 EVE Acid

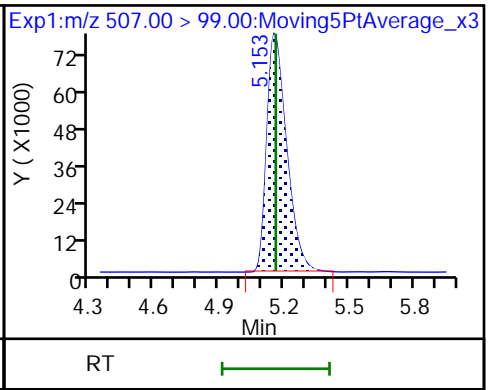
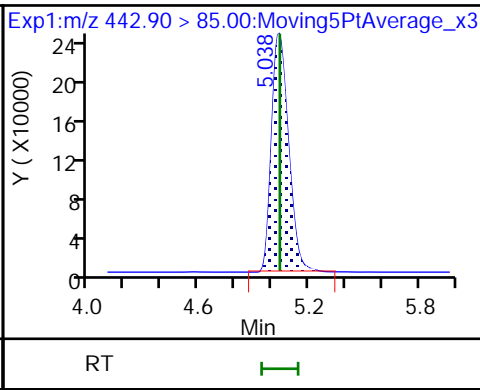
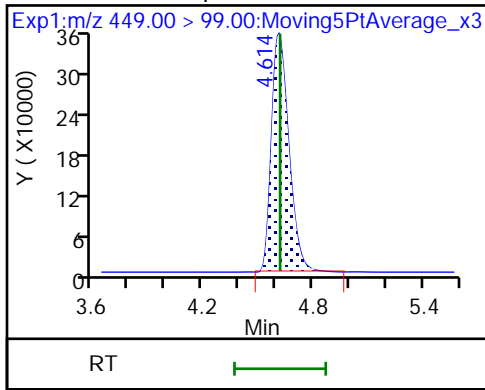




57 Perfluoroheptanesulfonic acid

59 TAF

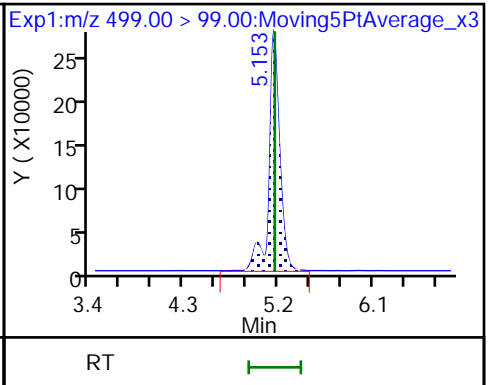
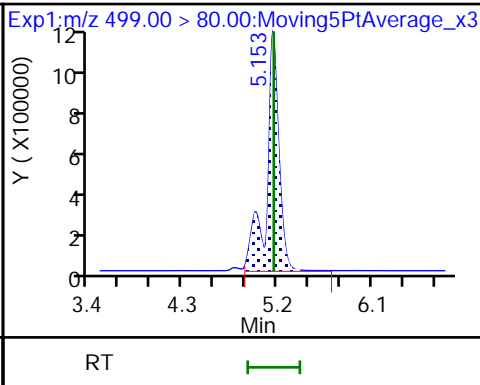
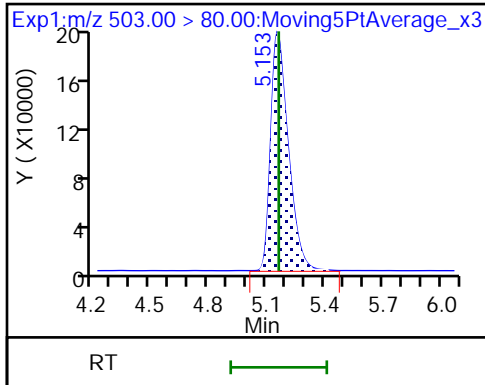
\$ 60 13C8 PFOS



D 61 13C4 PFOS

62 Perfluorooctanesulfonic acid

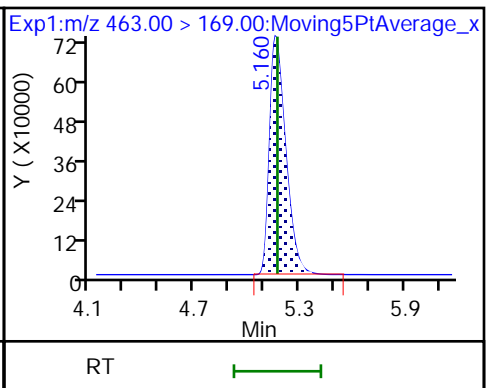
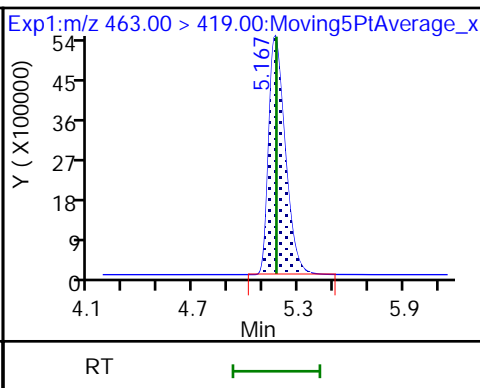
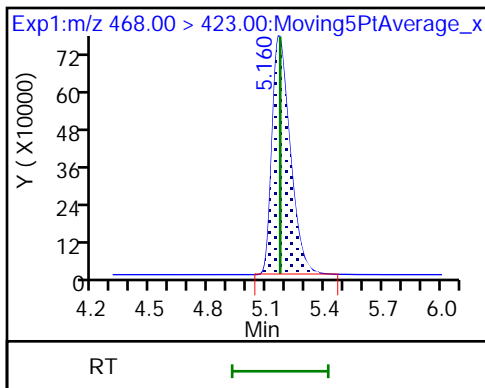
62 Perfluorooctanesulfonic acid



D 64 13C5 PFNA

63 Perfluorononanoic acid

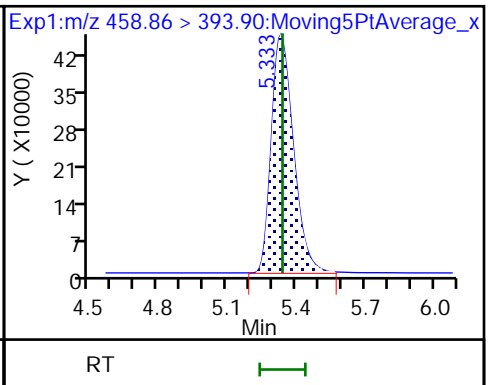
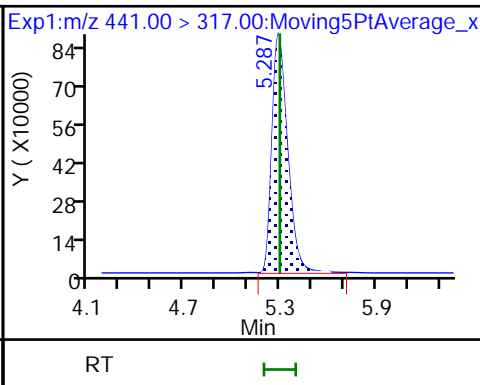
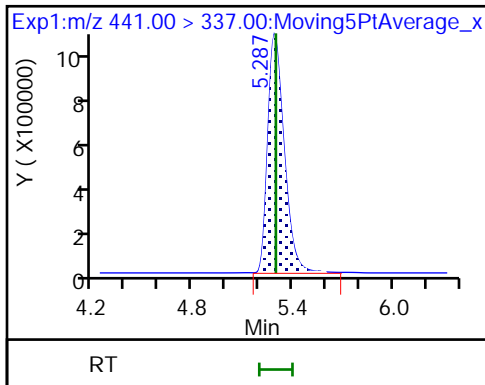
63 Perfluorononanoic acid

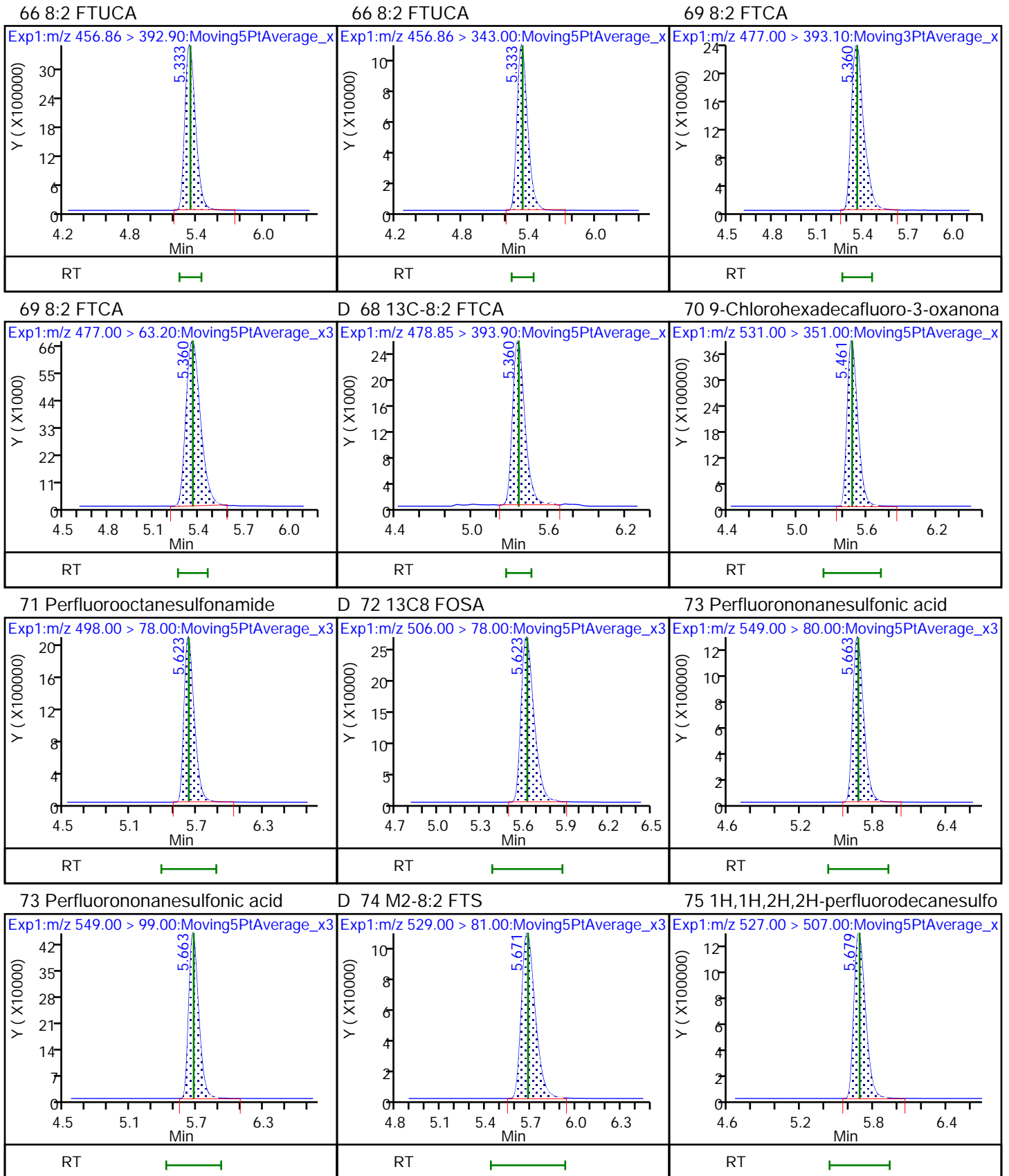


65 7:3 FTCA

65 7:3 FTCA

D 67 13C-8:2 FTUCA

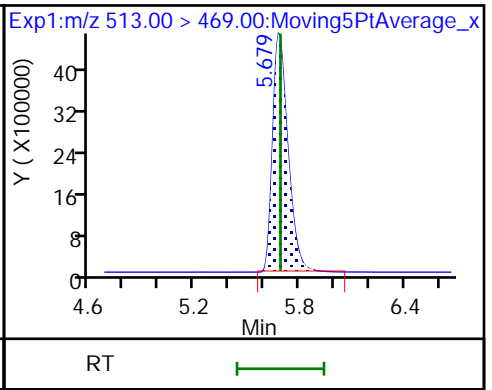
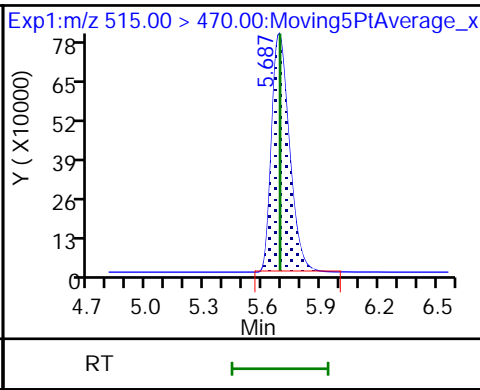
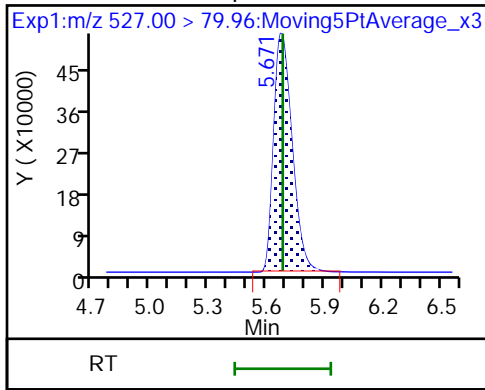




75 1H,1H,2H,2H-perfluorodecanesulfo D

76 13C2 PFDA

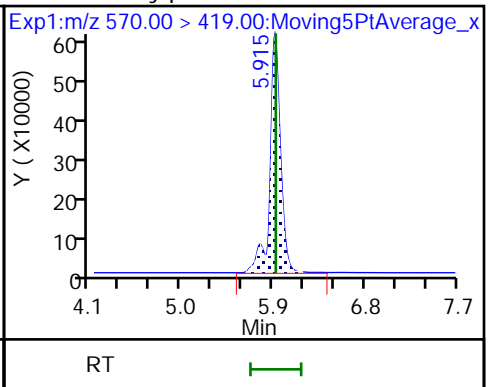
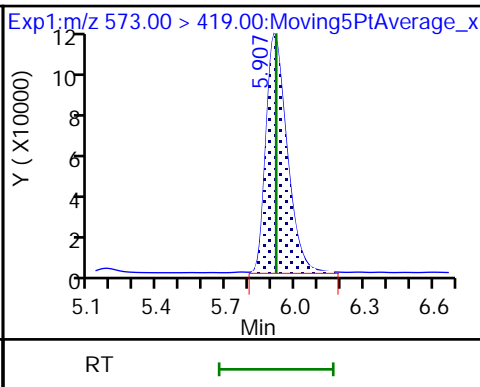
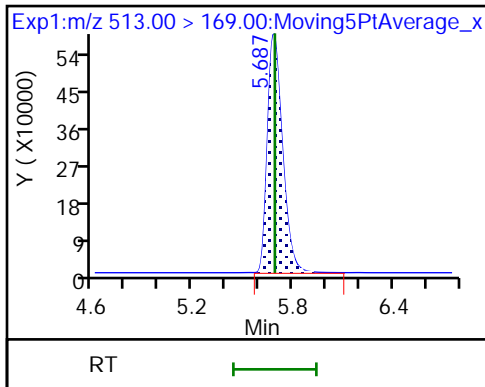
77 Perfluorodecanoic acid



77 Perfluorodecanoic acid

D 78 d3-NMeFOSAA

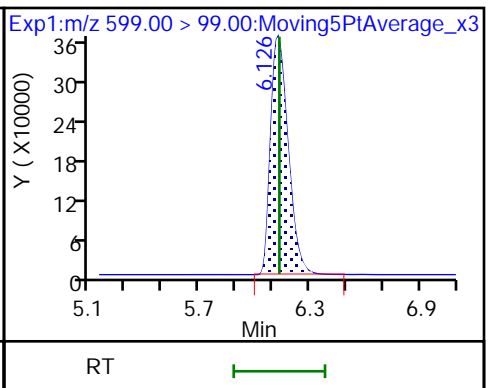
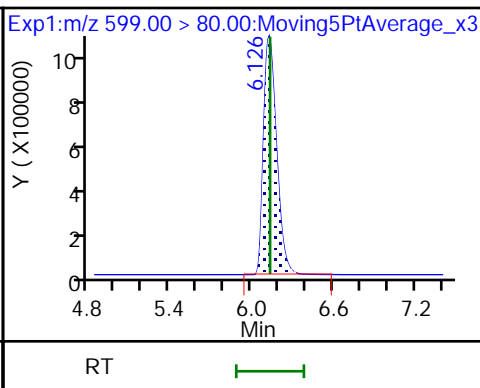
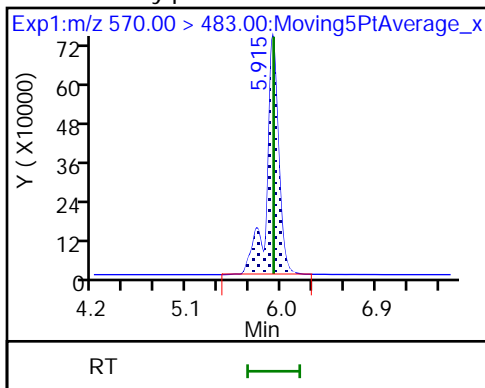
79 N-methylperfluorooctanesulfonami



79 N-methylperfluorooctanesulfonami

80 Perfluorodecanesulfonic acid

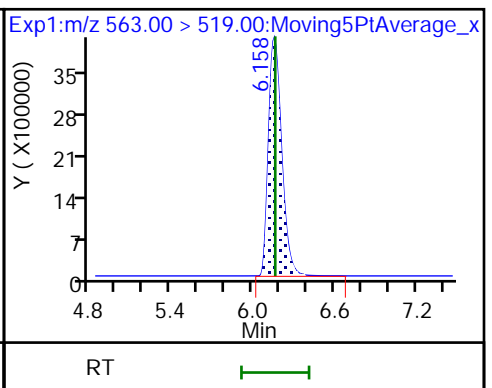
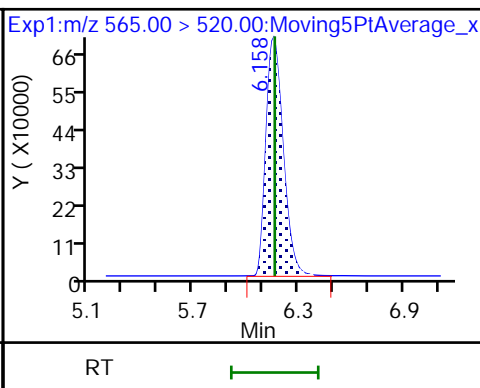
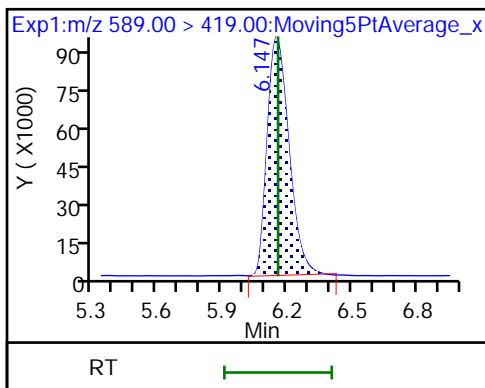
80 Perfluorodecanesulfonic acid



D 81 d5-NEtFOSAA

D 82 13C2 PFUnA

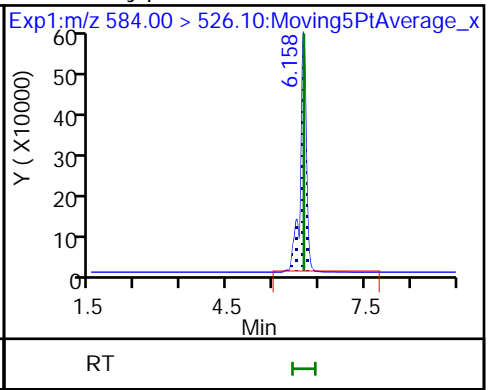
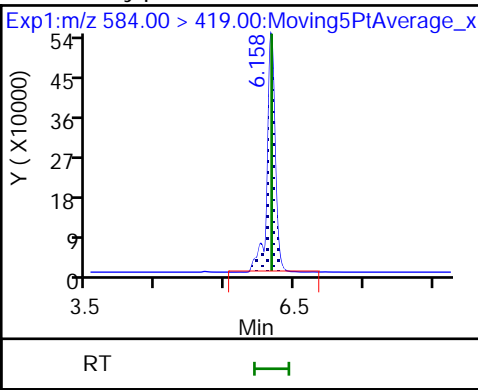
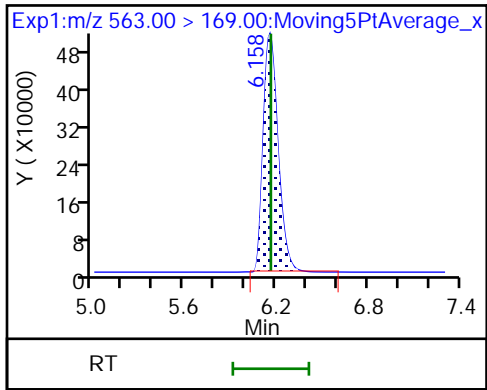
83 Perfluoroundecanoic acid



83 Perfluoroundecanoic acid

84 N-ethylperfluorooctanesulfonamid

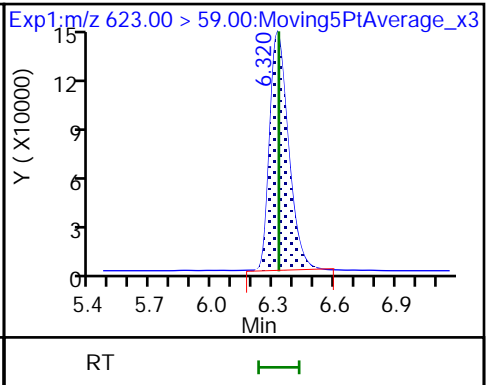
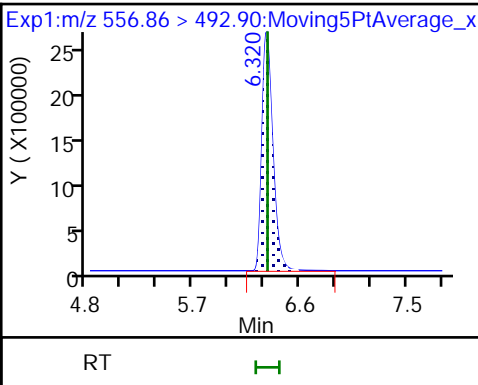
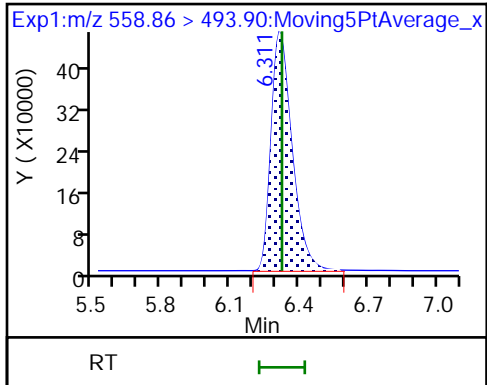
84 N-ethylperfluorooctanesulfonamid



D 89 13C-10:2 FTUCA

90 10:2 FTUCA

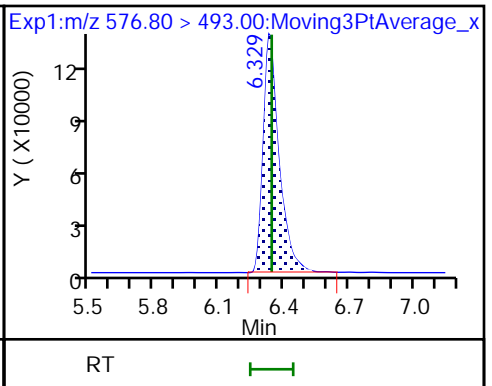
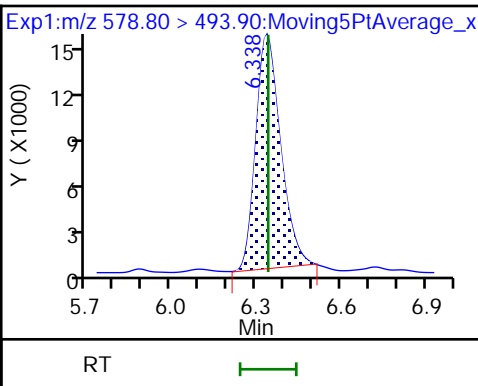
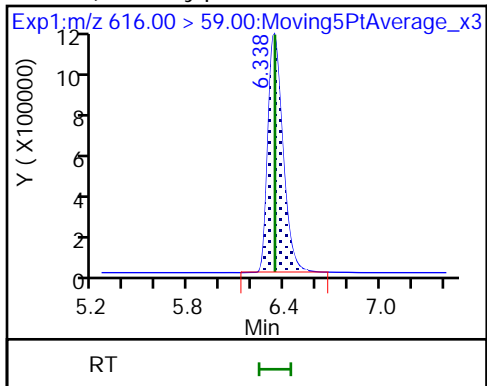
D 85 d7-N-MeFOSE-M



86 2-(N-methylperfluoro-1-octanesul

D 91 13C-10:2 FTCA

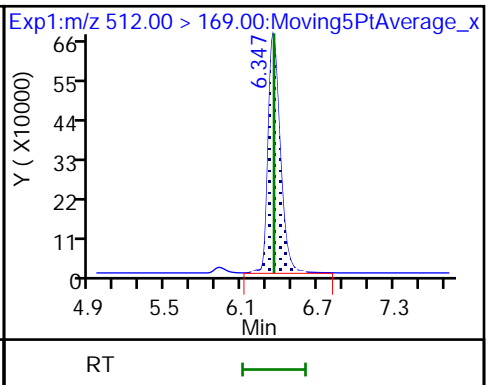
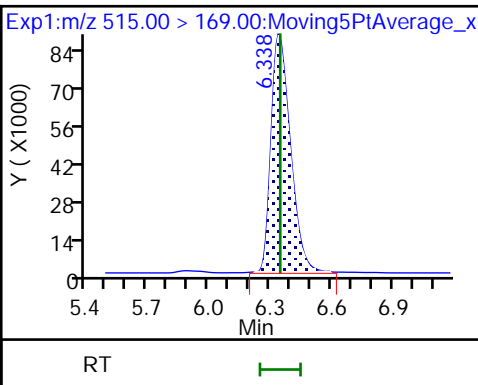
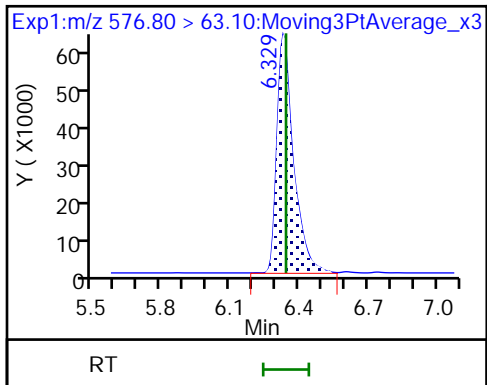
92 10:2 FTCA



92 10:2 FTCA

D 87 d-N-MeFOSA-M

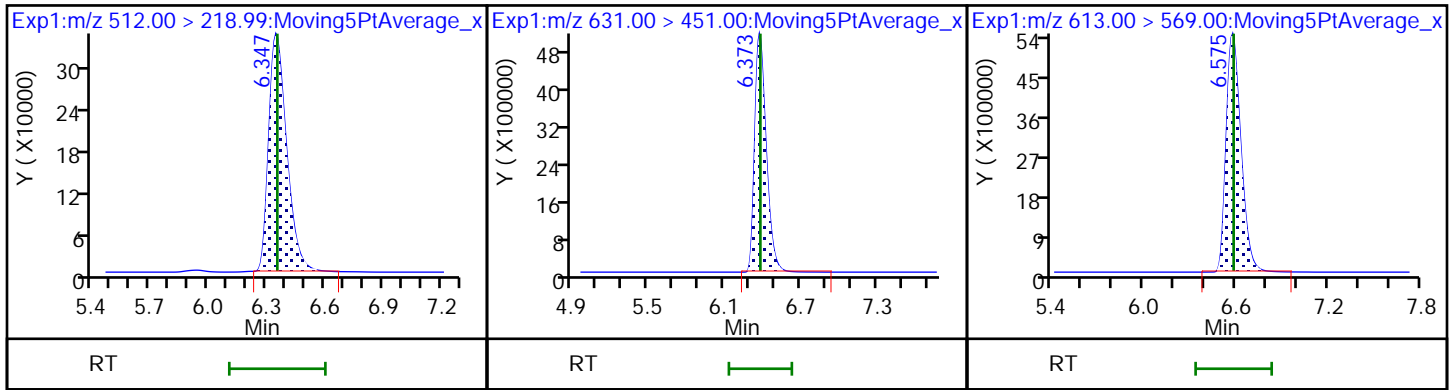
88 NMeFOSA



88 NMeFOSA

93 11-Chloroeicosafuoro-3-oxaundec

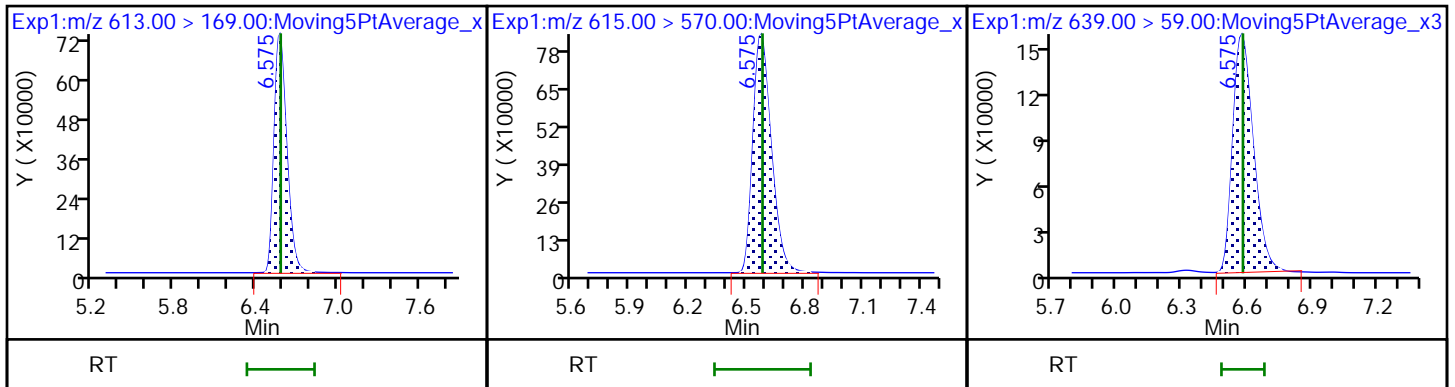
99 Perfluorododecanoic acid



99 Perfluorododecanoic acid

D 98 13C2 PFDaA

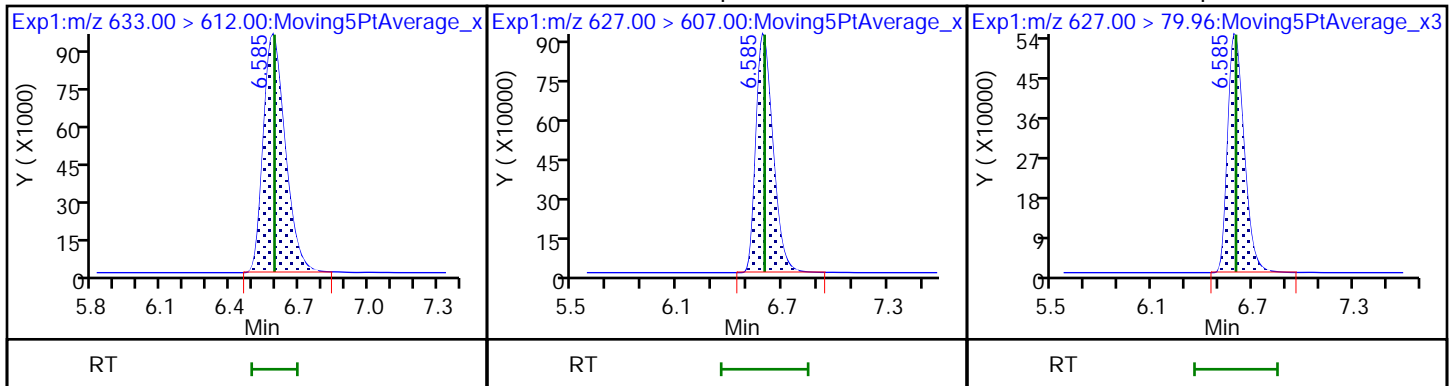
D 94 d9-N-EtFOSE-M



D 100 13C2 10:2 FTS

101 1H,1H,2H,2H-perfluorododecanesul

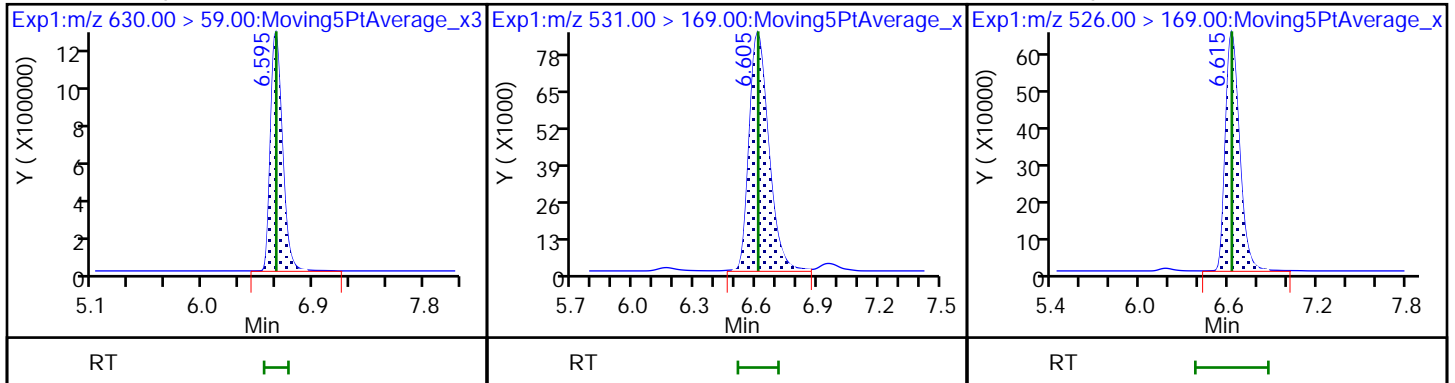
101 1H,1H,2H,2H-perfluorododecanesul



95 2-(N-ethylperfluoro-1-octanesulf

D 96 d-N-EtFOSA-M

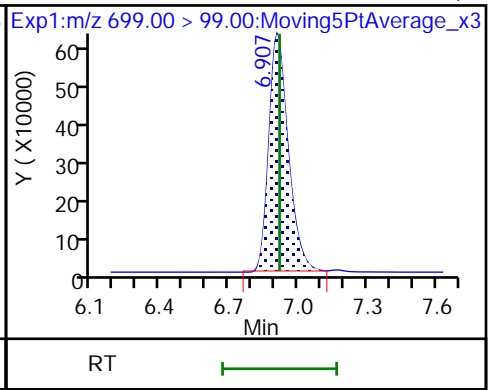
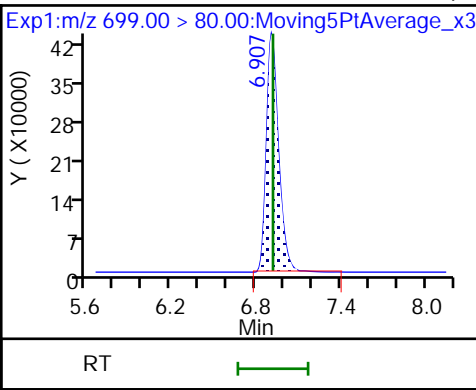
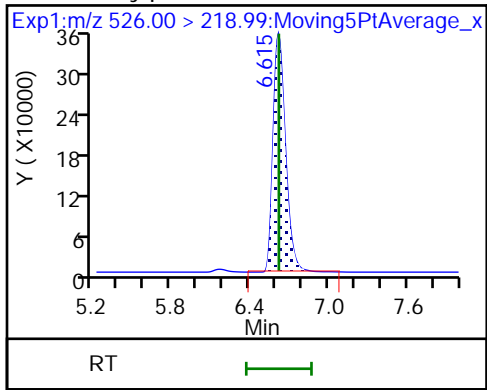
97 N-ethylperfluoro-1-octanesulfona



97 N-ethylperfluoro-1-octanesulfona

102 Perfluorododecanesulfonic acid (

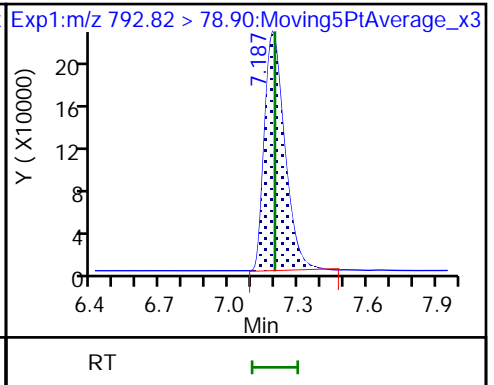
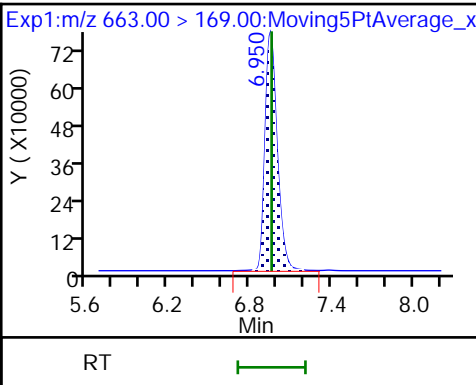
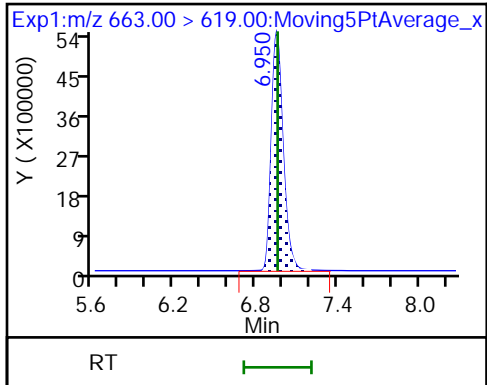
102 Perfluorododecanesulfonic acid (



103 Perfluorotridecanoic acid

103 Perfluorotridecanoic acid

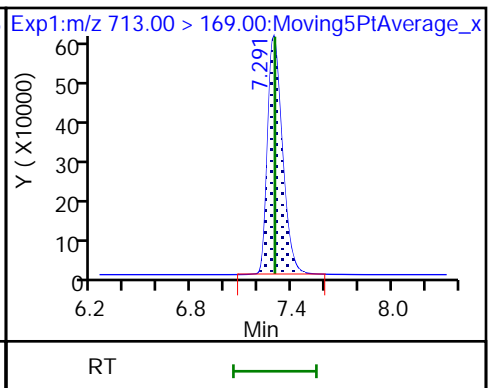
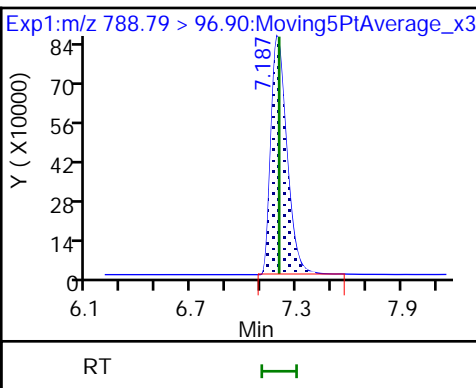
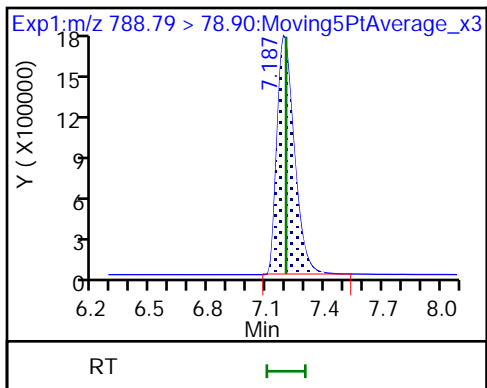
D 112 13C4-6:2 diPAP



114 6:2 diPAP

114 6:2 diPAP

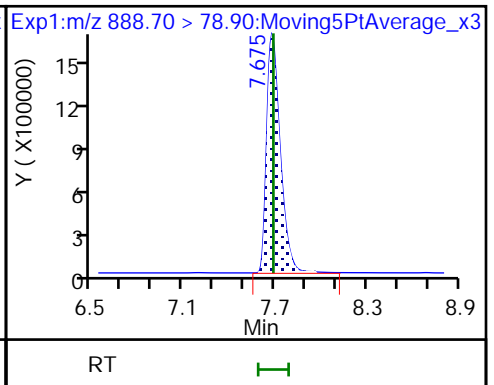
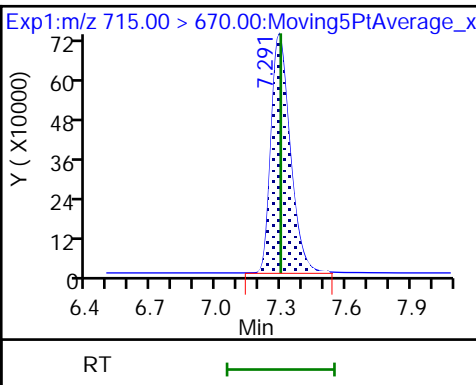
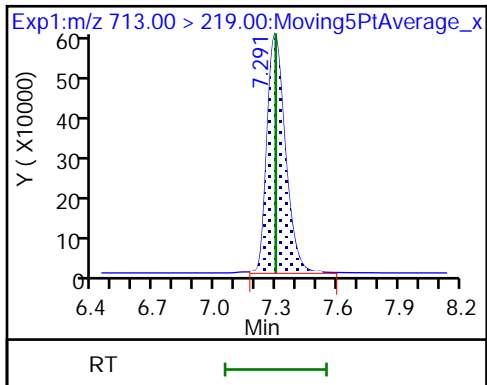
105 Perfluorotetradecanoic acid



105 Perfluorotetradecanoic acid

D 104 13C2 PFTeDA

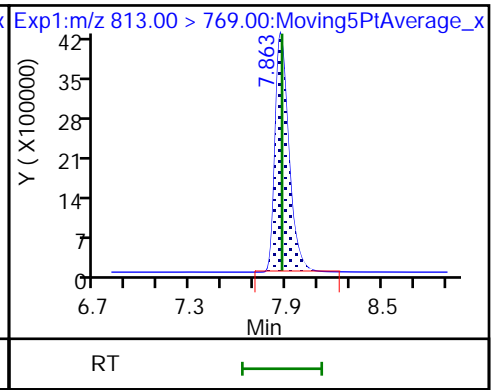
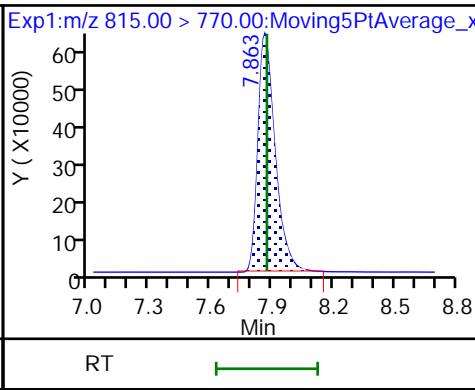
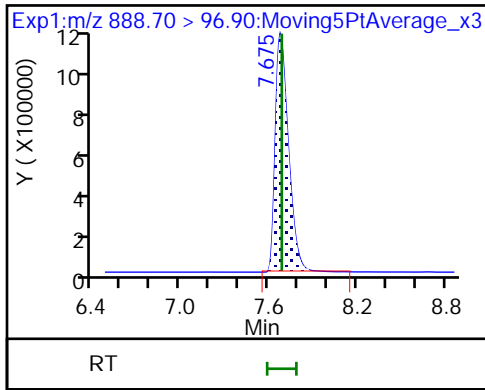
115 6:2/8:2 diPAP



115 6:2/8:2 diPAP

D 106 13C2 PFHxDa

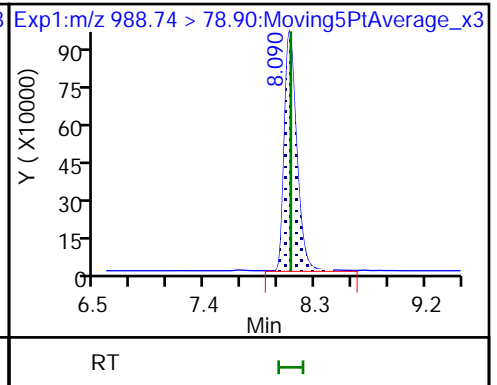
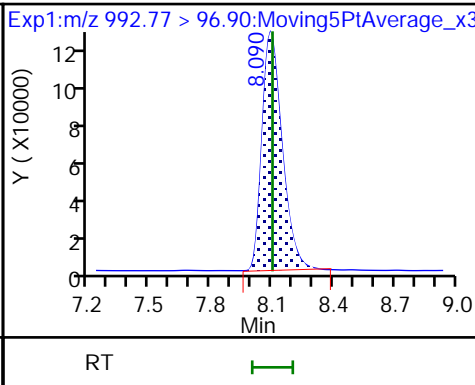
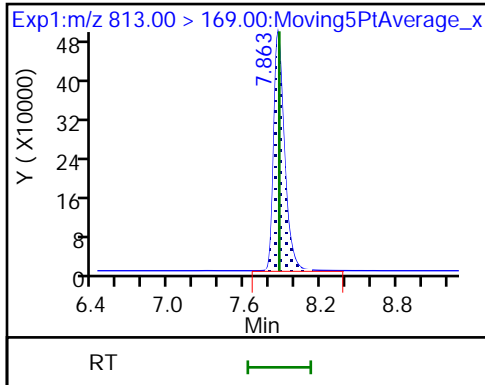
107 Perfluorohexadecanoic acid



107 Perfluorohexadecanoic acid

D 113 13C4-8:2 diPAP

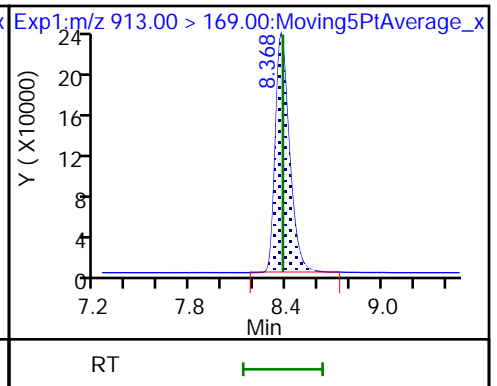
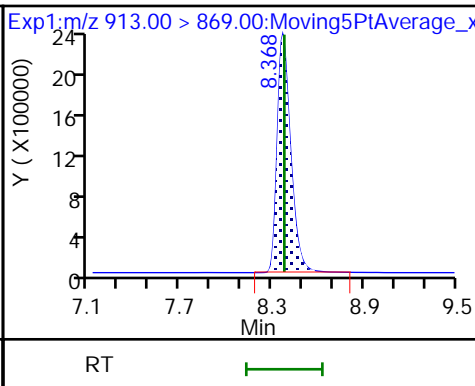
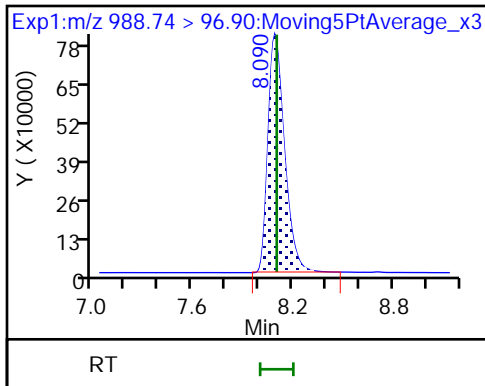
116 8:2 diPAP



116 8:2 diPAP

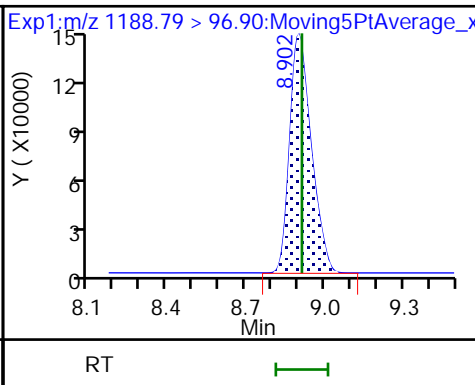
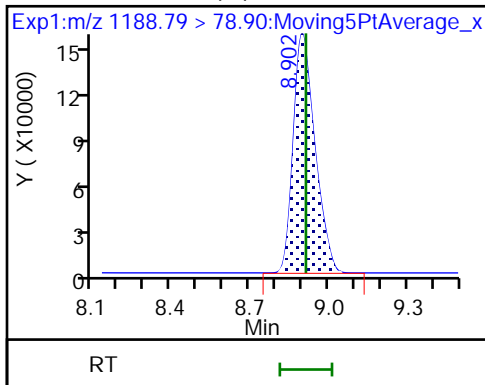
108 Perfluorooctadecanoic acid

108 Perfluorooctadecanoic acid



117 10:2 diPAP (M)

117 10:2 diPAP



Eurofins Sacramento

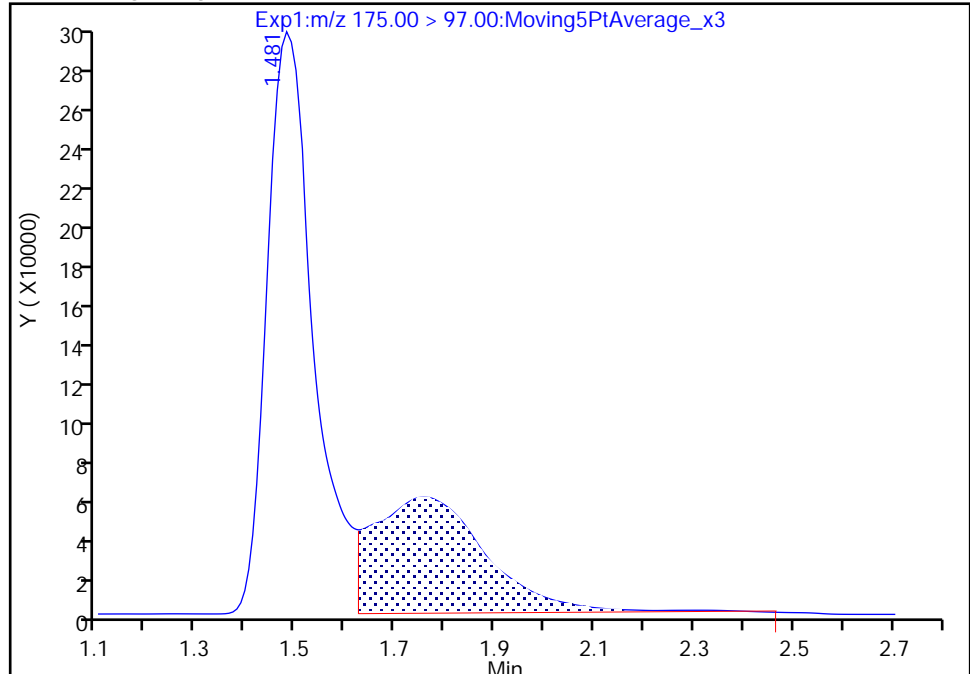
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
Injection Date: 21-Dec-2022 13:11:20 Instrument ID: A18
Lims ID: IC L7
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 7 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

1 MTP, CAS: 93449-21-9

Signal: 1

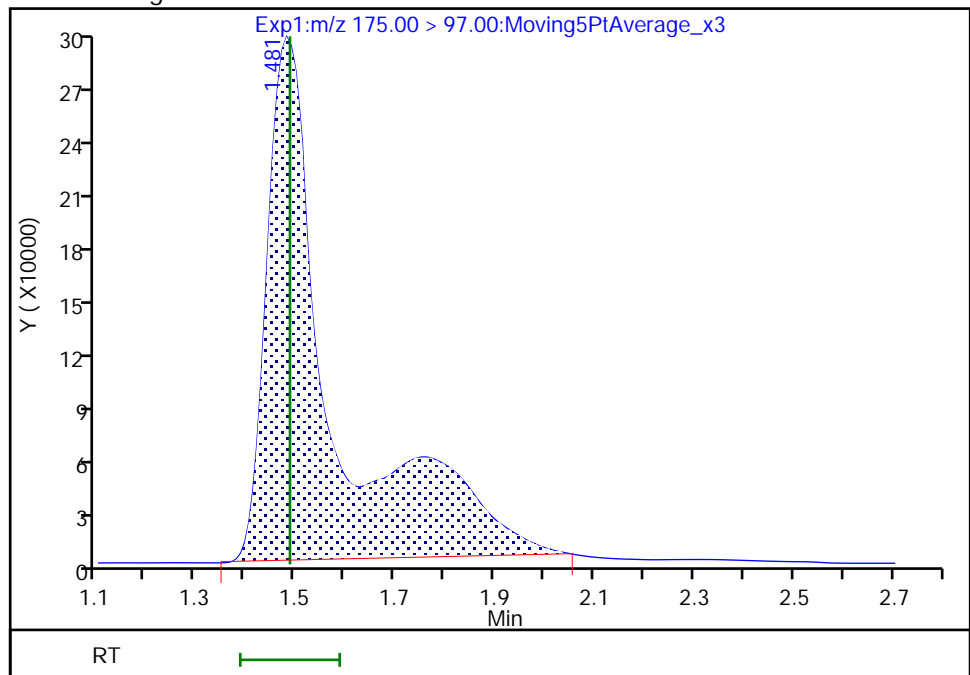
RT: 1.48
Area: 913200
Amount: 4.289263
Amount Units: ng/ml

Processing Integration Results



RT: 1.48
Area: 2684293
Amount: 9.918918
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 13:58:45
Audit Action: Manually Integrated

Audit Reason: Split Peak
Page 1244 of 1632

12/29/2022
3:43 PM

Eurofins Sacramento

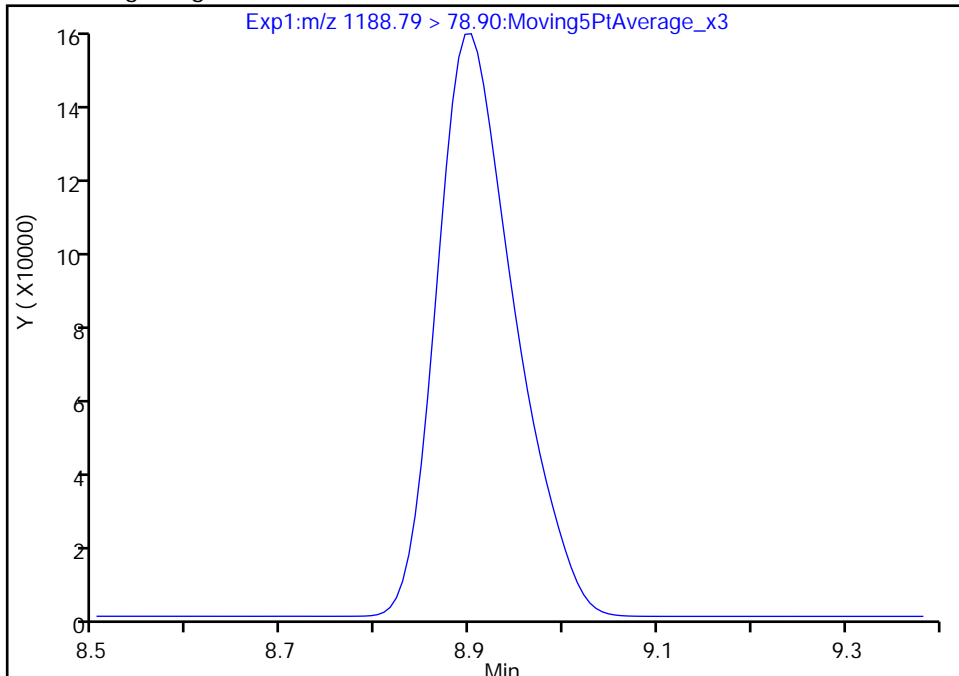
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
Injection Date: 21-Dec-2022 13:11:20 Instrument ID: A18
Lims ID: IC L7
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 7 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

117 10:2 diPAP, CAS: 1895-26-7

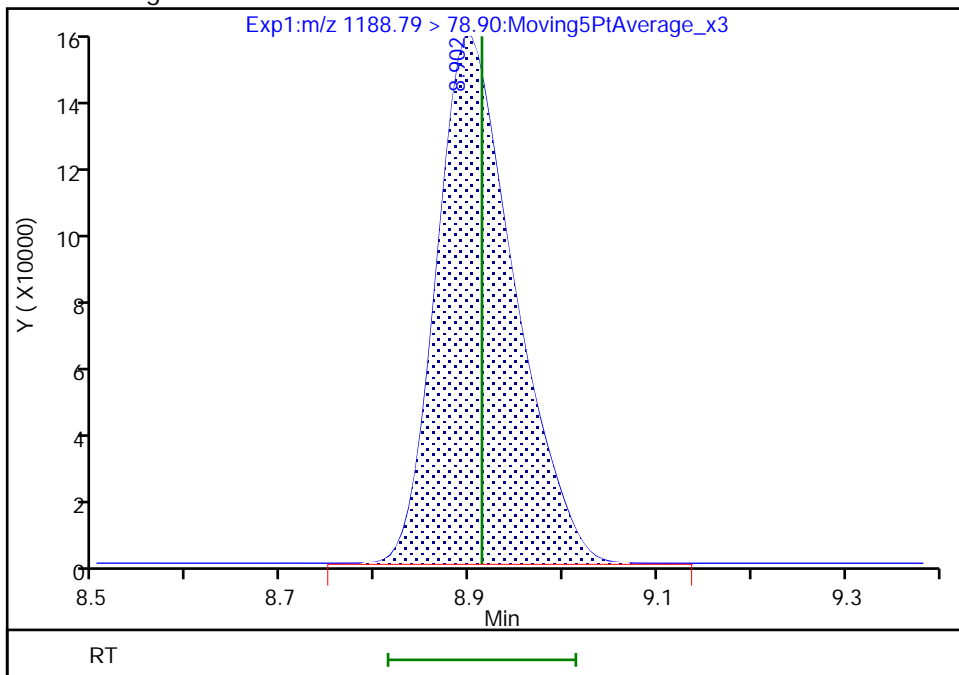
Signal: 1

Not Detected
Expected RT: 8.91

Processing Integration Results



Manual Integration Results



RT: 8.90
Area: 884641
Amount: 12.813951
Amount Units: ng/ml

Reviewer: YS2U, 22-Dec-2022 06:07:03

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Calibration

/ MTP

Curve Type: Linear
 Weighting: Conc
 Origin: None
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

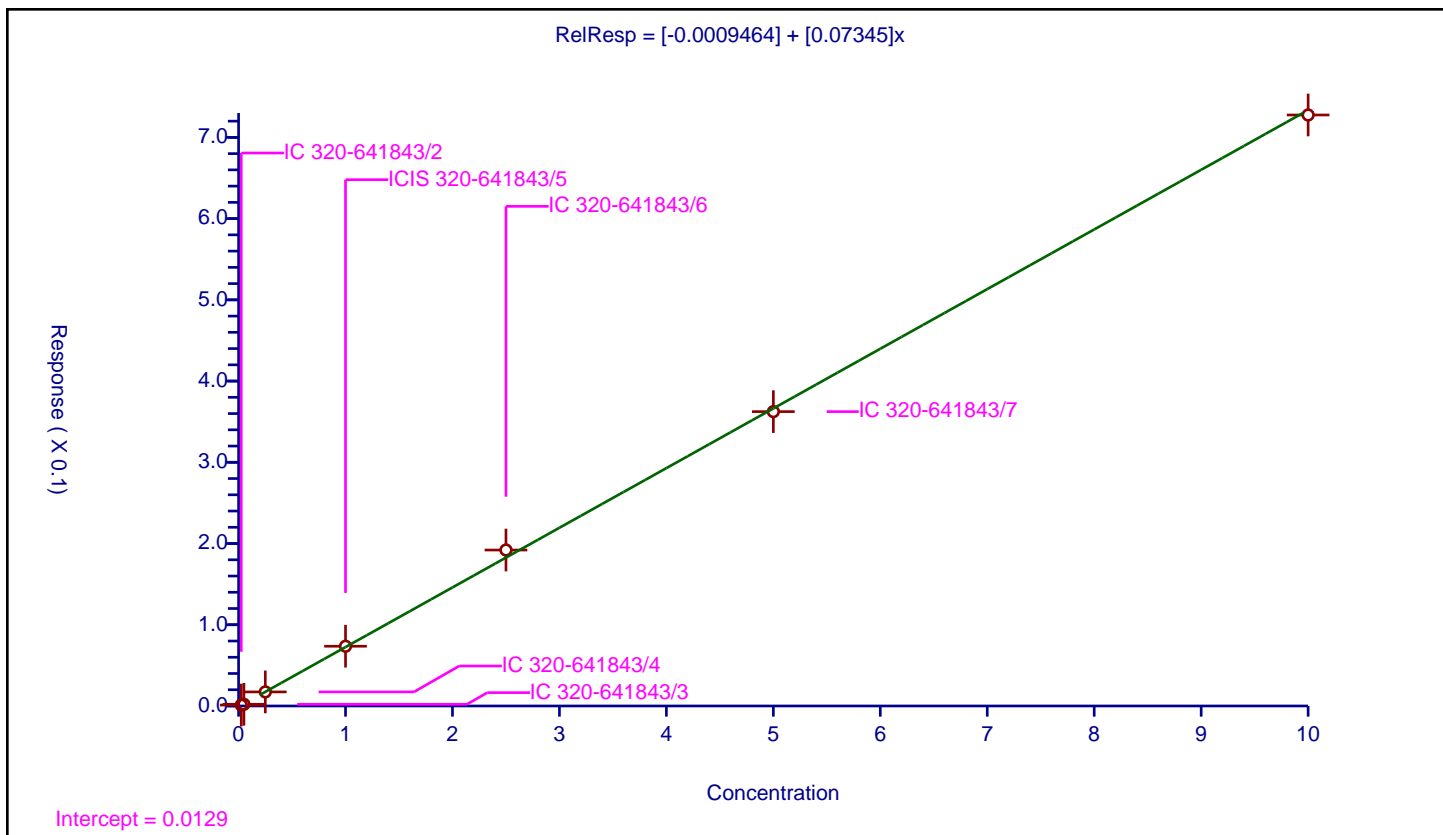
Curve Coefficients

Intercept: -0.0009464
 Slope: 0.07345

Error Coefficients

Standard Error: 1410000
 Relative Standard Error: 10.1
 Correlation Coefficient: 0.998
 Coefficient of Determination (Adjusted): 0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.001133	1.25	5289988.0	0.045303	Y
2	IC 320-641843/3	0.05	0.002089	1.25	5305834.0	0.04177	Y
3	IC 320-641843/4	0.25	0.017329	1.25	5066845.0	0.069314	Y
4	ICIS 320-641843/5	1.0	0.073544	1.25	5311179.0	0.073544	Y
5	IC 320-641843/6	2.5	0.192001	1.25	4999599.0	0.076801	Y
6	IC 320-641843/7	5.0	0.362367	1.25	4982225.0	0.072473	Y
7	IC 320-641843/8	10.0	0.727585	1.25	4611646.0	0.072759	Y



Calibration

/ PPF Acid

Curve Type: Linear
Weighting: Conc
Origin: None
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

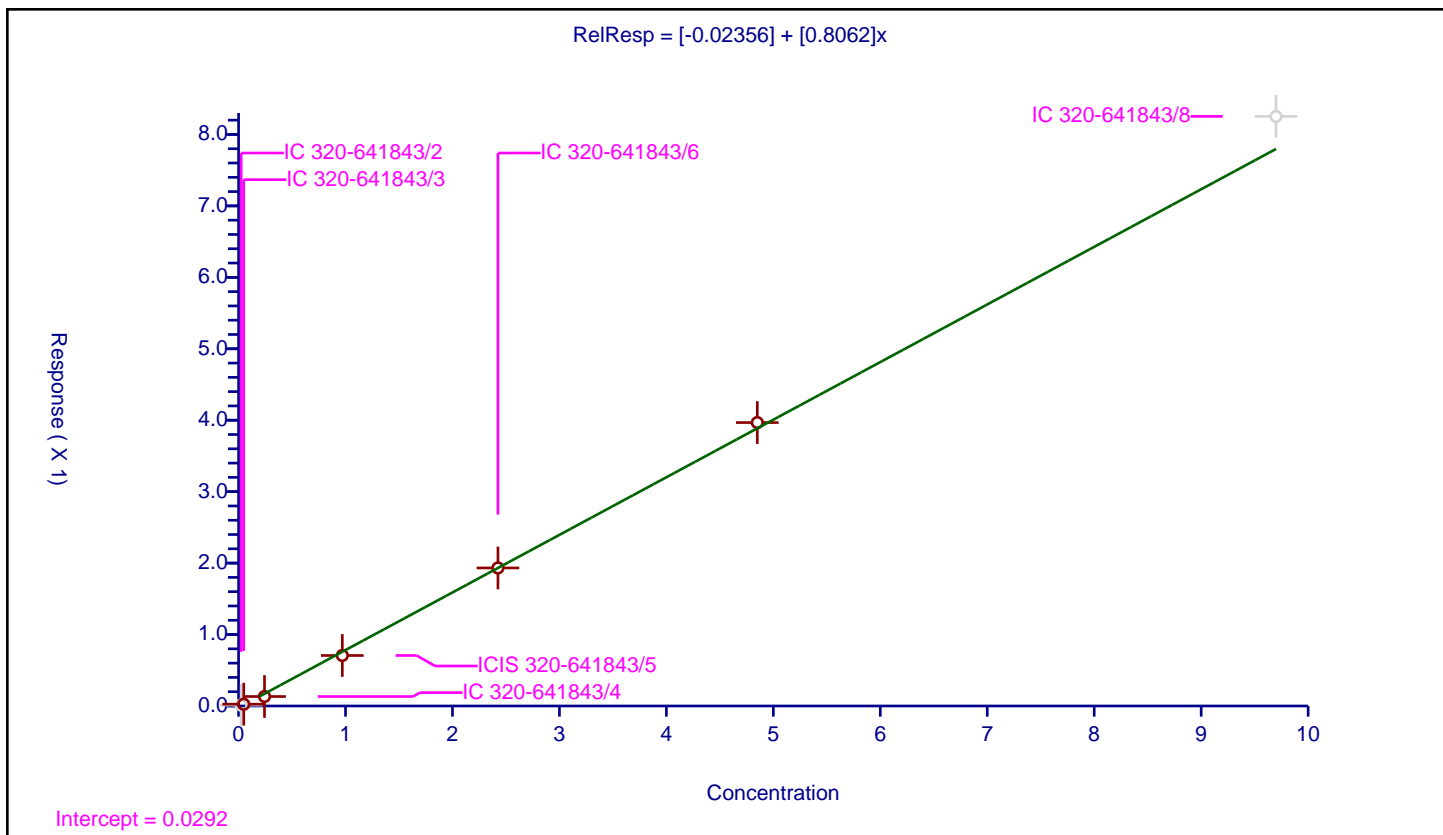
Curve Coefficients

Intercept: -0.02356
Slope: 0.8062

Error Coefficients

Standard Error: 10300000
Relative Standard Error: 18.7
Correlation Coefficient: 1.000
Coefficient of Determination (Adjusted): 0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.02425	0.011789	1.25	5289988.0	0.486155	N
2	IC 320-641843/3	0.0485	0.025142	1.25	5305834.0	0.518399	Y
3	IC 320-641843/4	0.2425	0.1328	1.25	5066845.0	0.547627	Y
4	ICIS 320-641843/5	0.97	0.706798	1.25	5311179.0	0.728658	Y
5	IC 320-641843/6	2.425	1.932128	1.25	4999599.0	0.796754	Y
6	IC 320-641843/7	4.85	3.967285	1.25	4982225.0	0.817997	Y
7	IC 320-641843/8	9.7	8.252792	1.25	4611646.0	0.850803	N



Calibration

/ PFMOAA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

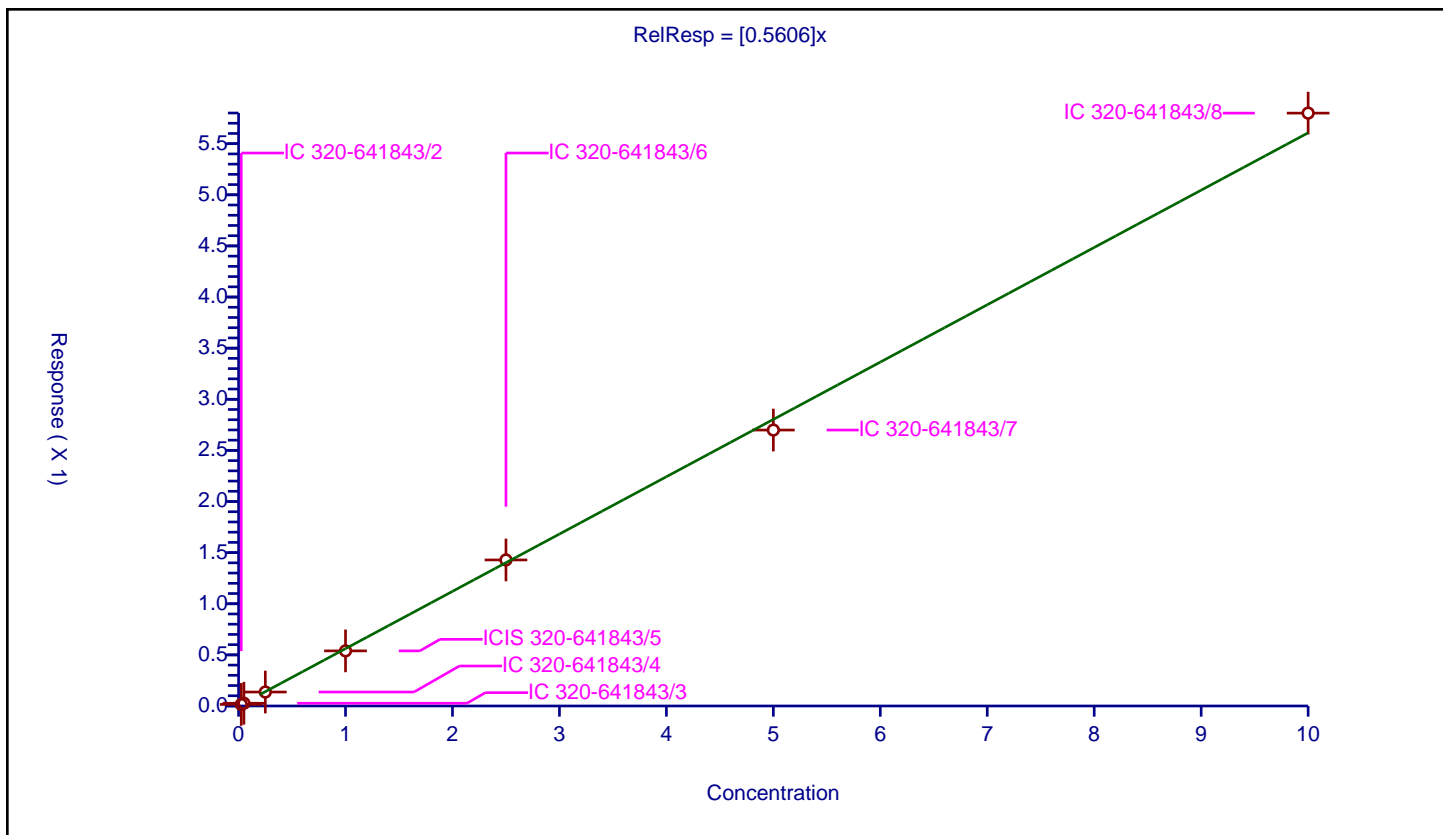
Curve Coefficients

Intercept: 0
 Slope: 0.5606

Error Coefficients

Standard Error: 10100000
 Relative Standard Error: 5.0
 Correlation Coefficient: 1.000
 Coefficient of Determination (Adjusted): 0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.015278	1.25	5289988.0	0.611107	Y
2	IC 320-641843/3	0.05	0.026835	1.25	5305834.0	0.536692	Y
3	IC 320-641843/4	0.25	0.13659	1.25	5066845.0	0.546362	Y
4	ICIS 320-641843/5	1.0	0.539064	1.25	5311179.0	0.539064	Y
5	IC 320-641843/6	2.5	1.428338	1.25	4999599.0	0.571335	Y
6	IC 320-641843/7	5.0	2.698917	1.25	4982225.0	0.539783	Y
7	IC 320-641843/8	10.0	5.799058	1.25	4611646.0	0.579906	Y



Calibration

/ R-PSDA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

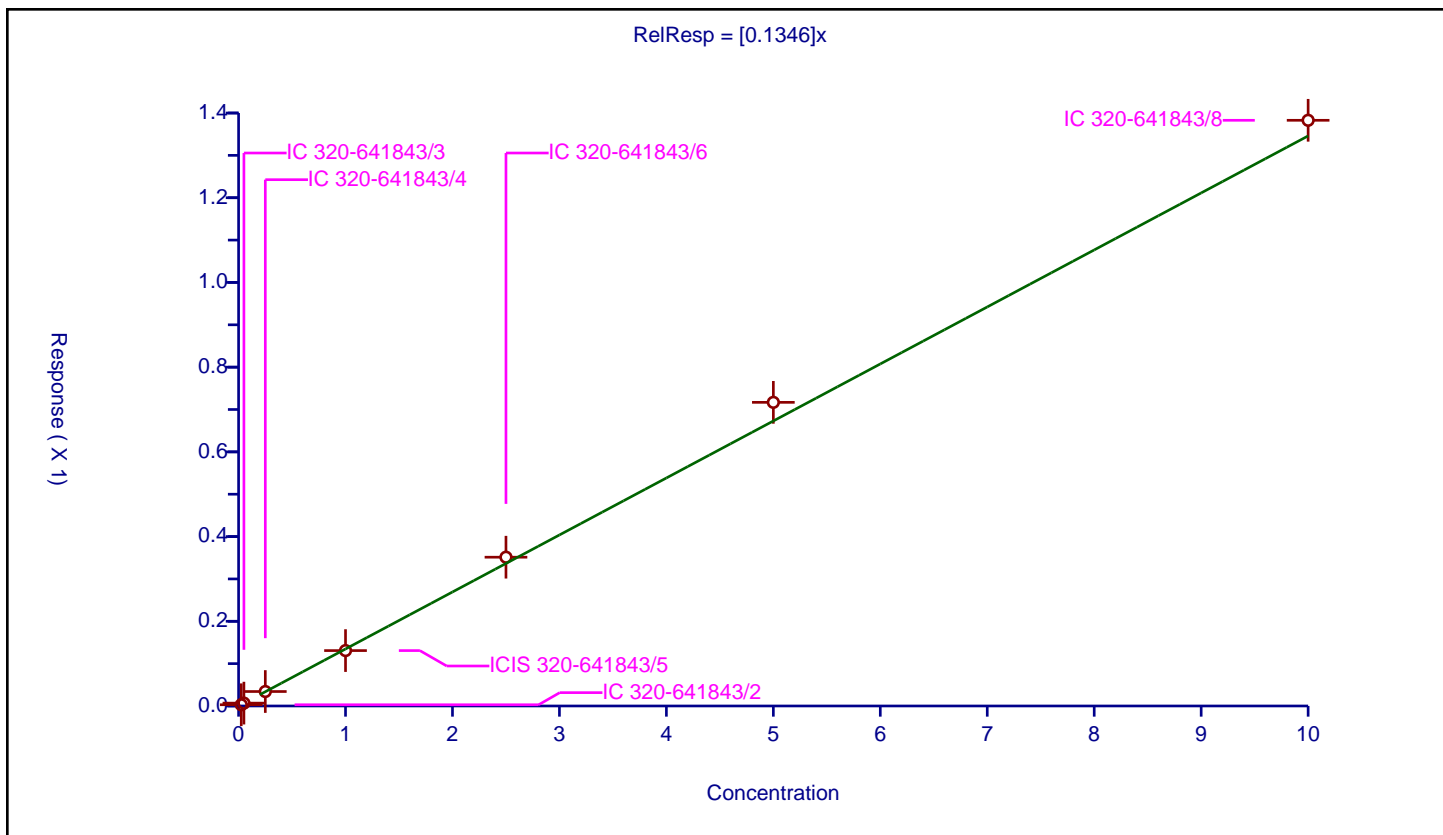
Curve Coefficients

Intercept: 0
 Slope: 0.1346

Error Coefficients

Standard Error: 2470000
 Relative Standard Error: 6.5
 Correlation Coefficient: 0.997
 Coefficient of Determination (Adjusted): 0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.002922	1.25	5289988.0	0.116862	Y
2	IC 320-641843/3	0.05	0.006787	1.25	5305834.0	0.135742	Y
3	IC 320-641843/4	0.25	0.034143	1.25	5066845.0	0.136571	Y
4	ICIS 320-641843/5	1.0	0.130769	1.25	5311179.0	0.130769	Y
5	IC 320-641843/6	2.5	0.351295	1.25	4999599.0	0.140518	Y
6	IC 320-641843/7	5.0	0.716891	1.25	4982225.0	0.143378	Y
7	IC 320-641843/8	10.0	1.382808	1.25	4611646.0	0.138281	Y



Calibration

/ Hydrolyzed PSDA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

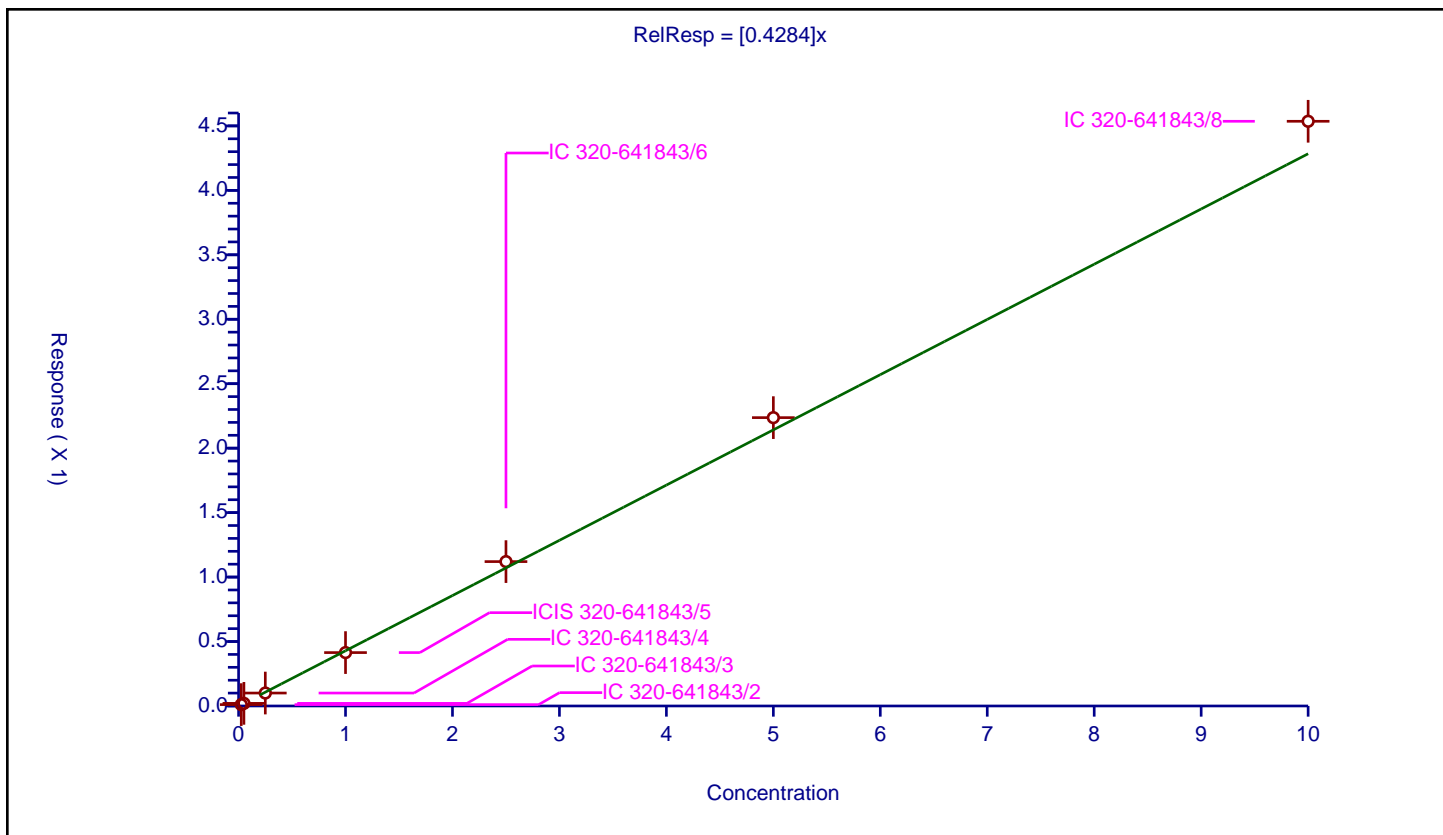
Curve Coefficients

Intercept: 0
 Slope: 0.4284

Error Coefficients

Standard Error: 7990000
 Relative Standard Error: 5.0
 Correlation Coefficient: 0.999
 Coefficient of Determination (Adjusted): 0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.010655	1.25	5289988.0	0.426192	Y
2	IC 320-641843/3	0.05	0.020379	1.25	5305834.0	0.407575	Y
3	IC 320-641843/4	0.25	0.10041	1.25	5066845.0	0.401641	Y
4	ICIS 320-641843/5	1.0	0.414287	1.25	5311179.0	0.414287	Y
5	IC 320-641843/6	2.5	1.120035	1.25	4999599.0	0.448014	Y
6	IC 320-641843/7	5.0	2.236853	1.25	4982225.0	0.447371	Y
7	IC 320-641843/8	10.0	4.535933	1.25	4611646.0	0.453593	Y



Calibration

/ R-EVE

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

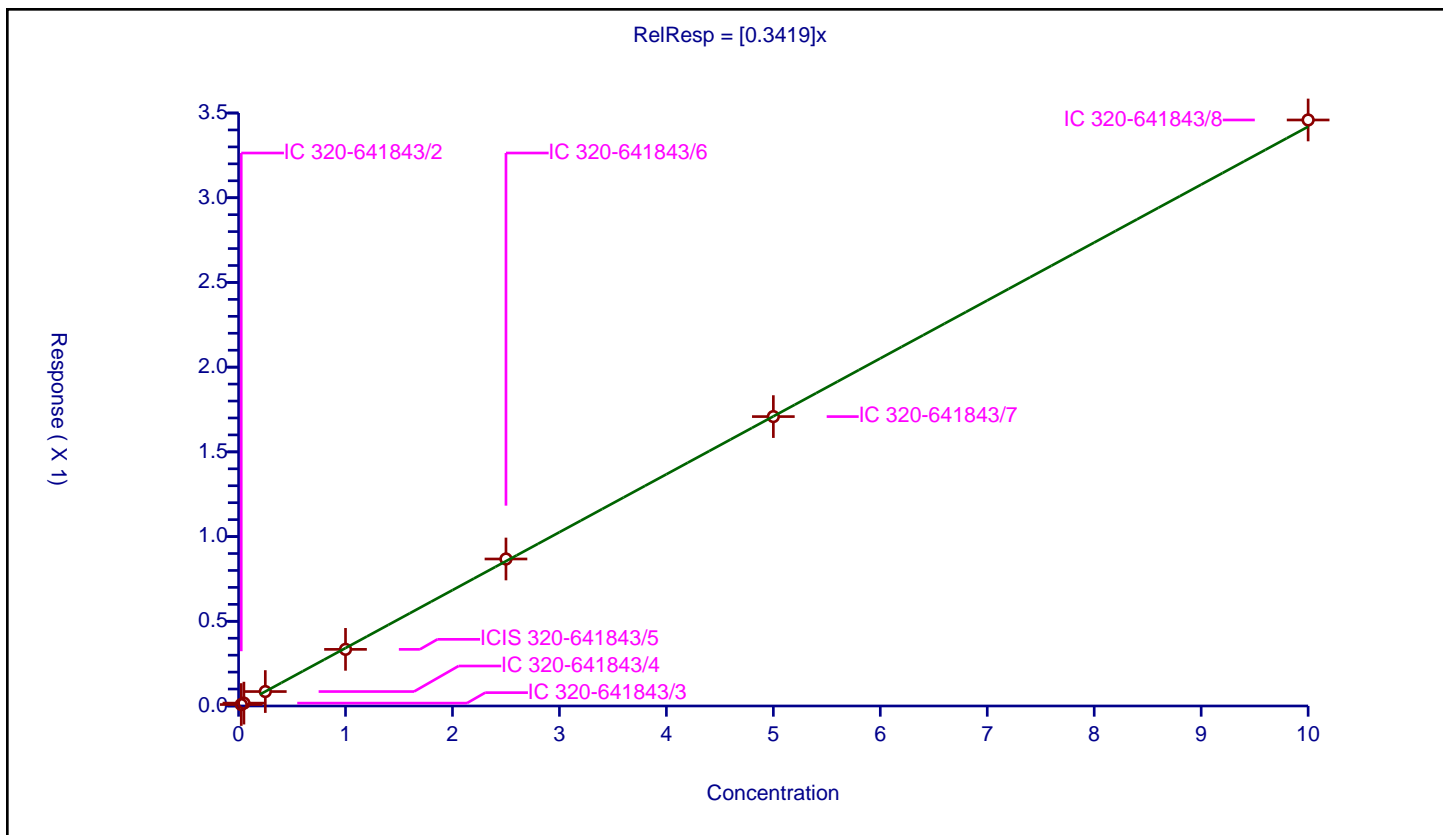
Curve Coefficients

Intercept: 0
 Slope: 0.3419

Error Coefficients

Standard Error: 6100000
 Relative Standard Error: 1.4
 Correlation Coefficient: 0.999
 Coefficient of Determination (Adjusted): 1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.008648	1.25	5289988.0	0.345908	Y
2	IC 320-641843/3	0.05	0.016902	1.25	5305834.0	0.338038	Y
3	IC 320-641843/4	0.25	0.085233	1.25	5066845.0	0.340932	Y
4	ICIS 320-641843/5	1.0	0.334171	1.25	5311179.0	0.334171	Y
5	IC 320-641843/6	2.5	0.867594	1.25	4999599.0	0.347038	Y
6	IC 320-641843/7	5.0	1.708119	1.25	4982225.0	0.341624	Y
7	IC 320-641843/8	10.0	3.45893	1.25	4611646.0	0.345893	Y



Calibration

/ Perfluorobutanoic acid

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

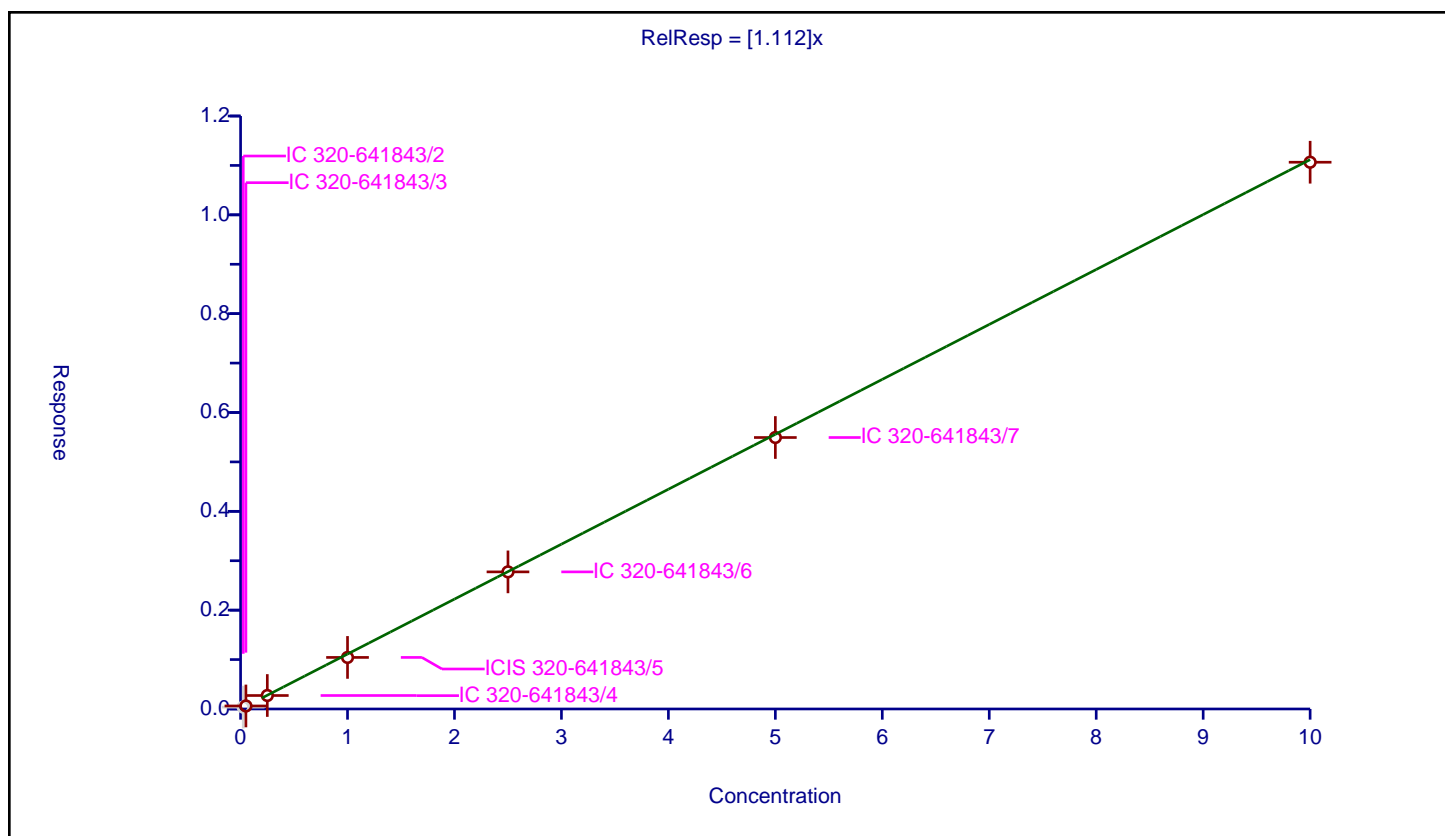
Curve Coefficients

Intercept: 0
Slope: 1.112

Error Coefficients

Standard Error: 21400000
Relative Standard Error: 5.2
Correlation Coefficient: 0.999
Coefficient of Determination (Adjusted): 0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.038187	1.25	5289988.0	1.52747	N
2	IC 320-641843/3	0.05	0.060991	1.25	5305834.0	1.219818	Y
3	IC 320-641843/4	0.25	0.273038	1.25	5066845.0	1.092154	Y
4	ICIS 320-641843/5	1.0	1.043146	1.25	5311179.0	1.043146	Y
5	IC 320-641843/6	2.5	2.774553	1.25	4999599.0	1.109821	Y
6	IC 320-641843/7	5.0	5.493743	1.25	4982225.0	1.098749	Y
7	IC 320-641843/8	10.0	11.06476	1.25	4611646.0	1.106476	Y



Calibration

/ PMPA

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

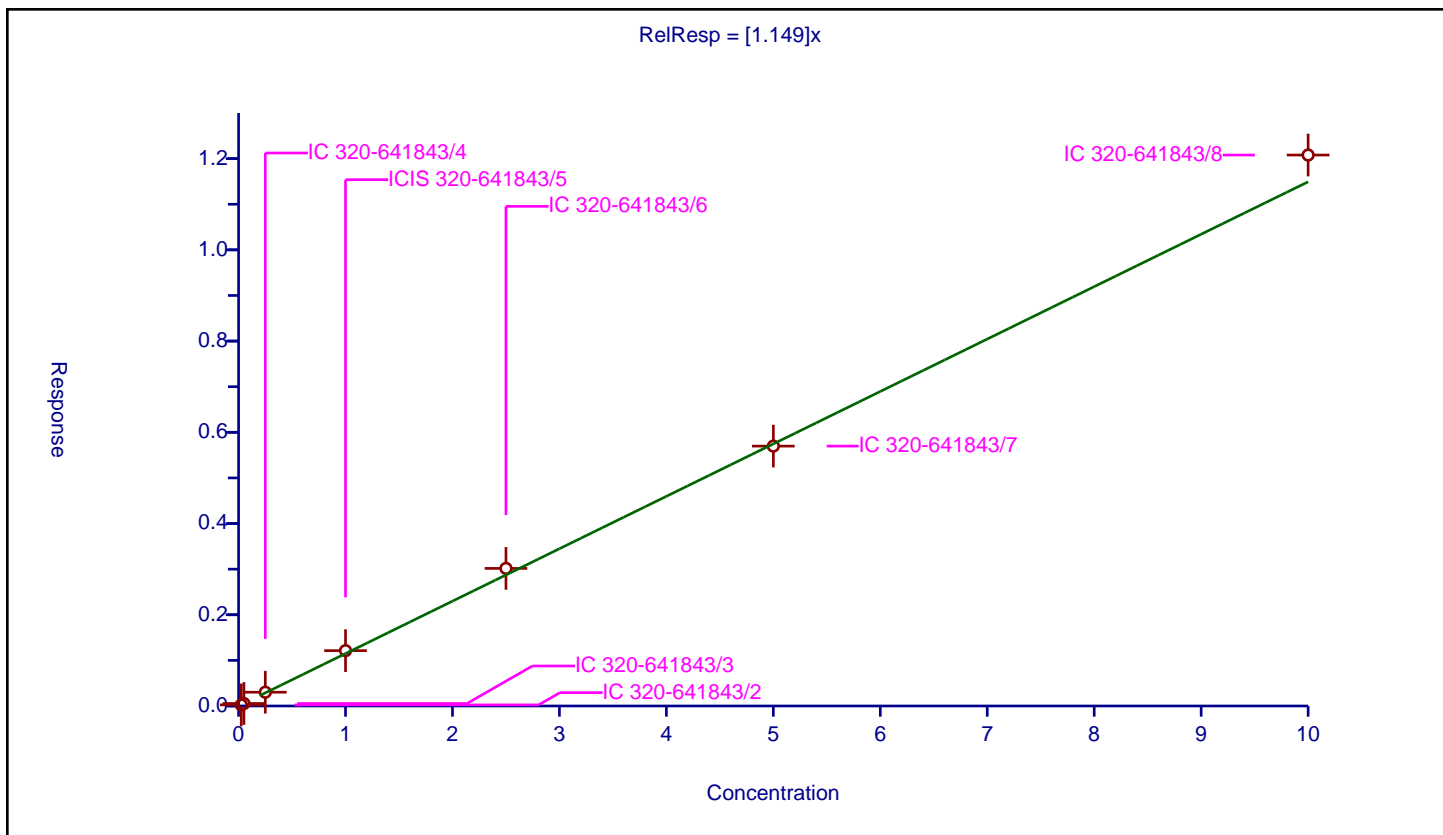
Curve Coefficients

Intercept: 0
Slope: 1.149

Error Coefficients

Standard Error: 21100000
Relative Standard Error: 7.7
Correlation Coefficient: 0.999
Coefficient of Determination (Adjusted): 0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.024398	1.25	5289988.0	0.975919	Y
2	IC 320-641843/3	0.05	0.054697	1.25	5305834.0	1.093947	Y
3	IC 320-641843/4	0.25	0.301797	1.25	5066845.0	1.207186	Y
4	ICIS 320-641843/5	1.0	1.21339	1.25	5311179.0	1.21339	Y
5	IC 320-641843/6	2.5	3.016156	1.25	4999599.0	1.206463	Y
6	IC 320-641843/7	5.0	5.697391	1.25	4982225.0	1.139478	Y
7	IC 320-641843/8	10.0	12.078539	1.25	4611646.0	1.207854	Y



Calibration

/ PFPPrS

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

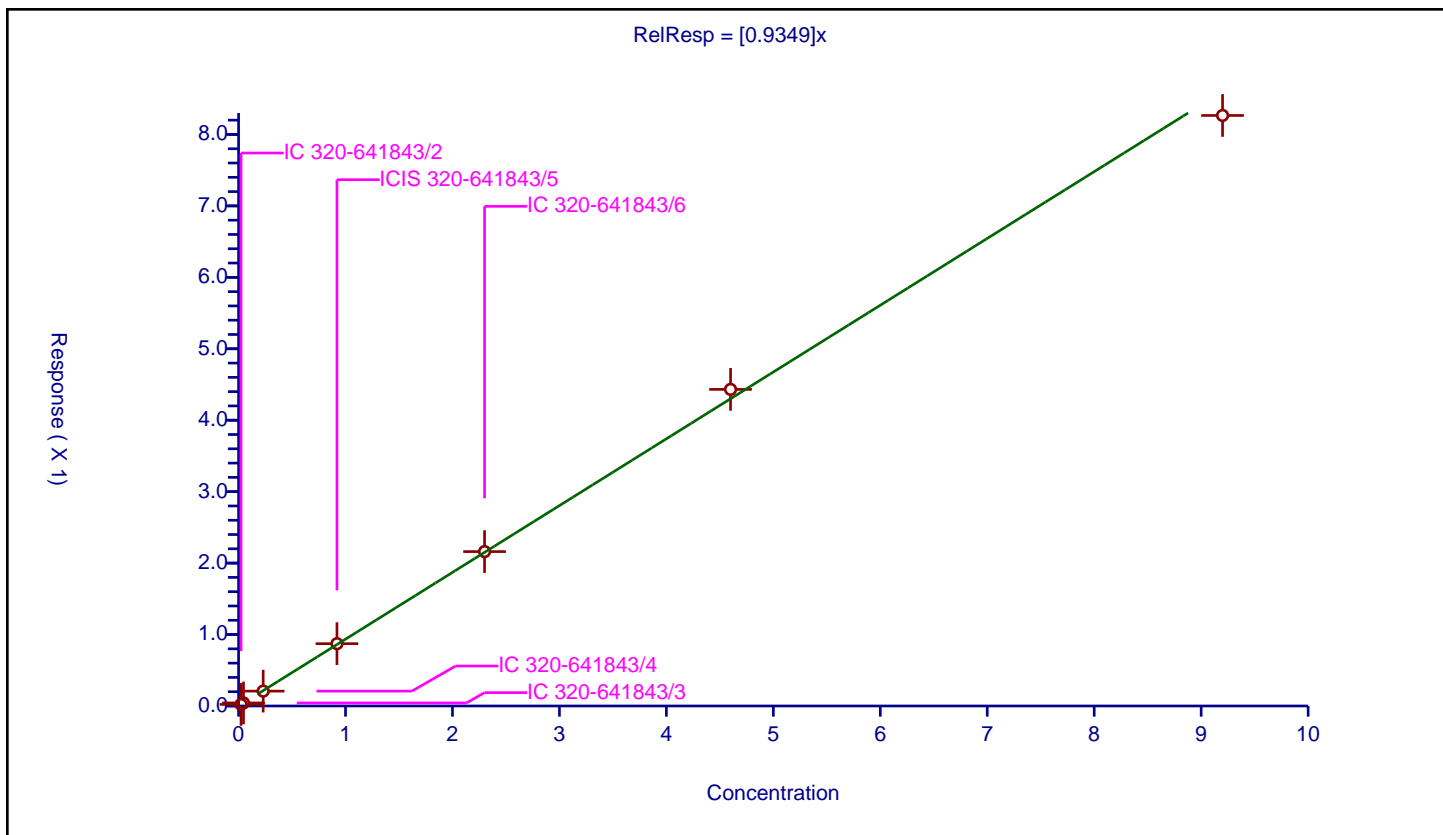
Curve Coefficients

Intercept: 0
 Slope: 0.9349

Error Coefficients

Standard Error: 9380000
 Relative Standard Error: 2.8
 Correlation Coefficient: 0.997
 Coefficient of Determination (Adjusted): 0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.023	0.02214	1.165	3081314.0	0.962622	Y
2	IC 320-641843/3	0.046	0.04271	1.165	3021473.0	0.928478	Y
3	IC 320-641843/4	0.23	0.207954	1.165	2980714.0	0.904147	Y
4	ICIS 320-641843/5	0.92	0.872158	1.165	2887646.0	0.947998	Y
5	IC 320-641843/6	2.3	2.16081	1.165	2899206.0	0.939482	Y
6	IC 320-641843/7	4.6	4.431389	1.165	2821528.0	0.963346	Y
7	IC 320-641843/8	9.2	8.265751	1.165	2744823.0	0.898451	Y



Calibration

/ NVHOS

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

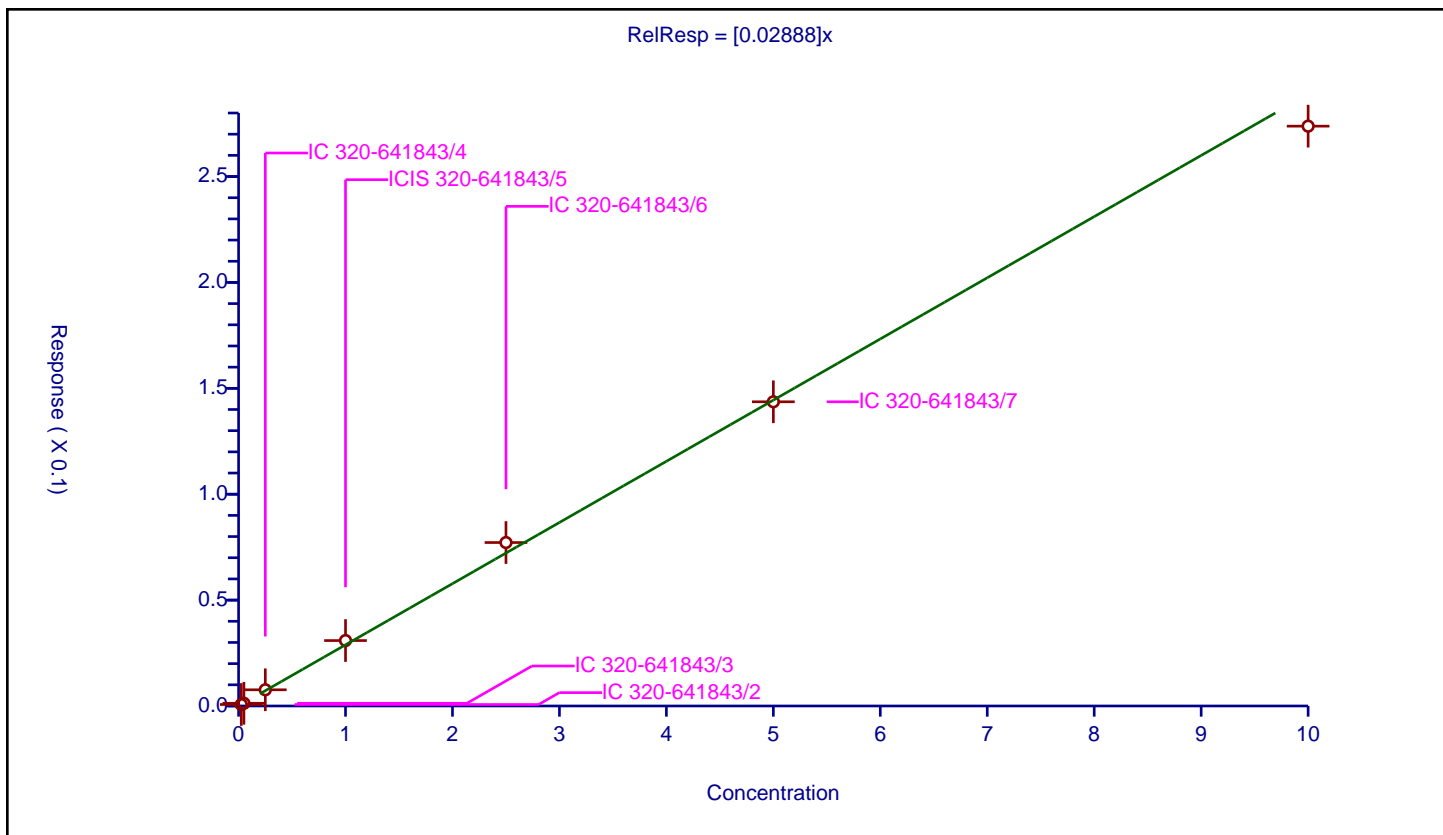
Curve Coefficients

Intercept: 0
Slope: 0.02888

Error Coefficients

Standard Error: 494000
Relative Standard Error: 7.0
Correlation Coefficient: 0.994
Coefficient of Determination (Adjusted): 0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.000704	1.25	5289988.0	0.028157	Y
2	IC 320-641843/3	0.05	0.001278	1.25	5305834.0	0.025566	Y
3	IC 320-641843/4	0.25	0.007648	1.25	5066845.0	0.03059	Y
4	ICIS 320-641843/5	1.0	0.030899	1.25	5311179.0	0.030899	Y
5	IC 320-641843/6	2.5	0.07718	1.25	4999599.0	0.030872	Y
6	IC 320-641843/7	5.0	0.143641	1.25	4982225.0	0.028728	Y
7	IC 320-641843/8	10.0	0.273794	1.25	4611646.0	0.027379	Y



Calibration

/ PFECA F

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

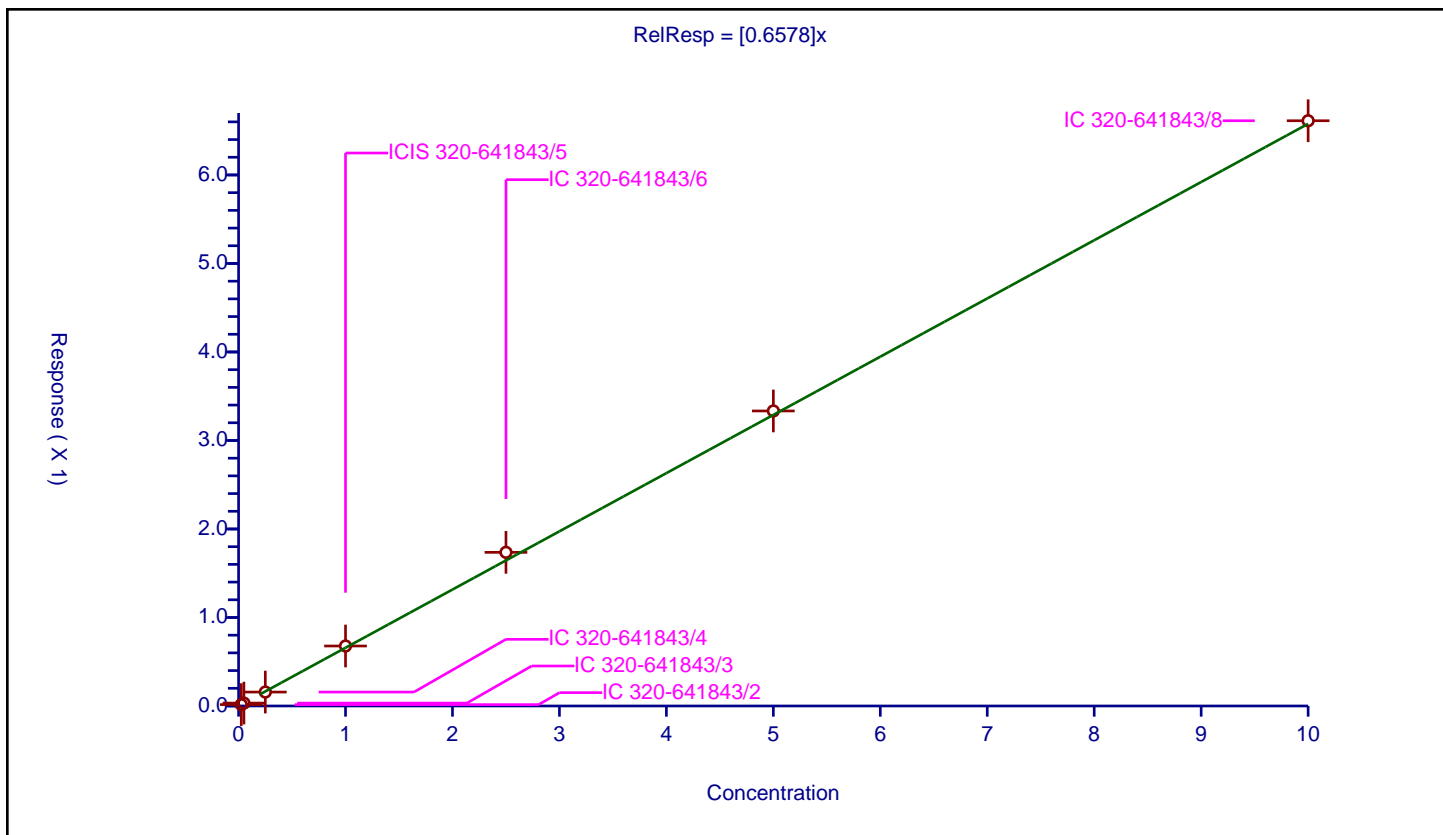
Curve Coefficients

Intercept: 0
 Slope: 0.6578

Error Coefficients

Standard Error: 10800000
 Relative Standard Error: 4.0
 Correlation Coefficient: 0.999
 Coefficient of Determination (Adjusted): 0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.015488	1.25	4840346.0	0.619501	Y
2	IC 320-641843/3	0.05	0.032747	1.25	4525957.0	0.654933	Y
3	IC 320-641843/4	0.25	0.157488	1.25	4546088.0	0.629952	Y
4	ICIS 320-641843/5	1.0	0.677743	1.25	4725710.0	0.677743	Y
5	IC 320-641843/6	2.5	1.73604	1.25	4465695.0	0.694416	Y
6	IC 320-641843/7	5.0	3.333602	1.25	4436348.0	0.66672	Y
7	IC 320-641843/8	10.0	6.612618	1.25	4278195.0	0.661262	Y



Calibration

/ PFO2HxA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

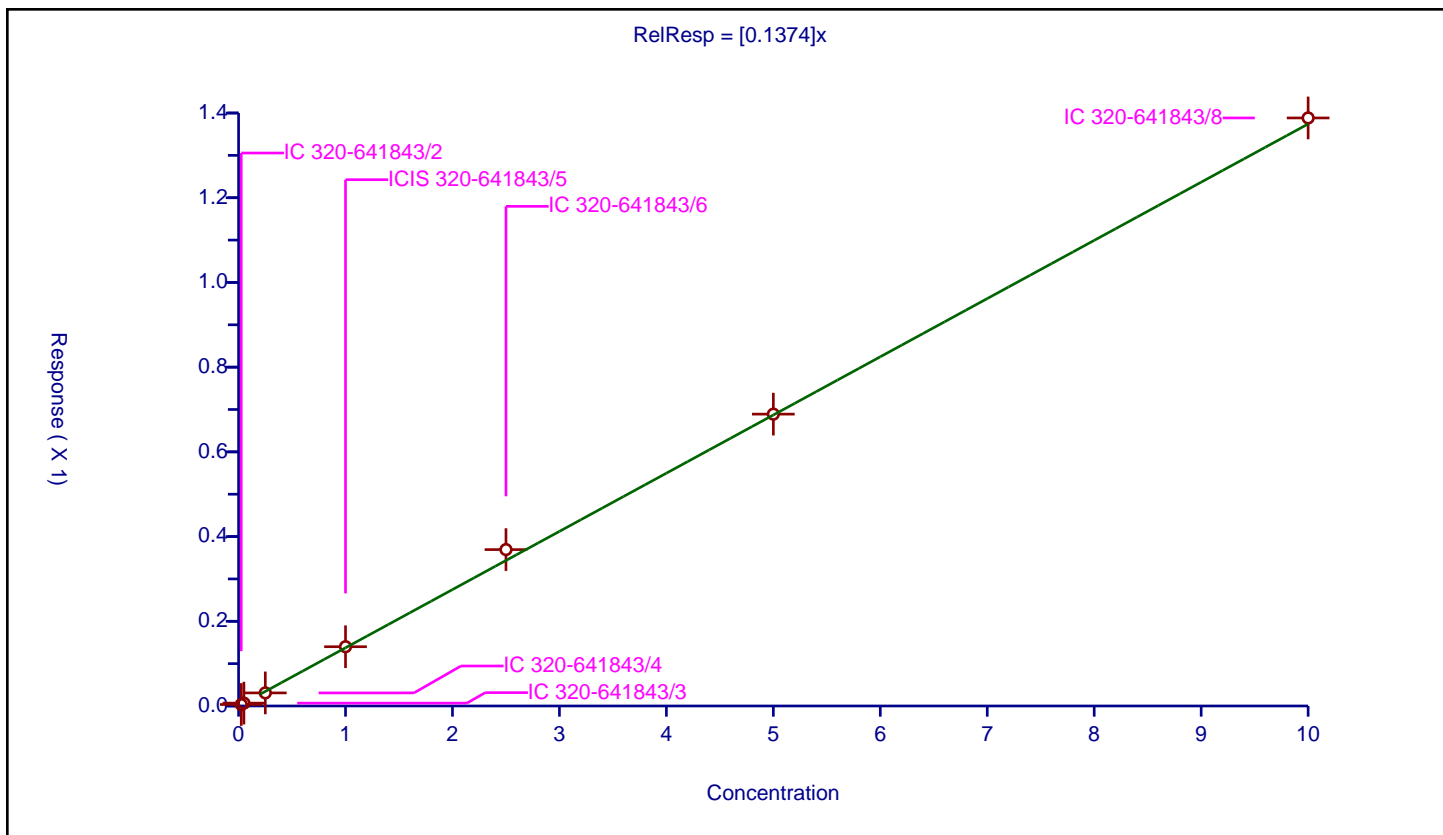
Curve Coefficients

Intercept: 0
 Slope: 0.1374

Error Coefficients

Standard Error: 2260000
 Relative Standard Error: 5.2
 Correlation Coefficient: 0.999
 Coefficient of Determination (Adjusted): 0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.003474	1.25	4840346.0	0.138957	Y
2	IC 320-641843/3	0.05	0.006751	1.25	4525957.0	0.135016	Y
3	IC 320-641843/4	0.25	0.030908	1.25	4546088.0	0.123634	Y
4	ICIS 320-641843/5	1.0	0.13993	1.25	4725710.0	0.13993	Y
5	IC 320-641843/6	2.5	0.369222	1.25	4465695.0	0.147689	Y
6	IC 320-641843/7	5.0	0.689085	1.25	4436348.0	0.137817	Y
7	IC 320-641843/8	10.0	1.38834	1.25	4278195.0	0.138834	Y



Calibration

/ Perfluoropentanoic acid

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

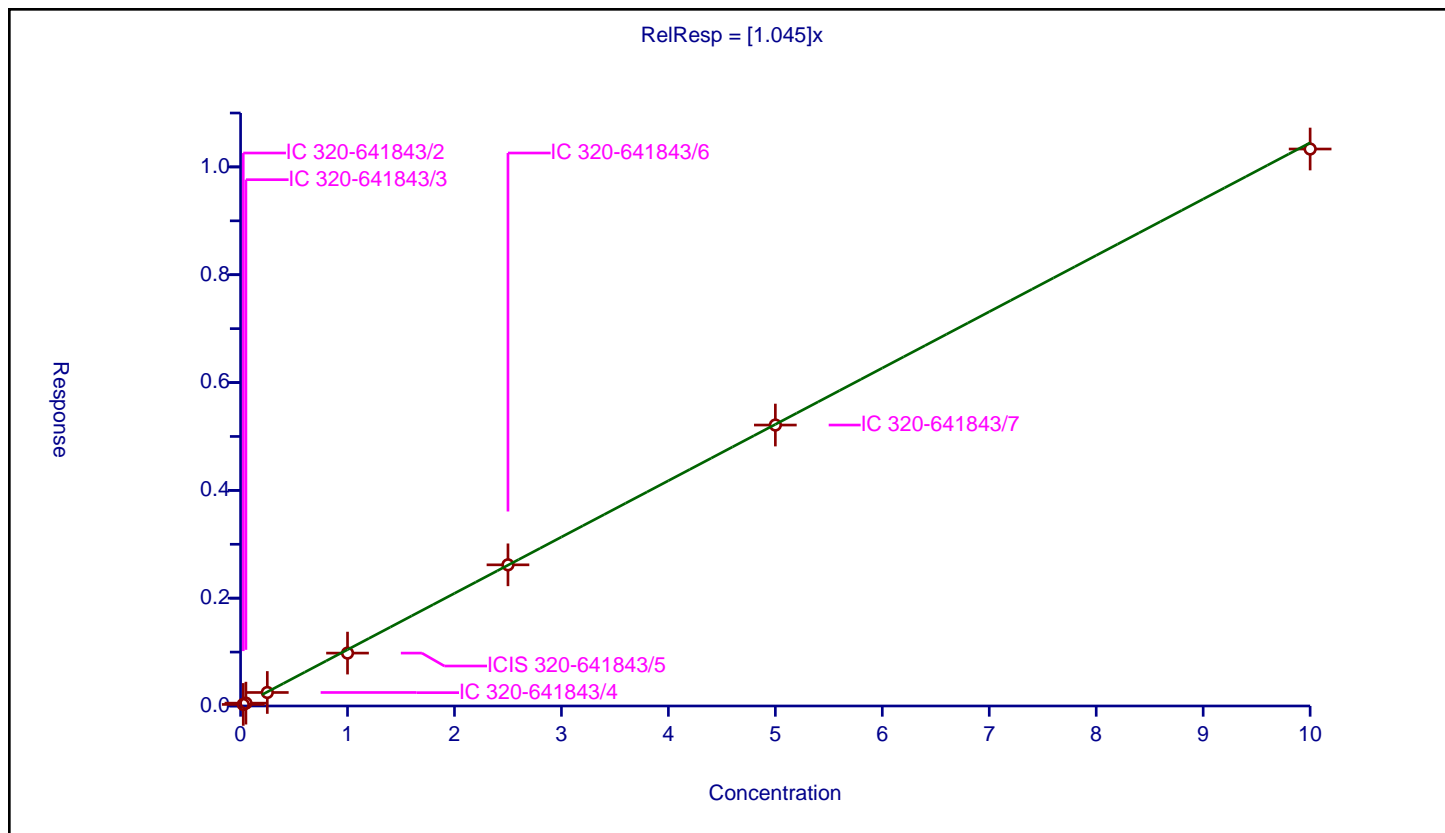
Curve Coefficients

Intercept: 0
Slope: 1.045

Error Coefficients

Standard Error: 16800000
Relative Standard Error: 5.2
Correlation Coefficient: 0.999
Coefficient of Determination (Adjusted): 0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.028836	1.25	4840346.0	1.15344	Y
2	IC 320-641843/3	0.05	0.052673	1.25	4525957.0	1.053451	Y
3	IC 320-641843/4	0.25	0.250616	1.25	4546088.0	1.002464	Y
4	ICIS 320-641843/5	1.0	0.98105	1.25	4725710.0	0.98105	Y
5	IC 320-641843/6	2.5	2.618621	1.25	4465695.0	1.047448	Y
6	IC 320-641843/7	5.0	5.211635	1.25	4436348.0	1.042327	Y
7	IC 320-641843/8	10.0	10.332406	1.25	4278195.0	1.033241	Y



Calibration

/ 3:3 FTCA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

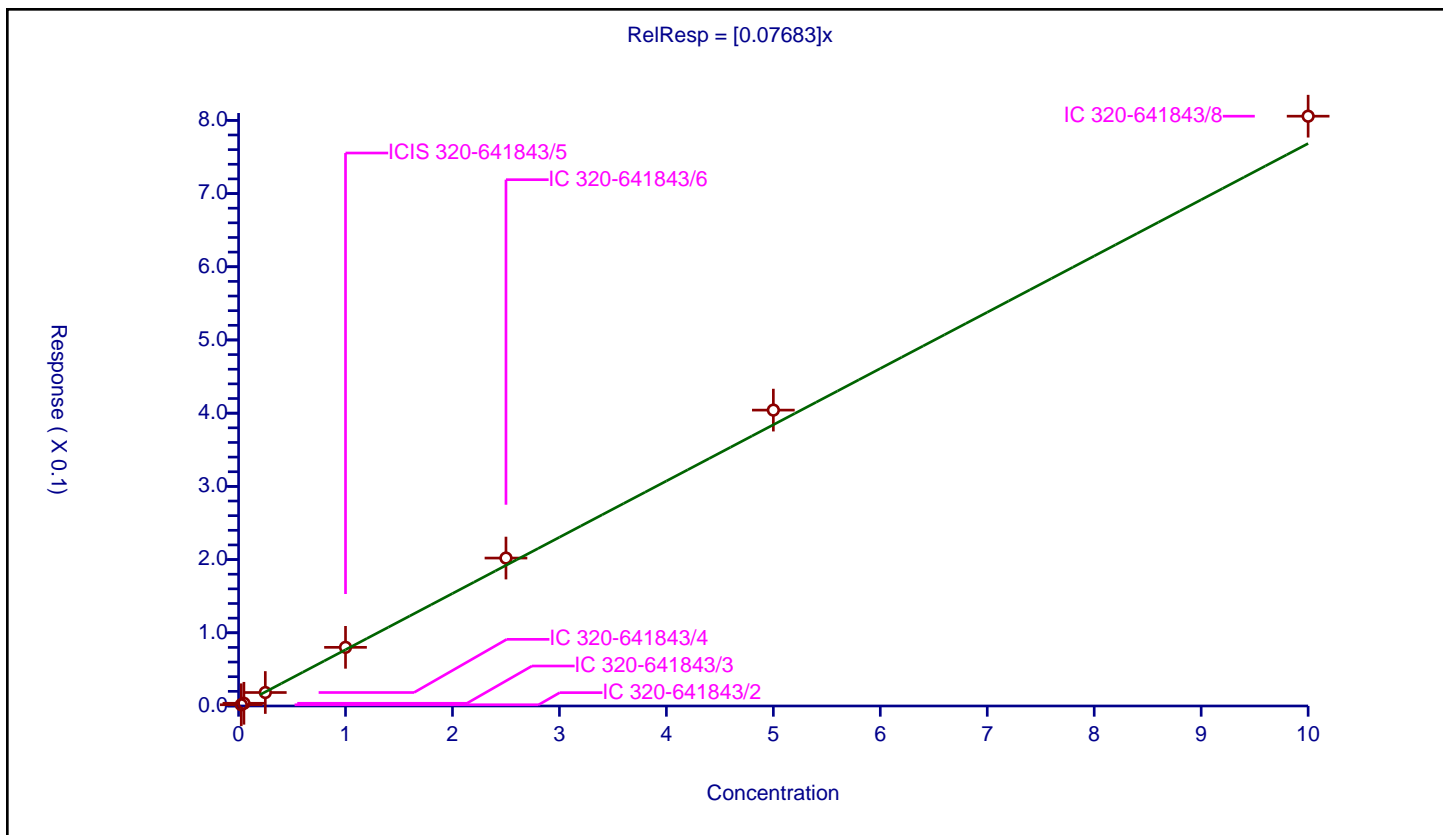
Curve Coefficients

Intercept: 0
 Slope: 0.07683

Error Coefficients

Standard Error: 900000
 Relative Standard Error: 6.6
 Correlation Coefficient: 1.000
 Coefficient of Determination (Adjusted): 0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.001697	1.165	3081314.0	0.067889	Y
2	IC 320-641843/3	0.05	0.003699	1.165	3021473.0	0.073984	Y
3	IC 320-641843/4	0.25	0.018401	1.165	2980714.0	0.073606	Y
4	ICIS 320-641843/5	1.0	0.080129	1.165	2887646.0	0.080129	Y
5	IC 320-641843/6	2.5	0.202063	1.165	2899206.0	0.080825	Y
6	IC 320-641843/7	5.0	0.404181	1.165	2821528.0	0.080836	Y
7	IC 320-641843/8	10.0	0.805665	1.165	2744823.0	0.080566	Y



Calibration

/ Perfluorobutanesulfonic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

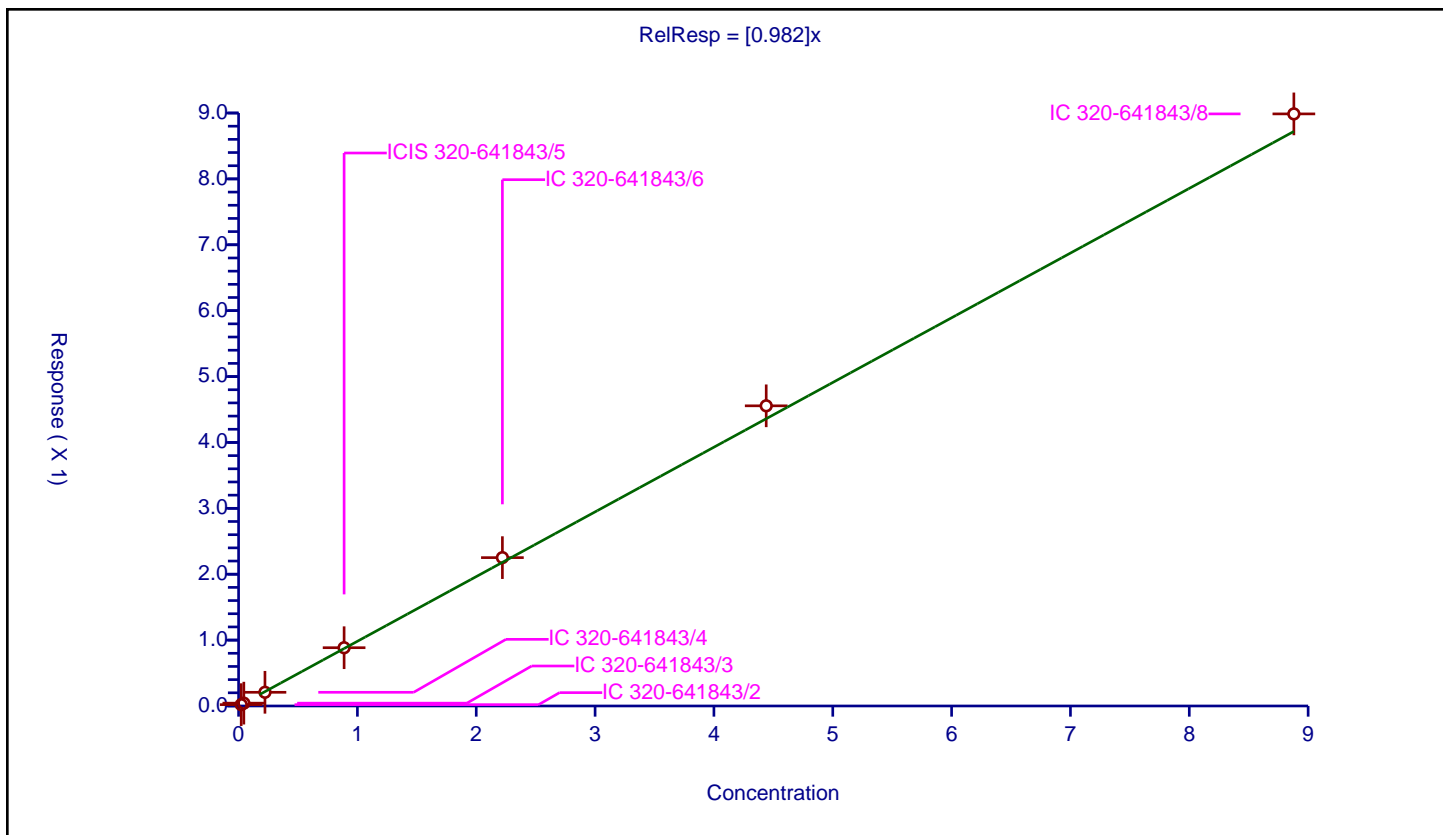
Curve Coefficients

Intercept: 0
 Slope: 0.982

Error Coefficients

Standard Error: 10100000
 Relative Standard Error: 4.2
 Correlation Coefficient: 0.999
 Coefficient of Determination (Adjusted): 0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.0222	0.020401	1.165	3081314.0	0.918986	Y
2	IC 320-641843/3	0.0444	0.043082	1.165	3021473.0	0.970308	Y
3	IC 320-641843/4	0.222	0.207896	1.165	2980714.0	0.93647	Y
4	ICIS 320-641843/5	0.888	0.884353	1.165	2887646.0	0.995893	Y
5	IC 320-641843/6	2.22	2.251804	1.165	2899206.0	1.014326	Y
6	IC 320-641843/7	4.44	4.555858	1.165	2821528.0	1.026094	Y
7	IC 320-641843/8	8.88	8.986726	1.165	2744823.0	1.012019	Y



Calibration

/ PEPA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

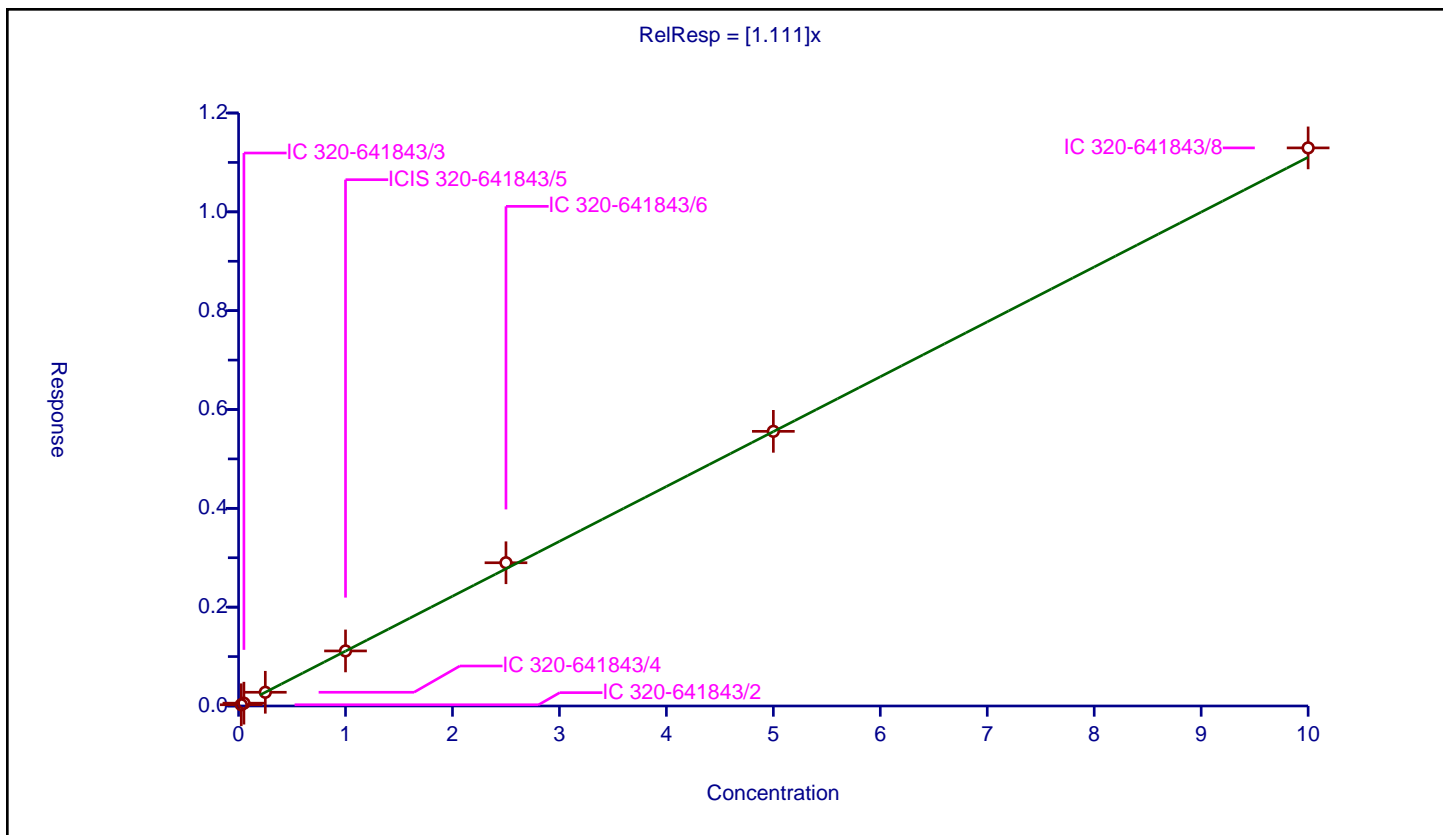
Curve Coefficients

Intercept: 0
 Slope: 1.111

Error Coefficients

Standard Error: 18300000
 Relative Standard Error: 4.4
 Correlation Coefficient: 1.000
 Coefficient of Determination (Adjusted): 0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.025186	1.25	4840346.0	1.007459	Y
2	IC 320-641843/3	0.05	0.057072	1.25	4525957.0	1.141433	Y
3	IC 320-641843/4	0.25	0.277536	1.25	4546088.0	1.110143	Y
4	ICIS 320-641843/5	1.0	1.113894	1.25	4725710.0	1.113894	Y
5	IC 320-641843/6	2.5	2.898899	1.25	4465695.0	1.15956	Y
6	IC 320-641843/7	5.0	5.558413	1.25	4436348.0	1.111683	Y
7	IC 320-641843/8	10.0	11.294005	1.25	4278195.0	1.1294	Y



Calibration

/ PFECA A

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

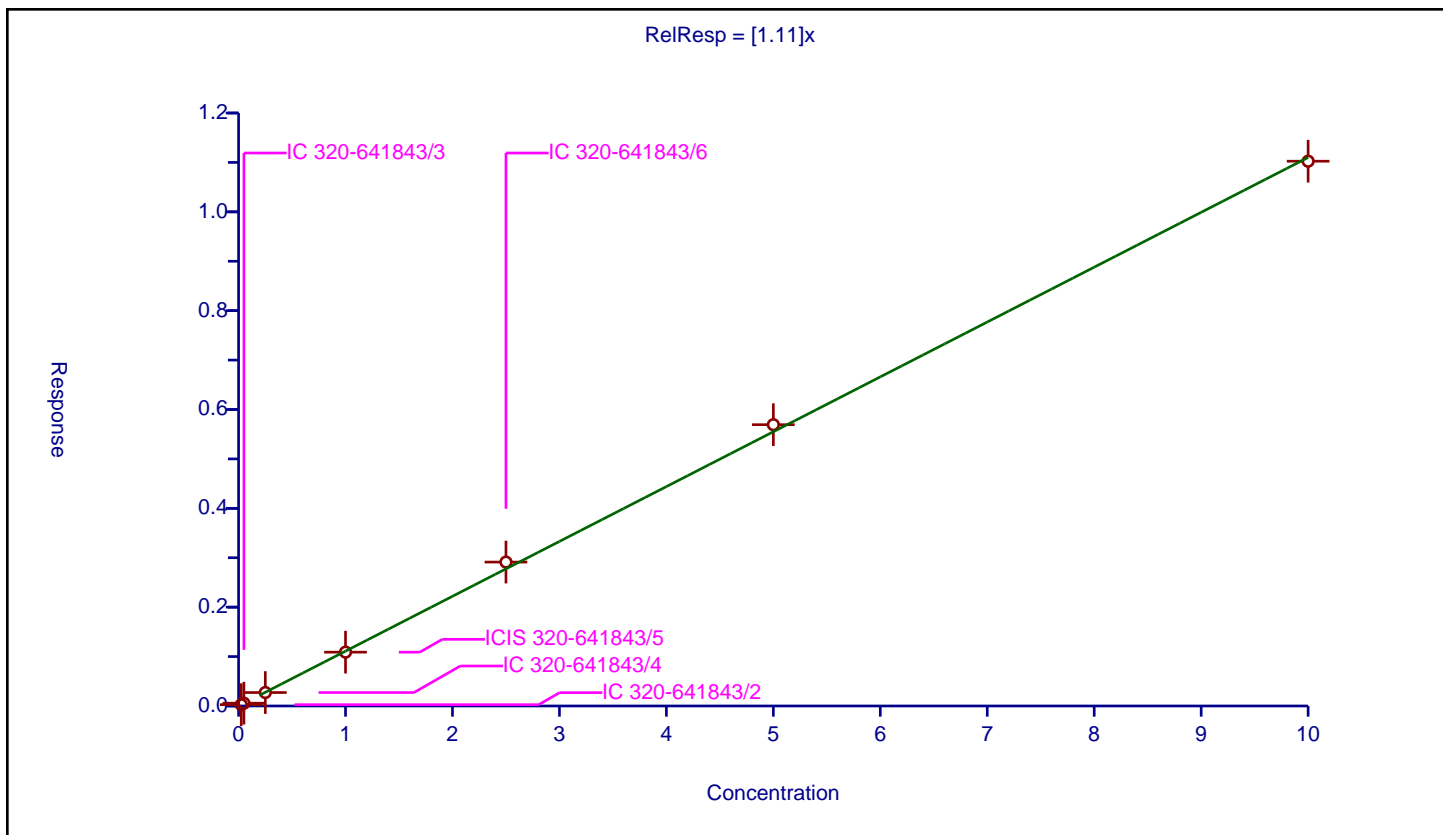
Curve Coefficients

Intercept: 0
 Slope: 1.11

Error Coefficients

Standard Error: 18100000
 Relative Standard Error: 3.1
 Correlation Coefficient: 0.999
 Coefficient of Determination (Adjusted): 0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.026539	1.25	4840346.0	1.061546	Y
2	IC 320-641843/3	0.05	0.056183	1.25	4525957.0	1.123668	Y
3	IC 320-641843/4	0.25	0.272398	1.25	4546088.0	1.089593	Y
4	ICIS 320-641843/5	1.0	1.089342	1.25	4725710.0	1.089342	Y
5	IC 320-641843/6	2.5	2.91228	1.25	4465695.0	1.164912	Y
6	IC 320-641843/7	5.0	5.692549	1.25	4436348.0	1.13851	Y
7	IC 320-641843/8	10.0	11.025054	1.25	4278195.0	1.102505	Y



Calibration

/ PES

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

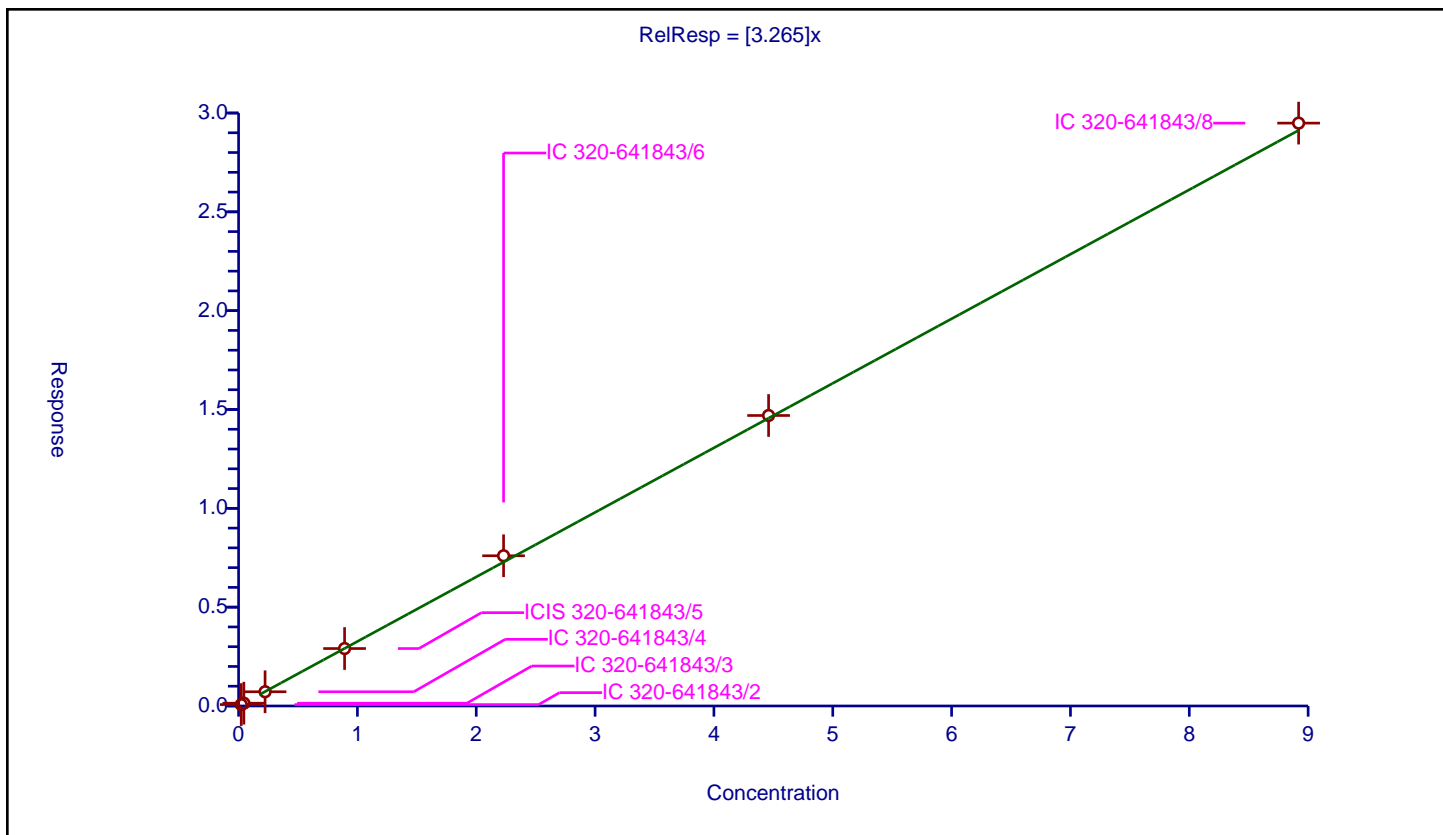
Curve Coefficients

Intercept: 0
Slope: 3.265

Error Coefficients

Standard Error: 32900000
Relative Standard Error: 2.5
Correlation Coefficient: 0.999
Coefficient of Determination (Adjusted): 0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.0223	0.07106	1.165	3081314.0	3.186548	Y
2	IC 320-641843/3	0.0446	0.141503	1.165	3021473.0	3.172708	Y
3	IC 320-641843/4	0.223	0.719669	1.165	2980714.0	3.227215	Y
4	ICIS 320-641843/5	0.892	2.906748	1.165	2887646.0	3.258686	Y
5	IC 320-641843/6	2.23	7.600078	1.165	2899206.0	3.408107	Y
6	IC 320-641843/7	4.46	14.696203	1.165	2821528.0	3.295113	Y
7	IC 320-641843/8	8.92	29.488859	1.165	2744823.0	3.305926	Y



Calibration

/ FBSA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

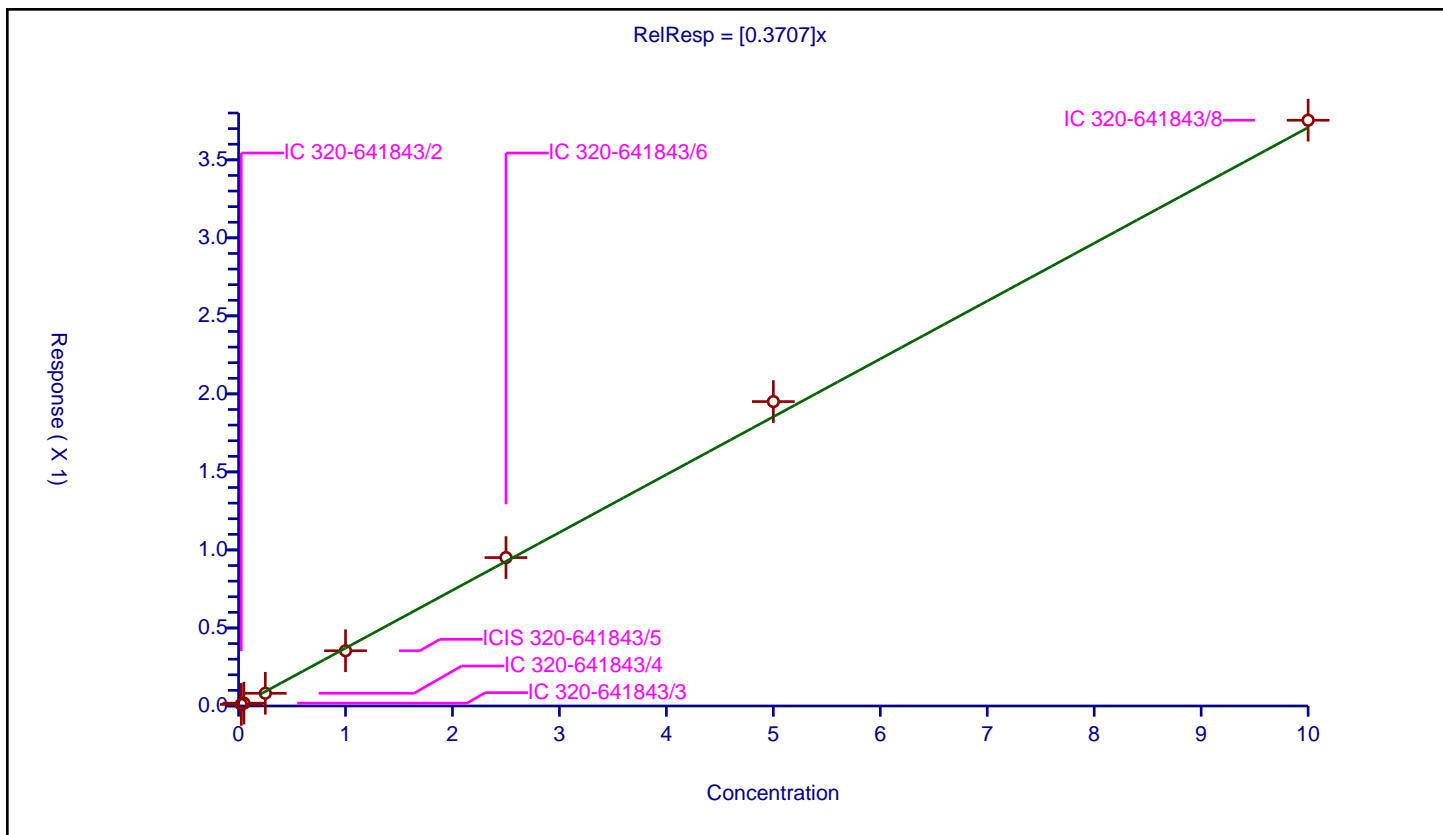
Curve Coefficients

Intercept: 0
 Slope: 0.3707

Error Coefficients

Standard Error: 2450000
 Relative Standard Error: 7.0
 Correlation Coefficient: 0.997
 Coefficient of Determination (Adjusted): 0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.010145	1.25	1959299.0	0.405808	Y
2	IC 320-641843/3	0.05	0.018182	1.25	1886081.0	0.363638	Y
3	IC 320-641843/4	0.25	0.081397	1.25	1916740.0	0.325587	Y
4	ICIS 320-641843/5	1.0	0.353978	1.25	1890673.0	0.353978	Y
5	IC 320-641843/6	2.5	0.951057	1.25	1857541.0	0.380423	Y
6	IC 320-641843/7	5.0	1.950777	1.25	1806938.0	0.390155	Y
7	IC 320-641843/8	10.0	3.753862	1.25	1685839.0	0.375386	Y



Calibration

/ PFECA B

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

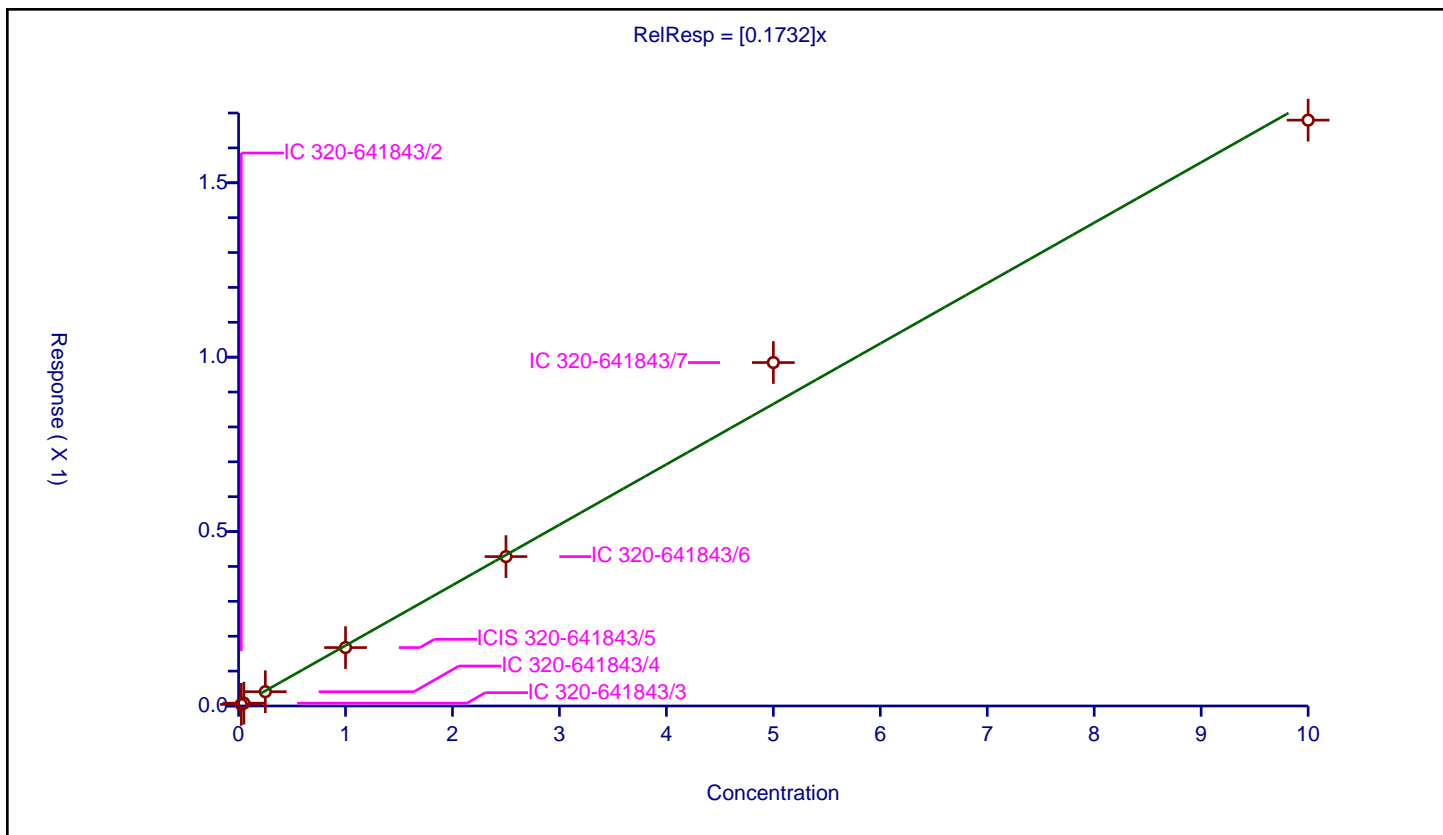
Curve Coefficients

Intercept: 0
 Slope: 0.1732

Error Coefficients

Standard Error: 3070000
 Relative Standard Error: 7.0
 Correlation Coefficient: 0.988
 Coefficient of Determination (Adjusted): 0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.00454	1.25	5209983.0	0.181613	Y
2	IC 320-641843/3	0.05	0.008162	1.25	5056255.0	0.163238	Y
3	IC 320-641843/4	0.25	0.04093	1.25	5187930.0	0.163718	Y
4	ICIS 320-641843/5	1.0	0.16746	1.25	5056091.0	0.16746	Y
5	IC 320-641843/6	2.5	0.428278	1.25	5028123.0	0.171311	Y
6	IC 320-641843/7	5.0	0.984659	1.25	4862283.0	0.196932	Y
7	IC 320-641843/8	10.0	1.679609	1.25	4621814.0	0.167961	Y



Calibration

/ 1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

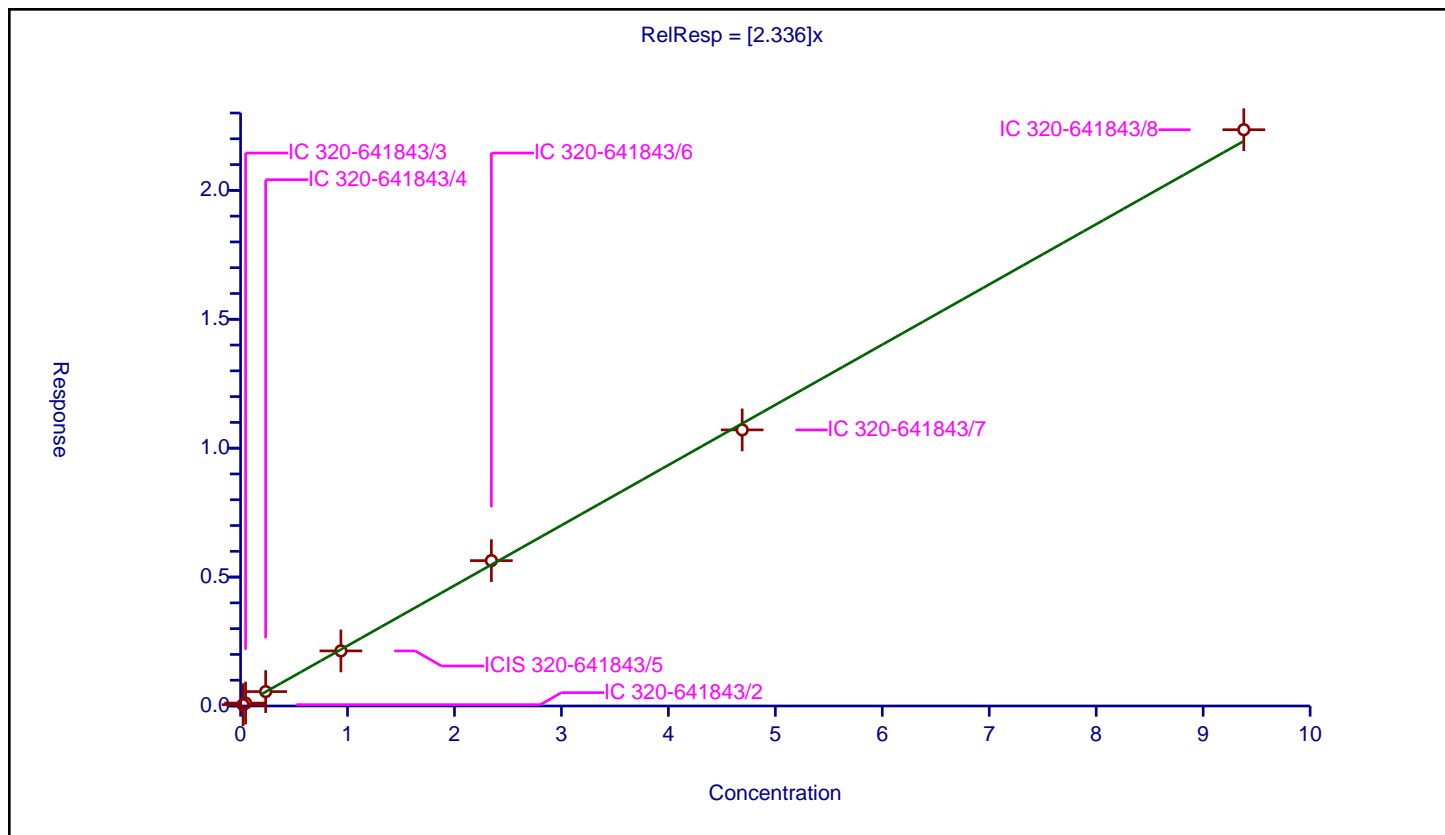
Curve Coefficients

Intercept: 0
 Slope: 2.336

Error Coefficients

Standard Error: 5330000
 Relative Standard Error: 3.4
 Correlation Coefficient: 0.994
 Coefficient of Determination (Adjusted): 0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.02345	0.051823	1.1725	760490.0	2.209957	Y
2	IC 320-641843/3	0.0469	0.11317	1.1725	727484.0	2.413008	Y
3	IC 320-641843/4	0.2345	0.558139	1.1725	704703.0	2.380123	Y
4	ICIS 320-641843/5	0.938	2.136349	1.1725	688975.0	2.277557	Y
5	IC 320-641843/6	2.345	5.638609	1.1725	662219.0	2.404524	Y
6	IC 320-641843/7	4.69	10.708693	1.1725	687123.0	2.283303	Y
7	IC 320-641843/8	9.38	22.353006	1.1725	572256.0	2.38305	Y



Calibration

/ Perfluorohexanoic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

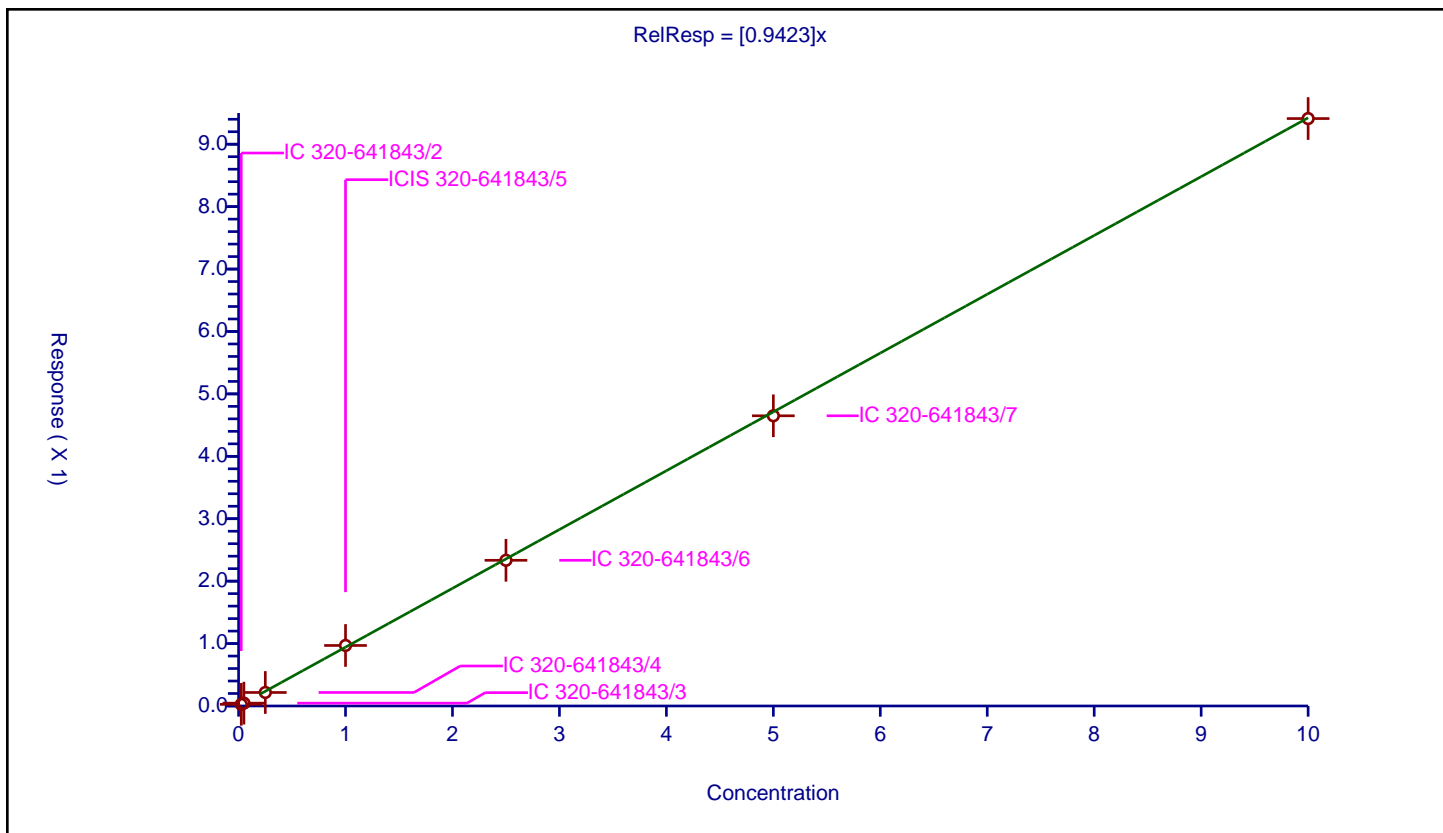
Curve Coefficients

Intercept: 0
 Slope: 0.9423

Error Coefficients

Standard Error: 16500000
 Relative Standard Error: 5.8
 Correlation Coefficient: 0.999
 Coefficient of Determination (Adjusted): 0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.02611	1.25	5209983.0	1.044399	Y
2	IC 320-641843/3	0.05	0.045593	1.25	5056255.0	0.911851	Y
3	IC 320-641843/4	0.25	0.216519	1.25	5187930.0	0.866076	Y
4	ICIS 320-641843/5	1.0	0.969509	1.25	5056091.0	0.969509	Y
5	IC 320-641843/6	2.5	2.334017	1.25	5028123.0	0.933607	Y
6	IC 320-641843/7	5.0	4.649186	1.25	4862283.0	0.929837	Y
7	IC 320-641843/8	10.0	9.411257	1.25	4621814.0	0.941126	Y



Calibration

/ Perfluoropentanesulfonic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

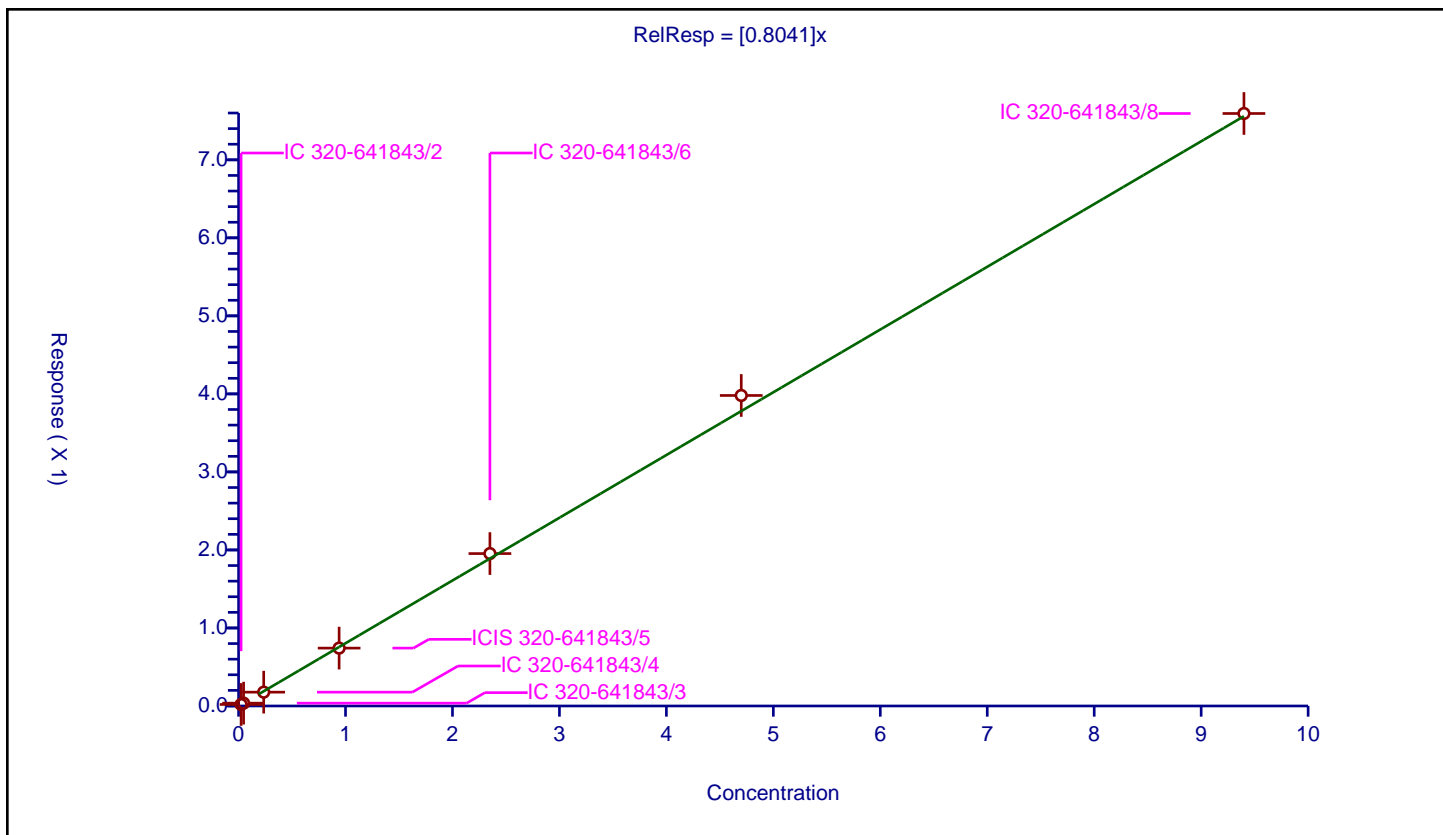
Curve Coefficients

Intercept: 0
 Slope: 0.8041

Error Coefficients

Standard Error: 8570000
 Relative Standard Error: 4.0
 Correlation Coefficient: 0.998
 Coefficient of Determination (Adjusted): 0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.0235	0.019331	1.165	3081314.0	0.822585	Y
2	IC 320-641843/3	0.047	0.036537	1.165	3021473.0	0.777382	Y
3	IC 320-641843/4	0.235	0.177199	1.165	2980714.0	0.75404	Y
4	ICIS 320-641843/5	0.94	0.741707	1.165	2887646.0	0.78905	Y
5	IC 320-641843/6	2.35	1.95344	1.165	2899206.0	0.831251	Y
6	IC 320-641843/7	4.7	3.979811	1.165	2821528.0	0.846768	Y
7	IC 320-641843/8	9.4	7.593806	1.165	2744823.0	0.807852	Y



Calibration

/ PFO3OA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

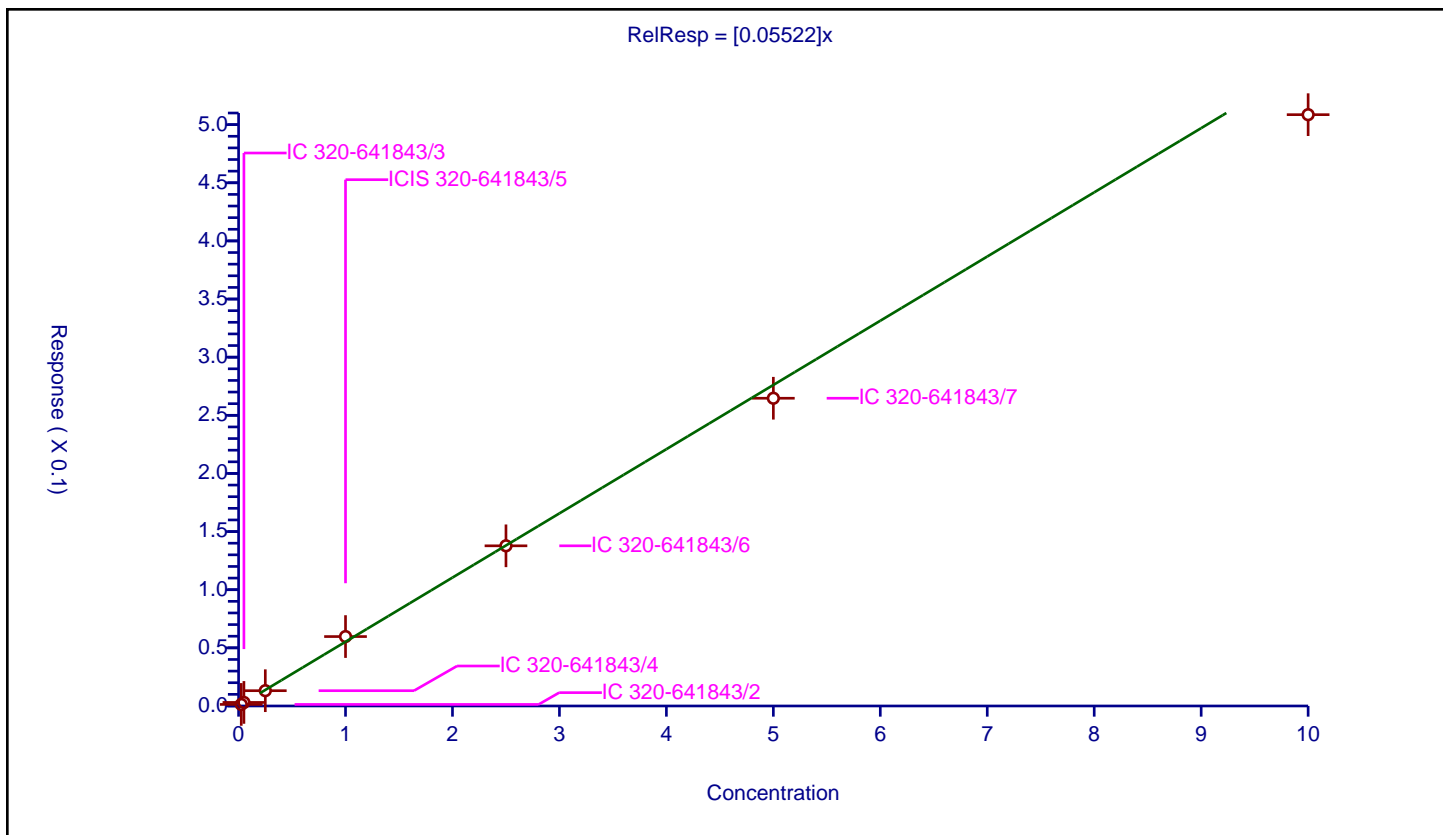
Curve Coefficients

Intercept: 0
 Slope: 0.05522

Error Coefficients

Standard Error: 910000
 Relative Standard Error: 7.1
 Correlation Coefficient: 0.997
 Coefficient of Determination (Adjusted): 0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.001347	1.25	5209983.0	0.053868	Y
2	IC 320-641843/3	0.05	0.003071	1.25	5056255.0	0.061414	Y
3	IC 320-641843/4	0.25	0.013164	1.25	5187930.0	0.052656	Y
4	ICIS 320-641843/5	1.0	0.059718	1.25	5056091.0	0.059718	Y
5	IC 320-641843/6	2.5	0.137757	1.25	5028123.0	0.055103	Y
6	IC 320-641843/7	5.0	0.264677	1.25	4862283.0	0.052935	Y
7	IC 320-641843/8	10.0	0.508582	1.25	4621814.0	0.050858	Y



Calibration

/ Perfluoro(2-propoxypropanoic) acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

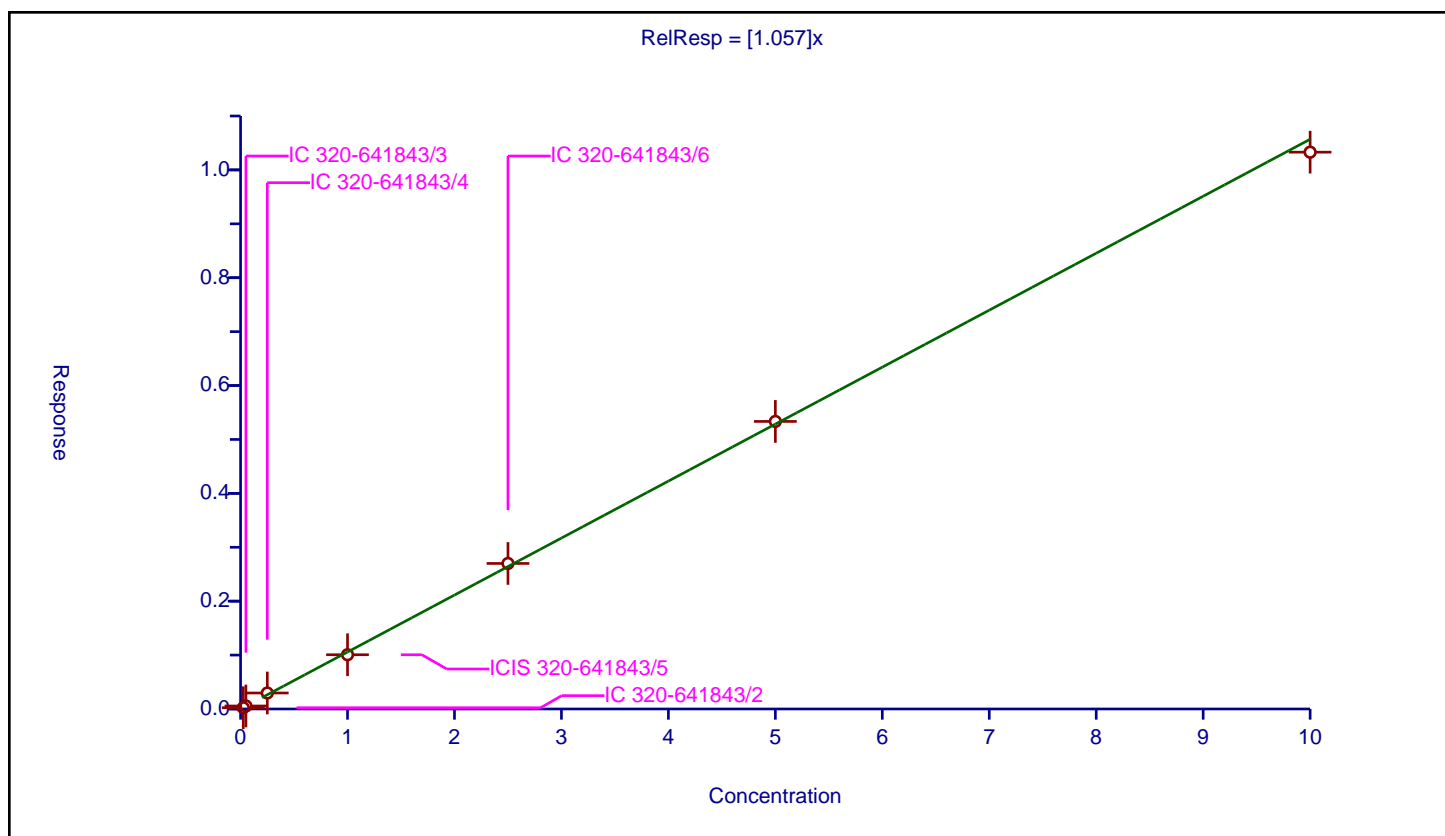
Curve Coefficients

Intercept: 0
 Slope: 1.057

Error Coefficients

Standard Error: 611000
 Relative Standard Error: 8.0
 Correlation Coefficient: 0.998
 Coefficient of Determination (Adjusted): 0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.022873	1.25	176735.0	0.914929	Y
2	IC 320-641843/3	0.05	0.055579	1.25	162965.0	1.111588	Y
3	IC 320-641843/4	0.25	0.29637	1.25	178139.0	1.185479	Y
4	ICIS 320-641843/5	1.0	1.006494	1.25	179051.0	1.006494	Y
5	IC 320-641843/6	2.5	2.699591	1.25	162996.0	1.079836	Y
6	IC 320-641843/7	5.0	5.334293	1.25	162765.0	1.066859	Y
7	IC 320-641843/8	10.0	10.329287	1.25	153654.0	1.032929	Y



Calibration

/ R-PSDCA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

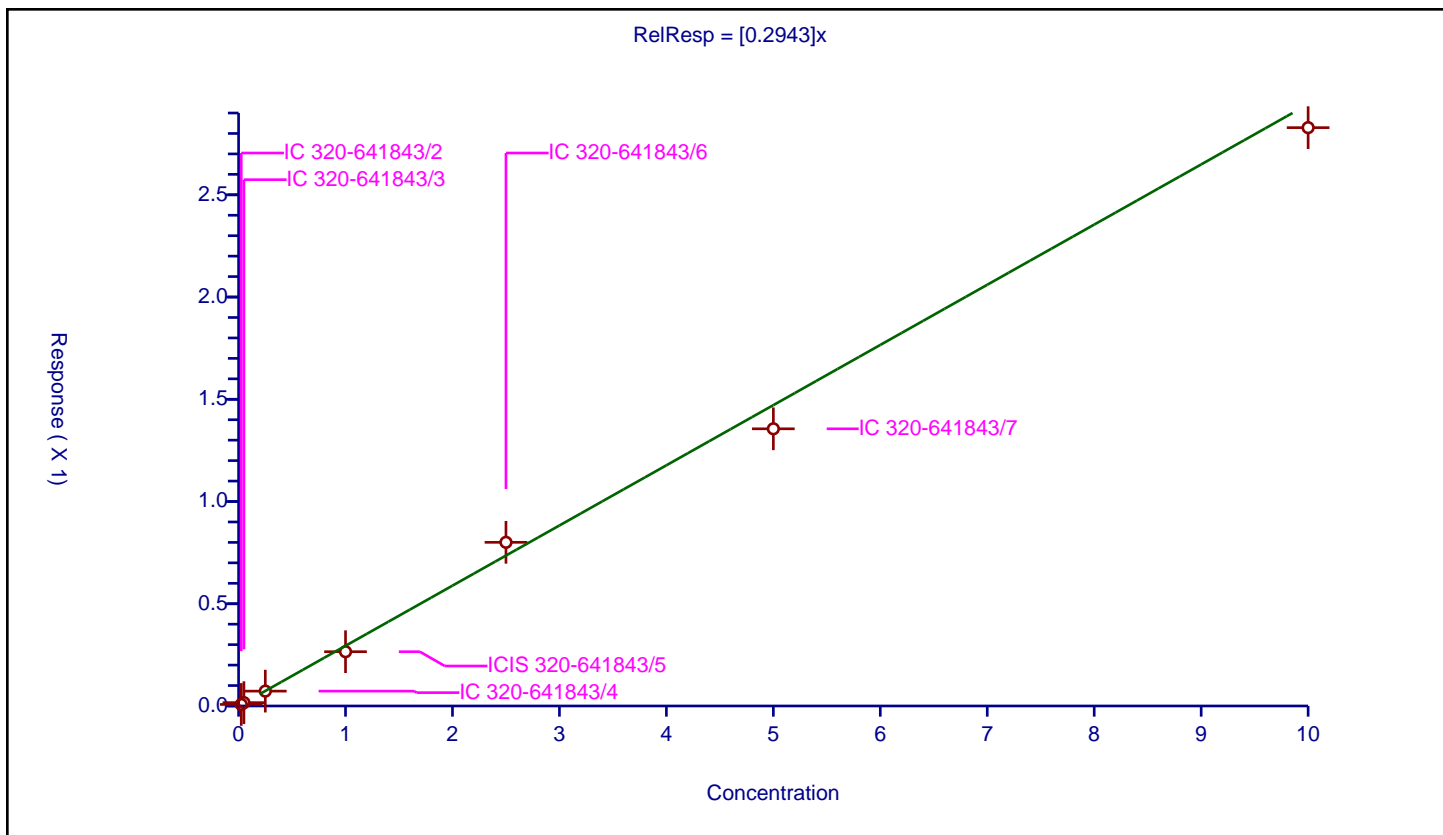
Curve Coefficients

Intercept: 0
 Slope: 0.2943

Error Coefficients

Standard Error: 5120000
 Relative Standard Error: 8.1
 Correlation Coefficient: 0.995
 Coefficient of Determination (Adjusted): 0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.007523	1.25	5872977.0	0.300921	Y
2	IC 320-641843/3	0.05	0.016423	1.25	5167387.0	0.328464	Y
3	IC 320-641843/4	0.25	0.072765	1.25	5522379.0	0.291059	Y
4	ICIS 320-641843/5	1.0	0.265447	1.25	5405324.0	0.265447	Y
5	IC 320-641843/6	2.5	0.800431	1.25	5250843.0	0.320172	Y
6	IC 320-641843/7	5.0	1.355555	1.25	5286047.0	0.271111	Y
7	IC 320-641843/8	10.0	2.82845	1.25	4666051.0	0.282845	Y



Calibration

/ Perfluoroheptanoic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

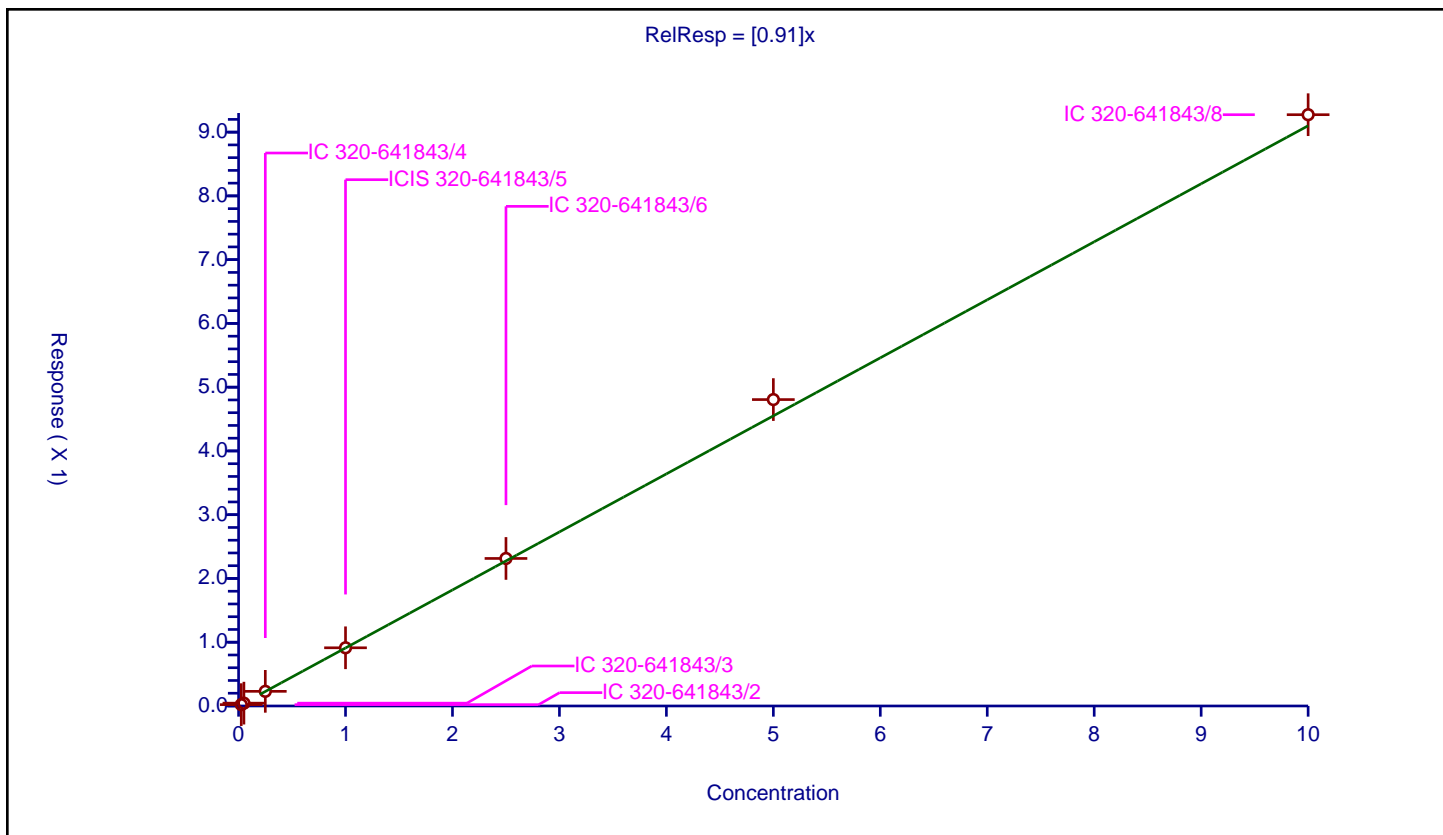
Curve Coefficients

Intercept: 0
 Slope: 0.91

Error Coefficients

Standard Error: 16900000
 Relative Standard Error: 4.3
 Correlation Coefficient: 0.993
 Coefficient of Determination (Adjusted): 0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.020942	1.25	5872977.0	0.837667	Y
2	IC 320-641843/3	0.05	0.04433	1.25	5167387.0	0.886599	Y
3	IC 320-641843/4	0.25	0.229815	1.25	5522379.0	0.919259	Y
4	ICIS 320-641843/5	1.0	0.912687	1.25	5405324.0	0.912687	Y
5	IC 320-641843/6	2.5	2.3138	1.25	5250843.0	0.92552	Y
6	IC 320-641843/7	5.0	4.805479	1.25	5286047.0	0.961096	Y
7	IC 320-641843/8	10.0	9.273552	1.25	4666051.0	0.927355	Y



Calibration

/ Perfluorohexanesulfonic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

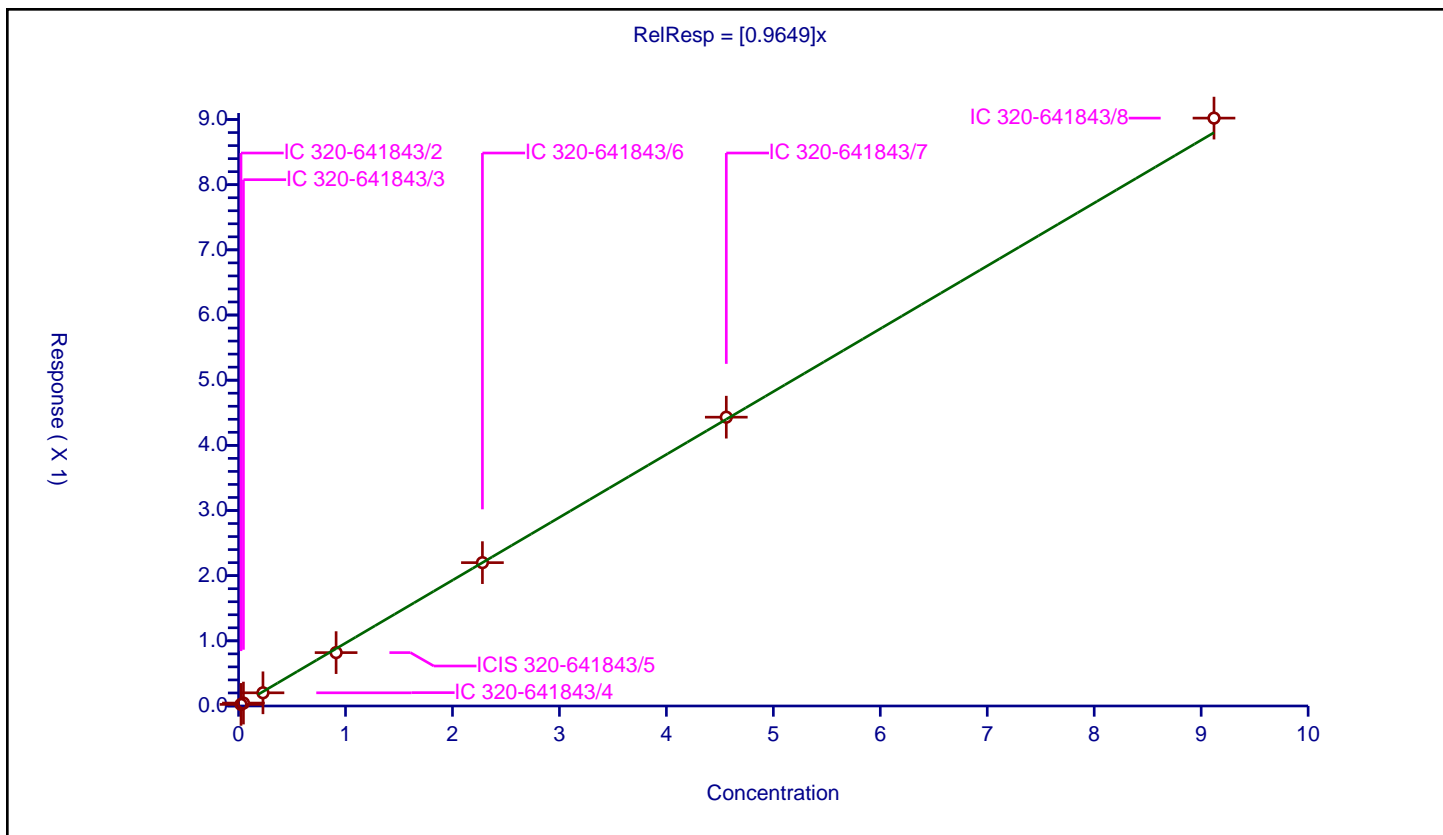
Curve Coefficients

Intercept: 0
 Slope: 0.9649

Error Coefficients

Standard Error: 6350000
 Relative Standard Error: 6.1
 Correlation Coefficient: 0.998
 Coefficient of Determination (Adjusted): 0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.0228	0.024205	1.1825	2121163.0	1.061627	Y
2	IC 320-641843/3	0.0456	0.04474	1.1825	1993425.0	0.981148	Y
3	IC 320-641843/4	0.228	0.202251	1.1825	2033754.0	0.887066	Y
4	ICIS 320-641843/5	0.912	0.819201	1.1825	1977270.0	0.898247	Y
5	IC 320-641843/6	2.28	2.19997	1.1825	1955429.0	0.964899	Y
6	IC 320-641843/7	4.56	4.432176	1.1825	1933548.0	0.971968	Y
7	IC 320-641843/8	9.12	9.022006	1.1825	1728897.0	0.989255	Y



Calibration

/ Hydro-EVE Acid

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

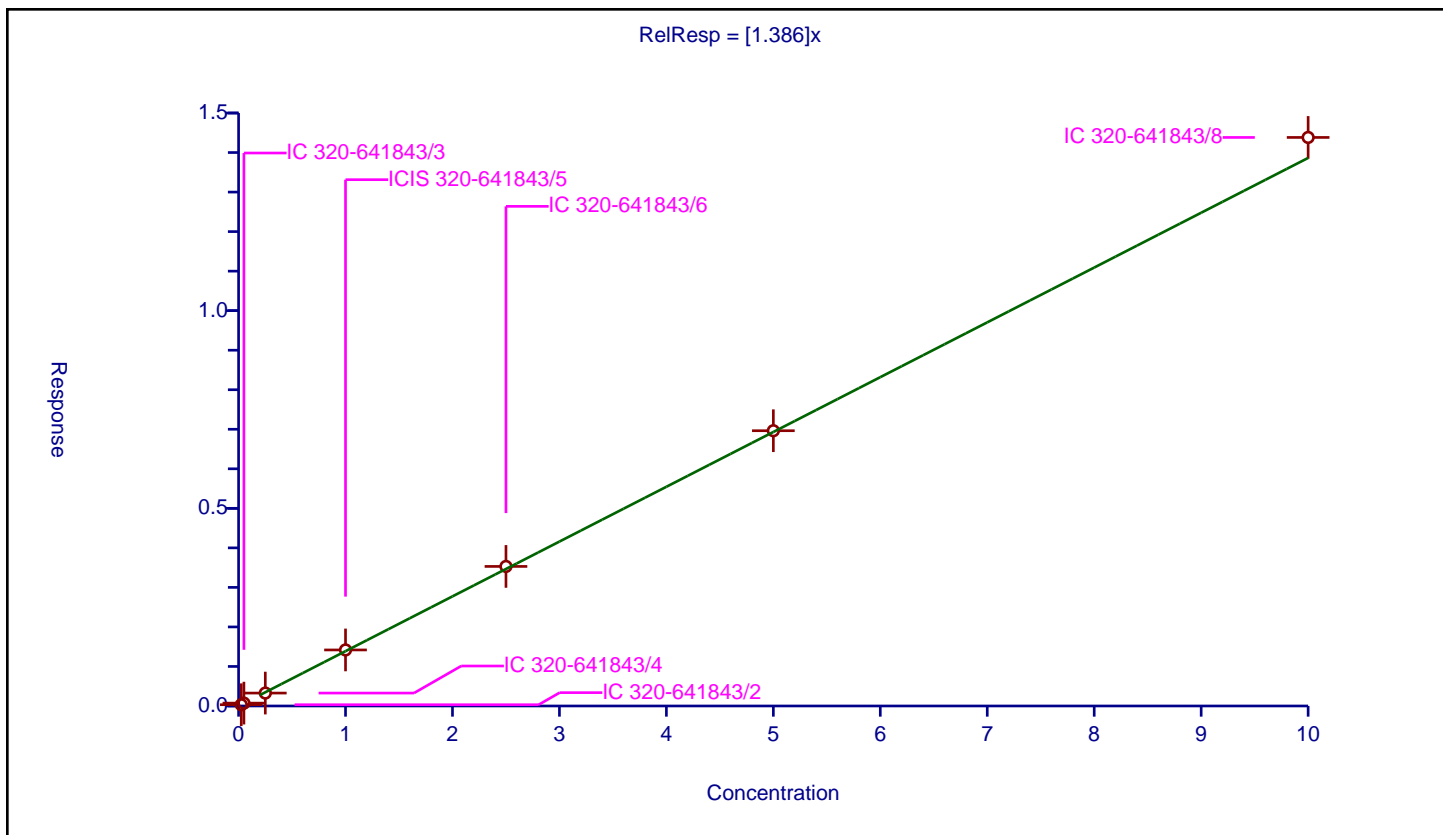
Curve Coefficients

Intercept: 0
Slope: 1.386

Error Coefficients

Standard Error: 25800000
Relative Standard Error: 4.4
Correlation Coefficient: 0.998
Coefficient of Determination (Adjusted): 0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.032319	1.25	5872977.0	1.292769	Y
2	IC 320-641843/3	0.05	0.072194	1.25	5167387.0	1.443873	Y
3	IC 320-641843/4	0.25	0.326693	1.25	5522379.0	1.306773	Y
4	ICIS 320-641843/5	1.0	1.417803	1.25	5405324.0	1.417803	Y
5	IC 320-641843/6	2.5	3.530452	1.25	5250843.0	1.412181	Y
6	IC 320-641843/7	5.0	6.963121	1.25	5286047.0	1.392624	Y
7	IC 320-641843/8	10.0	14.381949	1.25	4666051.0	1.438195	Y



Calibration

/ Hydro-PS Acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

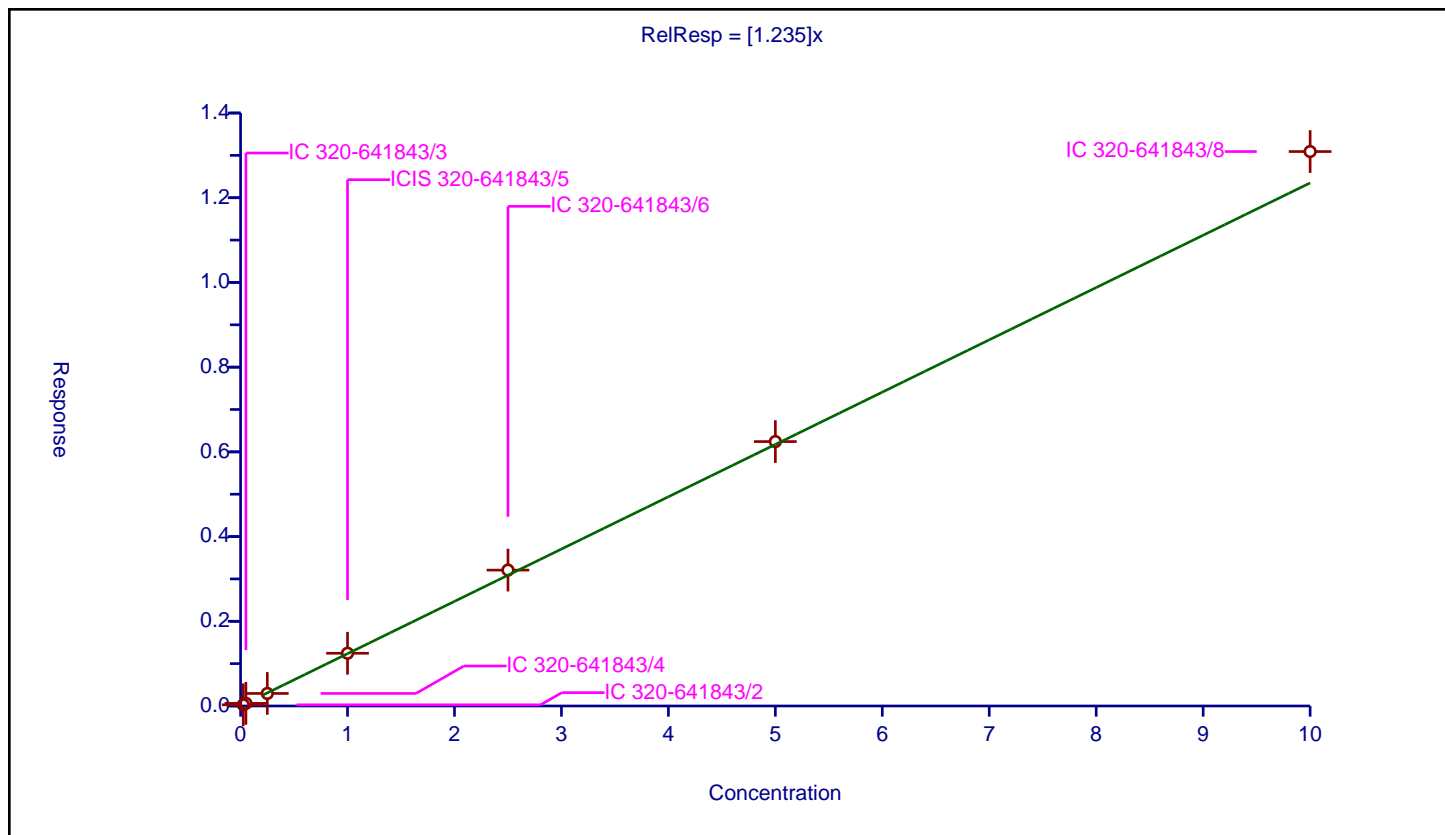
Curve Coefficients

Intercept: 0
 Slope: 1.235

Error Coefficients

Standard Error: 23400000
 Relative Standard Error: 4.9
 Correlation Coefficient: 0.998
 Coefficient of Determination (Adjusted): 0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.028262	1.25	5872977.0	1.130474	Y
2	IC 320-641843/3	0.05	0.062215	1.25	5167387.0	1.244309	Y
3	IC 320-641843/4	0.25	0.296034	1.25	5522379.0	1.184136	Y
4	ICIS 320-641843/5	1.0	1.244853	1.25	5405324.0	1.244853	Y
5	IC 320-641843/6	2.5	3.208277	1.25	5250843.0	1.283311	Y
6	IC 320-641843/7	5.0	6.242637	1.25	5286047.0	1.248527	Y
7	IC 320-641843/8	10.0	13.090284	1.25	4666051.0	1.309028	Y



Calibration

/ 5:3 FTCA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

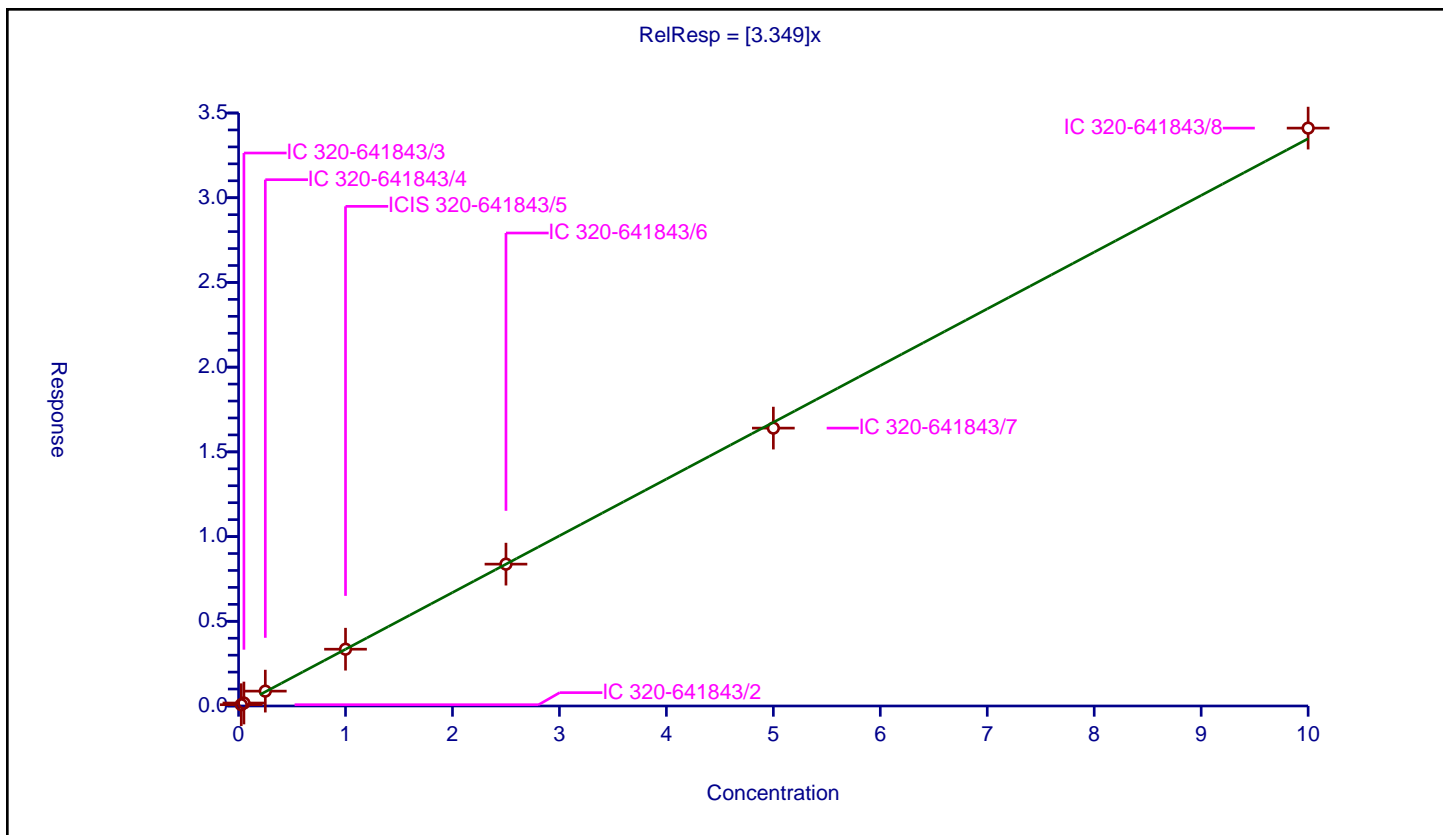
Curve Coefficients

Intercept: 0
 Slope: 3.349

Error Coefficients

Standard Error: 2830000
 Relative Standard Error: 4.8
 Correlation Coefficient: 0.997
 Coefficient of Determination (Adjusted): 0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.075844	1.25	250779.0	3.033747	Y
2	IC 320-641843/3	0.05	0.175221	1.25	252103.0	3.504421	Y
3	IC 320-641843/4	0.25	0.877484	1.25	247177.0	3.509934	Y
4	ICIS 320-641843/5	1.0	3.351088	1.25	246937.0	3.351088	Y
5	IC 320-641843/6	2.5	8.373276	1.25	243796.0	3.34931	Y
6	IC 320-641843/7	5.0	16.402351	1.25	249850.0	3.28047	Y
7	IC 320-641843/8	10.0	34.108828	1.25	214455.0	3.410883	Y



Calibration

/ DONA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

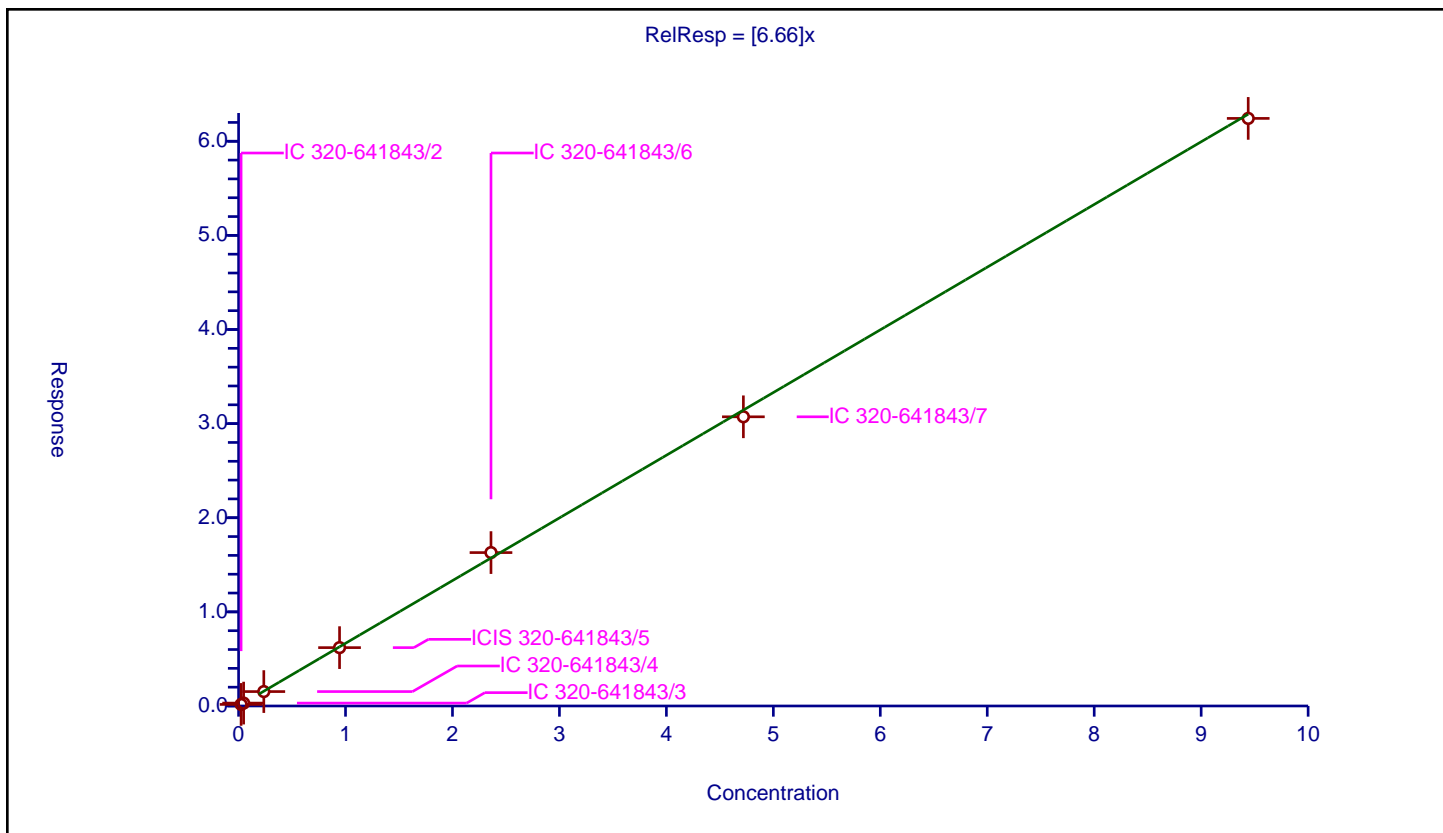
Curve Coefficients

Intercept: 0
 Slope: 6.66

Error Coefficients

Standard Error: 30300000
 Relative Standard Error: 3.4
 Correlation Coefficient: 0.997
 Coefficient of Determination (Adjusted): 0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.0236	0.166283	1.1975	1424220.0	7.04589	Y
2	IC 320-641843/3	0.0472	0.30673	1.1975	1353806.0	6.498526	Y
3	IC 320-641843/4	0.236	1.530051	1.1975	1392450.0	6.483265	Y
4	ICIS 320-641843/5	0.944	6.199746	1.1975	1348079.0	6.567528	Y
5	IC 320-641843/6	2.36	16.296809	1.1975	1301599.0	6.905428	Y
6	IC 320-641843/7	4.72	30.725473	1.1975	1350075.0	6.509634	Y
7	IC 320-641843/8	9.44	62.426893	1.1975	1206062.0	6.613018	Y



Calibration

/ PFECA G

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

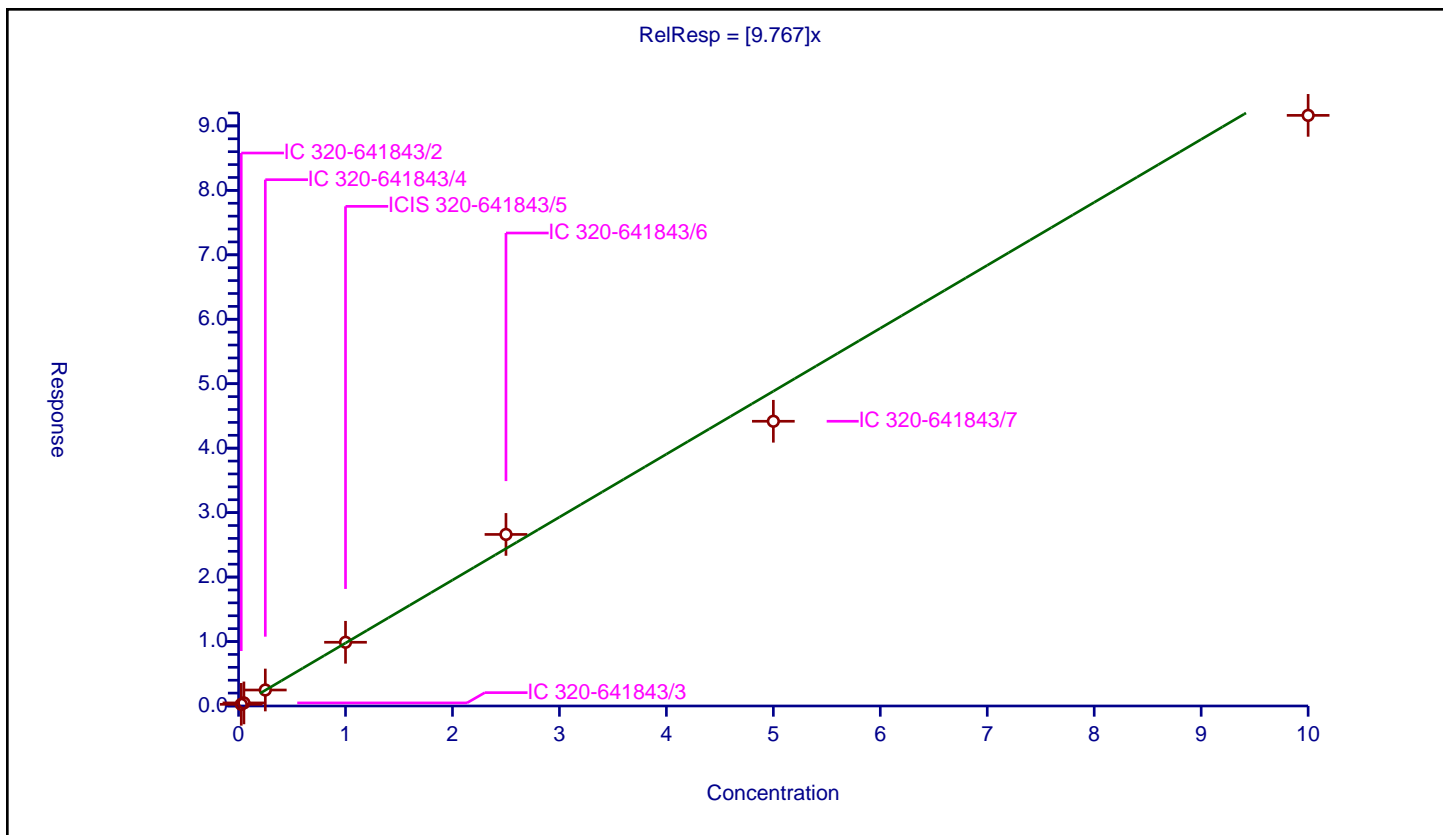
Curve Coefficients

Intercept: 0
 Slope: 9.767

Error Coefficients

Standard Error: 7700000
 Relative Standard Error: 6.5
 Correlation Coefficient: 0.992
 Coefficient of Determination (Adjusted): 0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.258649	1.25	250779.0	10.345962	Y
2	IC 320-641843/3	0.05	0.478609	1.25	252103.0	9.572179	Y
3	IC 320-641843/4	0.25	2.48052	1.25	247177.0	9.92208	Y
4	ICIS 320-641843/5	1.0	9.886054	1.25	246937.0	9.886054	Y
5	IC 320-641843/6	2.5	26.617105	1.25	243796.0	10.646842	Y
6	IC 320-641843/7	5.0	44.174895	1.25	249850.0	8.834979	Y
7	IC 320-641843/8	10.0	91.634912	1.25	214455.0	9.163491	Y



Calibration

/ 6:2 FTUCA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

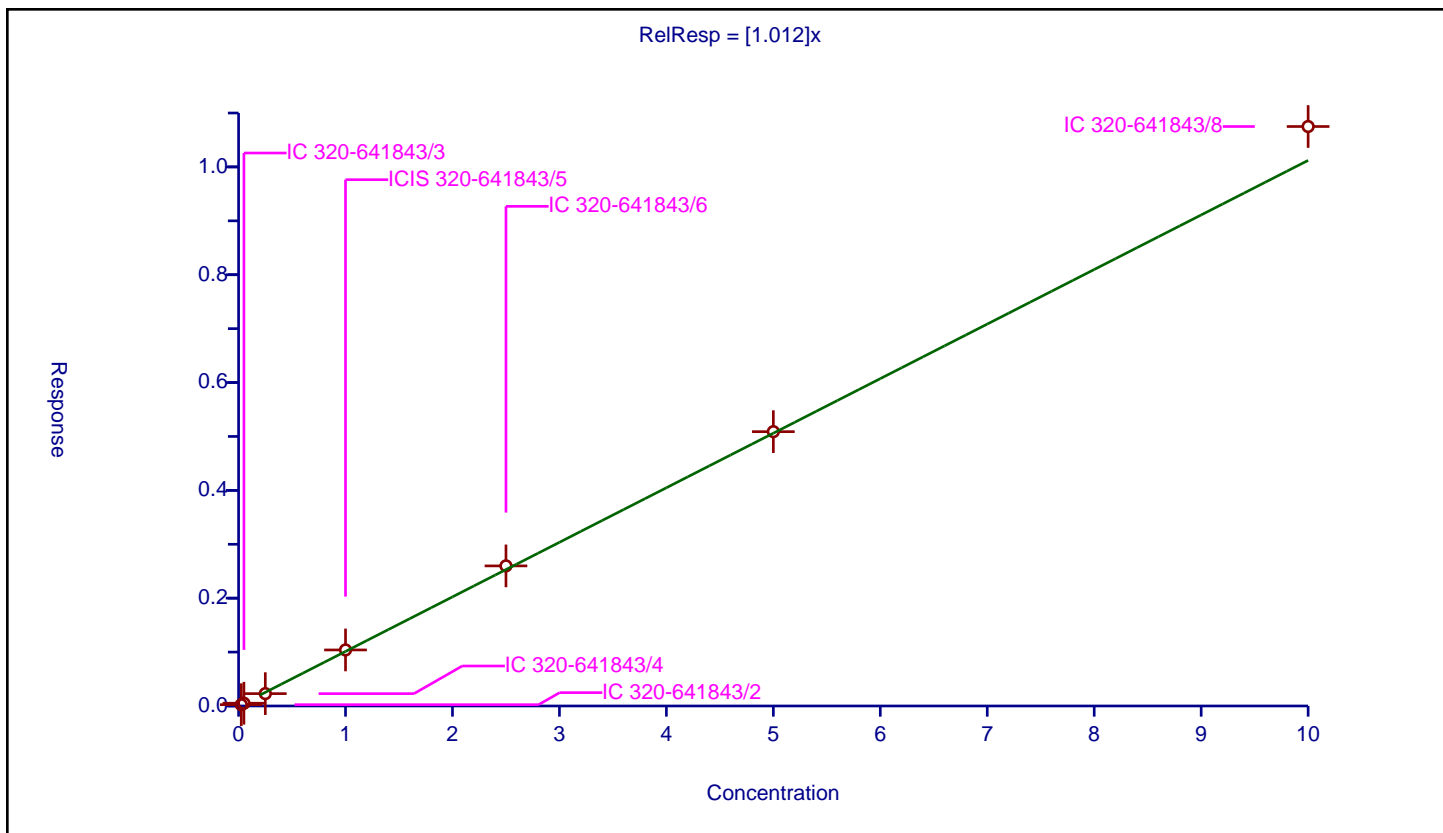
Curve Coefficients

Intercept: 0
 Slope: 1.012

Error Coefficients

Standard Error: 11100000
 Relative Standard Error: 5.1
 Correlation Coefficient: 0.998
 Coefficient of Determination (Adjusted): 0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.024314	1.25	3521172.0	0.972546	Y
2	IC 320-641843/3	0.05	0.051169	1.25	3177503.0	1.023374	Y
3	IC 320-641843/4	0.25	0.229202	1.25	3406633.0	0.916807	Y
4	ICIS 320-641843/5	1.0	1.039706	1.25	3156625.0	1.039706	Y
5	IC 320-641843/6	2.5	2.598815	1.25	3013717.0	1.039526	Y
6	IC 320-641843/7	5.0	5.088883	1.25	3111763.0	1.017777	Y
7	IC 320-641843/8	10.0	10.749465	1.25	2674693.0	1.074946	Y



Calibration

/ 6:2 FTCA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

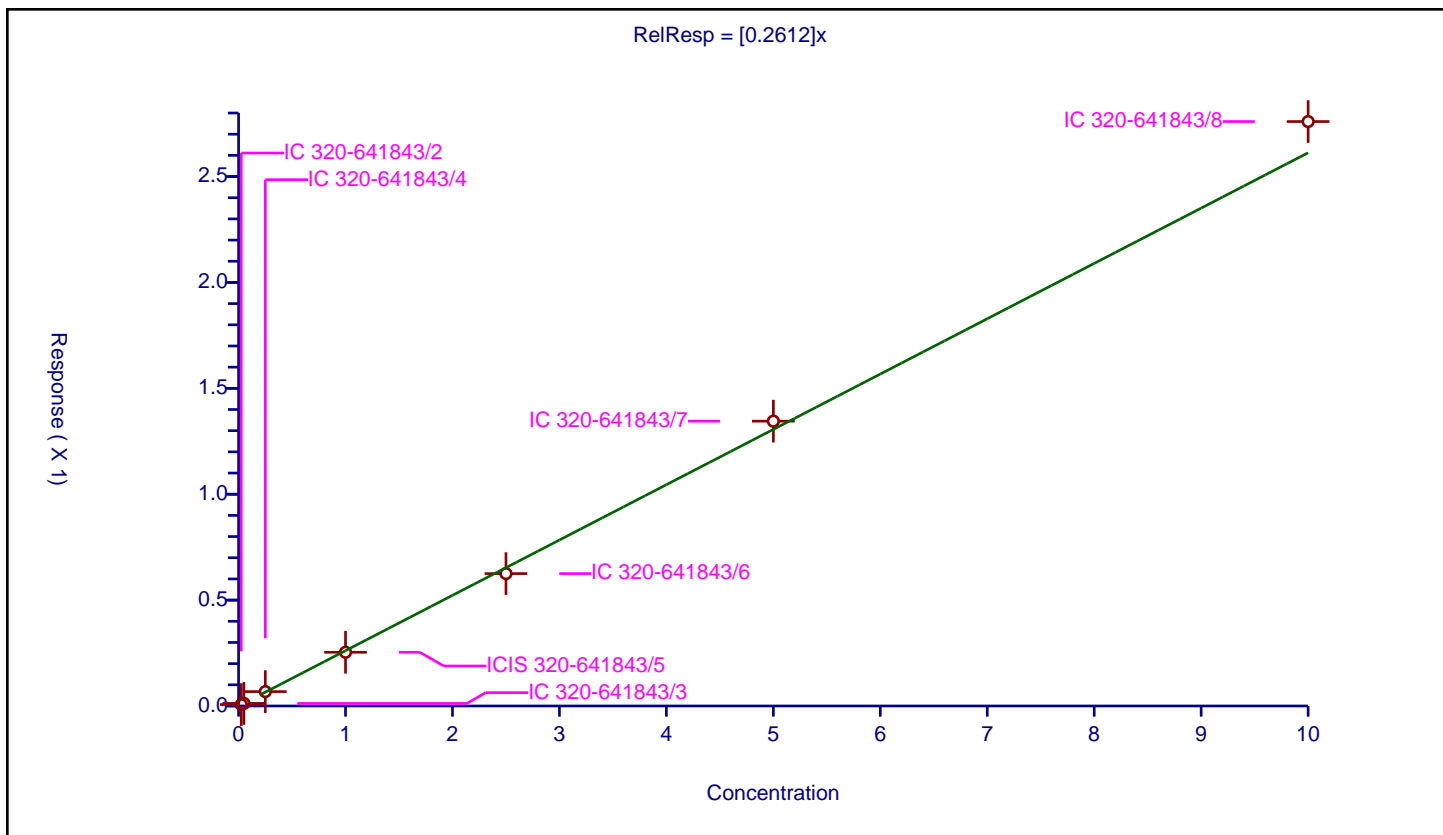
Curve Coefficients

Intercept: 0
 Slope: 0.2612

Error Coefficients

Standard Error: 229000
 Relative Standard Error: 4.7
 Correlation Coefficient: 0.996
 Coefficient of Determination (Adjusted): 0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.006619	1.25	250779.0	0.264775	Y
2	IC 320-641843/3	0.05	0.012178	1.25	252103.0	0.243551	Y
3	IC 320-641843/4	0.25	0.067902	1.25	247177.0	0.271607	Y
4	ICIS 320-641843/5	1.0	0.253607	1.25	246937.0	0.253607	Y
5	IC 320-641843/6	2.5	0.625159	1.25	243796.0	0.250064	Y
6	IC 320-641843/7	5.0	1.344977	1.25	249850.0	0.268995	Y
7	IC 320-641843/8	10.0	2.759711	1.25	214455.0	0.275971	Y



Calibration

/ PFO4DA

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

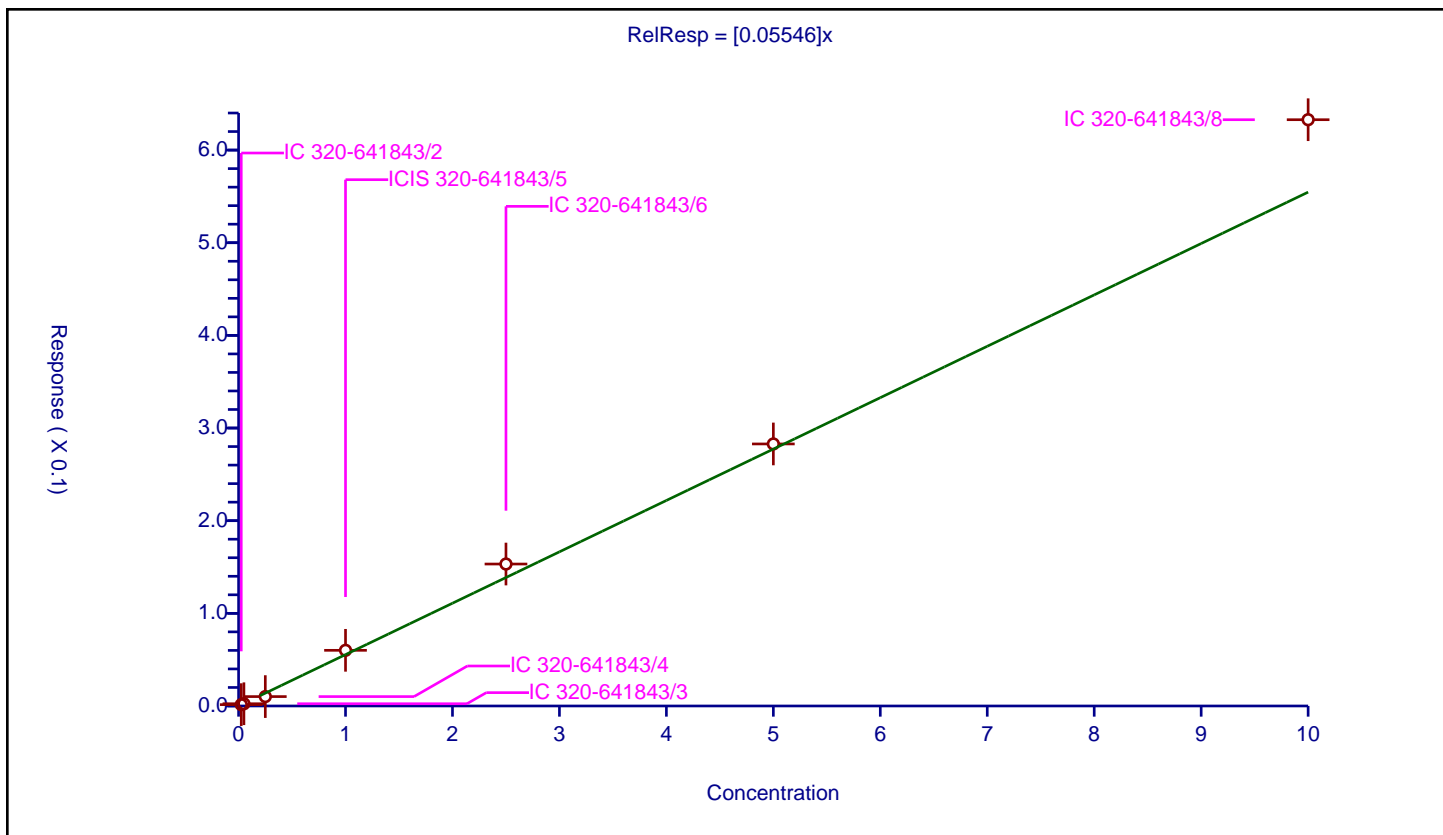
Curve Coefficients

Intercept: 0
Slope: 0.05546

Error Coefficients

Standard Error: 1120000
Relative Standard Error: 14.6
Correlation Coefficient: 0.999
Coefficient of Determination (Adjusted): 0.975

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.001446	1.25	5872977.0	0.05785	Y
2	IC 320-641843/3	0.05	0.002427	1.25	5167387.0	0.04854	Y
3	IC 320-641843/4	0.25	0.010153	1.25	5522379.0	0.040613	Y
4	ICIS 320-641843/5	1.0	0.060082	1.25	5405324.0	0.060082	Y
5	IC 320-641843/6	2.5	0.153226	1.25	5250843.0	0.06129	Y
6	IC 320-641843/7	5.0	0.282819	1.25	5286047.0	0.056564	Y
7	IC 320-641843/8	10.0	0.632787	1.25	4666051.0	0.063279	Y



Calibration

/ PS Acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

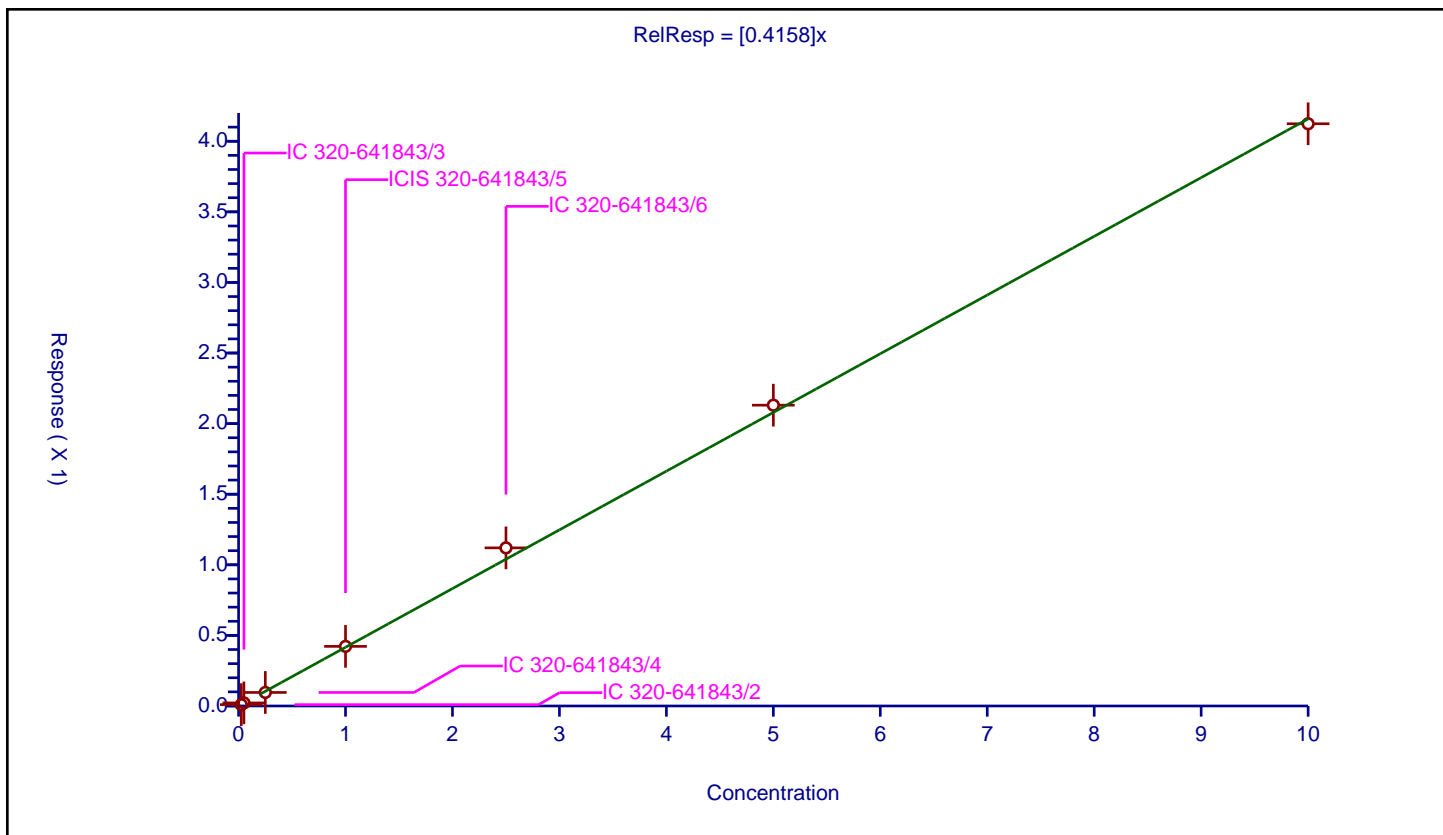
Curve Coefficients

Intercept: 0
 Slope: 0.4158

Error Coefficients

Standard Error: 8370000
 Relative Standard Error: 6.1
 Correlation Coefficient: 0.996
 Coefficient of Determination (Adjusted): 0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.009521	1.25	6271839.0	0.380829	Y
2	IC 320-641843/3	0.05	0.021874	1.25	6004578.0	0.43747	Y
3	IC 320-641843/4	0.25	0.095935	1.25	6038830.0	0.38374	Y
4	ICIS 320-641843/5	1.0	0.422276	1.25	5782654.0	0.422276	Y
5	IC 320-641843/6	2.5	1.11993	1.25	5597131.0	0.447972	Y
6	IC 320-641843/7	5.0	2.130579	1.25	5651966.0	0.426116	Y
7	IC 320-641843/8	10.0	4.123854	1.25	5237620.0	0.412385	Y



Calibration

/ EVE Acid

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

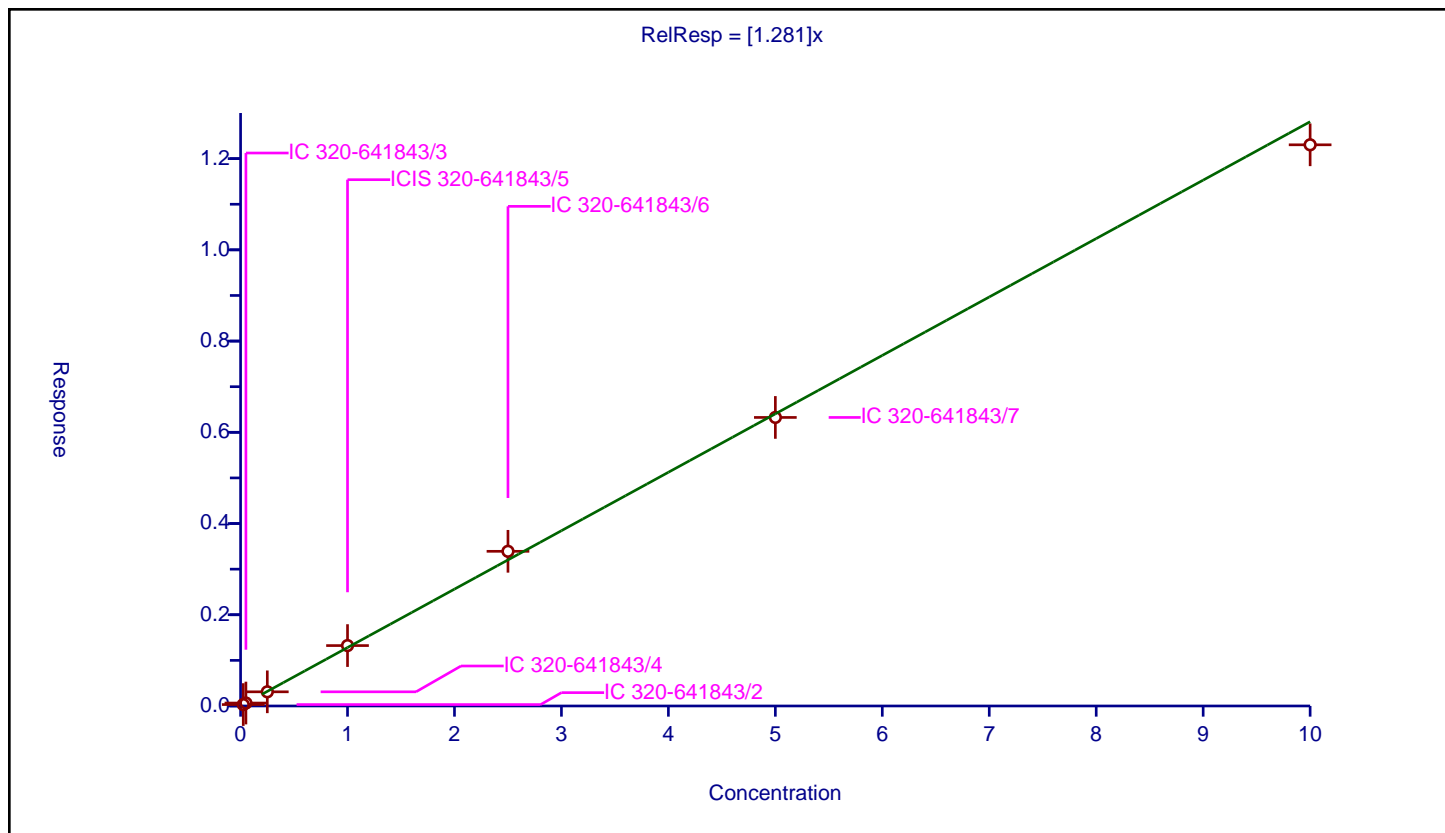
Curve Coefficients

Intercept: 0
Slope: 1.281

Error Coefficients

Standard Error: 25000000
Relative Standard Error: 3.6
Correlation Coefficient: 0.996
Coefficient of Determination (Adjusted): 0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.031218	1.25	6271839.0	1.248717	Y
2	IC 320-641843/3	0.05	0.064875	1.25	6004578.0	1.297502	Y
3	IC 320-641843/4	0.25	0.310982	1.25	6038830.0	1.243928	Y
4	ICIS 320-641843/5	1.0	1.32447	1.25	5782654.0	1.32447	Y
5	IC 320-641843/6	2.5	3.391012	1.25	5597131.0	1.356405	Y
6	IC 320-641843/7	5.0	6.32608	1.25	5651966.0	1.265216	Y
7	IC 320-641843/8	10.0	12.303359	1.25	5237620.0	1.230336	Y



Calibration

/ FHxSA

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

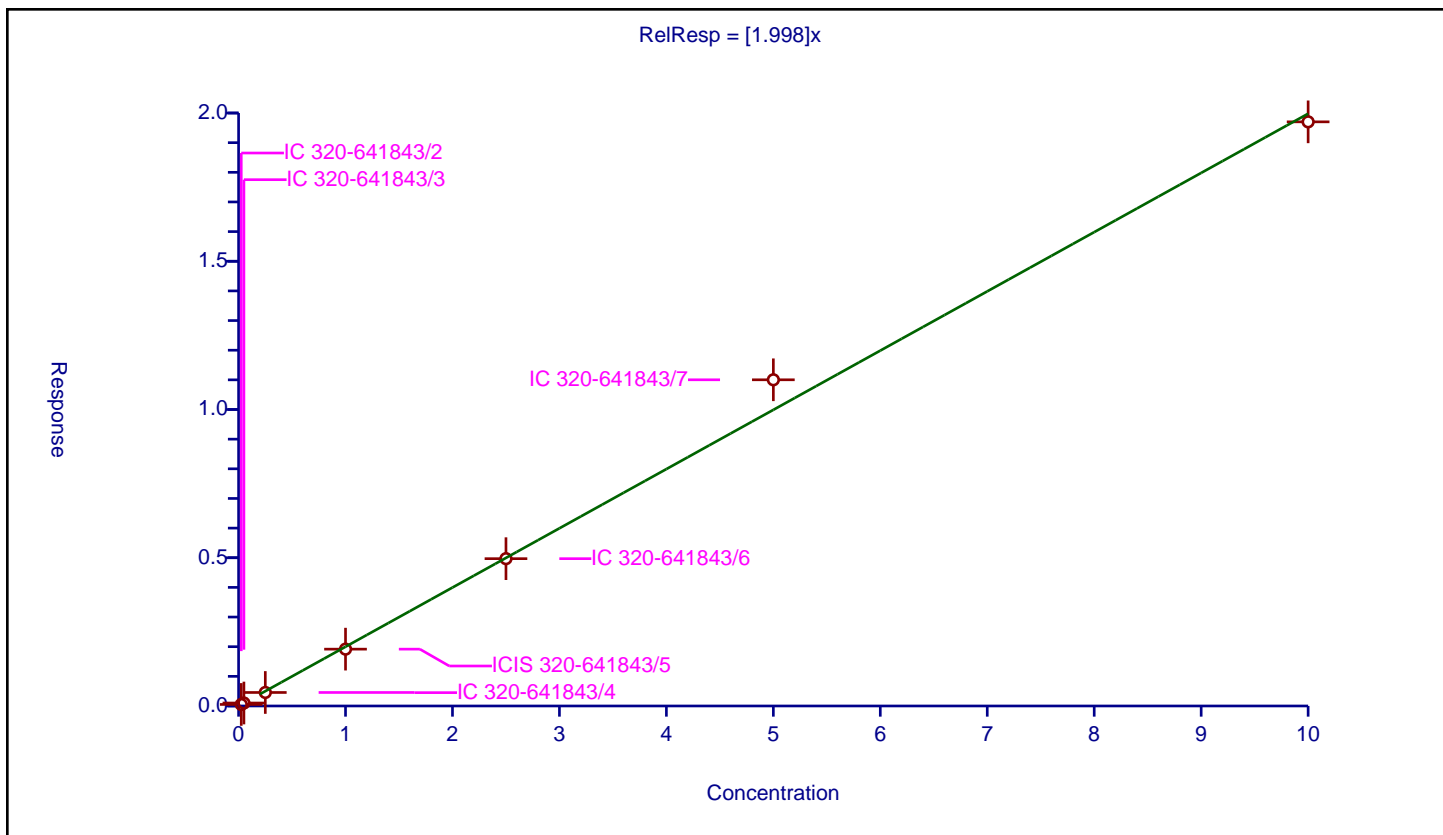
Curve Coefficients

Intercept: 0
Slope: 1.998

Error Coefficients

Standard Error: 13100000
Relative Standard Error: 6.0
Correlation Coefficient: 0.992
Coefficient of Determination (Adjusted): 0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.051961	1.25	1959299.0	2.078447	Y
2	IC 320-641843/3	0.05	0.100343	1.25	1886081.0	2.00686	Y
3	IC 320-641843/4	0.25	0.455861	1.25	1916740.0	1.823442	Y
4	ICIS 320-641843/5	1.0	1.91741	1.25	1890673.0	1.91741	Y
5	IC 320-641843/6	2.5	4.968937	1.25	1857541.0	1.987575	Y
6	IC 320-641843/7	5.0	11.001767	1.25	1806938.0	2.200353	Y
7	IC 320-641843/8	10.0	19.702546	1.25	1685839.0	1.970255	Y



Calibration

/ PFECHS

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

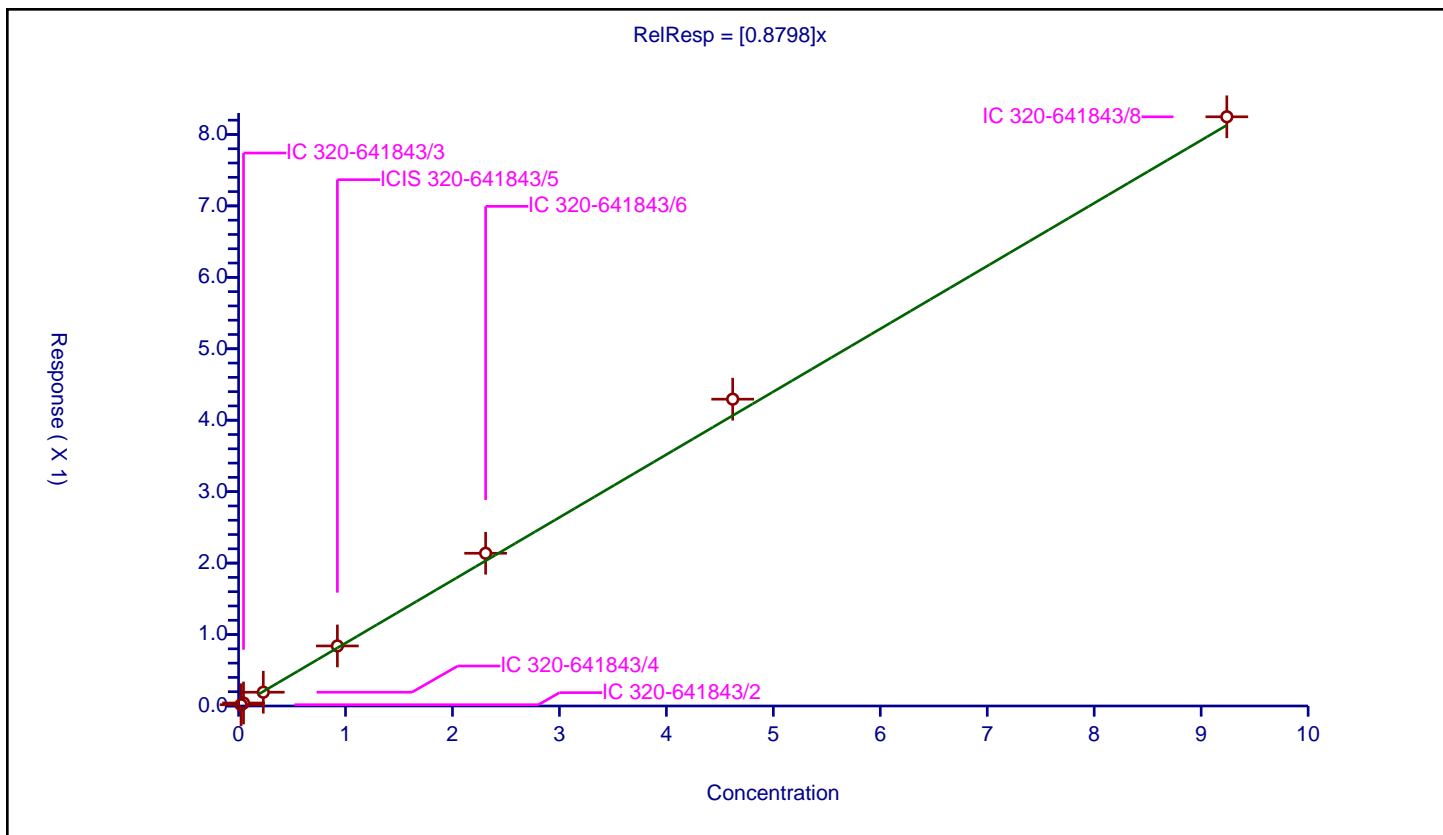
Curve Coefficients

Intercept: 0
Slope: 0.8798

Error Coefficients

Standard Error: 16700000
Relative Standard Error: 6.7
Correlation Coefficient: 0.996
Coefficient of Determination (Adjusted): 0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.0231	0.017723	1.25	6271839.0	0.767224	Y
2	IC 320-641843/3	0.0462	0.041594	1.25	6004578.0	0.90031	Y
3	IC 320-641843/4	0.231	0.192715	1.25	6038830.0	0.834265	Y
4	ICIS 320-641843/5	0.924	0.840372	1.25	5782654.0	0.909494	Y
5	IC 320-641843/6	2.31	2.137748	1.25	5597131.0	0.925432	Y
6	IC 320-641843/7	4.62	4.294564	1.25	5651966.0	0.929559	Y
7	IC 320-641843/8	9.24	8.24706	1.25	5237620.0	0.892539	Y



Calibration

/ 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

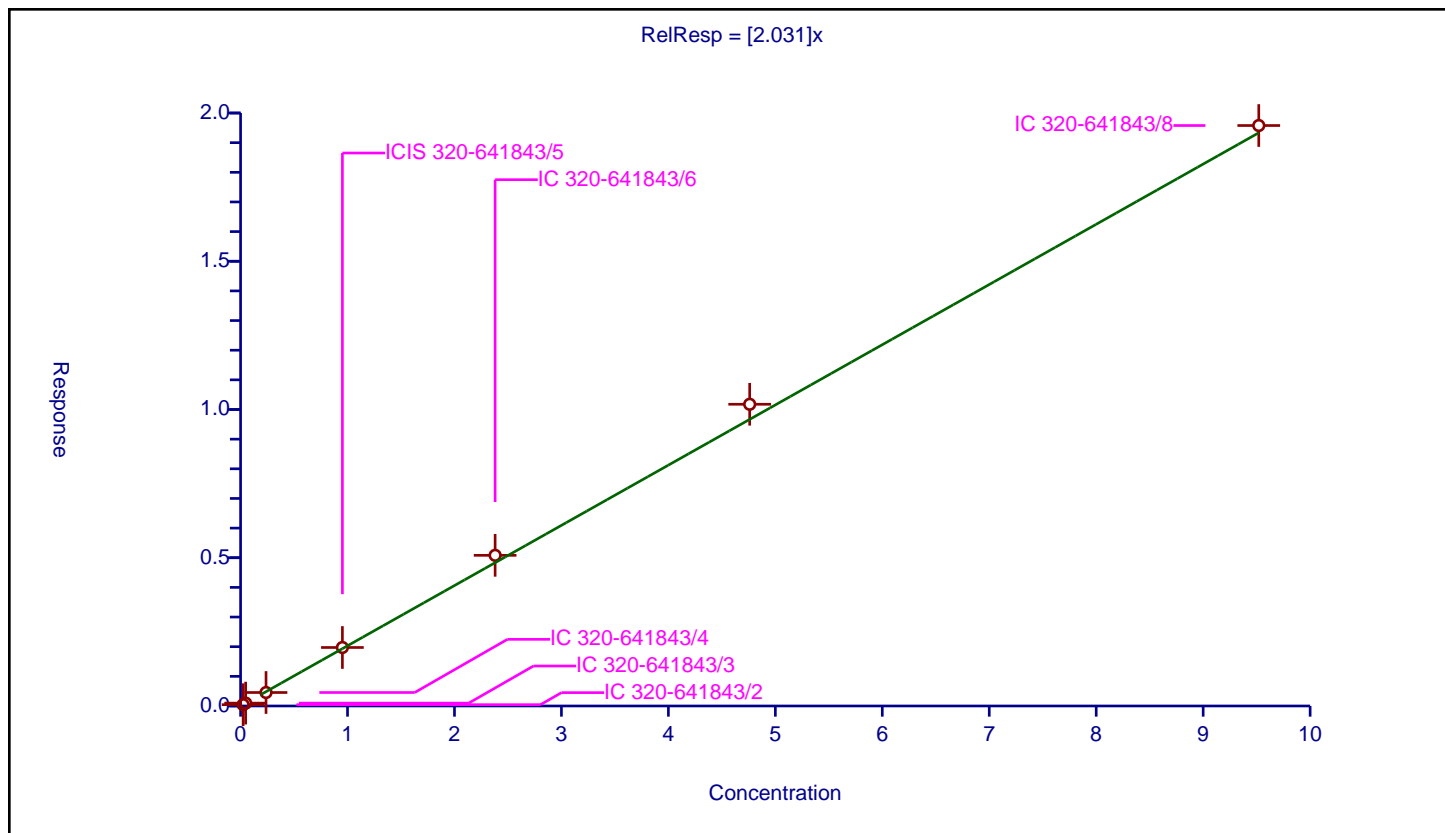
Curve Coefficients

Intercept: 0
Slope: 2.031

Error Coefficients

Standard Error: 4970000
Relative Standard Error: 5.0
Correlation Coefficient: 0.992
Coefficient of Determination (Adjusted): 0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.0238	0.04474	1.1875	829396.0	1.879823	Y
2	IC 320-641843/3	0.0476	0.096386	1.1875	809811.0	2.024914	Y
3	IC 320-641843/4	0.238	0.454431	1.1875	774362.0	1.909375	Y
4	ICIS 320-641843/5	0.952	1.97273	1.1875	714883.0	2.072196	Y
5	IC 320-641843/6	2.38	5.081636	1.1875	688289.0	2.135141	Y
6	IC 320-641843/7	4.76	10.176383	1.1875	698908.0	2.137896	Y
7	IC 320-641843/8	9.52	19.578525	1.1875	613639.0	2.056568	Y



Calibration

/ 13C8 PFOA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: ISTD
 Response Base: AREA
 RF Rounding: 0

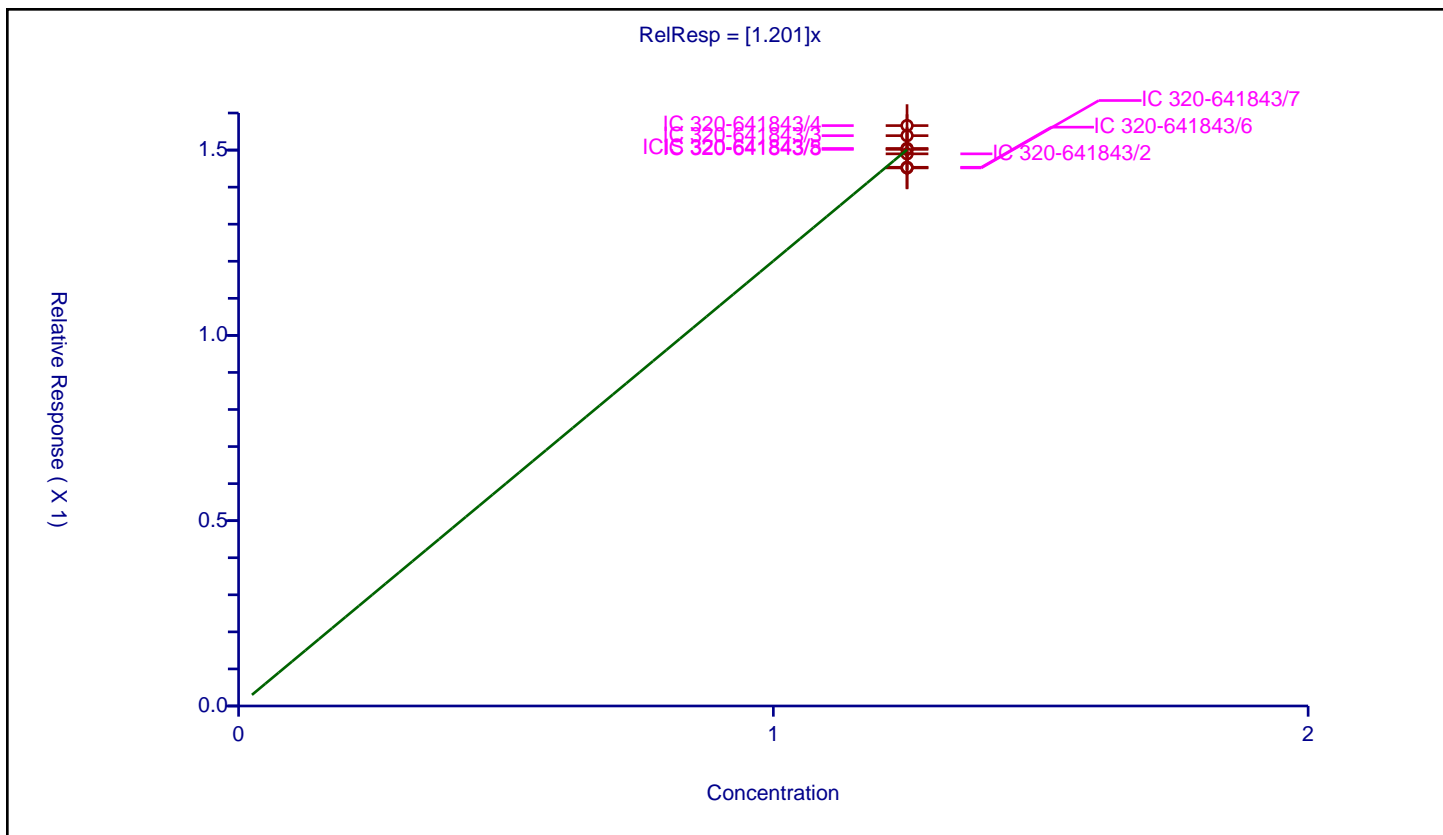
Curve Coefficients

Intercept: 0
 Slope: 1.201

Error Coefficients

Standard Error: 7460000
 Relative Standard Error: 2.8
 Correlation Coefficient: 0.00000000000000000000
 Coefficient of Determination (Adjusted): 0

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	1.25	1.489842	1.25	6244331.0	1.191874	Y
2	IC 320-641843/3	1.25	1.538914	1.25	5787639.0	1.231132	Y
3	IC 320-641843/4	1.25	1.566022	1.25	5781446.0	1.252817	Y
4	ICIS 320-641843/5	1.25	1.50439	1.25	5748994.0	1.203512	Y
5	IC 320-641843/6	1.25	1.4536	1.25	5758465.0	1.16288	Y
6	IC 320-641843/7	1.25	1.451936	1.25	5820495.0	1.161549	Y
7	IC 320-641843/8	1.25	1.50194	1.25	5052051.0	1.201552	Y



Calibration

/ Perfluorooctanoic acid

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

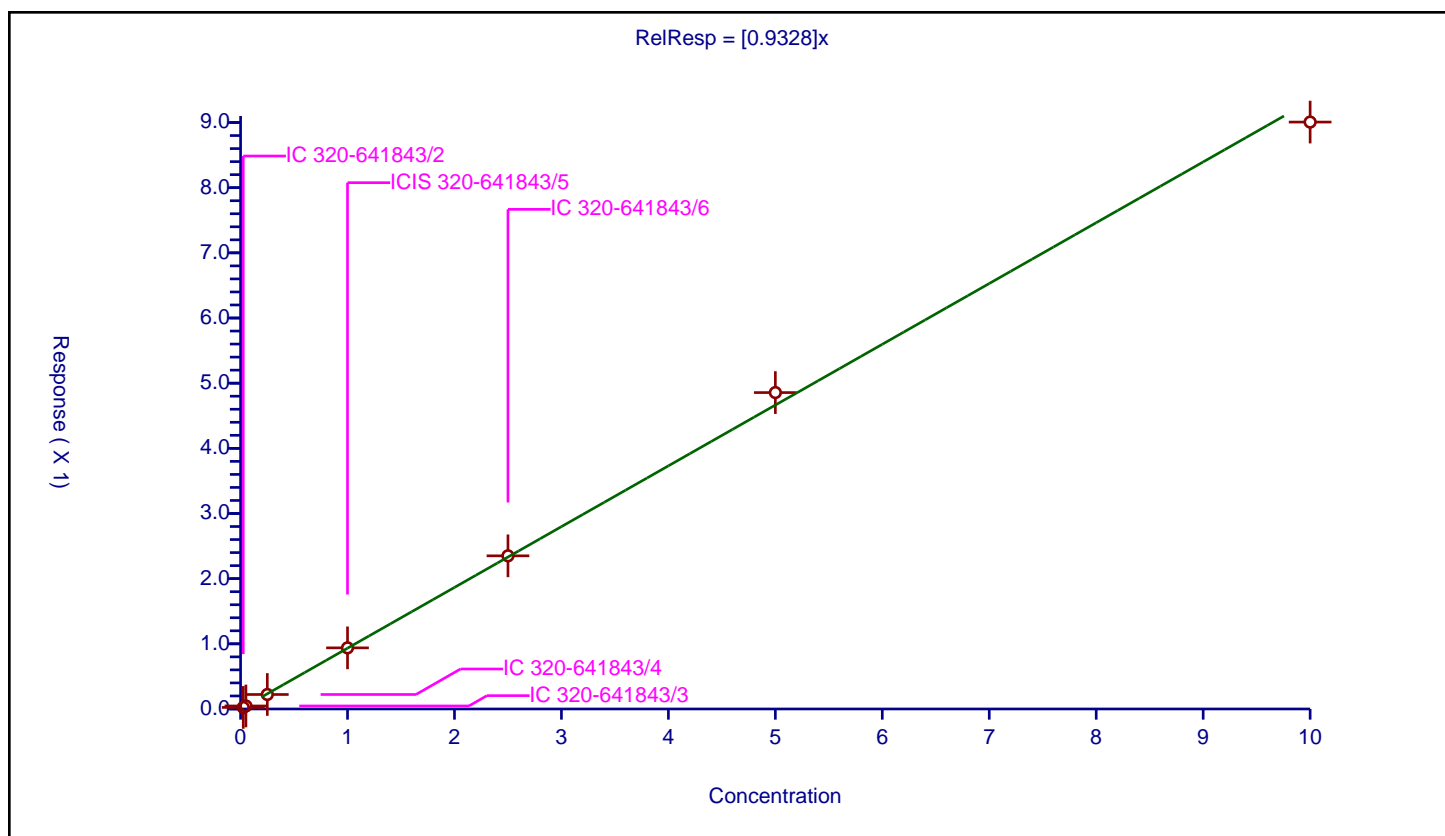
Curve Coefficients

Intercept: 0
Slope: 0.9328

Error Coefficients

Standard Error: 18400000
Relative Standard Error: 3.2
Correlation Coefficient: 0.994
Coefficient of Determination (Adjusted): 0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.024037	1.25	6271839.0	0.961496	Y
2	IC 320-641843/3	0.05	0.046403	1.25	6004578.0	0.92805	Y
3	IC 320-641843/4	0.25	0.2225	1.25	6038830.0	0.890001	Y
4	ICIS 320-641843/5	1.0	0.93805	1.25	5782654.0	0.93805	Y
5	IC 320-641843/6	2.5	2.350565	1.25	5597131.0	0.940226	Y
6	IC 320-641843/7	5.0	4.85584	1.25	5651966.0	0.971168	Y
7	IC 320-641843/8	10.0	9.007174	1.25	5237620.0	0.900717	Y



Calibration

/ Perfluoroheptanesulfonic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

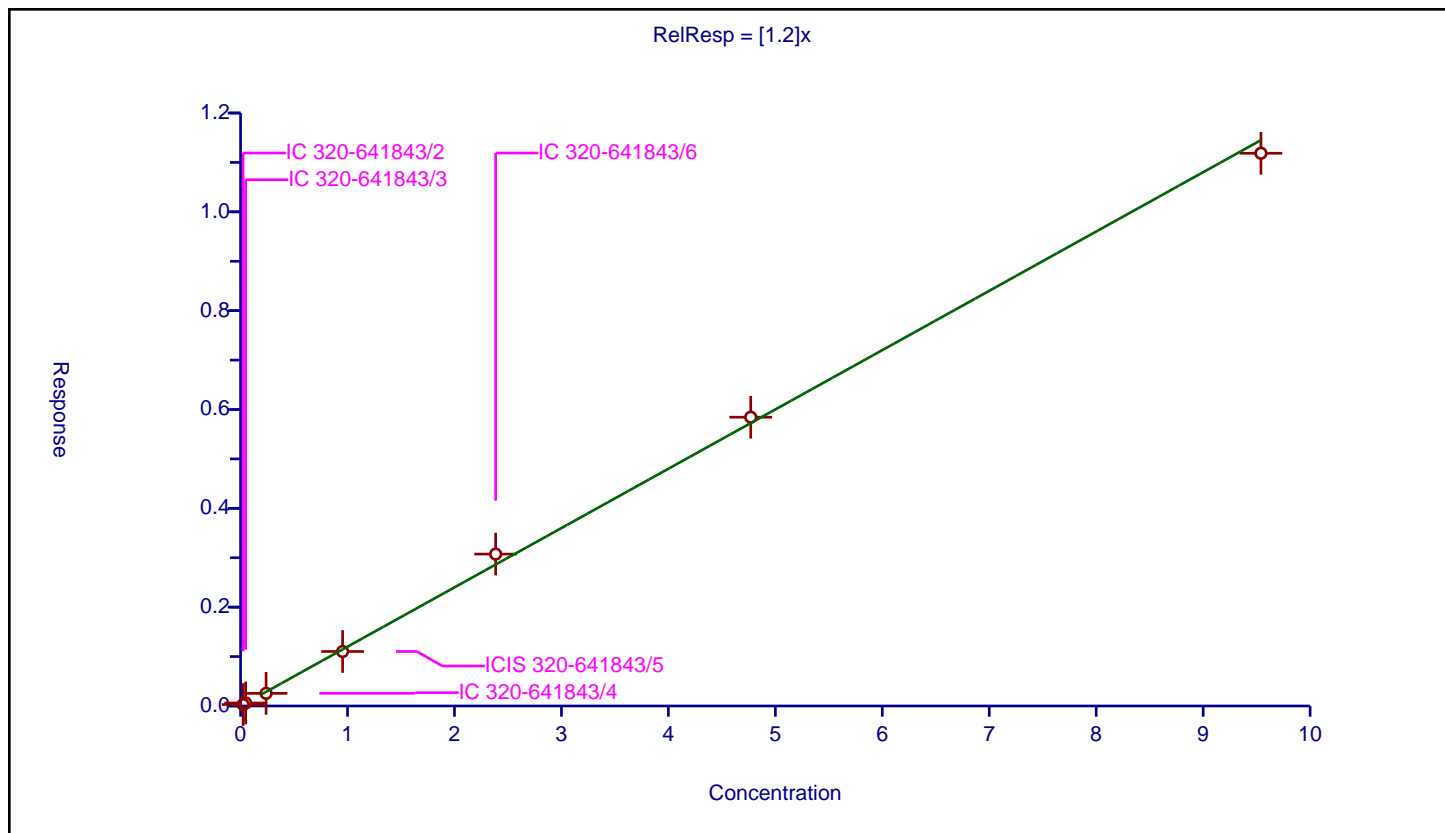
Curve Coefficients

Intercept: 0
 Slope: 1.2

Error Coefficients

Standard Error: 5520000
 Relative Standard Error: 6.2
 Correlation Coefficient: 0.993
 Coefficient of Determination (Adjusted): 0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.02385	0.029065	1.1975	1424220.0	1.218665	Y
2	IC 320-641843/3	0.0477	0.060538	1.1975	1353806.0	1.269143	Y
3	IC 320-641843/4	0.2385	0.255491	1.1975	1392450.0	1.07124	Y
4	ICIS 320-641843/5	0.954	1.102747	1.1975	1348079.0	1.155919	Y
5	IC 320-641843/6	2.385	3.073972	1.1975	1301599.0	1.288877	Y
6	IC 320-641843/7	4.77	5.844357	1.1975	1350075.0	1.225232	Y
7	IC 320-641843/8	9.54	11.185923	1.1975	1206062.0	1.172529	Y



Calibration

/ TAF

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

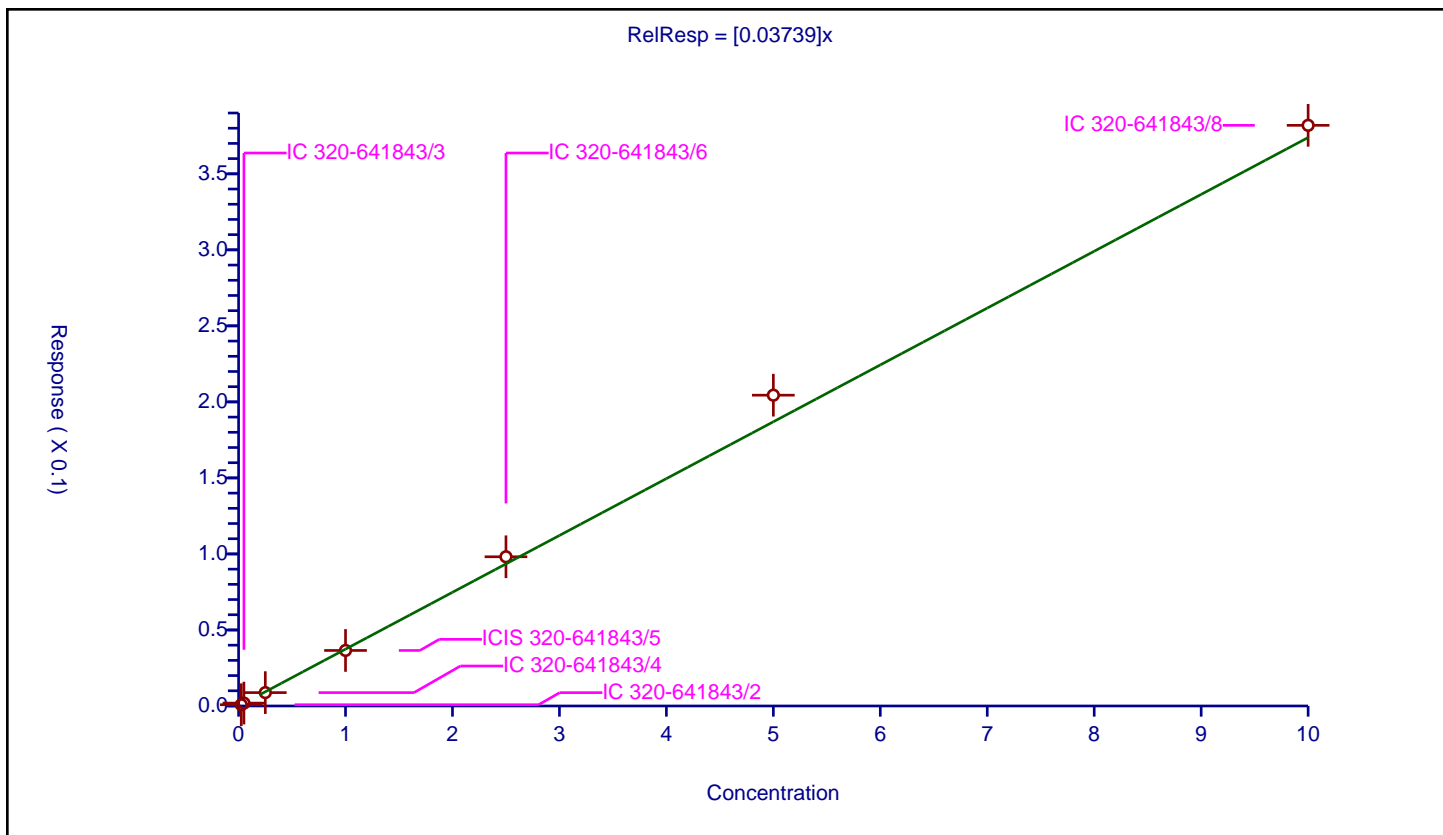
Curve Coefficients

Intercept: 0
 Slope: 0.03739

Error Coefficients

Standard Error: 779000
 Relative Standard Error: 6.7
 Correlation Coefficient: 0.995
 Coefficient of Determination (Adjusted): 0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.000839	1.25	6271839.0	0.033547	Y
2	IC 320-641843/3	0.05	0.001905	1.25	6004578.0	0.038108	Y
3	IC 320-641843/4	0.25	0.0088	1.25	6038830.0	0.035199	Y
4	ICIS 320-641843/5	1.0	0.036525	1.25	5782654.0	0.036525	Y
5	IC 320-641843/6	2.5	0.098132	1.25	5597131.0	0.039253	Y
6	IC 320-641843/7	5.0	0.204419	1.25	5651966.0	0.040884	Y
7	IC 320-641843/8	10.0	0.381902	1.25	5237620.0	0.03819	Y



Calibration

/ 13C8 PFOS

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: ISTD
 Response Base: AREA
 RF Rounding: 0

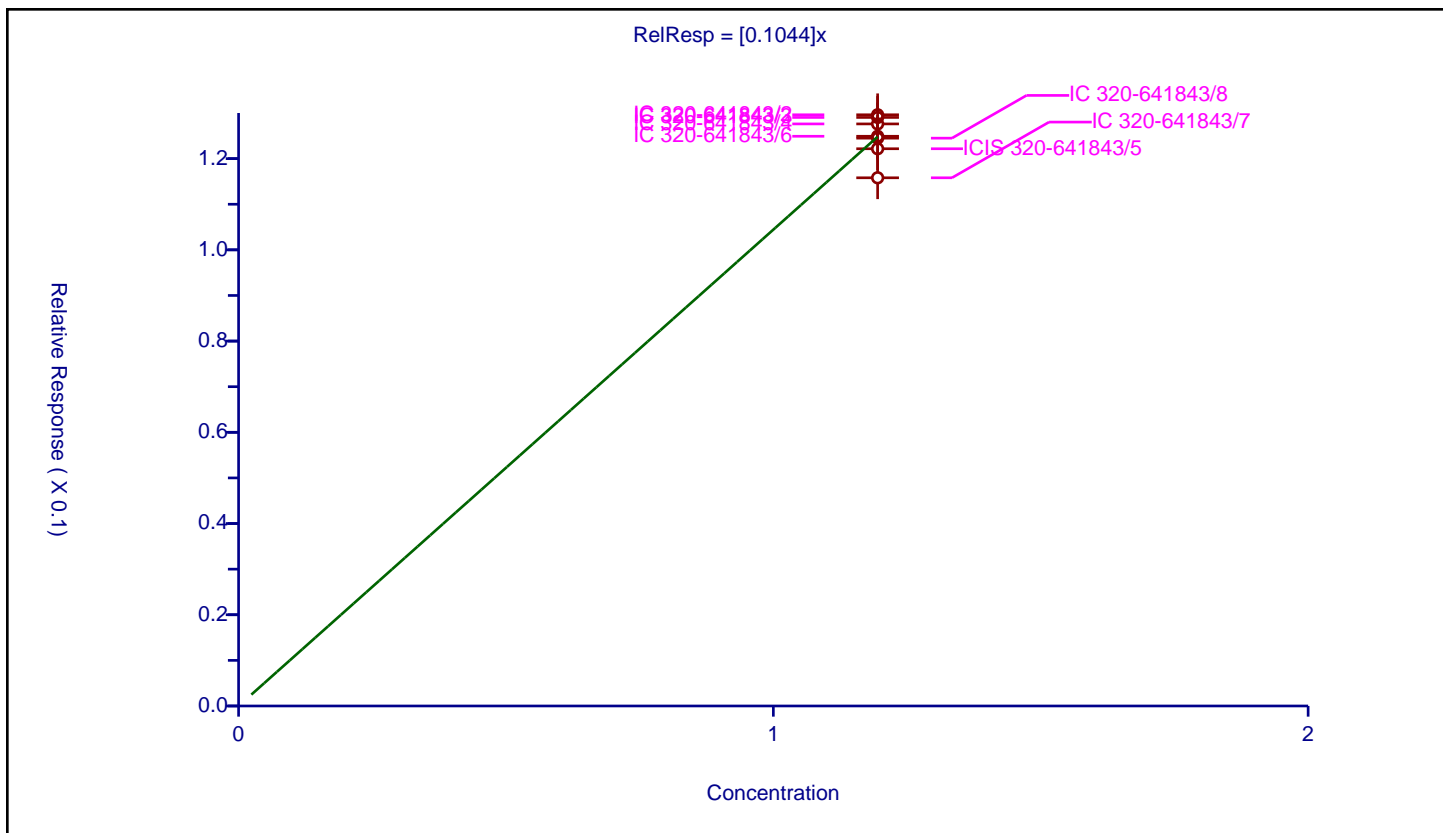
Curve Coefficients

Intercept: 0
 Slope: 0.1044

Error Coefficients

Standard Error: 621000
 Relative Standard Error: 3.8
 Correlation Coefficient: 0.00000000000000000000
 Coefficient of Determination (Adjusted): 0

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	1.195	0.129615	1.25	6244331.0	0.108465	Y
2	IC 320-641843/3	1.195	0.12903	1.25	5787639.0	0.107975	Y
3	IC 320-641843/4	1.195	0.127608	1.25	5781446.0	0.106785	Y
4	ICIS 320-641843/5	1.195	0.122167	1.25	5748994.0	0.102232	Y
5	IC 320-641843/6	1.195	0.124899	1.25	5758465.0	0.104518	Y
6	IC 320-641843/7	1.195	0.115802	1.25	5820495.0	0.096905	Y
7	IC 320-641843/8	1.195	0.124484	1.25	5052051.0	0.104171	Y



Calibration

/ Perfluorooctanesulfonic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

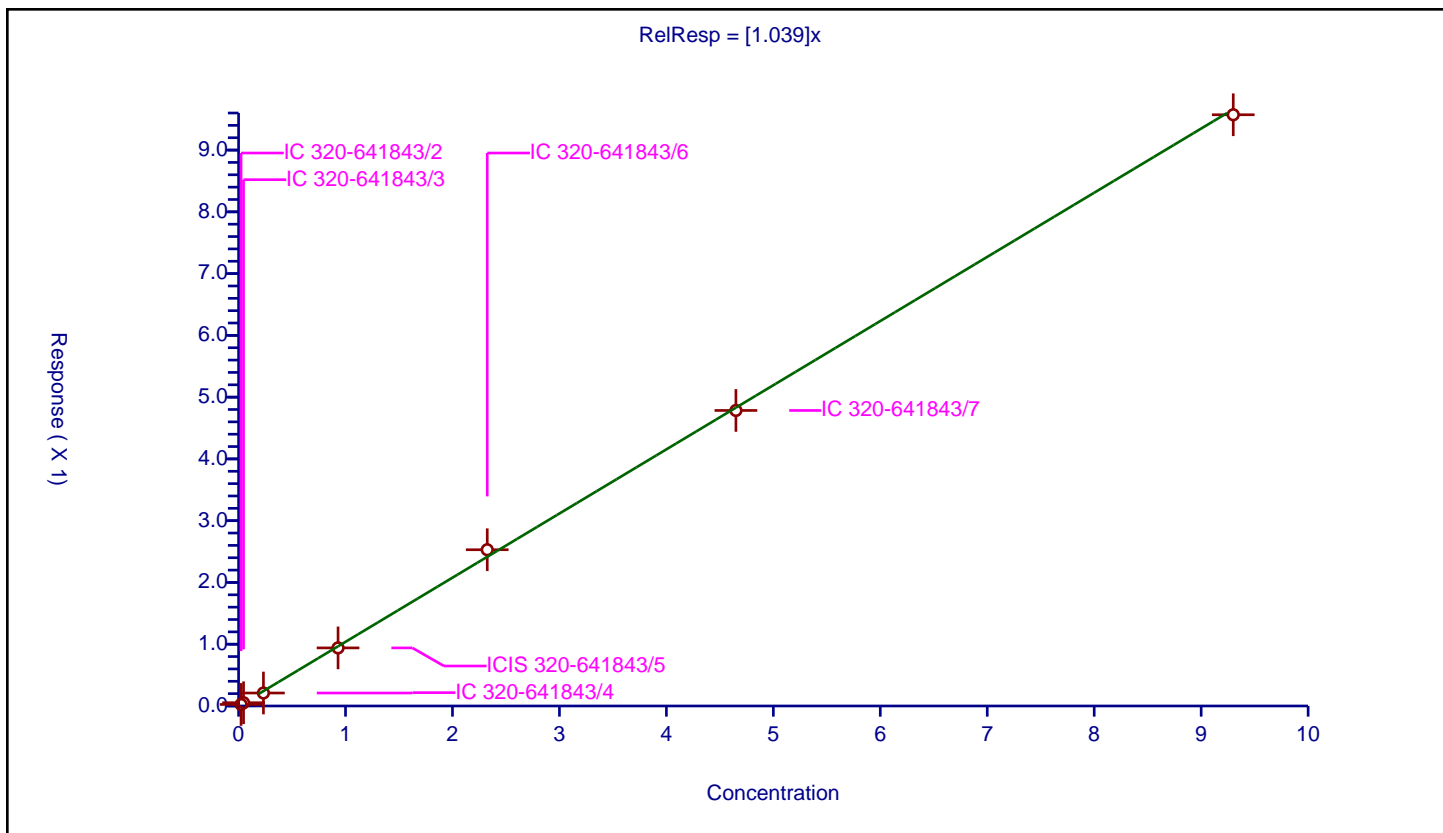
Curve Coefficients

Intercept: 0
 Slope: 1.039

Error Coefficients

Standard Error: 4670000
 Relative Standard Error: 7.0
 Correlation Coefficient: 0.996
 Coefficient of Determination (Adjusted): 0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.02325	0.025005	1.1975	1424220.0	1.075479	Y
2	IC 320-641843/3	0.0465	0.052751	1.1975	1353806.0	1.134422	Y
3	IC 320-641843/4	0.2325	0.210055	1.1975	1392450.0	0.903464	Y
4	ICIS 320-641843/5	0.93	0.940577	1.1975	1348079.0	1.011373	Y
5	IC 320-641843/6	2.325	2.529576	1.1975	1301599.0	1.08799	Y
6	IC 320-641843/7	4.65	4.784346	1.1975	1350075.0	1.028892	Y
7	IC 320-641843/8	9.3	9.571914	1.1975	1206062.0	1.029238	Y



Calibration

/ Perfluorononanoic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

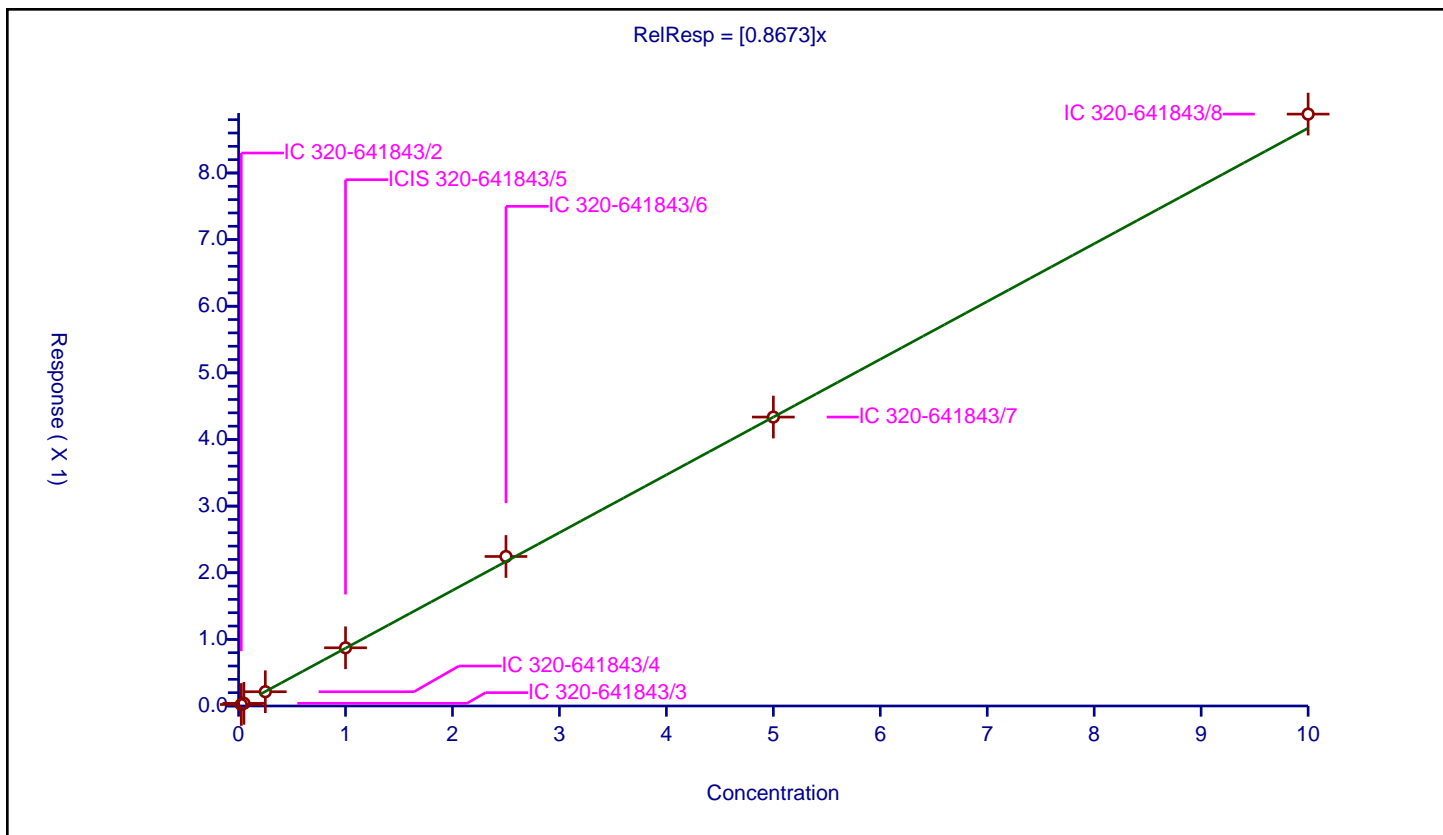
Curve Coefficients

Intercept: 0
 Slope: 0.8673

Error Coefficients

Standard Error: 17300000
 Relative Standard Error: 3.4
 Correlation Coefficient: 0.996
 Coefficient of Determination (Adjusted): 0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.022038	1.25	5925306.0	0.881533	Y
2	IC 320-641843/3	0.05	0.040384	1.25	6020708.0	0.807679	Y
3	IC 320-641843/4	0.25	0.213749	1.25	5627096.0	0.854996	Y
4	ICIS 320-641843/5	1.0	0.873587	1.25	5870061.0	0.873587	Y
5	IC 320-641843/6	2.5	2.244097	1.25	5467050.0	0.897639	Y
6	IC 320-641843/7	5.0	4.336427	1.25	5797989.0	0.867285	Y
7	IC 320-641843/8	10.0	8.883704	1.25	5015471.0	0.88837	Y



Calibration

/ 7:3 FTCA

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

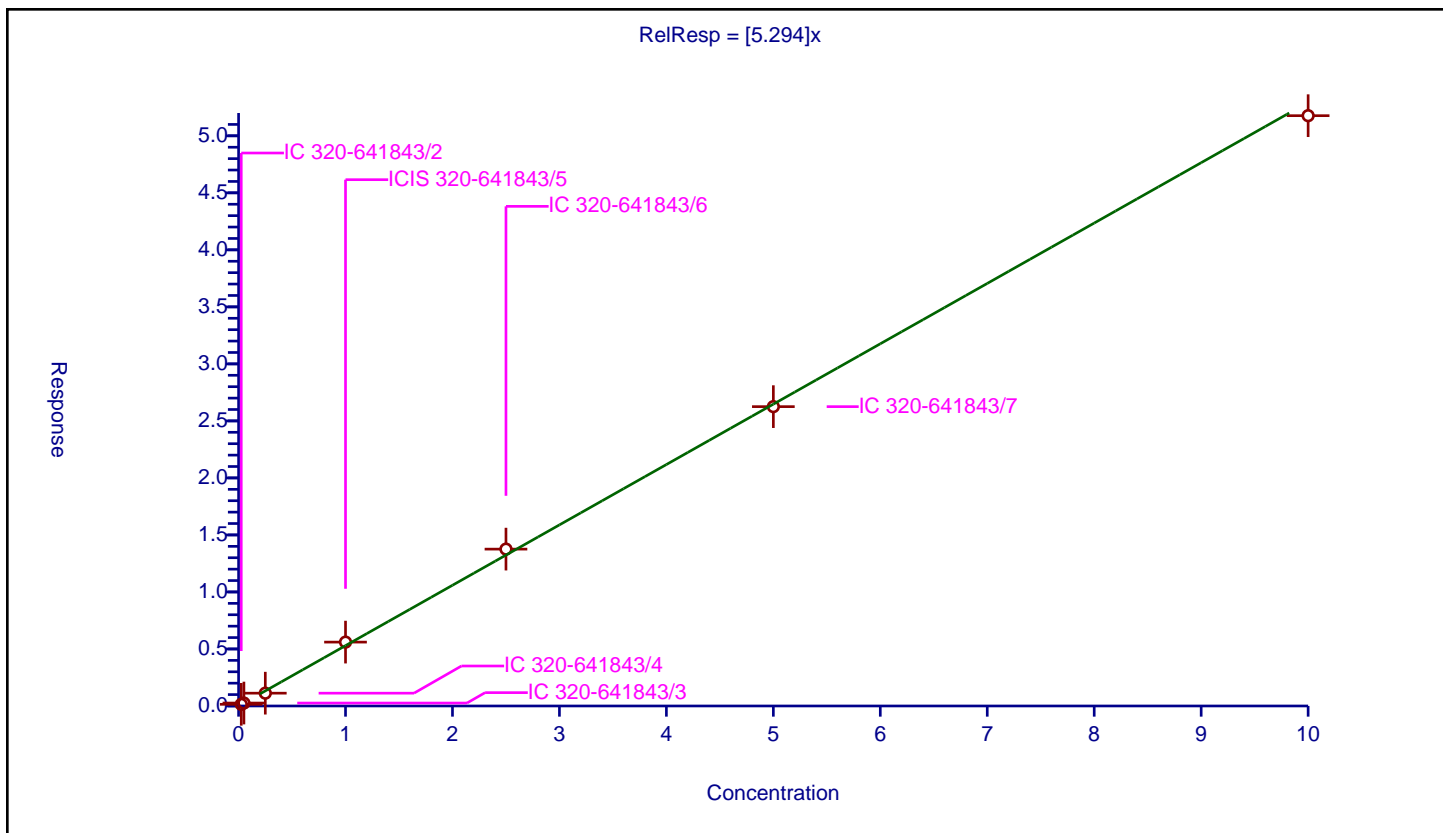
Curve Coefficients

Intercept: 0
Slope: 5.294

Error Coefficients

Standard Error: 3350000
Relative Standard Error: 8.3
Correlation Coefficient: 0.999
Coefficient of Determination (Adjusted): 0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.146975	1.25	186962.0	5.879002	Y
2	IC 320-641843/3	0.05	0.257788	1.25	192610.0	5.155755	Y
3	IC 320-641843/4	0.25	1.122568	1.25	198577.0	4.490273	Y
4	ICIS 320-641843/5	1.0	5.601263	1.25	174753.0	5.601263	Y
5	IC 320-641843/6	2.5	13.756972	1.25	171395.0	5.502789	Y
6	IC 320-641843/7	5.0	26.25068	1.25	178265.0	5.250136	Y
7	IC 320-641843/8	10.0	51.76585	1.25	169228.0	5.176585	Y



Calibration

/ 8:2 FTUCA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

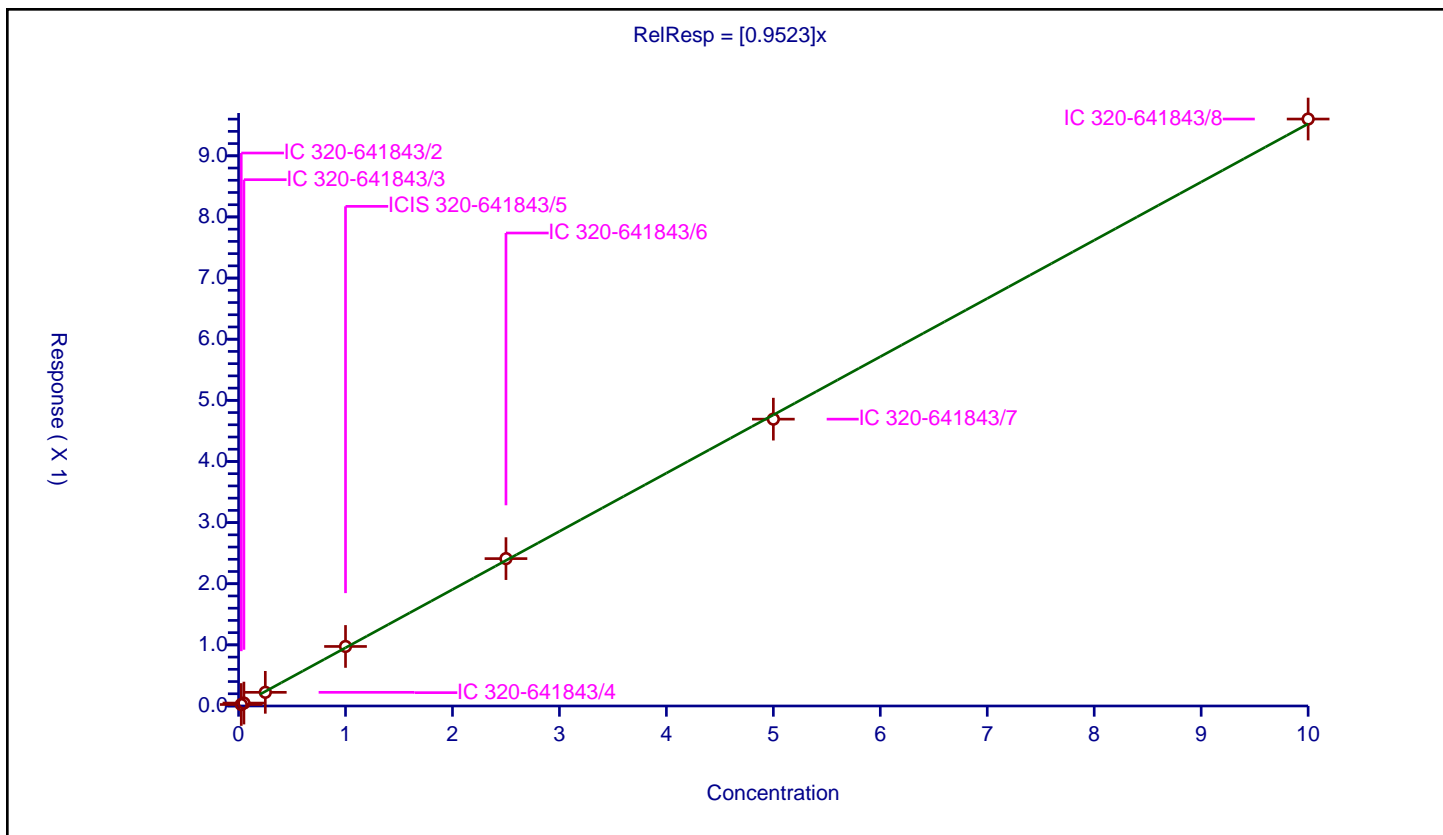
Curve Coefficients

Intercept: 0
 Slope: 0.9523

Error Coefficients

Standard Error: 11200000
 Relative Standard Error: 3.0
 Correlation Coefficient: 0.998
 Coefficient of Determination (Adjusted): 0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.024405	1.25	3592347.0	0.976214	Y
2	IC 320-641843/3	0.05	0.047955	1.25	3608847.0	0.959094	Y
3	IC 320-641843/4	0.25	0.223528	1.25	3455886.0	0.894112	Y
4	ICIS 320-641843/5	1.0	0.973994	1.25	3398407.0	0.973994	Y
5	IC 320-641843/6	2.5	2.410796	1.25	3229578.0	0.964319	Y
6	IC 320-641843/7	5.0	4.692147	1.25	3388615.0	0.938429	Y
7	IC 320-641843/8	10.0	9.601372	1.25	3026054.0	0.960137	Y



Calibration

/ 8:2 FTCA

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

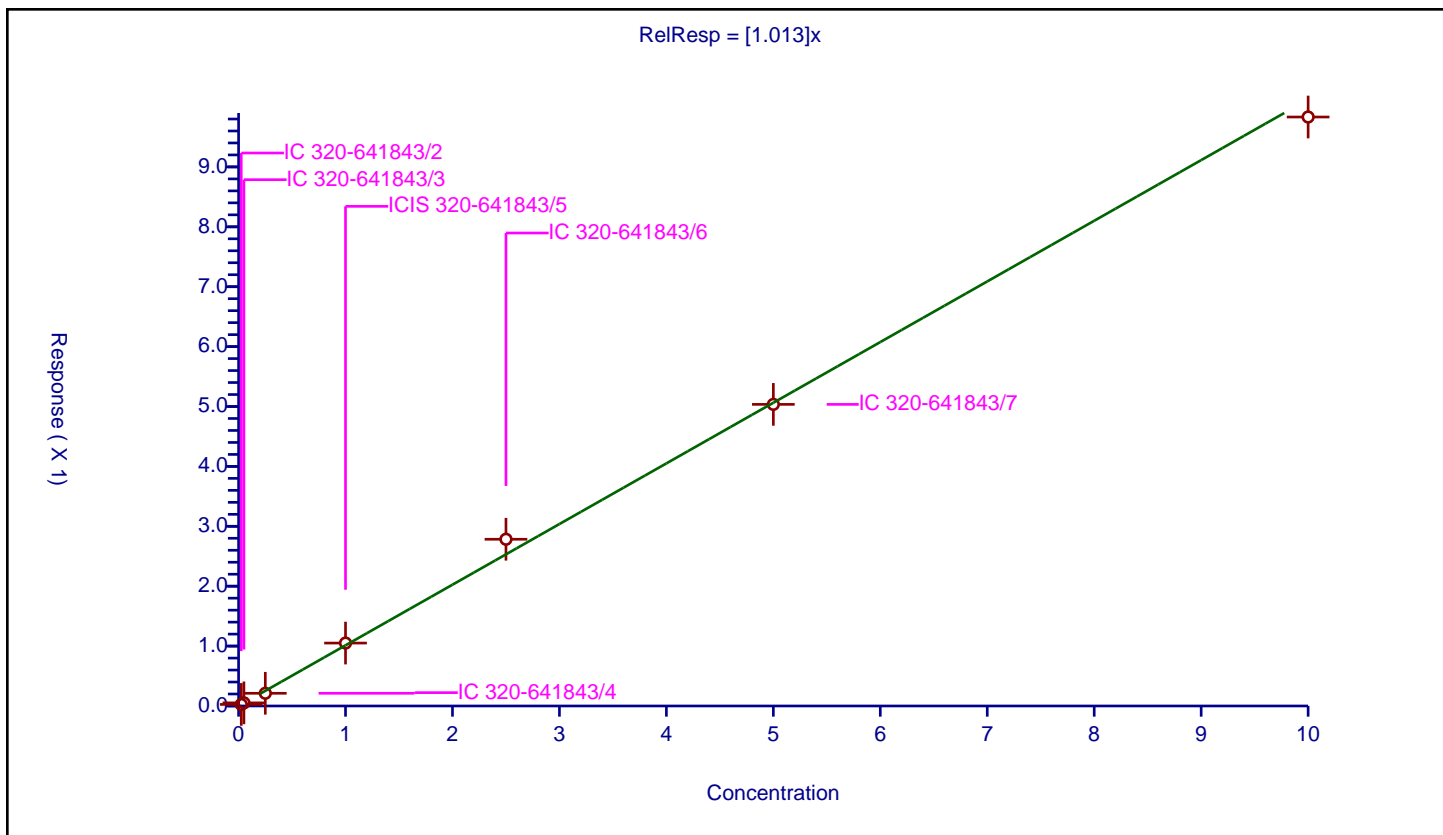
Curve Coefficients

Intercept: 0
Slope: 1.013

Error Coefficients

Standard Error: 640000
Relative Standard Error: 8.2
Correlation Coefficient: 0.998
Coefficient of Determination (Adjusted): 0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.026048	1.25	186962.0	1.041923	Y
2	IC 320-641843/3	0.05	0.05212	1.25	192610.0	1.042391	Y
3	IC 320-641843/4	0.25	0.212292	1.25	198577.0	0.849167	Y
4	ICIS 320-641843/5	1.0	1.050697	1.25	174753.0	1.050697	Y
5	IC 320-641843/6	2.5	2.783876	1.25	171395.0	1.113551	Y
6	IC 320-641843/7	5.0	5.03539	1.25	178265.0	1.007078	Y
7	IC 320-641843/8	10.0	9.833294	1.25	169228.0	0.983329	Y



Calibration

/ 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

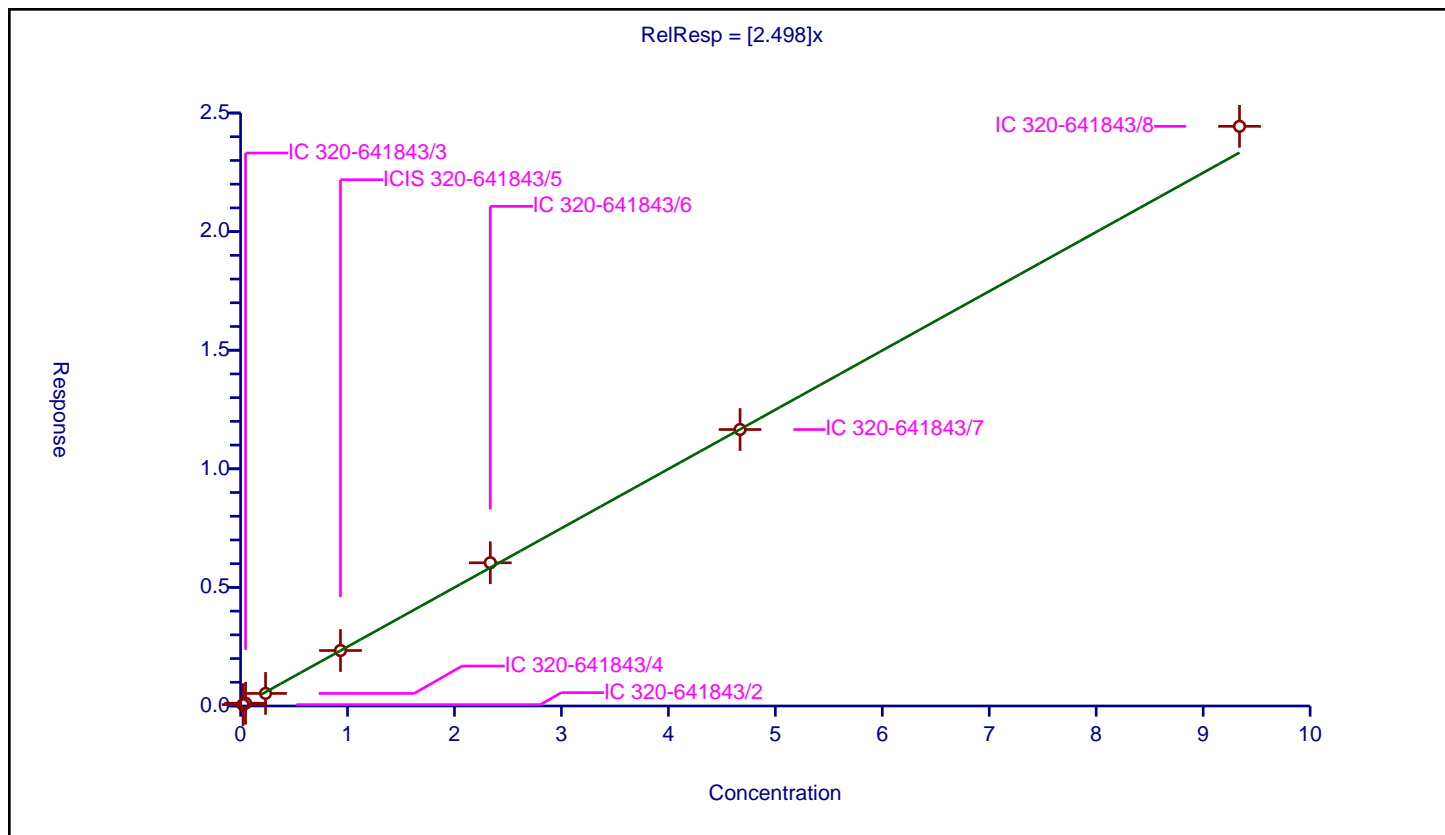
Curve Coefficients

Intercept: 0
 Slope: 2.498

Error Coefficients

Standard Error: 11800000
 Relative Standard Error: 4.5
 Correlation Coefficient: 0.999
 Coefficient of Determination (Adjusted): 0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.02335	0.05805	1.1975	1424220.0	2.4861	Y
2	IC 320-641843/3	0.0467	0.117985	1.1975	1353806.0	2.526441	Y
3	IC 320-641843/4	0.2335	0.529966	1.1975	1392450.0	2.269661	Y
4	ICIS 320-641843/5	0.934	2.339544	1.1975	1348079.0	2.504865	Y
5	IC 320-641843/6	2.335	6.038165	1.1975	1301599.0	2.585938	Y
6	IC 320-641843/7	4.67	11.655533	1.1975	1350075.0	2.495831	Y
7	IC 320-641843/8	9.34	24.439003	1.1975	1206062.0	2.616596	Y



Calibration

/ Perfluorooctanesulfonamide

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

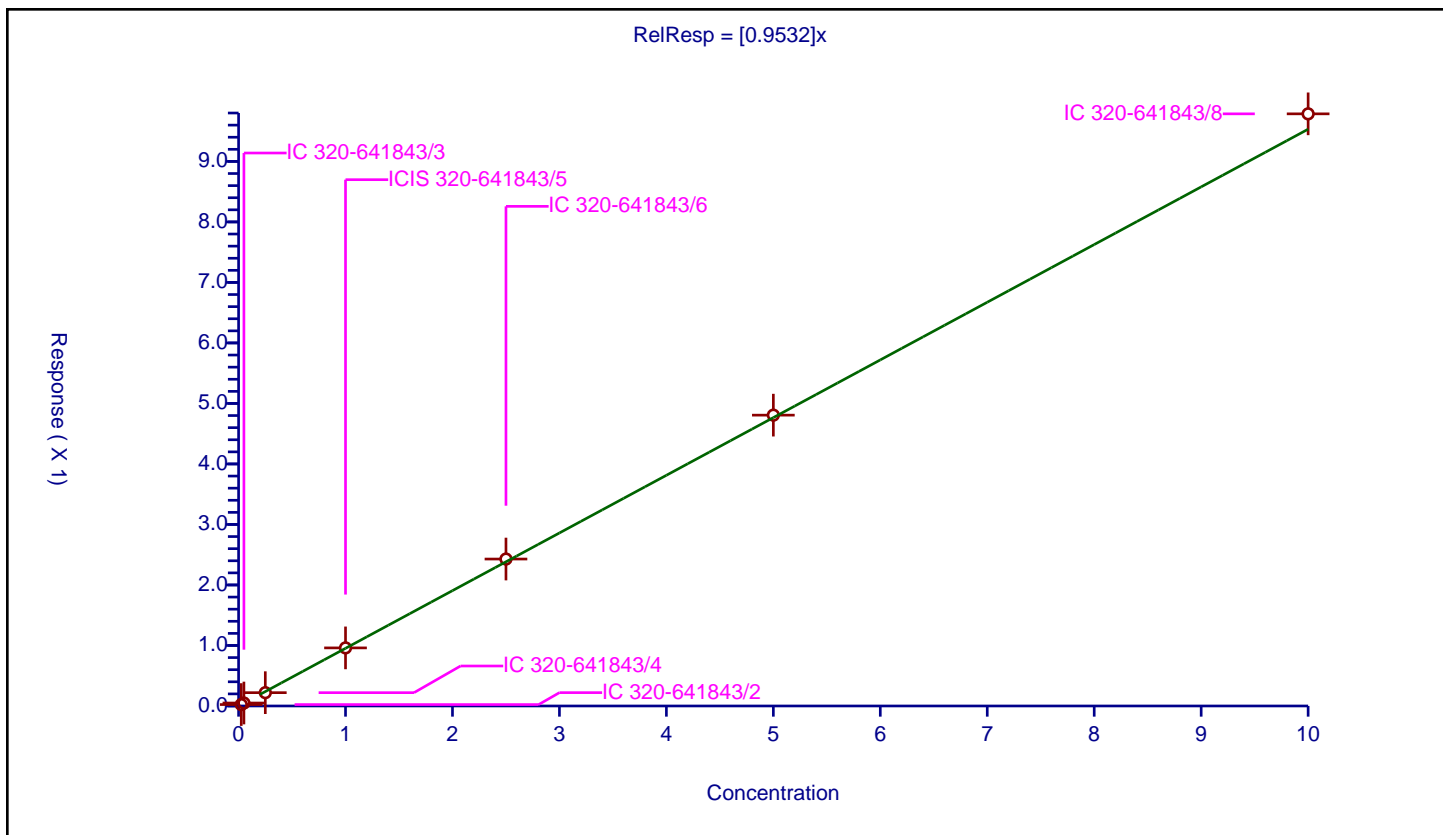
Curve Coefficients

Intercept: 0
 Slope: 0.9532

Error Coefficients

Standard Error: 6290000
 Relative Standard Error: 3.7
 Correlation Coefficient: 0.999
 Coefficient of Determination (Adjusted): 0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.023533	1.25	1959299.0	0.941332	Y
2	IC 320-641843/3	0.05	0.048979	1.25	1886081.0	0.979584	Y
3	IC 320-641843/4	0.25	0.220014	1.25	1916740.0	0.880054	Y
4	ICIS 320-641843/5	1.0	0.960204	1.25	1890673.0	0.960204	Y
5	IC 320-641843/6	2.5	2.428609	1.25	1857541.0	0.971443	Y
6	IC 320-641843/7	5.0	4.806815	1.25	1806938.0	0.961363	Y
7	IC 320-641843/8	10.0	9.786224	1.25	1685839.0	0.978622	Y



Calibration

/ Perfluorononanesulfonic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

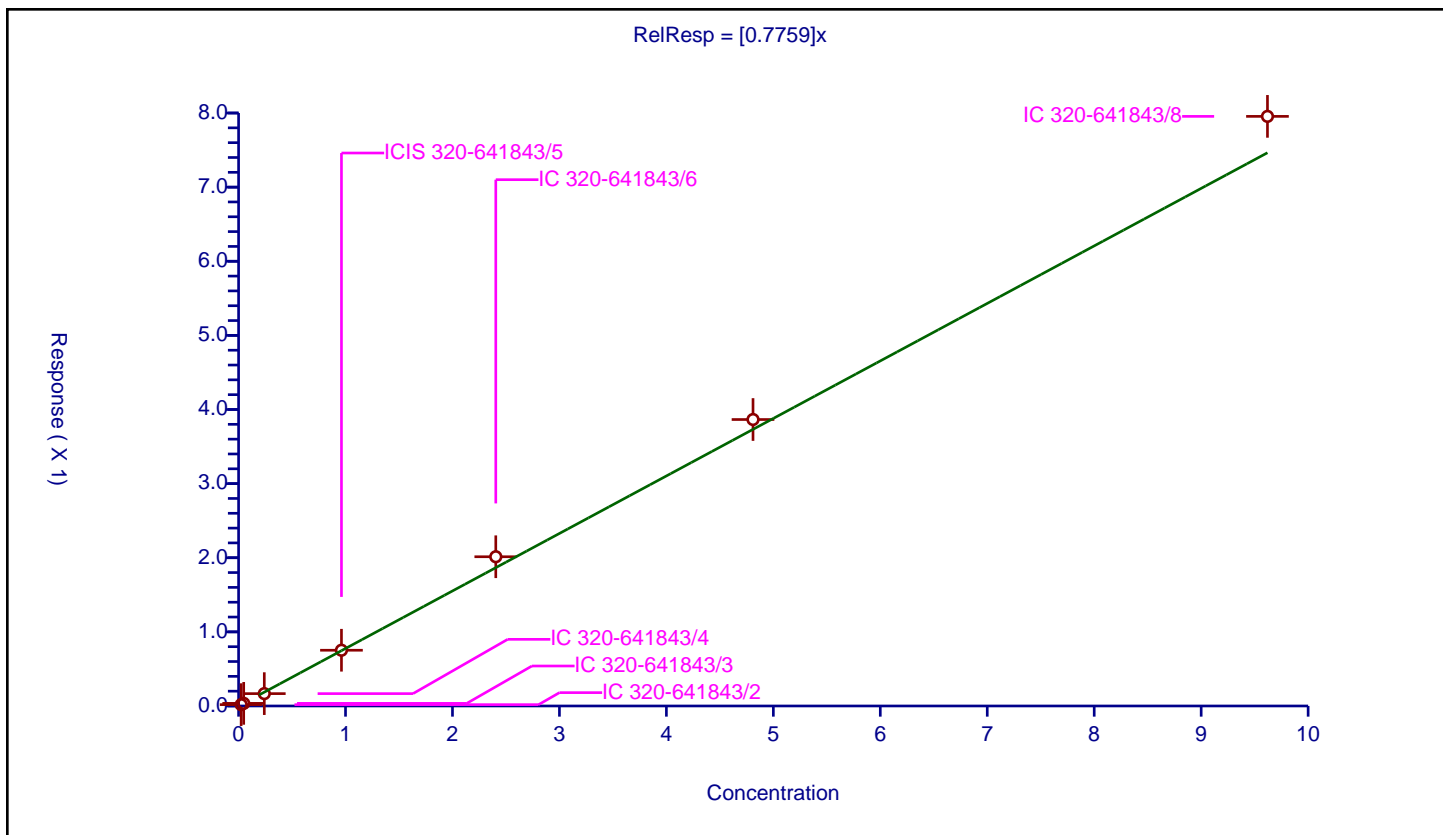
Curve Coefficients

Intercept: 0
 Slope: 0.7759

Error Coefficients

Standard Error: 3850000
 Relative Standard Error: 6.7
 Correlation Coefficient: 0.998
 Coefficient of Determination (Adjusted): 0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.02405	0.018101	1.1975	1424220.0	0.75264	Y
2	IC 320-641843/3	0.0481	0.035419	1.1975	1353806.0	0.736359	Y
3	IC 320-641843/4	0.2405	0.16664	1.1975	1392450.0	0.692888	Y
4	ICIS 320-641843/5	0.962	0.752086	1.1975	1348079.0	0.781794	Y
5	IC 320-641843/6	2.405	2.013316	1.1975	1301599.0	0.837138	Y
6	IC 320-641843/7	4.81	3.86498	1.1975	1350075.0	0.80353	Y
7	IC 320-641843/8	9.62	7.954561	1.1975	1206062.0	0.826877	Y



Calibration

/ 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

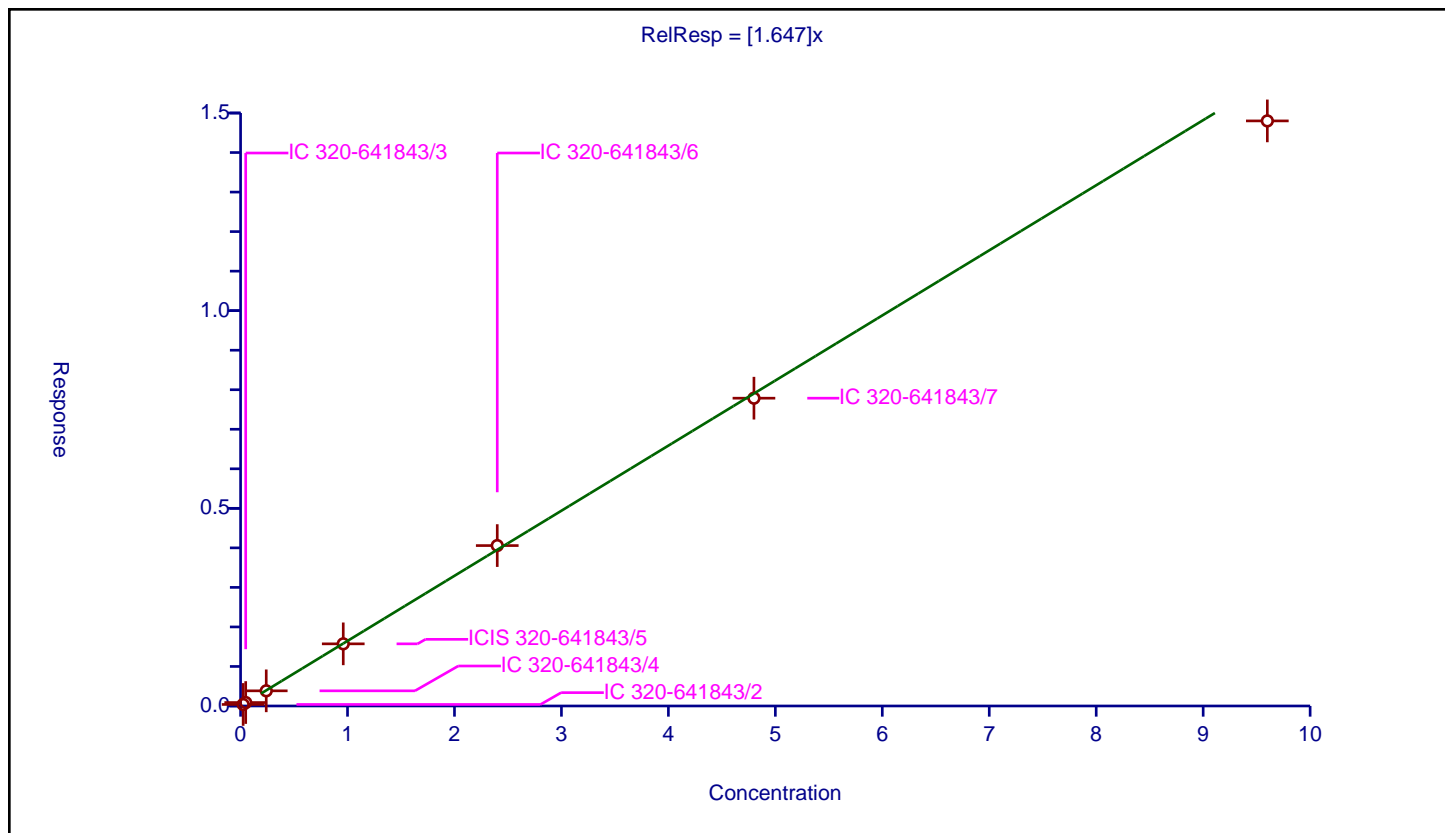
Curve Coefficients

Intercept: 0
Slope: 1.647

Error Coefficients

Standard Error: 3990000
Relative Standard Error: 5.3
Correlation Coefficient: 0.996
Coefficient of Determination (Adjusted): 0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.024	0.038823	1.2	830405.0	1.617644	Y
2	IC 320-641843/3	0.048	0.087276	1.2	760844.0	1.818244	Y
3	IC 320-641843/4	0.24	0.383435	1.2	766962.0	1.597648	Y
4	ICIS 320-641843/5	0.96	1.572296	1.2	757758.0	1.637809	Y
5	IC 320-641843/6	2.4	4.05806	1.2	724409.0	1.690858	Y
6	IC 320-641843/7	4.8	7.786318	1.2	702421.0	1.62215	Y
7	IC 320-641843/8	9.6	14.800655	1.2	666486.0	1.541735	Y



Calibration

/ Perfluorodecanoic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

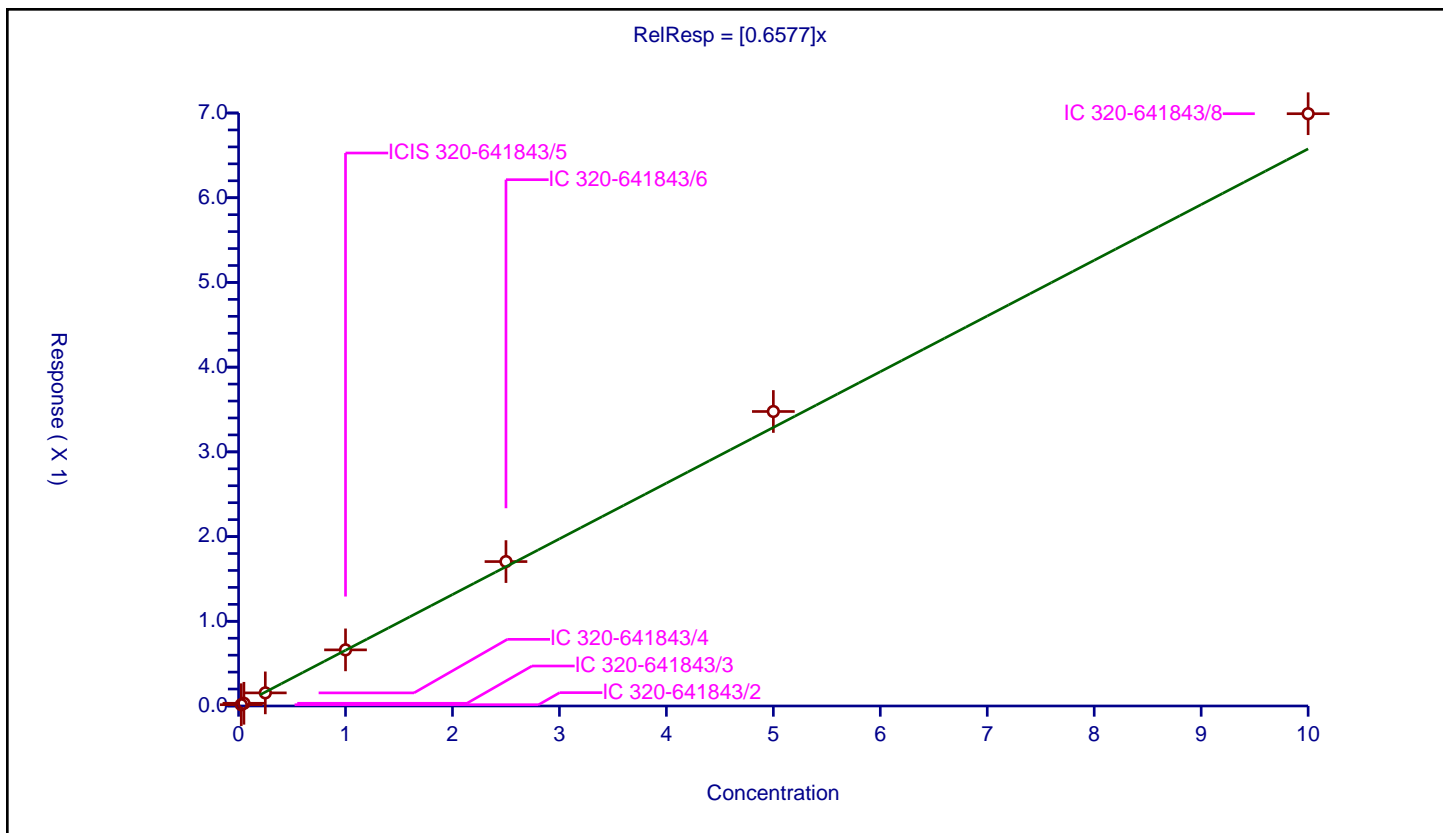
Curve Coefficients

Intercept: 0
 Slope: 0.6577

Error Coefficients

Standard Error: 13500000
 Relative Standard Error: 5.6
 Correlation Coefficient: 1.000
 Coefficient of Determination (Adjusted): 0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.015174	1.25	5646361.0	0.606948	Y
2	IC 320-641843/3	0.05	0.03192	1.25	5428601.0	0.638406	Y
3	IC 320-641843/4	0.25	0.154863	1.25	5538643.0	0.619451	Y
4	ICIS 320-641843/5	1.0	0.662415	1.25	5802988.0	0.662415	Y
5	IC 320-641843/6	2.5	1.704809	1.25	5434160.0	0.681924	Y
6	IC 320-641843/7	5.0	3.476605	1.25	5327115.0	0.695321	Y
7	IC 320-641843/8	10.0	6.991749	1.25	5095868.0	0.699175	Y



Calibration

/ N-methylperfluorooctanesulfonamidoacetic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

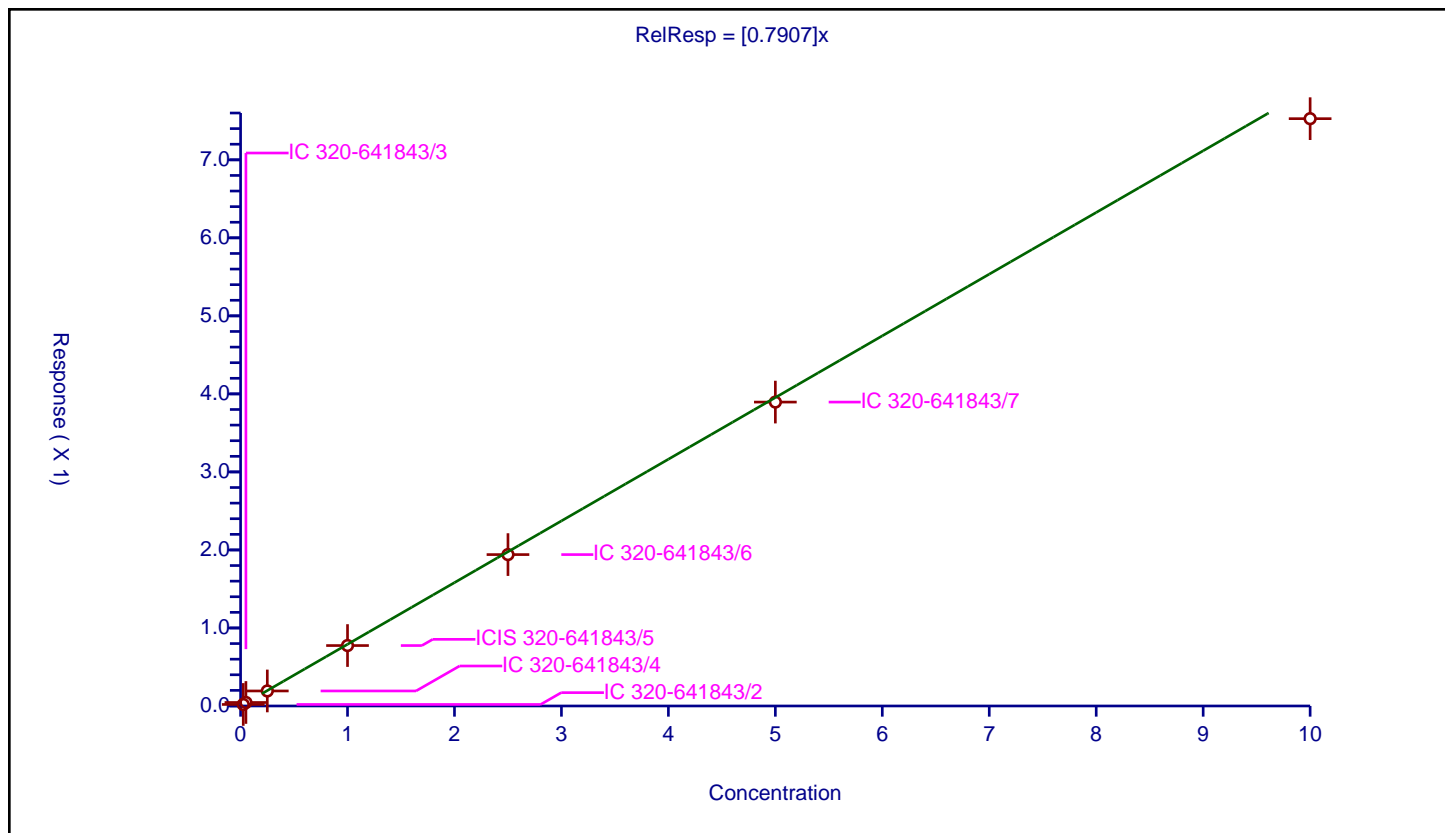
Curve Coefficients

Intercept: 0
 Slope: 0.7907

Error Coefficients

Standard Error: 2100000
 Relative Standard Error: 6.2
 Correlation Coefficient: 1.000
 Coefficient of Determination (Adjusted): 0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.019547	1.25	797870.0	0.781894	Y
2	IC 320-641843/3	0.05	0.045011	1.25	766454.0	0.900217	Y
3	IC 320-641843/4	0.25	0.192523	1.25	729447.0	0.77009	Y
4	ICIS 320-641843/5	1.0	0.77453	1.25	783120.0	0.77453	Y
5	IC 320-641843/6	2.5	1.940302	1.25	755309.0	0.776121	Y
6	IC 320-641843/7	5.0	3.895068	1.25	729840.0	0.779014	Y
7	IC 320-641843/8	10.0	7.527399	1.25	737397.0	0.75274	Y



Calibration

/ Perfluorodecanesulfonic acid

Curve Type: Linear
 Weighting: Conc
 Origin: None
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

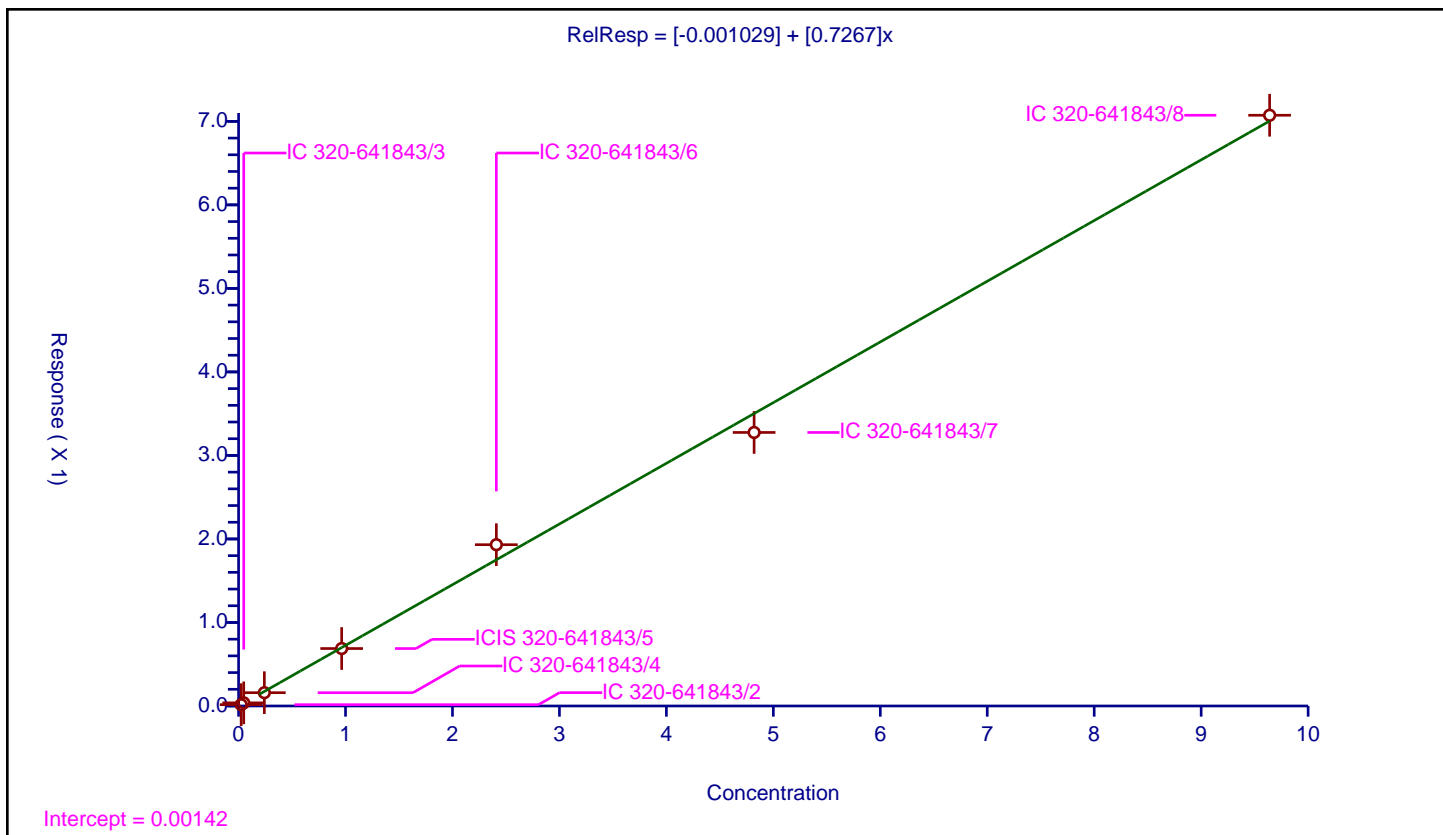
Curve Coefficients

Intercept: -0.001029
 Slope: 0.7267

Error Coefficients

Standard Error: 3730000
 Relative Standard Error: 8.3
 Correlation Coefficient: 0.998
 Coefficient of Determination (Adjusted): 0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.0241	0.015677	1.1975	1424220.0	0.650495	Y
2	IC 320-641843/3	0.0482	0.037439	1.1975	1353806.0	0.776746	Y
3	IC 320-641843/4	0.241	0.15932	1.1975	1392450.0	0.661079	Y
4	ICIS 320-641843/5	0.964	0.68802	1.1975	1348079.0	0.713714	Y
5	IC 320-641843/6	2.41	1.931166	1.1975	1301599.0	0.801314	Y
6	IC 320-641843/7	4.82	3.275169	1.1975	1350075.0	0.679496	Y
7	IC 320-641843/8	9.64	7.073185	1.1975	1206062.0	0.733733	Y



Calibration

/ Perfluoroundecanoic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

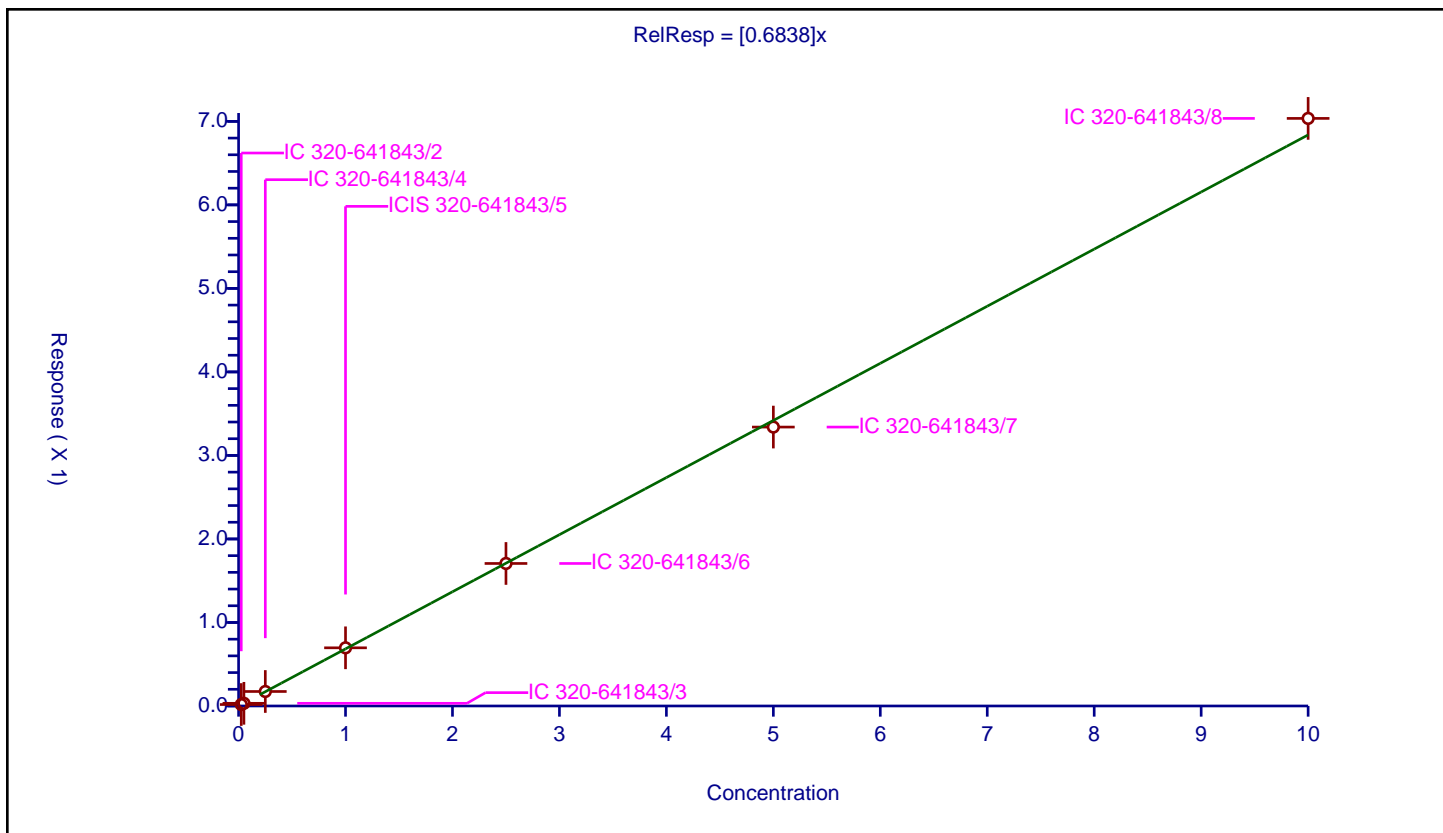
Curve Coefficients

Intercept: 0
 Slope: 0.6838

Error Coefficients

Standard Error: 12800000
 Relative Standard Error: 3.1
 Correlation Coefficient: 1.000
 Coefficient of Determination (Adjusted): 0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.017465	1.25	5260158.0	0.698582	Y
2	IC 320-641843/3	0.05	0.032188	1.25	5173428.0	0.643751	Y
3	IC 320-641843/4	0.25	0.173427	1.25	5059809.0	0.693708	Y
4	ICIS 320-641843/5	1.0	0.696448	1.25	5346327.0	0.696448	Y
5	IC 320-641843/6	2.5	1.706581	1.25	5124120.0	0.682632	Y
6	IC 320-641843/7	5.0	3.339555	1.25	5097277.0	0.667911	Y
7	IC 320-641843/8	10.0	7.035437	1.25	4825909.0	0.703544	Y



Calibration

/ N-ethylperfluorooctanesulfonamidoacetic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

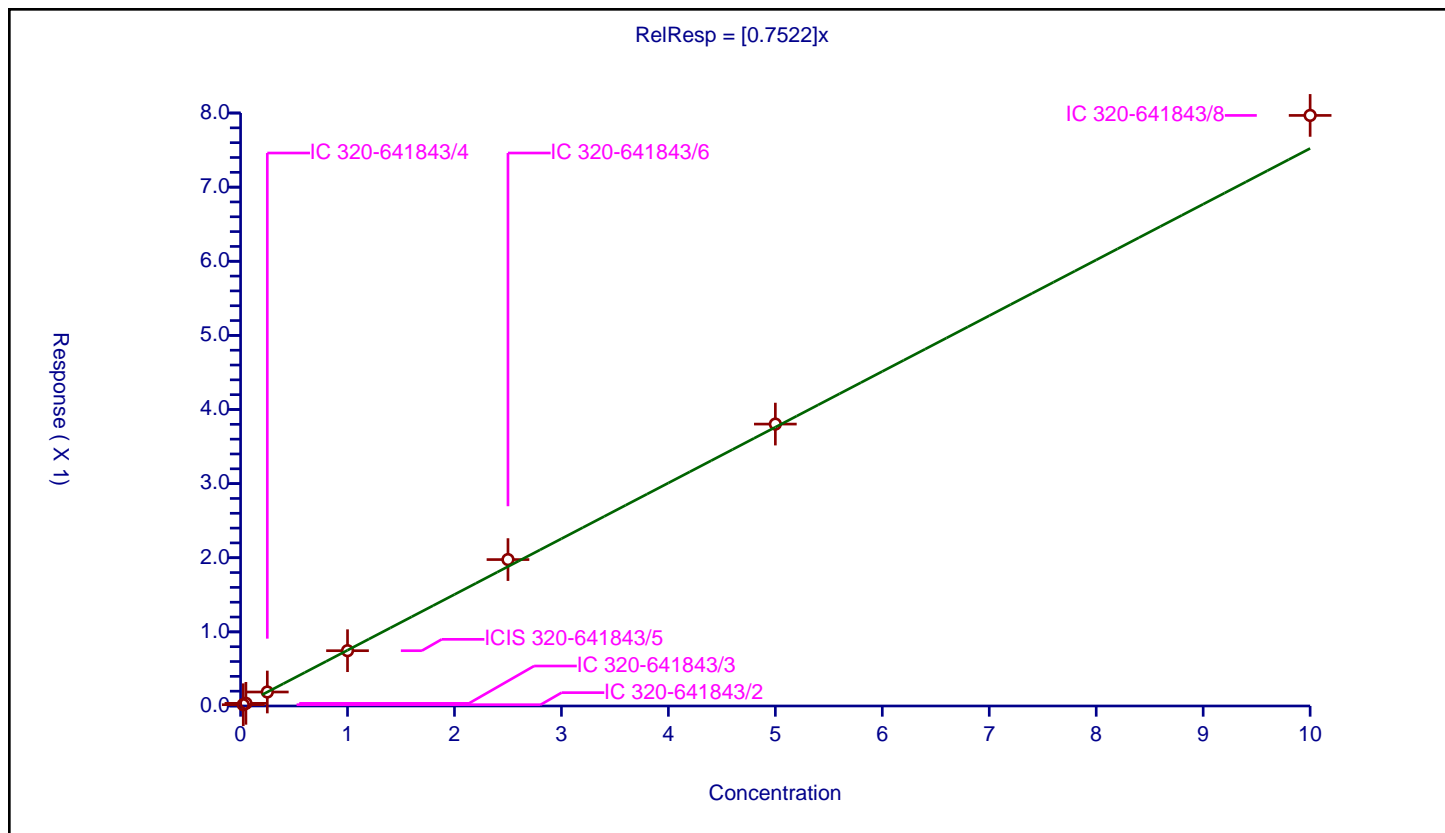
Curve Coefficients

Intercept: 0
 Slope: 0.7522

Error Coefficients

Standard Error: 2030000
 Relative Standard Error: 4.7
 Correlation Coefficient: 0.999
 Coefficient of Determination (Adjusted): 0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.017622	1.25	807536.0	0.70486	Y
2	IC 320-641843/3	0.05	0.035617	1.25	808849.0	0.712339	Y
3	IC 320-641843/4	0.25	0.188724	1.25	763789.0	0.754894	Y
4	ICIS 320-641843/5	1.0	0.745965	1.25	809200.0	0.745965	Y
5	IC 320-641843/6	2.5	1.975159	1.25	756881.0	0.790063	Y
6	IC 320-641843/7	5.0	3.803357	1.25	708804.0	0.760671	Y
7	IC 320-641843/8	10.0	7.96757	1.25	672383.0	0.796757	Y



Calibration

/ 10:2 FTUCA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

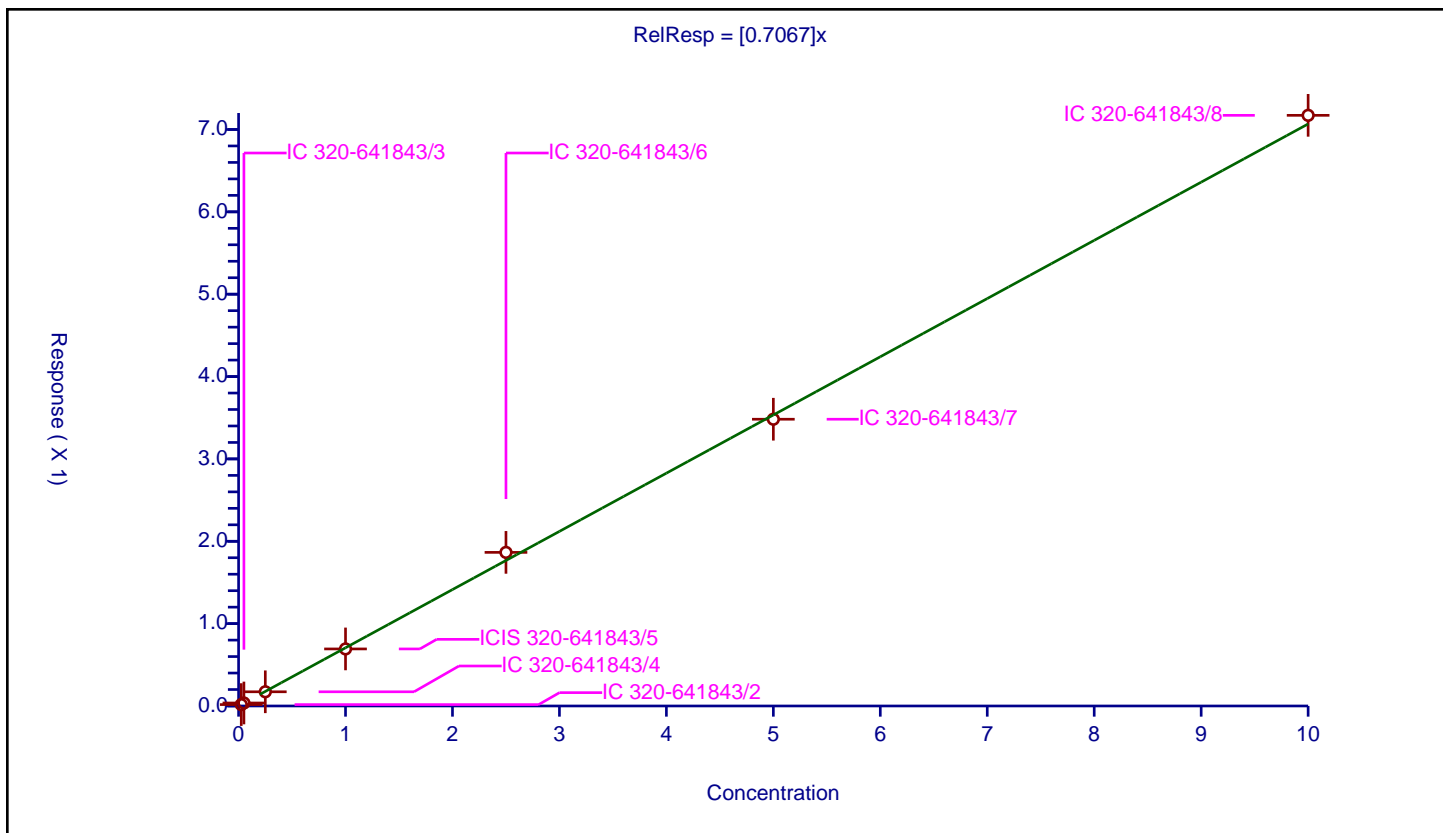
Curve Coefficients

Intercept: 0
 Slope: 0.7067

Error Coefficients

Standard Error: 7880000
 Relative Standard Error: 3.6
 Correlation Coefficient: 0.999
 Coefficient of Determination (Adjusted): 0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.016851	1.25	3131769.0	0.674044	Y
2	IC 320-641843/3	0.05	0.036543	1.25	3137556.0	0.730863	Y
3	IC 320-641843/4	0.25	0.172494	1.25	3011646.0	0.689975	Y
4	ICIS 320-641843/5	1.0	0.692645	1.25	3150416.0	0.692645	Y
5	IC 320-641843/6	2.5	1.865041	1.25	3027785.0	0.746016	Y
6	IC 320-641843/7	5.0	3.48178	1.25	2962874.0	0.696356	Y
7	IC 320-641843/8	10.0	7.171703	1.25	2919338.0	0.71717	Y



Calibration

/ 10:2 FTCA

Curve Type: Linear
Weighting: Conc
Origin: None
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

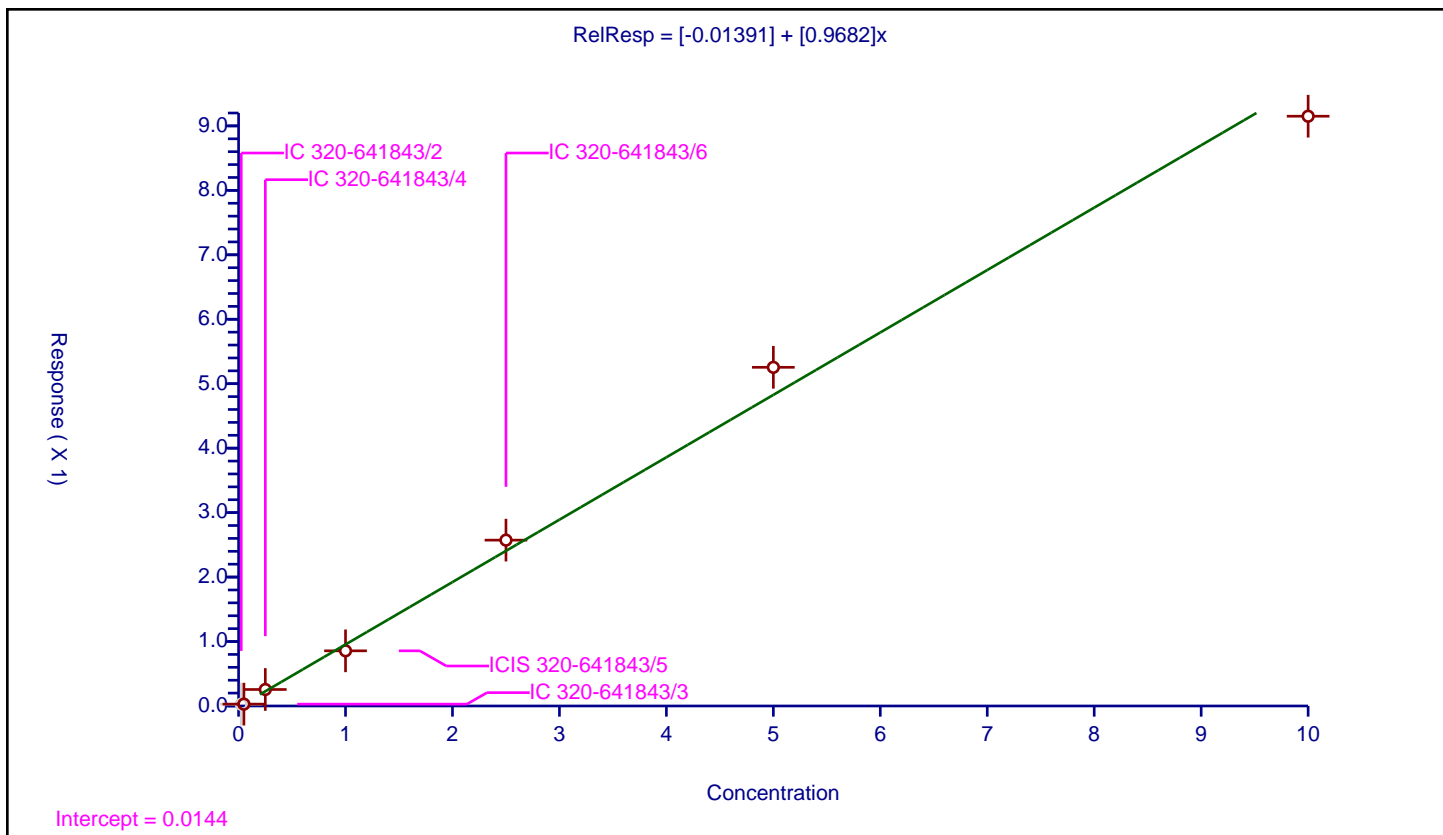
Curve Coefficients

Intercept: -0.01391
Slope: 0.9682

Error Coefficients

Standard Error: 414000
Relative Standard Error: 11.5
Correlation Coefficient: 0.997
Coefficient of Determination (Adjusted): 0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.027159	1.25	111336.0	1.086351	N
2	IC 320-641843/3	0.05	0.028832	1.25	109123.0	0.576643	Y
3	IC 320-641843/4	0.25	0.256032	1.25	105148.0	1.024128	Y
4	ICIS 320-641843/5	1.0	0.855781	1.25	103109.0	0.855781	Y
5	IC 320-641843/6	2.5	2.573057	1.25	97732.0	1.029223	Y
6	IC 320-641843/7	5.0	5.254423	1.25	91688.0	1.050885	Y
7	IC 320-641843/8	10.0	9.150186	1.25	95821.0	0.915019	Y



Calibration

/ 2-(N-methylperfluoro-1-octanesulfonamido) ethanol

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

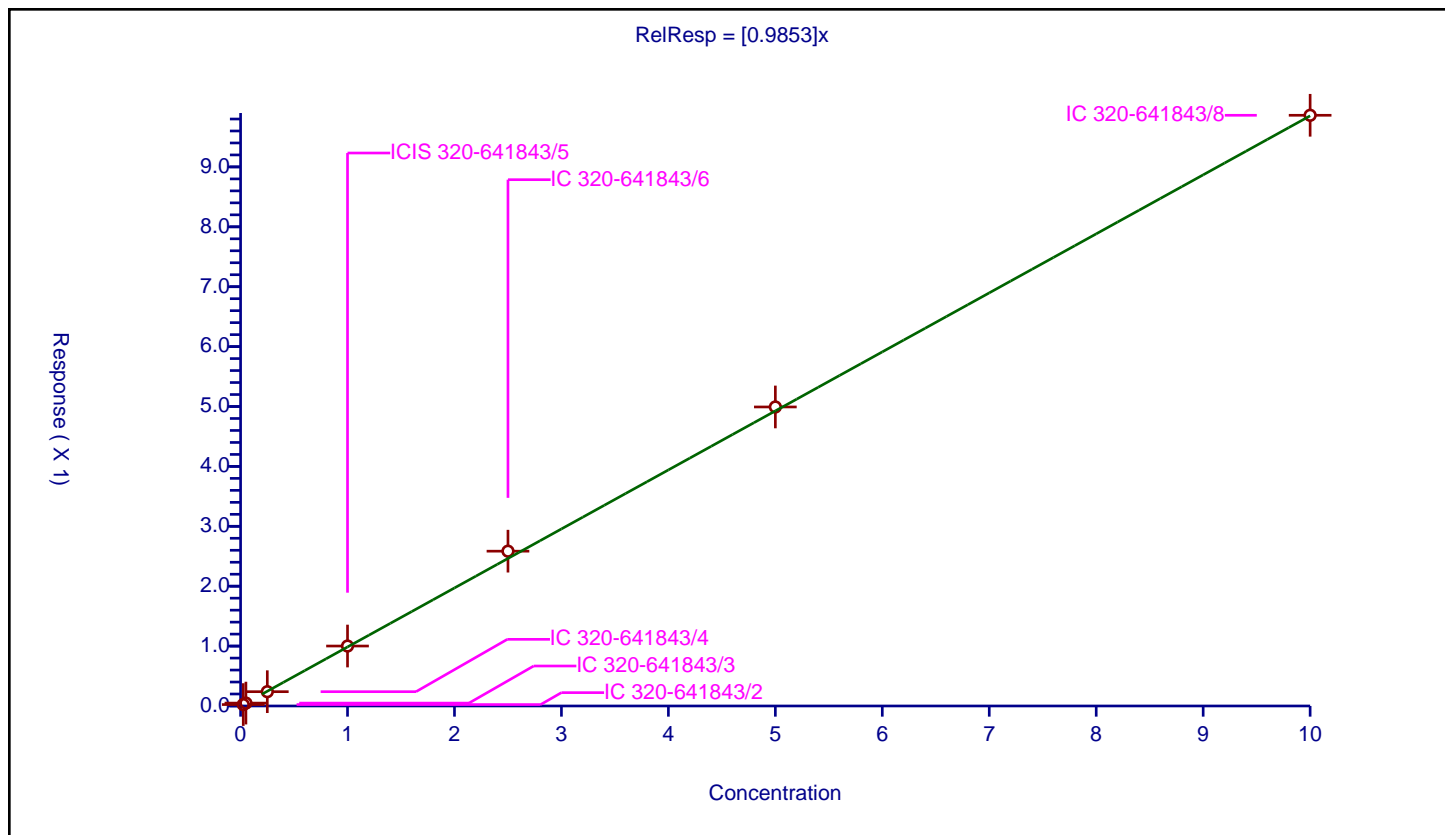
Curve Coefficients

Intercept: 0
 Slope: 0.9853

Error Coefficients

Standard Error: 3370000
 Relative Standard Error: 2.9
 Correlation Coefficient: 1.000
 Coefficient of Determination (Adjusted): 0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.023968	1.25	908767.0	0.958717	Y
2	IC 320-641843/3	0.05	0.048201	1.25	894226.0	0.964018	Y
3	IC 320-641843/4	0.25	0.238662	1.25	898476.0	0.95465	Y
4	ICIS 320-641843/5	1.0	1.001009	1.25	950291.0	1.001009	Y
5	IC 320-641843/6	2.5	2.584904	1.25	913617.0	1.033962	Y
6	IC 320-641843/7	5.0	4.992297	1.25	893540.0	0.998459	Y
7	IC 320-641843/8	10.0	9.861961	1.25	908186.0	0.986196	Y



Calibration

/ NMeFOSA

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

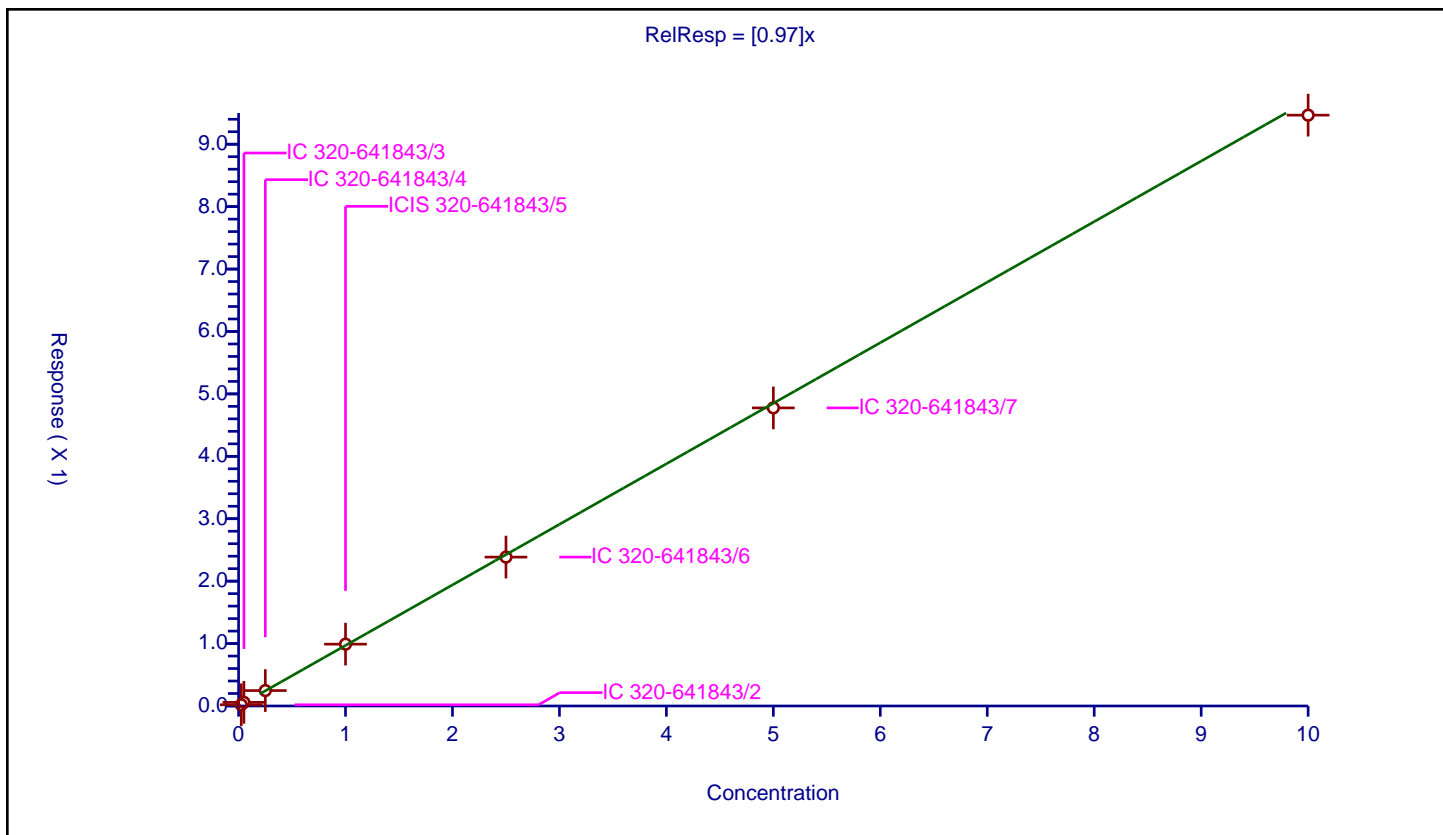
Curve Coefficients

Intercept: 0
 Slope: 0.97

Error Coefficients

Standard Error: 2100000
 Relative Standard Error: 11.6
 Correlation Coefficient: 1.000
 Coefficient of Determination (Adjusted): 0.984

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.019636	1.25	623985.0	0.785436	Y
2	IC 320-641843/3	0.05	0.058503	1.25	595910.0	1.170059	Y
3	IC 320-641843/4	0.25	0.246972	1.25	587805.0	0.987887	Y
4	ICIS 320-641843/5	1.0	0.990455	1.25	622195.0	0.990455	Y
5	IC 320-641843/6	2.5	2.385272	1.25	622786.0	0.954109	Y
6	IC 320-641843/7	5.0	4.775892	1.25	578889.0	0.955178	Y
7	IC 320-641843/8	10.0	9.465725	1.25	588140.0	0.946572	Y



Calibration

/ 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

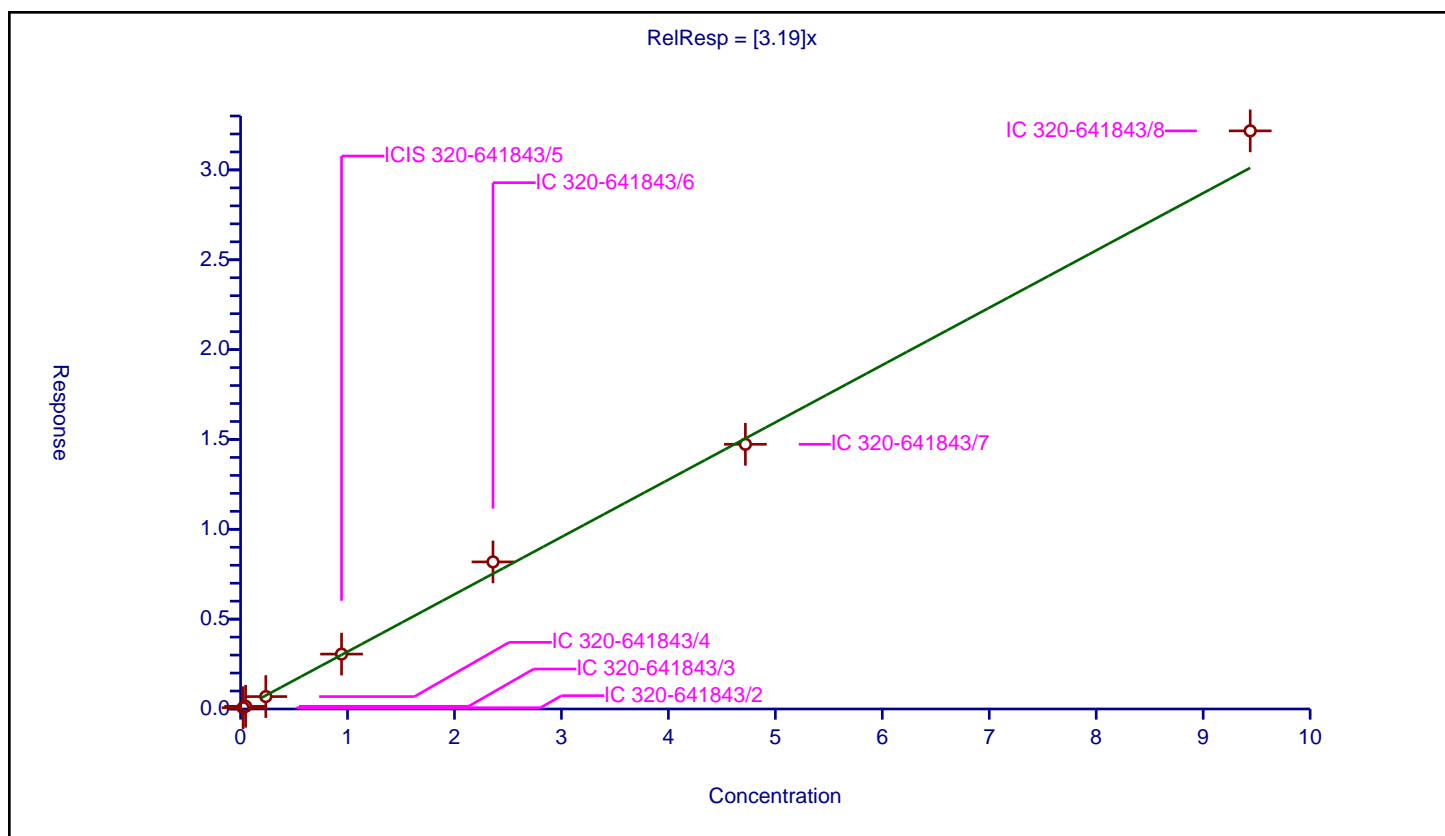
Curve Coefficients

Intercept: 0
Slope: 3.19

Error Coefficients

Standard Error: 15400000
Relative Standard Error: 6.3
Correlation Coefficient: 0.999
Coefficient of Determination (Adjusted): 0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.0236	0.070524	1.1975	1424220.0	2.9883	Y
2	IC 320-641843/3	0.0472	0.150216	1.1975	1353806.0	3.182538	Y
3	IC 320-641843/4	0.236	0.690379	1.1975	1392450.0	2.925335	Y
4	ICIS 320-641843/5	0.944	3.05432	1.1975	1348079.0	3.235509	Y
5	IC 320-641843/6	2.36	8.185218	1.1975	1301599.0	3.468313	Y
6	IC 320-641843/7	4.72	14.7318	1.1975	1350075.0	3.121144	Y
7	IC 320-641843/8	9.44	32.174017	1.1975	1206062.0	3.408265	Y



Calibration

/ Perfluorododecanoic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

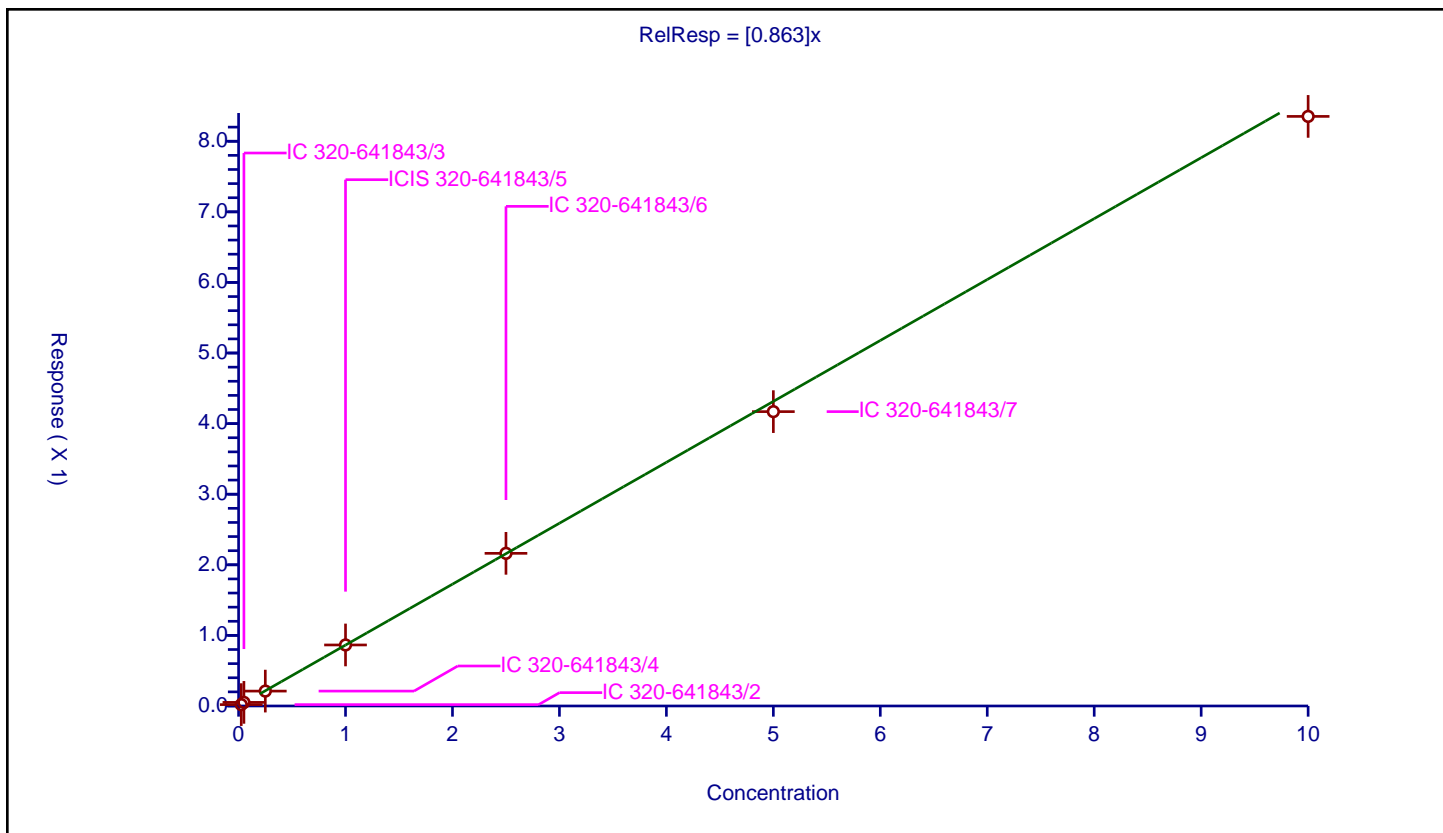
Curve Coefficients

Intercept: 0
 Slope: 0.863

Error Coefficients

Standard Error: 17500000
 Relative Standard Error: 8.8
 Correlation Coefficient: 0.999
 Coefficient of Determination (Adjusted): 0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.019391	1.25	5849099.0	0.775624	Y
2	IC 320-641843/3	0.05	0.051112	1.25	5060592.0	1.022247	Y
3	IC 320-641843/4	0.25	0.211081	1.25	5631274.0	0.844324	Y
4	ICIS 320-641843/5	1.0	0.864447	1.25	5968570.0	0.864447	Y
5	IC 320-641843/6	2.5	2.162496	1.25	5788906.0	0.864998	Y
6	IC 320-641843/7	5.0	4.169696	1.25	5617808.0	0.833939	Y
7	IC 320-641843/8	10.0	8.352013	1.25	5516531.0	0.835201	Y



Calibration

/ 1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

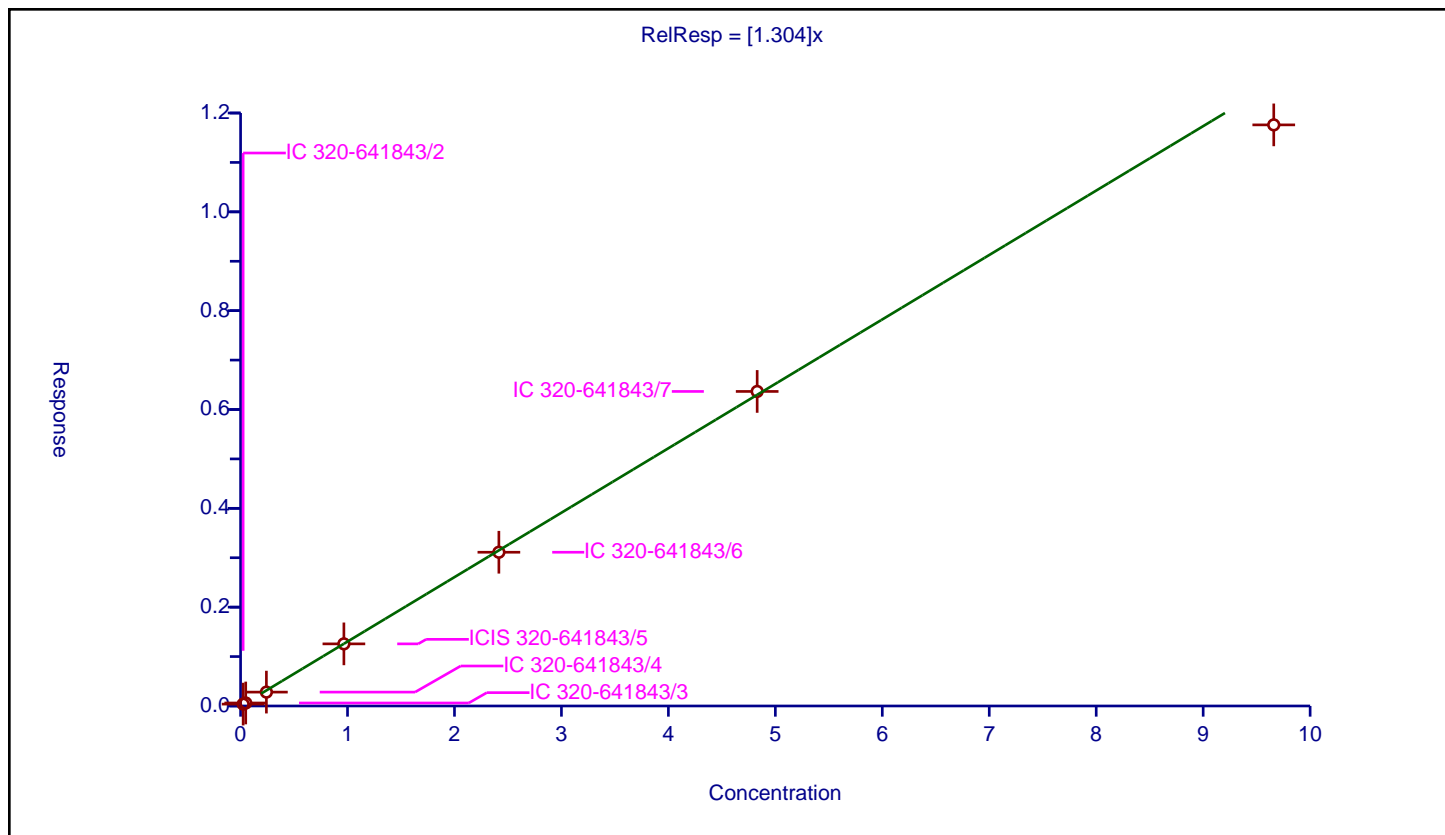
Curve Coefficients

Intercept: 0
 Slope: 1.304

Error Coefficients

Standard Error: 2970000
 Relative Standard Error: 10.2
 Correlation Coefficient: 0.998
 Coefficient of Determination (Adjusted): 0.986

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.02415	0.03817	1.20625	706621.0	1.58054	Y
2	IC 320-641843/3	0.0483	0.060807	1.20625	777382.0	1.258951	Y
3	IC 320-641843/4	0.2415	0.280662	1.20625	691905.0	1.162163	Y
4	ICIS 320-641843/5	0.966	1.257235	1.20625	747337.0	1.301486	Y
5	IC 320-641843/6	2.415	3.111134	1.20625	700116.0	1.288254	Y
6	IC 320-641843/7	4.83	6.365363	1.20625	622362.0	1.317881	Y
7	IC 320-641843/8	9.66	11.759686	1.20625	635276.0	1.217359	Y



Calibration

/ 2-(N-ethylperfluoro-1-octanesulfonamido) ethanol

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

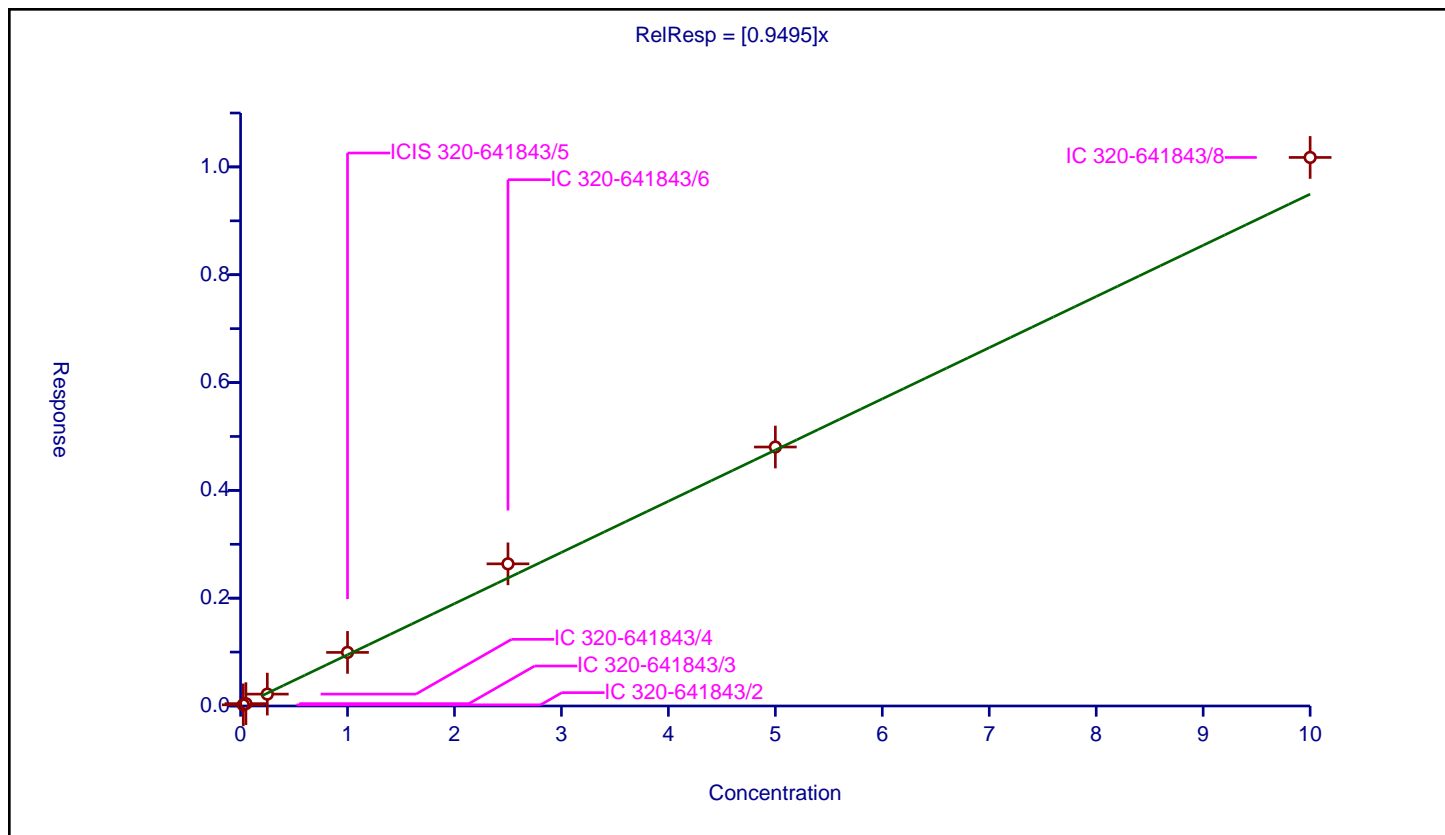
Curve Coefficients

Intercept: 0
 Slope: 0.9495

Error Coefficients

Standard Error: 3910000
 Relative Standard Error: 8.1
 Correlation Coefficient: 0.994
 Coefficient of Determination (Adjusted): 0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.021562	1.25	1045109.0	0.862494	Y
2	IC 320-641843/3	0.05	0.043792	1.25	1071457.0	0.87584	Y
3	IC 320-641843/4	0.25	0.220278	1.25	1063135.0	0.881111	Y
4	ICIS 320-641843/5	1.0	0.994095	1.25	1148436.0	0.994095	Y
5	IC 320-641843/6	2.5	2.637104	1.25	1048354.0	1.054842	Y
6	IC 320-641843/7	5.0	4.804084	1.25	943499.0	0.960817	Y
7	IC 320-641843/8	10.0	10.175696	1.25	1047626.0	1.01757	Y



Calibration

/ N-ethylperfluoro-1-octanesulfonamide

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

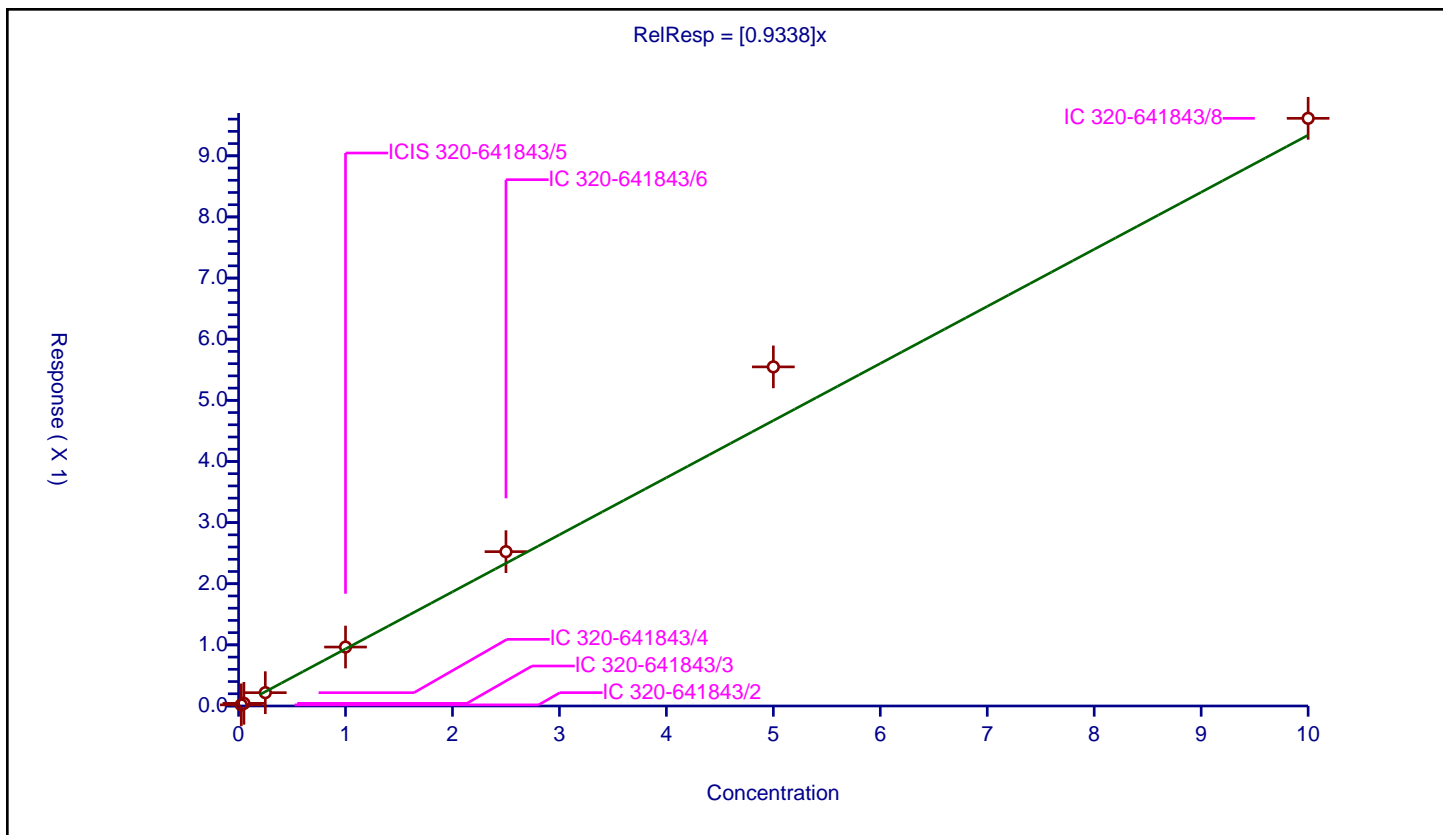
Curve Coefficients

Intercept: 0
 Slope: 0.9338

Error Coefficients

Standard Error: 2040000
 Relative Standard Error: 12.4
 Correlation Coefficient: 0.999
 Coefficient of Determination (Adjusted): 0.983

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.018727	1.25	592648.0	0.749096	Y
2	IC 320-641843/3	0.05	0.043574	1.25	592841.0	0.871482	Y
3	IC 320-641843/4	0.25	0.217752	1.25	544076.0	0.871009	Y
4	ICIS 320-641843/5	1.0	0.964385	1.25	587666.0	0.964385	Y
5	IC 320-641843/6	2.5	2.524583	1.25	569194.0	1.009833	Y
6	IC 320-641843/7	5.0	5.547199	1.25	473811.0	1.10944	Y
7	IC 320-641843/8	10.0	9.613263	1.25	566557.0	0.961326	Y



Calibration

/ Perfluorododecanesulfonic acid (PFDoS)

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

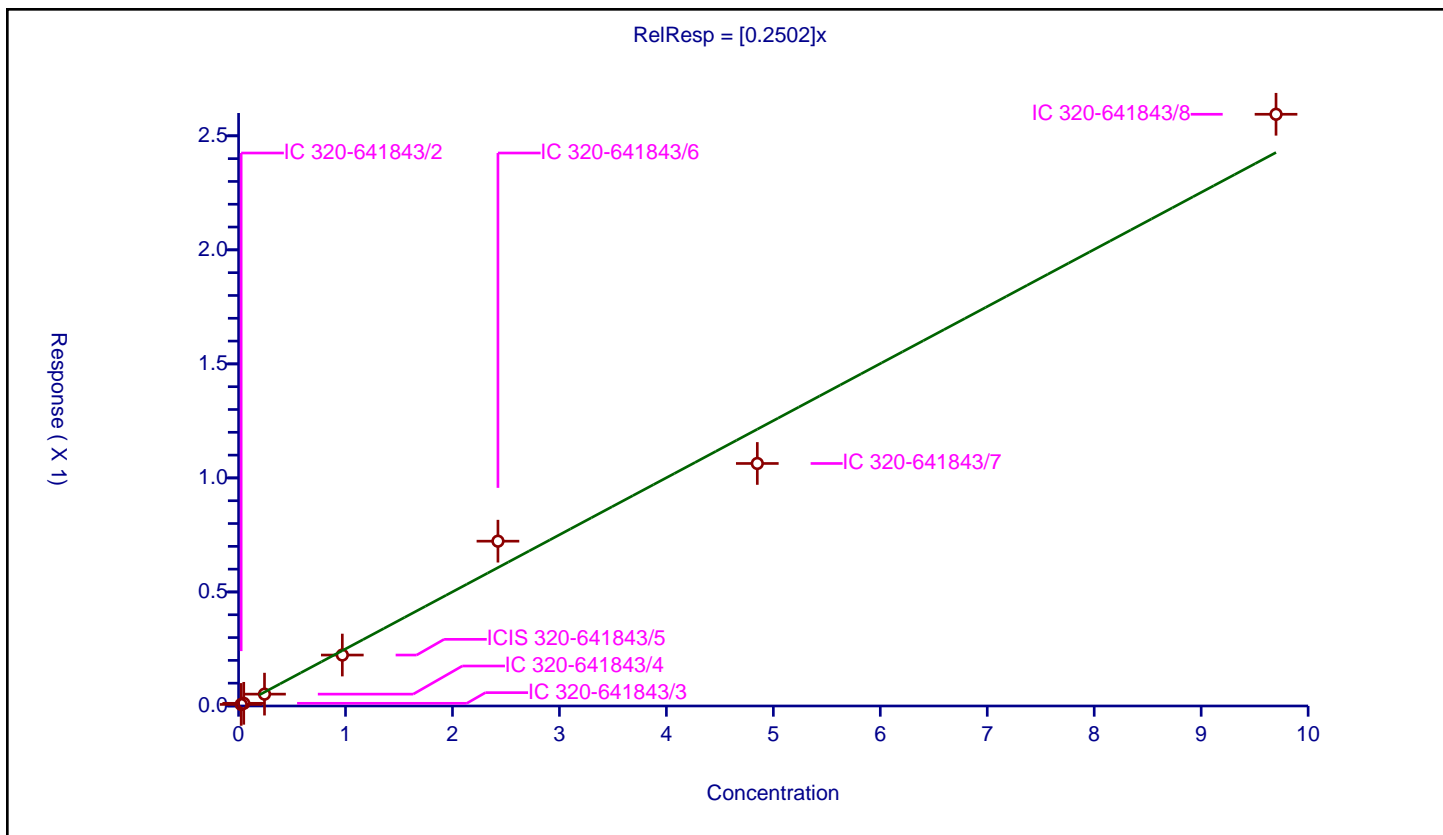
Curve Coefficients

Intercept: 0
Slope: 0.2502

Error Coefficients

Standard Error: 1220000
Relative Standard Error: 12.9
Correlation Coefficient: 0.995
Coefficient of Determination (Adjusted): 0.979

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.02425	0.006811	1.1975	1424220.0	0.280883	Y
2	IC 320-641843/3	0.0485	0.011709	1.1975	1353806.0	0.241416	Y
3	IC 320-641843/4	0.2425	0.05193	1.1975	1392450.0	0.214144	Y
4	ICIS 320-641843/5	0.97	0.223329	1.1975	1348079.0	0.230236	Y
5	IC 320-641843/6	2.425	0.722673	1.1975	1301599.0	0.298009	Y
6	IC 320-641843/7	4.85	1.063385	1.1975	1350075.0	0.219255	Y
7	IC 320-641843/8	9.7	2.594492	1.1975	1206062.0	0.267473	Y



Calibration

/ Perfluorotridecanoic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

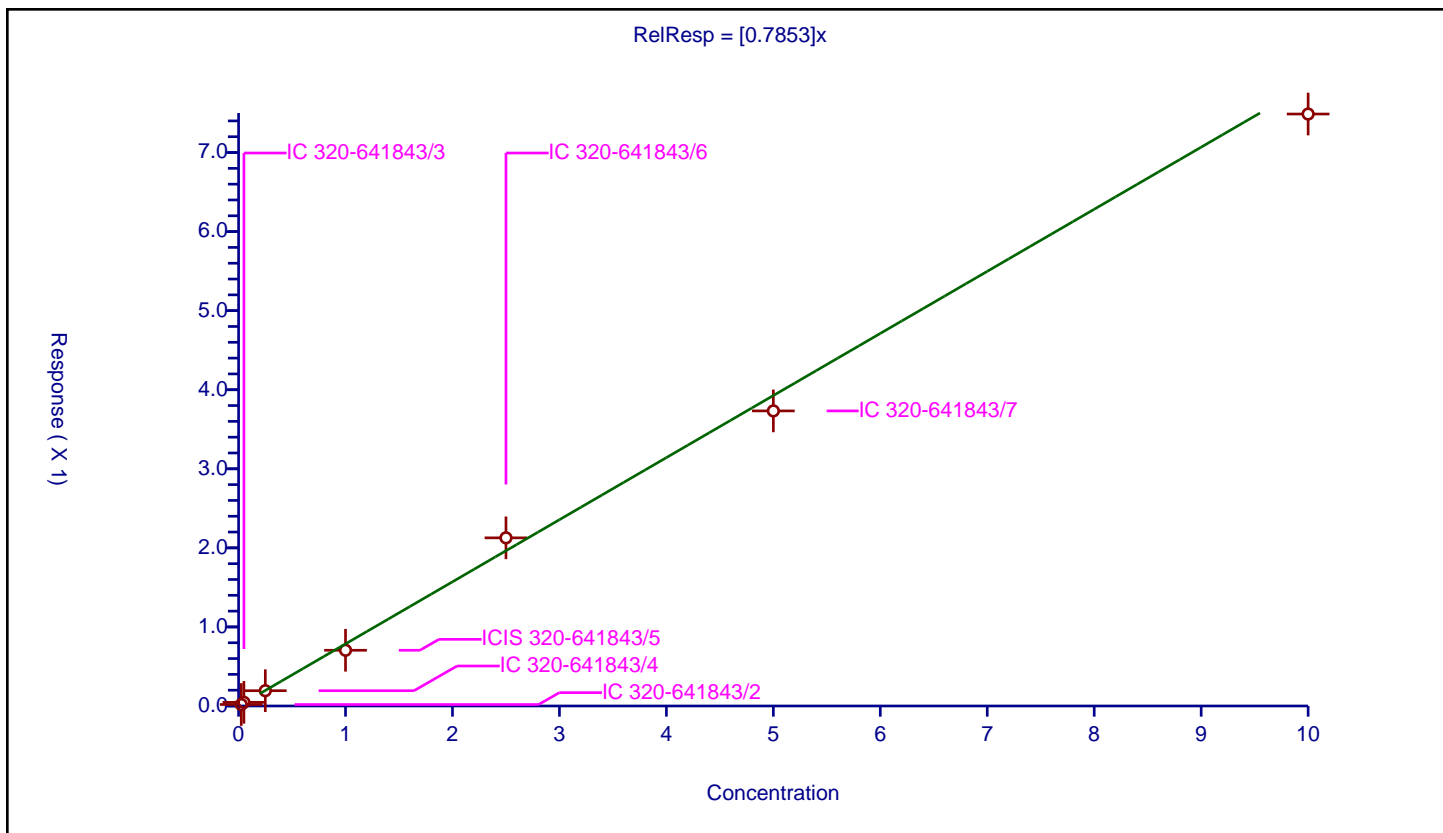
Curve Coefficients

Intercept: 0
 Slope: 0.7853

Error Coefficients

Standard Error: 15700000
 Relative Standard Error: 9.7
 Correlation Coefficient: 0.998
 Coefficient of Determination (Adjusted): 0.988

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.018671	1.25	5849099.0	0.746859	Y
2	IC 320-641843/3	0.05	0.046327	1.25	5060592.0	0.926542	Y
3	IC 320-641843/4	0.25	0.193351	1.25	5631274.0	0.773402	Y
4	ICIS 320-641843/5	1.0	0.704771	1.25	5968570.0	0.704771	Y
5	IC 320-641843/6	2.5	2.126662	1.25	5788906.0	0.850665	Y
6	IC 320-641843/7	5.0	3.732134	1.25	5617808.0	0.746427	Y
7	IC 320-641843/8	10.0	7.487033	1.25	5516531.0	0.748703	Y



Calibration

/ 6:2 diPAP

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

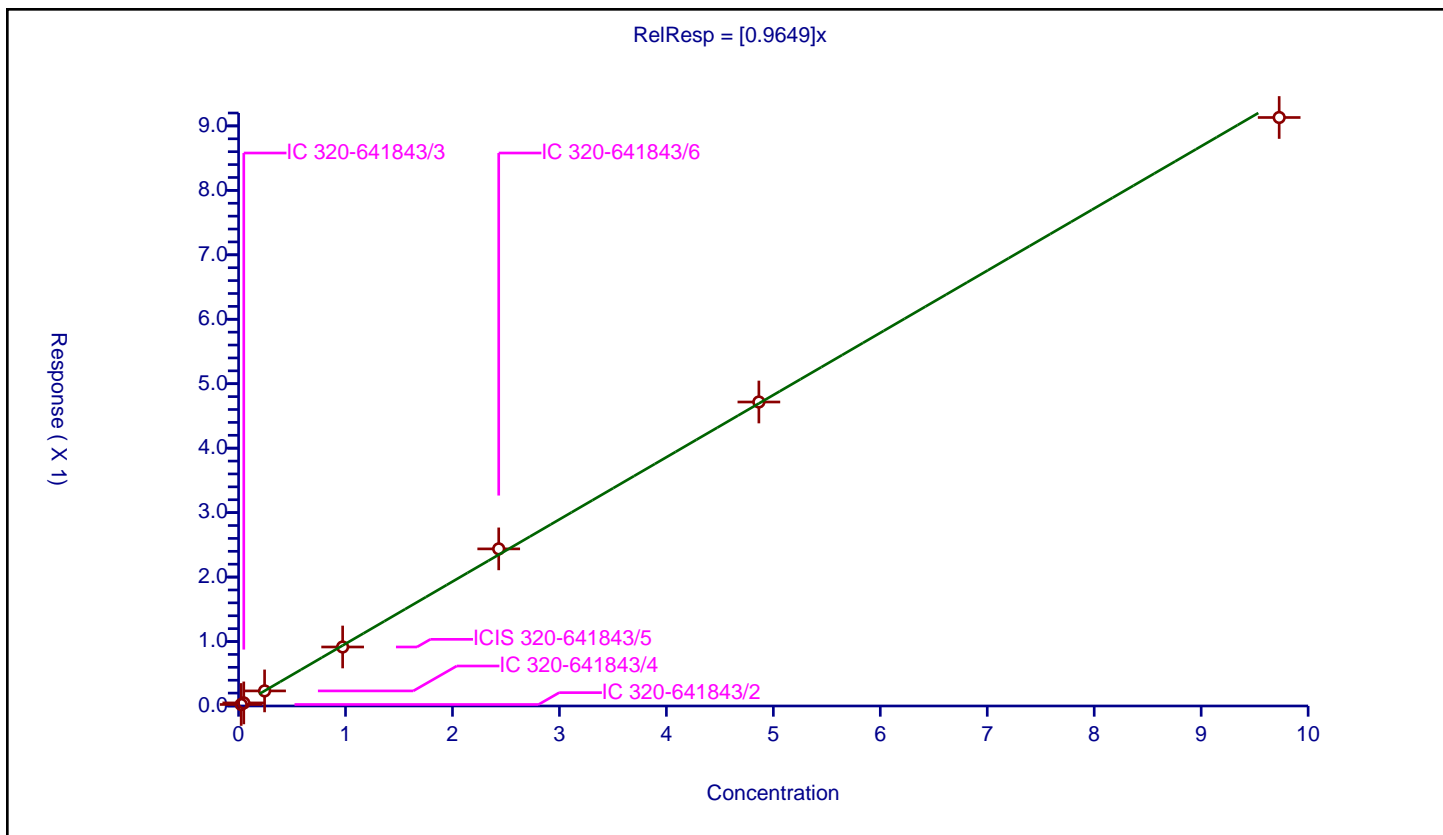
Curve Coefficients

Intercept: 0
 Slope: 0.9649

Error Coefficients

Standard Error: 5230000
 Relative Standard Error: 2.3
 Correlation Coefficient: 0.986
 Coefficient of Determination (Adjusted): 0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.024323	0.023441	1.216335	1717500.0	0.963741	Y
2	IC 320-641843/3	0.048647	0.047602	1.216335	1683560.0	0.978521	Y
3	IC 320-641843/4	0.243234	0.233845	1.216335	1783673.0	0.9614	Y
4	ICIS 320-641843/5	0.972936	0.915275	1.216335	1490851.0	0.940735	Y
5	IC 320-641843/6	2.43234	2.437323	1.216335	1421678.0	1.002048	Y
6	IC 320-641843/7	4.86468	4.716517	1.216335	1705249.0	0.969543	Y
7	IC 320-641843/8	9.72936	9.13043	1.216335	1403184.0	0.938441	Y



Calibration

/ Perfluorotetradecanoic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

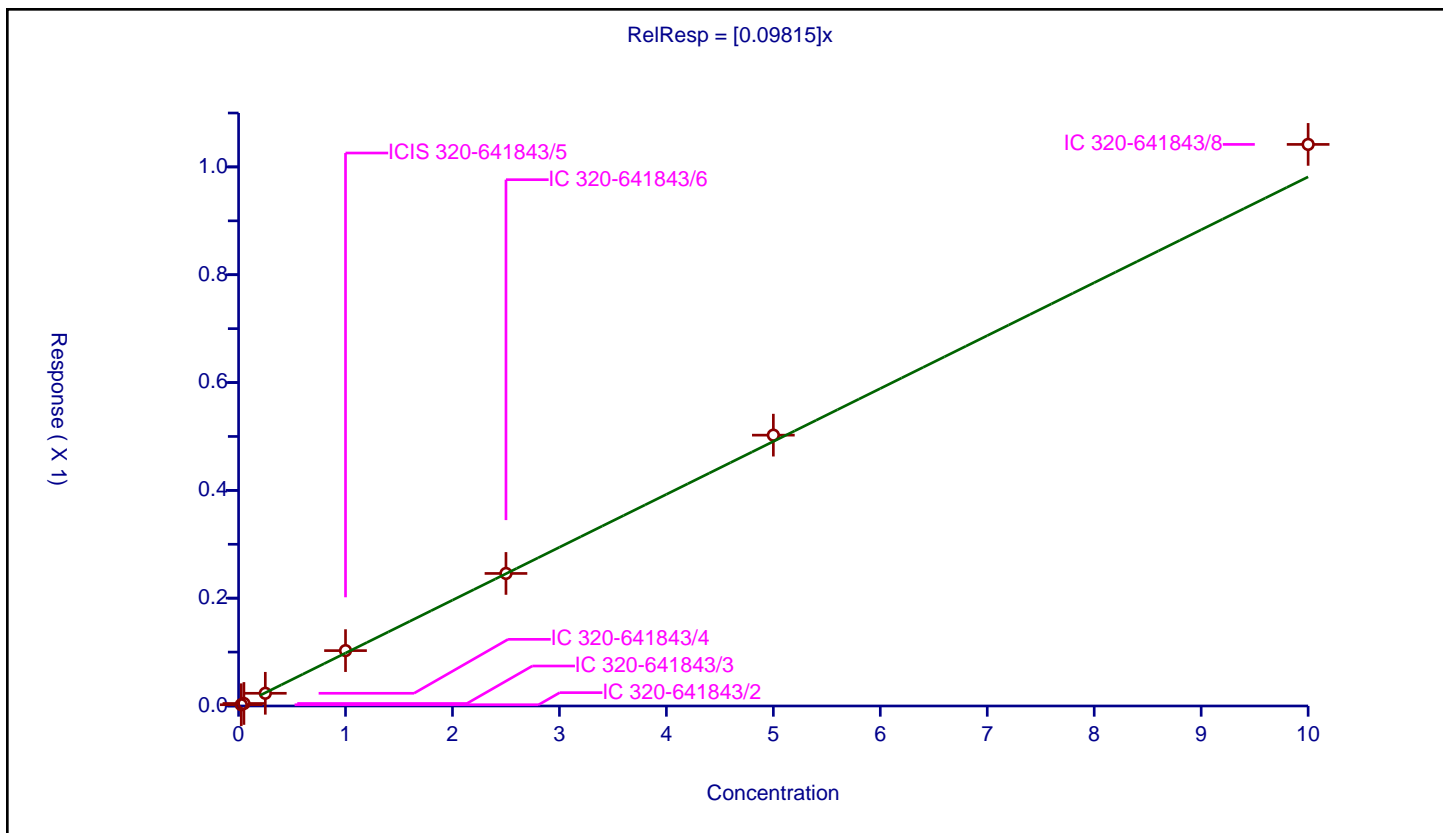
Curve Coefficients

Intercept: 0
 Slope: 0.09815

Error Coefficients

Standard Error: 1780000
 Relative Standard Error: 4.6
 Correlation Coefficient: 0.999
 Coefficient of Determination (Adjusted): 0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.002331	1.25	5208696.0	0.093248	Y
2	IC 320-641843/3	0.05	0.004694	1.25	5384742.0	0.093872	Y
3	IC 320-641843/4	0.25	0.023549	1.25	5087560.0	0.094194	Y
4	ICIS 320-641843/5	1.0	0.10274	1.25	4686411.0	0.10274	Y
5	IC 320-641843/6	2.5	0.24588	1.25	4445136.0	0.098352	Y
6	IC 320-641843/7	5.0	0.50242	1.25	4952271.0	0.100484	Y
7	IC 320-641843/8	10.0	1.041772	1.25	4495946.0	0.104177	Y



Calibration

/ 6:2/8:2 diPAP

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

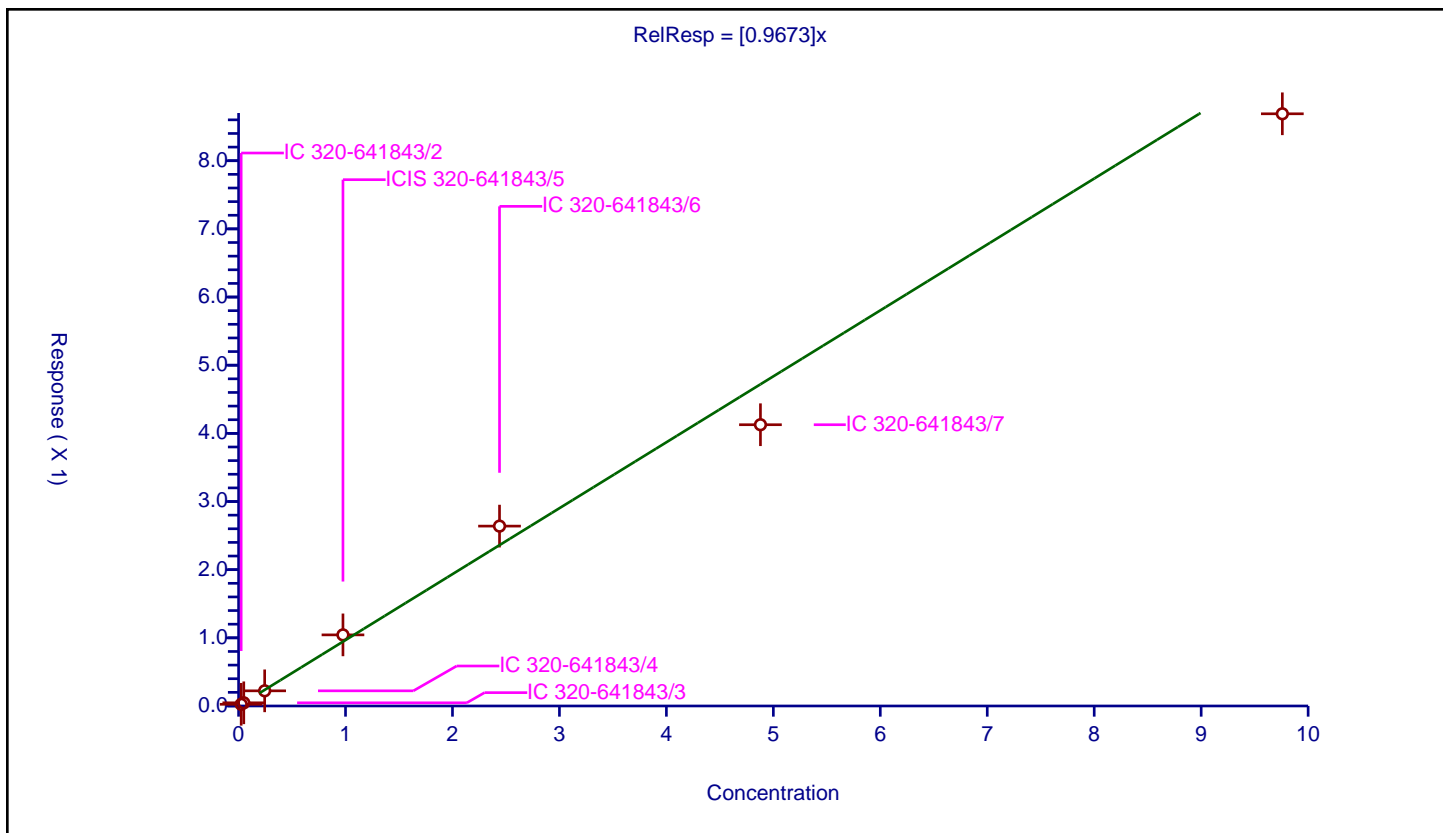
Curve Coefficients

Intercept: 0
Slope: 0.9673

Error Coefficients

Standard Error: 4920000
Relative Standard Error: 9.4
Correlation Coefficient: 0.993
Coefficient of Determination (Adjusted): 0.989

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.024398	0.02474	1.216335	1717500.0	1.014046	Y
2	IC 320-641843/3	0.048795	0.046761	1.216335	1683560.0	0.95831	Y
3	IC 320-641843/4	0.243976	0.22249	1.216335	1783673.0	0.911935	Y
4	ICIS 320-641843/5	0.975904	1.0433	1.216335	1490851.0	1.06906	Y
5	IC 320-641843/6	2.43976	2.63905	1.216335	1421678.0	1.081684	Y
6	IC 320-641843/7	4.87952	4.126565	1.216335	1705249.0	0.845691	Y
7	IC 320-641843/8	9.75904	8.688489	1.216335	1403184.0	0.890302	Y



Calibration

/ Perfluorohexadecanoic acid

Curve Type: Linear
 Weighting: Conc
 Origin: None
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

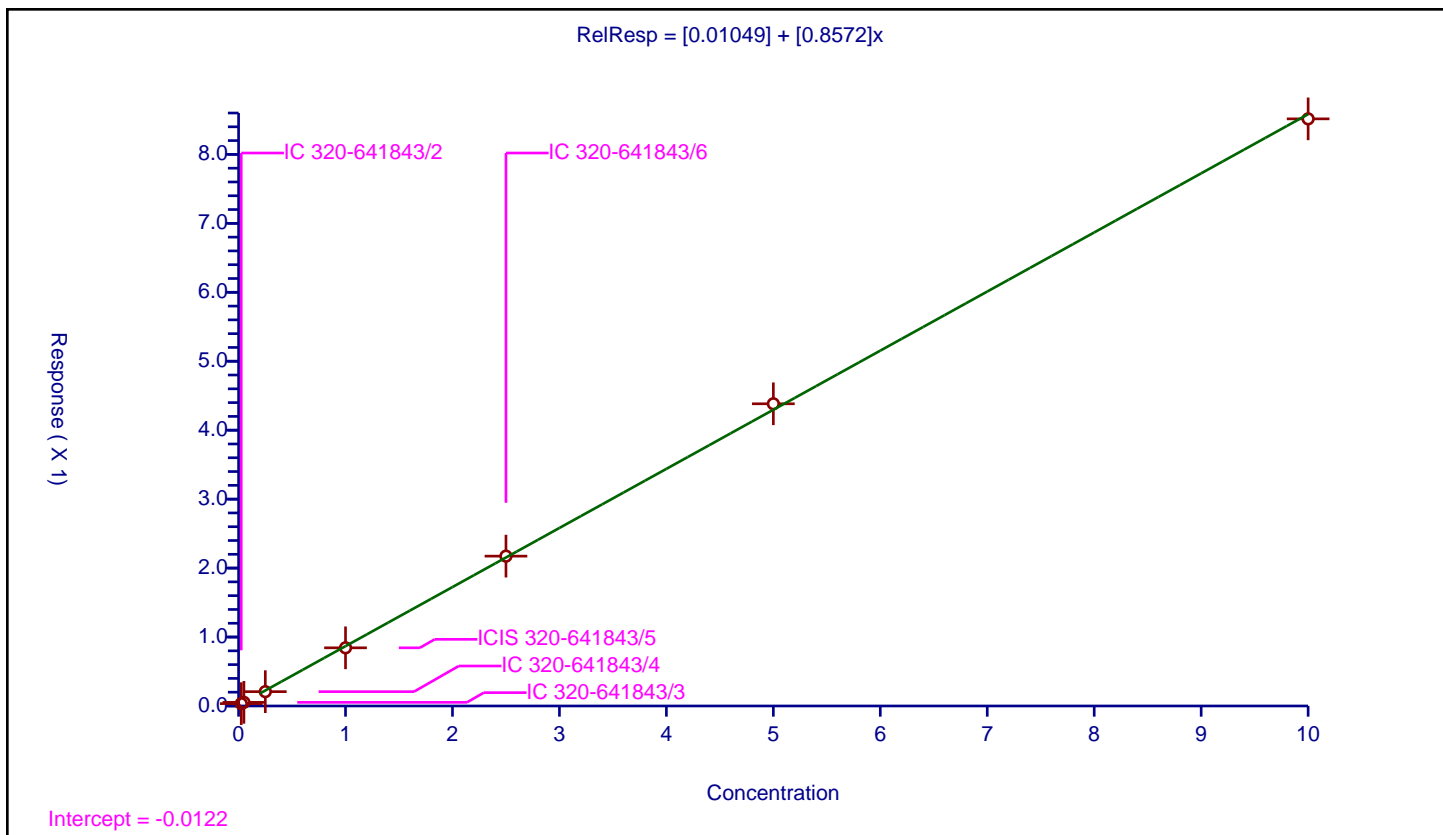
Curve Coefficients

Intercept: 0.01049
 Slope: 0.8572

Error Coefficients

Standard Error: 13700000
 Relative Standard Error: 6.0
 Correlation Coefficient: 0.994
 Coefficient of Determination (Adjusted): 1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.034062	1.25	4312190.0	1.362463	Y
2	IC 320-641843/3	0.05	0.052734	1.25	4179814.0	1.054688	Y
3	IC 320-641843/4	0.25	0.207862	1.25	4405212.0	0.831448	Y
4	ICIS 320-641843/5	1.0	0.84359	1.25	4467876.0	0.84359	Y
5	IC 320-641843/6	2.5	2.173256	1.25	4399767.0	0.869302	Y
6	IC 320-641843/7	5.0	4.38273	1.25	4189416.0	0.876546	Y
7	IC 320-641843/8	10.0	8.515435	1.25	3741509.0	0.851544	Y



Calibration

/ 8:2 diPAP

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

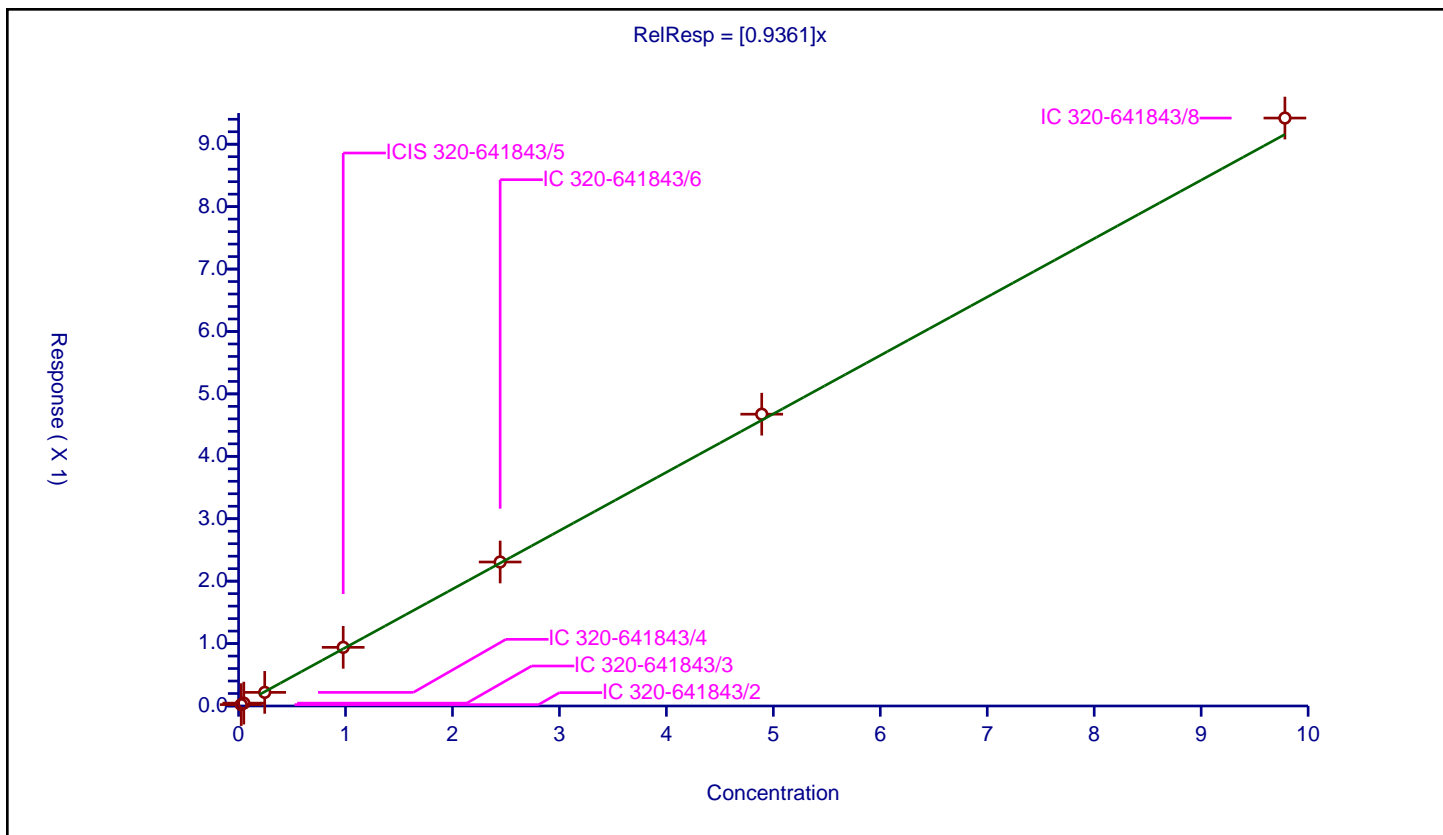
Curve Coefficients

Intercept: 0
 Slope: 0.9361

Error Coefficients

Standard Error: 3320000
 Relative Standard Error: 3.0
 Correlation Coefficient: 0.990
 Coefficient of Determination (Adjusted): 0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.024457	0.022096	1.222963	1344001.0	0.903464	Y
2	IC 320-641843/3	0.048914	0.045729	1.222963	1287349.0	0.934891	Y
3	IC 320-641843/4	0.244571	0.218118	1.222963	1309386.0	0.89184	Y
4	ICIS 320-641843/5	0.978284	0.939624	1.222963	1230960.0	0.960482	Y
5	IC 320-641843/6	2.44571	2.306946	1.222963	1108137.0	0.943262	Y
6	IC 320-641843/7	4.89142	4.674762	1.222963	1042281.0	0.955707	Y
7	IC 320-641843/8	9.78284	9.41919	1.222963	870185.0	0.962828	Y



Calibration

/ Perfluorooctadecanoic acid

Curve Type: Average
 Weighting: Conc_Sq
 Origin: Force
 Dependency: Response
 Calib Mode: IsoDil
 Response Base: AREA
 RF Rounding: 0

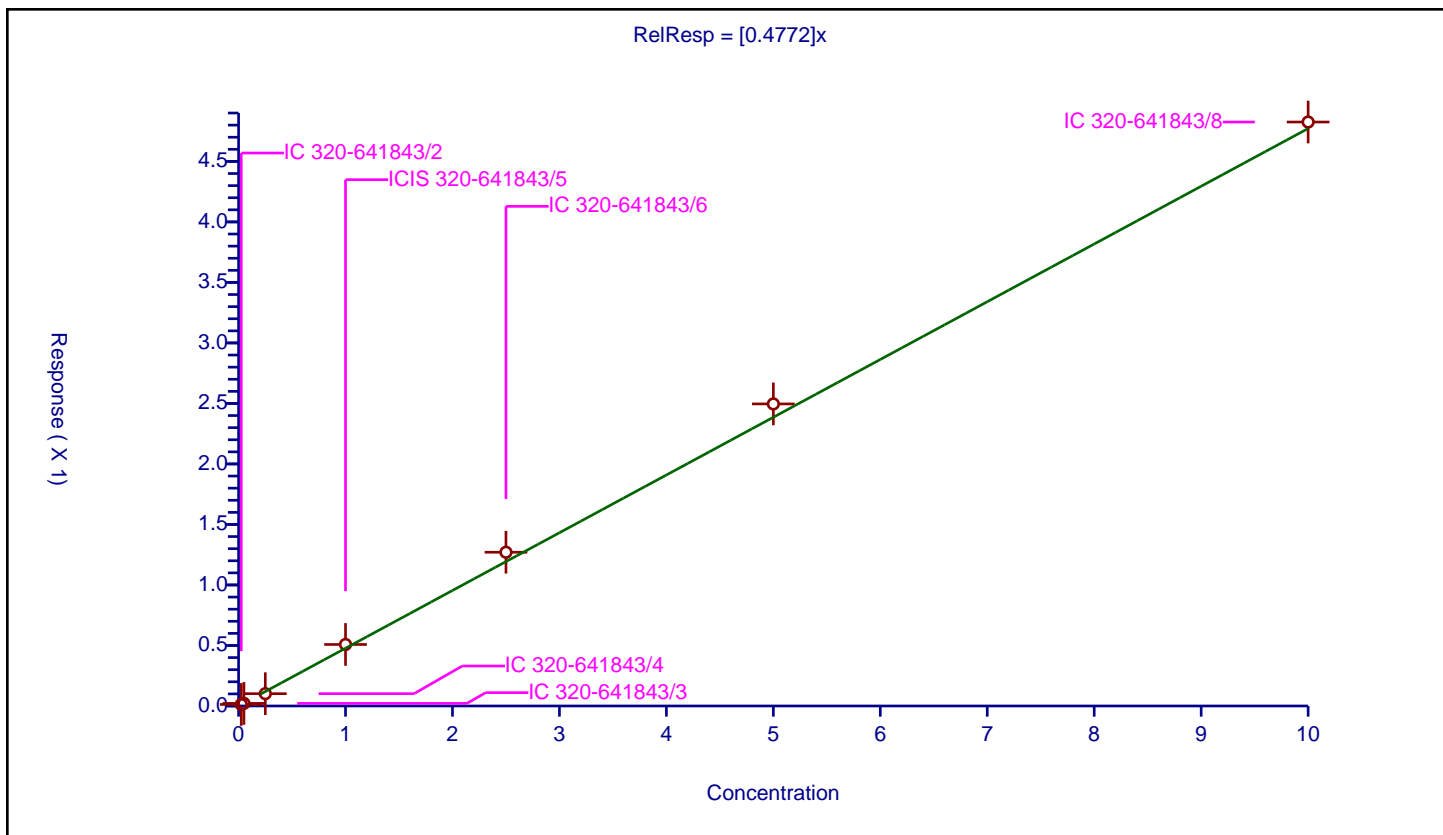
Curve Coefficients

Intercept: 0
 Slope: 0.4772

Error Coefficients

Standard Error: 7100000
 Relative Standard Error: 8.8
 Correlation Coefficient: 0.992
 Coefficient of Determination (Adjusted): 0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025	0.012649	1.25	4312190.0	0.505949	Y
2	IC 320-641843/3	0.05	0.021485	1.25	4179814.0	0.429702	Y
3	IC 320-641843/4	0.25	0.10163	1.25	4405212.0	0.40652	Y
4	ICIS 320-641843/5	1.0	0.508312	1.25	4467876.0	0.508312	Y
5	IC 320-641843/6	2.5	1.270455	1.25	4399767.0	0.508182	Y
6	IC 320-641843/7	5.0	2.496051	1.25	4189416.0	0.49921	Y
7	IC 320-641843/8	10.0	4.825562	1.25	3741509.0	0.482556	Y



Calibration

/ 10:2 diPAP

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

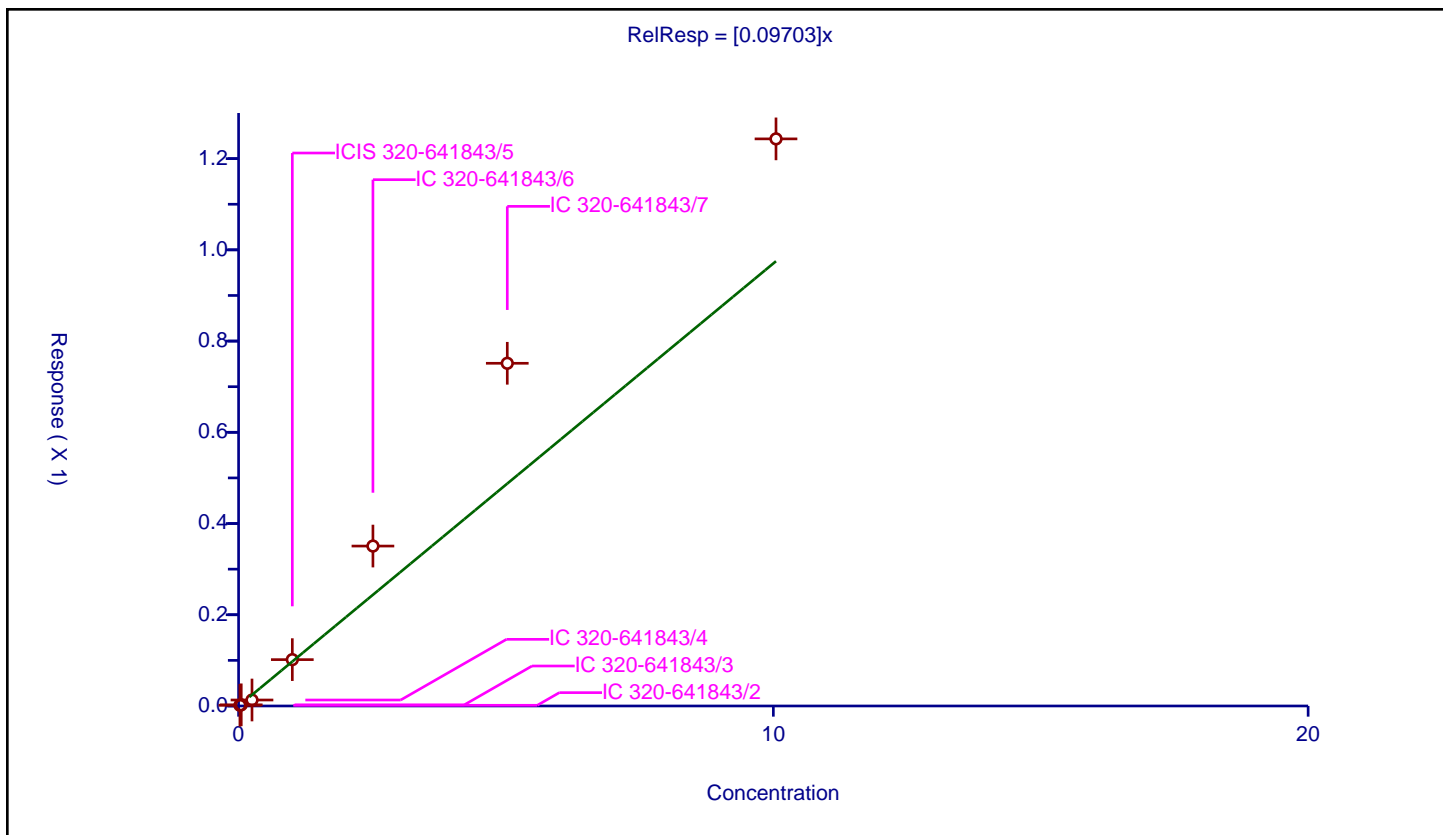
Curve Coefficients

Intercept: 0
Slope: 0.09703

Error Coefficients

Standard Error: 466000
Relative Standard Error: 43.4
Correlation Coefficient: 0.955
Coefficient of Determination (Adjusted): 0.845

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-641843/2	0.025125	0.001571	1.222963	1344001.0	0.062511	Y
2	IC 320-641843/3	0.050249	0.002542	1.222963	1287349.0	0.050591	Y
3	IC 320-641843/4	0.251245	0.013109	1.222963	1309386.0	0.052175	Y
4	ICIS 320-641843/5	1.00498	0.101626	1.222963	1230960.0	0.101123	Y
5	IC 320-641843/6	2.51245	0.350605	1.222963	1108137.0	0.139547	Y
6	IC 320-641843/7	5.0249	0.75132	1.222963	1042281.0	0.149519	Y
7	IC 320-641843/8	10.0498	1.243279	1.222963	870185.0	0.123712	Y



FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: ICV 320-641843/10 Calibration Date: 12/21/2022 13:31

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC+_ICAL_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
MTP	L1ID		0.0716		2.45	2.50	-2.0	30.0
PFPPrA	L1ID		0.8700		2.65	2.43	9.1	30.0
PfMOAA	AveID	0.5606	0.5702		2.54	2.50	1.7	30.0
R-PSDA	AveID	0.1346	0.1323		2.46	2.50	-1.7	30.0
Hydrolyzed PSDA	AveID	0.4284	0.4221		2.46	2.50	-1.5	30.0
R-EVE	AveID	0.3419	0.3206		2.34	2.50	-6.2	30.0
Perfluorobutanoic acid (PFBA)	AveID	1.112	1.240		2.52	2.26	11.5	30.0
PMPA	AveID	1.149	1.209		2.63	2.50	5.2	30.0
PFPPrS	AveID	0.9349	0.997		2.45	2.30	6.7	30.0
NVHOS	AveID	0.0289	0.0315		2.73	2.50	9.1	30.0
PFMPA	AveID	0.6578	0.6655		2.53	2.50	1.2	30.0
PFO2HxA	AveID	0.1374	0.1417		2.58	2.50	3.1	30.0
Perfluoropentanoic acid (PFPeA)	AveID	1.045	1.098		2.42	2.30	5.1	30.0
3:3 FTCA	AveID	0.0768	0.0834		2.71	2.50	8.6	30.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9820	1.038		2.64	2.50	5.7	30.0
PEPA	AveID	1.111	1.077		2.42	2.50	-3.0	30.0
PFMBA	AveID	1.110	1.173		2.64	2.50	5.7	30.0
PFEEESA	AveID	3.265	3.520		2.40	2.23	7.8	30.0
FBSA	AveID	0.3707	0.4099		2.76	2.50	10.6	30.0
NFDHA	AveID	0.1732	0.1966		2.84	2.50	13.5	30.0
4:2 FTS	AveID	2.336	2.579		2.58	2.34	10.4	30.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9423	1.016		2.69	2.50	7.8	30.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8041	0.8360		2.44	2.35	4.0	30.0
PFO3OA	AveID	0.0552	0.0555		2.51	2.50	0.4	30.0
HFPO-DA (GenX)	AveID	1.057	1.058		2.50	2.50	0.1	30.0
R-PSDCA	AveID	0.2943	0.3442		2.92	2.50	17.0	30.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9100	0.9823		2.70	2.50	7.9	30.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	0.9649	1.052		2.72	2.50	9.0	30.0
Hydro-EVE Acid	AveID	1.386	1.434		2.59	2.50	3.4	30.0
Hydro-PS Acid	AveID	1.235	1.332		2.70	2.50	7.9	30.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	6.660	6.786		2.55	2.50	1.9	30.0
5:3 FTCA	AveID	3.349	3.974		2.97	2.50	18.7	30.0
PFPE-1	AveID	9.767	11.41		2.92	2.50	16.8	30.0
6:2 FTUCA	AveID	1.012	1.040		2.57	2.50	2.8	30.0
6:2 FTCA	AveID	0.2612	0.2948		2.82	2.50	12.8	30.0
PFO4DA	AveID	0.0555	0.0627		2.82	2.50	13.0	30.0
PS Acid	AveID	0.4158	0.4194		2.52	2.50	0.8	30.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: ICV 320-641843/10 Calibration Date: 12/21/2022 13:31

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC+_ICAL_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
EVE Acid	AveID	1.281	1.276		2.49	2.50	-0.4	30.0
FHxSA	AveID	1.998	2.021		2.53	2.50	1.2	30.0
PFECHS	AveID	0.8798	0.9888		2.59	2.31	12.4	30.0
6:2 FTS	AveID	2.031	2.054		2.40	2.37	1.1	50.0
Perfluorooctanoic acid (PFOA)	AveID	0.9328	0.9207		2.59	2.63	-1.3	30.0
Perfluoroheptanesulfonic acid (PFHpS)	AveID	1.200	1.367		2.71	2.38	13.9	30.0
PFO5DA	AveID	0.0374	0.0415		2.77	2.50	11.0	30.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.039	1.004		2.42	2.50	-3.3	30.0
Perfluorononanoic acid (PFNA)	AveID	0.8673	0.9414		2.85	2.63	8.5	30.0
7:3 FTCA	AveID	5.294	5.367		2.53	2.50	1.4	30.0
8:2 FTUCA	AveID	0.9523	0.9554		2.51	2.50	0.3	30.0
8:2 FTCA	AveID	1.013	1.026		2.53	2.50	1.3	30.0
9Cl-PF3ONS	AveID	2.498	2.594		2.60	2.50	3.9	30.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9532	1.013		2.66	2.50	6.3	30.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7759	0.9481		2.93	2.40	22.2	30.0
8:2 FTS	AveID	1.647	1.745		2.62	2.47	6.0	30.0
Perfluorodecanoic acid (PFDA)	AveID	0.6577	0.6938		2.64	2.50	5.5	30.0
NMeFOSAA	AveID	0.7907	0.8130		2.57	2.50	2.8	30.0
Perfluorodecanesulfonic acid (PFDS)	L1ID		0.9078		2.94	2.35	25.0	30.0
NEtFOSAA	AveID	0.7522	0.7828		2.60	2.50	4.1	30.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.6838	0.6868		2.64	2.63	0.4	30.0
10:2 FTUCA	AveID	0.7067	0.7140		2.53	2.50	1.0	30.0
10:2 FTCA	L1ID		1.041		2.70	2.50	8.1	30.0
NMeFOSE	AveID	0.9853	1.058		2.68	2.50	7.4	30.0
NMeFOSA	AveID	0.9700	1.091		2.81	2.50	12.5	30.0
11Cl-PF3OUdS	AveID	3.190	3.436		2.69	2.50	7.7	30.0
Perfluorododecanoic acid (PFDoA)	AveID	0.8630	0.8653		2.63	2.63	0.3	30.0
10:2 FTS	AveID	1.304	1.393		2.58	2.42	6.9	30.0
NEtFOSE	AveID	0.9495	1.004		2.64	2.50	5.8	30.0
NEtFOSA	AveID	0.9338	1.160		3.10	2.50	24.2	30.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2502	0.2857		2.76	2.42	14.2	30.0
Perfluorotridecanoic acid (PFTrDA)	AveID	0.7853	0.7371		2.35	2.50	-6.1	30.0
6:2 Fluorotelomer phosphate diester	AveID	0.9649	1.037		2.62	2.43	7.5	30.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.0982	0.1103		2.81	2.50	12.4	30.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: ICV 320-641843/10 Calibration Date: 12/21/2022 13:31

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC+_ICAL_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
6:2/8:2 Fluorotelomer phosphate diester	AveID	0.9673	0.9339		2.36	2.44	-3.4	30.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.8779		2.55	2.50	1.9	50.0
8:2 Fluorotelomer phosphate diester	AveID	0.9361	1.041		2.72	2.45	11.2	30.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.4772	0.4491		2.35	2.50	-5.9	50.0
10:2 Fluorotelomer phosphate diester	AveID	0.0970	0.1049		2.72	2.51	8.1	30.0
13C4 PFBA	Ave	0.8859	0.9308		1.31	1.25	5.1	50.0
13C5 PFPeA	Ave	0.7929	0.8512		1.34	1.25	7.4	50.0
13C3 PFBS	Ave	0.5464	0.5787		1.23	1.17	5.9	50.0
M2-4:2 FTS	Ave	0.1273	0.1323		1.22	1.17	4.0	50.0
13C2 PFHxA	Ave	0.8726	0.9091		1.30	1.25	4.2	50.0
13C3 HFPO-DA	Ave	0.0293	0.0307		1.31	1.25	4.9	50.0
13C4 PFHpA	Ave	0.9246	0.9435		1.28	1.25	2.0	50.0
18O2 PFHxS	Ave	0.3615	0.3796		1.24	1.18	5.0	50.0
13C-6:2 FTUCA	Ave	0.5484	0.5442		1.24	1.25	-0.8	50.0
13C-6:2 FTCA	Ave	0.0424	0.0408		1.20	1.25	-3.9	50.0
M2-6:2 FTS	Ave	0.1342	0.1333		1.18	1.19	-0.6	50.0
13C4 PFOA	Ave	1.010	1.014		1.25	1.25	0.4	50.0
13C4 PFOS	Ave	0.2437	0.2512		1.23	1.20	3.1	50.0
13C5 PFNA	Ave	0.9888	1.011		1.28	1.25	2.3	50.0
13C-8:2 FTUCA	Ave	0.5900	0.5888		1.25	1.25	-0.2	50.0
13C-8:2 FTCA	Ave	0.0317	0.0332		1.31	1.25	4.6	50.0
13C8 FOSA	Ave	0.3238	0.3403		1.31	1.25	5.1	50.0
M2-8:2 FTS	Ave	0.1350	0.1385		1.23	1.20	2.6	50.0
13C2 PFDA	Ave	0.9539	1.007		1.32	1.25	5.6	50.0
d3-NMeFOSAA	Ave	0.1322	0.1394		1.32	1.25	5.5	50.0
13C2 PFUnA	Ave	0.8946	0.9305		1.30	1.25	4.0	50.0
d5-NEtFOSAA	Ave	0.1326	0.1351		1.27	1.25	1.9	50.0
13C-10:2 FTUCA	Ave	0.5322	0.5479		1.29	1.25	3.0	50.0
d7-N-MeFOSE-M	Ave	0.1590	0.1715		1.35	1.25	7.9	50.0
13C-10:2 FTCA	Ave	0.0178	0.0162		1.14	1.25	-8.9	50.0
d-N-MeFOSA-M	Ave	0.1053	0.1140		1.35	1.25	8.3	50.0
13C2 PFDoA	Ave	0.9837	1.025		1.30	1.25	4.2	50.0
d9-N-EtFOSE-M	Ave	0.1840	0.1994		1.35	1.25	8.4	50.0
13C2 10:2 FTS	Ave	0.1260	0.1267		1.21	1.21	0.5	50.0
d-N-EtFOSA-M	Ave	0.0980	0.1049		1.34	1.25	7.0	50.0
13C4-6:2 Fluorotelomer phosphate diester	Ave	0.2865	0.3110		1.32	1.22	8.6	50.0
13C2 PFTeDA	Ave	0.8532	0.8594		1.26	1.25	0.7	50.0
13C2 PFHxDA	Ave	0.7395	0.5714		0.966	1.25	-22.7	50.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
SDG No.: _____
Lab Sample ID: ICV 320-641843/10 Calibration Date: 12/21/2022 13:31
Instrument ID: A18 Calib Start Date: 12/21/2022 12:10
GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11
Lab File ID: 2022.12.21_A18_PFC+_ICAL_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4-8:2 Fluorotelomer phosphate diester	Ave	0.2076	0.1715		1.01	1.22	-17.4	50.0

Preliminary Report

Manual Integration/User Assign Peak Report

Eurofins Sacramento

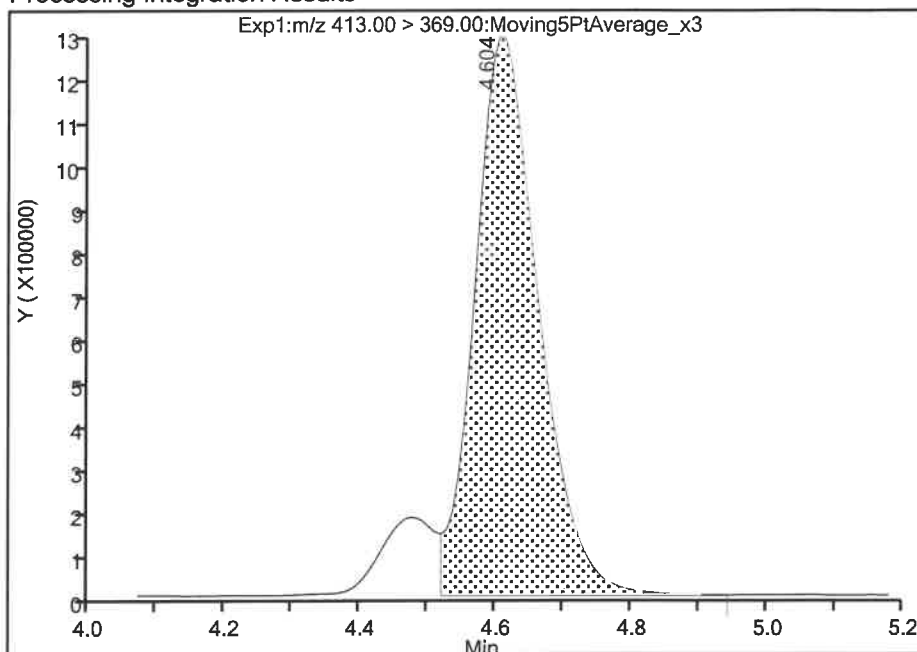
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_018.d
Injection Date: 21-Dec-2022 13:41:44 Instrument ID: A18
Lims ID: TPFOA Lab Sample ID: Client 320-641844/11-A
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 10 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

58 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

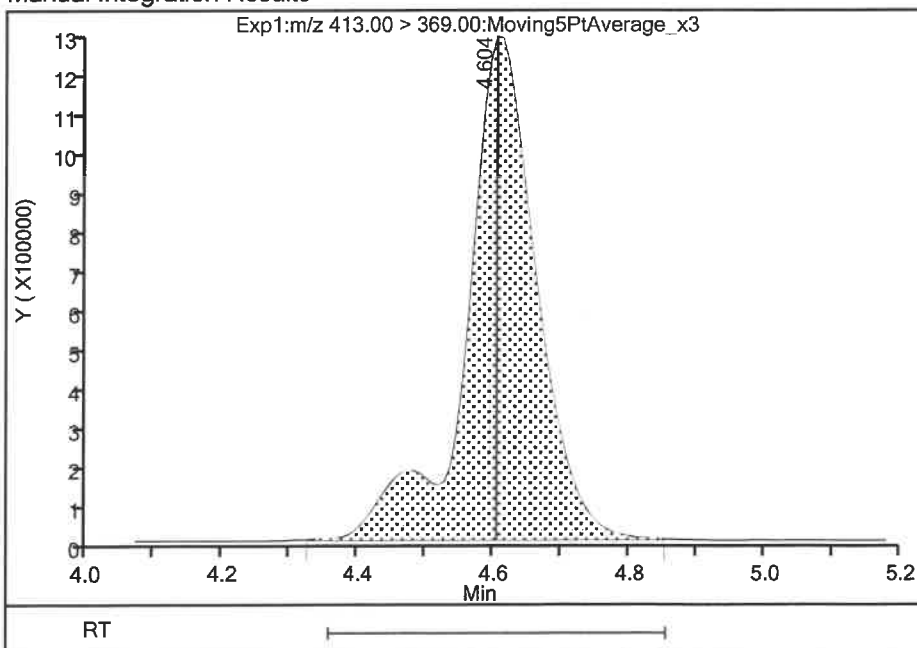
RT: 4.60
Area: 8043662
Amount: 1.923452
Amount Units: ng/ml

Processing Integration Results



RT: 4.60
Area: 8907284
Amount: 2.129967
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 14:21:04

Audit Action: Manually Integrated

Audit Reason: Isomers

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_017.d
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 21-Dec-2022 13:31:38 ALS Bottle#: 9 Worklist Smp#: 10
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: ICV (21)
 Misc. Info.: Plate: 2 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Sublist:

Method: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Dec-2022 07:43:06 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1678

First Level Reviewer: YS2U

Date: 21-Dec-2022 13:53:14

Ratio Calibration: Initial Calibration Level: 4

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 MTP										
175.00 > 97.00	1.463	1.481	-0.018	0.548	714676	2.45			1436	
2 PPF Acid										
162.95 > 119.00	1.869	1.886	-0.017	0.700	8424221	2.65			762	
3 PFMOAA										
179.00 > 84.90	2.367	2.386	-0.019	0.886	5692019	2.54			1861	
4 R-PSDA										
441.00 > 241.00	2.553	2.569	-0.016	0.956	1321065	2.46			21023	
5 R-EVE										
405.00 > 217.00	2.561	2.569	-0.008	0.959	3200530	2.34			37784	
6 Hydrolyzed PSDA										
439.10 > 342.90	2.561	2.577	-0.016	0.959	4213634	2.46			37508	
D 8 13C4 PFBA										
217.00 > 172.00	2.670	2.679	-0.008	0.582	4991376	1.31		105	15120	
7 Perfluorobutanoic acid										
212.90 > 169.00	2.670	2.688	-0.018	1.000	11169609	2.52			321	
10 PMPA										
229.00 > 185.00	2.742	2.751	-0.009	1.027	12065387	2.63			7911	
11 PFPrS										
249.10 > 80.00	2.751	2.769	-0.018	0.889	5694919	2.45			29707	
12 NVHOS										
297.00 > 135.00	2.769	2.787	-0.018	1.037	314690	2.73			6815	
13 PFECa F										
229.00 > 85.00	2.806	2.824	-0.018	0.920	6074960	2.53			17848	
14 PFO2HxA										
245.00 > 85.00	2.954	2.963	-0.009	0.968	1293723	2.58			6120	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 16 13C5 PFPeA										
267.90 > 223.00	3.050	3.059	-0.009	0.665	4564488	1.34		107	30957	
15 Perfluoropentanoic acid										
262.90 > 219.00	3.050	3.068	-0.018	1.000	9218849	2.42			17265	
17 3:3 FTCA										
241.00 > 177.10	3.059	3.068	-0.009	0.988	517685	2.71	Target=1.29		4458	
241.00 > 116.90	3.059	3.068	-0.009	0.988	416082		1.24(0.64-1.93)		2706	
19 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.096	3.105	-0.009	1.000	6443619	2.64	Target=2.33		20827	
298.90 > 99.00	3.096	3.105	-0.009	1.000	2823145		2.28(1.16-3.49)		12091	
D 18 13C3 PFBS										
301.90 > 80.00	3.096	3.105	-0.009	0.675	2892427	1.23		106	17489	
20 PEPA										
278.90 > 234.90	3.163	3.172	-0.009	1.037	9830632	2.42			2172	
21 PFECA A										
278.95 > 84.90	3.172	3.192	-0.020	1.040	10707475	2.64			55095	
22 PES										
314.80 > 135.00	3.270	3.288	-0.018	1.056	19490734	2.40			114501	
23 FBSA										
297.90 > 78.00	3.316	3.334	-0.018	0.591	1495861	2.76			14391	
24 PFECA B										
295.20 > 201.00	3.414	3.422	-0.008	0.977	1917315	2.84			28992	
26 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.441	3.458	-0.017	1.000	3420279	2.58	Target=1.90		54233	
327.00 > 79.96	3.441	3.458	-0.017	1.000	1677044		2.04(0.95-2.85)		13853	
D 25 M2-4:2 FTS										
329.00 > 81.00	3.441	3.458	-0.017	0.750	665556	1.22		104	3998	
D 27 13C2 PFHxA										
315.00 > 270.00	3.494	3.502	-0.008	0.761	4875309	1.30		104	34559	
28 Perfluorohexanoic acid										
313.00 > 269.00	3.494	3.511	-0.017	1.000	9903098	2.69	Target=13.49		12145	
313.00 > 119.00	3.494	3.511	-0.017	1.000	785214		12.61(6.75-20.24)		7791	
29 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.521	3.538	-0.017	1.137	4868221	2.44	Target=3.01		31467	
349.00 > 99.00	3.521	3.538	-0.017	1.137	1560273		3.12(1.50-4.51)		30426	
30 PFO3OA										
311.10 > 85.20	3.575	3.592	-0.017	1.023	540795	2.51			7423	
31 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.670	3.679	-0.009	1.000	348913	2.50	Target=0.88		13457	
285.00 > 185.00	3.670	3.679	-0.009	1.000	437191		0.80(0.44-1.31)		6110	
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.670	3.679	-0.009	0.800	164823	1.31		105	5173	
33 R-PSDCA										
397.00 > 217.00	3.974	3.994	-0.020	0.987	3483608	2.92			48359	
D 35 13C4 PFHpA										
367.00 > 322.00	4.028	4.037	-0.009	0.878	5059879	1.28		102	27635	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
36 Perfluoroheptanoic acid										
363.00 > 319.00	4.028	4.037	-0.009	1.000	9940647	2.70	Target=3.51		15002	
363.00 > 169.00	4.028	4.037	-0.009	1.000	2702639		3.68(1.75-5.26)		14791	
38 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.045	4.054	-0.009	1.000	4281651	2.72	Target=3.29		28000	
399.00 > 99.00	4.045	4.054	-0.009	1.000	1188629		3.60(1.64-4.93)		7285	
D 37 18O2 PFHxS										
403.00 > 84.00	4.045	4.054	-0.009	0.882	1925949	1.24		105	23008	
34 Hydro-EVE Acid										
427.00 > 282.90	4.062	4.071	-0.009	1.008	14510515	2.59			49734	
39 Hydro-PS Acid										
463.00 > 263.00	4.087	4.105	-0.018	1.015	13479452	2.70			157295	
41 5:3 FTCA										
340.88 > 236.90	4.105	4.122	-0.017	0.979	1738960	2.97	Target=1.13		13227	
340.88 > 216.90	4.105	4.122	-0.017	0.979	1543552		1.13(0.56-1.69)		10548	
40 DONA										
377.00 > 251.00	4.105	4.122	-0.017	0.799	18279762	2.55	Target=2.17		36285	
377.00 > 85.00	4.105	4.122	-0.017	0.799	8326305		2.20(1.09-3.26)		826	
42 PFECA G										
378.90 > 184.90	4.139	4.157	-0.018	0.988	4991989	2.92			19300	
D 44 13C-6:2 FTUCA										
358.86 > 293.90	4.165	4.174	-0.009	0.908	2918334	1.24		99.2	24778	
43 6:2 FTUCA										
356.86 > 292.90	4.165	4.183	-0.018	1.000	6072651	2.57	Target=14.13		21703	
356.86 > 243.00	4.165	4.183	-0.018	1.000	454424		13.36(7.07-21.20)		8650	
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.191	4.200	-0.009	0.913	218768	1.20		96.1	1093	
45 6:2 FTCA										
377.10 > 313.10	4.182	4.209	-0.027	0.998	128971	2.82	Target=0.64		3359	
377.10 > 63.00	4.191	4.209	-0.018	1.000	194450		0.66(0.32-0.96)		4894	
47 PFO4DA										
376.90 > 85.00	4.297	4.307	-0.010	1.067	634143	2.82			0.6	
48 PS Acid										
442.80 > 146.80	4.394	4.413	-0.019	0.958	4561689	2.52			11979	
49 EVE Acid										
407.00 > 262.90	4.403	4.422	-0.019	0.960	13876098	2.49			90317	
50 FHxSA										
397.90 > 78.00	4.492	4.511	-0.019	0.801	7377268	2.53			12597	
51 PFECHS										
460.80 > 380.90	4.519	4.529	-0.010	0.985	9917120	2.59	Target=2.14		56350	
460.80 > 98.90	4.511	4.529	-0.019	0.983	4855724		2.04(1.07-3.21)		39692	
53 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.555	4.572	-0.017	1.000	2787908	2.40	Target=2.29		21205	
427.00 > 79.96	4.555	4.572	-0.017	1.000	1256118		2.22(1.15-3.44)		9071	
D 52 M2-6:2 FTS										
429.00 > 81.00	4.555	4.572	-0.017	0.993	679346	1.18		99.4	11757	
\$ 54 13C8 PFOA										
421.00 > 376.00	4.589	4.606	-0.017	1.000	4481347	1.26		101	14661	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 55 13C2 PFOA										
415.00 > 370.00	4.589	4.606	-0.017		5362668	1.25			17953	
D 56 13C4 PFOA										
417.00 > 372.00	4.589	4.606	-0.017	1.000	5438976	1.25		100	15896	
58 Perfluorooctanoic acid										
413.00 > 369.00	4.589	4.606	-0.017	1.000	10515709	2.59	Target=2.76		3291	
413.00 > 169.00	4.589	4.606	-0.017	1.000	4068875		2.58(1.38-4.14)		15973	
57 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.597	4.606	-0.009	0.895	3503811	2.71	Target=4.72		12681	
449.00 > 99.00	4.597	4.606	-0.009	0.895	751478		4.66(2.36-7.08)		9865	
59 TAF										
442.90 > 85.00	5.020	5.038	-0.018	1.094	451418	2.77			10673	
\$ 60 13C8 PFOS										
507.00 > 99.00	5.139	5.153	-0.014	1.120	555740	1.24		104	8214	
D 61 13C4 PFOS										
503.00 > 80.00	5.139	5.153	-0.014	1.120	1290307	1.23		103	8261	
62 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.139	5.153	-0.014	1.000	2705192	2.42	Target=4.87		3551	M
499.00 > 99.00	5.139	5.153	-0.014	1.000	568590		4.76(2.43-7.30)		8573	M
D 64 13C5 PFNA										
468.00 > 423.00	5.146	5.160	-0.014	1.121	5423449	1.28		102	32268	
63 Perfluorononanoic acid										
463.00 > 419.00	5.153	5.167	-0.014	1.001	10721637	2.85	Target=7.86		10509	
463.00 > 169.00	5.146	5.167	-0.021	1.000	1425012		7.52(3.93-11.78)		20751	
65 7:3 FTCA										
441.00 > 337.00	5.277	5.287	-0.010	0.988	1908686	2.53	Target=1.24		4617	
441.00 > 317.00	5.277	5.287	-0.010	0.988	1638391		1.16(0.62-1.87)		5087	
D 67 13C-8:2 FTUCA										
458.86 > 393.90	5.314	5.333	-0.019	1.158	3157429	1.25		99.8	10889	
66 8:2 FTUCA										
456.86 > 392.90	5.314	5.333	-0.019	1.000	6032965	2.51	Target=35.99		17589	
456.86 > 343.00	5.314	5.333	-0.019	1.000	170943		35.29(17.99-53.98)		3842	
69 8:2 FTCA										
477.00 > 393.10	5.333	5.360	-0.027	0.998	364768	2.53	Target=2.79		612	
477.00 > 63.20	5.333	5.360	-0.027	0.998	135751		2.69(1.39-4.18)		2955	
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.342	5.360	-0.018	1.164	177824	1.31		105	1248	
70 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	5.452	5.461	-0.008	1.061	6988515	2.60			53202	
71 Perfluorooctanesulfonamide										
498.00 > 78.00	5.607	5.623	-0.016	1.000	3696430	2.66			1490	
D 72 13C8 FOSA										
506.00 > 78.00	5.607	5.623	-0.016	1.222	1824732	1.31		105	15249	
73 Perfluorononanesulfonic acid										
549.00 > 80.00	5.648	5.663	-0.015	1.099	2451283	2.93	Target=2.88		21012	
549.00 > 99.00	5.648	5.663	-0.015	1.099	832356		2.94(1.44-4.32)		13422	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.655	5.671	-0.016	1.232	761137	1.23		103	11524	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	5.655	5.679	-0.024	1.000	2558966	2.62	Target=2.38		29481	
527.00 > 79.96	5.655	5.679	-0.024	1.000	1115704		2.29(1.19-3.58)		16156	
77 Perfluorodecanoic acid										
513.00 > 469.00	5.663	5.679	-0.016	1.000	7493260	2.64	Target=7.41		13446	
513.00 > 169.00	5.663	5.679	-0.016	1.000	1037969		7.22(3.70-11.11)		8309	
D 76 13C2 PFDA										
515.00 > 470.00	5.663	5.687	-0.024	1.234	5400472	1.32		106	41188	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.891	5.907	-0.016	1.284	747360	1.32		105	2583	
79 N-methylperfluorooctanesulfonami										
570.00 > 419.00	5.899	5.915	-0.016	1.001	1215190	2.57	Target=0.78		7799	M
570.00 > 483.00	5.899	5.915	-0.016	1.001	1528255		0.80(0.39-1.17)		4833	M
80 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.106	6.126	-0.020	1.188	2299569	2.94	Target=2.82		44645	
599.00 > 99.00	6.106	6.126	-0.020	1.188	771363		2.98(1.41-4.23)		14805	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.137	6.147	-0.010	1.337	724365	1.27		102	2510	
D 82 13C2 PFUnA										
565.00 > 520.00	6.137	6.158	-0.021	1.337	4990016	1.30		104	47576	
83 Perfluoroundecanoic acid										
563.00 > 519.00	6.137	6.158	-0.021	1.000	7197389	2.64	Target=7.89		4835	
563.00 > 169.00	6.137	6.158	-0.021	1.000	875365		8.22(3.95-11.84)		1365	
84 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	6.137	6.158	-0.021	1.000	1134028	2.60	Target=0.75		4306	M
584.00 > 526.10	6.137	6.158	-0.021	1.000	1499918		0.76(0.38-1.13)		6983	M
D 89 13C-10:2 FTUCA										
558.86 > 493.90	6.302	6.311	-0.009	1.373	2938343	1.29		103	12201	
90 10:2 FTUCA										
556.86 > 492.90	6.302	6.320	-0.018	1.000	4196056	2.53			18986	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.302	6.320	-0.018	1.373	919506	1.35		108	5242	
92 10:2 FTCA										
576.80 > 493.00	6.320	6.329	-0.009	1.000	180879	2.70	Target=2.41		367	
576.80 > 63.10	6.311	6.329	-0.018	0.999	83154		2.18(1.20-3.61)		652	
86 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	6.320	6.338	-0.018	1.003	1945298	2.68			4637	M
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.320	6.338	-0.018	1.377	86889	1.14		91.1	637	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.329	6.338	-0.009	1.379	611586	1.35		108	2260	
88 NMeFOSA										
512.00 > 169.00	6.338	6.347	-0.009	1.001	1334184	2.81	Target=2.06		1501	M
512.00 > 218.99	6.338	6.347	-0.009	1.001	657230		2.03(1.03-3.09)		2417	M
93 11-Chloroeicosafuoro-3-oxaundec										
631.00 > 451.00	6.356	6.373	-0.017	1.237	9255376	2.69			73451	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.556	6.575	-0.019	1.429	1069191	1.35		108	4005	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
99 Perfluorododecanoic acid										
613.00 > 569.00	6.556	6.575	-0.019	1.000	9992518	2.63	Target=7.83		17245	
613.00 > 169.00	6.556	6.575	-0.019	1.000	1221691		8.18(3.91-11.74)		1788	
D 98 13C2 PFDaA										
615.00 > 570.00	6.556	6.575	-0.019	1.429	5499216	1.30		104	21739	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.566	6.585	-0.019	1.431	655652	1.21		101	6708	
101 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	6.576	6.585	-0.009	1.002	1829362	2.58	Target=1.80		10283	
627.00 > 79.96	6.576	6.585	-0.009	1.002	1069502		1.71(0.90-2.70)		7918	
95 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	6.576	6.595	-0.019	1.003	2147712	2.64			4210	M
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.586	6.605	-0.019	1.435	562532	1.34		107	1331	
97 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	6.606	6.615	-0.009	1.003	1304626	3.10	Target=1.83		1983	M
526.00 > 218.99	6.606	6.615	-0.009	1.003	703842		1.85(0.92-2.75)		2586	M
102 Perfluorododecanesulfonic acid (
699.00 > 80.00	6.889	6.907	-0.018	1.341	744920	2.76	Target=0.66		9919	
699.00 > 99.00	6.889	6.907	-0.018	1.341	1059939		0.70(0.33-0.99)		17193	
103 Perfluorotridecanoic acid										
663.00 > 619.00	6.933	6.950	-0.017	1.058	8107397	2.35	Target=6.66		13077	
663.00 > 169.00	6.933	6.950	-0.017	1.058	1177128		6.89(3.33-9.99)		8661	
D 112 13C4-6:2 diPAP										
792.82 > 78.90	7.178	7.187	-0.009	1.564	1622794	1.32		109	3145	
114 6:2 diPAP										
788.79 > 78.90	7.178	7.187	-0.009	1.000	3366527	2.62	Target=1.89		4171	
788.79 > 96.90	7.178	7.187	-0.009	1.000	1794144		1.88(0.95-2.84)		3460	
105 Perfluorotetradecanoic acid										
713.00 > 169.00	7.273	7.291	-0.018	1.000	1016697	2.81	Target=0.92		2039	
713.00 > 219.00	7.273	7.291	-0.018	1.000	1088254		0.93(0.46-1.38)		833	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.273	7.291	-0.018	1.585	4608508	1.26		101	8287	
115 6:2/8:2 diPAP										
888.70 > 78.90	7.658	7.675	-0.017	1.067	3040037	2.36	Target=1.35		5606	
888.70 > 96.90	7.658	7.675	-0.017	1.067	2283330		1.33(0.68-2.03)		4917	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.848	7.863	-0.015	1.710	3064052	0.9658		77.3	5306	
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.848	7.863	-0.015	1.000	5380152	2.55	Target=8.78		5043	
813.00 > 169.00	7.848	7.863	-0.015	1.000	639939		8.41(4.39-13.18)		5743	
D 113 13C4-8:2 diPAP										
992.77 > 96.90	8.069	8.090	-0.021	1.759	899778	1.01		82.6	2208	
116 8:2 diPAP										
988.74 > 78.90	8.069	8.090	-0.021	1.000	1873838	2.72	Target=1.18		3139	
988.74 > 96.90	8.069	8.090	-0.021	1.000	1595208		1.17(0.59-1.77)		3636	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
108 Perfluorooctadecanoic acid										
913.00 > 869.00	8.350	8.368	-0.018	1.064	2752381	2.35	Target=10.05		2720	
913.00 > 169.00	8.350	8.368	-0.018	1.064	279753		9.84(5.02-15.07)		2774	
117 10:2 diPAP										
1188.79 > 78.90	8.880	8.902	-0.022	1.101	193850	2.72	Target=1.13		4802	a
1188.79 > 96.90	8.880	8.902	-0.022	1.101	175867		1.10(0.57-1.70)		3817	a

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

LCPFC+6C_ICV_00021

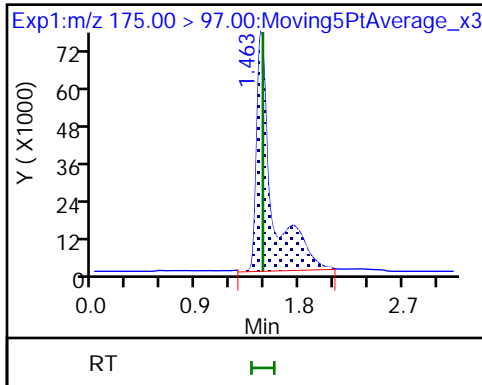
Amount Added: 1.00

Units: mL

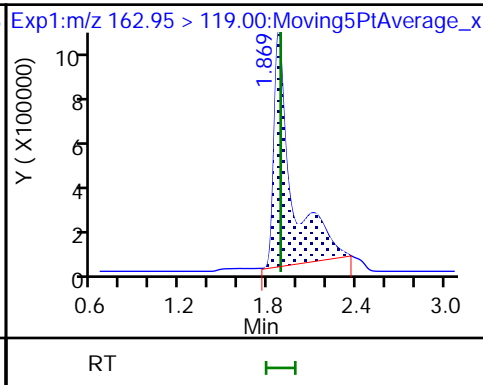
Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_017.d
Injection Date: 21-Dec-2022 13:31:38 Instrument ID: A18
Lims ID: ICV
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL

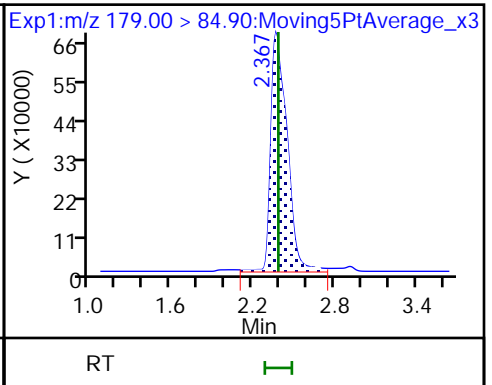
1 MTP



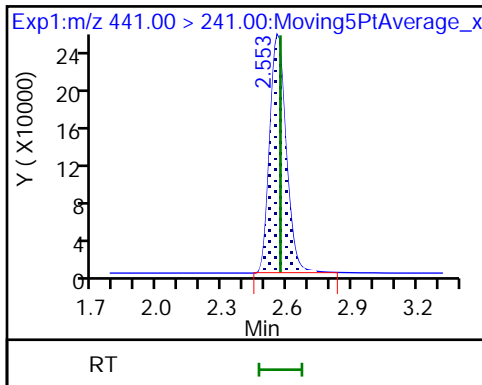
2 PPF Acid



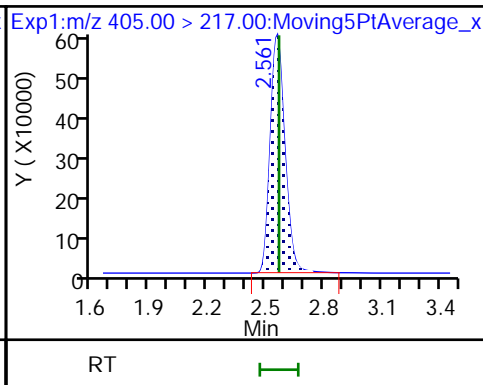
3 PFMOAA



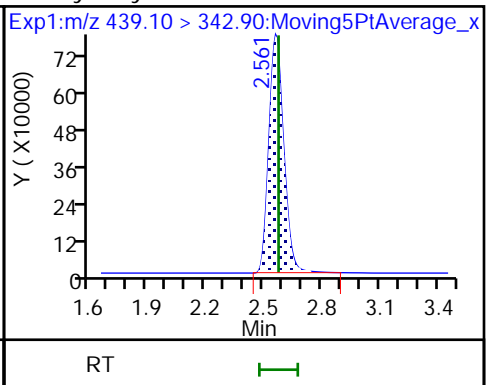
4 R-PSDA



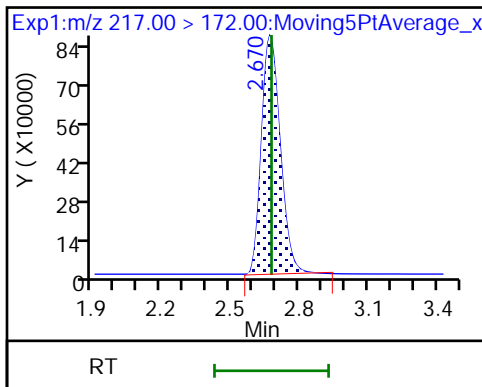
5 R-EVE



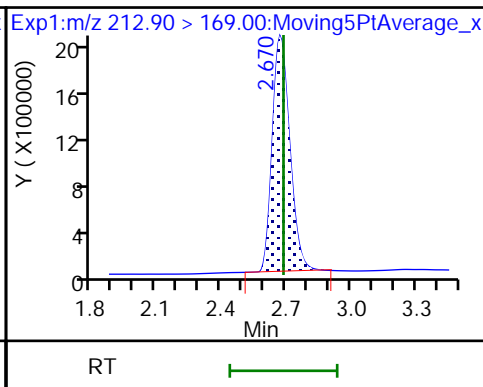
6 Hydrolyzed PSDA



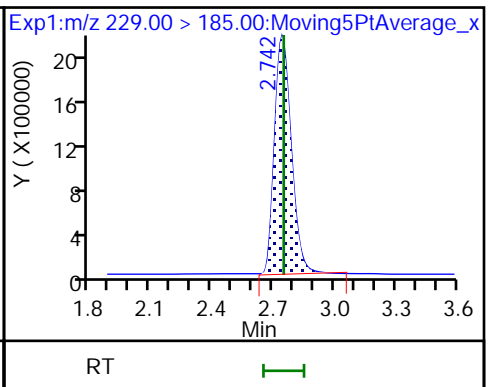
D 8 13C4 PFBA



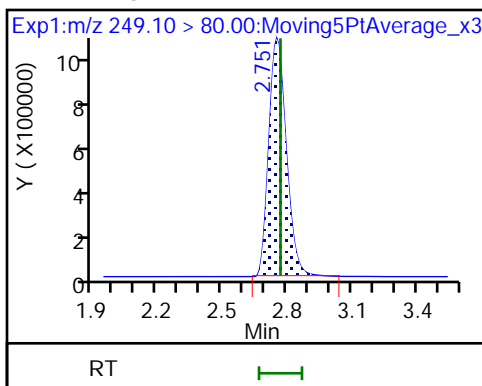
7 Perfluorobutanoic acid



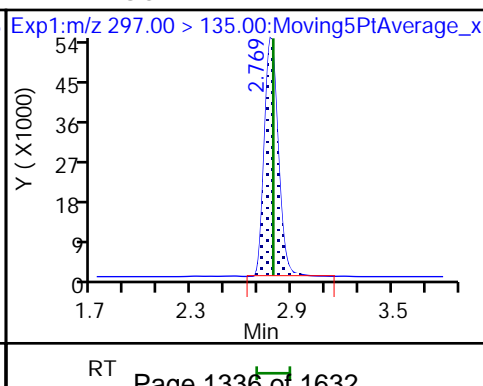
10 PMPA



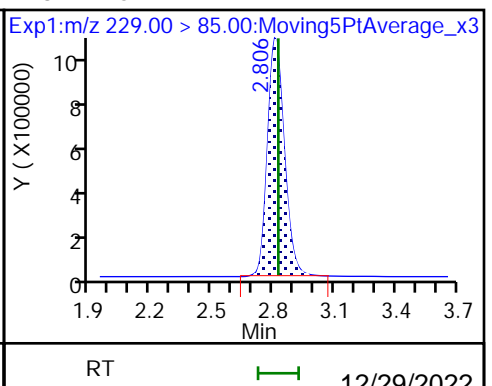
11 PFPrS

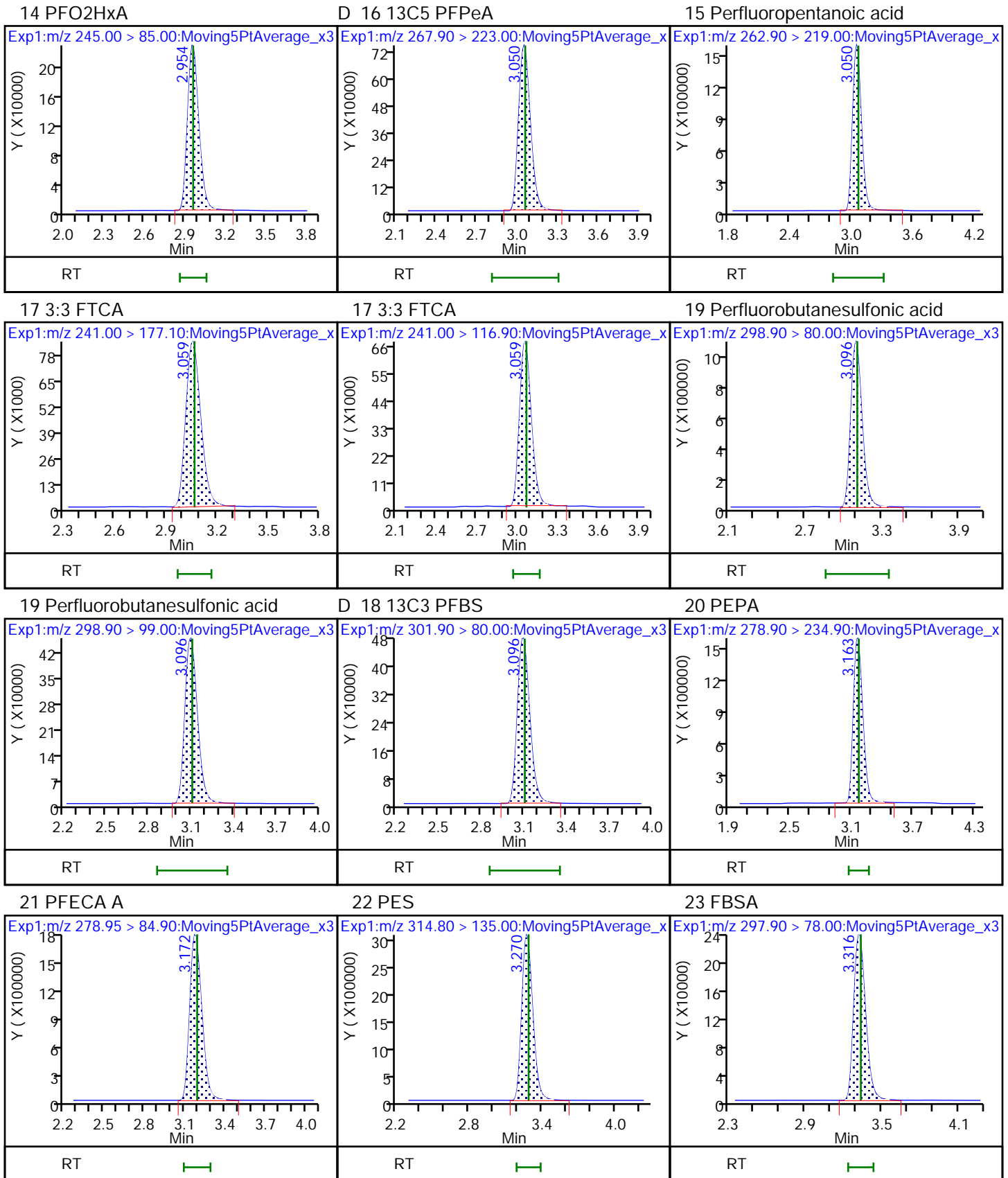


12 NVHOS



13 PFECA F

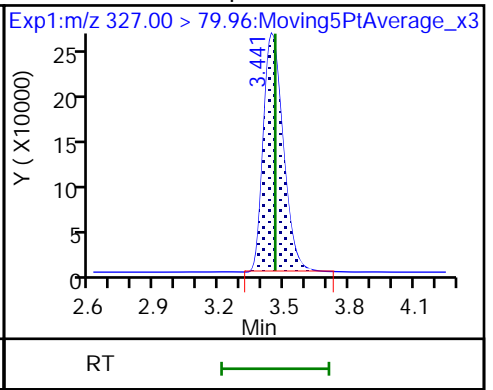
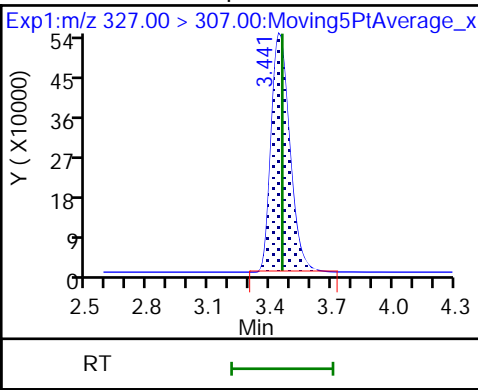
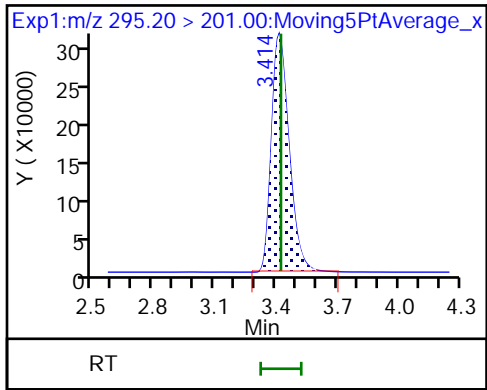




24 PFECA B

26 1H,1H,2H,2H-perfluorohexanesulfo

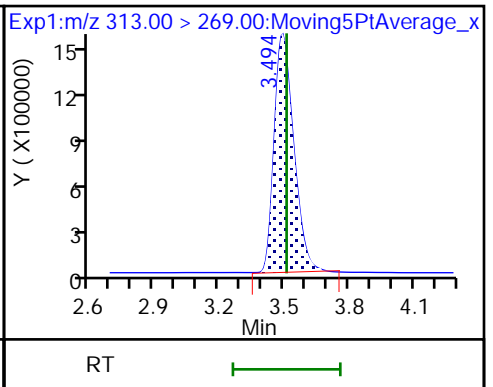
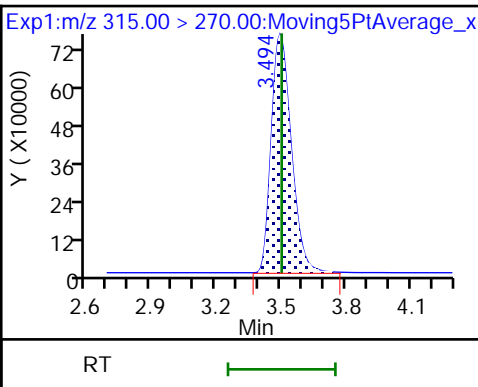
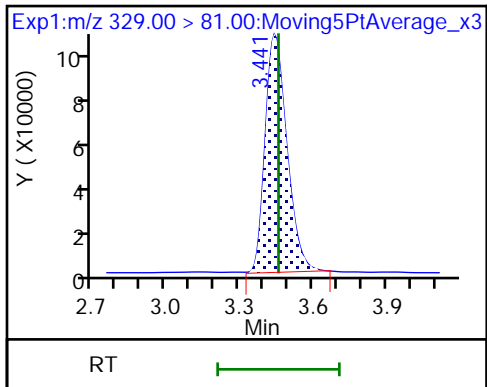
26 1H,1H,2H,2H-perfluorohexanesulfo



D 25 M2-4:2 FTS

D 27 13C2 PFHxA

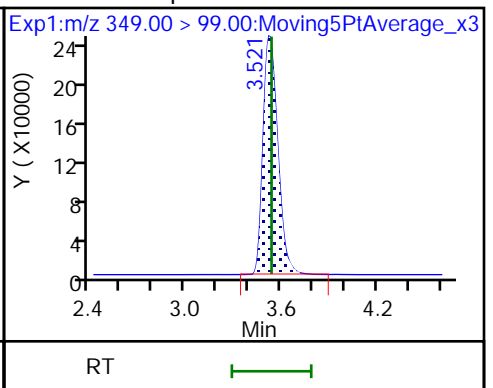
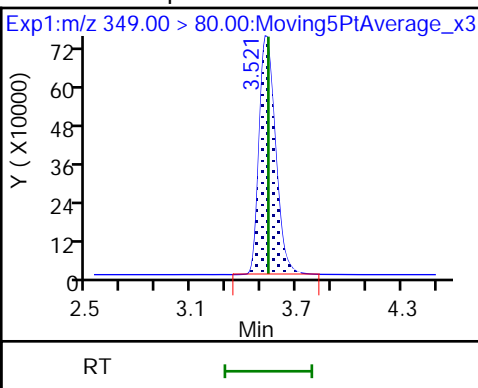
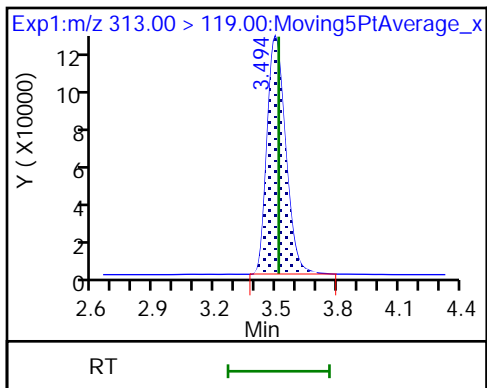
28 Perfluorohexanoic acid



28 Perfluorohexanoic acid

29 Perfluoropentanesulfonic acid

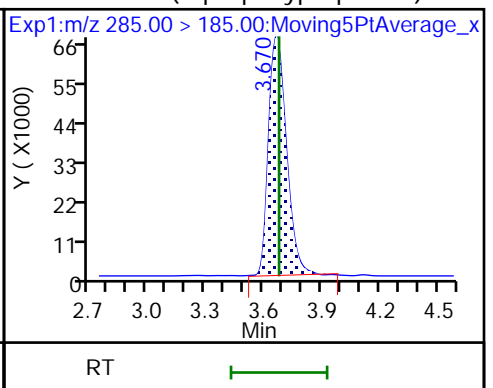
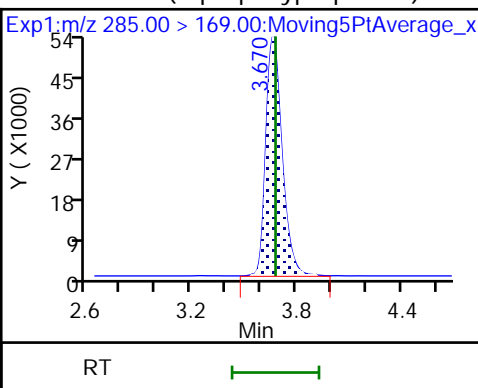
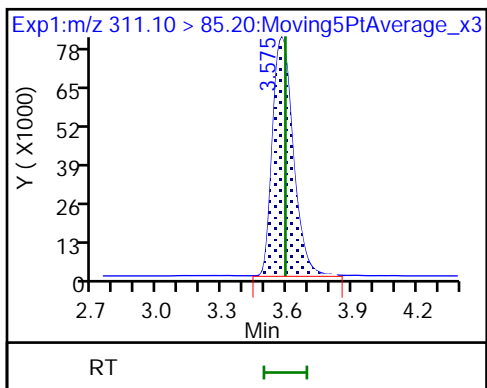
29 Perfluoropentanesulfonic acid



30 PFO3OA

31 Perfluoro(2-propoxypropanoic) ac

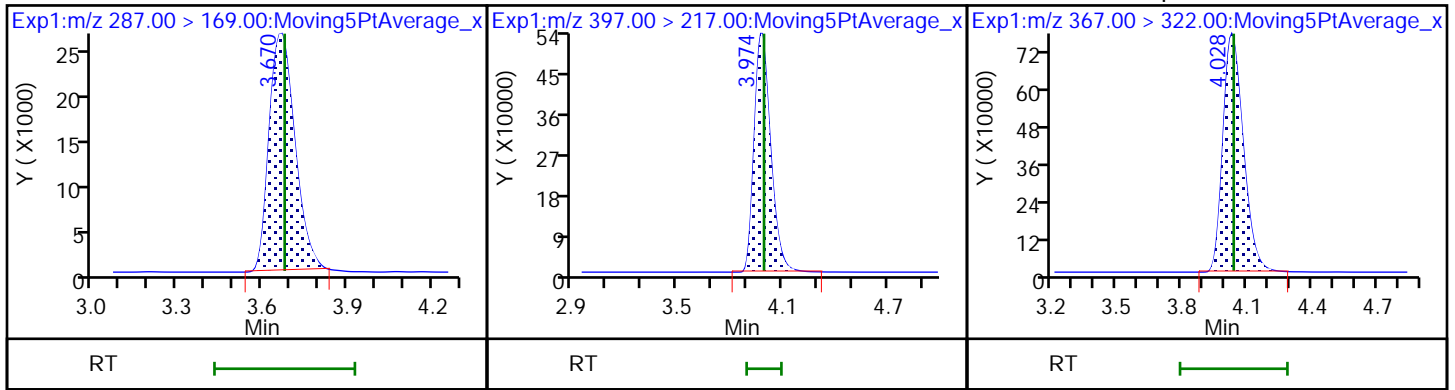
31 Perfluoro(2-propoxypropanoic) ac



D 32 13C3 HFPO-DA

33 R-PSDCA

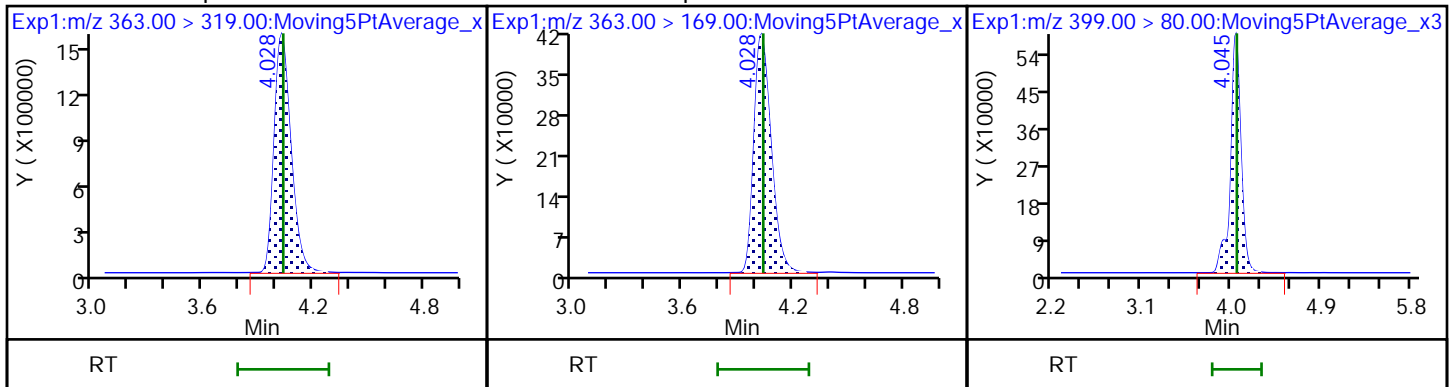
D 35 13C4 PFHpA



36 Perfluoroheptanoic acid

36 Perfluoroheptanoic acid

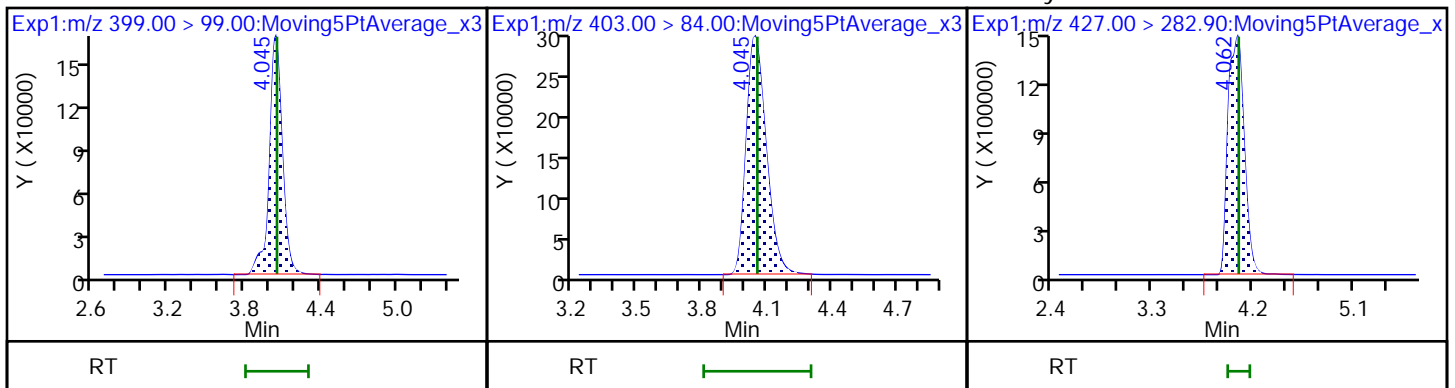
38 Perfluorohexanesulfonic acid



38 Perfluorohexanesulfonic acid

D 37 18O2 PFHxS

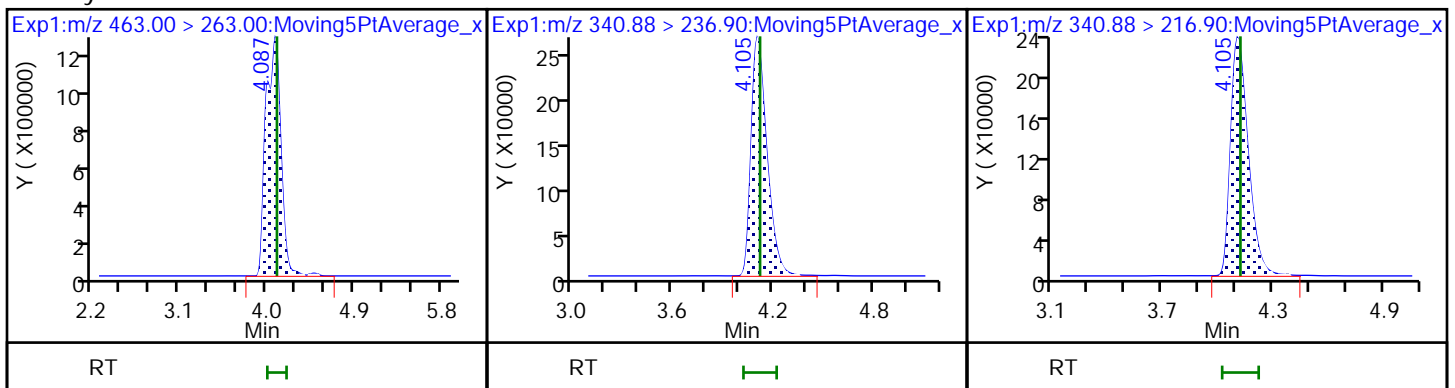
34 Hydro-EVE Acid

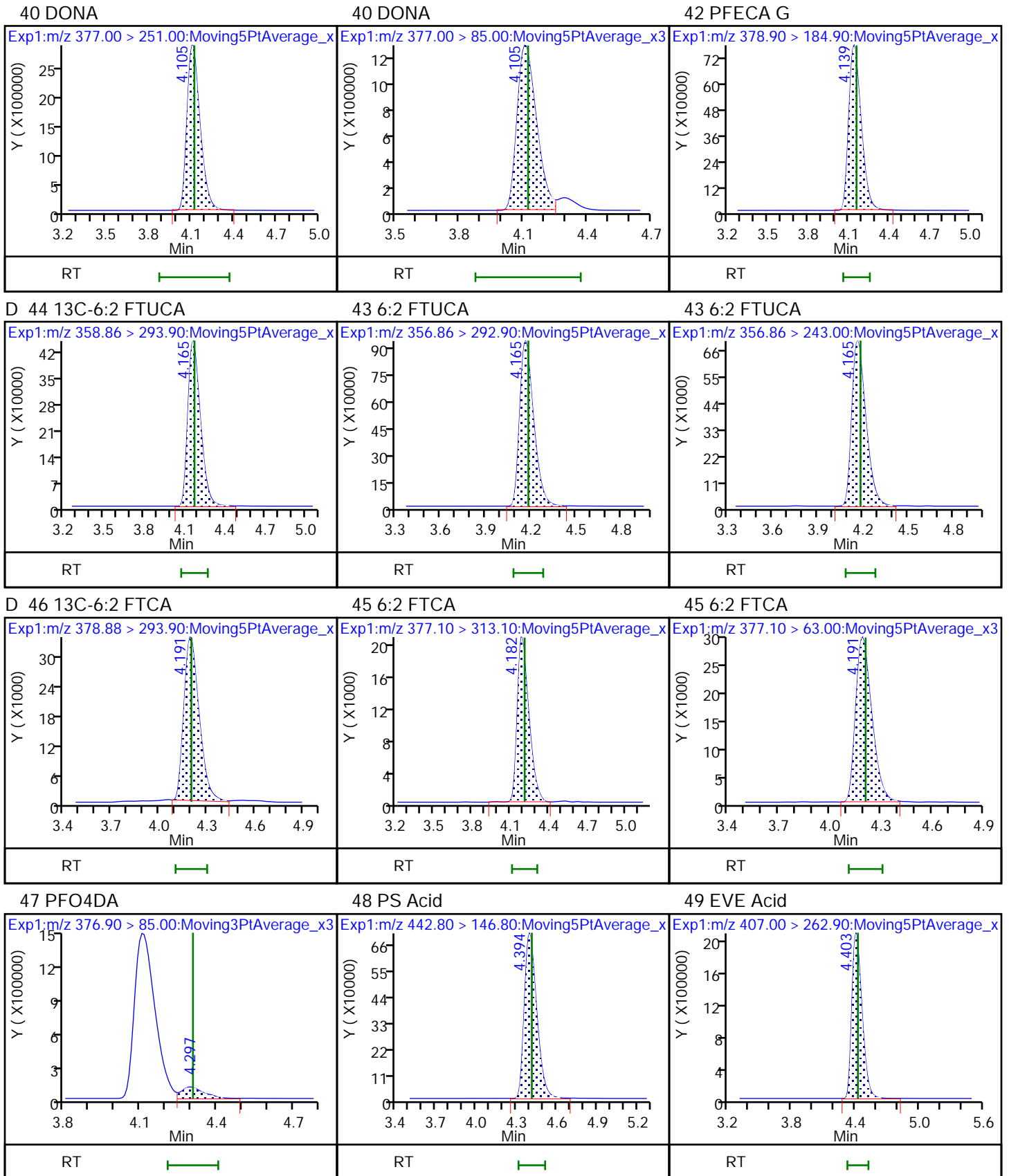


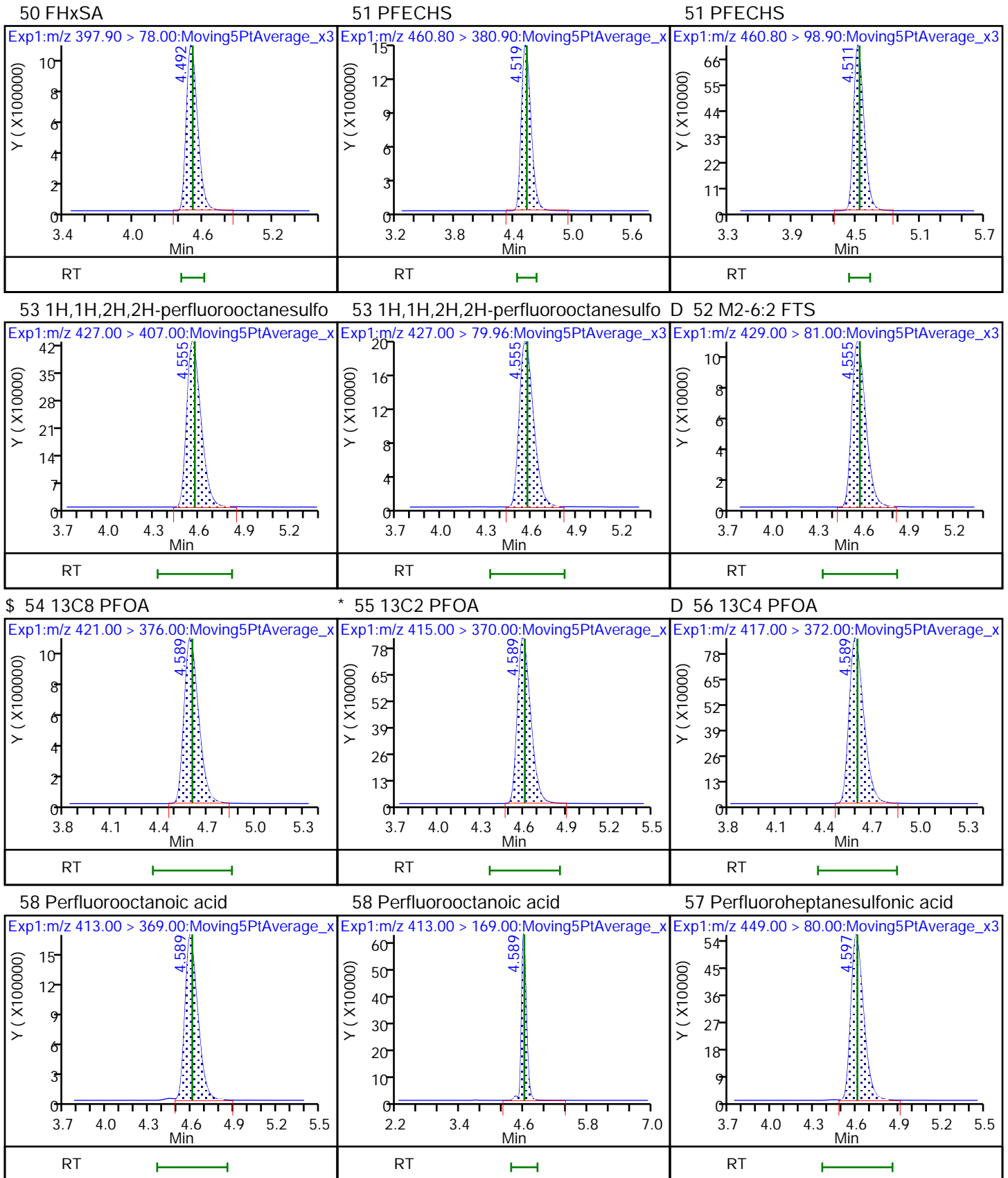
39 Hydro-PS Acid

41 5:3 FTCA

41 5:3 FTCA



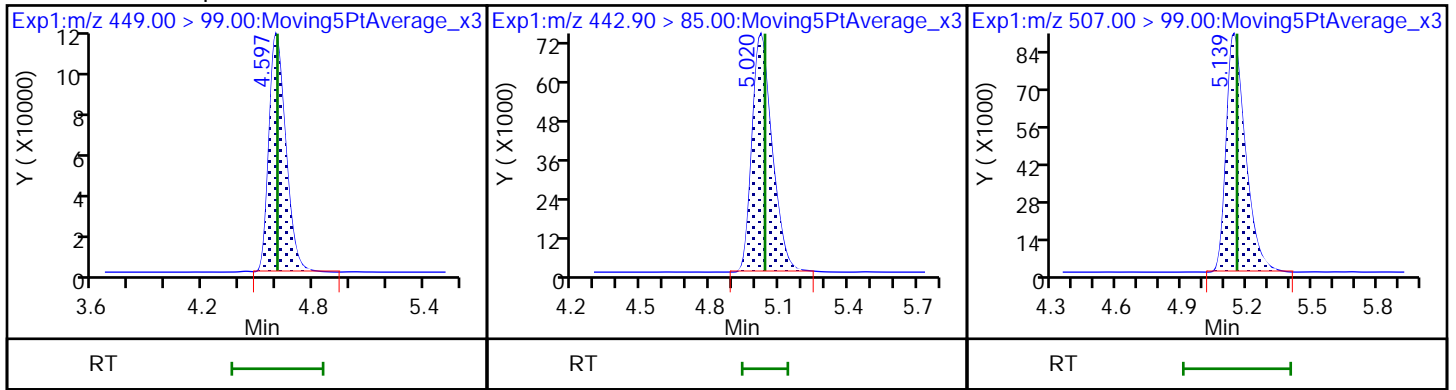




57 Perfluoroheptanesulfonic acid

59 TAF

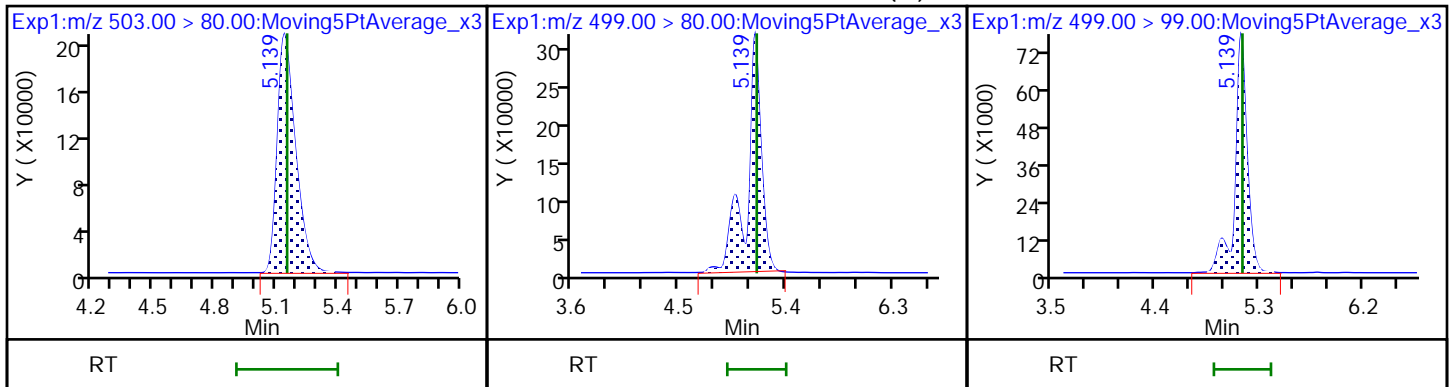
\$ 60 13C8 PFOS



D 61 13C4 PFOS

62 Perfluorooctanesulfonic acid (M)

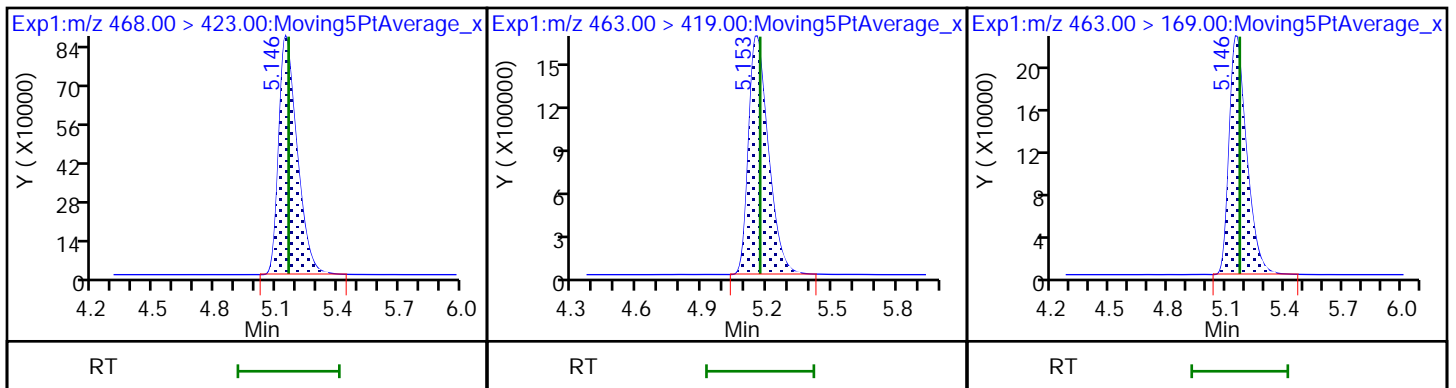
62 Perfluorooctanesulfonic acid



D 64 13C5 PFNA

63 Perfluorononanoic acid

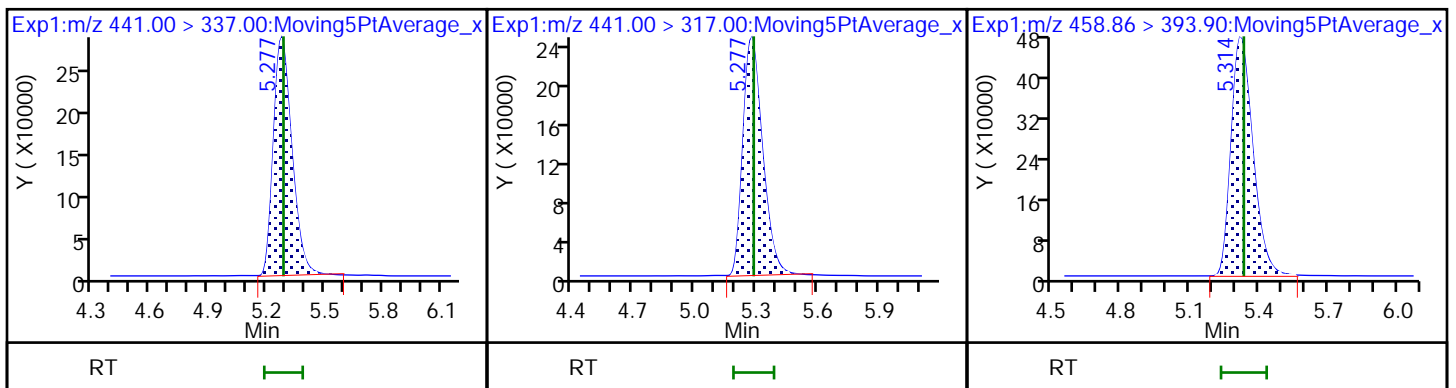
63 Perfluorononanoic acid

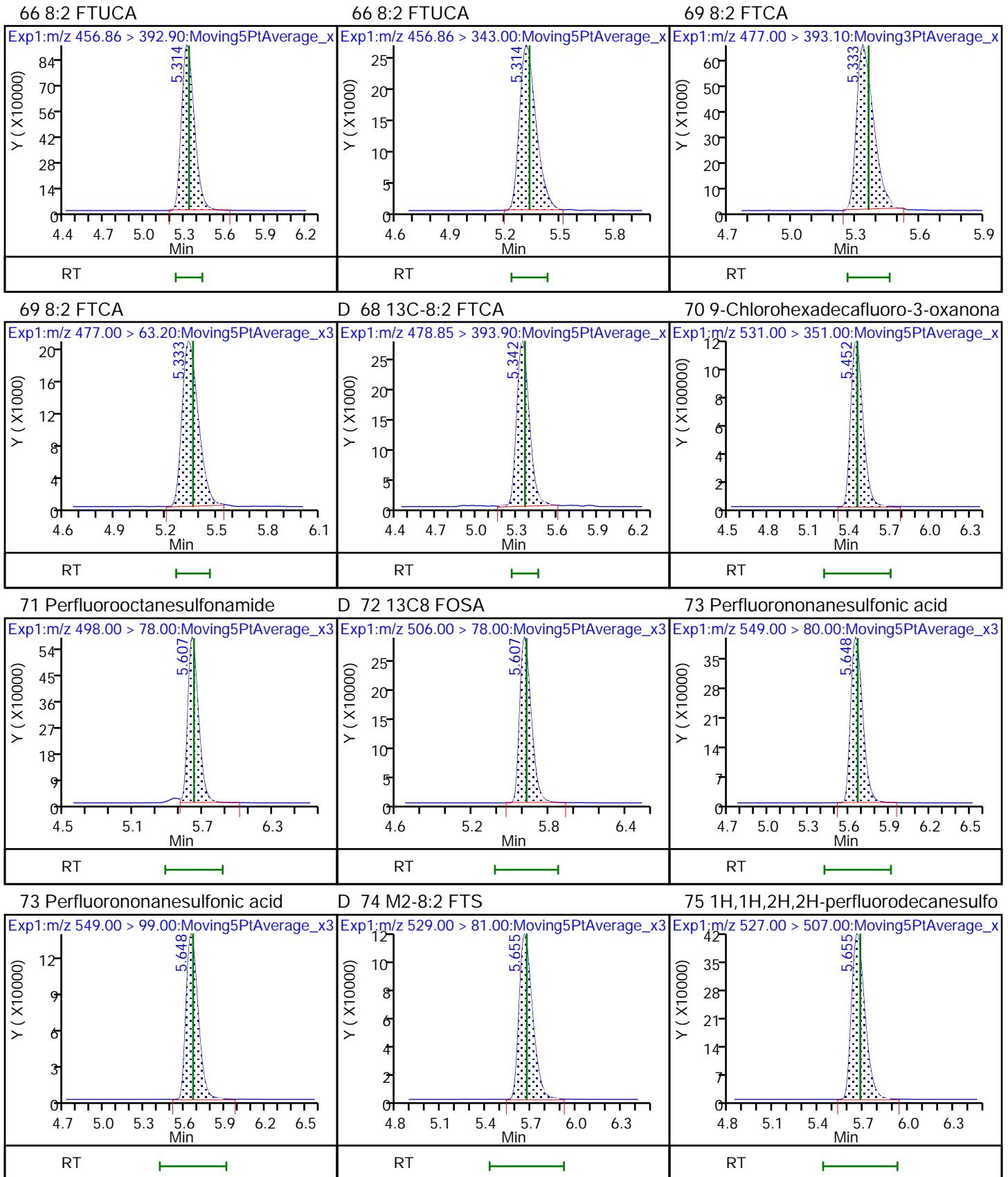


65 7:3 FTCA

65 7:3 FTCA

D 67 13C-8:2 FTUCA

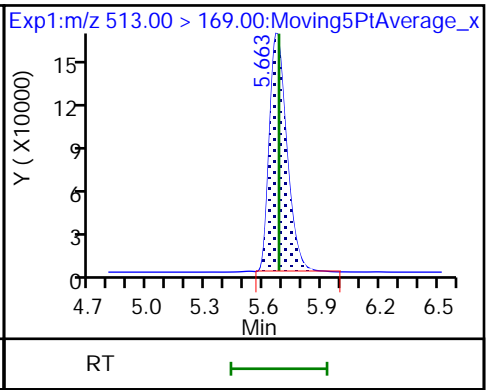
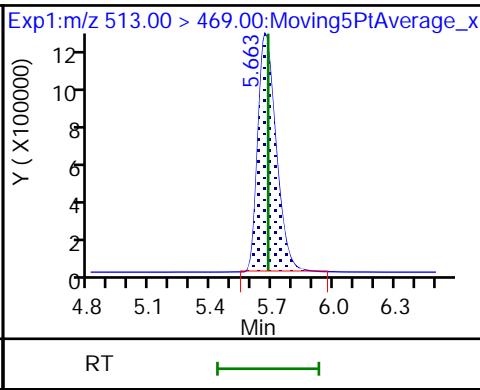
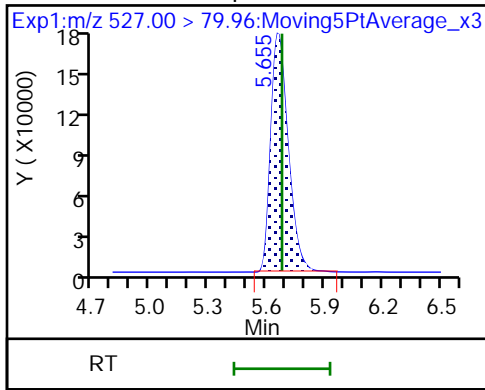




75 1H,1H,2H,2H-perfluorodecanesulfo

77 Perfluorodecanoic acid

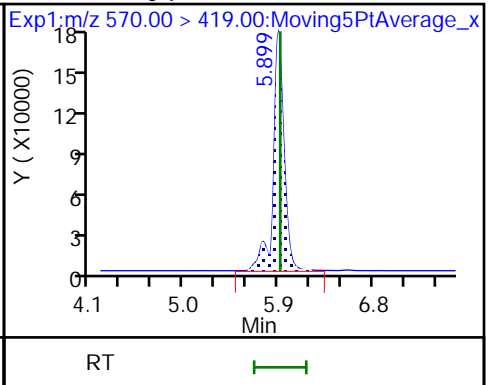
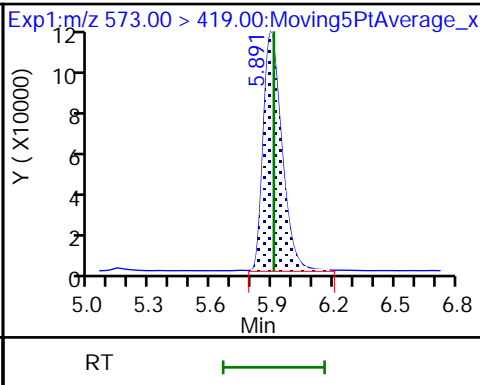
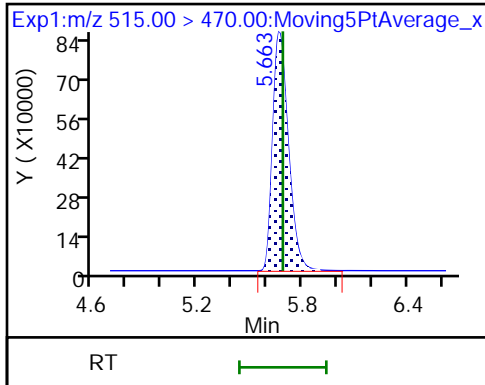
77 Perfluorodecanoic acid



D 76 13C2 PFDA

D 78 d3-NMeFOSAA

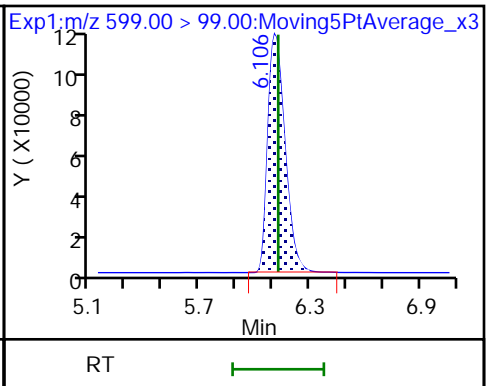
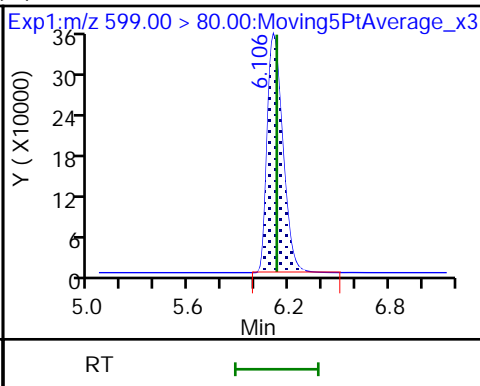
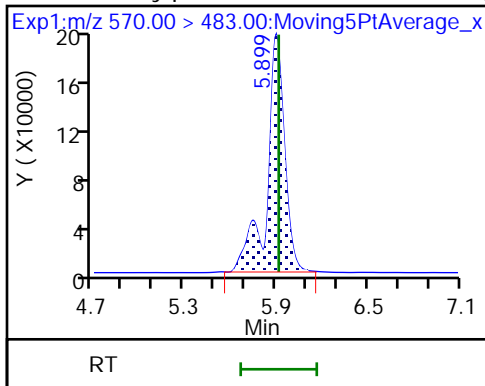
79 N-methylperfluorooctanesulfonami



79 N-methylperfluorooctanesulfonami (M)

80 Perfluorodecanesulfonic acid

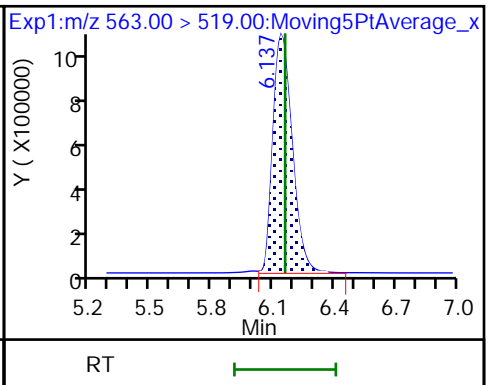
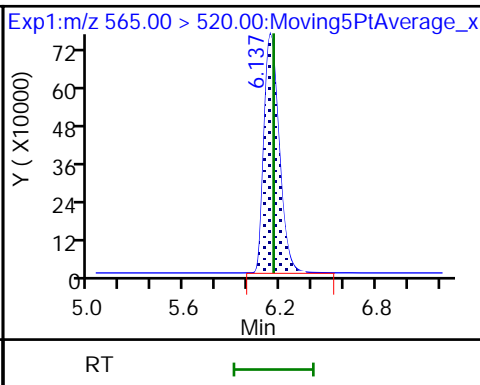
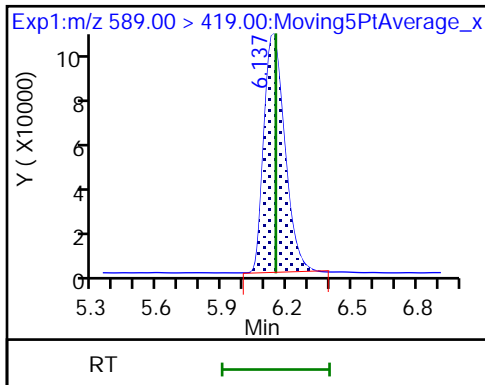
80 Perfluorodecanesulfonic acid



D 81 d5-NEtFOSAA

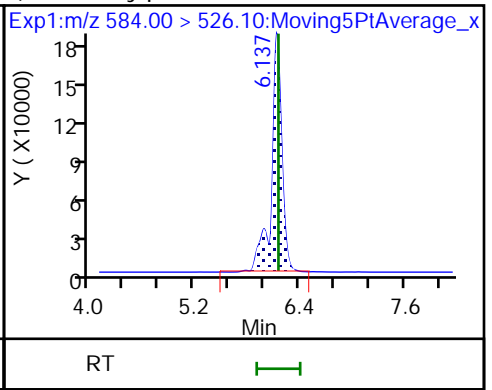
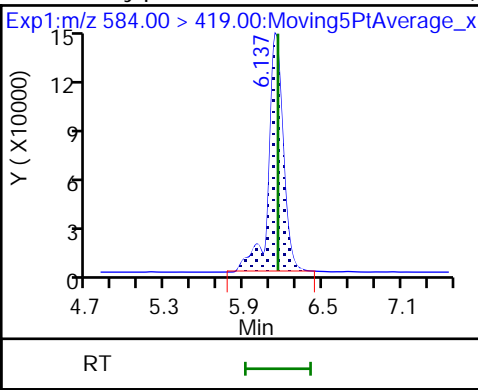
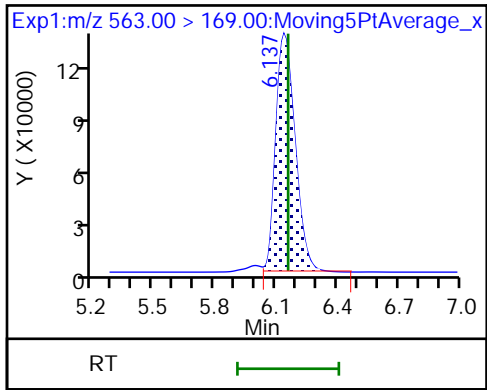
D 82 13C2 PFUnA

83 Perfluoroundecanoic acid



83 Perfluoroundecanoic acid

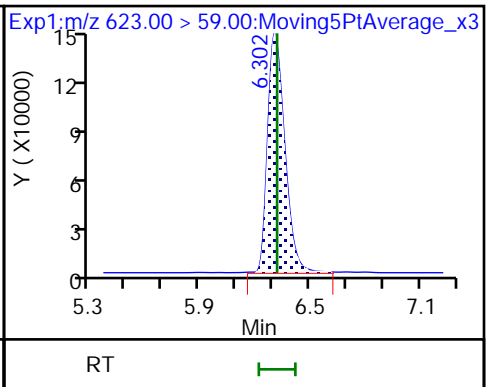
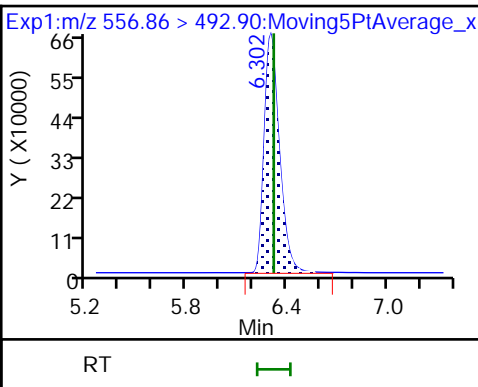
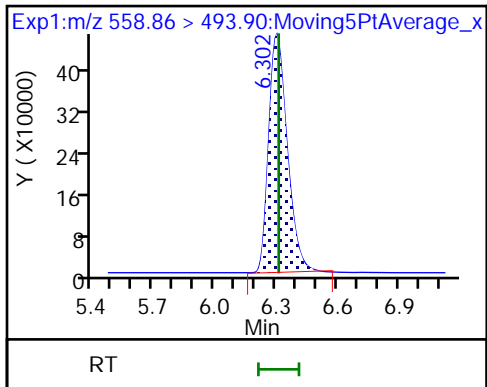
84 N-ethylperfluorooctanesulfonamid (M)84 N-ethylperfluorooctanesulfonamid



D 89 13C-10:2 FTUCA

90 10:2 FTUCA

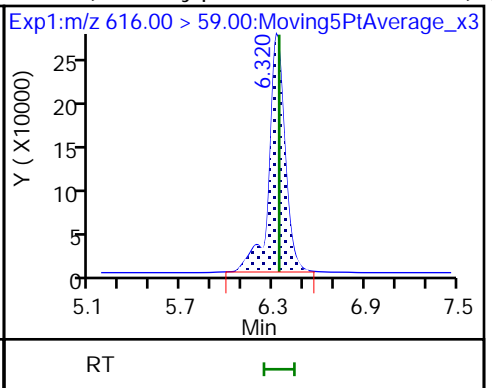
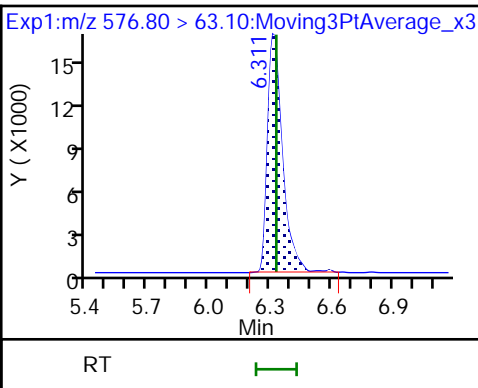
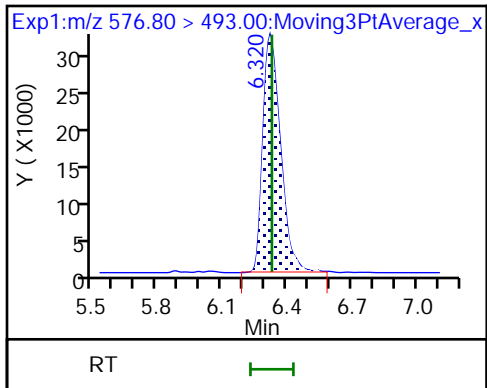
D 85 d7-N-MeFOSE-M



92 10:2 FTCA

92 10:2 FTCA

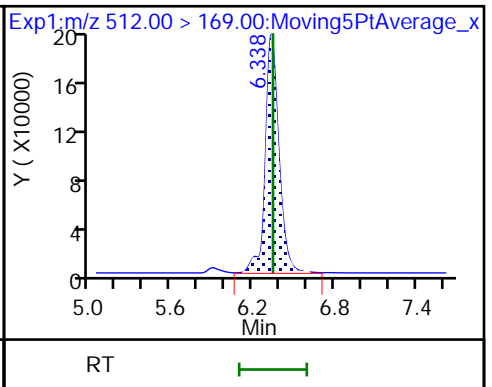
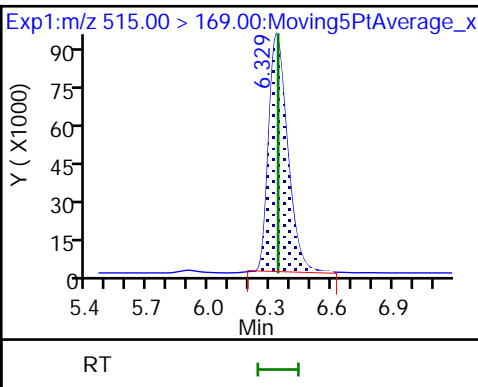
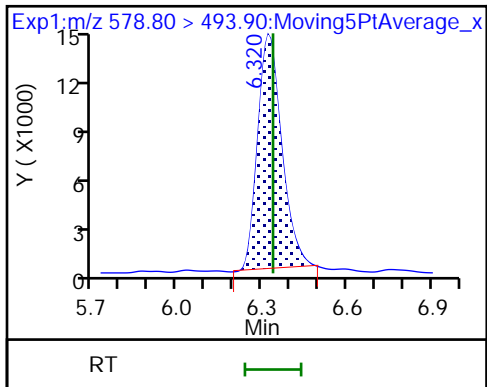
86 2-(N-methylperfluoro-1-octanesul (M)



D 91 13C-10:2 FTCA

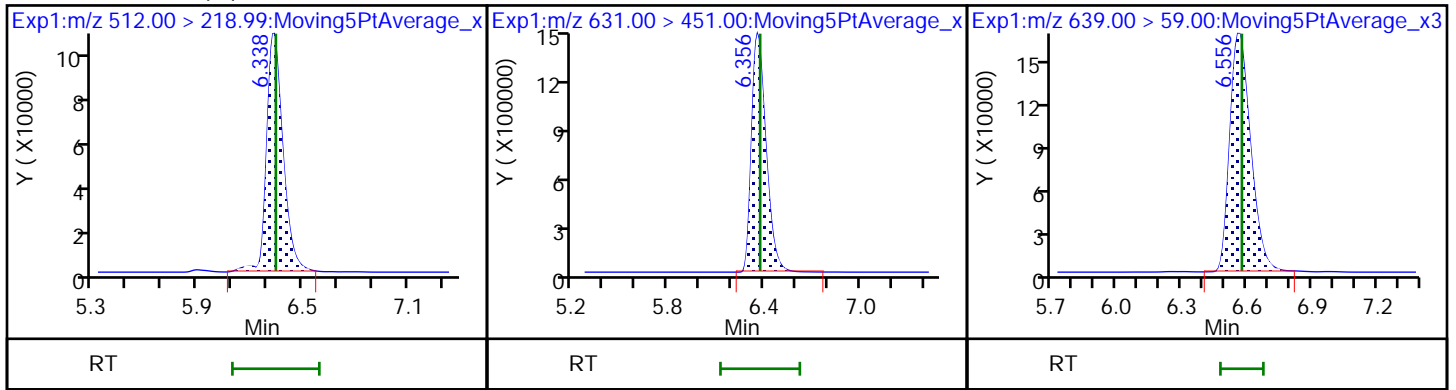
D 87 d-N-MeFOSA-M

88 NMeFOSA



88 NMeFOSA (M)

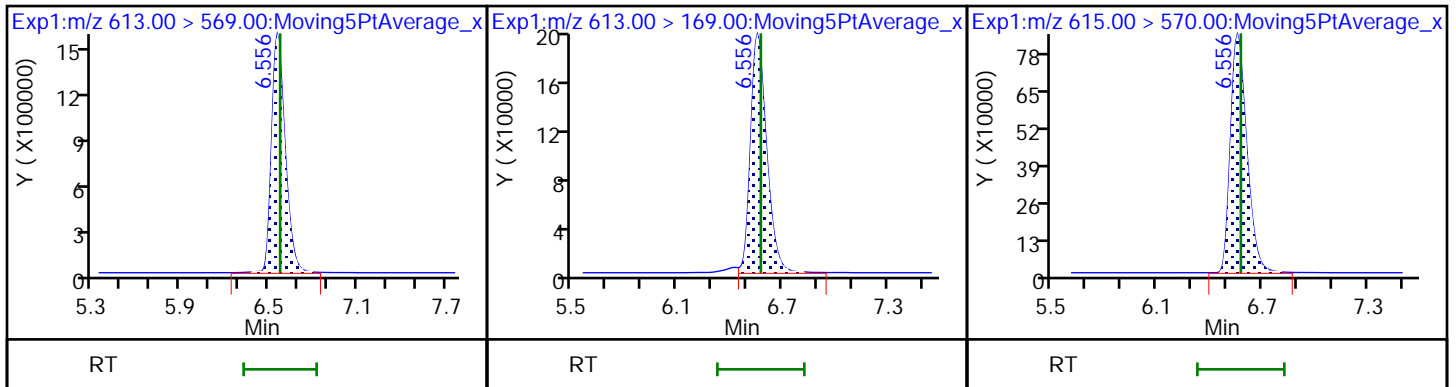
93 11-Chloroeicosfluoro-3-oxaundec D 94 d9-N-EtFOSE-M



99 Perfluorododecanoic acid

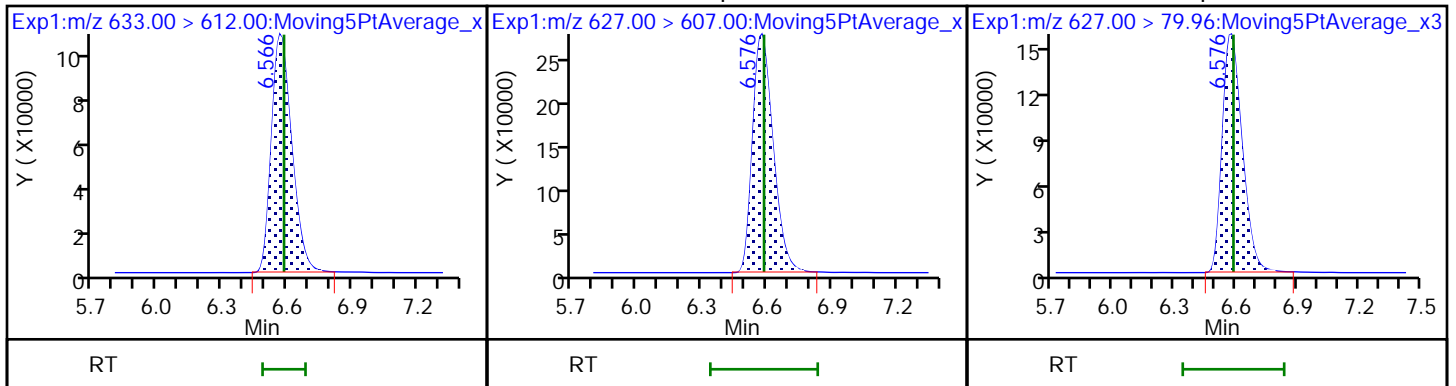
99 Perfluorododecanoic acid

D 98 13C2 PFDa



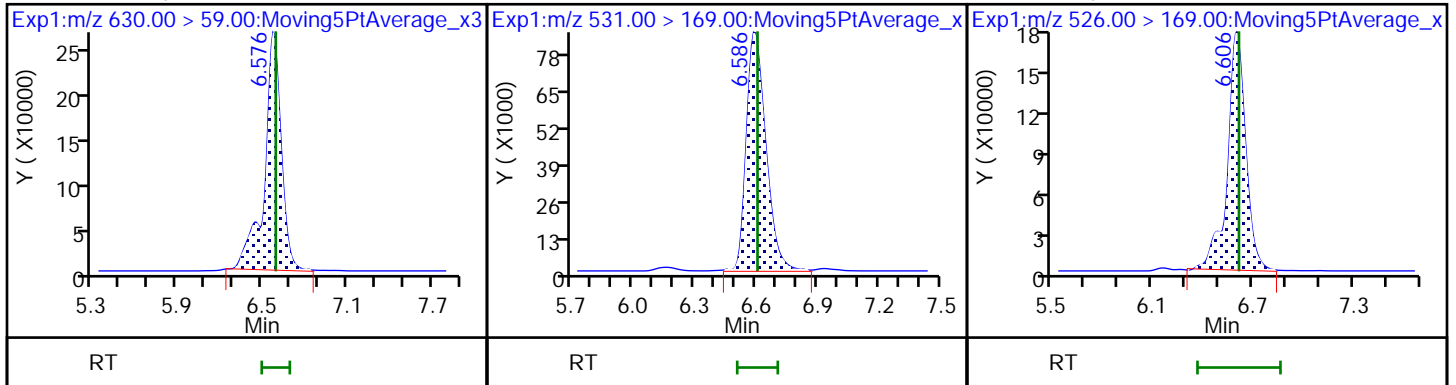
D 100 13C2 10:2 FTS

101 1H,1H,2H,2H-perfluorododecanesul 101 1H,1H,2H,2H-perfluorododecanesul

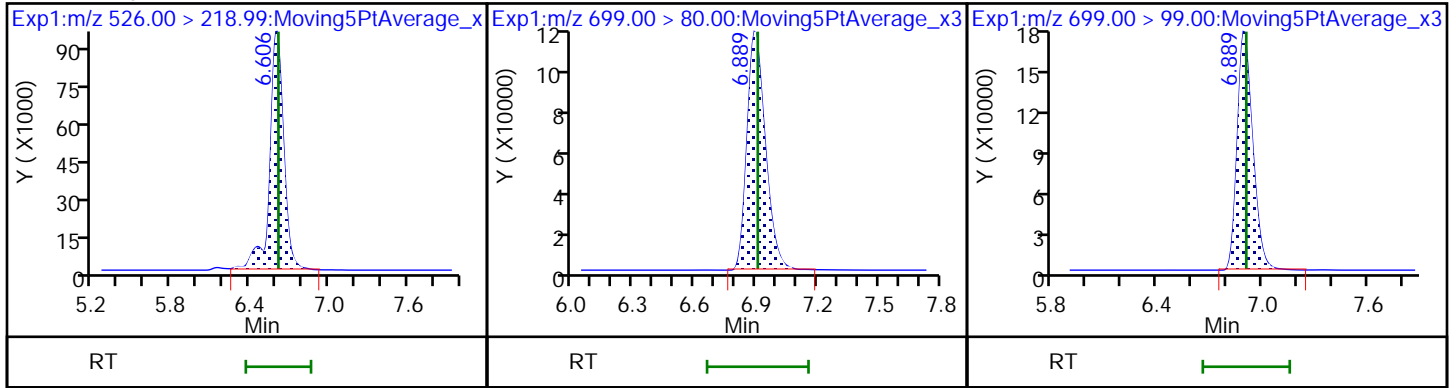


95 2-(N-ethylperfluoro-1-octanesulf (M)D 96 d-N-EtFOSE-M

97 N-ethylperfluoro-1-octanesulfona (M)



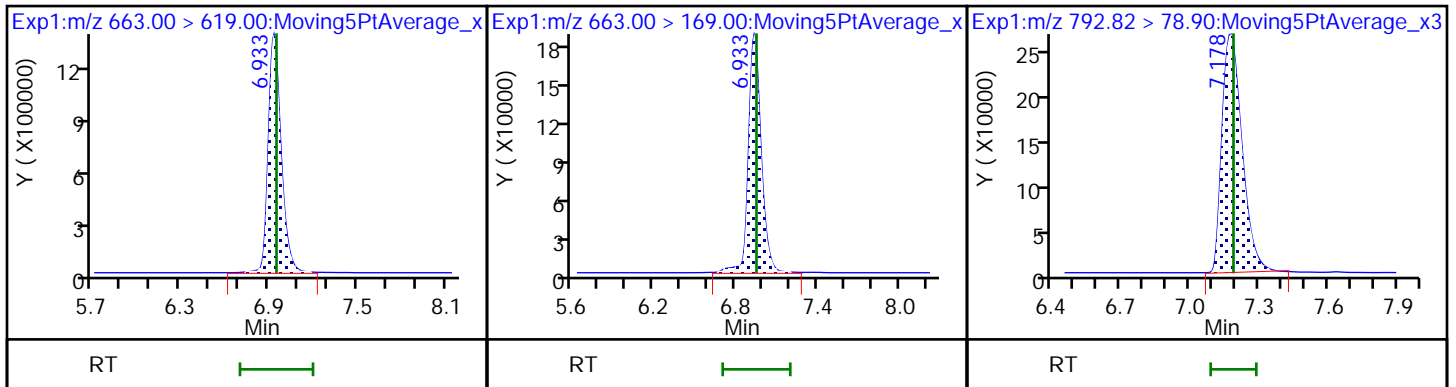
97 N-ethylperfluoro-1-octanesulfona (M)102 Perfluorododecanesulfonic acid (102 Perfluorododecanesulfonic acid (



103 Perfluorotridecanoic acid

103 Perfluorotridecanoic acid

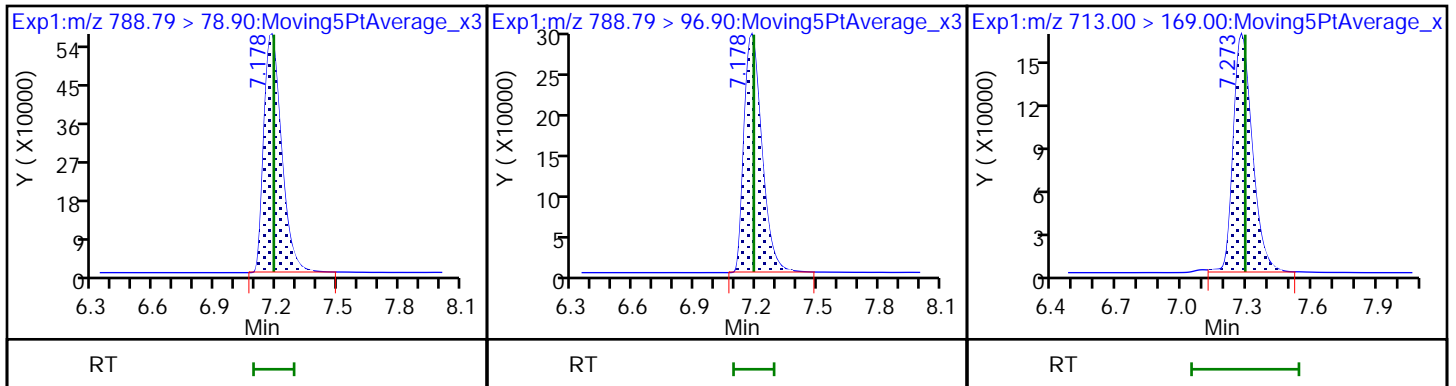
D 112 13C4-6:2 diPAP



114 6:2 diPAP

114 6:2 diPAP

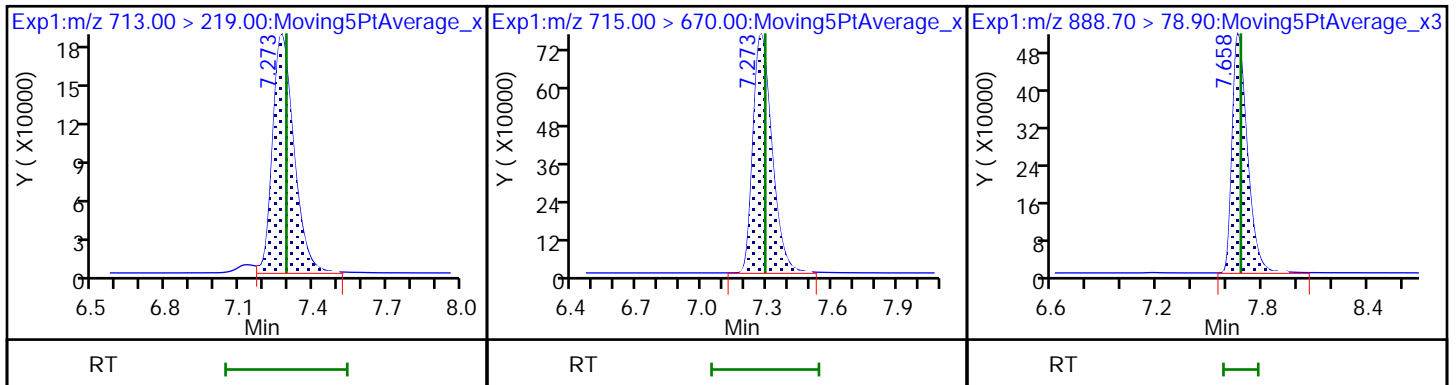
105 Perfluorotetradecanoic acid



105 Perfluorotetradecanoic acid

D 104 13C2 PFTeDA

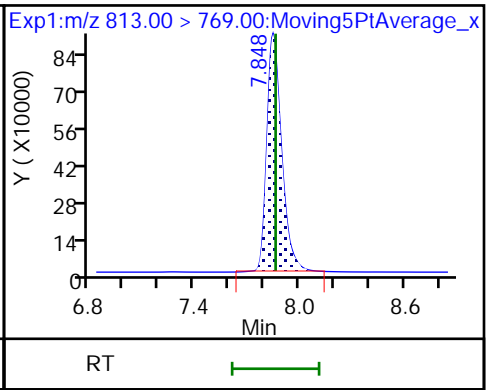
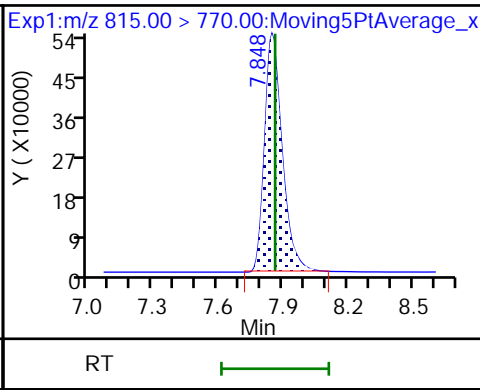
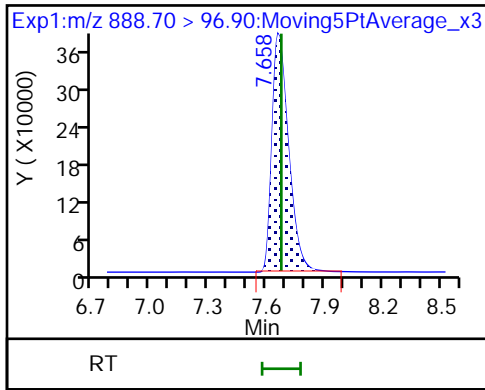
115 6:2/8:2 diPAP



115 6:2/8:2 diPAP

D 106 13C2 PFHxDA

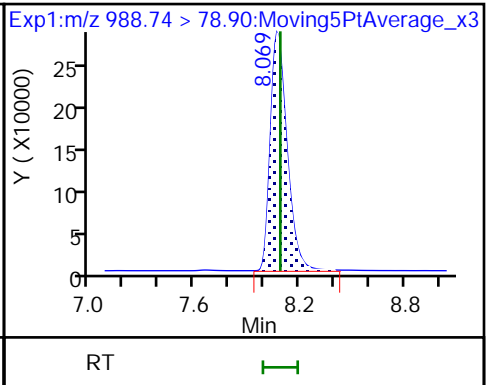
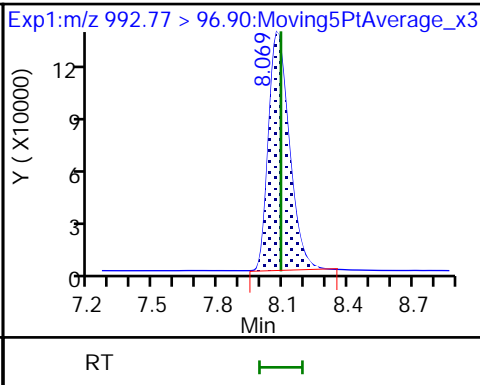
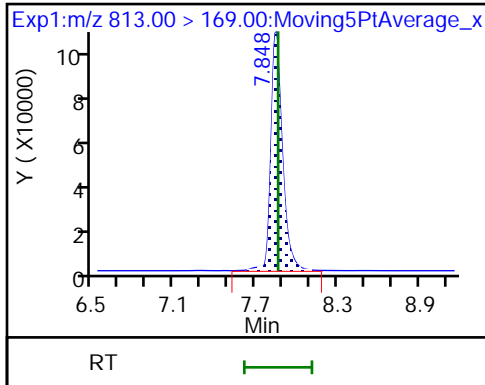
107 Perfluorohexadecanoic acid



107 Perfluorohexadecanoic acid

D 113 13C4-8:2 diPAP

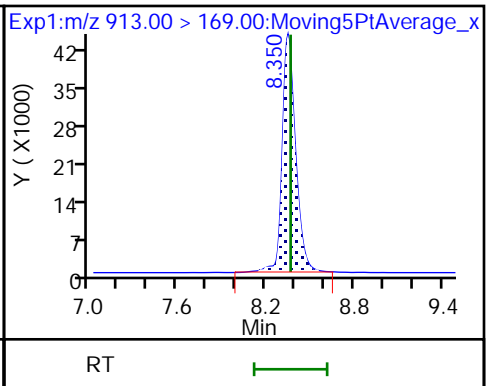
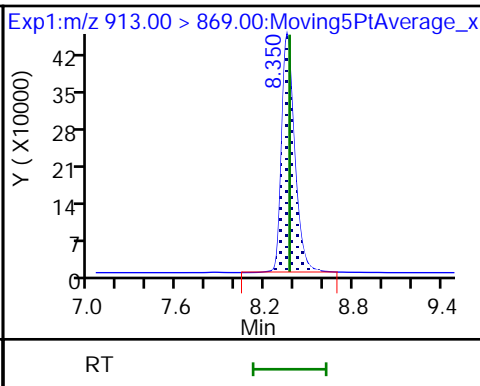
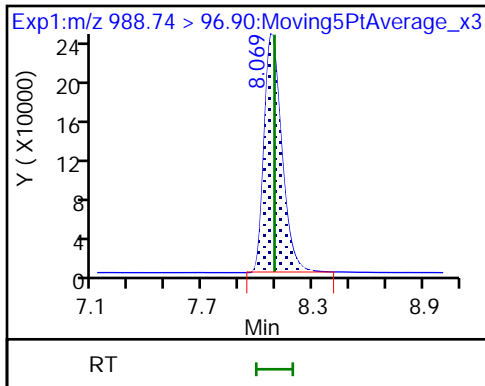
116 8:2 diPAP



116 8:2 diPAP

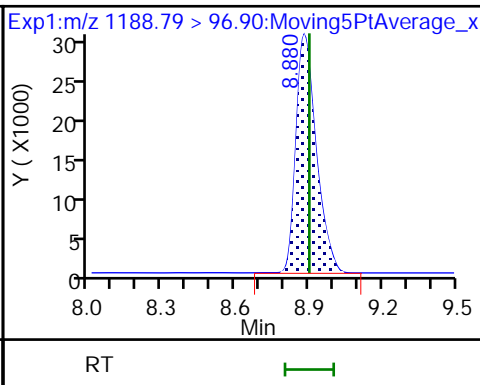
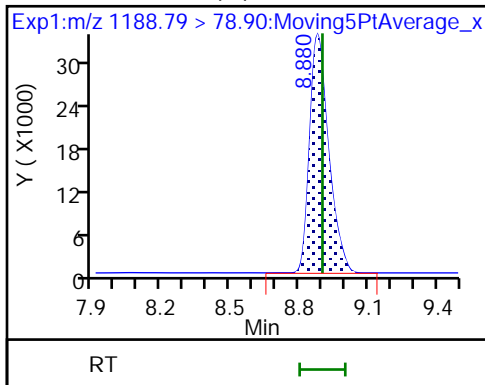
108 Perfluorooctadecanoic acid

108 Perfluorooctadecanoic acid



117 10:2 diPAP (M)

117 10:2 diPAP



Eurofins Sacramento

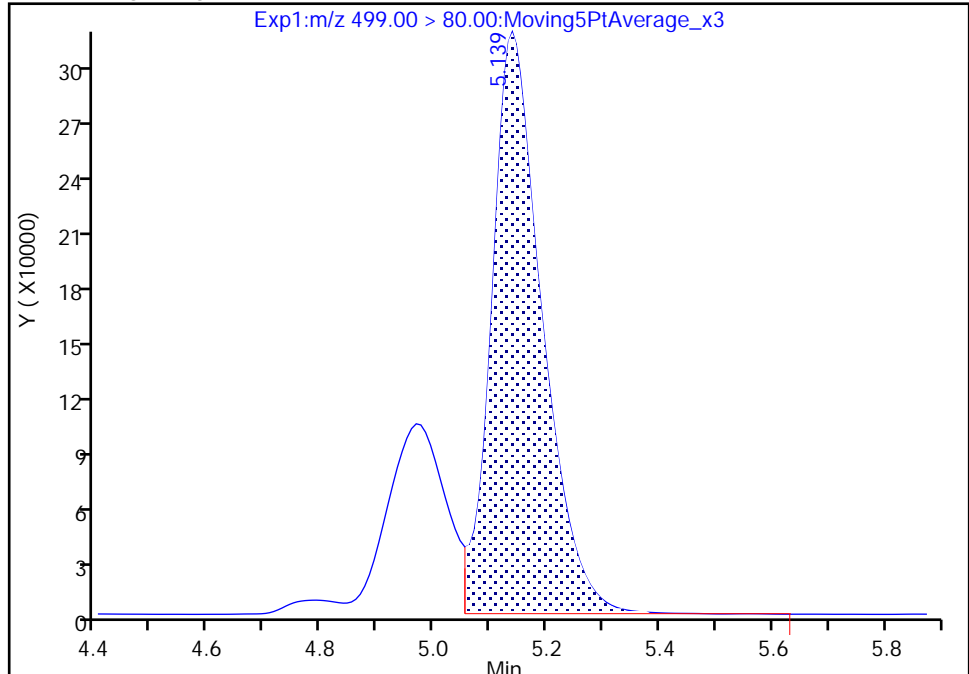
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_017.d
Injection Date: 21-Dec-2022 13:31:38 Instrument ID: A18
Lims ID: ICV
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

62 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

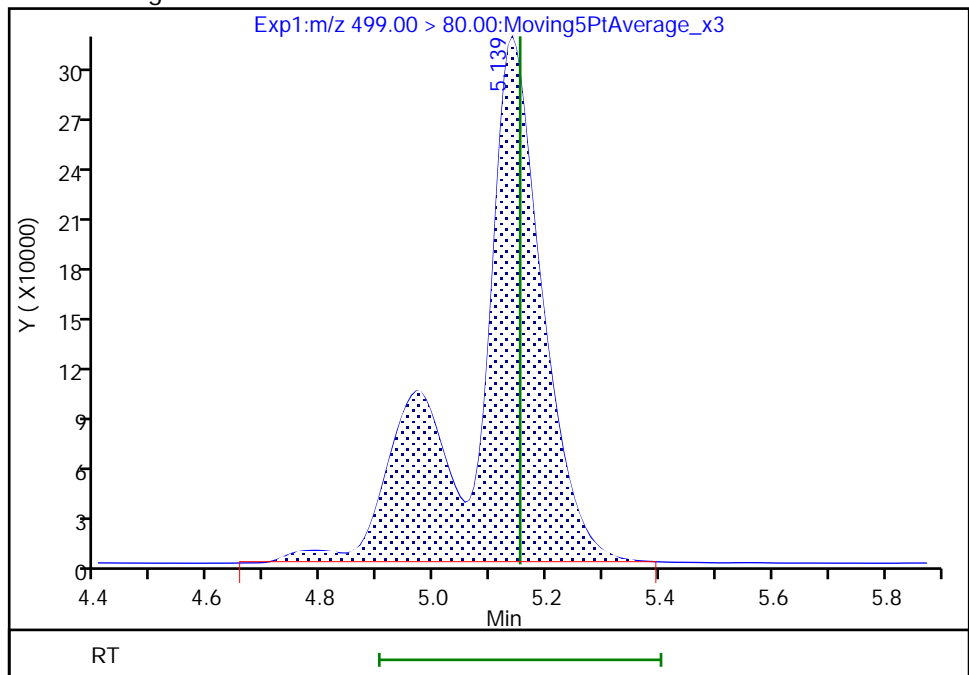
RT: 5.14
Area: 1952105
Amount: 1.744207
Amount Units: ng/ml

Processing Integration Results



RT: 5.14
Area: 2705192
Amount: 2.417091
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 14:12:46

Audit Action: Manually Integrated

Audit Reason: Isomers

Eurofins Sacramento

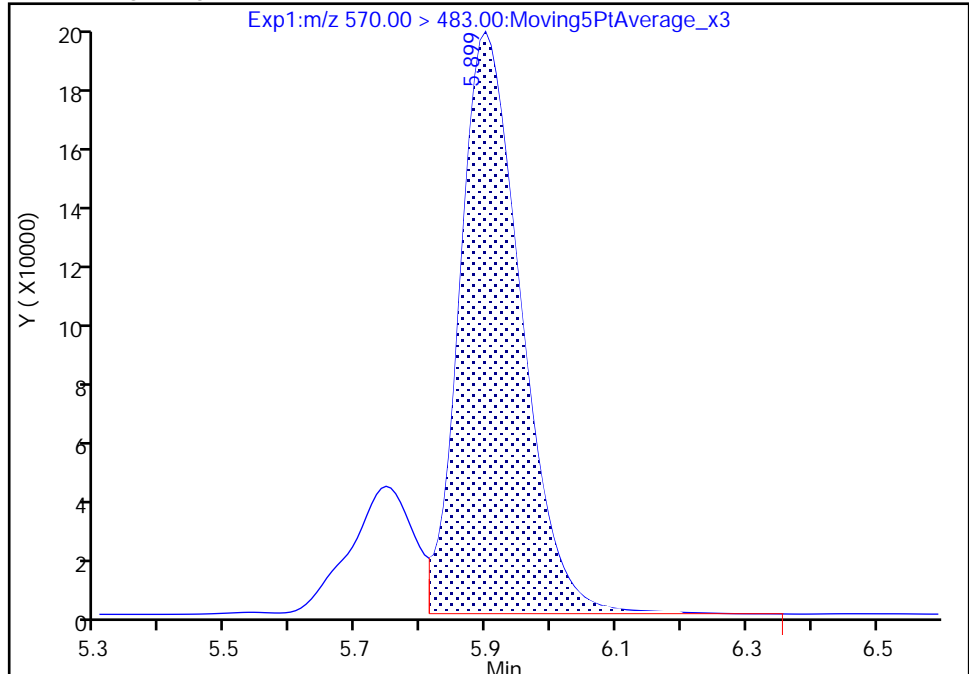
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_017.d
Injection Date: 21-Dec-2022 13:31:38 Instrument ID: A18
Lims ID: ICV
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

79 N-methylperfluorooctanesulfonami, CAS: 2355-31-9

Signal: 2

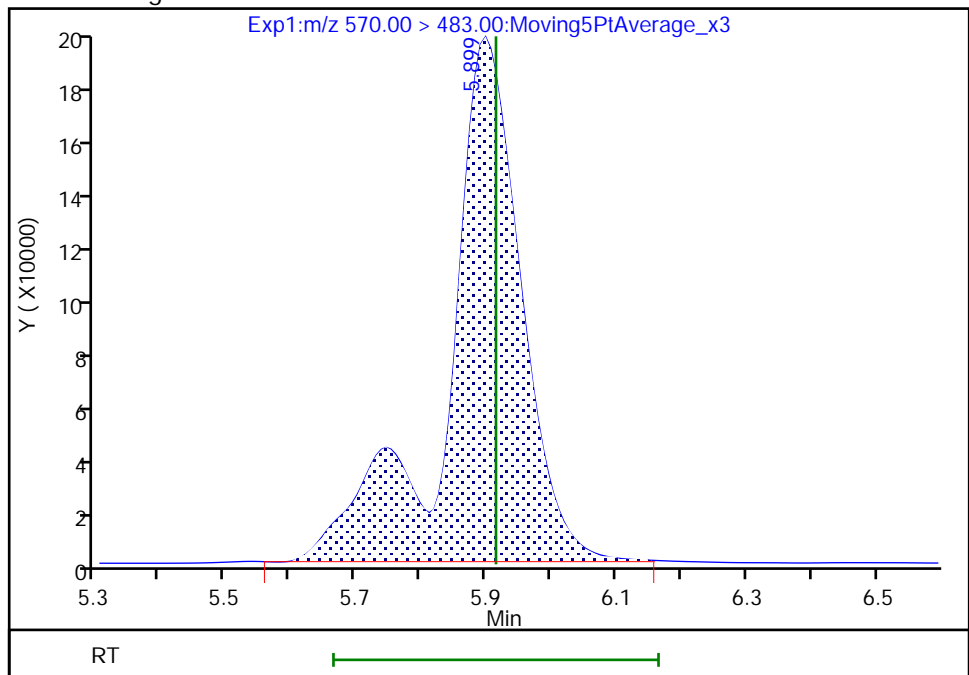
RT: 5.90
Area: 1269978
Amount: 2.570607
Amount Units: ng/ml

Processing Integration Results



RT: 5.90
Area: 1528255
Amount: 2.570607
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 14:13:00
Audit Action: Manually Integrated

Audit Reason: Isomers
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3:43 PM

Eurofins Sacramento

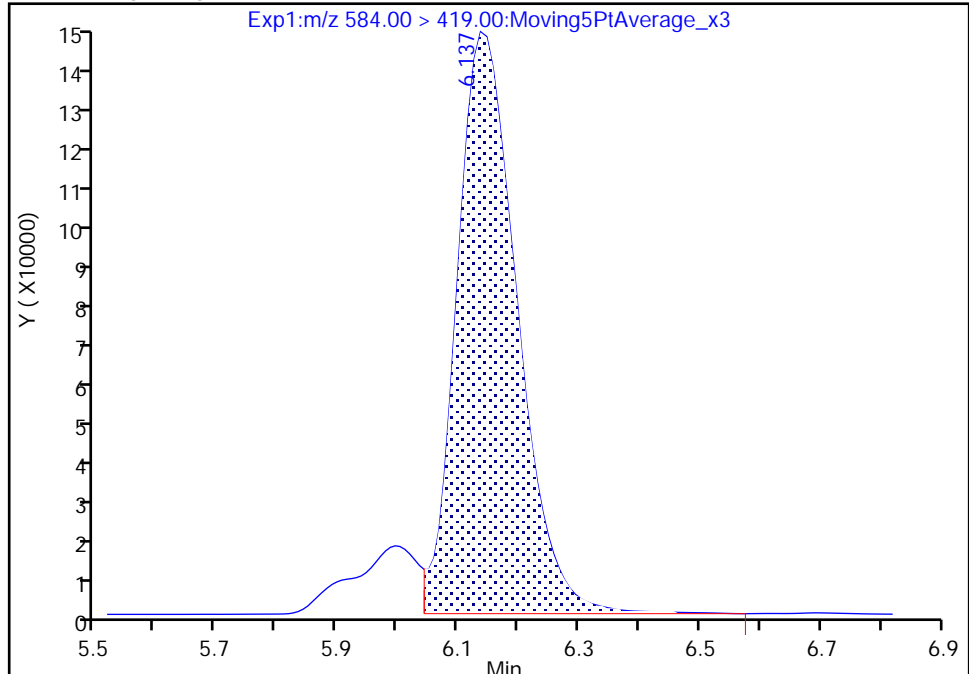
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_017.d
Injection Date: 21-Dec-2022 13:31:38 Instrument ID: A18
Lims ID: ICV
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

84 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 1

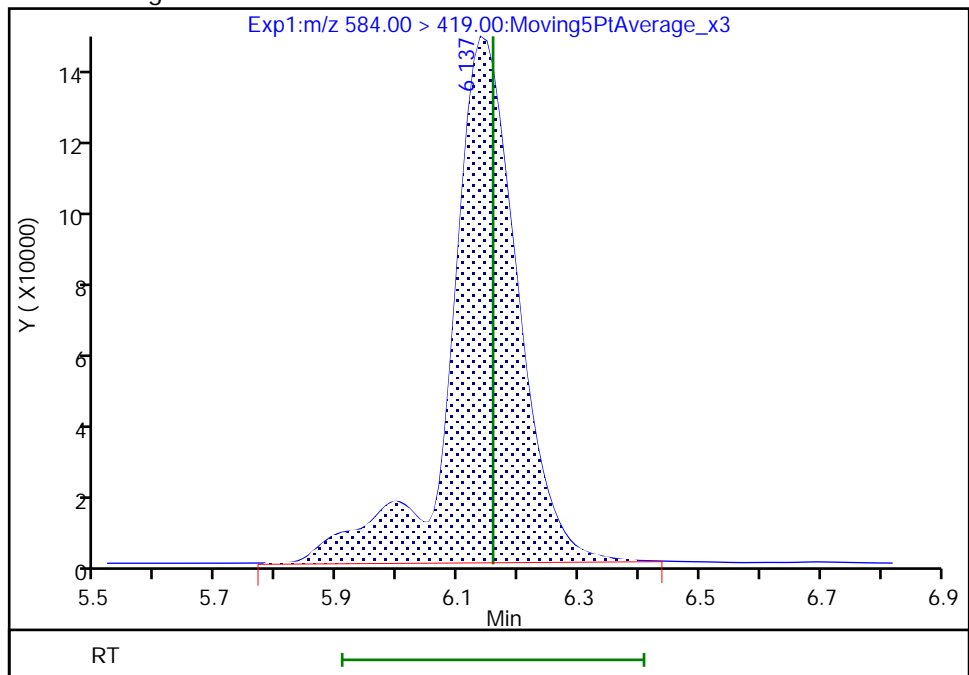
RT: 6.14
Area: 1018098
Amount: 2.335589
Amount Units: ng/ml

Processing Integration Results



RT: 6.14
Area: 1134028
Amount: 2.601540
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 14:13:10
Audit Action: Manually Integrated

Audit Reason: Isomers
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3:43 PM

Eurofins Sacramento

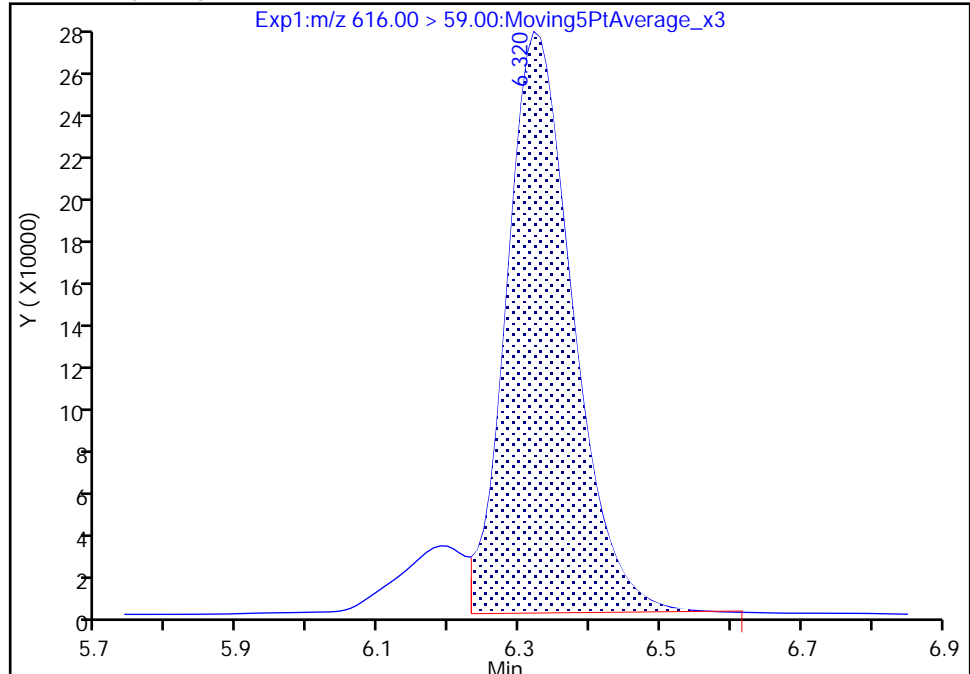
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_017.d
Injection Date: 21-Dec-2022 13:31:38 Instrument ID: A18
Lims ID: ICV
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

86 2-(N-methylperfluoro-1-octanesul, CAS: 24448-09-7

Signal: 1

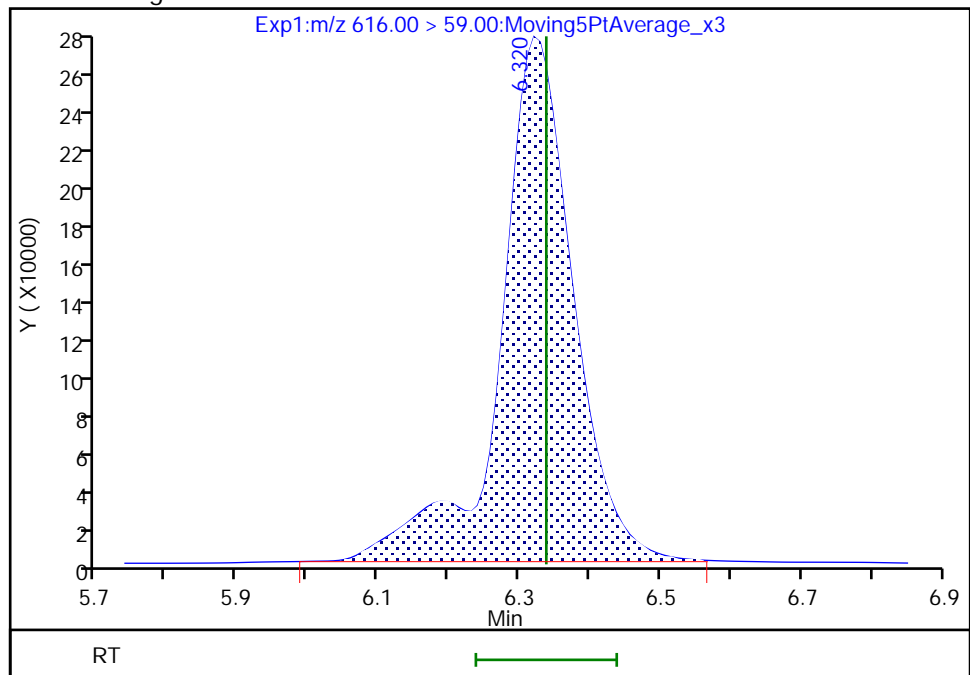
RT: 6.32
Area: 1753700
Amount: 2.419624
Amount Units: ng/ml

Processing Integration Results



RT: 6.32
Area: 1945298
Amount: 2.683976
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 14:13:19

Audit Action: Manually Integrated

Audit Reason: Isomers

Eurofins Sacramento

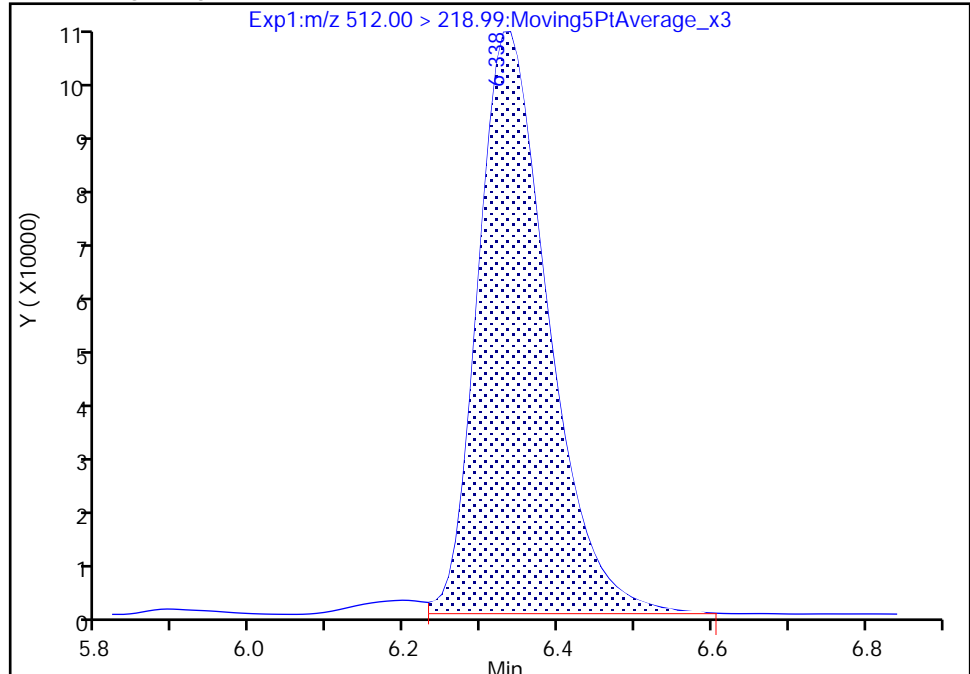
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_017.d
Injection Date: 21-Dec-2022 13:31:38 Instrument ID: A18
Lims ID: ICV
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

88 NMeFOSA, CAS: 31506-32-8

Signal: 2

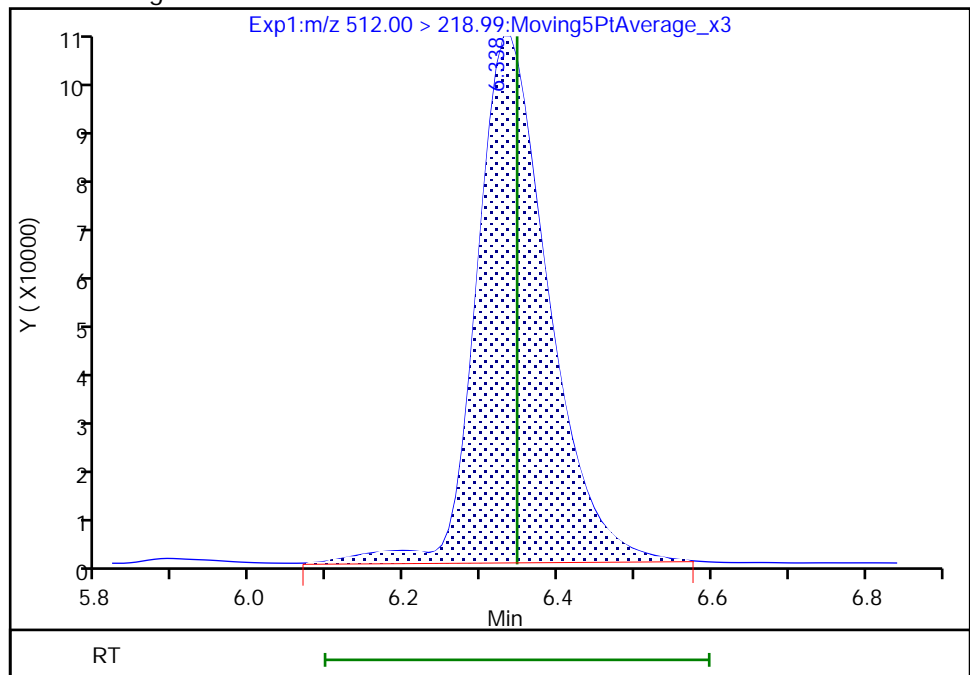
RT: 6.34
Area: 647380
Amount: 2.811356
Amount Units: ng/ml

Processing Integration Results



RT: 6.34
Area: 657230
Amount: 2.811356
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 14:13:31

Audit Action: Manually Integrated

Audit Reason: Isomers

Eurofins Sacramento

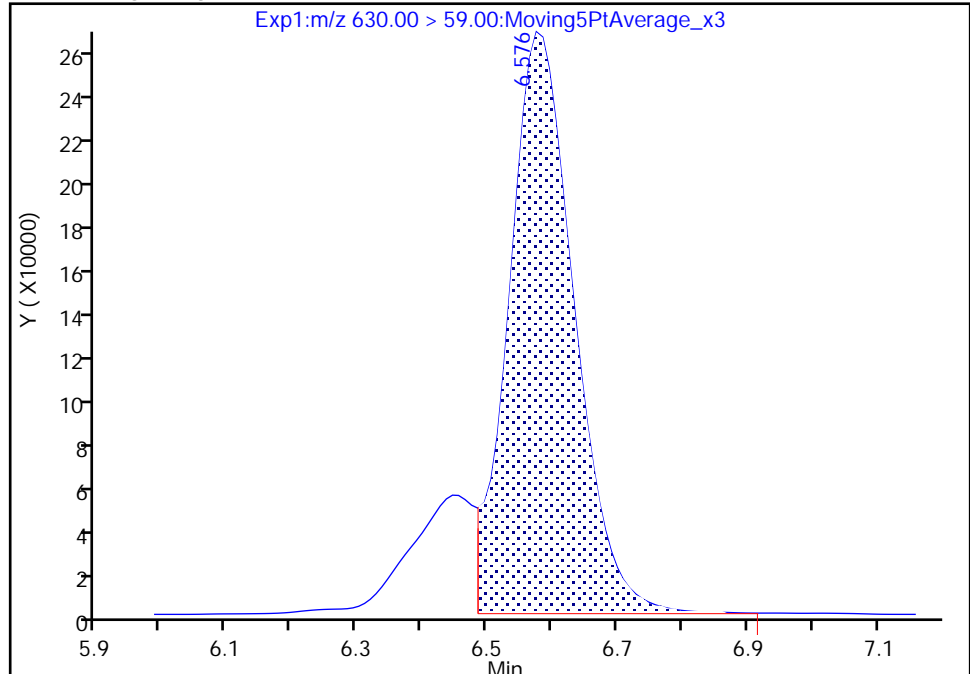
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_017.d
Injection Date: 21-Dec-2022 13:31:38 Instrument ID: A18
Lims ID: ICV
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

95 2-(N-ethylperfluoro-1-octanesulf, CAS: 1691-99-2

Signal: 1

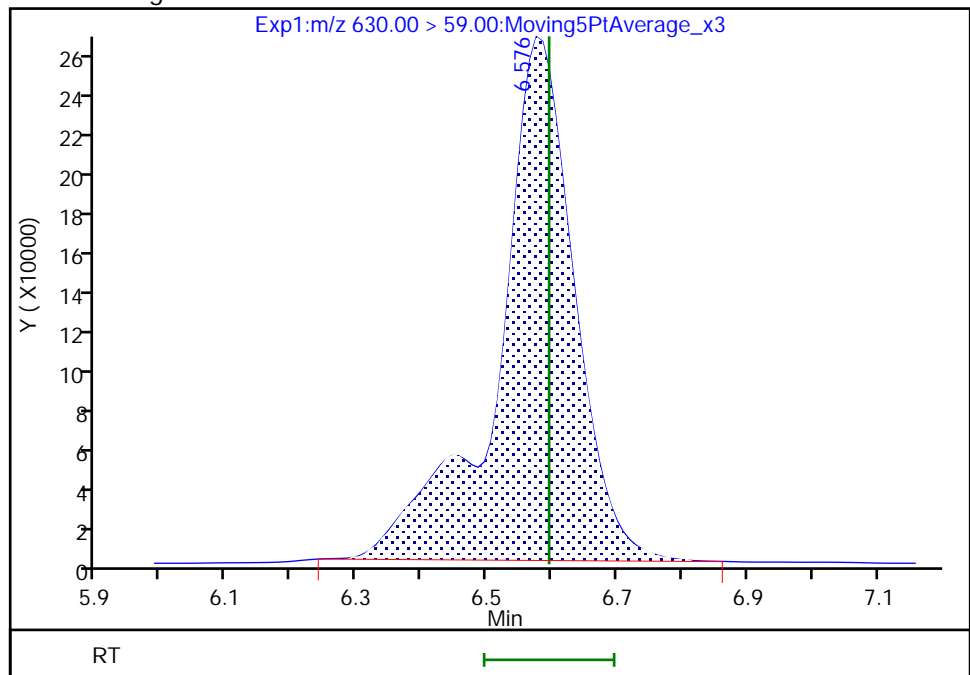
RT: 6.58
Area: 1825947
Amount: 2.248176
Amount Units: ng/ml

Processing Integration Results



RT: 6.58
Area: 2147712
Amount: 2.644346
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 14:13:41
Audit Action: Manually Integrated

Audit Reason: Isomers
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3:43 PM

Eurofins Sacramento

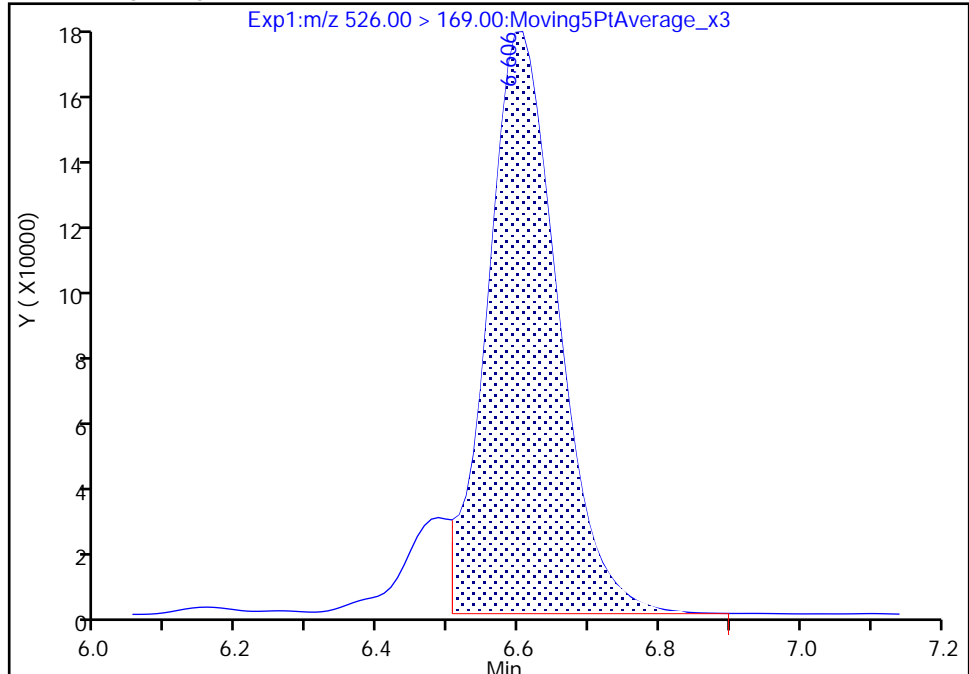
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_017.d
Injection Date: 21-Dec-2022 13:31:38 Instrument ID: A18
Lims ID: ICV
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

97 N-ethylperfluoro-1-octanesulfona, CAS: 4151-50-2

Signal: 1

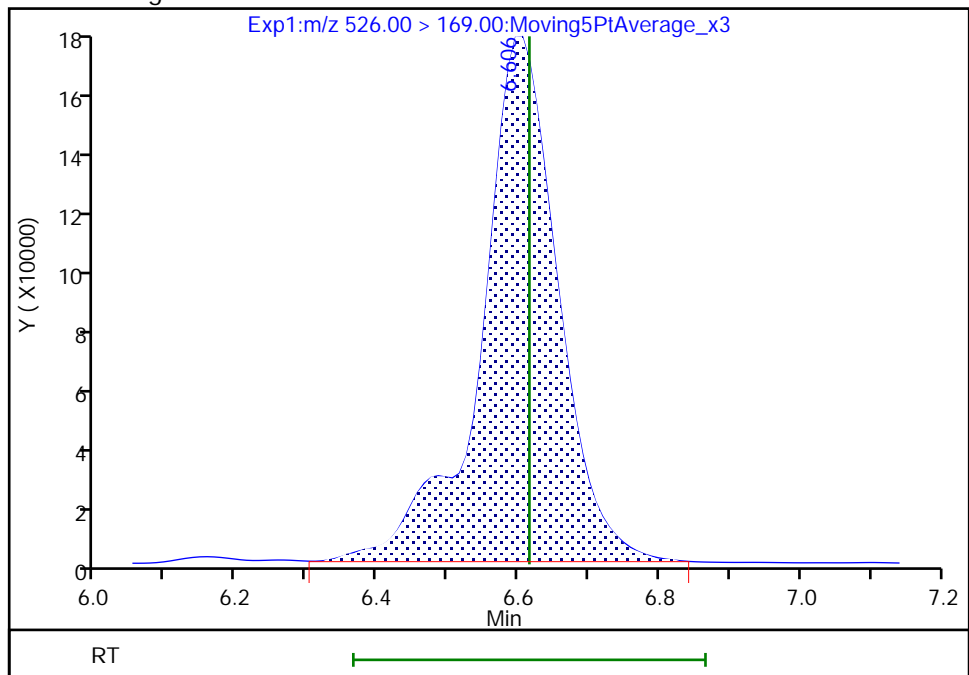
RT: 6.61
Area: 1184525
Amount: 2.818741
Amount Units: ng/ml

Processing Integration Results



RT: 6.61
Area: 1304626
Amount: 3.104538
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 14:14:55

Audit Action: Manually Integrated

Audit Reason: Isomers

Eurofins Sacramento

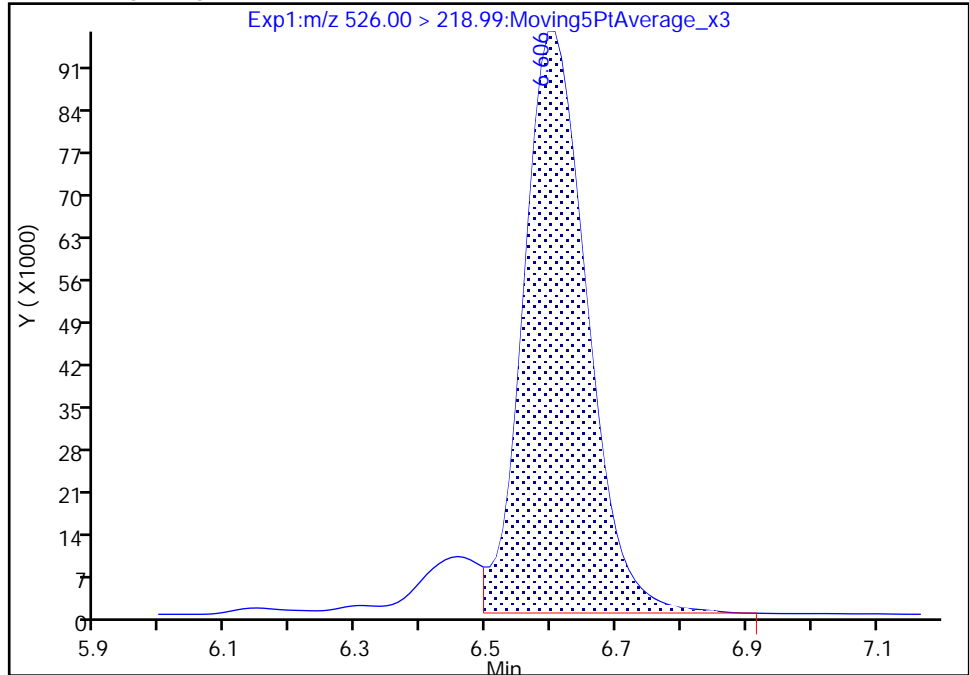
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_017.d
Injection Date: 21-Dec-2022 13:31:38 Instrument ID: A18
Lims ID: ICV
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

97 N-ethylperfluoro-1-octanesulfona, CAS: 4151-50-2

Signal: 2

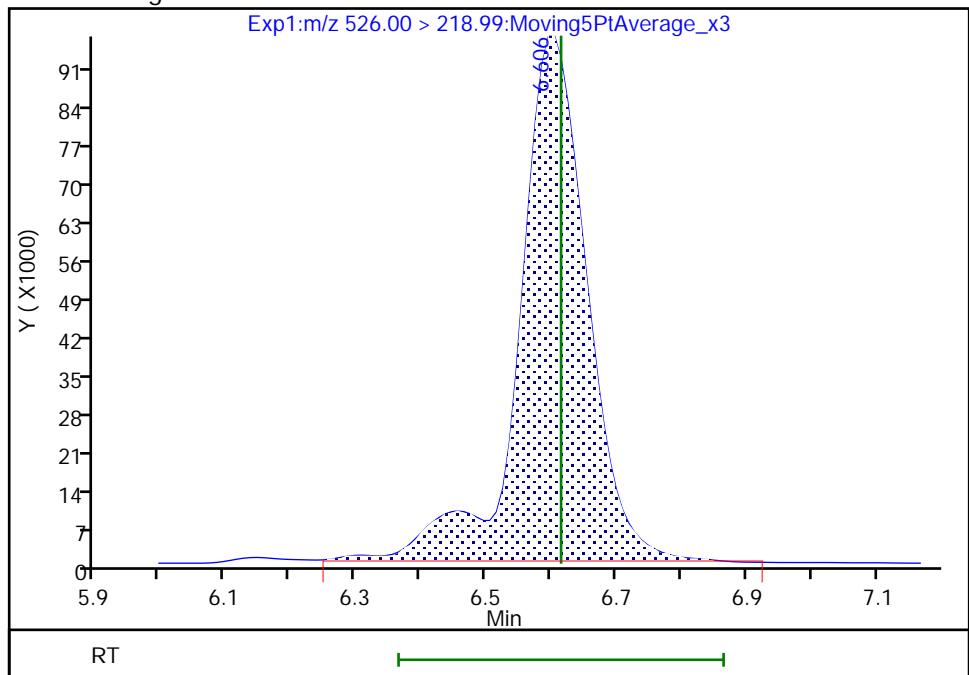
RT: 6.61
Area: 651180
Amount: 2.818741
Amount Units: ng/ml

Processing Integration Results



RT: 6.61
Area: 703842
Amount: 3.104538
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 21-Dec-2022 14:15:02

Audit Action: Manually Integrated

Audit Reason: Isomers

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3:43 PM

Eurofins Sacramento

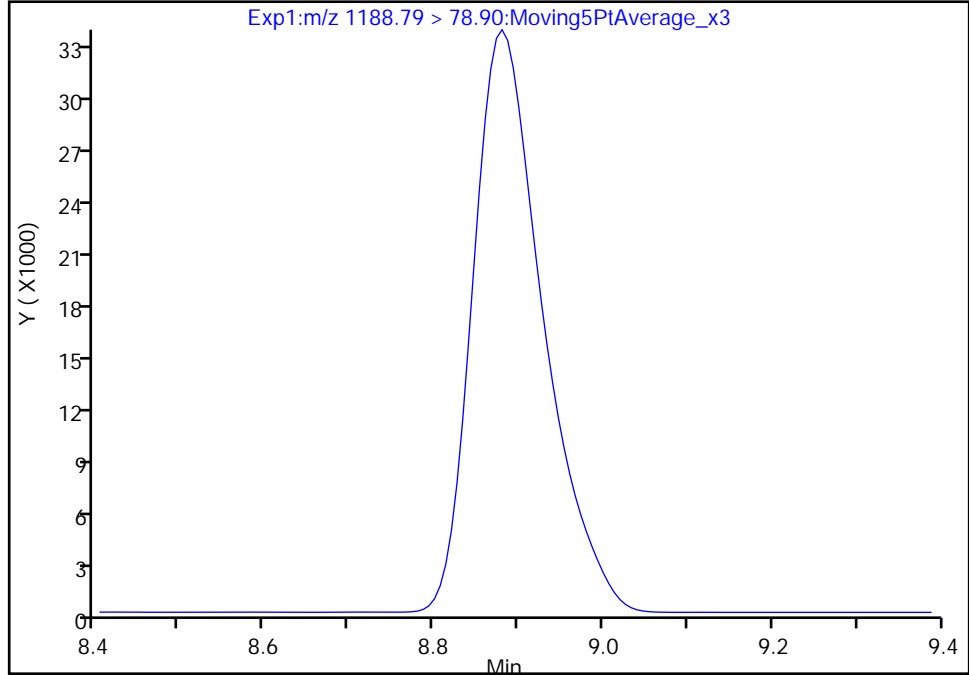
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_017.d
Injection Date: 21-Dec-2022 13:31:38 Instrument ID: A18
Lims ID: ICV
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

117 10:2 diPAP, CAS: 1895-26-7

Signal: 1

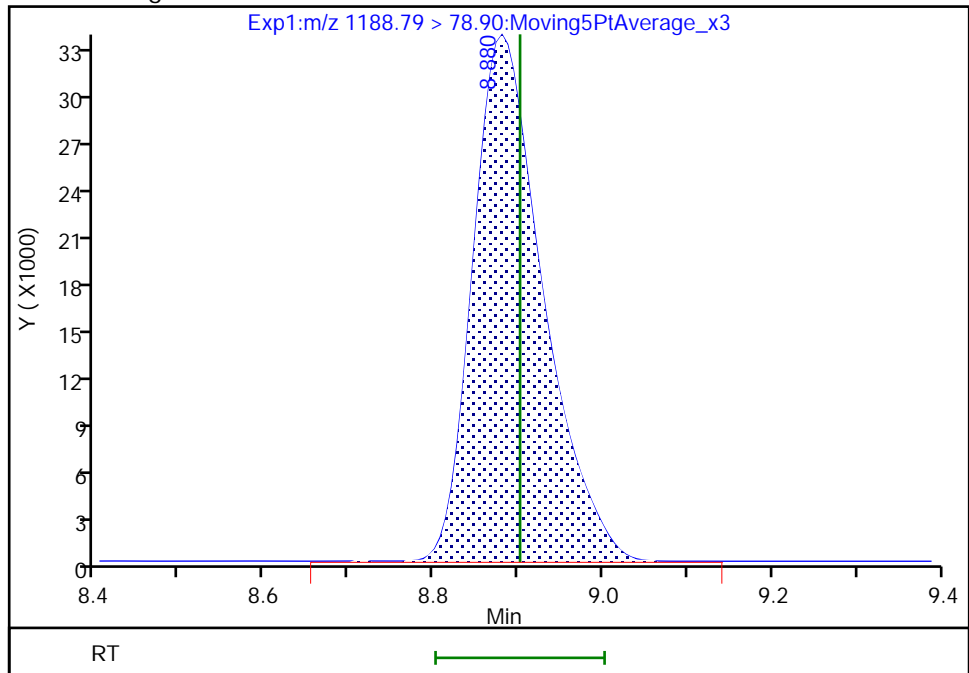
Not Detected
Expected RT: 8.90

Processing Integration Results



RT: 8.88
Area: 193850
Amount: 2.715551
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 22-Dec-2022 06:09:09
Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: CCVL 320-642483/2 Calibration Date: 12/22/2022 10:50

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC_A_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
MTP	L1ID		0.0438		0.0427	0.0500	-14.7	50.0
PFPrA	L1ID		0.4893		0.0587	0.0485	20.9	50.0
PFMOAA	AveID	0.5606	0.5952		0.0531	0.0500	6.2	50.0
R-EVE	AveID	0.3419	0.2941		0.0430	0.0500	-14.0	50.0
R-PSDA	AveID	0.1346	0.1183		0.0439	0.0500	-12.1	50.0
Hydrolyzed PSDA	AveID	0.4284	0.3946		0.0461	0.0500	-7.9	50.0
Perfluorobutanoic acid (PFBA)	AveID	1.112	1.106		0.0497	0.0500	-0.5	50.0
PMPA	AveID	1.149	1.136		0.0494	0.0500	-1.2	50.0
PFPrS	AveID	0.9349	0.9213		0.0453	0.0460	-1.5	50.0
NVHOS	AveID	0.0289	0.0318		0.0551	0.0500	10.2	50.0
PFMPA	AveID	0.6578	0.6363		0.0484	0.0500	-3.3	50.0
PFO2HxA	AveID	0.1374	0.1293		0.0470	0.0500	-5.9	50.0
3:3 FTCA	AveID	0.0768	0.0728		0.0474	0.0500	-5.2	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.045	1.024		0.0490	0.0500	-2.0	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9820	0.9721		0.0440	0.0444	-1.0	50.0
PEPA	AveID	1.111	1.115		0.0502	0.0500	0.4	50.0
PFMBA	AveID	1.110	1.058		0.0477	0.0500	-4.7	50.0
PFEEA	AveID	3.265	3.234		0.0442	0.0446	-0.9	50.0
FBSA	AveID	0.3707	0.3479		0.0469	0.0500	-6.2	50.0
NFDHA	AveID	0.1732	0.1635		0.0472	0.0500	-5.6	50.0
4:2 FTS	AveID	2.336	2.359		0.0474	0.0469	1.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9423	0.9222		0.0489	0.0500	-2.1	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8041	0.8056		0.0471	0.0470	0.2	50.0
PFO3OA	AveID	0.0552	0.0464		0.0420	0.0500	-15.9	50.0
HFPO-DA (GenX)	AveID	1.057	0.8520		0.0403	0.0500	-19.4	50.0
R-PSDCA	AveID	0.2943	0.3009		0.0511	0.0500	2.3	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9100	0.9810		0.0539	0.0500	7.8	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	0.9649	0.9272		0.0438	0.0456	-3.9	50.0
Hydro-EVE Acid	AveID	1.386	1.428		0.0515	0.0500	3.0	50.0
Hydro-PS Acid	AveID	1.235	1.239		0.0502	0.0500	0.3	50.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	6.660	6.518		0.0462	0.0472	-2.1	50.0
5:3 FTCA	AveID	3.349	3.240		0.0484	0.0500	-3.2	50.0
PFPE-1	AveID	9.767	9.556		0.0489	0.0500	-2.2	50.0
6:2 FTUCA	AveID	1.012	1.074		0.0531	0.0500	6.1	50.0
6:2 FTCA	AveID	0.2612	0.3440		0.0659	0.0500	31.7	50.0
PFO4DA	AveID	0.0555	0.0456		0.0411	0.0500	-17.8	50.0
PS Acid	AveID	0.4158	0.4554		0.0548	0.0500	9.5	50.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: CCVL 320-642483/2 Calibration Date: 12/22/2022 10:50

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC_A_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
EVE Acid	AveID	1.281	1.268		0.0495	0.0500	-1.0	50.0
FHxSA	AveID	1.998	2.071		0.0518	0.0500	3.7	50.0
PFECHS	AveID	0.8798	0.9577		0.0503	0.0462	8.9	50.0
6:2 FTS	AveID	2.031	1.930		0.0452	0.0476	-5.0	50.0
Perfluorooctanoic acid (PFOA)	AveID	0.9328	1.022		0.0548	0.0500	9.5	50.0
Perfluoroheptanesulfonic acid (PFHpS)	AveID	1.200	1.334		0.0530	0.0477	11.2	50.0
PFO5DA	AveID	0.0374	0.0331		0.0442	0.0500	-11.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.039	1.078		0.0483	0.0465	3.8	50.0
Perfluorononanoic acid (PFNA)	AveID	0.8673	0.8259		0.0476	0.0500	-4.8	50.0
7:3 FTCA	AveID	5.294	4.743		0.0448	0.0500	-10.4	50.0
8:2 FTUCA	AveID	0.9523	1.073		0.0563	0.0500	12.7	50.0
8:2 FTCA	AveID	1.013	1.209		0.0597	0.0500	19.4	50.0
9Cl-PF3ONS	AveID	2.498	2.398		0.0448	0.0467	-4.0	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9532	1.002		0.0525	0.0500	5.1	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7759	0.7322		0.0454	0.0481	-5.6	50.0
8:2 FTS	AveID	1.647	1.811		0.0528	0.0480	10.0	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.6577	0.5934		0.0451	0.0500	-9.8	50.0
NMeFOSAA	AveID	0.7907	0.8349		0.0528	0.0500	5.6	50.0
Perfluorodecanesulfonic acid (PFDS)	L1ID		0.8063		0.0549	0.0482	13.9	50.0
NEtFOSAA	AveID	0.7522	0.8065		0.0536	0.0500	7.2	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.6838	0.7076		0.0517	0.0500	3.5	50.0
10:2 FTUCA	AveID	0.7067	0.7010		0.0496	0.0500	-0.8	50.0
10:2 FTCA	L1ID		1.384		0.0858	0.0500	71.7*	50.0
11Cl-PF3OUdS	AveID	3.190	3.441		0.0509	0.0472	7.9	50.0
NMeFOSE	AveID	0.9853	0.9673		0.0491	0.0500	-1.8	50.0
NMeFOSA	AveID	0.9700	0.9503		0.0490	0.0500	-2.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.8630	0.8554		0.0496	0.0500	-0.9	50.0
10:2 FTS	AveID	1.304	1.352		0.0501	0.0483	3.7	50.0
NEtFOSE	AveID	0.9495	1.042		0.0548	0.0500	9.7	50.0
NEtFOSA	AveID	0.9338	0.8568		0.0459	0.0500	-8.2	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2502	0.2761		0.0535	0.0485	10.4	50.0
Perfluorotridecanoic acid (PFTrDA)	AveID	0.7853	0.8066		0.0514	0.0500	2.7	50.0
6:2 Fluorotelomer phosphate diester	AveID	0.9649	1.049		0.0529	0.0486	8.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.0982	0.0968		0.0493	0.0500	-1.3	50.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: CCVL 320-642483/2 Calibration Date: 12/22/2022 10:50

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC_A_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
6:2/8:2 Fluorotelomer phosphate diester	AveID	0.9673	1.077		0.0543	0.0488	11.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		1.021		0.0473	0.0500	-5.4	50.0
8:2 Fluorotelomer phosphate diester	AveID	0.9361	0.9323		0.0487	0.0489	-0.4	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.4772	0.5297		0.0555	0.0500	11.0	50.0
10:2 Fluorotelomer phosphate diester	AveID	0.0970	0.1021		0.0529	0.0502	5.2	50.0
13C4 PFBA	Ave	0.8859	0.8847		1.25	1.25	-0.1	50.0
13C5 PFPeA	Ave	0.7929	0.7986		1.26	1.25	0.7	50.0
13C3 PFBS	Ave	0.5464	0.5654		1.21	1.17	3.5	50.0
M2-4:2 FTS	Ave	0.1273	0.1150		1.06	1.17	-9.6	50.0
13C2 PFHxA	Ave	0.8726	0.8806		1.26	1.25	0.9	50.0
13C3 HFPO-DA	Ave	0.0293	0.0299		1.28	1.25	2.1	50.0
13C4 PFHpA	Ave	0.9246	0.8935		1.21	1.25	-3.4	50.0
18O2 PFHxS	Ave	0.3615	0.3764		1.23	1.18	4.1	50.0
13C-6:2 FTUCA	Ave	0.5484	0.5297		1.21	1.25	-3.4	50.0
13C-6:2 FTCA	Ave	0.0424	0.0430		1.27	1.25	1.3	50.0
M2-6:2 FTS	Ave	0.1342	0.1185		1.05	1.19	-11.7	50.0
13C4 PFOA	Ave	1.010	0.9745		1.21	1.25	-3.5	50.0
13C4 PFOS	Ave	0.2437	0.2456		1.21	1.20	0.8	50.0
13C5 PFNA	Ave	0.9888	0.9739		1.23	1.25	-1.5	50.0
13C-8:2 FTUCA	Ave	0.5900	0.5712		1.21	1.25	-3.2	50.0
13C-8:2 FTCA	Ave	0.0317	0.0333		1.31	1.25	5.0	50.0
13C8 FOSA	Ave	0.3238	0.3449		1.33	1.25	6.5	50.0
M2-8:2 FTS	Ave	0.1350	0.1208		1.07	1.20	-10.5	50.0
13C2 PFDA	Ave	0.9539	0.9839		1.29	1.25	3.1	50.0
d3-NMeFOSAA	Ave	0.1322	0.1300		1.23	1.25	-1.6	50.0
d5-NEtFOSAA	Ave	0.1326	0.1332		1.26	1.25	0.4	50.0
13C2 PFUnA	Ave	0.8946	0.8971		1.25	1.25	0.3	50.0
13C-10:2 FTUCA	Ave	0.5322	0.5324		1.25	1.25	0.0	50.0
13C-10:2 FTCA	Ave	0.0178	0.0183		1.29	1.25	2.9	50.0
d7-N-MeFOSE-M	Ave	0.1590	0.1681		1.32	1.25	5.7	50.0
d-N-MeFOSA-M	Ave	0.1053	0.1131		1.34	1.25	7.5	50.0
13C2 PFDoA	Ave	0.9837	1.018		1.29	1.25	3.5	50.0
13C2 10:2 FTS	Ave	0.1260	0.1271		1.22	1.21	0.9	50.0
d9-N-EtFOSE-M	Ave	0.1840	0.1934		1.31	1.25	5.1	50.0
d-N-EtFOSA-M	Ave	0.0980	0.1072		1.37	1.25	9.3	50.0
13C4-6:2 Fluorotelomer phosphate diester	Ave	0.2865	0.2880		1.22	1.22	0.5	50.0
13C2 PFTeDA	Ave	0.8532	0.8475		1.24	1.25	-0.7	50.0
13C2 PFHxDA	Ave	0.7395	0.7288		1.23	1.25	-1.4	50.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
SDG No.: _____
Lab Sample ID: CCVL 320-642483/2 Calibration Date: 12/22/2022 10:50
Instrument ID: A18 Calib Start Date: 12/21/2022 12:10
GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11
Lab File ID: 2022.12.21_A18_PFC_A_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4-8:2 Fluorotelomer phosphate diester	Ave	0.2076	0.2191		1.29	1.22	5.5	50.0

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_005.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 22-Dec-2022 10:50:03 ALS Bottle#: 51 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCVL (10)
 Misc. Info.: Plate: 3 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Sublist: chrom-PFAS+_A18*sub3
 Method: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 23-Dec-2022 13:31:09 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1657

First Level Reviewer: sanjumnair

Date: 23-Dec-2022 12:24:19

Ratio Calibration: Initial Calibration Level: 4

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 MTP										M
175.00 > 97.00	1.421	1.429	-0.008	0.532	8648	0.0427		85.3	20.0	M
2 PPF Acid										M
162.95 > 119.00	1.835	1.852	-0.017	0.687	93825	0.0587		121	7.0	M
3 PFMOAA										M
179.00 > 84.90	2.366	2.367	-0.001	0.886	117649	0.0531		106	24.2	M
4 R-PSDA										
441.00 > 241.00	2.560	2.544	0.016	0.959	23379	0.0439		87.9	769	
5 R-EVE										
405.00 > 217.00	2.560	2.553	0.007	0.959	58124	0.0430		86.0	1630	
6 Hydrolyzed PSDA										
439.10 > 342.90	2.568	2.553	0.015	0.962	77996	0.0461		92.1	2161	
D 8 13C4 PFBA										
217.00 > 172.00	2.670	2.662	0.008	0.584	4941658	1.25		99.9	16368	
7 Perfluorobutanoic acid										
212.90 > 169.00	2.670	2.662	0.008	1.000	218617	0.0497		99.5	9.8	
10 PMPA										
229.00 > 185.00	2.741	2.733	0.008	1.027	224469	0.0494		98.8	124	
11 PFPrS										
249.10 > 80.00	2.750	2.742	0.008	0.892	107077	0.0453		98.5	1148	
12 NVHOS										
297.00 > 135.00	2.768	2.760	0.008	1.037	6293	0.0551		110	116	
13 PFCA F										
229.00 > 85.00	2.805	2.796	0.009	0.920	113526	0.0484		96.7	809	
14 PFO2HxA										
245.00 > 85.00	2.953	2.945	0.008	0.969	23063	0.0470		94.1	96.9	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 16 13C5 PFPeA										
267.90 > 223.00	3.048	3.031	0.017	0.667	4460509	1.26		101	30048	
15 Perfluoropentanoic acid										
262.90 > 219.00	3.048	3.031	0.017	1.000	182616	0.0490		98.0	206	
17 3:3 FTCA										
241.00 > 177.10	3.048	3.041	0.008	0.988	9198	0.0474	Target=1.29	94.8	107	
241.00 > 116.90	3.048	3.041	0.008	0.988	9043		1.02(0.64-1.93)		60.6	
19 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.085	3.077	0.008	1.000	109045	0.0440	Target=2.33	99.0	750	
298.90 > 99.00	3.085	3.077	0.008	1.000	46520		2.34(1.16-3.49)		225	
D 18 13C3 PFBS										
301.90 > 80.00	3.085	3.077	0.008	0.675	2943353	1.21		103	19916	
20 PEPA										
278.90 > 234.90	3.151	3.143	0.008	1.034	198947	0.0502		100	43.1	
21 PFECA A										
278.95 > 84.90	3.170	3.163	0.008	1.040	188824	0.0477		95.3	3316	
22 PES										
314.80 > 135.00	3.268	3.252	0.016	1.059	364462	0.0442		99.1	4837	
23 FBSA										
297.90 > 78.00	3.323	3.306	0.017	0.593	26806	0.0469		93.8	550	
24 PFECA B										
295.20 > 201.00	3.412	3.396	0.016	0.979	32167	0.0472		94.4	779	
26 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.439	3.422	0.017	1.003	56854	0.0474	Target=1.90	101	2022	
327.00 > 79.96	3.430	3.422	0.008	1.000	31173		1.82(0.95-2.85)		330	
D 25 M2-4:2 FTS										
329.00 > 81.00	3.430	3.422	0.008	0.751	602444	1.06		90.4	3307	
D 27 13C2 PFHxA										
315.00 > 270.00	3.483	3.468	0.015	0.762	4918554	1.26		101	36812	
28 Perfluorohexanoic acid										
313.00 > 269.00	3.483	3.468	0.015	1.000	181435	0.0489	Target=13.49	97.9	208	
313.00 > 119.00	3.483	3.468	0.015	1.000	13172		13.77(6.75-20.24)		140	
29 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.510	3.503	0.007	1.138	95662	0.0471	Target=3.01	100	986	
349.00 > 99.00	3.510	3.503	0.007	1.138	32479		2.95(1.50-4.51)		625	
30 PFO3OA										
311.10 > 85.20	3.564	3.547	0.017	1.023	9136	0.0420		84.1	158	
31 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.639	3.632	0.007	0.998	5692	0.0403	Target=0.88	80.6	316	M
285.00 > 185.00	3.648	3.632	0.016	1.000	6244		0.91(0.44-1.31)		66.8	M
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.648	3.632	0.016	0.798	167011	1.28		102	5782	
33 R-PSDCA										
397.00 > 217.00	3.963	3.946	0.017	0.988	60077	0.0511		102	1995	
D 35 13C4 PFHpA										
367.00 > 322.00	4.009	3.994	0.015	0.877	4990839	1.21		96.6	26479	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
36 Perfluoroheptanoic acid										M
363.00 > 319.00	4.009	3.994	0.015	1.000	195845	0.0539	Target=3.51	108	366	M
363.00 > 169.00	4.009	3.994	0.015	1.000	54390		3.60(1.75-5.26)		1195	
38 Perfluorohexanesulfonic acid										M
399.00 > 80.00	4.027	4.012	0.015	1.000	71115	0.0438	Target=3.29	96.1	680	M
399.00 > 99.00	4.018	4.012	0.006	0.998	20956		3.39(1.64-4.93)		171	M
D 37 18O2 PFHxS										
403.00 > 84.00	4.027	4.012	0.015	0.881	1988854	1.23		104	21450	
34 Hydro-EVE Acid										
427.00 > 282.90	4.044	4.038	0.006	1.009	285169	0.0515		103	3164	
39 Hydro-PS Acid										
463.00 > 263.00	4.077	4.063	0.014	1.017	247289	0.0502		100	1333	
41 5:3 FTCA										
340.88 > 236.90	4.086	4.071	0.015	0.979	31115	0.0484	Target=1.13	96.8	519	
340.88 > 216.90	4.086	4.071	0.015	0.979	29590		1.05(0.56-1.69)		288	
40 DONA										
377.00 > 251.00	4.086	4.071	0.015	0.799	337613	0.0462	Target=2.17	97.9	3776	
377.00 > 85.00	4.086	4.071	0.015	0.799	149449		2.26(1.09-3.26)		935	
42 PFECA G										
378.90 > 184.90	4.120	4.097	0.023	0.988	91768	0.0489		97.8	2571	
43 6:2 FTUCA										
356.86 > 292.90	4.146	4.131	0.015	1.000	127108	0.0531	Target=14.13	106	1638	
356.86 > 243.00	4.137	4.131	0.006	0.998	8499		14.96(7.07-21.20)		309	
D 44 13C-6:2 FTUCA										
358.86 > 293.90	4.146	4.131	0.015	0.907	2958501	1.21		96.6	27282	
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.172	4.157	0.015	0.913	240091	1.27		101	1051	
45 6:2 FTCA										M
377.10 > 313.10	4.188	4.157	0.031	1.004	3304	0.0659	Target=0.64	132	179	
377.10 > 63.00	4.188	4.157	0.031	1.004	3808		0.87(0.32-0.96)		91.8	M
47 PFO4DA										
376.90 > 85.00	4.286	4.271	0.015	1.069	9103	0.0411		82.2	0.5	
48 PS Acid										
442.80 > 146.80	4.374	4.360	0.014	0.957	99160	0.0548		110	262	
49 EVE Acid										
407.00 > 262.90	4.383	4.369	0.014	0.959	276107	0.0495		99.0	9303	
50 FHxSA										
397.90 > 78.00	4.490	4.475	0.015	0.801	159606	0.0518		104	2894	
51 PFECHS										
460.80 > 380.90	4.490	4.475	0.015	0.983	192672	0.0503	Target=2.14	109	2160	
460.80 > 98.90	4.490	4.475	0.015	0.983	93477		2.06(1.07-3.21)		2133	
53 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.535	4.520	0.015	1.000	48629	0.0452	Target=2.29	95.0	695	
427.00 > 79.96	4.535	4.520	0.015	1.000	20868		2.33(1.15-3.44)		312	
D 52 M2-6:2 FTS										
429.00 > 81.00	4.535	4.520	0.015	0.992	628551	1.05		88.3	10545	
\$ 54 13C8 PFOA										
421.00 > 376.00	4.570	4.547	0.023	1.000	4588651	1.23		98.2	15632	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 56 13C4 PFOA										
417.00 > 372.00	4.570	4.556	0.014	1.000	5443165	1.21		96.5	19045	
58 Perfluorooctanoic acid										M
413.00 > 369.00	4.570	4.556	0.014	1.000	222454	0.0548	Target=2.76	110	202	M
413.00 > 169.00	4.570	4.556	0.014	1.000	76999		2.89(1.38-4.14)		594	M
* 55 13C2 PFOA										
415.00 > 370.00	4.570	4.556	0.014		5585424	1.25			19342	
57 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.578	4.556	0.022	0.895	69834	0.0530	Target=4.72	111	1068	
449.00 > 99.00	4.586	4.556	0.030	0.896	14949		4.67(2.36-7.08)		373	
59 TAF										
442.90 > 85.00	4.992	4.970	0.022	1.093	7203	0.0442		88.5	283	
D 61 13C4 PFOS										
503.00 > 80.00	5.117	5.097	0.020	1.120	1314128	1.21		101	7575	
\$ 60 13C8 PFOS										
507.00 > 99.00	5.117	5.097	0.020	1.120	544541	1.17		97.6	7503	
62 Perfluorooctanesulfonic acid										M
499.00 > 80.00	5.117	5.097	0.020	1.000	55031	0.0483	Target=4.87	104	116	M
499.00 > 99.00	5.117	5.097	0.020	1.000	12910		4.26(2.43-7.30)		203	
D 64 13C5 PFNA										
468.00 > 423.00	5.124	5.104	0.020	1.121	5439592	1.23		98.5	27801	
63 Perfluorononanoic acid										
463.00 > 419.00	5.124	5.112	0.012	1.000	179709	0.0476	Target=7.86	95.2	271	
463.00 > 169.00	5.124	5.112	0.012	1.000	27164		6.62(3.93-11.78)		517	
65 7:3 FTCA										
441.00 > 337.00	5.247	5.231	0.016	0.989	35278	0.0448	Target=1.24	89.6	301	
441.00 > 317.00	5.247	5.231	0.016	0.989	32480		1.09(0.62-1.87)		400	
D 67 13C-8:2 FTUCA										
458.86 > 393.90	5.285	5.269	0.016	1.157	3190631	1.21		96.8	9555	
66 8:2 FTUCA										
456.86 > 392.90	5.285	5.269	0.016	1.000	136920	0.0563	Target=35.99	113	2297	
456.86 > 343.00	5.266	5.269	-0.003	0.996	3923		34.90(17.99-53.98)		142	
69 8:2 FTCA										M
477.00 > 393.10	5.313	5.288	0.025	1.002	8991	0.0597	Target=2.79	119	92.6	
477.00 > 63.20	5.294	5.288	0.006	0.998	2617		3.44(1.39-4.18)		148	M
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.303	5.297	0.006	1.161	185935	1.31		105	1041	
70 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	5.418	5.403	0.015	1.059	122882	0.0448		96.0	3069	
71 Perfluorooctanesulfonamide										
498.00 > 78.00	5.606	5.592	0.014	1.000	77196	0.0525		105	1878	
D 72 13C8 FOSA										
506.00 > 78.00	5.606	5.592	0.014	1.227	1926498	1.33		107	17436	
73 Perfluorononanesulfonic acid										
549.00 > 80.00	5.614	5.600	0.014	1.097	38651	0.0454	Target=2.88	94.4	896	
549.00 > 99.00	5.614	5.600	0.014	1.097	16477		2.35(1.44-4.32)		391	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.630	5.608	0.022	1.232	447847	1.07		89.5	13969	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	5.630	5.616	0.014	1.000	46918	0.0528	Target=2.38	110	2808	
527.00 > 79.96	5.630	5.616	0.014	1.000	18818		2.49(1.19-3.58)		449	
D 76 13C2 PFDA										
515.00 > 470.00	5.639	5.616	0.023	1.234	5495642	1.29		103	28812	
77 Perfluorodecanoic acid										
513.00 > 469.00	5.639	5.616	0.023	1.000	130443	0.0451	Target=7.41	90.2	667	
513.00 > 169.00	5.639	5.616	0.023	1.000	20278		6.43(3.70-11.11)		664	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.858	5.843	0.015	1.282	726102	1.23		98.4	4492	
79 N-methylperfluorooctanesulfonami										
570.00 > 419.00	5.858	5.851	0.007	1.000	24250	0.0528	Target=0.78	106	475	
570.00 > 483.00	5.858	5.851	0.007	1.000	26903		0.90(0.39-1.17)		729	
80 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.068	6.061	0.007	1.186	42648	0.0549	Target=2.82	114	1253	
599.00 > 99.00	6.076	6.061	0.015	1.188	12410		3.44(1.41-4.23)		335	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.096	6.078	0.018	1.334	743787	1.26		100	3170	
D 82 13C2 PFUnA										
565.00 > 520.00	6.106	6.087	0.019	1.336	5010484	1.25		100	26774	
83 Perfluoroundecanoic acid										
563.00 > 519.00	6.106	6.087	0.019	1.000	141820	0.0517	Target=7.89	103	899	
563.00 > 169.00	6.106	6.087	0.019	1.000	18050		7.86(3.95-11.84)		753	
84 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	6.106	6.087	0.019	1.002	23994	0.0536	Target=0.75	107	716	M
584.00 > 526.10	6.106	6.087	0.019	1.002	32682		0.73(0.38-1.13)		655	M
D 89 13C-10:2 FTUCA										
558.86 > 493.90	6.267	6.251	0.016	1.371	2973411	1.25		100	10079	
90 10:2 FTUCA										
556.86 > 492.90	6.267	6.251	0.016	1.000	83375	0.0496		99.2	1823	
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.276	6.269	0.007	1.373	102232	1.29		103	546	
92 10:2 FTCA										
576.80 > 493.00	6.276	6.277	-0.001	1.000	5660	0.0858	Target=2.41	172	32.7	RM
576.80 > 63.10	6.267	6.277	-0.010	0.999	1277		4.43(1.20-3.61)		8.0	M
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.320	6.304	0.016	1.383	938757	1.32		106	4846	
93 11-Chloroeicosafuoro-3-oxaundec										
631.00 > 451.00	6.329	6.304	0.025	1.237	178232	0.0509		108	7964	
86 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	6.338	6.322	0.016	1.003	36324	0.0491		98.2	405	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.338	6.322	0.016	1.387	631885	1.34		107	2445	
88 NMeFOSA										
512.00 > 169.00	6.347	6.331	0.016	1.001	24019	0.0490	Target=2.06	98.0	608	
512.00 > 218.99	6.338	6.331	0.007	1.000	10823		2.22(1.03-3.09)		301	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
99 Perfluorododecanoic acid										
613.00 > 569.00	6.516	6.508	0.008	1.000	194567	0.0496	Target=7.83	99.1	780	
613.00 > 169.00	6.516	6.508	0.008	1.000	27161		7.16(3.91-11.74)		1516	
D 98 13C2 PFDaA										
615.00 > 570.00	6.516	6.508	0.008	1.426	5686286	1.29		103	15775	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.526	6.518	0.008	1.428	685158	1.22		101	12590	
101 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	6.536	6.518	0.018	1.002	37089	0.0501	Target=1.80	104	1241	
627.00 > 79.96	6.536	6.518	0.018	1.002	19889		1.86(0.90-2.70)		469	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.576	6.558	0.018	1.439	1080099	1.31		105	8746	
95 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	6.586	6.578	0.008	1.002	45000	0.0548		110	546	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.596	6.588	0.008	1.443	598587	1.37		109	2480	
97 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	6.615	6.598	0.017	1.003	20515	0.0459	Target=1.83	91.8	374	
526.00 > 218.99	6.615	6.598	0.017	1.003	13049		1.57(0.92-2.75)		588	
102 Perfluorododecanesulfonic acid (
699.00 > 80.00	6.851	6.846	0.005	1.339	14697	0.0535	Target=0.66	110	528	
699.00 > 99.00	6.851	6.846	0.005	1.339	21326		0.69(0.33-0.99)		890	
103 Perfluorotridecanoic acid										
663.00 > 619.00	6.889	6.876	0.013	1.057	183456	0.0514	Target=6.66	103	1468	
663.00 > 169.00	6.889	6.876	0.013	1.057	28592		6.42(3.33-9.99)		1236	
D 112 13C4-6:2 diPAP										
792.82 > 78.90	7.119	7.108	0.011	1.558	1565248	1.22		101	2645	
114 6:2 diPAP										
788.79 > 78.90	7.126	7.108	0.018	1.001	65658	0.0529	Target=1.89	109	293	
788.79 > 96.90	7.126	7.108	0.018	1.001	34138		1.92(0.95-2.84)		219	
105 Perfluorotetradecanoic acid										
713.00 > 169.00	7.222	7.216	0.006	1.000	18337	0.0493	Target=0.92	98.7	645	
713.00 > 219.00	7.222	7.216	0.006	1.000	18077		1.01(0.46-1.38)		487	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.222	7.216	0.006	1.581	4733546	1.24		99.3	6772	
115 6:2/8:2 diPAP										
888.70 > 78.90	7.606	7.593	0.013	1.068	67632	0.0543	Target=1.35	111	830	
888.70 > 96.90	7.606	7.593	0.013	1.068	43503		1.55(0.68-2.03)		421	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.786	7.779	0.007	1.704	4070542	1.23		98.6	5290	
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.795	7.779	0.016	1.001	166166	0.0473	Target=8.78	94.6	379	
813.00 > 169.00	7.786	7.779	0.007	1.000	19695		8.44(4.39-13.18)		444	
D 113 13C4-8:2 diPAP										
992.77 > 96.90	8.009	7.993	0.016	1.753	1197157	1.29		106	2120	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
116 8:2 diPAP										
988.74 > 78.90	8.009	7.993	0.016	1.000	44640	0.0487	Target=1.18	99.6	936	
988.74 > 96.90	8.009	7.993	0.016	1.000	38988		1.14(0.59-1.77)		559	
108 Perfluorooctadecanoic acid										
913.00 > 869.00	8.271	8.266	0.005	1.062	86243	0.0555	Target=10.05	111	176	
913.00 > 169.00	8.271	8.266	0.005	1.062	8491		10.16(5.02-15.07)		307	
117 10:2 diPAP										
1188.79 > 78.90	8.770	8.752	0.018	1.095	5023	0.0529	Target=1.13	105	243	
1188.79 > 96.90	8.770	8.752	0.018	1.095	4366		1.15(0.57-1.70)		162	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Reagents:

LCPFC+6C_LL2_00010

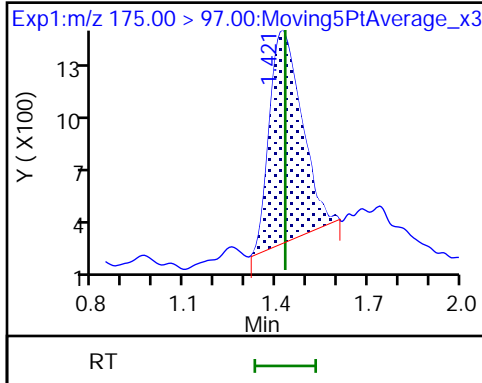
Amount Added: 1.00

Units: mL

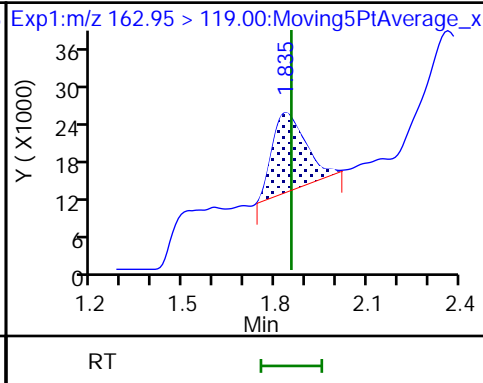
Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_005.d
Injection Date: 22-Dec-2022 10:50:03 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL

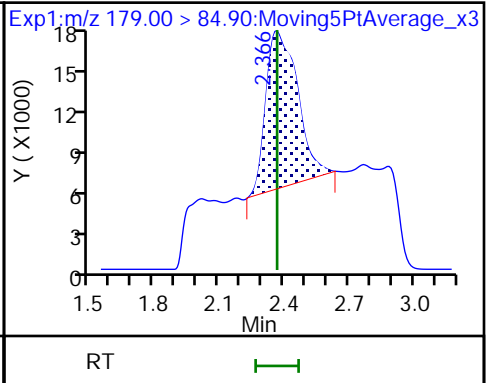
1 MTP (M)



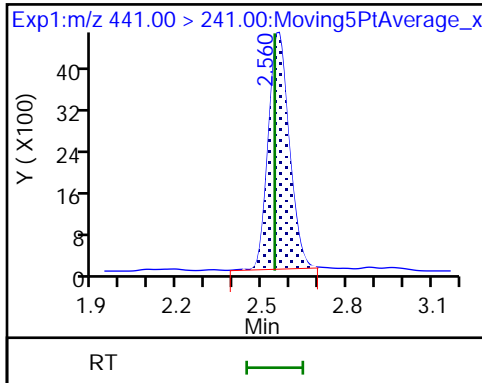
2 PPF Acid (M)



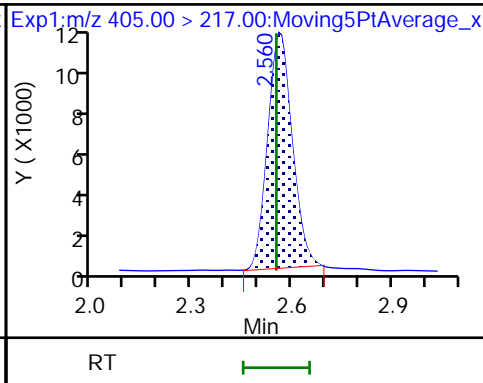
3 PFMOAA (M)



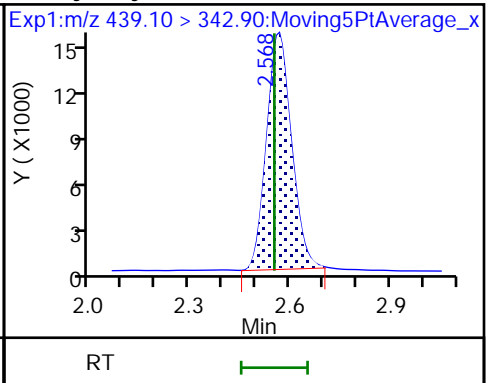
4 R-PSDA



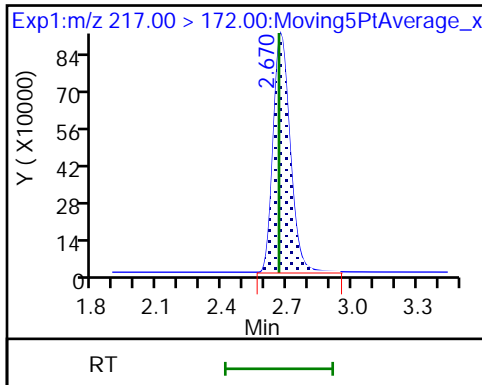
5 R-EVE



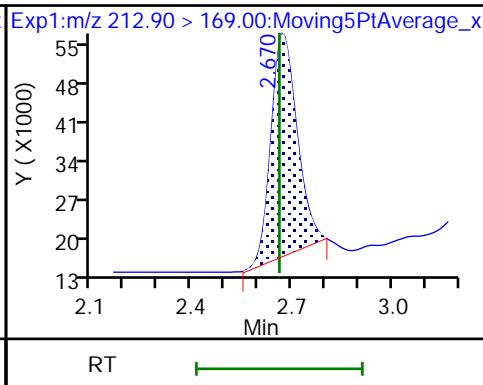
6 Hydrolyzed PSDA



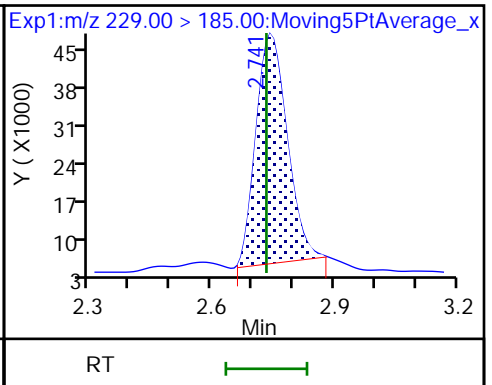
D 8 13C4 PFBA



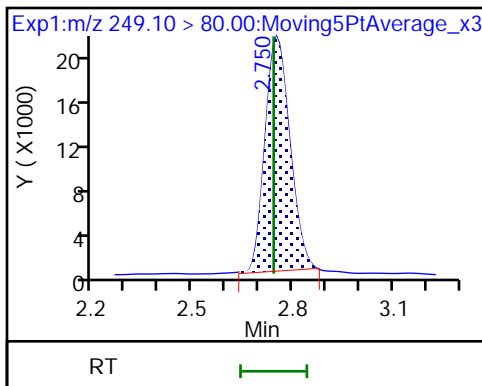
7 Perfluorobutanoic acid



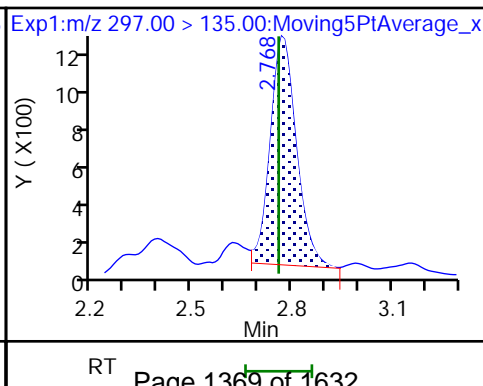
10 PMPA



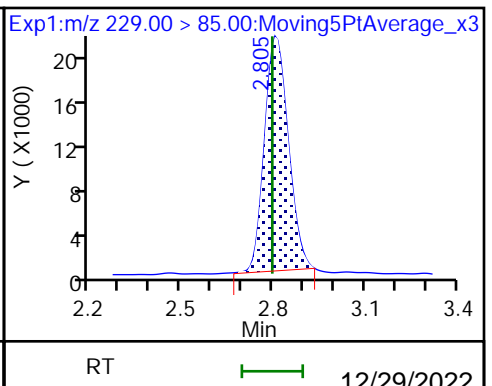
11 PFPrS

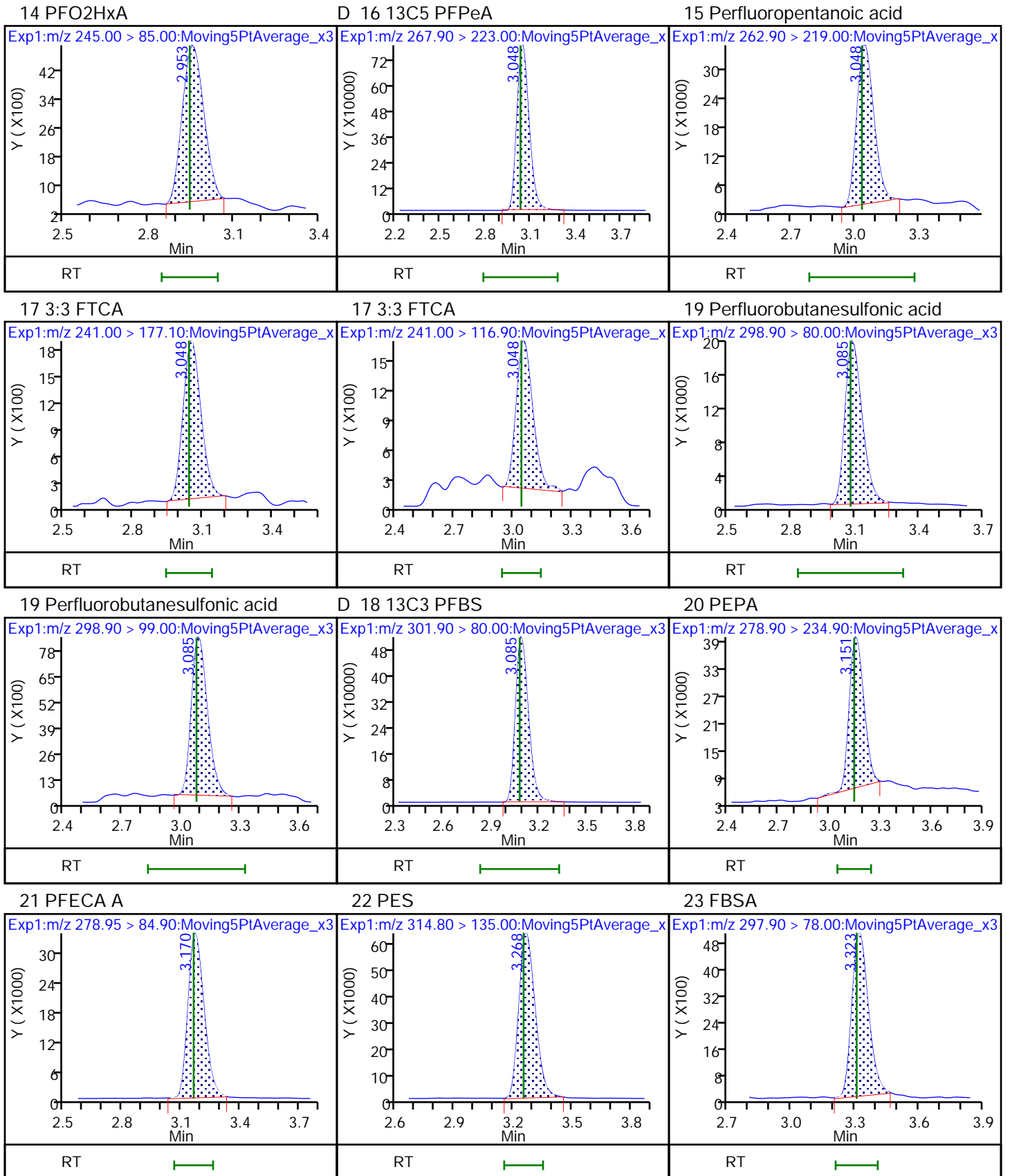


12 NVHOS



13 PFECA F

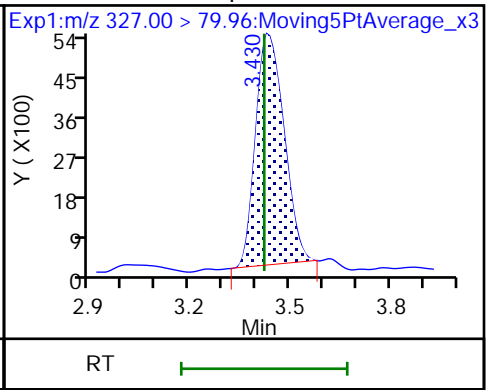
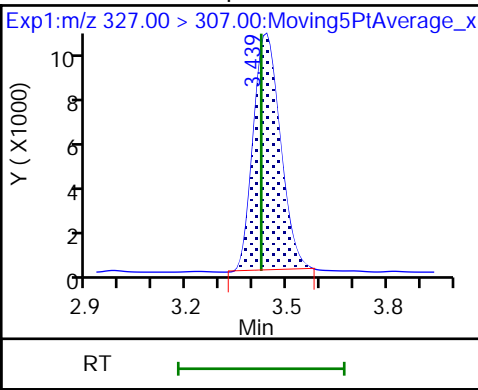
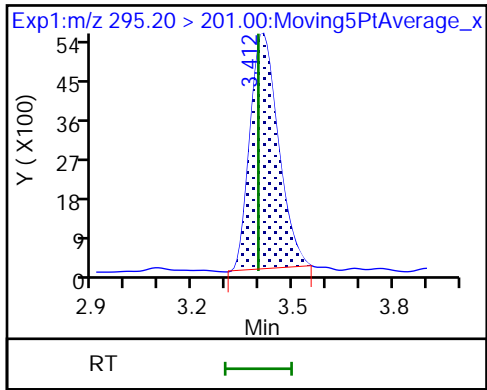




24 PFECA B

26 1H,1H,2H,2H-perfluorohexanesulfo

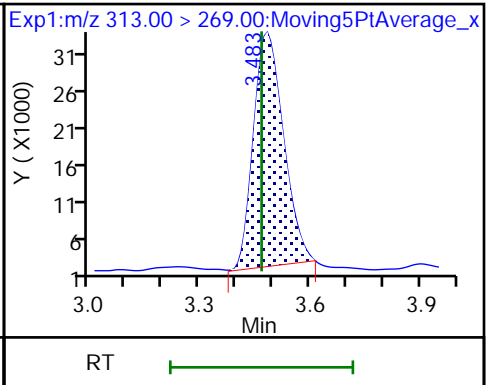
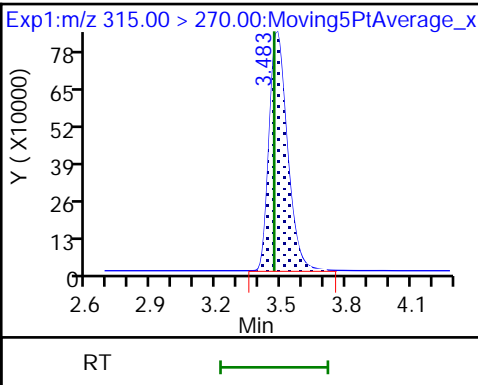
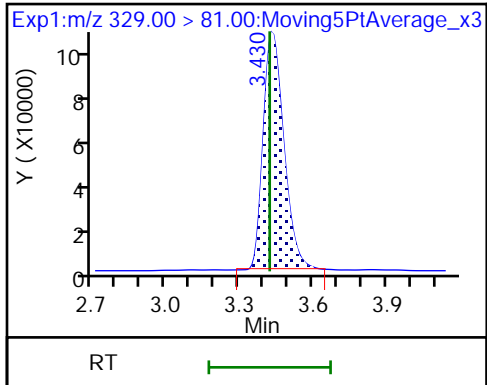
26 1H,1H,2H,2H-perfluorohexanesulfo



D 25 M2-4:2 FTS

D 27 13C2 PFHxA

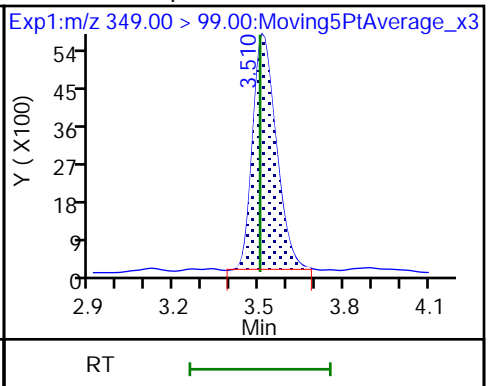
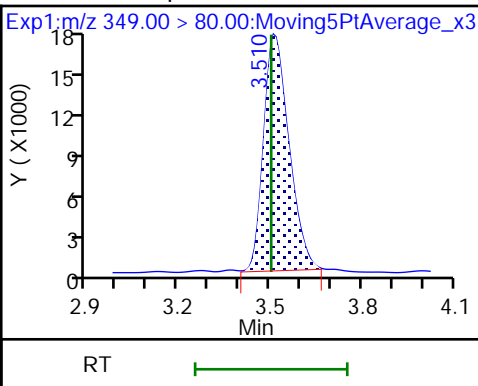
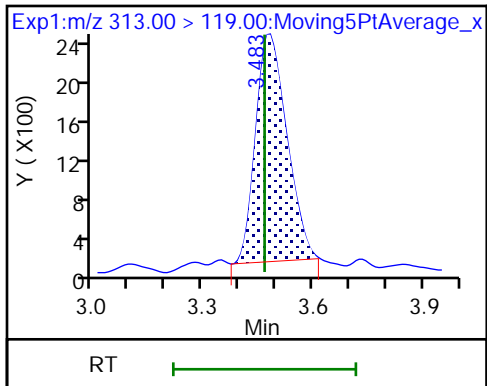
28 Perfluorohexanoic acid



28 Perfluorohexanoic acid

29 Perfluoropentanesulfonic acid

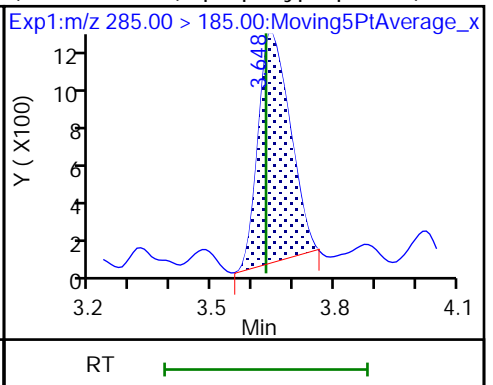
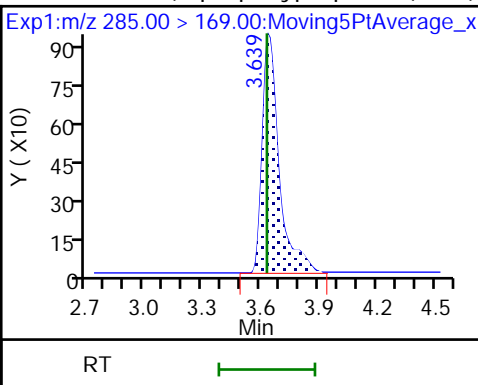
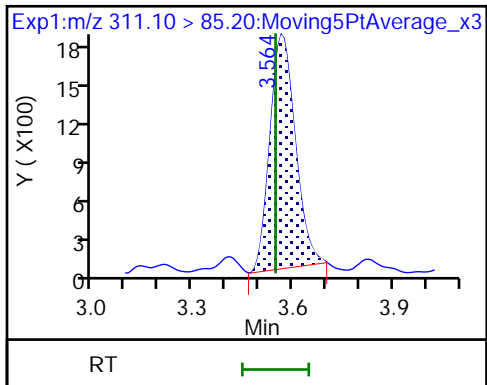
29 Perfluoropentanesulfonic acid



30 PFO3OA

31 Perfluoro(2-propoxypropanoic) ac (M)

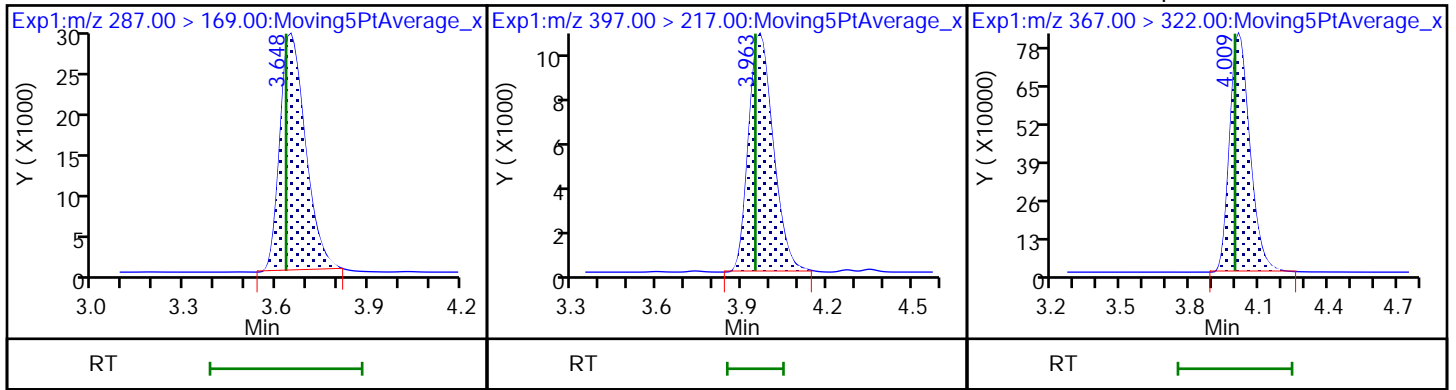
31 Perfluoro(2-propoxypropanoic) ac



D 32 13C3 HFPO-DA

33 R-PSDCA

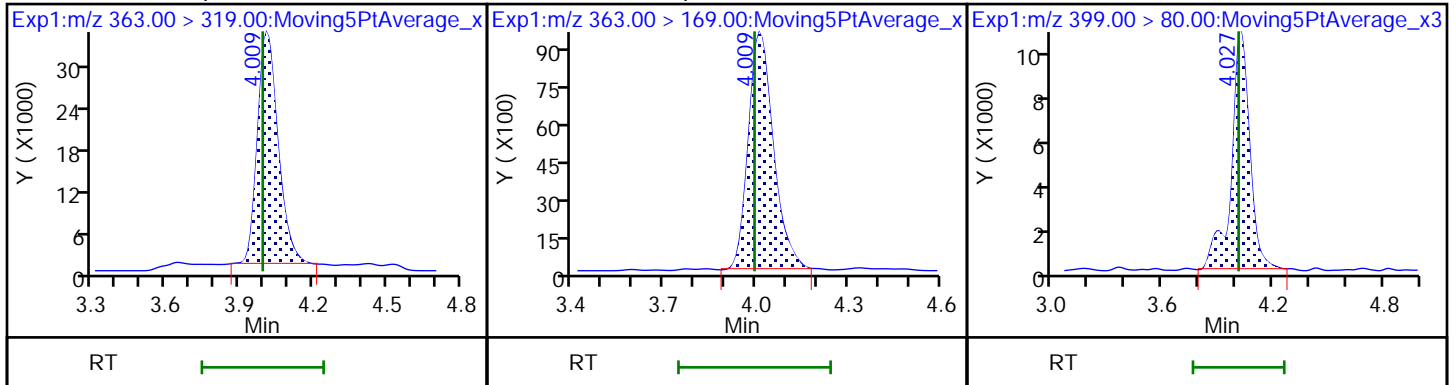
D 35 13C4 PFHpA



36 Perfluoroheptanoic acid (M)

36 Perfluoroheptanoic acid

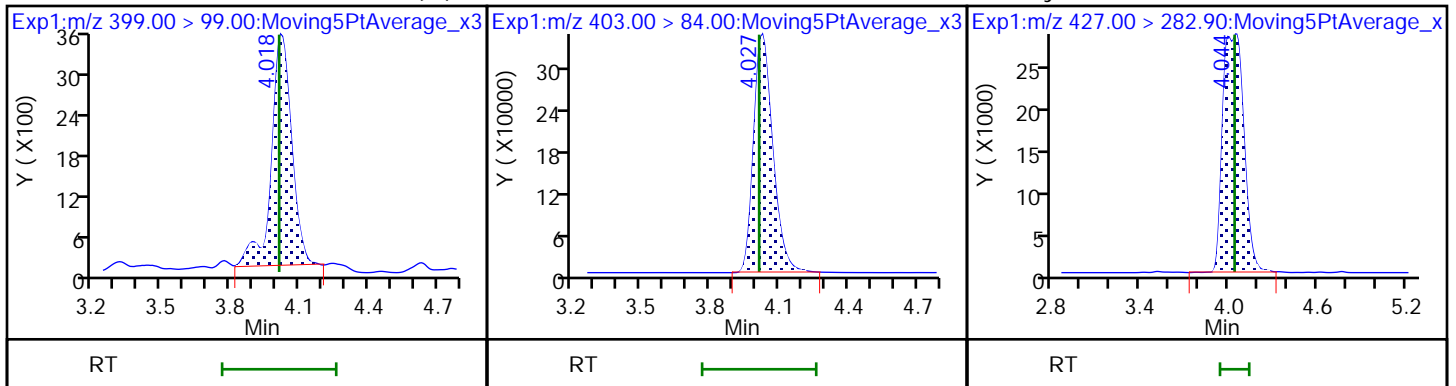
38 Perfluorohexanesulfonic acid (M)



38 Perfluorohexanesulfonic acid (M)

D 37 18O2 PFHxS

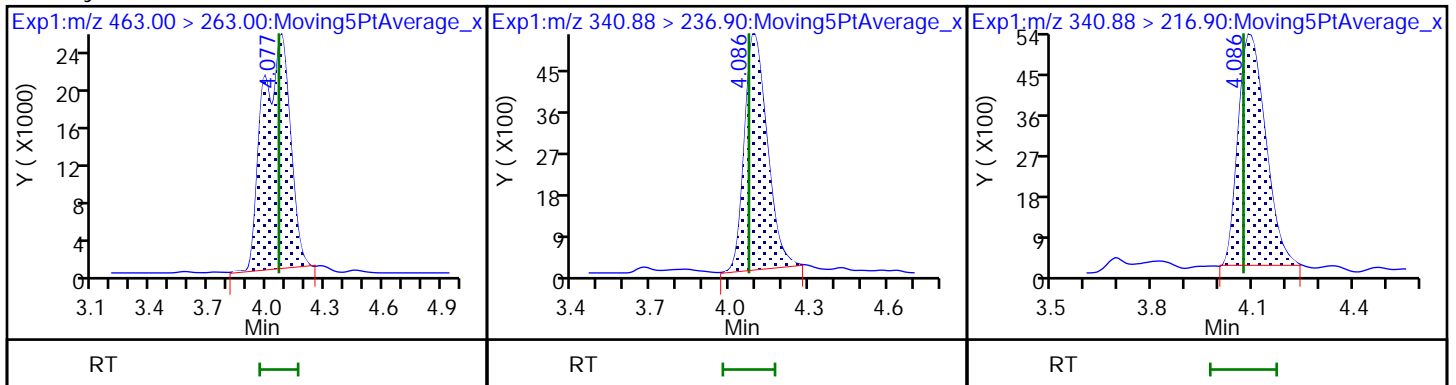
34 Hydro-EVE Acid

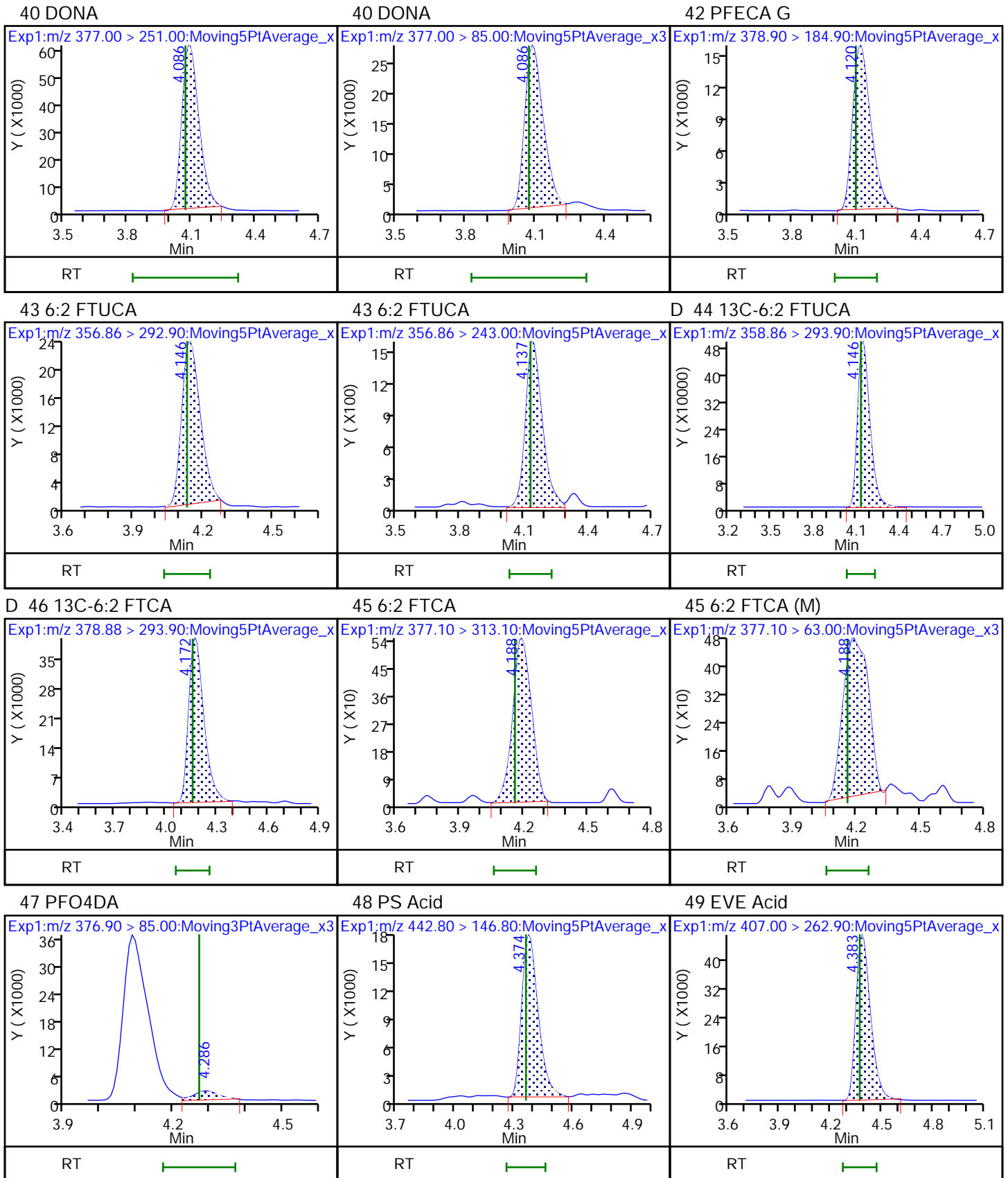


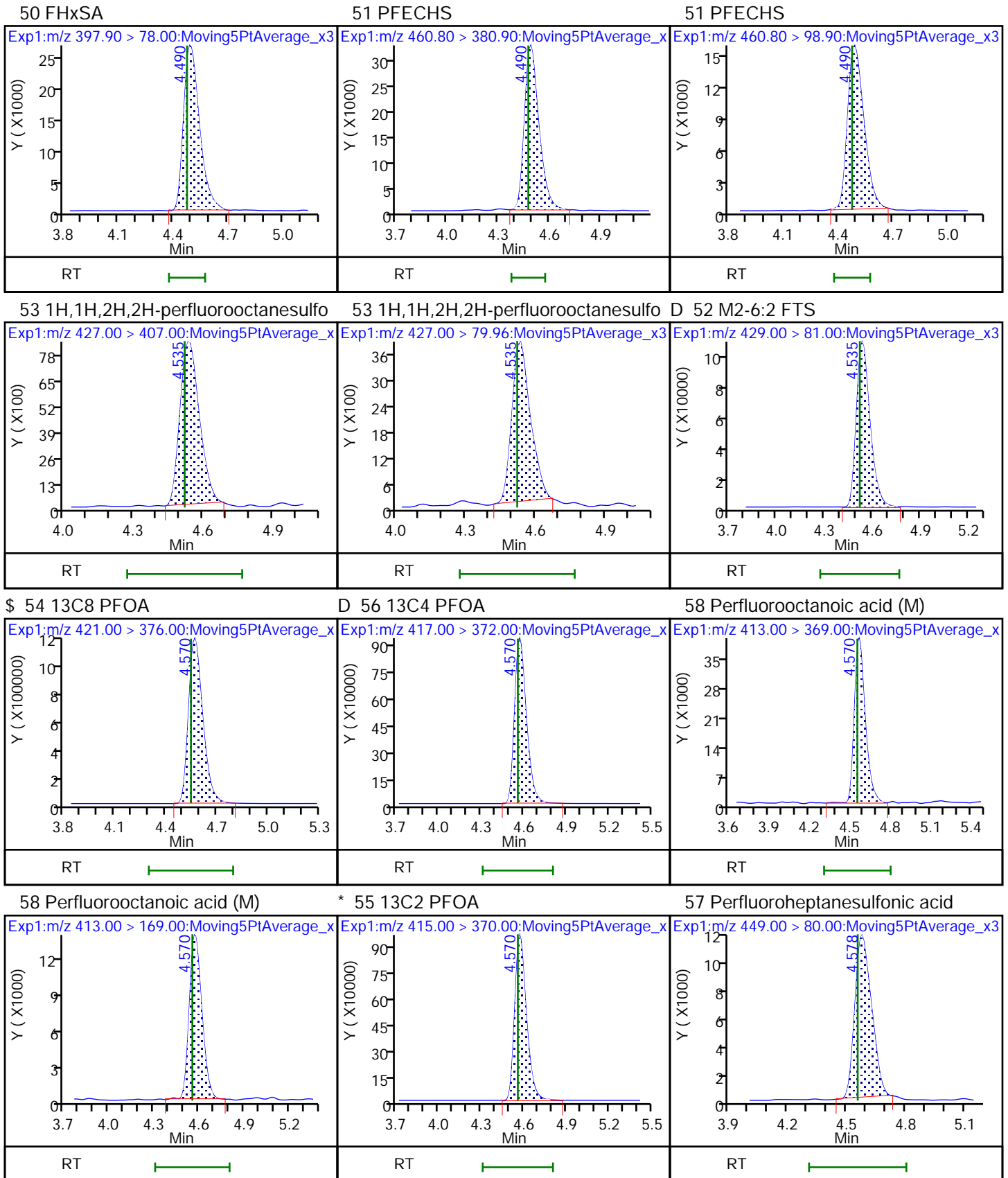
39 Hydro-PS Acid

41 5:3 FTCA

41 5:3 FTCA



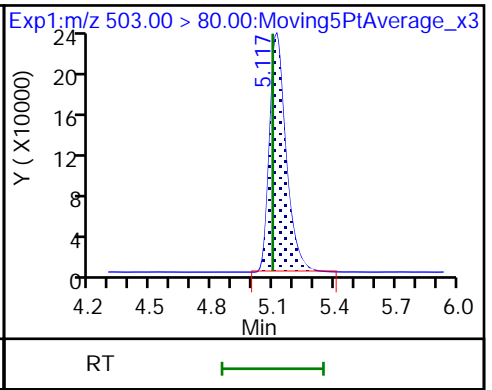
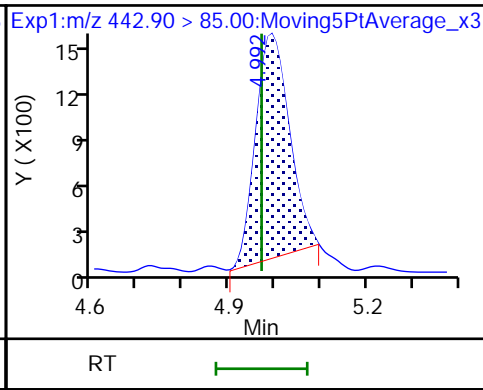
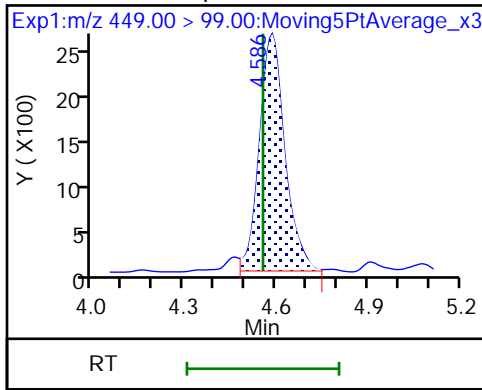




57 Perfluoroheptanesulfonic acid

59 TAF

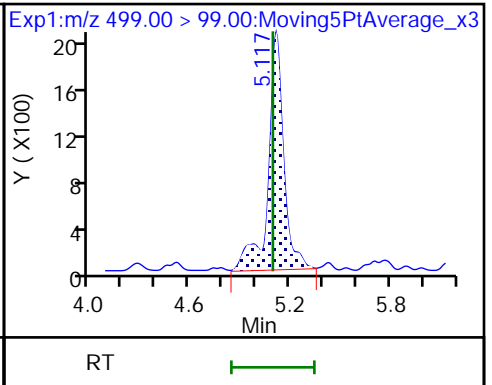
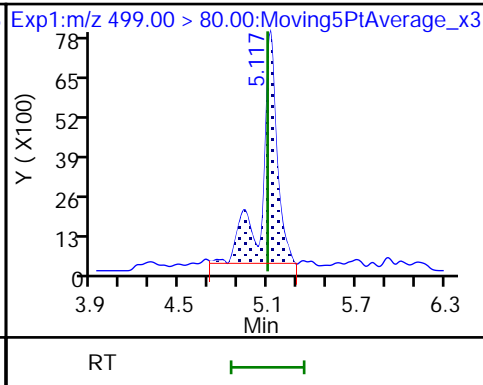
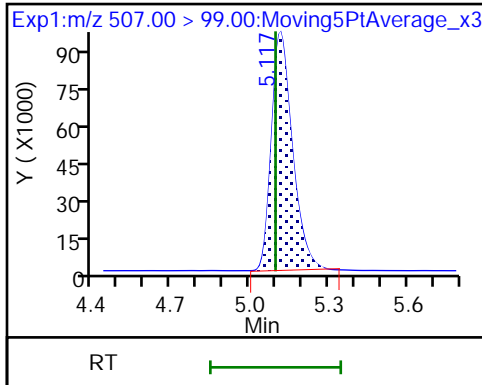
D 61 13C4 PFOS



\$ 60 13C8 PFOS

62 Perfluorooctanesulfonic acid (M)

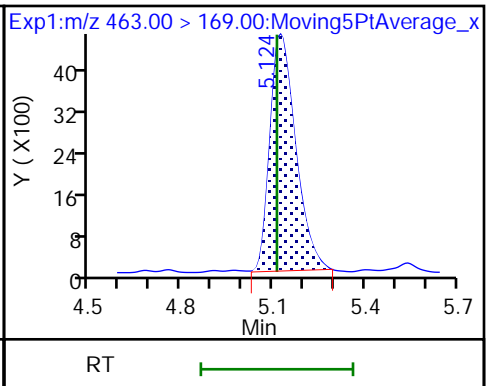
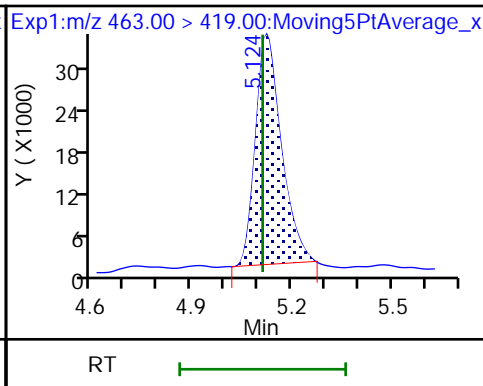
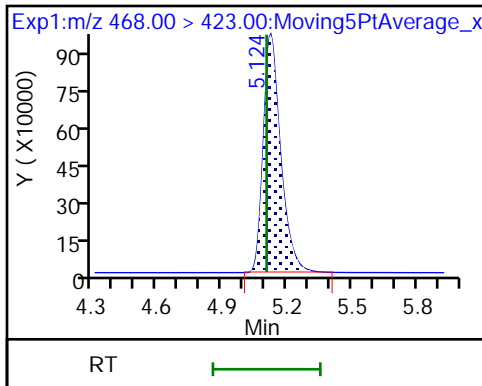
62 Perfluorooctanesulfonic acid



D 64 13C5 PFNA

63 Perfluorononanoic acid

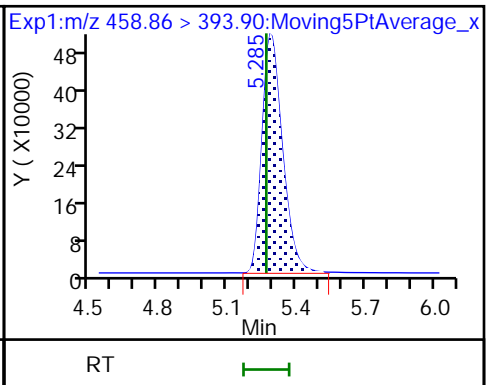
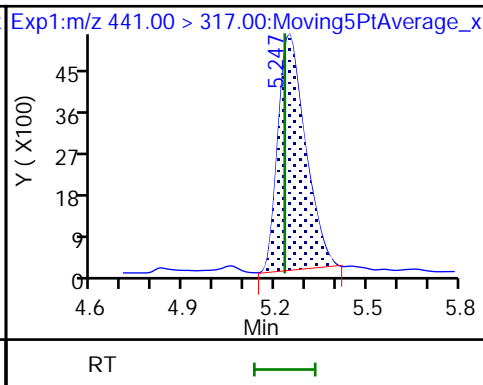
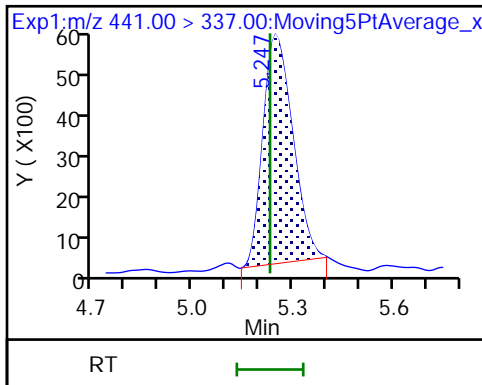
63 Perfluorononanoic acid

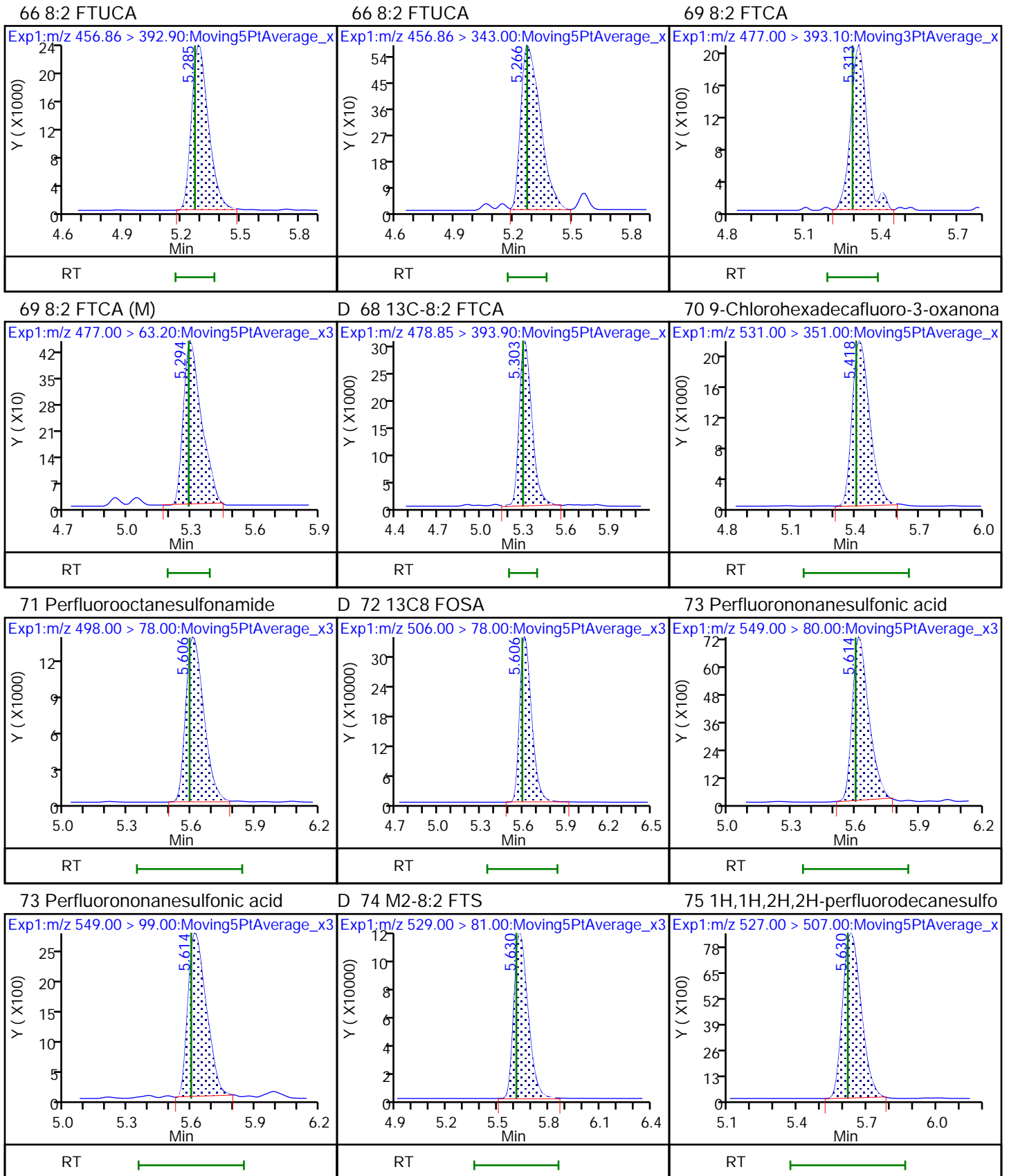


65 7:3 FTCA

65 7:3 FTCA

D 67 13C-8:2 FTUCA

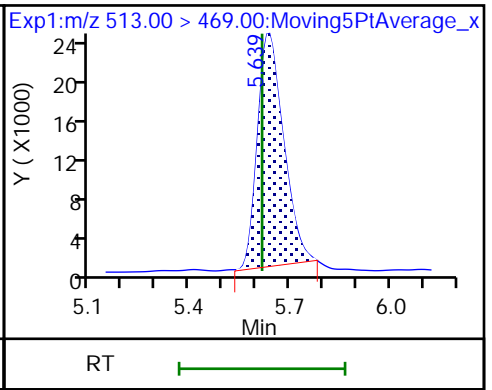
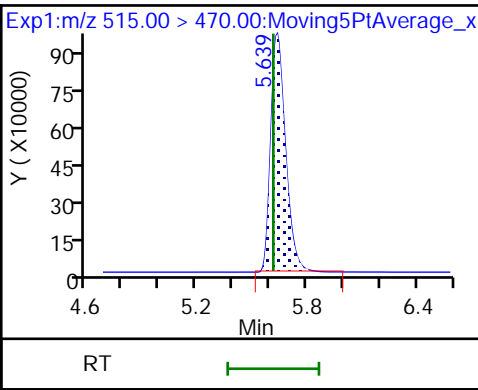
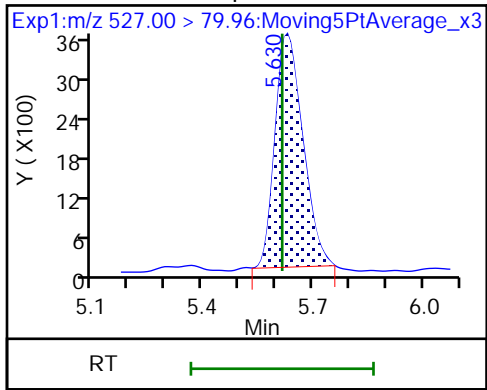




75 1H,1H,2H,2H-perfluorodecanesulfo D

76 13C2 PFDA

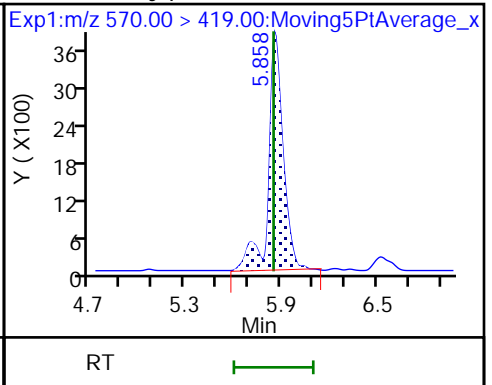
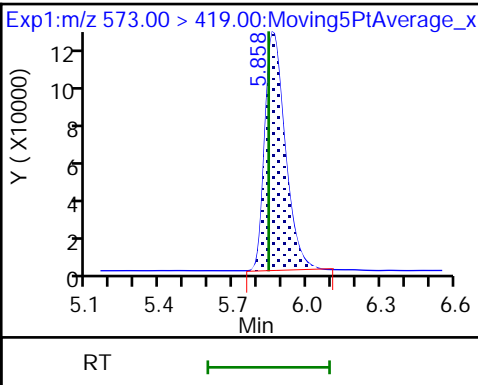
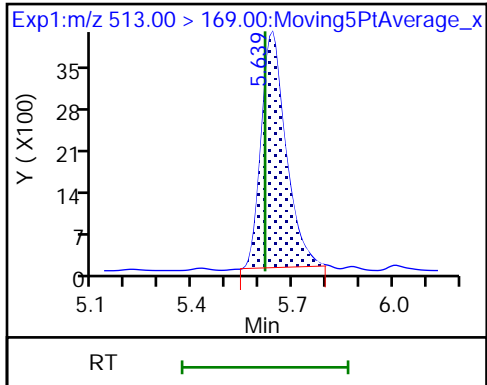
77 Perfluorodecanoic acid



77 Perfluorodecanoic acid

D 78 d3-NMeFOSAA

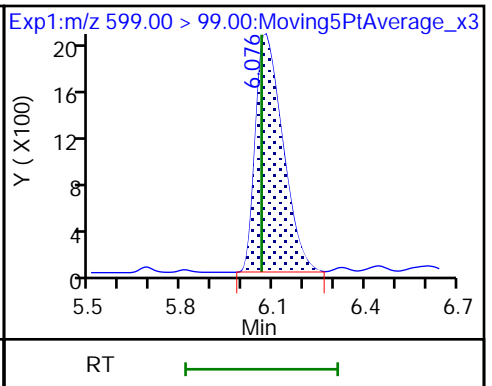
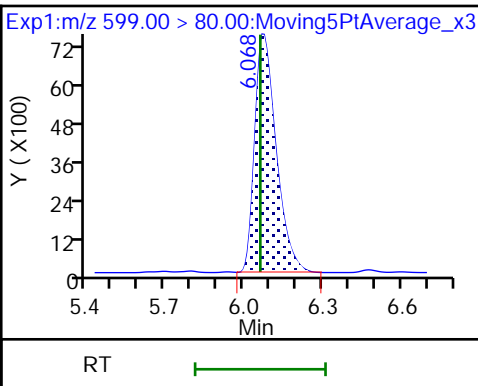
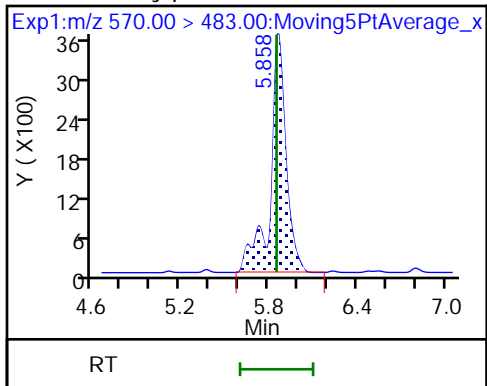
79 N-methylperfluorooctanesulfonami



79 N-methylperfluorooctanesulfonami

80 Perfluorodecanesulfonic acid

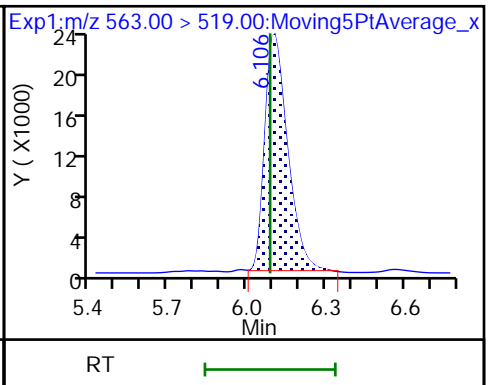
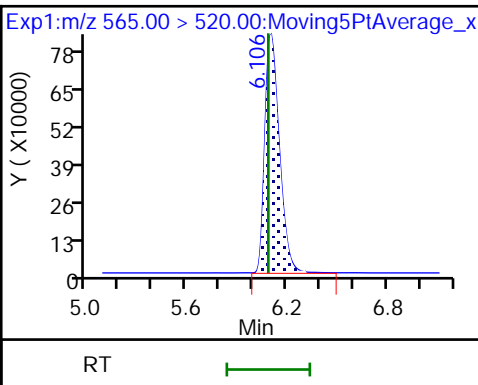
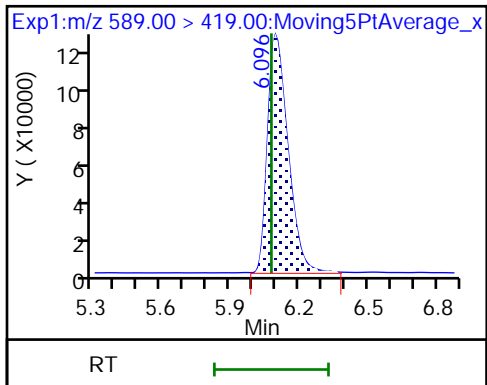
80 Perfluorodecanesulfonic acid



D 81 d5-NEtFOSAA

D 82 13C2 PFUnA

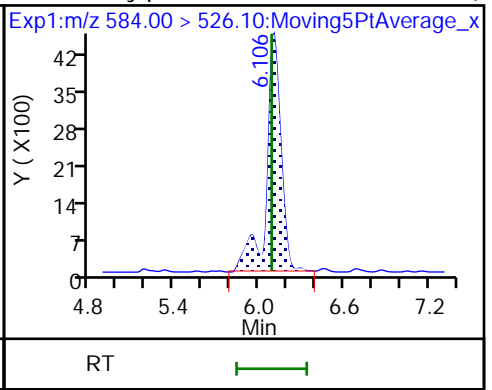
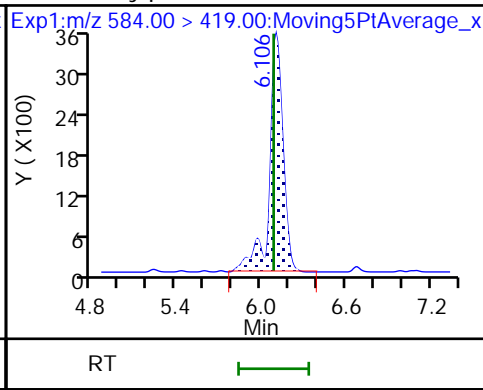
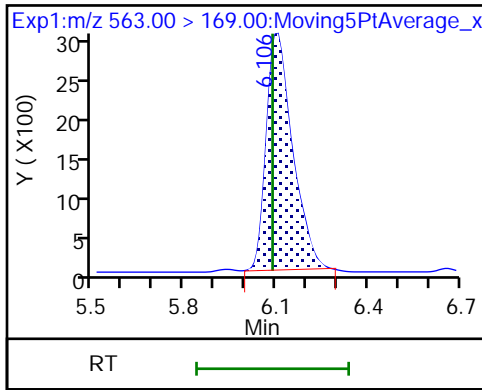
83 Perfluoroundecanoic acid



83 Perfluoroundecanoic acid

84 N-ethylperfluorooctanesulfonamid

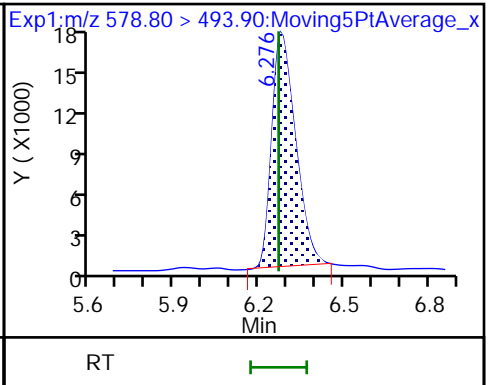
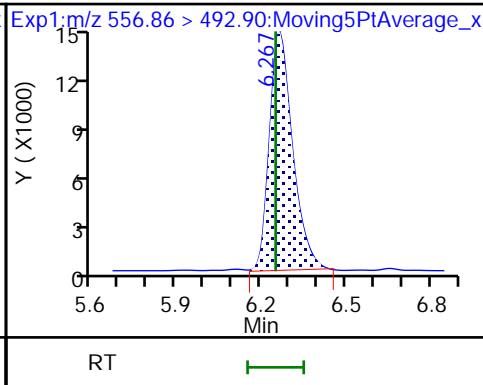
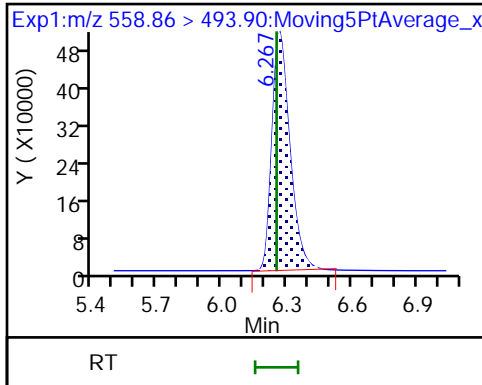
84 N-ethylperfluorooctanesulfonamid (M)



D 89 13C-10:2 FTUCA

90 10:2 FTUCA

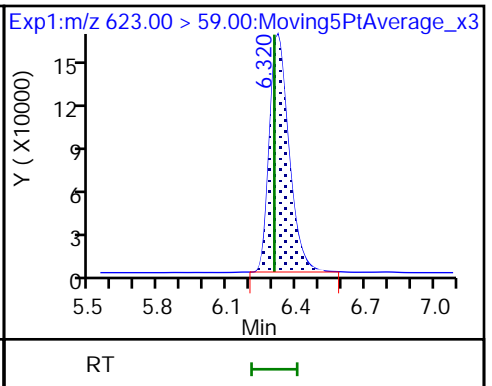
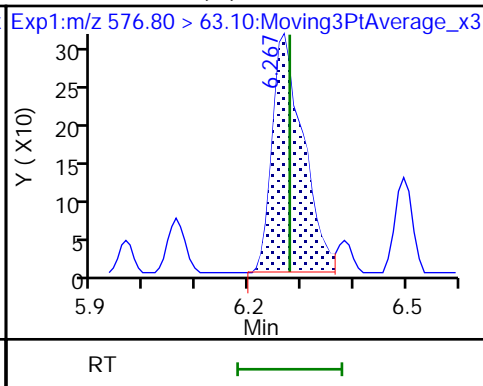
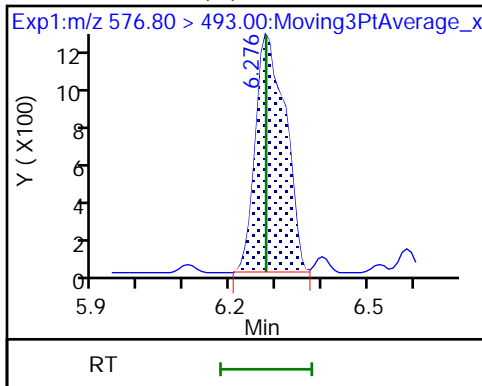
D 91 13C-10:2 FTCA



92 10:2 FTCA (M)

92 10:2 FTCA (M)

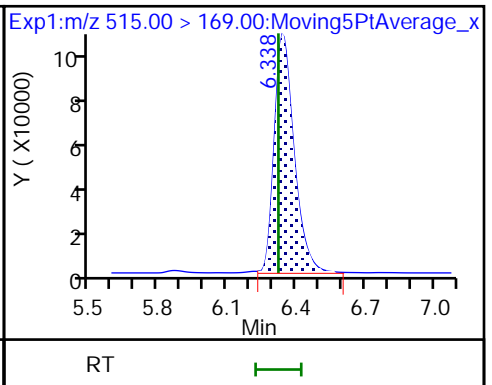
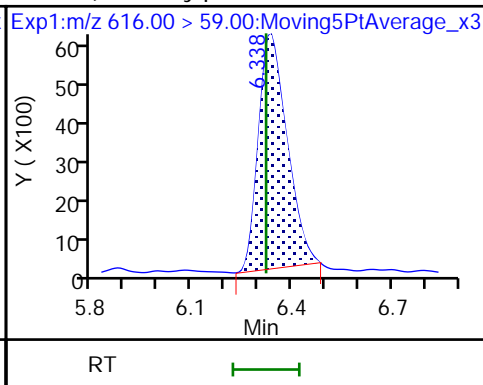
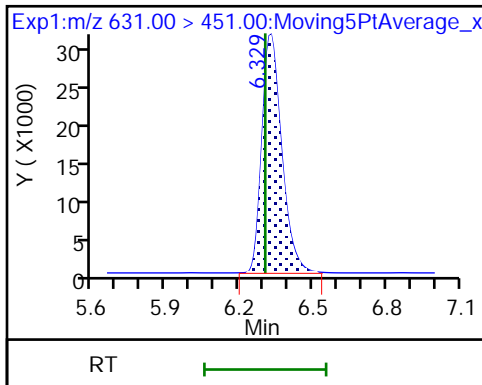
D 85 d7-N-MeFOSE-M

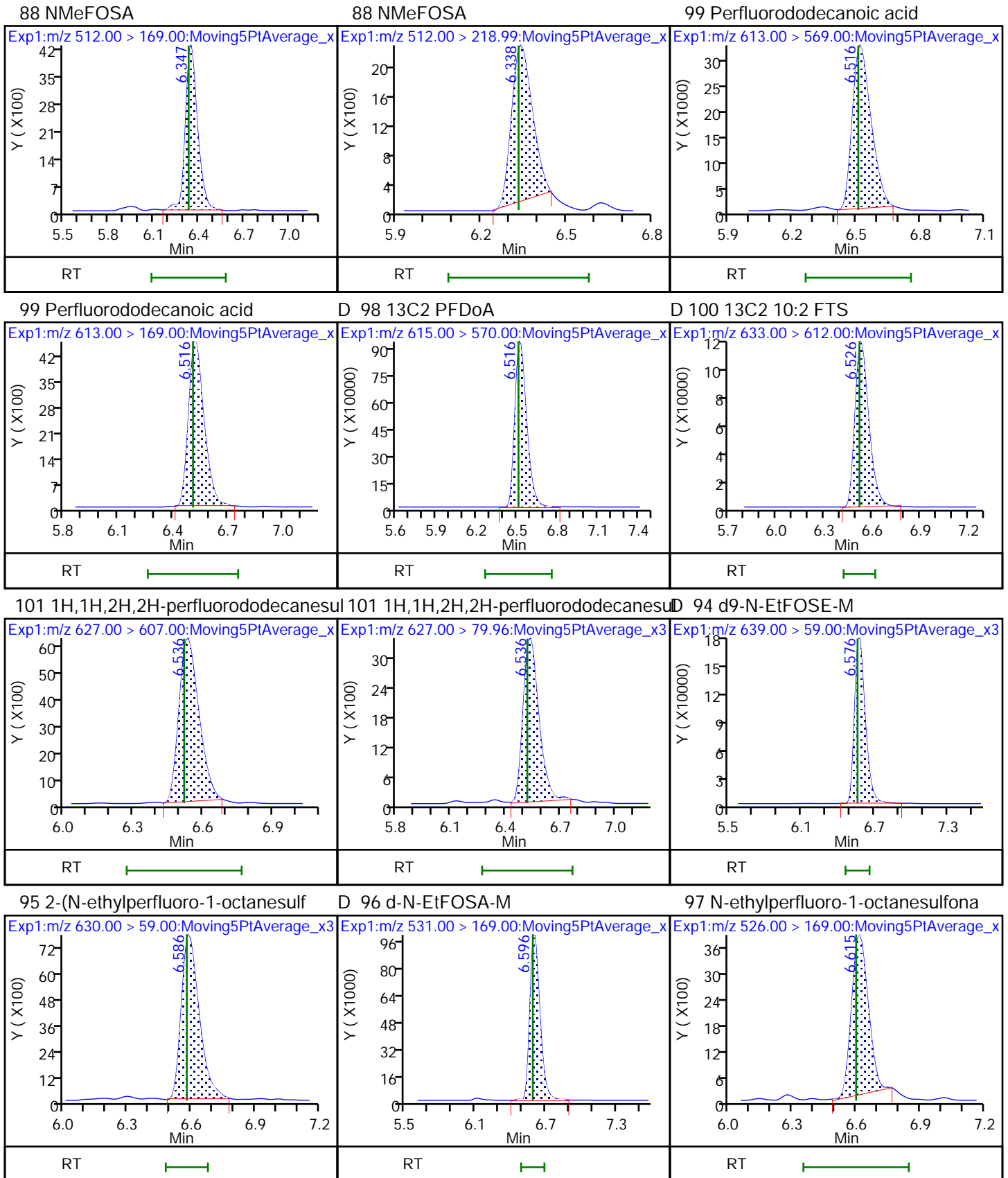


93 11-Chloroeicosafluoro-3-oxaundec

86 2-(N-methylperfluoro-1-octanesul

D 87 d-N-MeFOSA-M

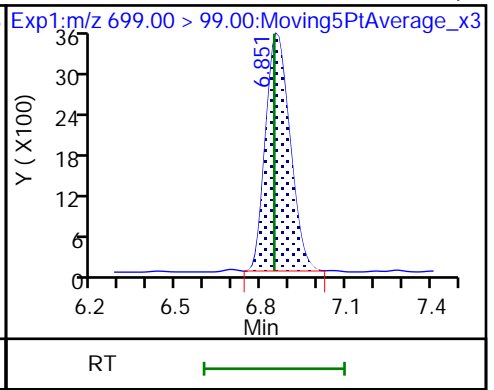
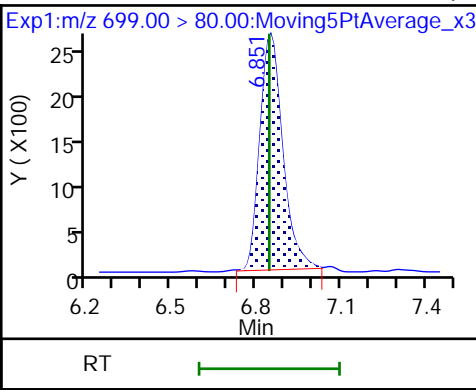
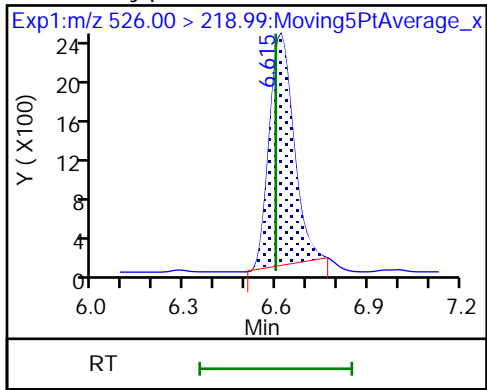




97 N-ethylperfluoro-1-octanesulfona

102 Perfluorododecanesulfonic acid (

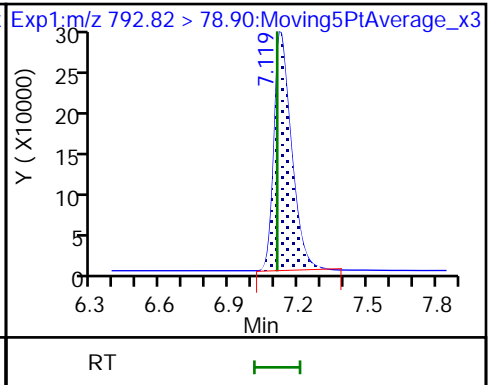
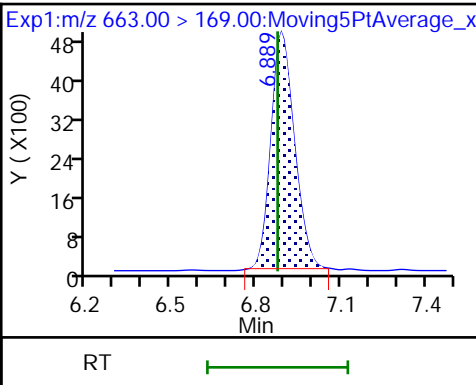
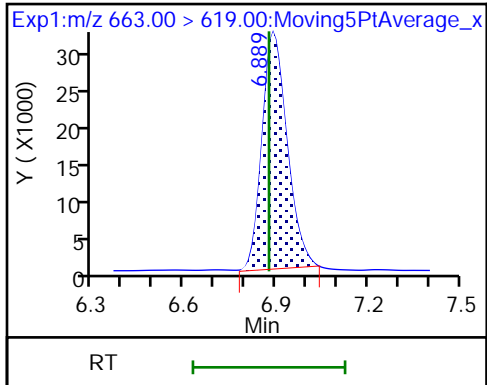
102 Perfluorododecanesulfonic acid (



103 Perfluorotridecanoic acid

103 Perfluorotridecanoic acid

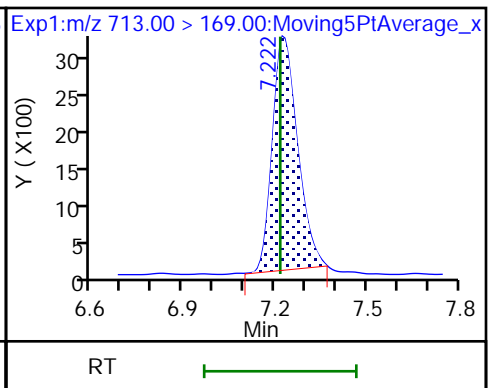
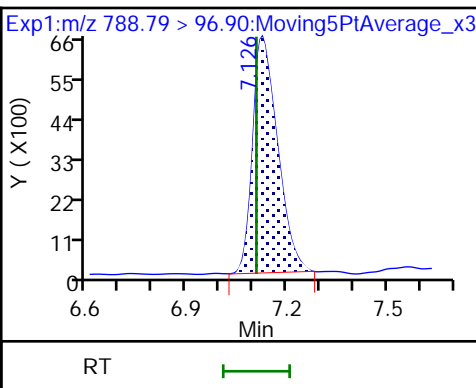
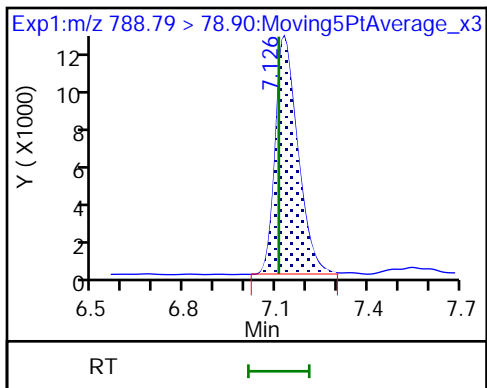
D 112 13C4-6:2 diPAP



114 6:2 diPAP

114 6:2 diPAP

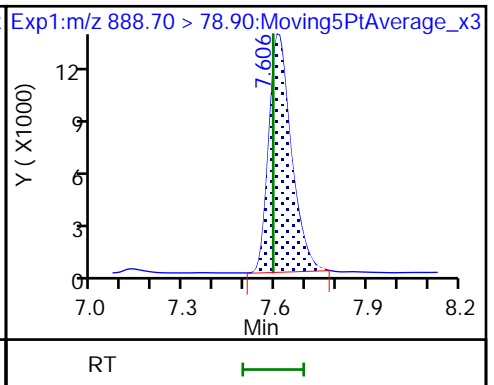
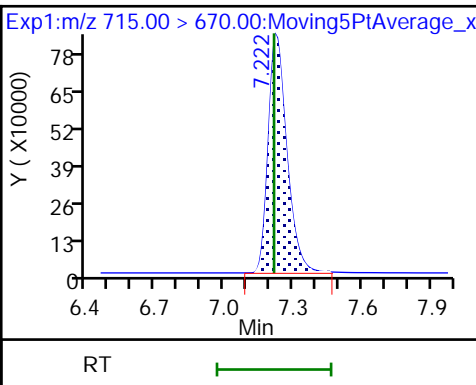
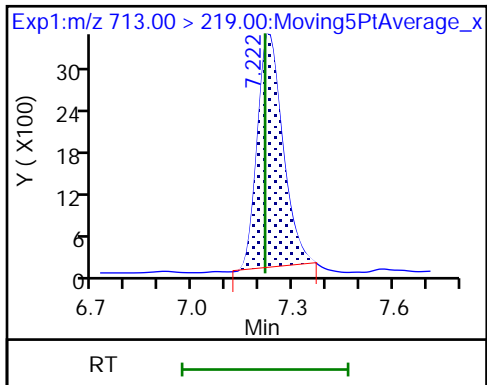
105 Perfluorotetradecanoic acid



105 Perfluorotetradecanoic acid

D 104 13C2 PFTeDA

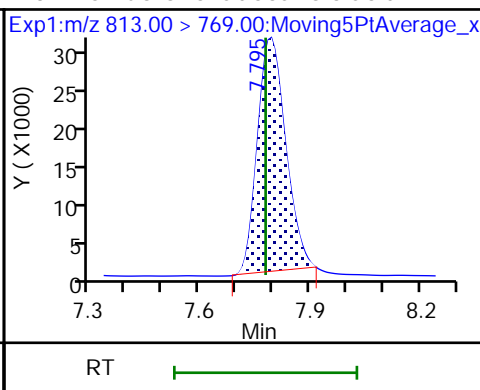
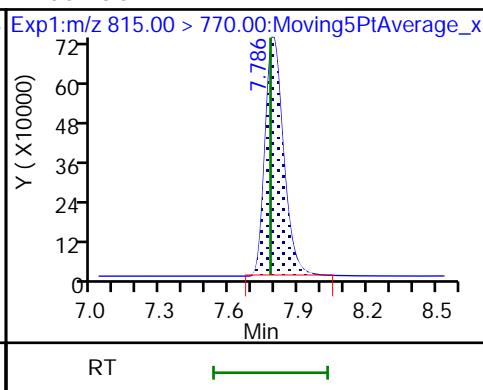
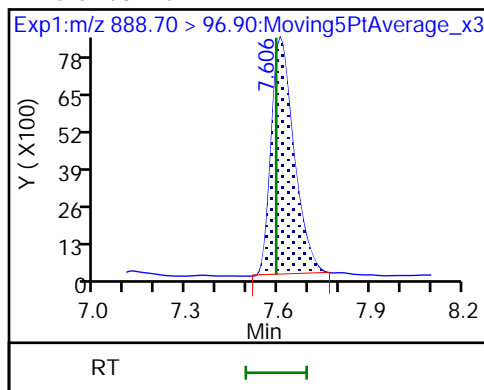
115 6:2/8:2 diPAP



115 6:2/8:2 diPAP

D 106 13C2 PFHxD

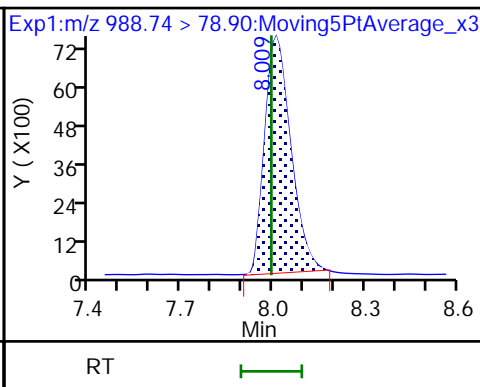
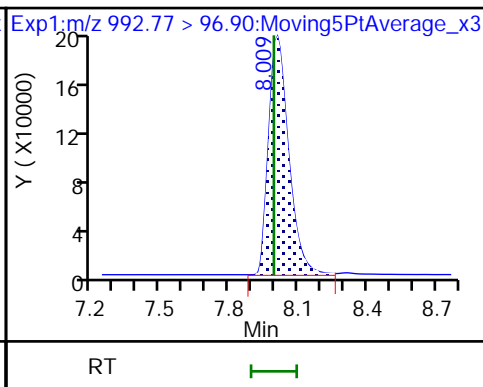
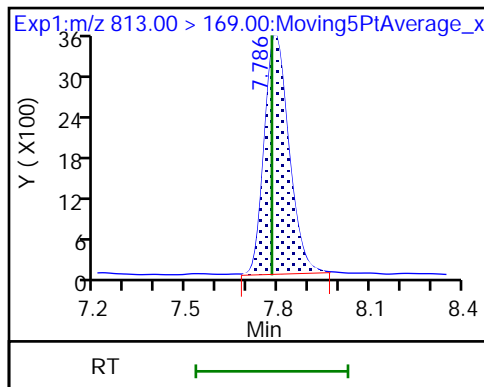
107 Perfluorohexadecanoic acid



107 Perfluorohexadecanoic acid

D 113 13C4-8:2 diPAP

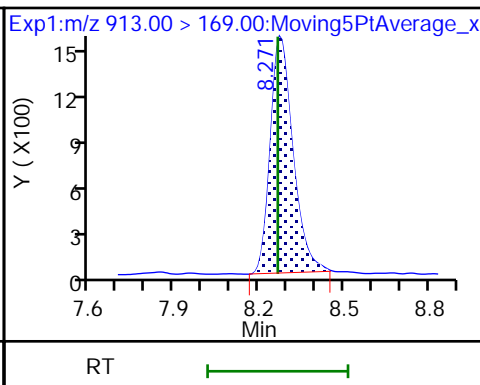
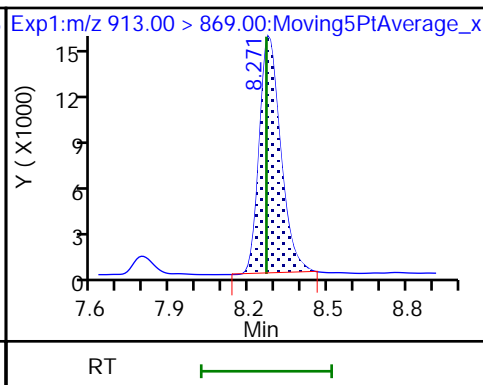
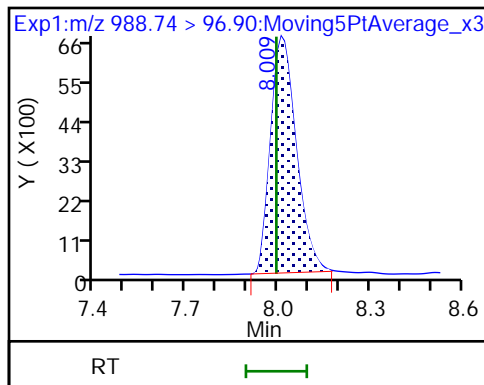
116 8:2 diPAP



116 8:2 diPAP

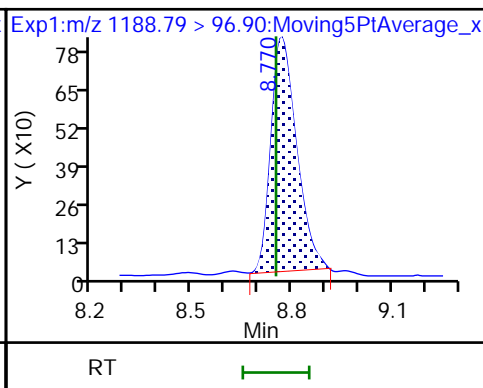
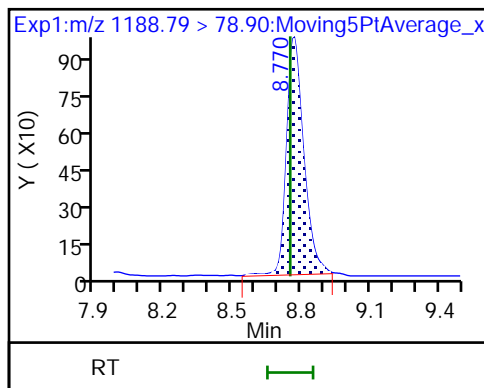
108 Perfluorooctadecanoic acid

108 Perfluorooctadecanoic acid



117 10:2 diPAP

117 10:2 diPAP



Eurofins Sacramento

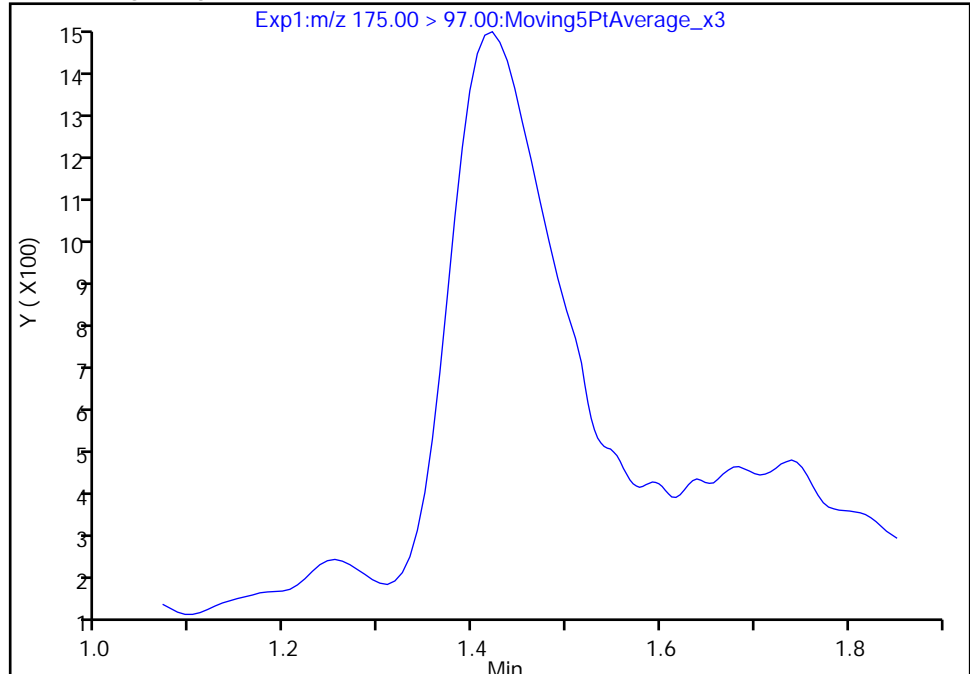
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_005.d
Injection Date: 22-Dec-2022 10:50:03 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

1 MTP, CAS: 93449-21-9

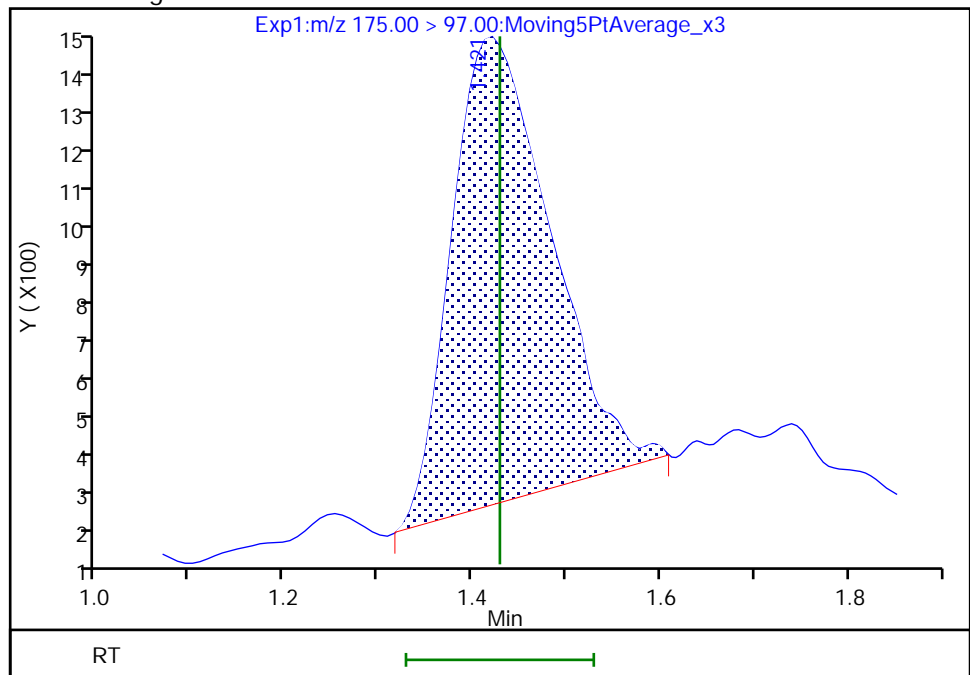
Signal: 1

Not Detected
Expected RT: 1.43

Processing Integration Results



Manual Integration Results



RT: 1.42
Area: 8648
Amount: 0.042668
Amount Units: ng/ml

Reviewer: sanjumnair, 23-Dec-2022 12:24:07

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

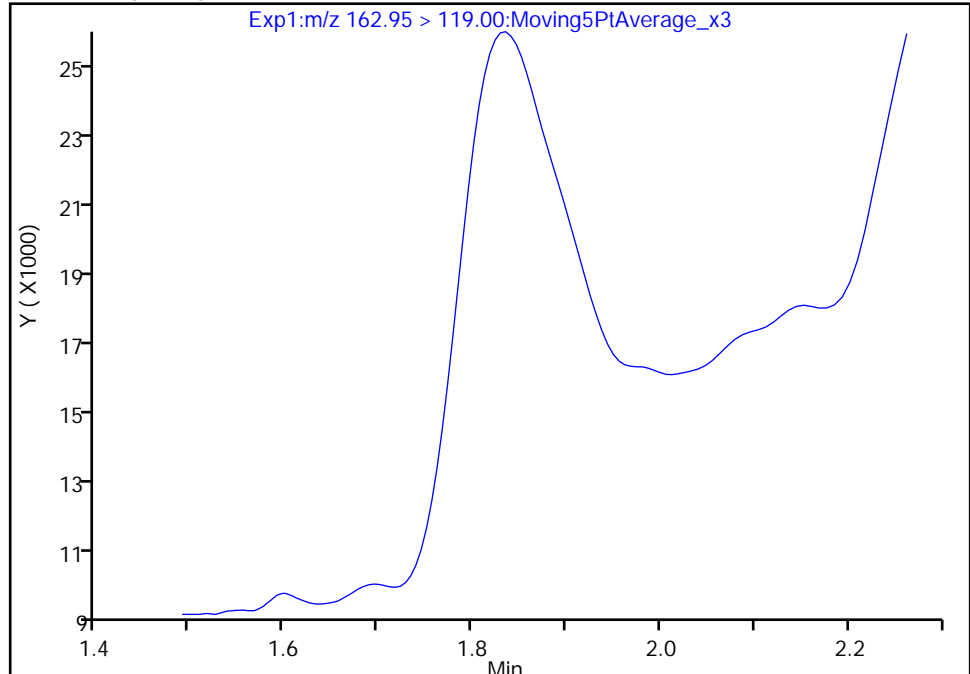
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_005.d
Injection Date: 22-Dec-2022 10:50:03 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

2 PPF Acid, CAS: 422-64-0

Signal: 1

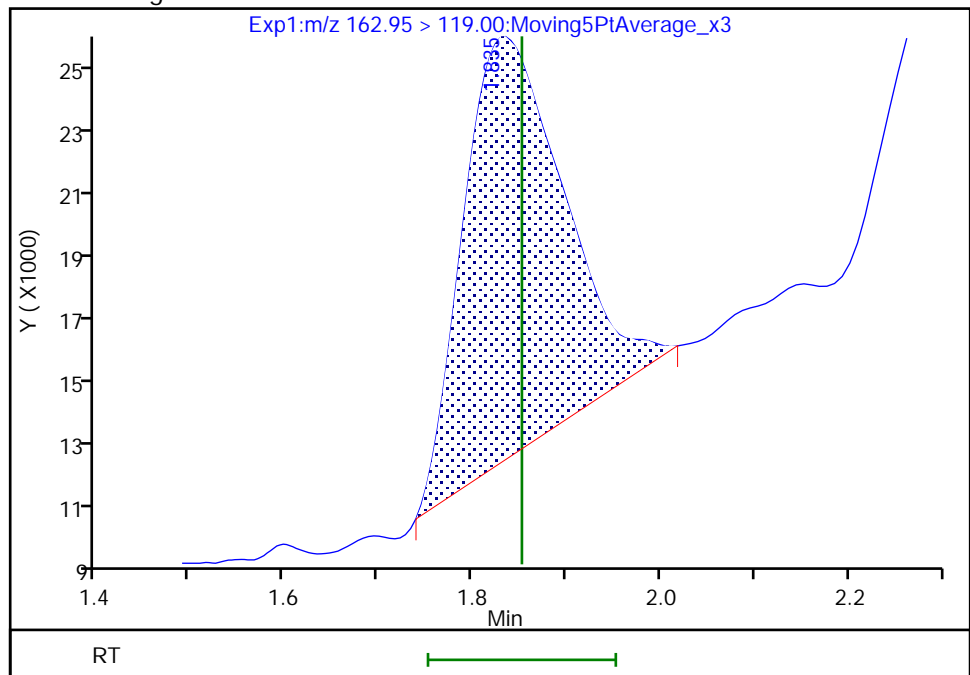
Not Detected
Expected RT: 1.85

Processing Integration Results



Manual Integration Results

RT: 1.84
Area: 93825
Amount: 0.058655
Amount Units: ng/ml



Reviewer: sanjumnair, 23-Dec-2022 12:24:03
Audit Action: Manually Integrated

Audit Reason: Baseline
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12/29/2022
3:43 PM

Eurofins Sacramento

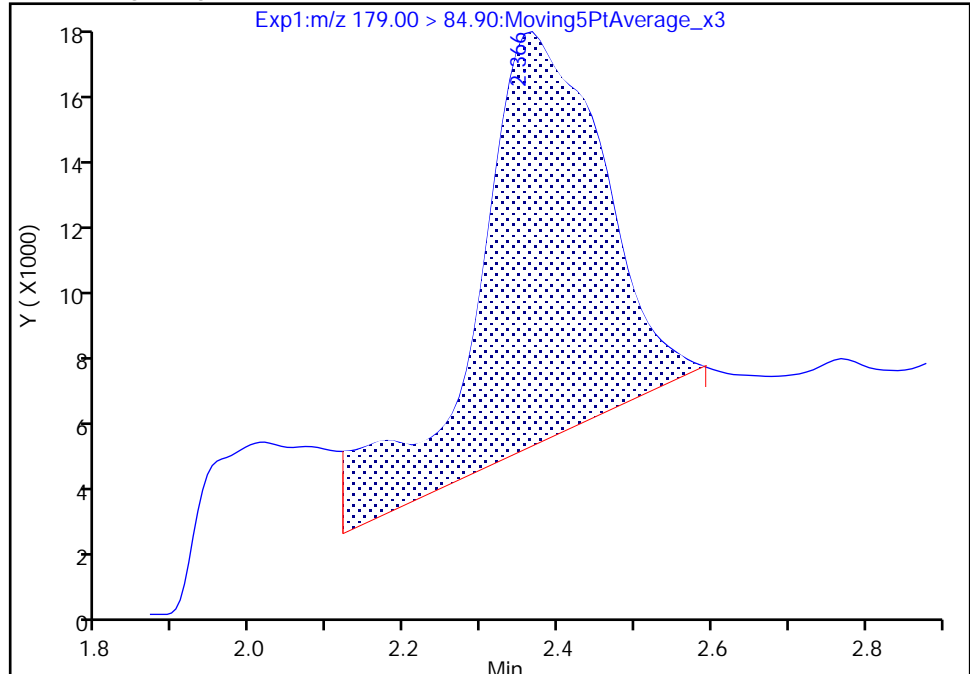
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_005.d
Injection Date: 22-Dec-2022 10:50:03 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

3 PFMOAA, CAS: 674-13-5

Signal: 1

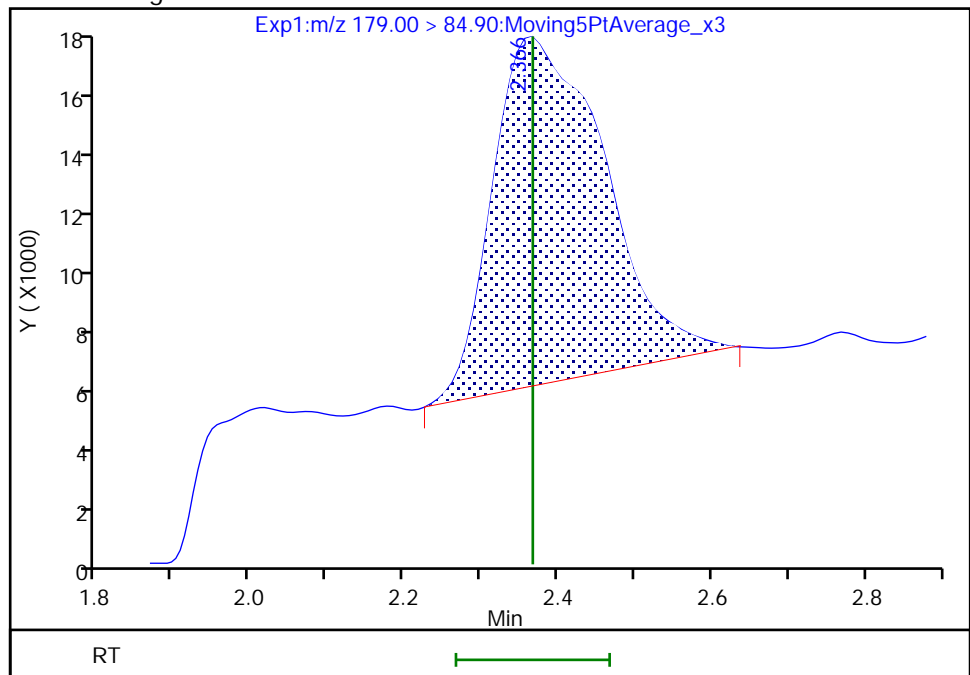
RT: 2.37
Area: 143547
Amount: 0.064770
Amount Units: ng/ml

Processing Integration Results



RT: 2.37
Area: 117649
Amount: 0.053084
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:23:59

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

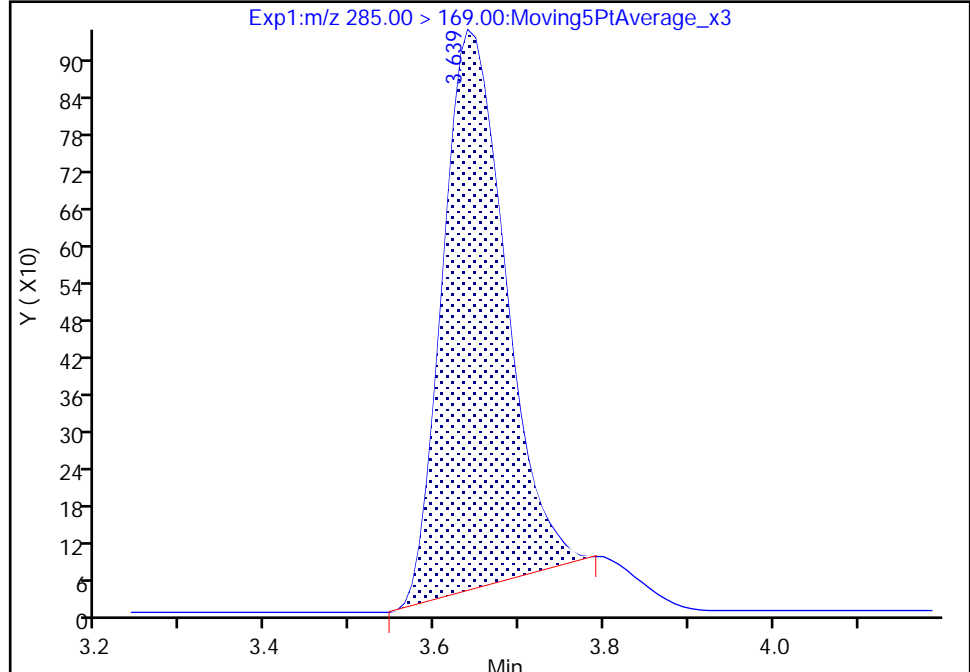
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_005.d
Injection Date: 22-Dec-2022 10:50:03 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

31 Perfluoro(2-propoxypropanoic) ac, CAS: 13252-13-6

Signal: 1

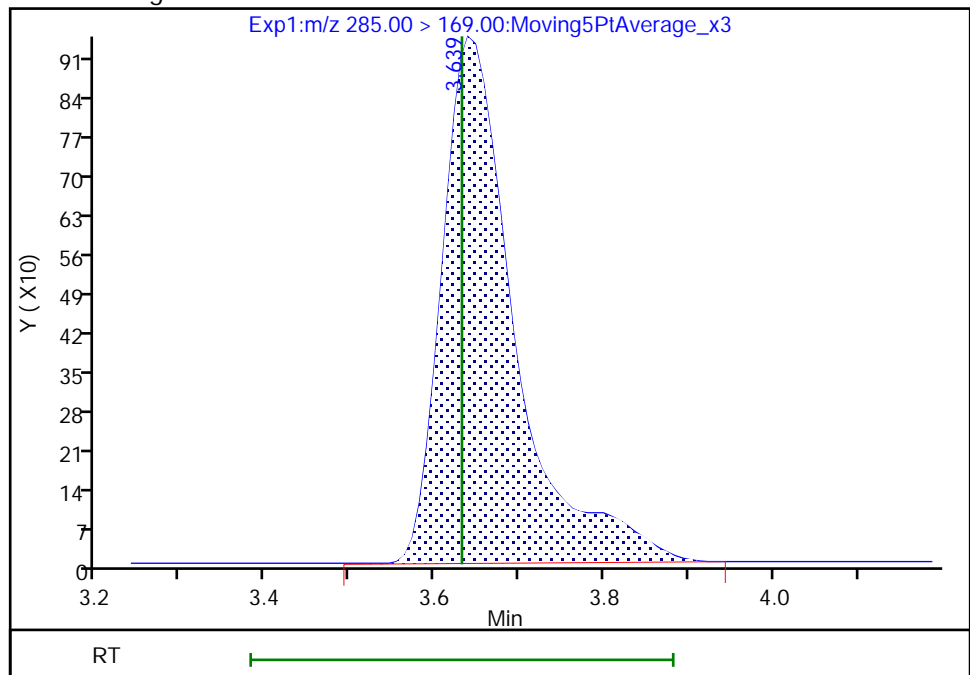
RT: 3.64
Area: 4728
Amount: 0.033483
Amount Units: ng/ml

Processing Integration Results



RT: 3.64
Area: 5692
Amount: 0.040309
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 13:31:03
Audit Action: Manually Integrated

Audit Reason: Baseline
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3:43 PM

Eurofins Sacramento

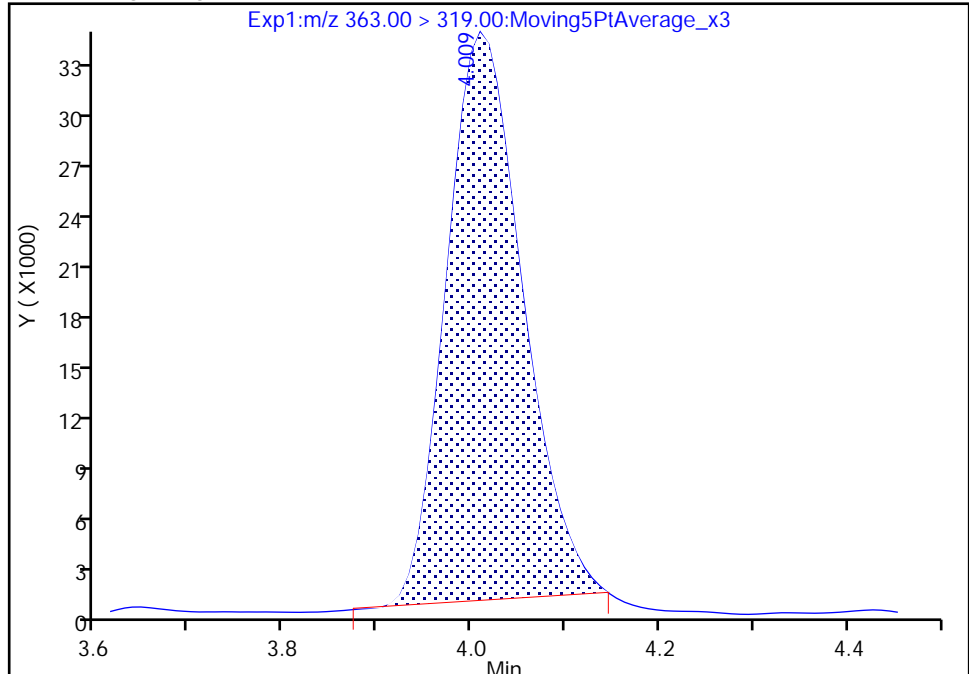
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_005.d
Injection Date: 22-Dec-2022 10:50:03 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

36 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

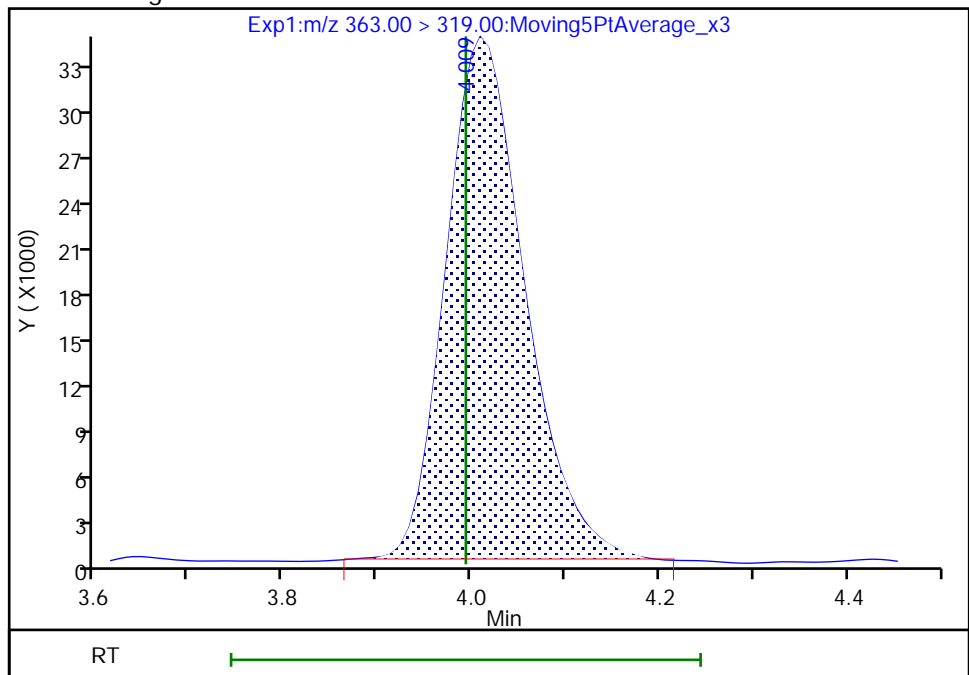
RT: 4.01
Area: 185595
Amount: 0.051080
Amount Units: ng/ml

Processing Integration Results



RT: 4.01
Area: 195845
Amount: 0.053901
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:23:40

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

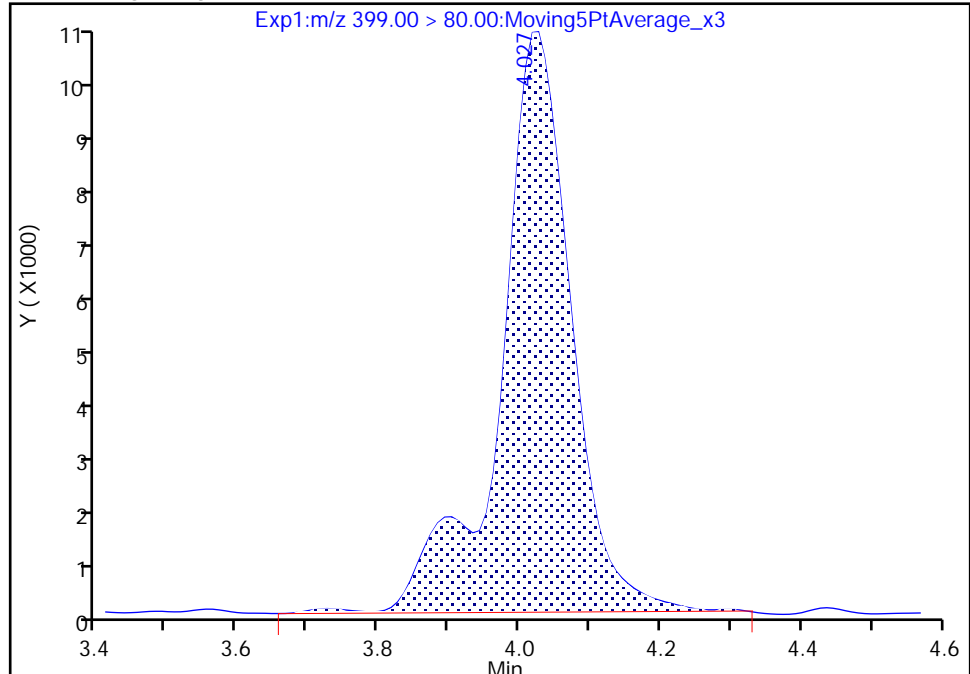
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_005.d
Injection Date: 22-Dec-2022 10:50:03 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

38 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

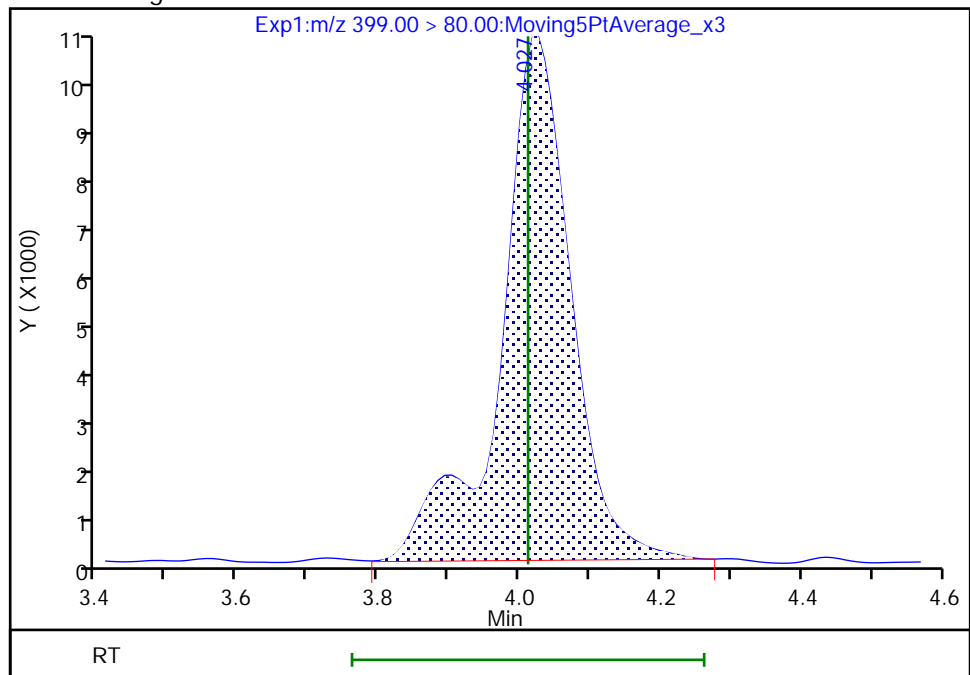
RT: 4.03
Area: 72472
Amount: 0.044657
Amount Units: ng/ml

Processing Integration Results



RT: 4.03
Area: 71115
Amount: 0.043821
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:23:29

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

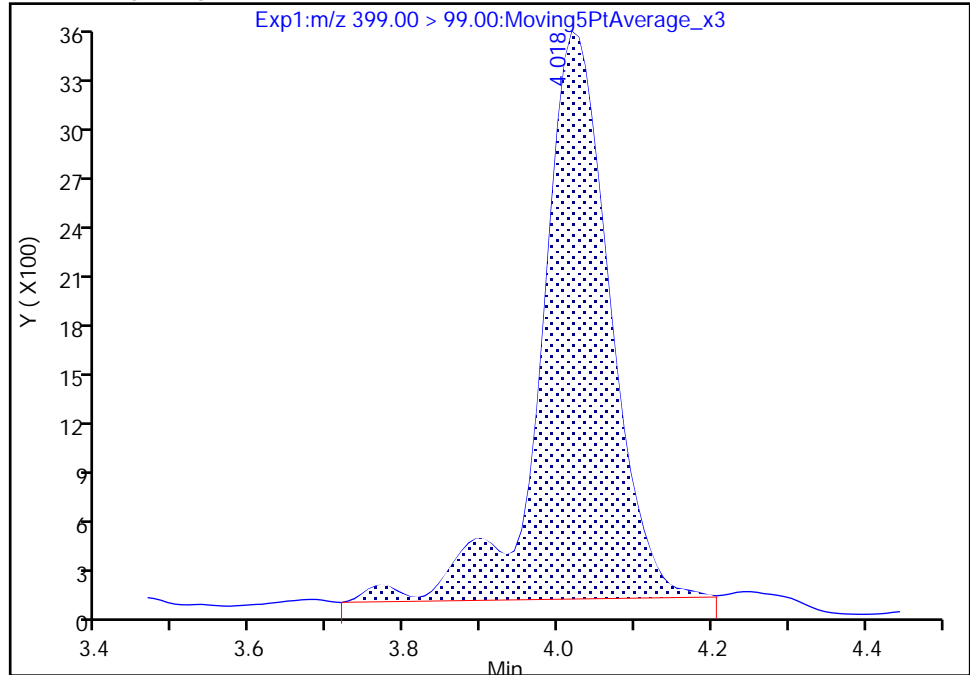
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_005.d
Injection Date: 22-Dec-2022 10:50:03 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

38 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

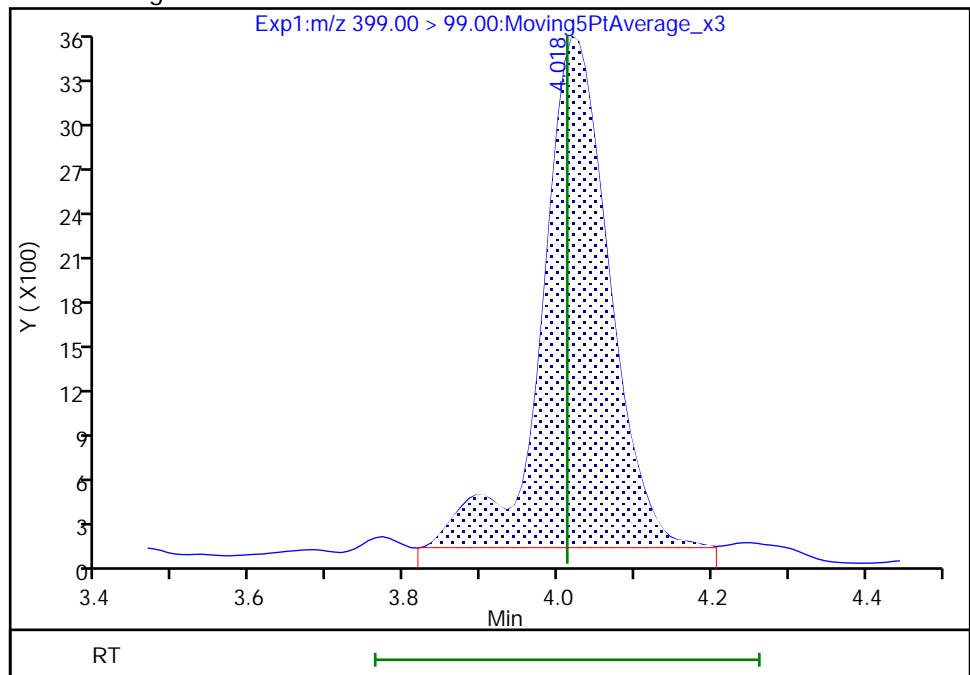
RT: 4.02
Area: 21534
Amount: 0.044657
Amount Units: ng/ml

Processing Integration Results



RT: 4.02
Area: 20956
Amount: 0.043821
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:23:33

Audit Action: Manually Integrated

Audit Reason: Baseline

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3:43 PM

Eurofins Sacramento

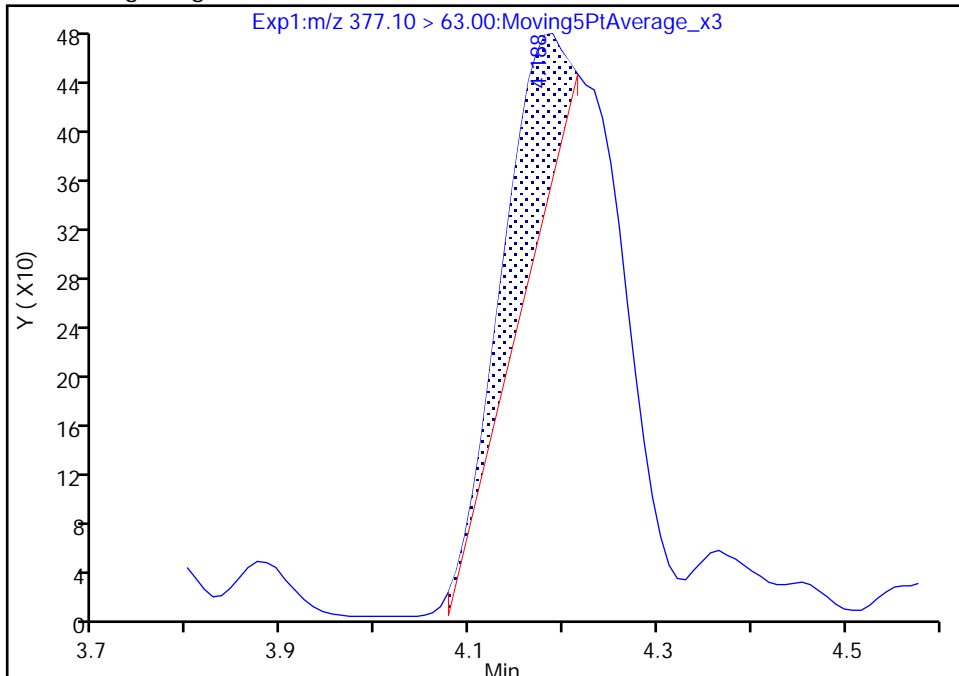
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_005.d
Injection Date: 22-Dec-2022 10:50:03 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

45 6:2 FTCA, CAS: 53826-12-3

Signal: 2

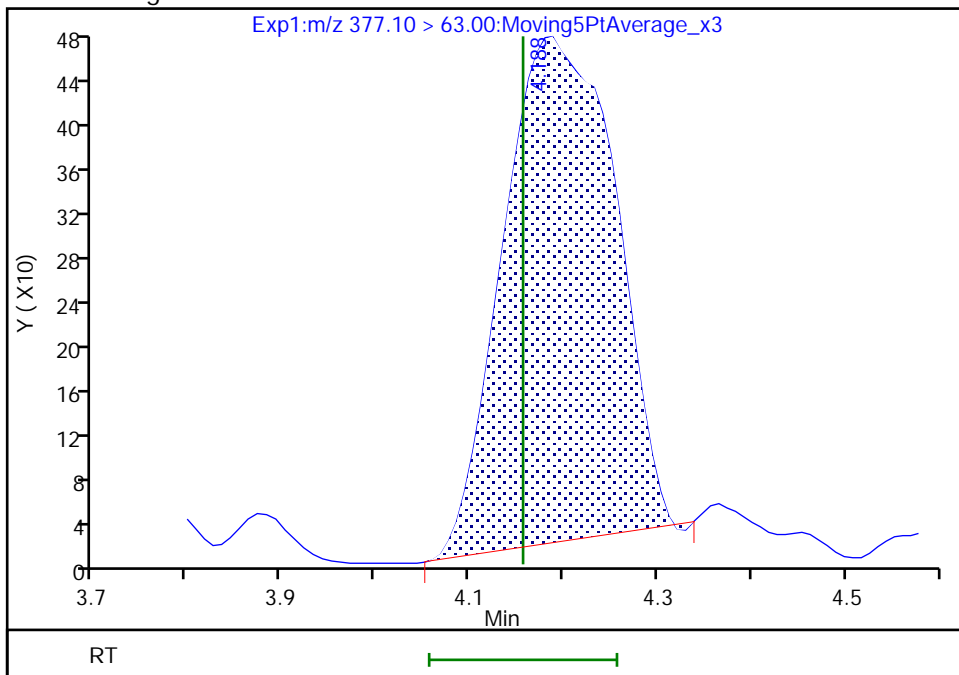
RT: 4.19
Area: 671
Amount: 0.065851
Amount Units: ng/ml

Processing Integration Results



RT: 4.19
Area: 3808
Amount: 0.065851
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:23:11

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

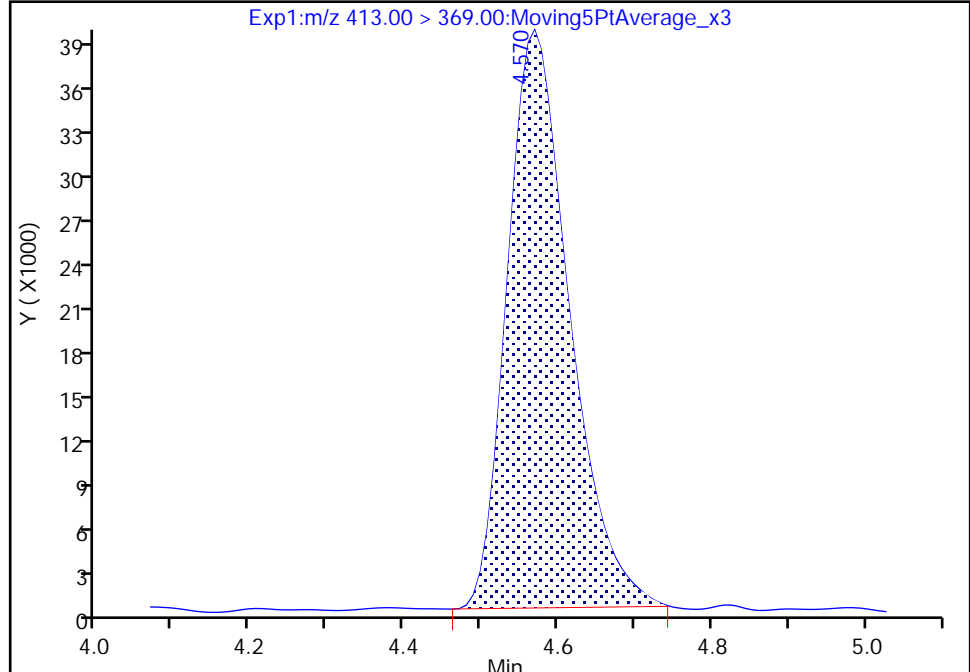
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_005.d
Injection Date: 22-Dec-2022 10:50:03 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

58 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

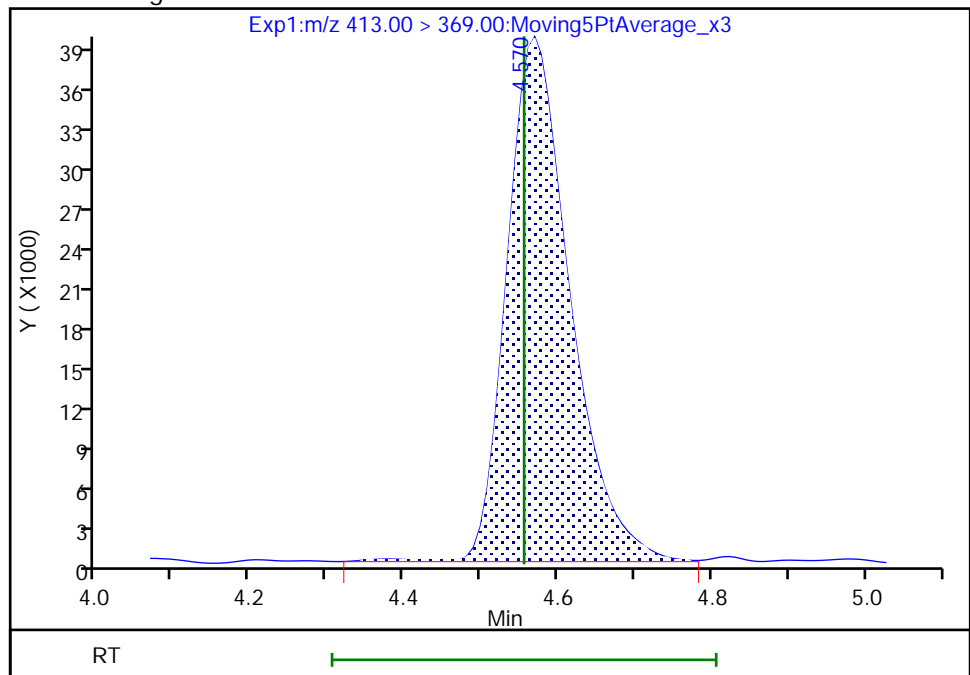
RT: 4.57
Area: 218109
Amount: 0.053695
Amount Units: ng/ml

Processing Integration Results



RT: 4.57
Area: 222454
Amount: 0.054765
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:23:00
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

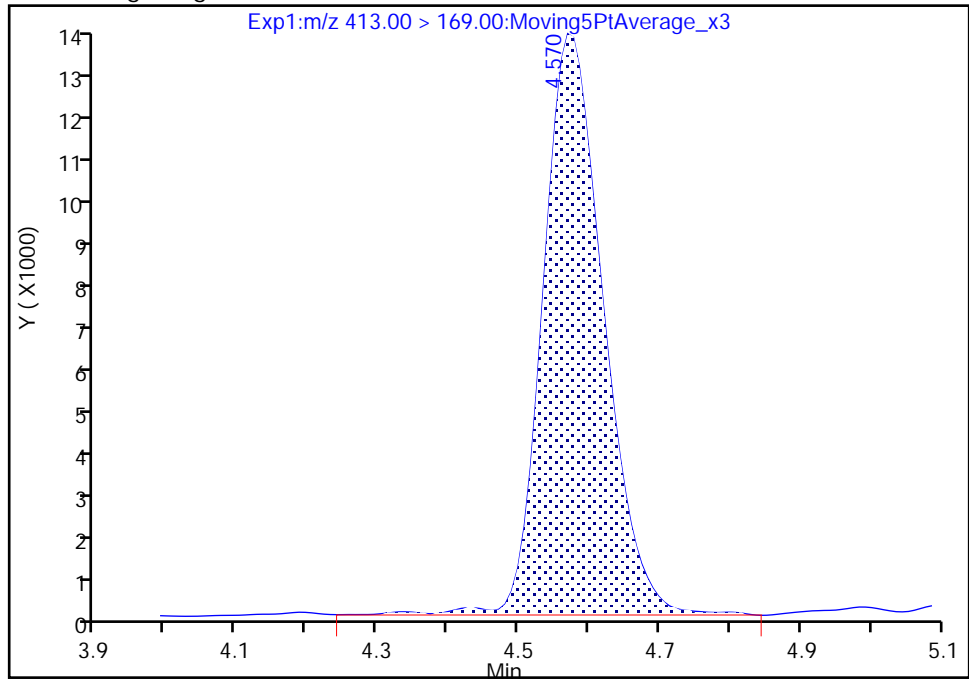
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Injection Date: 22-Dec-2022 10:50:03 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

58 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

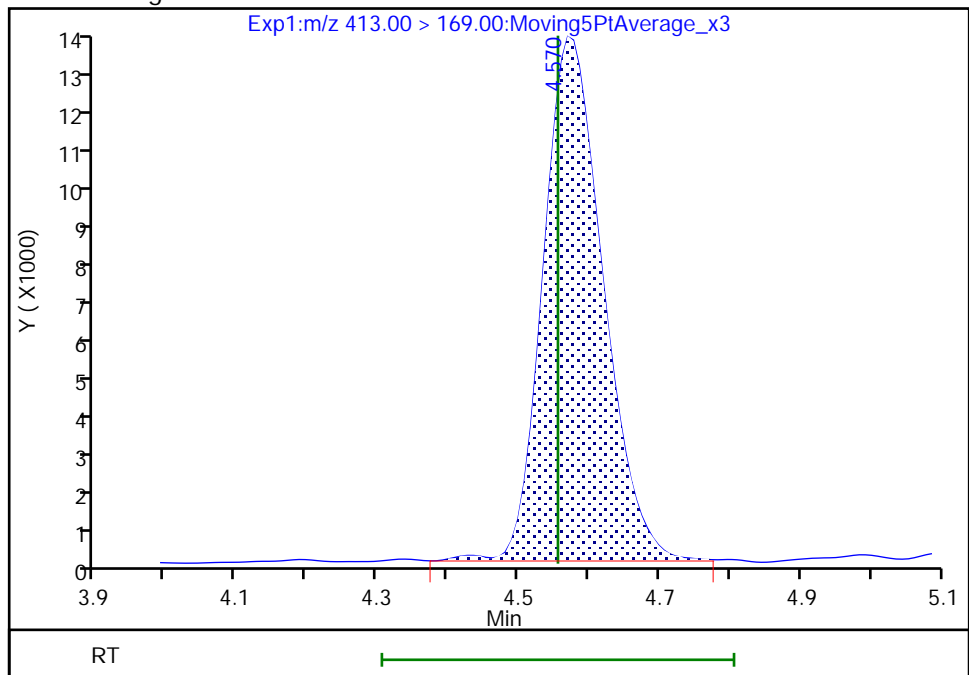
RT: 4.57
Area: 78463
Amount: 0.053695
Amount Units: ng/ml

Processing Integration Results



RT: 4.57
Area: 76999
Amount: 0.054765
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjunair, 23-Dec-2022 12:23:05

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

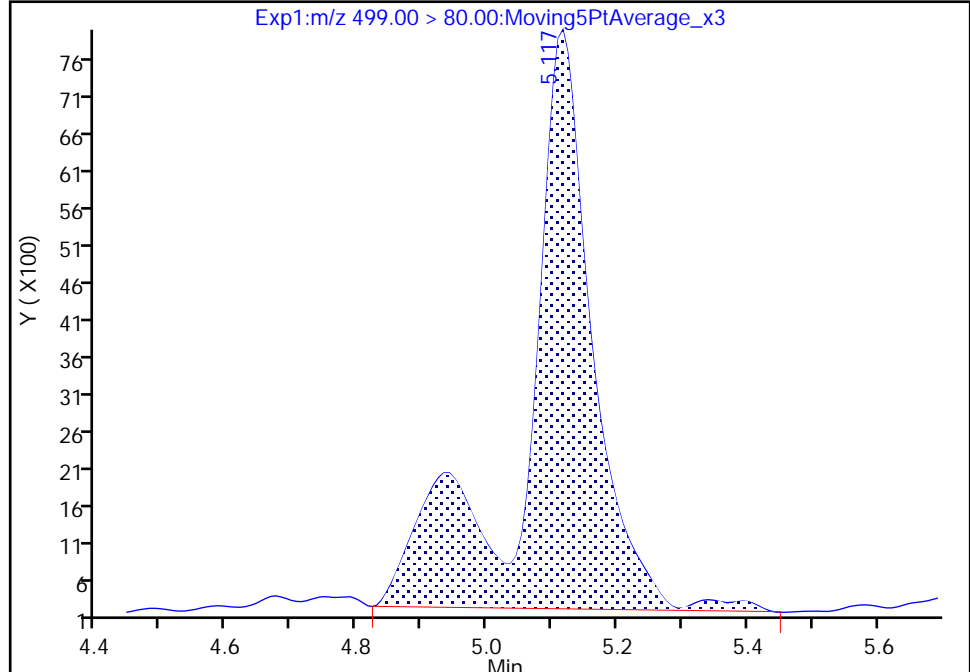
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_005.d
Injection Date: 22-Dec-2022 10:50:03 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

62 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

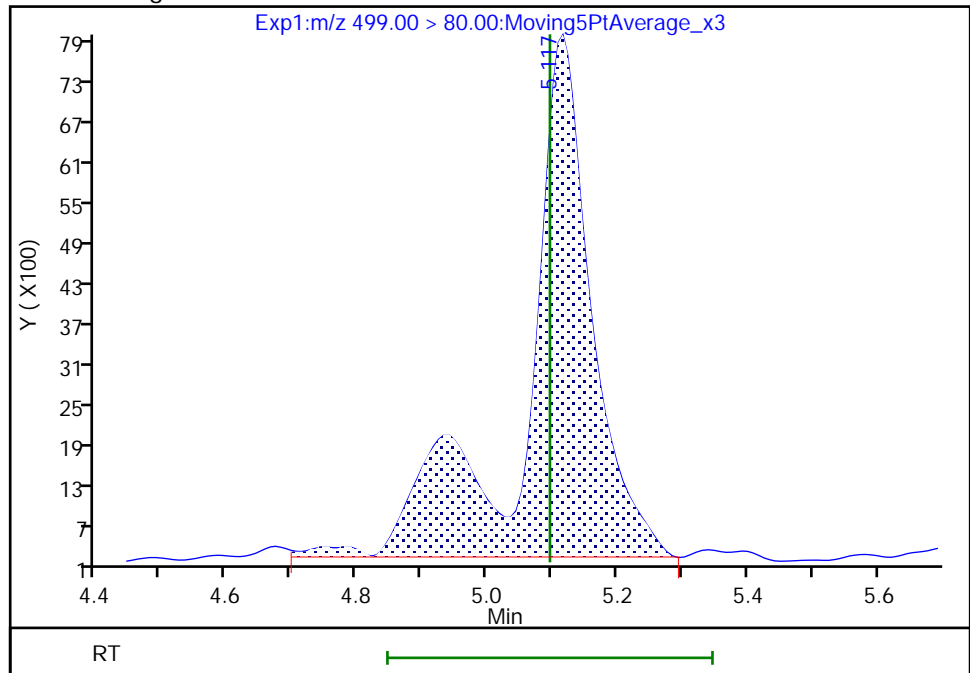
RT: 5.12
Area: 55775
Amount: 0.048932
Amount Units: ng/ml

Processing Integration Results



RT: 5.12
Area: 55031
Amount: 0.048279
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:22:48
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

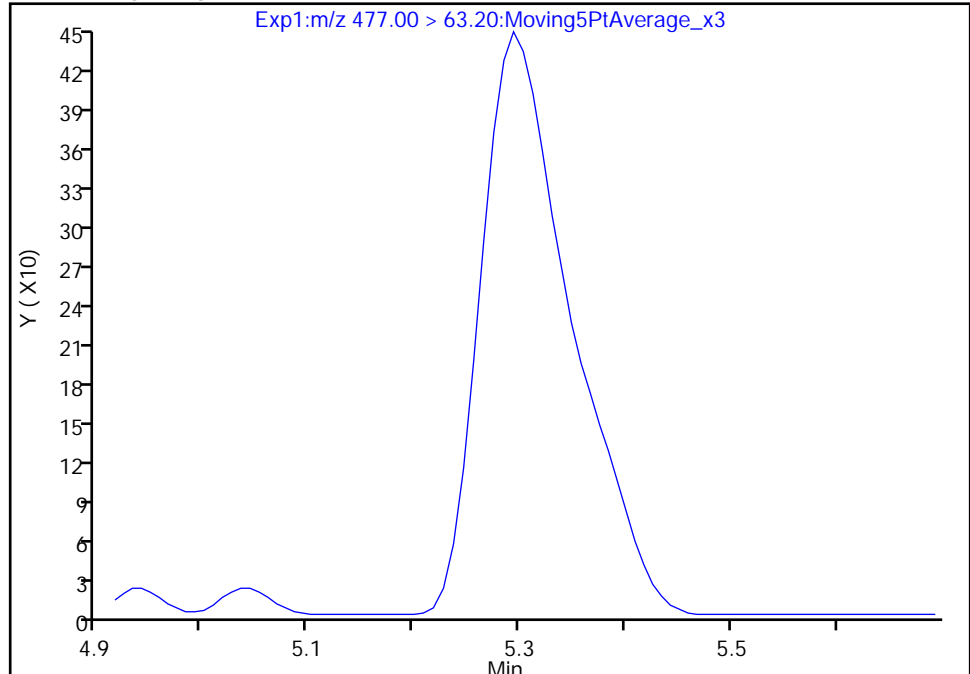
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Injection Date: 22-Dec-2022 10:50:03 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

69 8:2 FTCA, CAS: 27854-31-5

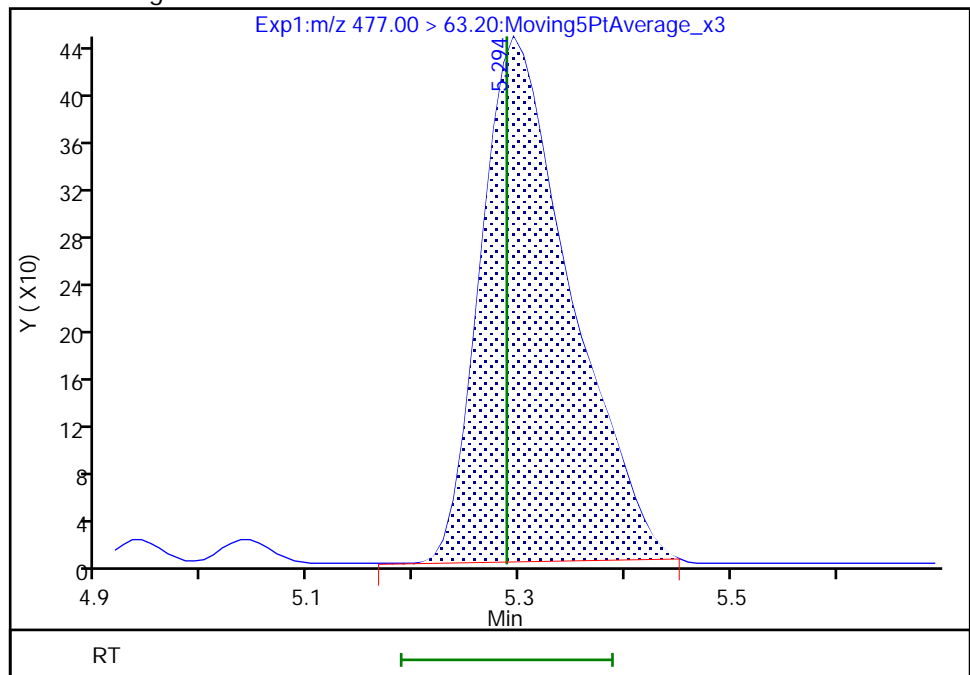
Signal: 2

Not Detected
Expected RT: 5.29

Processing Integration Results



Manual Integration Results



RT: 5.29
Area: 2617
Amount: 0.059693
Amount Units: ng/ml

Reviewer: sanjumnair, 23-Dec-2022 12:21:54
Audit Action: Manually Integrated

Audit Reason: Baseline
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3:43 PM

Eurofins Sacramento

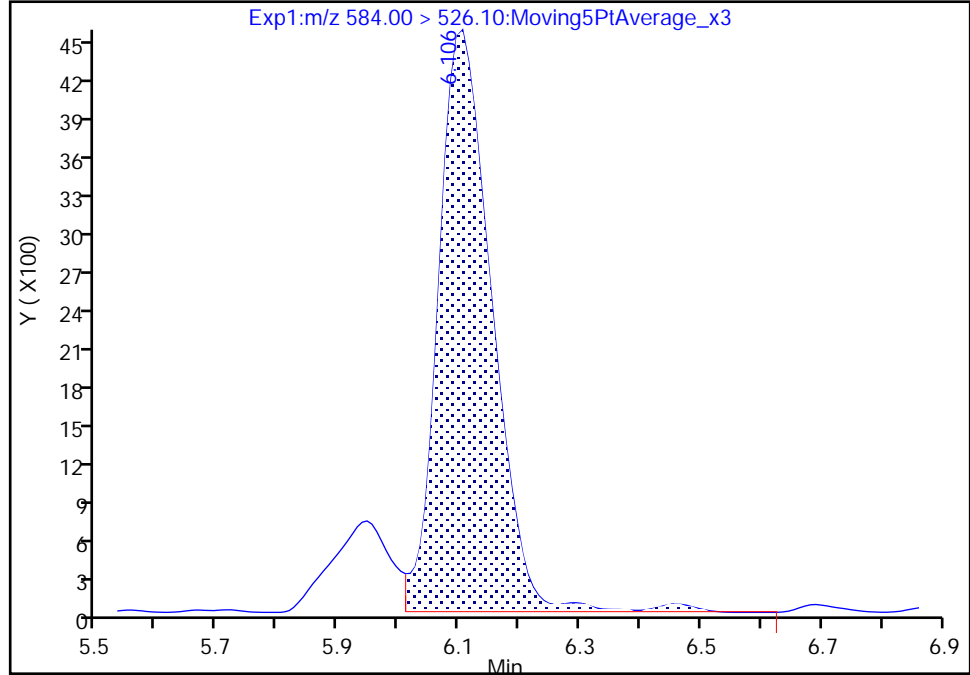
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_005.d
Injection Date: 22-Dec-2022 10:50:03 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

84 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 2

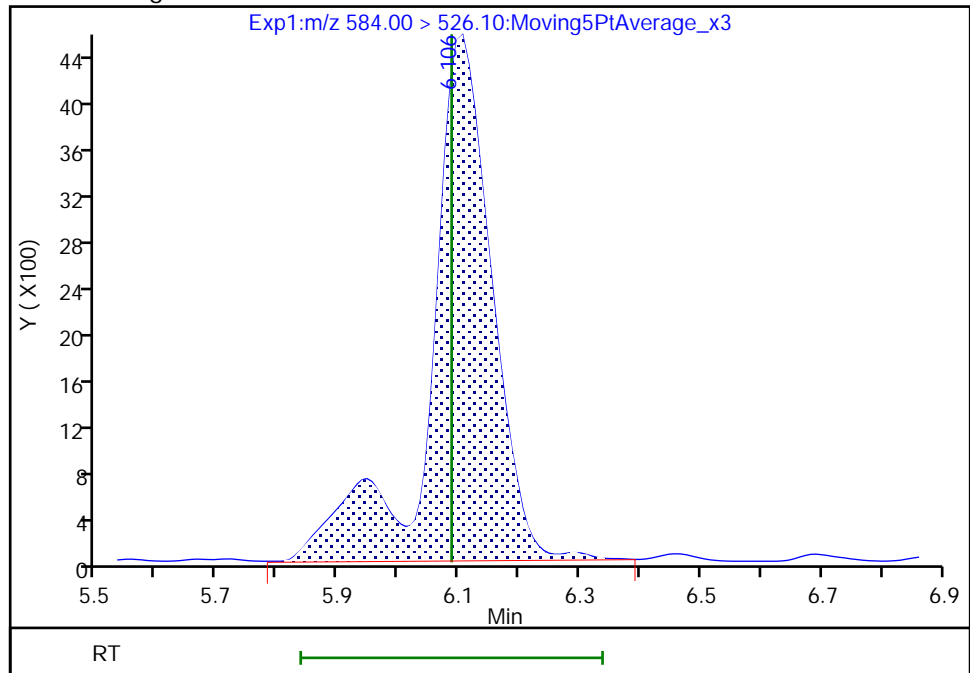
RT: 6.11
Area: 28477
Amount: 0.053607
Amount Units: ng/ml

Processing Integration Results



RT: 6.11
Area: 32682
Amount: 0.053607
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:22:07

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

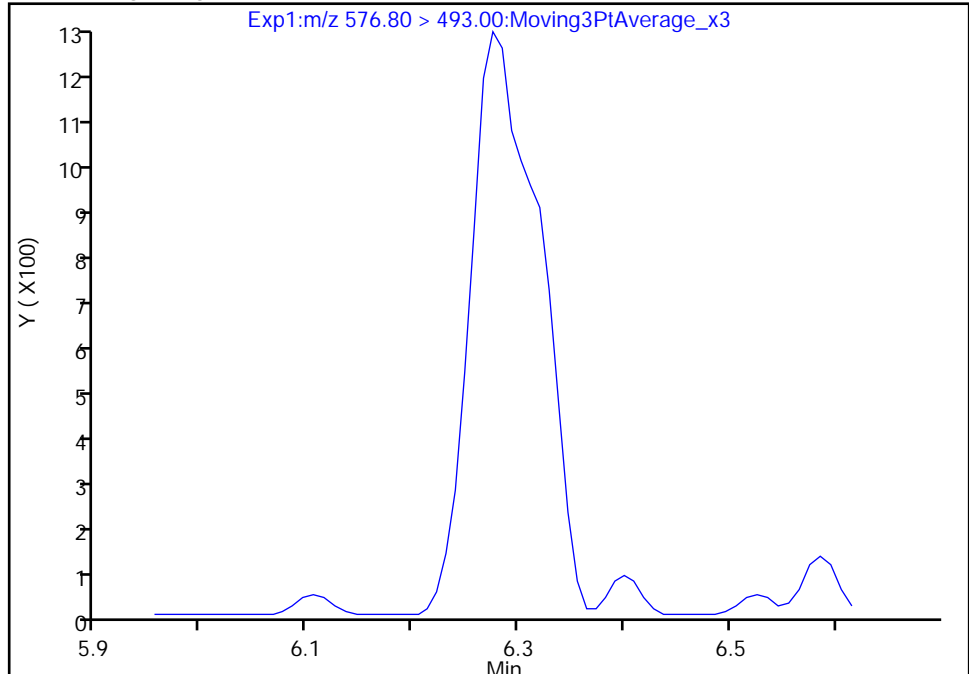
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_005.d
Injection Date: 22-Dec-2022 10:50:03 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

92 10:2 FTCA, CAS: 53826-13-4

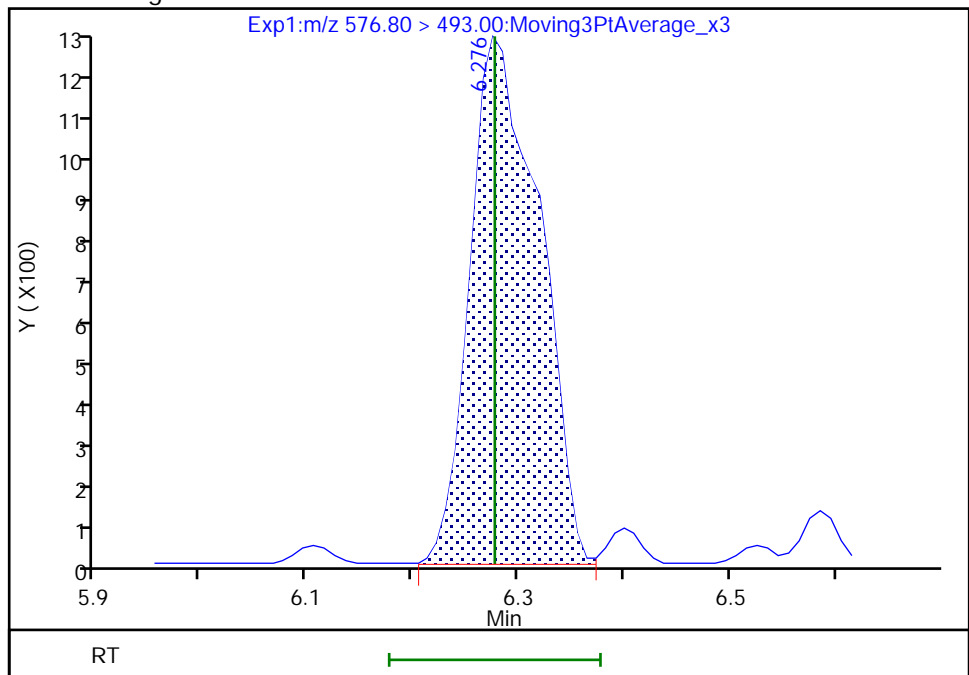
Signal: 1

Not Detected
Expected RT: 6.28

Processing Integration Results



Manual Integration Results



RT: 6.28
Area: 5660
Amount: 0.085843
Amount Units: ng/ml

Reviewer: sanjumnair, 23-Dec-2022 12:22:21
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

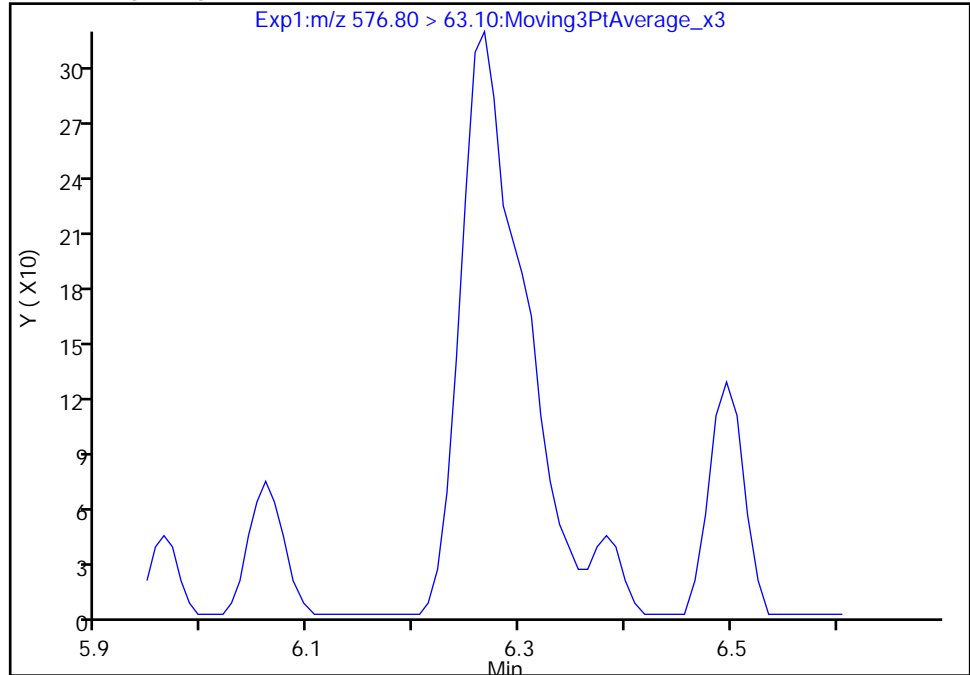
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_005.d
Injection Date: 22-Dec-2022 10:50:03 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

92 10:2 FTCA, CAS: 53826-13-4

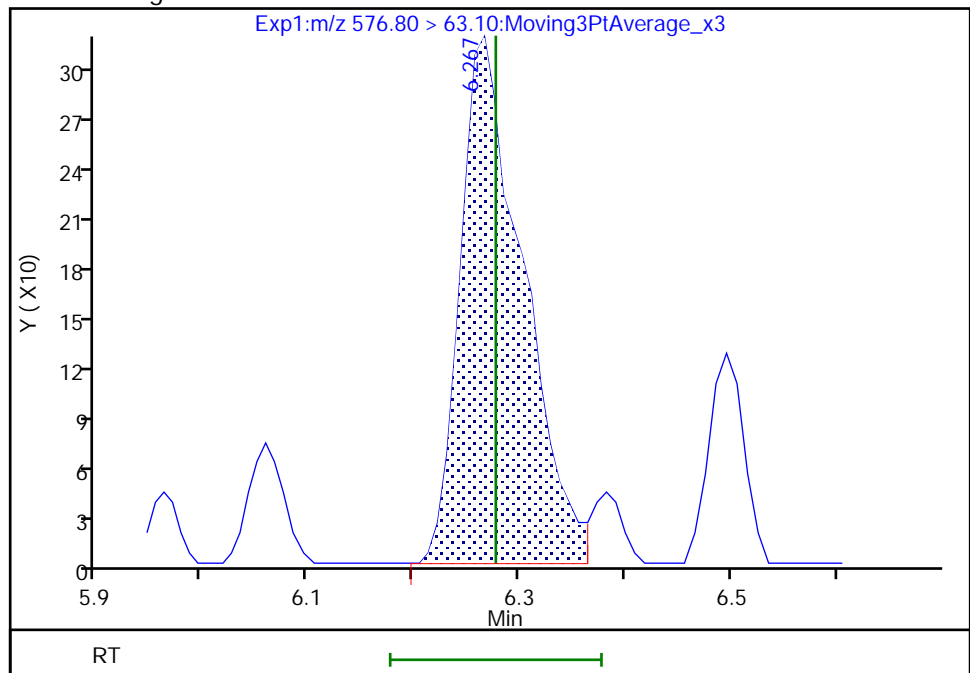
Signal: 2

Not Detected
Expected RT: 6.28

Processing Integration Results



Manual Integration Results



RT: 6.27
Area: 1277
Amount: 0.085843
Amount Units: ng/ml

Reviewer: sanjumnair, 23-Dec-2022 12:22:25

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: CCV 320-642483/3 Calibration Date: 12/22/2022 11:00

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC_A_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
MTP	L1ID		0.0726		1.00	1.00	0.1	30.0
PFPrA	L1ID		0.7560		0.939	0.970	-3.2	30.0
PFMOAA	AveID	0.5606	0.5603		1.00	1.00	-0.0	30.0
R-PSDA	AveID	0.1346	0.1320		0.981	1.00	-1.9	30.0
Hydrolyzed PSDA	AveID	0.4284	0.4341		1.01	1.00	1.3	30.0
R-EVE	AveID	0.3419	0.3210		0.939	1.00	-6.1	30.0
Perfluorobutanoic acid (PFBA)	AveID	1.112	1.068		0.961	1.00	-3.9	30.0
PMPA	AveID	1.149	1.229		1.07	1.00	6.9	30.0
PFPrS	AveID	0.9349	0.9094		0.895	0.920	-2.7	30.0
NVHOS	AveID	0.0289	0.0319		1.10	1.00	10.5	30.0
PFMPA	AveID	0.6578	0.6699		1.02	1.00	1.8	30.0
PFO2HxA	AveID	0.1374	0.1398		1.02	1.00	1.8	30.0
Perfluoropentanoic acid (PFPeA)	AveID	1.045	1.039		0.994	1.00	-0.6	30.0
3:3 FTCA	AveID	0.0768	0.0756		0.984	1.00	-1.6	30.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9820	0.9458		0.855	0.888	-3.7	30.0
PEPA	AveID	1.111	1.196		1.08	1.00	7.7	30.0
PFMBA	AveID	1.110	1.134		1.02	1.00	2.2	30.0
PFEEA	AveID	3.265	3.196		0.873	0.892	-2.1	30.0
FBSA	AveID	0.3707	0.3674		0.991	1.00	-0.9	30.0
NFDHA	AveID	0.1732	0.1808		1.04	1.00	4.4	30.0
4:2 FTS	AveID	2.336	2.414		0.969	0.938	3.3	30.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9423	0.9485		1.01	1.00	0.7	30.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8041	0.7886		0.922	0.940	-1.9	30.0
PFO3OA	AveID	0.0552	0.0572		1.04	1.00	3.7	30.0
HFPO-DA (GenX)	AveID	1.057	1.037		0.981	1.00	-1.9	30.0
R-PSDCA	AveID	0.2943	0.3218		1.09	1.00	9.3	30.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9100	0.9439		1.04	1.00	3.7	30.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	0.9649	0.9390		0.888	0.912	-2.7	30.0
Hydro-EVE Acid	AveID	1.386	1.483		1.07	1.00	6.9	30.0
Hydro-PS Acid	AveID	1.235	1.300		1.05	1.00	5.3	30.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	6.660	6.746		0.956	0.944	1.3	30.0
5:3 FTCA	AveID	3.349	3.463		1.03	1.00	3.4	30.0
PFPE-1	AveID	9.767	9.95		1.02	1.00	1.9	30.0
6:2 FTUCA	AveID	1.012	1.025		1.01	1.00	1.3	30.0
6:2 FTCA	AveID	0.2612	0.2588		0.991	1.00	-0.9	30.0
PFO4DA	AveID	0.0555	0.0660		1.19	1.00	19.0	30.0
PS Acid	AveID	0.4158	0.4526		1.09	1.00	8.8	30.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: CCV 320-642483/3 Calibration Date: 12/22/2022 11:00

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC_A_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
EVE Acid	AveID	1.281	1.333		1.04	1.00	4.0	30.0
FHxSA	AveID	1.998	1.930		0.966	1.00	-3.4	30.0
PFECHS	AveID	0.8798	0.9316		0.978	0.924	5.9	30.0
6:2 FTS	AveID	2.031	1.933		0.906	0.952	-4.8	50.0
Perfluoroheptanesulfonic acid (PFHpS)	AveID	1.200	1.198		0.952	0.954	-0.2	30.0
Perfluorooctanoic acid (PFOA)	AveID	0.9328	0.9580		1.03	1.00	2.7	30.0
PFO5DA	AveID	0.0374	0.0400		1.07	1.00	6.9	30.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.039	1.043		0.934	0.930	0.4	30.0
Perfluorononanoic acid (PFNA)	AveID	0.8673	0.8611		0.993	1.00	-0.7	30.0
7:3 FTCA	AveID	5.294	5.365		1.01	1.00	1.3	30.0
8:2 FTUCA	AveID	0.9523	0.9331		0.980	1.00	-2.0	30.0
8:2 FTCA	AveID	1.013	1.008		0.995	1.00	-0.5	30.0
9Cl-PF3ONS	AveID	2.498	2.624		0.981	0.934	5.1	30.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9532	0.9295		0.975	1.00	-2.5	30.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7759	0.8138		1.01	0.962	4.9	30.0
8:2 FTS	AveID	1.647	1.712		0.998	0.960	4.0	30.0
Perfluorodecanoic acid (PFDA)	AveID	0.6577	0.6663		1.01	1.00	1.3	30.0
NMeFOSAA	AveID	0.7907	0.7378		0.933	1.00	-6.7	30.0
Perfluorodecanesulfonic acid (PFDS)	L1ID		0.7687		1.02	0.964	5.9	30.0
NETFOSAA	AveID	0.7522	0.8033		1.07	1.00	6.8	30.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.6838	0.6821		0.997	1.00	-0.3	30.0
10:2 FTUCA	AveID	0.7067	0.6775		0.959	1.00	-4.1	30.0
10:2 FTCA	L1ID		0.8739		0.917	1.00	-8.3	30.0
11Cl-PF3OUdS	AveID	3.190	3.088		0.914	0.944	-3.2	30.0
NMeFOSE	AveID	0.9853	1.020		1.03	1.00	3.5	30.0
NMeFOSA	AveID	0.9700	0.9408		0.970	1.00	-3.0	30.0
Perfluorododecanoic acid (PFDoA)	AveID	0.8630	0.8624		0.999	1.00	-0.0	30.0
10:2 FTS	AveID	1.304	1.326		0.982	0.966	1.7	30.0
NETFOSE	AveID	0.9495	0.9745		1.03	1.00	2.6	30.0
NETFOSA	AveID	0.9338	0.9260		0.992	1.00	-0.8	30.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2502	0.2660		1.03	0.970	6.3	30.0
Perfluorotridecanoic acid (PFTrDA)	AveID	0.7853	0.8227		1.05	1.00	4.8	30.0
6:2 Fluorotelomer phosphate diester	AveID	0.9649	1.013		1.02	0.973	5.0	30.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.0982	0.1038		1.06	1.00	5.8	30.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: CCV 320-642483/3 Calibration Date: 12/22/2022 11:00

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC_A_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
6:2/8:2 Fluorotelomer phosphate diester	AveID	0.9673	1.031		1.04	0.976	6.6	30.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.8562		0.987	1.00	-1.3	50.0
8:2 Fluorotelomer phosphate diester	AveID	0.9361	0.9690		1.01	0.978	3.5	30.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.4772	0.5620		1.18	1.00	17.8	50.0
10:2 Fluorotelomer phosphate diester	AveID	0.0970	0.1974		2.04	1.00	103.4*	30.0
13C4 PFBA	Ave	0.8859	0.9184		1.30	1.25	3.7	50.0
13C5 PFPeA	Ave	0.7929	0.8116		1.28	1.25	2.4	50.0
13C3 PFBS	Ave	0.5464	0.5811		1.24	1.17	6.4	50.0
M2-4:2 FTS	Ave	0.1273	0.1194		1.10	1.17	-6.2	50.0
13C2 PFHxA	Ave	0.8726	0.8855		1.27	1.25	1.5	50.0
13C3 HFPO-DA	Ave	0.0293	0.0294		1.25	1.25	0.2	50.0
13C4 PFHpA	Ave	0.9246	0.9280		1.25	1.25	0.4	50.0
18O2 PFHxS	Ave	0.3615	0.3755		1.23	1.18	3.9	50.0
13C-6:2 FTUCA	Ave	0.5484	0.5715		1.30	1.25	4.2	50.0
13C-6:2 FTCA	Ave	0.0424	0.0446		1.31	1.25	5.2	50.0
M2-6:2 FTS	Ave	0.1342	0.1235		1.09	1.19	-7.9	50.0
13C4 PFOA	Ave	1.010	0.9944		1.23	1.25	-1.6	50.0
13C4 PFOS	Ave	0.2437	0.2454		1.21	1.20	0.7	50.0
13C5 PFNA	Ave	0.9888	0.9849		1.24	1.25	-0.4	50.0
13C-8:2 FTUCA	Ave	0.5900	0.5963		1.26	1.25	1.1	50.0
13C-8:2 FTCA	Ave	0.0317	0.0314		1.24	1.25	-0.9	50.0
13C8 FOSA	Ave	0.3238	0.3484		1.34	1.25	7.6	50.0
M2-8:2 FTS	Ave	0.1350	0.1234		1.10	1.20	-8.6	50.0
13C2 PFDA	Ave	0.9539	0.9783		1.28	1.25	2.6	50.0
d3-NMeFOSAA	Ave	0.1322	0.1421		1.34	1.25	7.5	50.0
d5-NEtFOSAA	Ave	0.1326	0.1341		1.26	1.25	1.1	50.0
13C2 PFUnA	Ave	0.8946	0.9246		1.29	1.25	3.3	50.0
13C-10:2 FTUCA	Ave	0.5322	0.5582		1.31	1.25	4.9	50.0
13C-10:2 FTCA	Ave	0.0178	0.0180		1.26	1.25	1.0	50.0
d7-N-MeFOSE-M	Ave	0.1590	0.1657		1.30	1.25	4.2	50.0
d-N-MeFOSA-M	Ave	0.1053	0.1079		1.28	1.25	2.5	50.0
13C2 PFDoA	Ave	0.9837	1.034		1.31	1.25	5.2	50.0
13C2 10:2 FTS	Ave	0.1260	0.1196		1.14	1.21	-5.1	50.0
d9-N-EtFOSE-M	Ave	0.1840	0.2013		1.37	1.25	9.4	50.0
d-N-EtFOSA-M	Ave	0.0980	0.1081		1.38	1.25	10.3	50.0
13C4-6:2 Fluorotelomer phosphate diester	Ave	0.2865	0.2716		1.15	1.22	-5.2	50.0
13C2 PFTeDA	Ave	0.8532	0.8353		1.22	1.25	-2.1	50.0
13C2 PFHxDA	Ave	0.7395	0.8420		1.42	1.25	13.9	50.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
SDG No.: _____
Lab Sample ID: CCV 320-642483/3 Calibration Date: 12/22/2022 11:00
Instrument ID: A18 Calib Start Date: 12/21/2022 12:10
GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11
Lab File ID: 2022.12.21_A18_PFC_A_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4-8:2 Fluorotelomer phosphate diester	Ave	0.2076	0.2216		1.31	1.22	6.7	50.0

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_006.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 22-Dec-2022 11:00:09 ALS Bottle#: 52 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4 (08)
 Misc. Info.: Plate: 3 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Sublist: chrom-PFAS+_A18*sub3
 Method: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 23-Dec-2022 12:21:01 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1657

First Level Reviewer: sanjumnair

Date: 23-Dec-2022 12:21:01

Ratio Calibration: Initial Calibration Level: 4

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 MTP										M
175.00 > 97.00	1.429	1.429	0.0	0.537	295717	1.00		100	572	M
2 PPF Acid										M
162.95 > 119.00	1.852	1.852	0.0	0.696	2987418	0.9388		96.8	203	M
3 PFMOAA										
179.00 > 84.90	2.367	2.367	0.0	0.889	2282700	1.00		100.0	653	
4 R-PSDA										
441.00 > 241.00	2.544	2.544	0.0	0.956	537871	0.9810		98.1	11748	
5 R-EVE										
405.00 > 217.00	2.553	2.553	0.0	0.959	1307648	0.9387		93.9	25351	
6 Hydrolyzed PSDA										
439.10 > 342.90	2.553	2.553	0.0	0.959	1768398	1.01		101	19946	
D 8 13C4 PFBA										
217.00 > 172.00	2.662	2.662	0.0	0.584	5092317	1.30		104	15772	
7 Perfluorobutanoic acid										
212.90 > 169.00	2.662	2.662	0.0	1.000	4351144	0.9608		96.1	160	
10 PMPA										
229.00 > 185.00	2.733	2.733	0.0	1.027	5006288	1.07		107	3248	
11 PFPrS										
249.10 > 80.00	2.742	2.742	0.0	0.891	2156896	0.8949		97.3	14465	
12 NVHOS										
297.00 > 135.00	2.760	2.760	0.0	1.037	130020	1.10		110	3490	
13 PFECA F										
229.00 > 85.00	2.796	2.796	0.0	0.922	2411734	1.02		102	10729	
14 PFO2HxA										
245.00 > 85.00	2.945	2.945	0.0	0.971	503489	1.02		102	2086	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 16 13C5 PFPeA										
267.90 > 223.00	3.031	3.031	0.0	0.665	4500302	1.28		102	39669	
15 Perfluoropentanoic acid										
262.90 > 219.00	3.031	3.031	0.0	1.000	3739685	0.99		99.4	5840	
17 3:3 FTCA										
241.00 > 177.10	3.041	3.041	0.0	0.988	194914	0.9841	Target=1.29	98.4	2094	
241.00 > 116.90	3.041	3.041	0.0	0.988	161290		1.21(0.64-1.93)		999	
19 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.077	3.077	0.0	1.000	2165205	0.8553	Target=2.33	96.3	10044	
298.90 > 99.00	3.077	3.077	0.0	1.000	941171		2.30(1.16-3.49)		4731	
D 18 13C3 PFBS										
301.90 > 80.00	3.077	3.077	0.0	0.675	3003255	1.24		106	17714	
20 PEPA										
278.90 > 234.90	3.143	3.143	0.0	1.037	4304410	1.08		108	1429	
21 PFECA A										
278.95 > 84.90	3.163	3.163	0.0	1.043	4082598	1.02		102	30225	
22 PES										
314.80 > 135.00	3.252	3.252	0.0	1.057	7348096	0.8730		97.9	60276	
23 FBSA										
297.90 > 78.00	3.306	3.306	0.0	0.591	567824	0.99		99.1	6975	
24 PFECA B										
295.20 > 201.00	3.396	3.396	0.0	0.979	710269	1.04		104	13821	
26 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.422	3.422	0.0	1.000	1198846	0.9692	Target=1.90	103	30259	
327.00 > 79.96	3.422	3.422	0.0	1.000	596796		2.01(0.95-2.85)		8003	
D 25 M2-4:2 FTS										
329.00 > 81.00	3.422	3.422	0.0	0.751	620895	1.10		93.8	3936	
D 27 13C2 PFHxA										
315.00 > 270.00	3.468	3.468	0.0	0.761	4910074	1.27		101	37099	
28 Perfluorohexanoic acid										
313.00 > 269.00	3.468	3.468	0.0	1.000	3725642	1.01	Target=13.49	101	4680	
313.00 > 119.00	3.476	3.468	0.008	1.003	275214		13.54(6.75-20.24)		2958	
29 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.503	3.503	0.0	1.138	1910878	0.9218	Target=3.01	98.1	14054	
349.00 > 99.00	3.503	3.503	0.0	1.138	591011		3.23(1.50-4.51)		8614	
30 PFO3OA										
311.10 > 85.20	3.547	3.547	0.0	1.023	224870	1.04		104	3909	
31 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.632	3.632	0.0	1.000	135049	0.9808	Target=0.88	98.1	5944	
285.00 > 185.00	3.632	3.632	0.0	1.000	161575		0.84(0.44-1.31)		1571	
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.632	3.632	0.0	0.797	162853	1.25		100	4839	
33 R-PSDCA										
397.00 > 217.00	3.946	3.946	0.0	0.988	1324575	1.09		109	27258	
D 35 13C4 PFHpA										
367.00 > 322.00	3.994	3.994	0.0	0.877	5145638	1.25		100	26312	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
36 Perfluoroheptanoic acid										
363.00 > 319.00	3.994	3.994	0.0	1.000	3885491	1.04	Target=3.51	104	6202	
363.00 > 169.00	3.994	3.994	0.0	1.000	1068245		3.64(1.75-5.26)		8143	
38 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.012	4.012	0.0	1.000	1426652	0.8876	Target=3.29	97.3	13460	
399.00 > 99.00	4.012	4.012	0.0	1.000	421000		3.39(1.64-4.93)		2739	
D 37 18O2 PFHxS										
403.00 > 84.00	4.012	4.012	0.0	0.881	1969923	1.23		104	18354	
34 Hydro-EVE Acid										
427.00 > 282.90	4.038	4.038	0.0	1.011	6102993	1.07		107	24631	
39 Hydro-PS Acid										
463.00 > 263.00	4.063	4.063	0.0	1.017	5352757	1.05		105	4196	
41 5:3 FTCA										
340.88 > 236.90	4.071	4.071	0.0	0.979	685663	1.03	Target=1.13	103	6086	
340.88 > 216.90	4.080	4.071	0.009	0.981	629719		1.09(0.56-1.69)		5965	
40 DONA										
377.00 > 251.00	4.071	4.071	0.0	0.799	6932437	0.9561	Target=2.17	101	27478	
377.00 > 85.00	4.071	4.071	0.0	0.799	3111381		2.23(1.09-3.26)		794	
42 PFECA G										
378.90 > 184.90	4.097	4.097	0.0	0.985	1970398	1.02		102	19350	
43 6:2 FTUCA										
356.86 > 292.90	4.131	4.131	0.0	1.000	2599899	1.01	Target=14.13	101	17639	
356.86 > 243.00	4.131	4.131	0.0	1.000	183027		14.21(7.07-21.20)		5016	
D 44 13C-6:2 FTUCA										
358.86 > 293.90	4.131	4.131	0.0	0.907	3169258	1.30		104	33327	
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.157	4.157	0.0	0.912	247507	1.31		105	1033	
45 6:2 FTCA										
377.10 > 313.10	4.157	4.157	0.0	1.000	51235	0.99	Target=0.64	99.1	1725	
377.10 > 63.00	4.157	4.157	0.0	1.000	75786		0.68(0.32-0.96)		3218	
47 PFO4DA										
376.90 > 85.00	4.271	4.271	0.0	1.069	271681	1.19		119	0.7	
48 PS Acid										
442.80 > 146.80	4.360	4.360	0.0	0.957	1996372	1.09		109	7112	
49 EVE Acid										
407.00 > 262.90	4.369	4.369	0.0	0.959	5877856	1.04		104	33888	
50 FHxSA										
397.90 > 78.00	4.475	4.475	0.0	0.800	2982839	0.9661		96.6	12909	
51 PFECHS										
460.80 > 380.90	4.475	4.475	0.0	0.982	3797296	0.9784	Target=2.14	106	26391	
460.80 > 98.90	4.475	4.475	0.0	0.982	1821187		2.09(1.07-3.21)		17488	
53 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.520	4.520	0.0	1.000	1008425	0.9063	Target=2.29	95.2	14171	
427.00 > 79.96	4.520	4.520	0.0	1.000	460666		2.19(1.15-3.44)		5478	
D 52 M2-6:2 FTS										
429.00 > 81.00	4.520	4.520	0.0	0.992	650588	1.09		92.1	12204	
\$ 54 13C8 PFOA										
421.00 > 376.00	4.547	4.547	0.0	0.998	4624403	1.24		99.5	15555	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 56 13C4 PFOA										
417.00 > 372.00	4.556	4.556	0.0	1.000	5513922	1.23		98.4	13290	
58 Perfluorooctanoic acid										
413.00 > 369.00	4.556	4.556	0.0	1.000	4226033	1.03	Target=2.76	103	3777	M
413.00 > 169.00	4.556	4.556	0.0	1.000	1517078		2.79(1.38-4.14)		8037	M
* 55 13C2 PFOA										
415.00 > 370.00	4.556	4.556	0.0		5545026	1.25			16348	
57 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.556	4.556	0.0	0.894	1244465	0.9524	Target=4.72	99.8	15140	
449.00 > 99.00	4.556	4.556	0.0	0.894	276417		4.50(2.36-7.08)		4345	
59 TAF										
442.90 > 85.00	4.970	4.970	0.0	1.091	176272	1.07		107	3467	
D 61 13C4 PFOS										
503.00 > 80.00	5.097	5.097	0.0	1.119	1303638	1.21		101	7206	
\$ 60 13C8 PFOS										
507.00 > 99.00	5.097	5.097	0.0	1.119	554890	1.20		100	7058	
62 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.097	5.097	0.0	1.000	1056229	0.9341	Target=4.87	100	2970	
499.00 > 99.00	5.097	5.097	0.0	1.000	208975		5.05(2.43-7.30)		2562	
D 64 13C5 PFNA										
468.00 > 423.00	5.104	5.104	0.0	1.120	5461054	1.24		99.6	23973	
63 Perfluorononanoic acid										
463.00 > 419.00	5.112	5.112	0.0	1.001	3762187	0.99	Target=7.86	99.3	4519	
463.00 > 169.00	5.104	5.112	-0.008	1.000	514152		7.32(3.93-11.78)		7501	
65 7:3 FTCA										
441.00 > 337.00	5.231	5.231	0.0	0.987	747486	1.01	Target=1.24	101	3571	
441.00 > 317.00	5.231	5.231	0.0	0.987	657184		1.14(0.62-1.87)		3915	
D 67 13C-8:2 FTUCA										
458.86 > 393.90	5.269	5.269	0.0	1.157	3306315	1.26		101	8550	
66 8:2 FTUCA										
456.86 > 392.90	5.269	5.269	0.0	1.000	2468200	0.9798	Target=35.99	98.0	13002	
456.86 > 343.00	5.278	5.269	0.009	1.002	69160		35.69(17.99-53.98)		2858	
69 8:2 FTCA										
477.00 > 393.10	5.288	5.288	0.0	0.998	140405	1.00	Target=2.79	99.5	346	
477.00 > 63.20	5.297	5.288	0.009	1.000	53185		2.64(1.39-4.18)		1772	
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.297	5.297	0.0	1.163	174165	1.24		99.1	811	
70 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	5.403	5.403	0.0	1.060	2668543	0.9813		105	24874	
71 Perfluorooctanesulfonamide										
498.00 > 78.00	5.592	5.592	0.0	1.000	1436391	0.9751		97.5	12409	
D 72 13C8 FOSA										
506.00 > 78.00	5.592	5.592	0.0	1.227	1931766	1.34		108	16312	
73 Perfluorononanesulfonic acid										
549.00 > 80.00	5.600	5.600	0.0	1.099	852285	1.01	Target=2.88	105	12691	
549.00 > 99.00	5.600	5.600	0.0	1.099	289099		2.95(1.44-4.32)		7459	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.608	5.608	0.0	1.231	5567404	1.10		91.4	14125	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	5.616	5.616	0.0	1.001	899531	1.00	Target=2.38	104	22085	
527.00 > 79.96	5.608	5.616	-0.008	1.000	377739		2.38(1.19-3.58)		6542	
D 76 13C2 PFDA										
515.00 > 470.00	5.616	5.616	0.0	1.233	5424846	1.28		103	36606	
77 Perfluorodecanoic acid										
513.00 > 469.00	5.616	5.616	0.0	1.000	2891562	1.01	Target=7.41	101	7374	
513.00 > 169.00	5.616	5.616	0.0	1.000	385363		7.50(3.70-11.11)		17279	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.843	5.843	0.0	1.282	787690	1.34		107	5043	
79 N-methylperfluorooctanesulfonami										
570.00 > 419.00	5.851	5.851	0.0	1.001	464913	0.9331	Target=0.78	93.3	4800	
570.00 > 483.00	5.851	5.851	0.0	1.001	585741		0.79(0.39-1.17)		5465	
80 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.061	6.061	0.0	1.189	806753	1.02	Target=2.82	106	28308	
599.00 > 99.00	6.053	6.061	-0.008	1.188	277842		2.90(1.41-4.23)		7031	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.078	6.078	0.0	1.334	743752	1.26		101	3990	
D 82 13C2 PFUnA										
565.00 > 520.00	6.087	6.087	0.0	1.336	5126783	1.29		103	27548	
83 Perfluoroundecanoic acid										
563.00 > 519.00	6.087	6.087	0.0	1.000	2797516	1.00	Target=7.89	99.7	19107	
563.00 > 169.00	6.087	6.087	0.0	1.000	373448		7.49(3.95-11.84)		7827	
84 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	6.087	6.087	0.0	1.002	477989	1.07	Target=0.75	107	5824	M
584.00 > 526.10	6.087	6.087	0.0	1.002	596519		0.80(0.38-1.13)		7184	M
D 89 13C-10:2 FTUCA										
558.86 > 493.90	6.251	6.251	0.0	1.372	3094980	1.31		105	11936	
90 10:2 FTUCA										
556.86 > 492.90	6.251	6.251	0.0	1.000	1677519	0.9587		95.9	15116	
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.269	6.269	0.0	1.376	99639	1.26		101	474	
92 10:2 FTCA										
576.80 > 493.00	6.277	6.277	0.0	1.001	69658	0.9170	Target=2.41	91.7	328	
576.80 > 63.10	6.269	6.277	-0.008	1.000	28138		2.48(1.20-3.61)		251	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.304	6.304	0.0	1.384	918555	1.30		104	5874	
93 11-Chloroeicosafuoro-3-oxaundec										
631.00 > 451.00	6.304	6.304	0.0	1.237	3173208	0.9138		96.8	29594	
86 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	6.322	6.322	0.0	1.003	749237	1.03		103	4754	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.322	6.322	0.0	1.388	598172	1.28		102	2576	
88 NMeFOSA										
512.00 > 169.00	6.331	6.331	0.0	1.001	450199	0.9699	Target=2.06	97.0	1973	
512.00 > 218.99	6.331	6.331	0.0	1.001	224787		2.00(1.03-3.09)		2778	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
99 Perfluorododecanoic acid										
613.00 > 569.00	6.508	6.508	0.0	1.000	3957370	1.00	Target=7.83	99.9	8628	
613.00 > 169.00	6.508	6.508	0.0	1.000	484615		8.17(3.91-11.74)		7235	
D 98 13C2 PFDaA										
615.00 > 570.00	6.508	6.508	0.0	1.429	5735956	1.31		105	16382	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.518	6.518	0.0	1.431	639980	1.14		94.9	14713	
101 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	6.518	6.518	0.0	1.000	679387	0.9821	Target=1.80	102	11116	
627.00 > 79.96	6.518	6.518	0.0	1.000	394164		1.72(0.90-2.70)		6378	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.558	6.558	0.0	1.439	1115983	1.37		109	8621	
95 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	6.578	6.578	0.0	1.003	870033	1.03		103	4646	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.588	6.588	0.0	1.446	599287	1.38		110	3012	
97 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	6.598	6.598	0.0	1.002	443935	0.99	Target=1.83	99.2	4885	
526.00 > 218.99	6.598	6.598	0.0	1.002	238030		1.87(0.92-2.75)		4305	
102 Perfluorododecanesulfonic acid (
699.00 > 80.00	6.846	6.846	0.0	1.343	280901	1.03	Target=0.66	106	4632	
699.00 > 99.00	6.846	6.846	0.0	1.343	424787		0.66(0.33-0.99)		11763	
103 Perfluorotridecanoic acid										
663.00 > 619.00	6.876	6.876	0.0	1.056	3775276	1.05	Target=6.66	105	6906	
663.00 > 169.00	6.876	6.876	0.0	1.056	536636		7.04(3.33-9.99)		8195	
D 112 13C4-6:2 diPAP										
792.82 > 78.90	7.108	7.108	0.0	1.560	1465511	1.15		94.8	3463	
114 6:2 diPAP										
788.79 > 78.90	7.108	7.108	0.0	1.000	1187877	1.02	Target=1.89	105	2699	
788.79 > 96.90	7.114	7.108	0.006	1.001	642466		1.85(0.95-2.84)		2242	
105 Perfluorotetradecanoic acid										
713.00 > 169.00	7.216	7.216	0.0	1.000	384696	1.06	Target=0.92	106	4289	
713.00 > 219.00	7.207	7.216	-0.009	0.999	386486		1.00(0.46-1.38)		3408	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.216	7.216	0.0	1.584	4631692	1.22		97.9	5861	
115 6:2/8:2 diPAP										
888.70 > 78.90	7.593	7.593	0.0	1.068	1212319	1.04	Target=1.35	107	3892	
888.70 > 96.90	7.593	7.593	0.0	1.068	895335		1.35(0.68-2.03)		3562	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.779	7.779	0.0	1.707	4668791	1.42		114	5486	
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.779	7.779	0.0	1.000	3198005	0.9866	Target=8.78	98.7	3776	
813.00 > 169.00	7.779	7.779	0.0	1.000	368583		8.68(4.39-13.18)		4528	
D 113 13C4-8:2 diPAP										
992.77 > 96.90	7.993	7.993	0.0	1.754	1202249	1.31		107	3265	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
116 8:2 diPAP										
988.74 > 78.90	7.993	7.993	0.0	1.000	931932	1.01	Target=1.18	104	2974	
988.74 > 96.90	7.993	7.993	0.0	1.000	774707		1.20(0.59-1.77)		1824	
108 Perfluorooctadecanoic acid										
913.00 > 869.00	8.266	8.266	0.0	1.063	2099084	1.18	Target=10.05	118	2246	
913.00 > 169.00	8.257	8.266	-0.009	1.061	215068		9.76(5.02-15.07)		3435	
117 10:2 diPAP										
1188.79 > 78.90	8.752	8.752	0.0	1.095	195006	2.04	Target=1.13	203	7449	
1188.79 > 96.90	8.752	8.752	0.0	1.095	172071		1.13(0.57-1.70)		6564	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

LCPFC+6C_LL4_00008

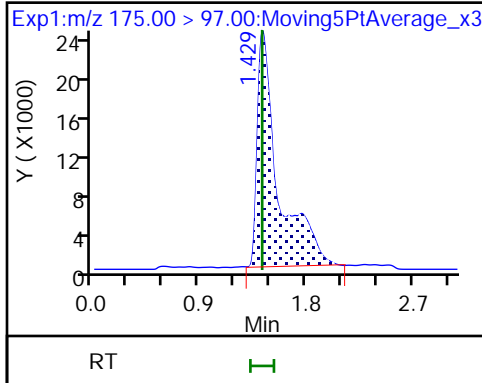
Amount Added: 1.00

Units: mL

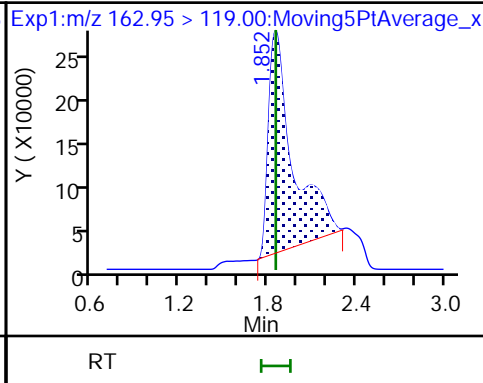
Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_006.d
Injection Date: 22-Dec-2022 11:00:09 Instrument ID: A18
Lims ID: CCV L4
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 52 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL

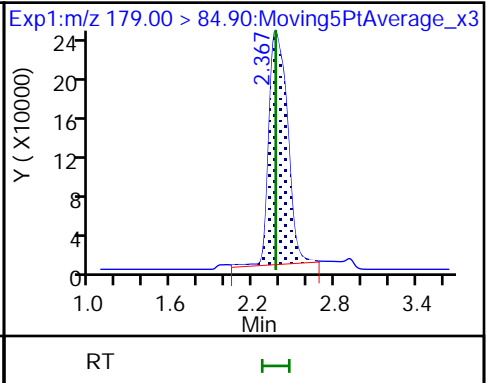
1 MTP (M)



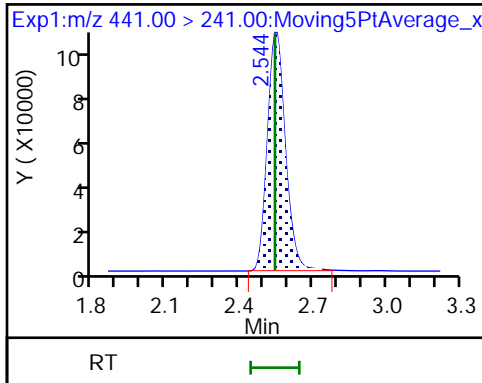
2 PPF Acid (M)



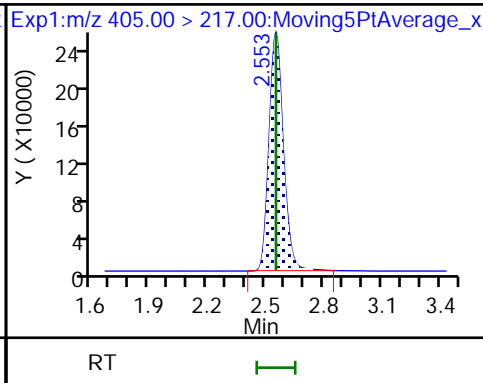
3 PFMOAA



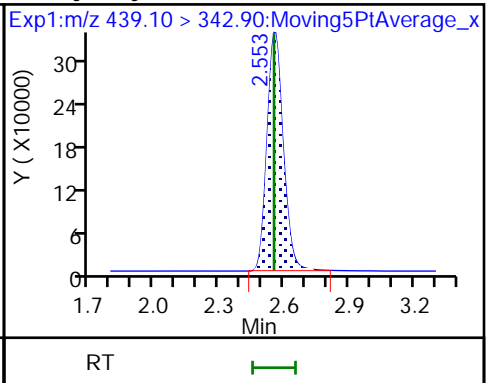
4 R-PSDA



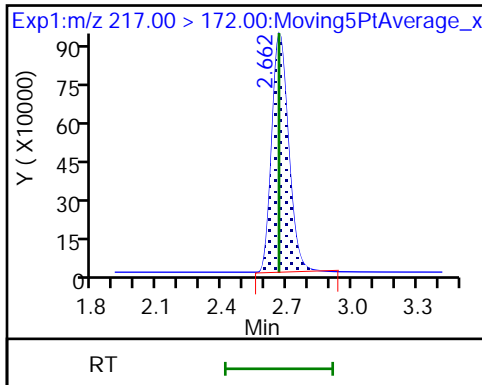
5 R-EVE



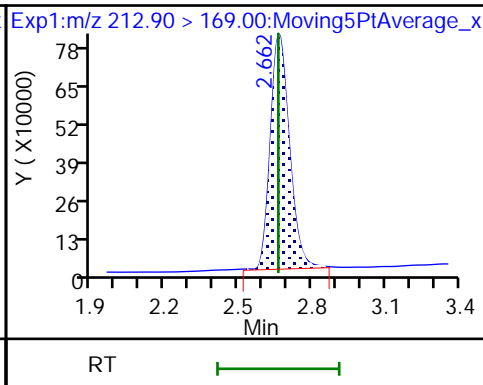
6 Hydrolyzed PSDA



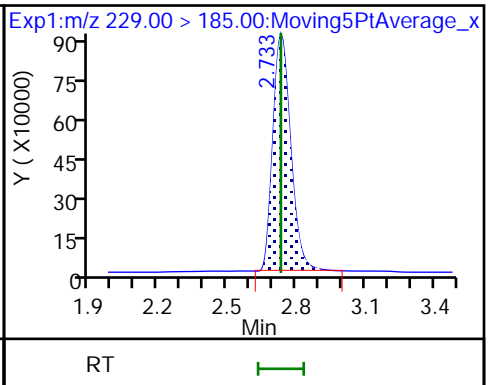
D 8 13C4 PFBA



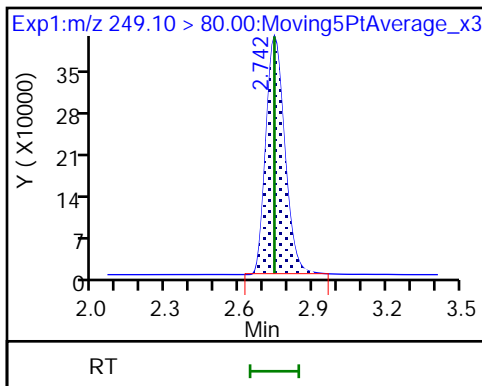
7 Perfluorobutanoic acid



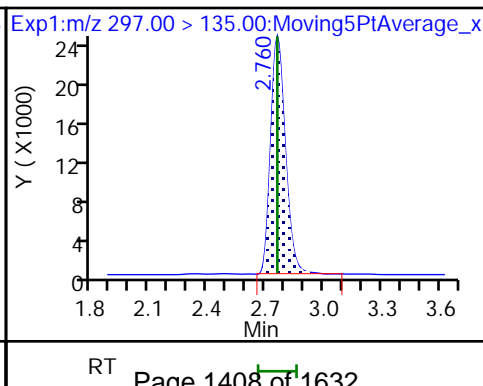
10 PMPA



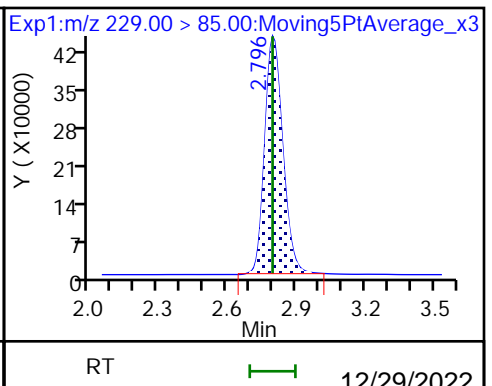
11 PFPrS

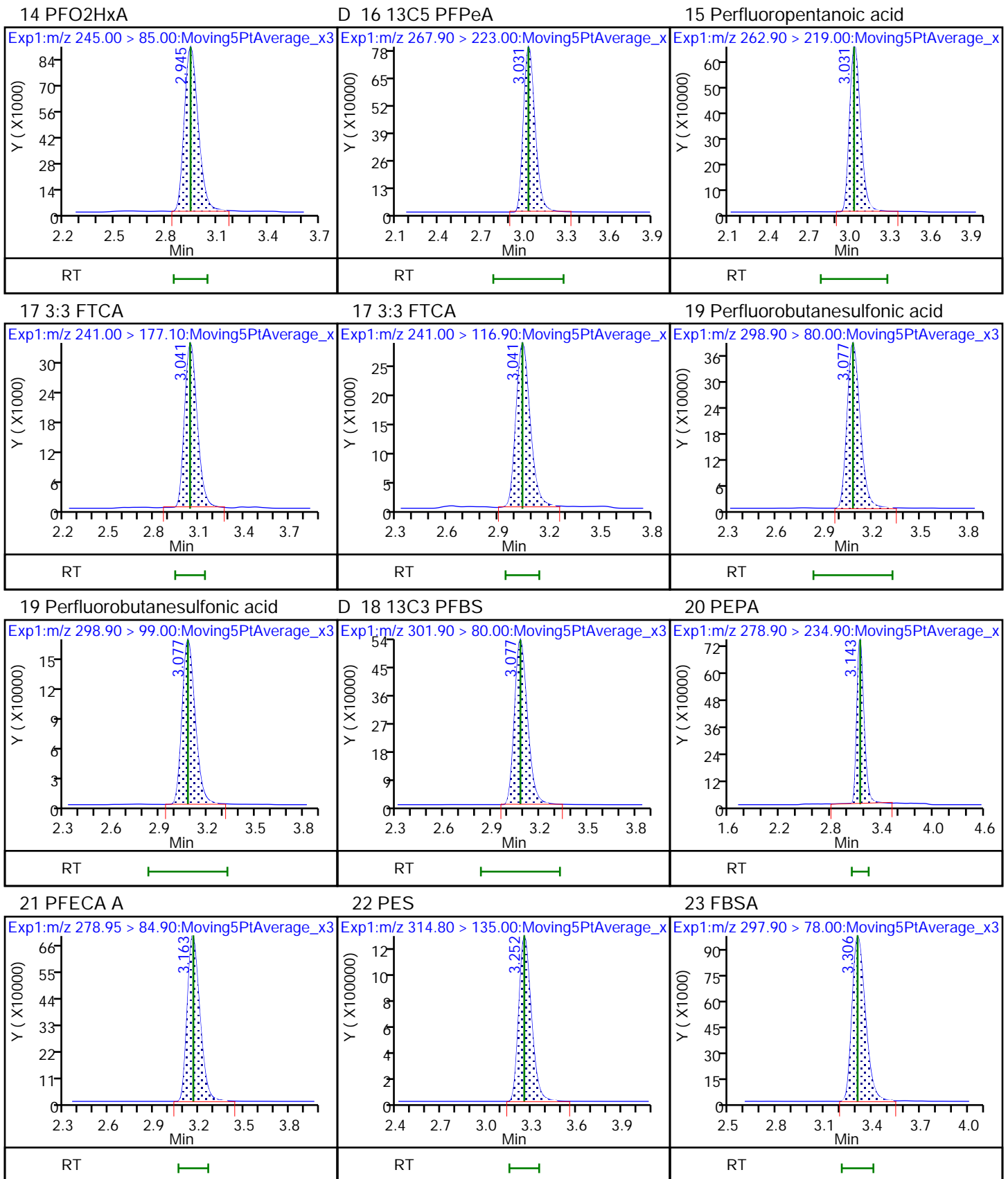


12 NVHOS



13 PFECA F

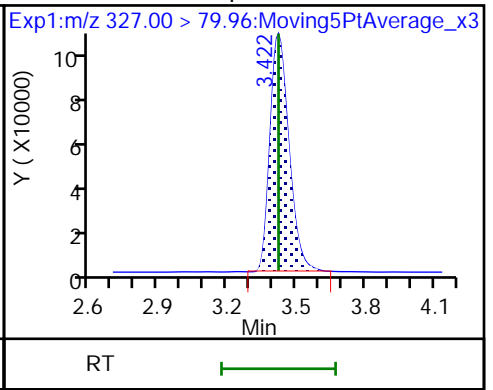
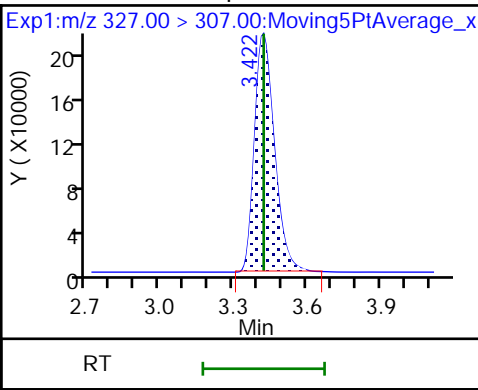
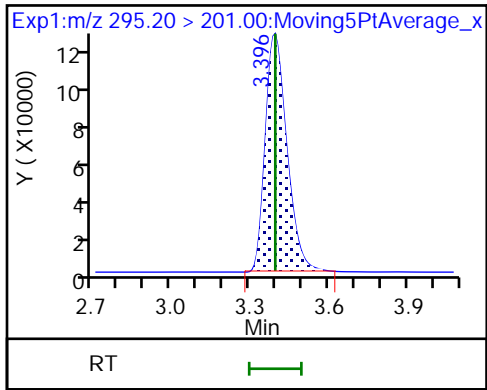




24 PFECA B

26 1H,1H,2H,2H-perfluorohexanesulfo

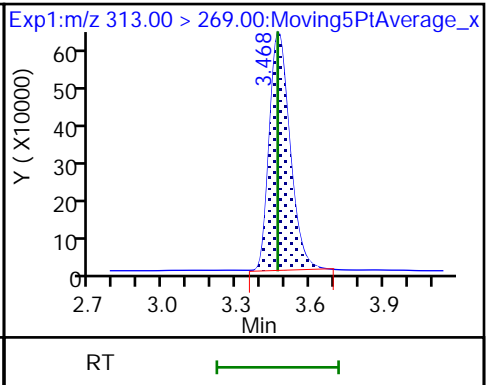
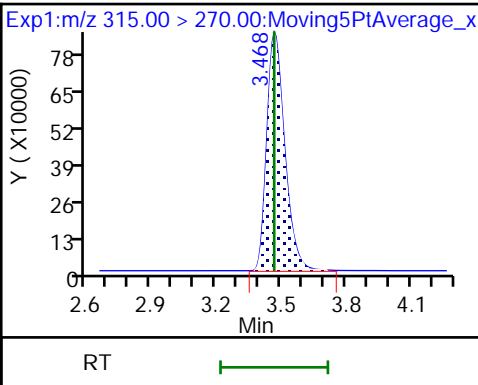
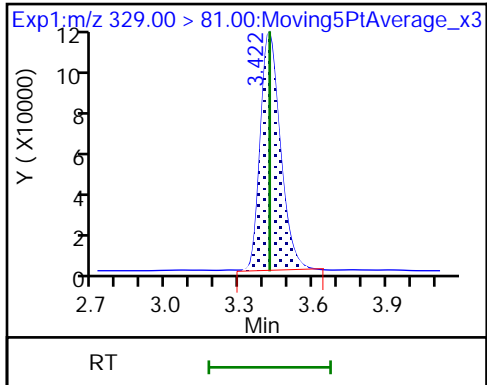
26 1H,1H,2H,2H-perfluorohexanesulfo



D 25 M2-4:2 FTS

D 27 13C2 PFHxA

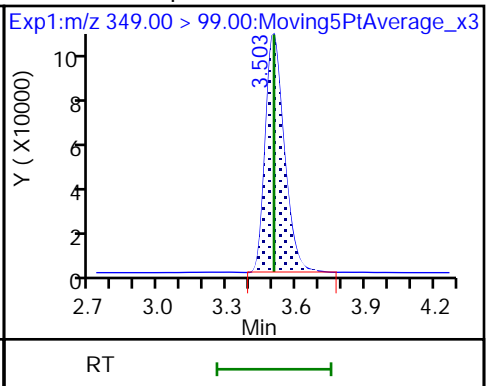
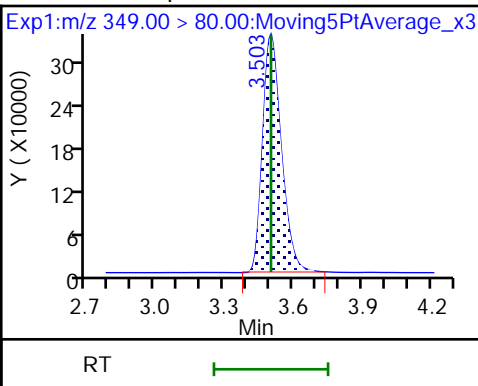
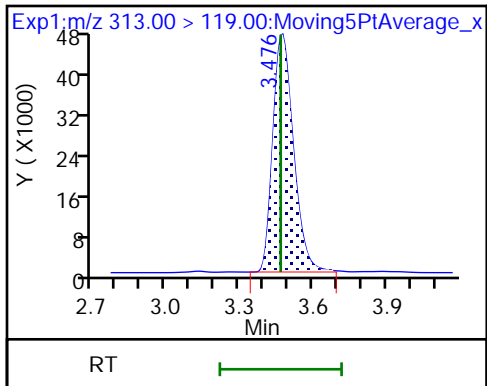
28 Perfluorohexanoic acid



28 Perfluorohexanoic acid

29 Perfluoropentanesulfonic acid

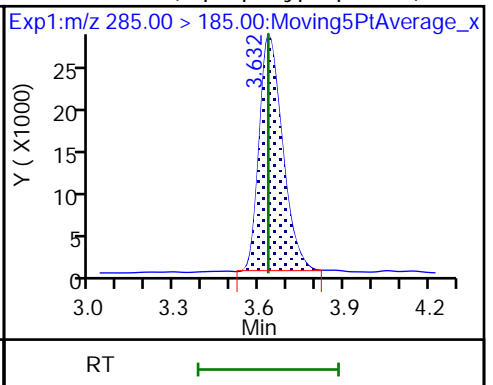
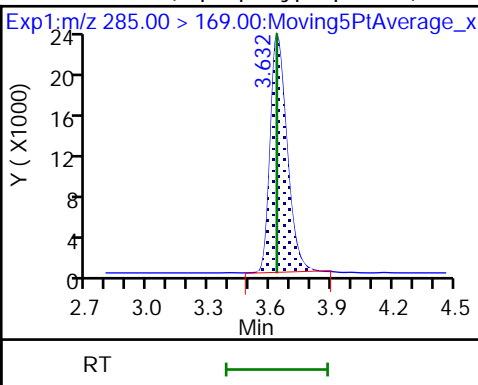
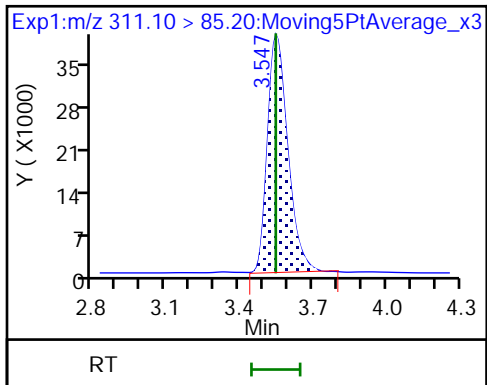
29 Perfluoropentanesulfonic acid



30 PFO3OA

31 Perfluoro(2-propoxypropanoic) ac

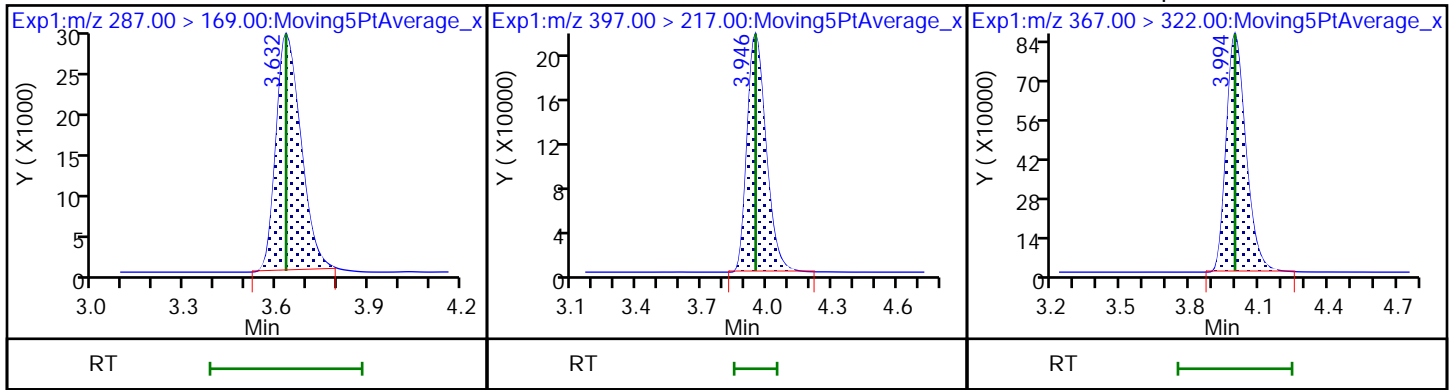
31 Perfluoro(2-propoxypropanoic) ac



D 32 13C3 HFPO-DA

33 R-PSDCA

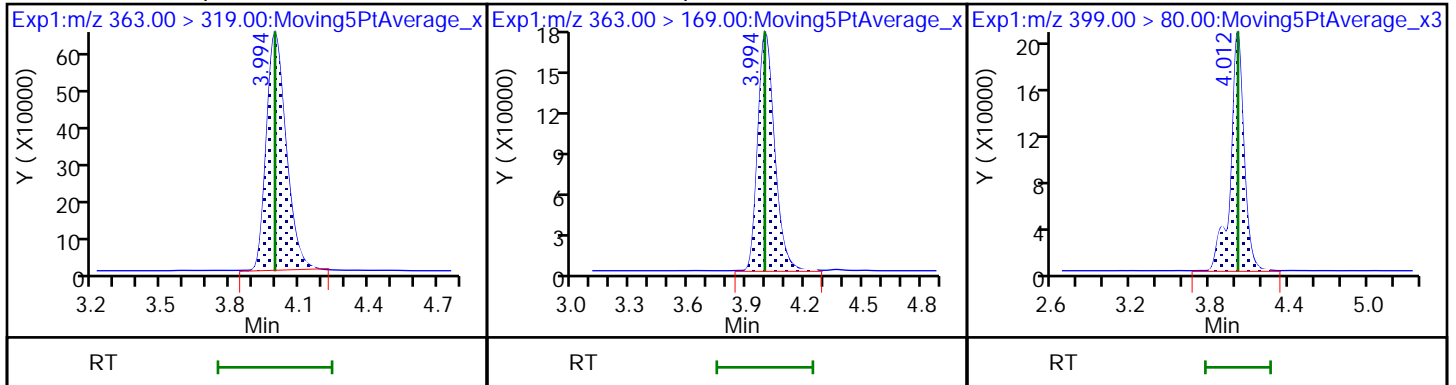
D 35 13C4 PFHpA



36 Perfluoroheptanoic acid

36 Perfluoroheptanoic acid

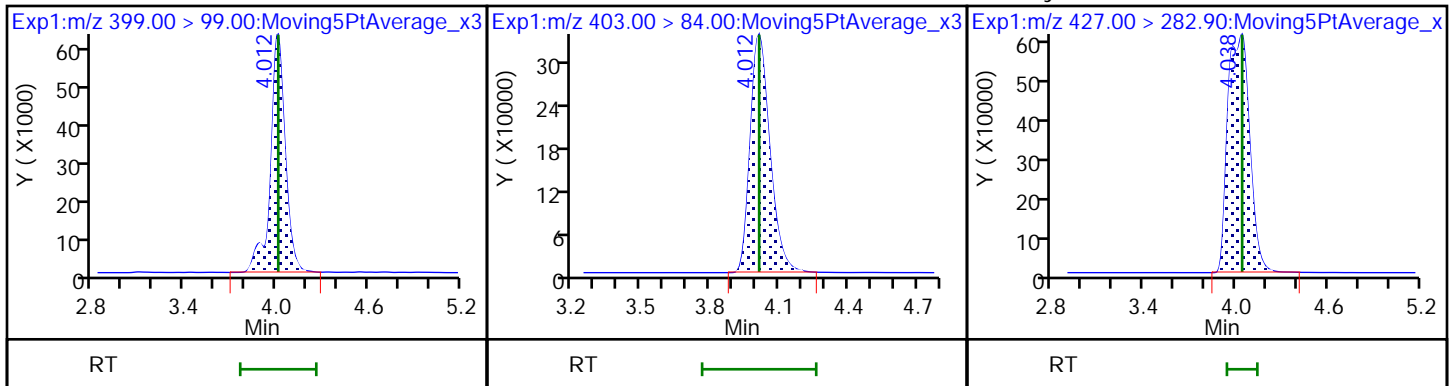
38 Perfluorohexanesulfonic acid



38 Perfluorohexanesulfonic acid

D 37 18O2 PFHxS

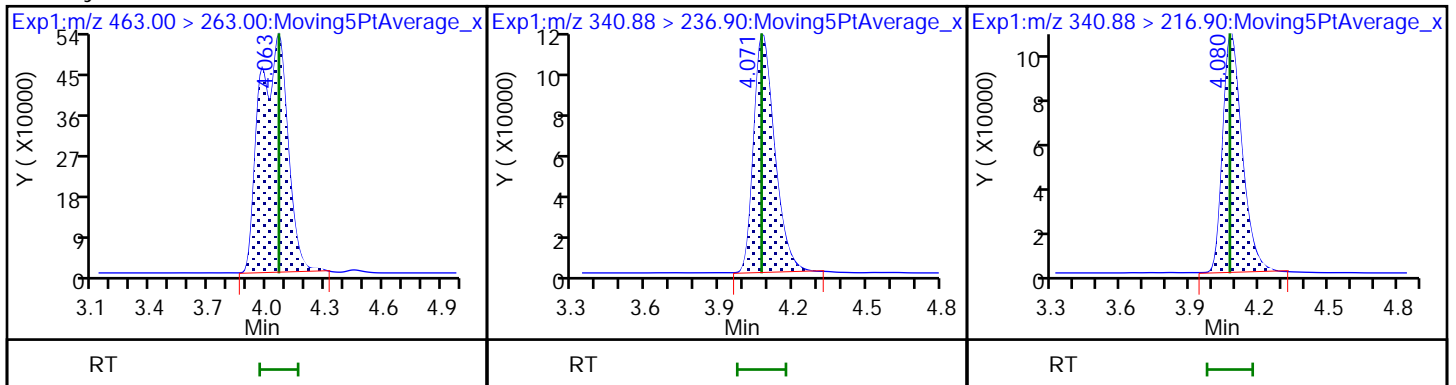
34 Hydro-EVE Acid

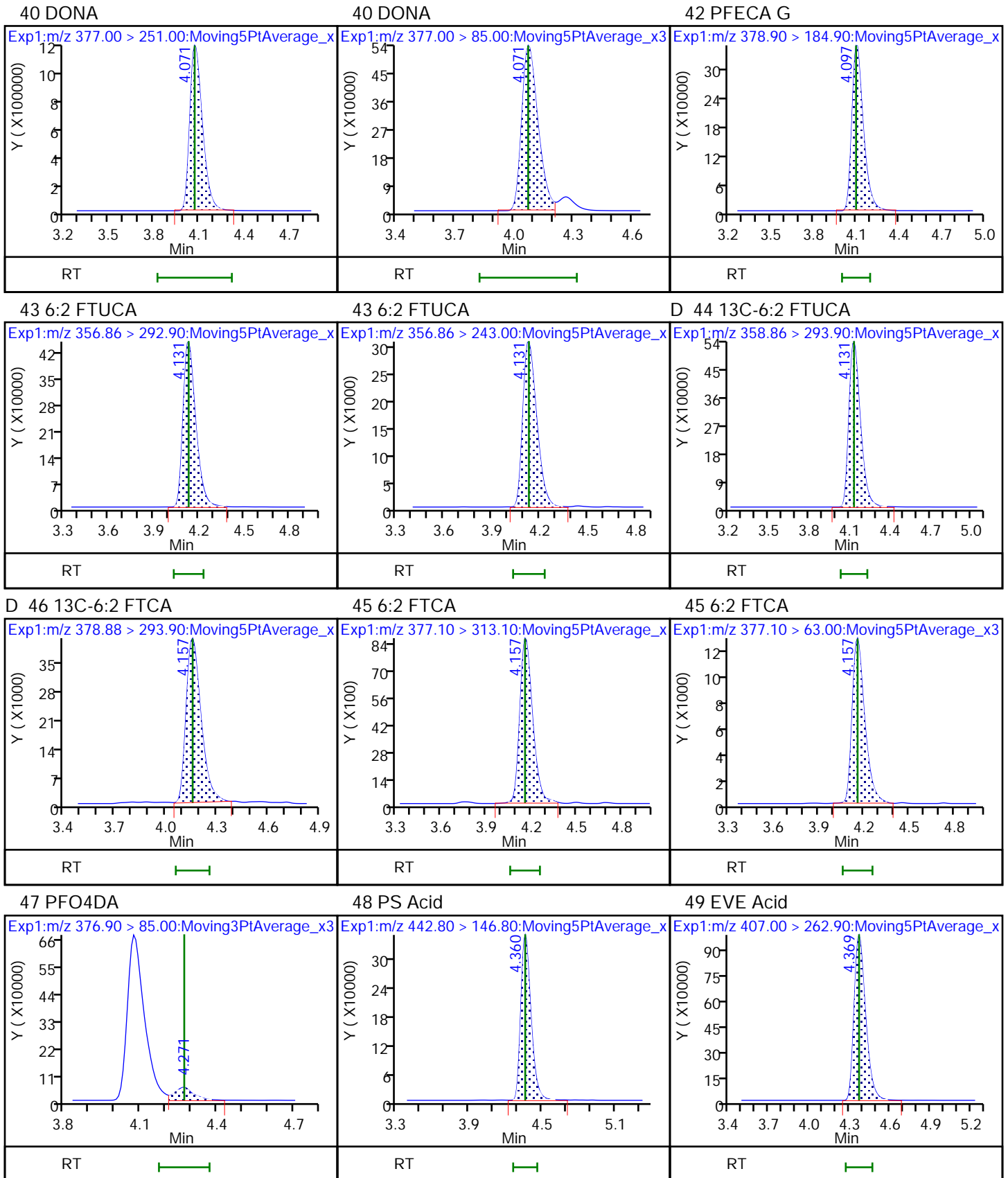


39 Hydro-PS Acid

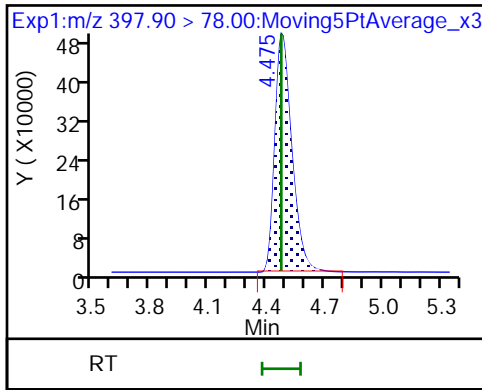
41 5:3 FTCA

41 5:3 FTCA

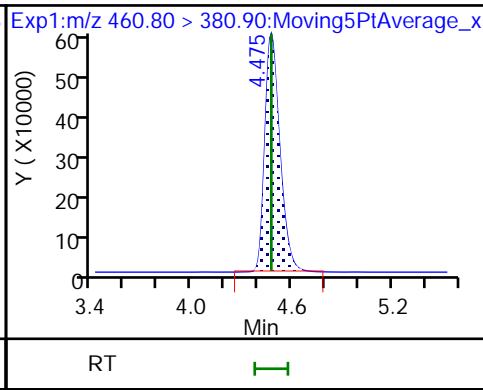




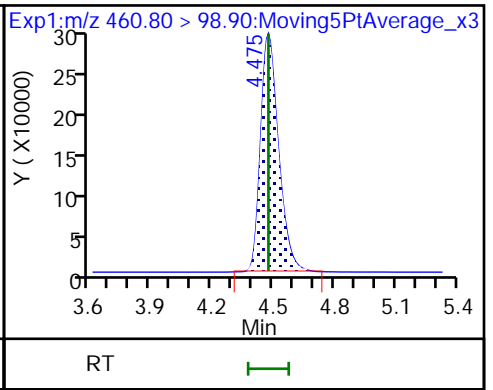
50 FHxSA



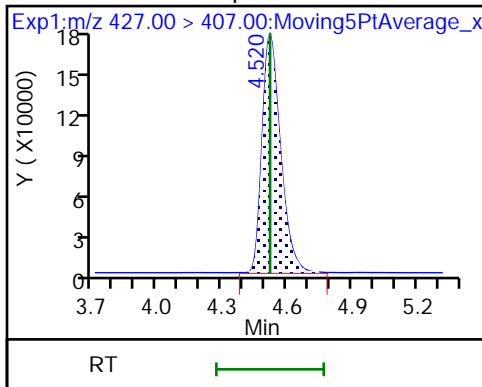
51 PFECHS



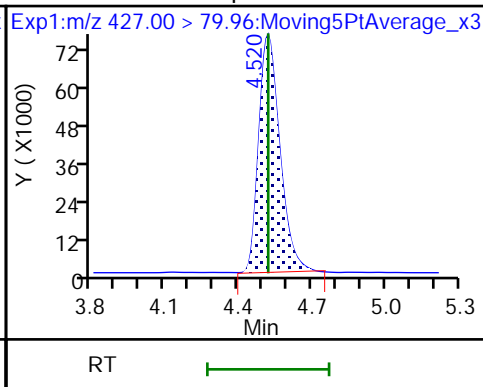
51 PFECHS



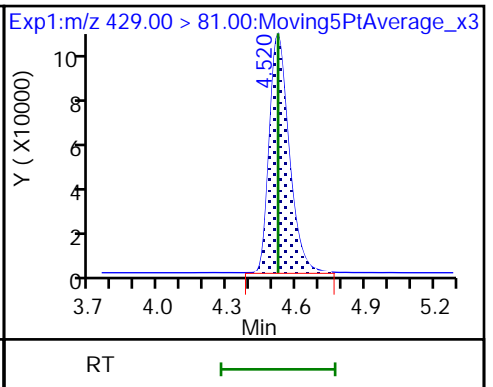
53 1H,1H,2H,2H-perfluorooctanesulfo



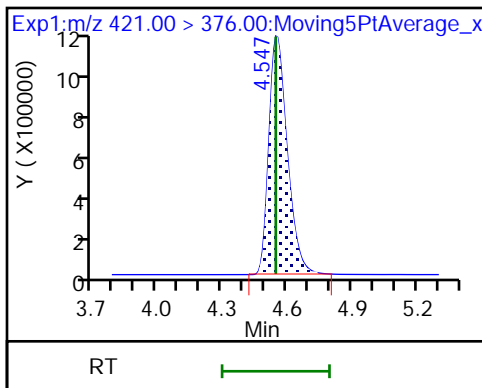
53 1H,1H,2H,2H-perfluorooctanesulfo



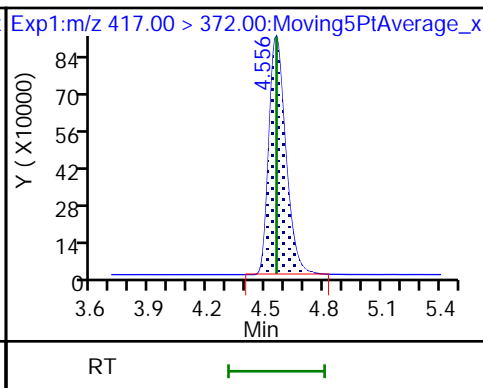
D 52 M2-6:2 FTS



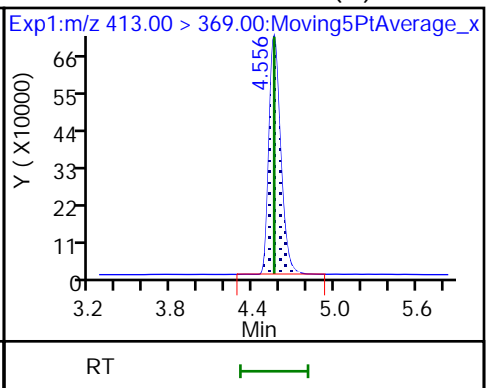
\$ 54 13C8 PFOA



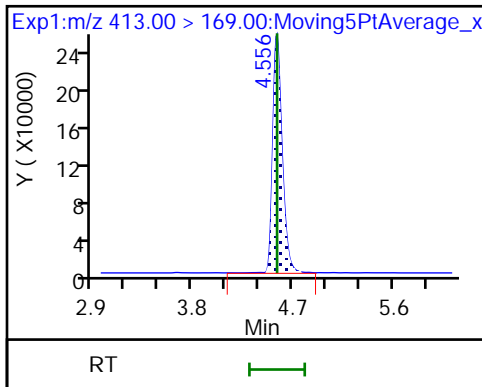
D 56 13C4 PFOA



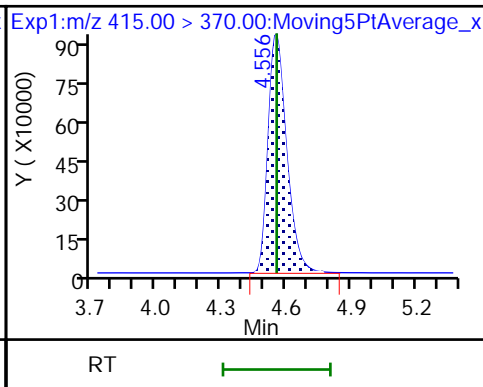
58 Perfluorooctanoic acid (M)



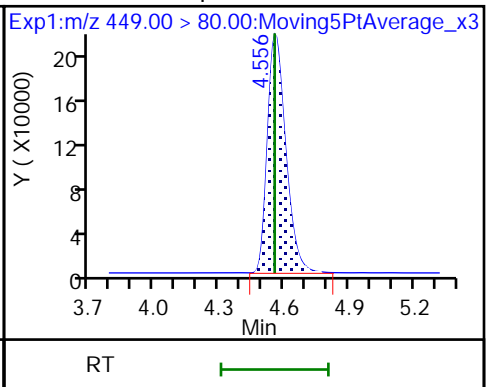
58 Perfluorooctanoic acid



* 55 13C2 PFOA



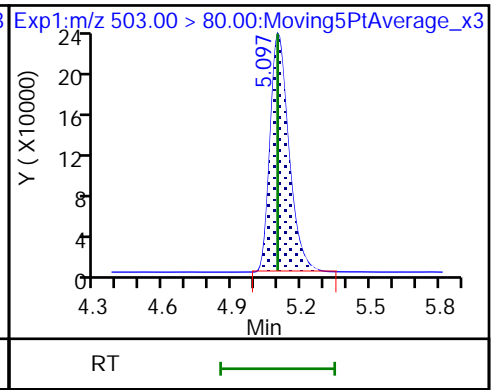
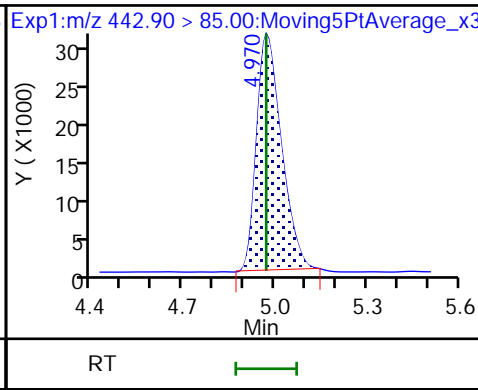
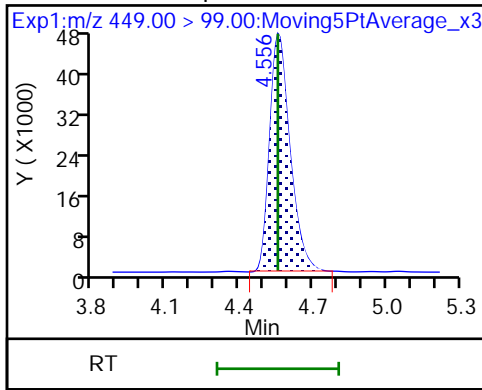
57 Perfluoroheptanesulfonic acid



57 Perfluoroheptanesulfonic acid

59 TAF

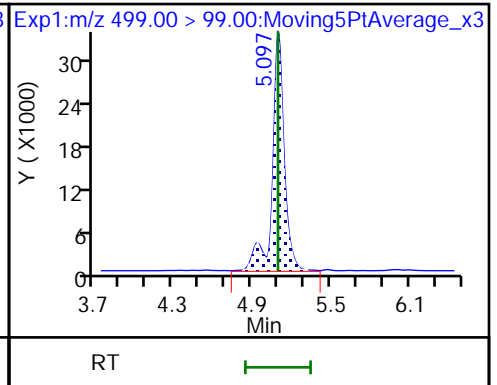
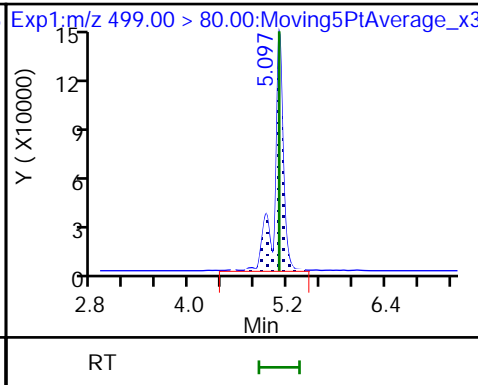
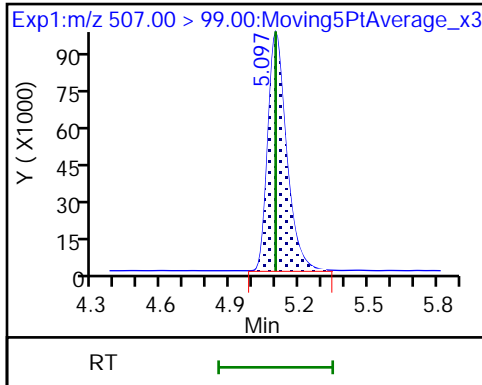
D 61 13C4 PFOS



\$ 60 13C8 PFOS

62 Perfluorooctanesulfonic acid

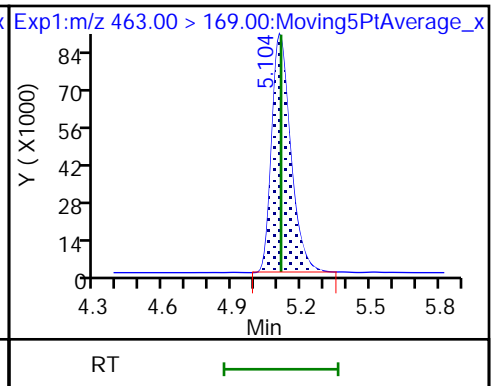
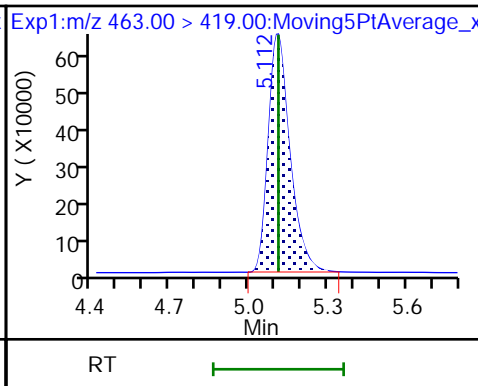
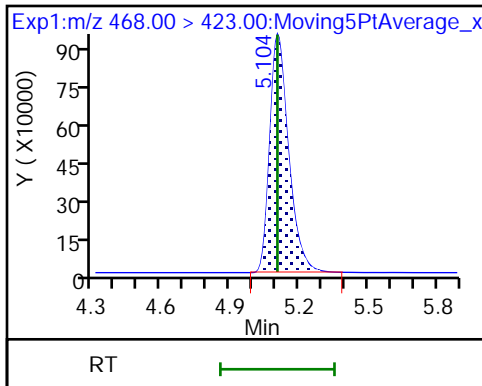
62 Perfluorooctanesulfonic acid



D 64 13C5 PFNA

63 Perfluorononanoic acid

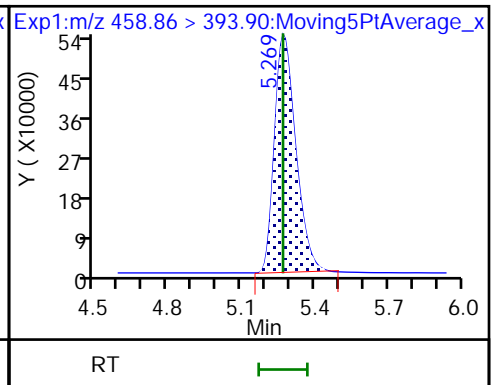
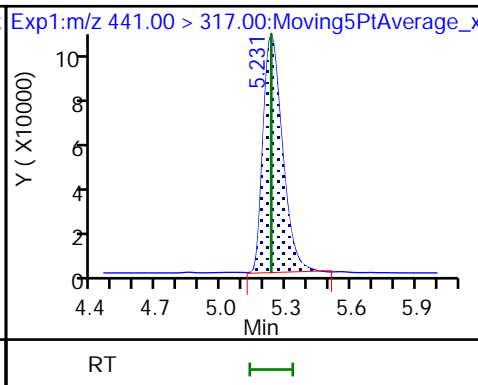
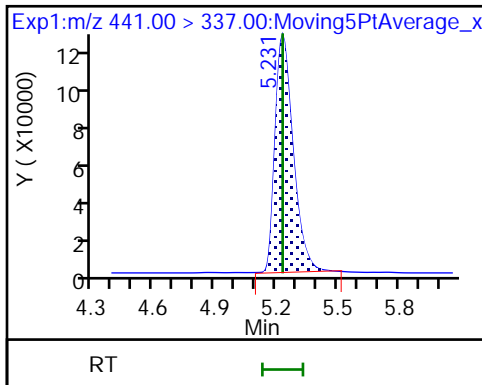
63 Perfluorononanoic acid

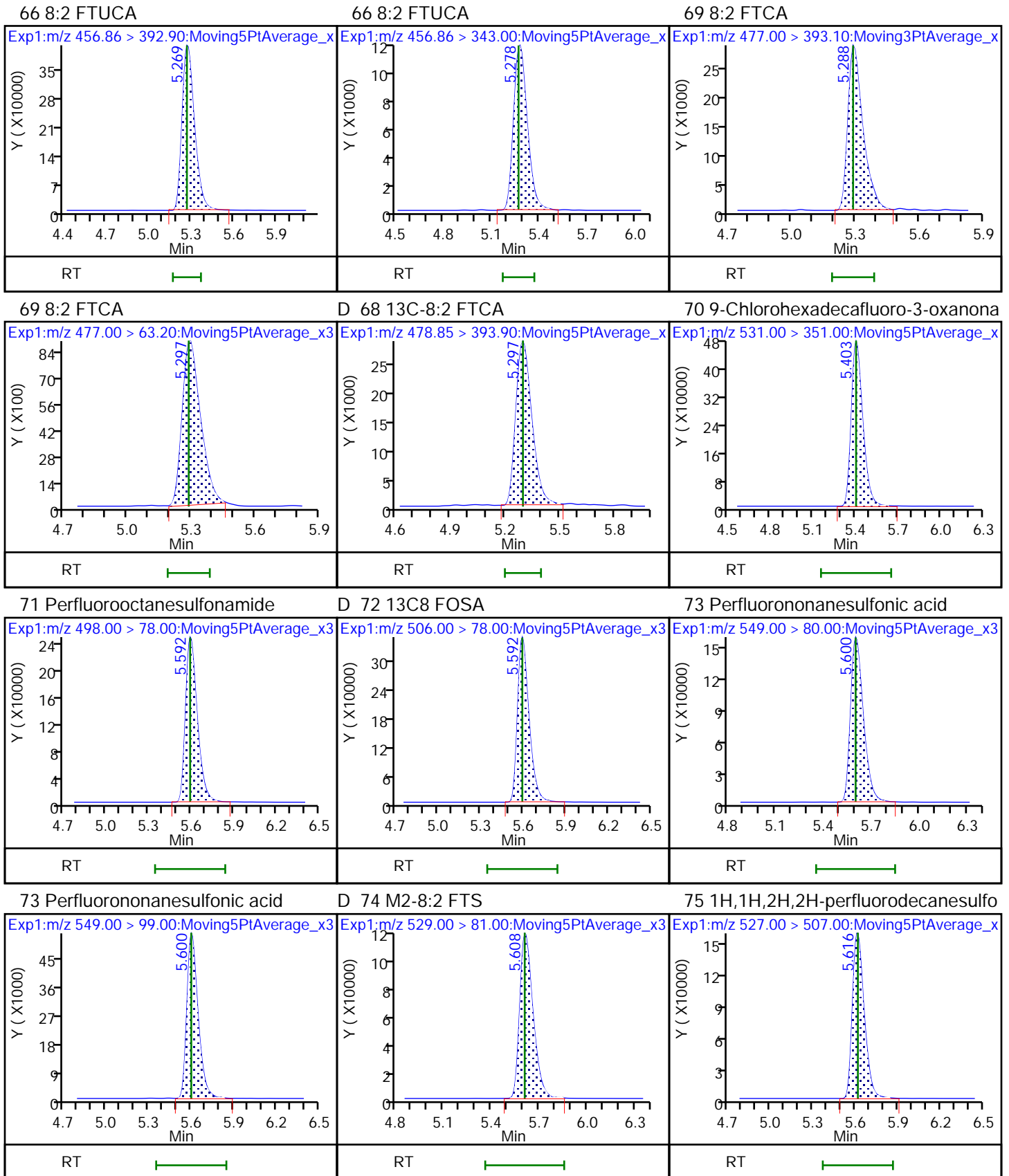


65 7:3 FTCA

65 7:3 FTCA

D 67 13C-8:2 FTUCA

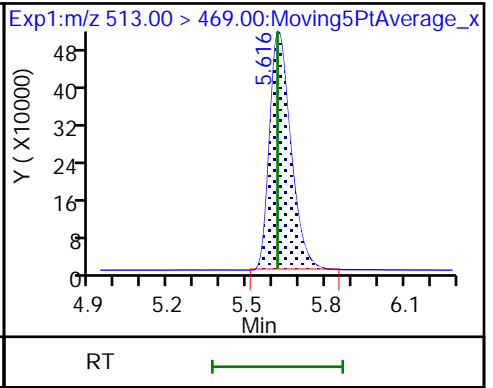
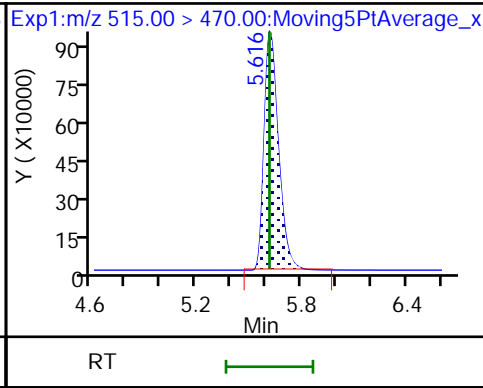
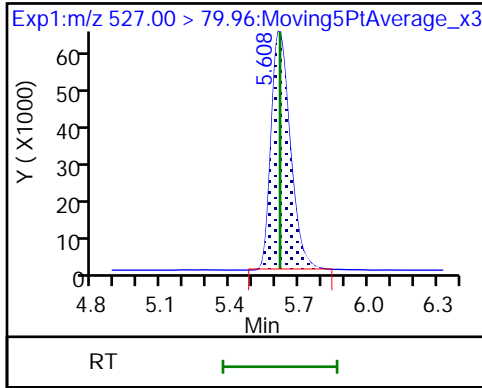




75 1H,1H,2H,2H-perfluorodecanesulfo D

76 13C2 PFDA

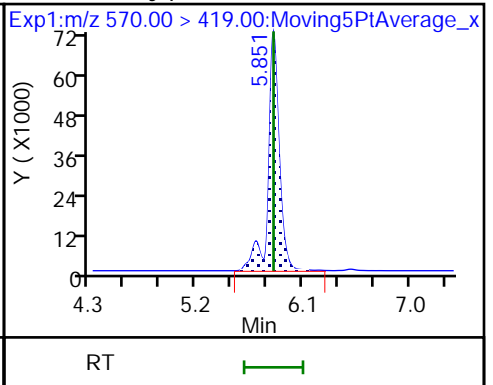
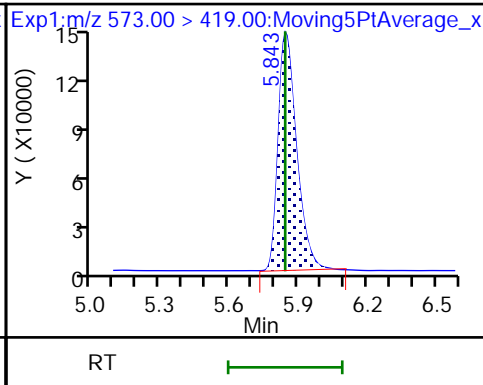
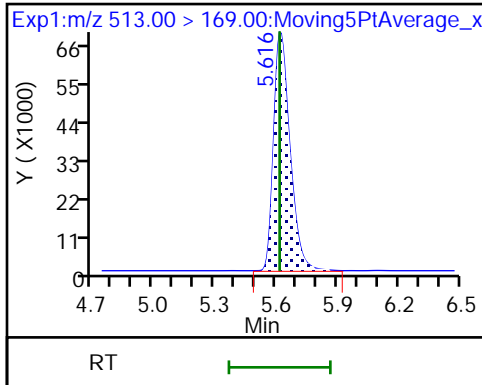
77 Perfluorodecanoic acid



77 Perfluorodecanoic acid

D 78 d3-NMeFOSAA

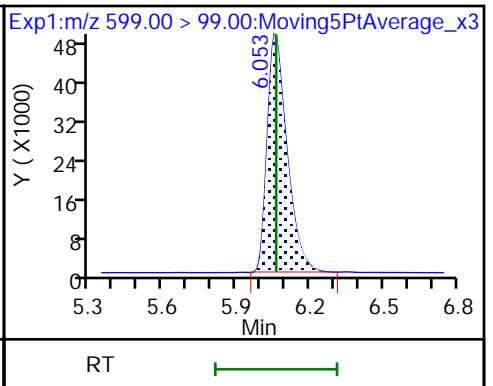
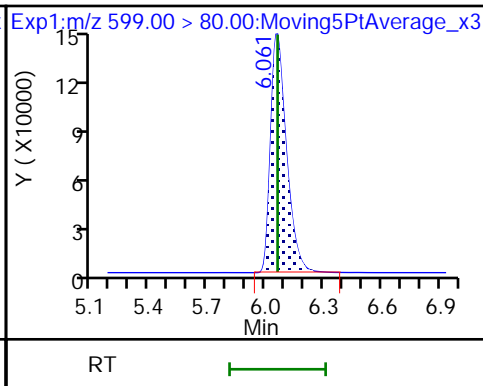
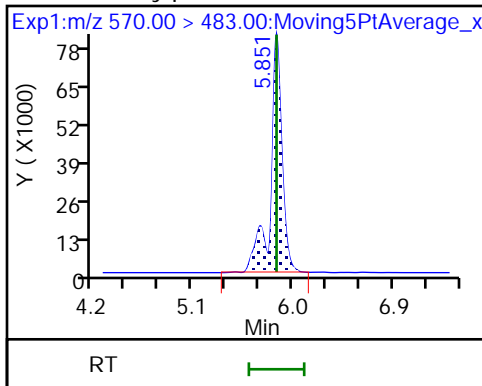
79 N-methylperfluorooctanesulfonami



79 N-methylperfluorooctanesulfonami

80 Perfluorodecanesulfonic acid

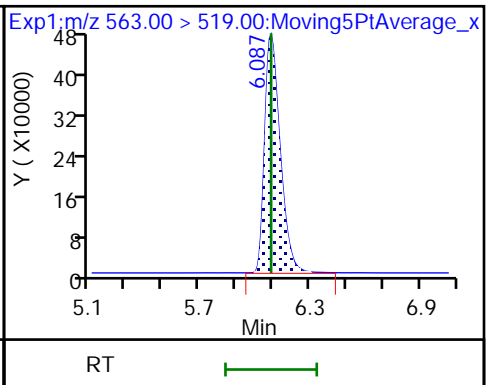
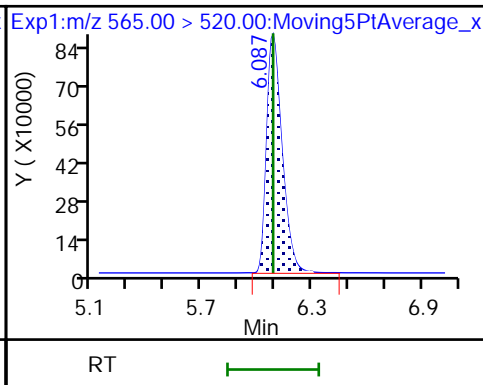
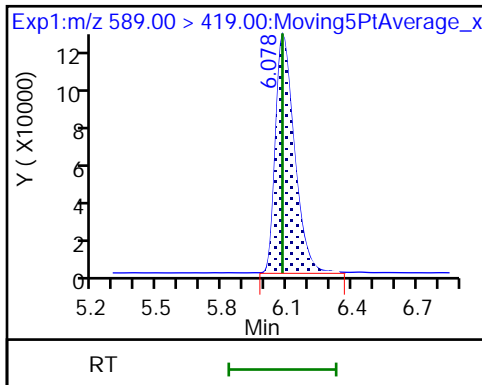
80 Perfluorodecanesulfonic acid



D 81 d5-NEtFOSAA

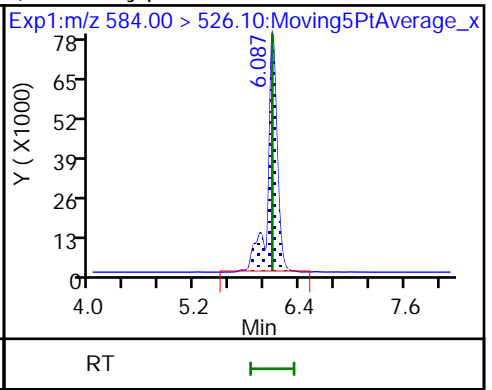
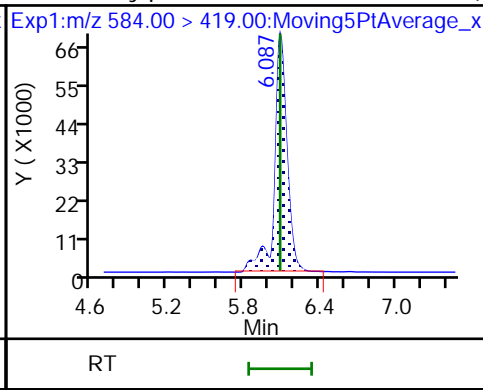
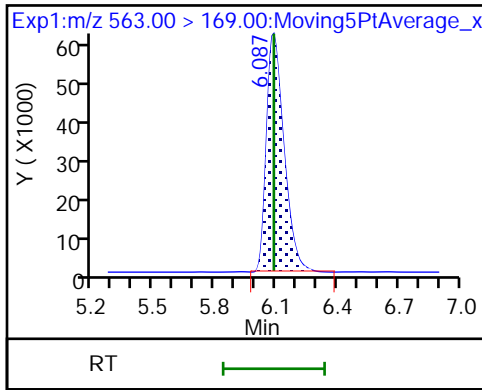
D 82 13C2 PFUnA

83 Perfluoroundecanoic acid



83 Perfluoroundecanoic acid

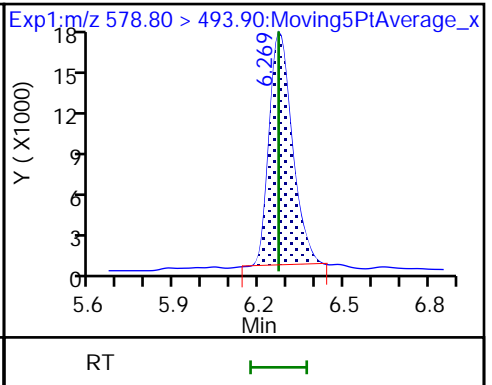
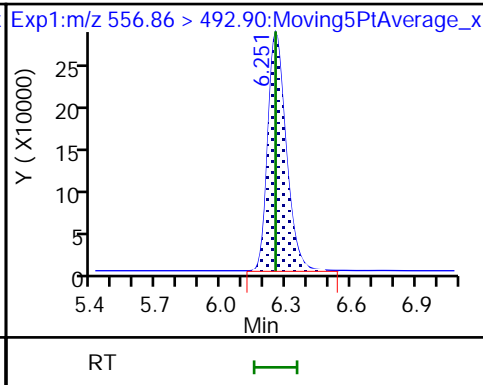
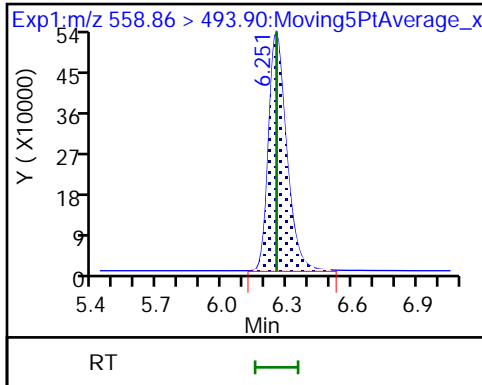
84 N-ethylperfluorooctanesulfonamid (M)84 N-ethylperfluorooctanesulfonamid



D 89 13C-10:2 FTUCA

90 10:2 FTUCA

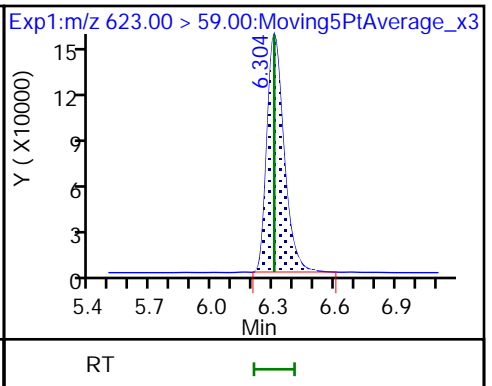
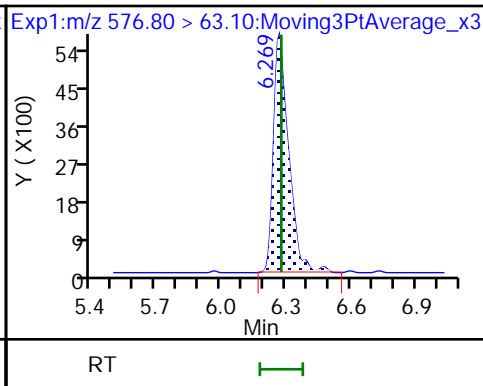
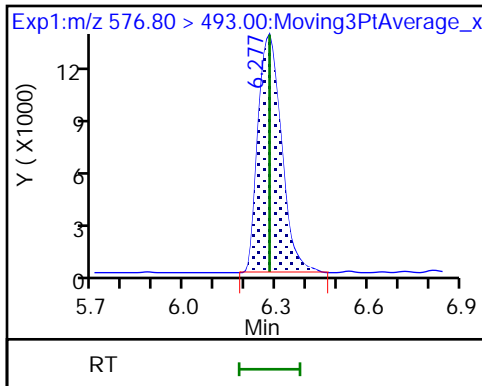
D 91 13C-10:2 FTCA



92 10:2 FTCA

92 10:2 FTCA

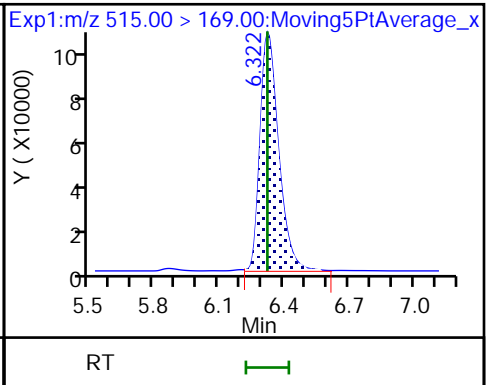
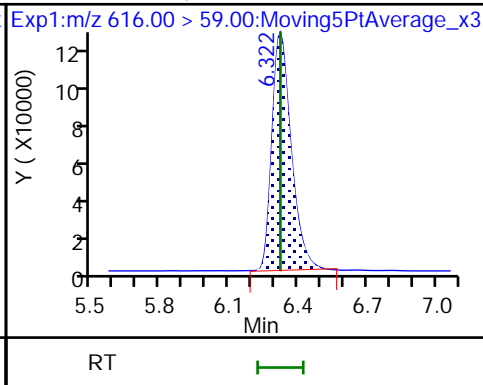
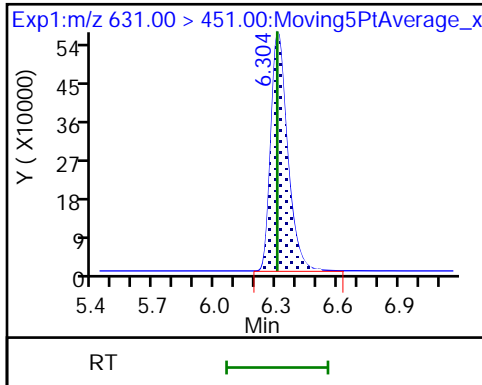
D 85 d7-N-MeFOSE-M

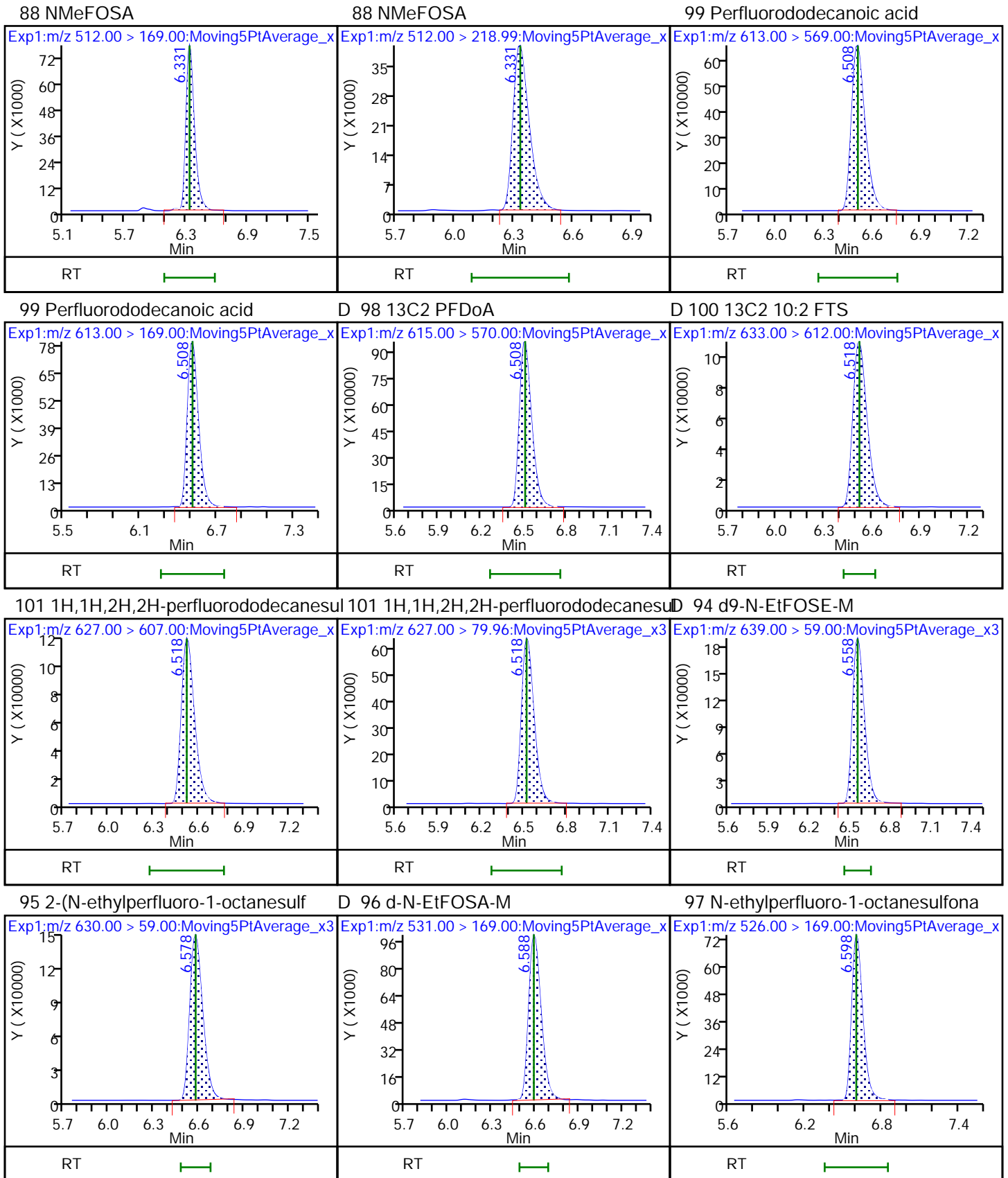


93 11-Chloroeicosafluoro-3-oxaundec

86 2-(N-methylperfluoro-1-octanesul

D 87 d-N-MeFOSA-M

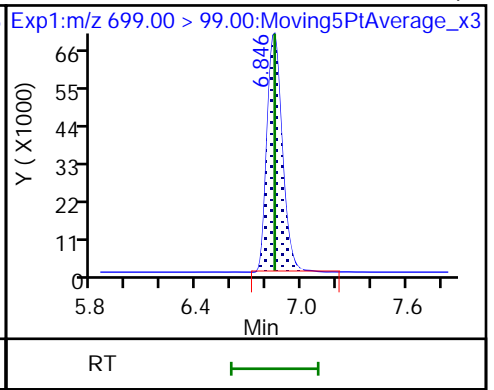
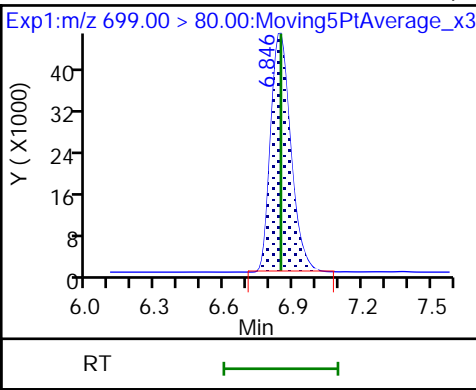
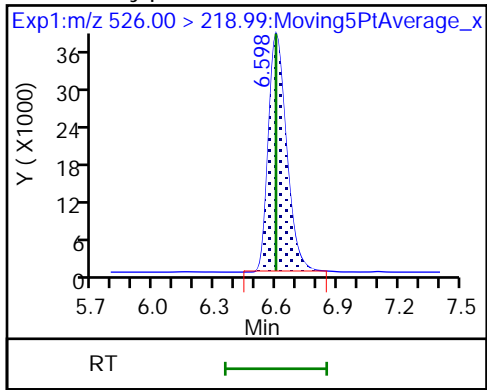




97 N-ethylperfluoro-1-octanesulfona

102 Perfluorododecanesulfonic acid (

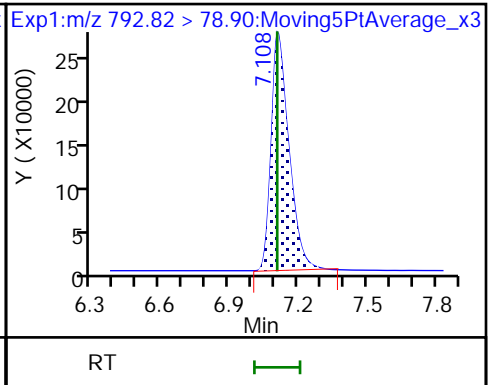
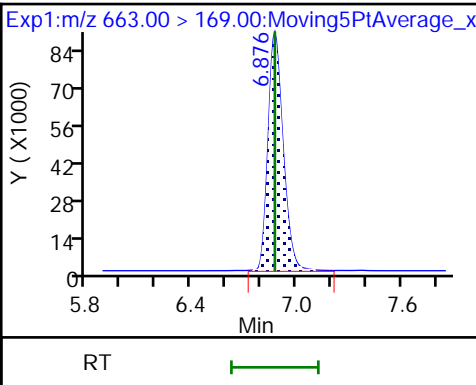
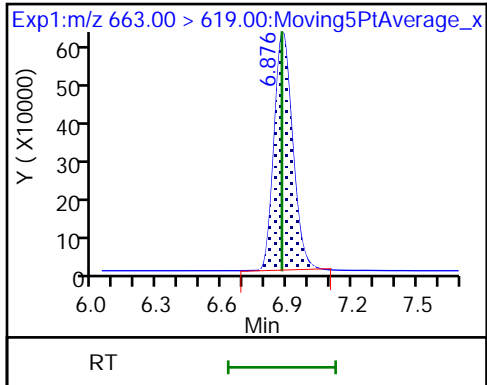
102 Perfluorododecanesulfonic acid (



103 Perfluorotridecanoic acid

103 Perfluorotridecanoic acid

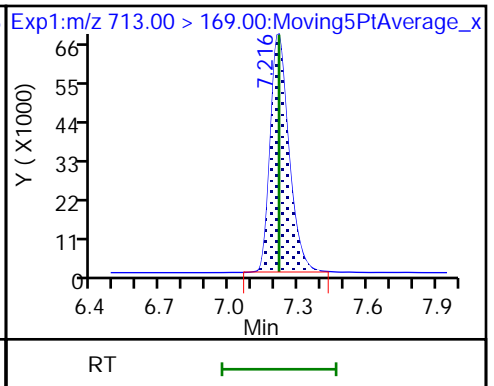
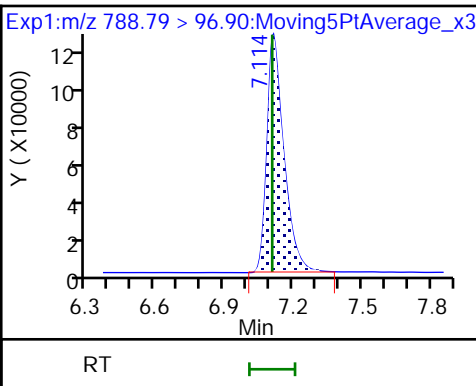
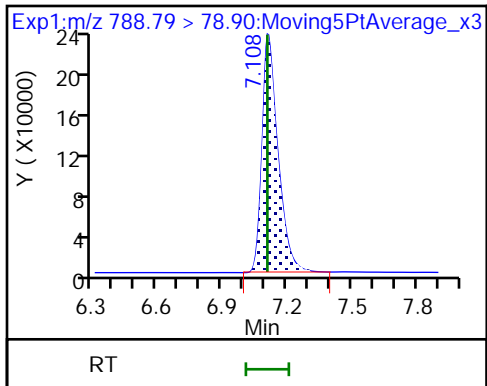
D 112 13C4-6:2 diPAP



114 6:2 diPAP

114 6:2 diPAP

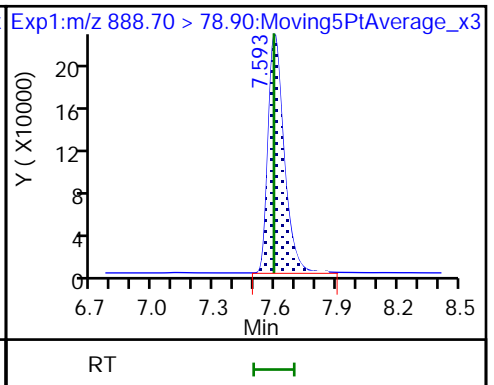
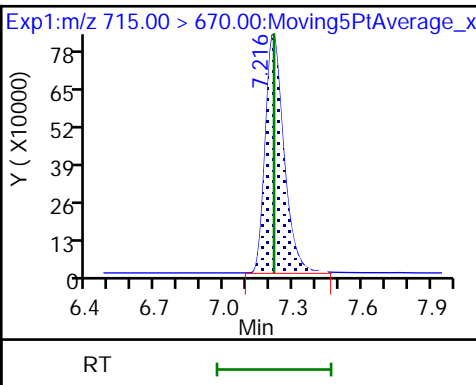
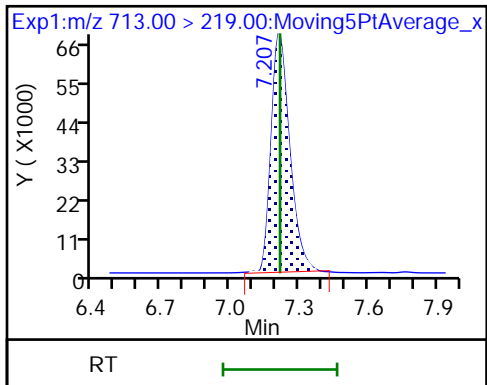
105 Perfluorotetradecanoic acid



105 Perfluorotetradecanoic acid

D 104 13C2 PFTeDA

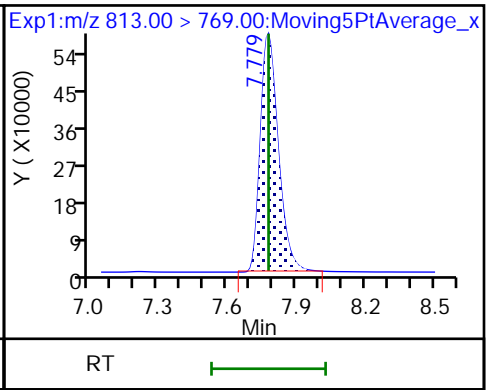
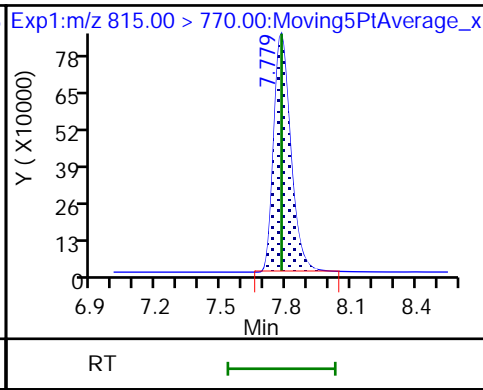
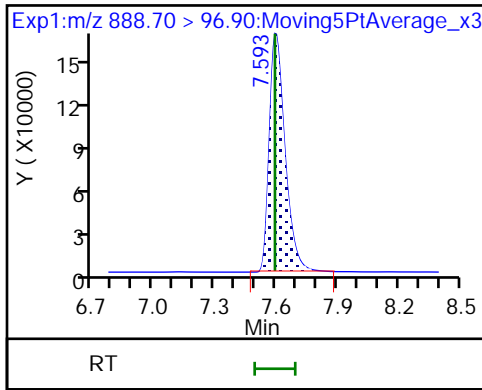
115 6:2/8:2 diPAP



115 6:2/8:2 diPAP

D 106 13C2 PFHxDa

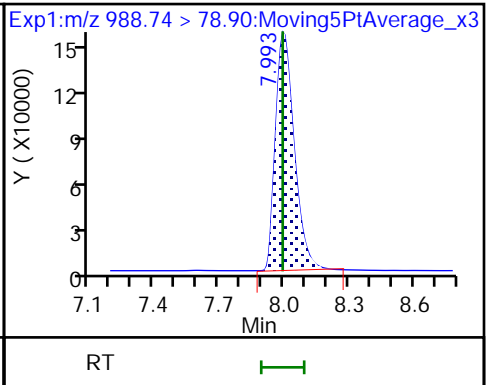
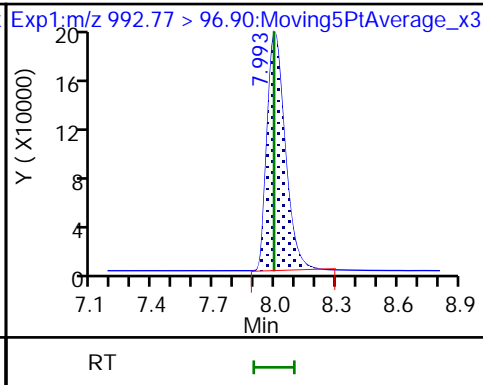
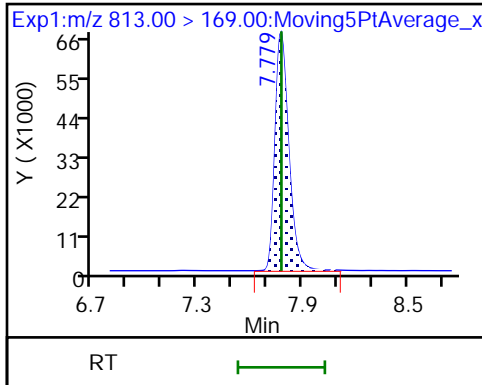
107 Perfluorohexadecanoic acid



107 Perfluorohexadecanoic acid

D 113 13C4-8:2 diPAP

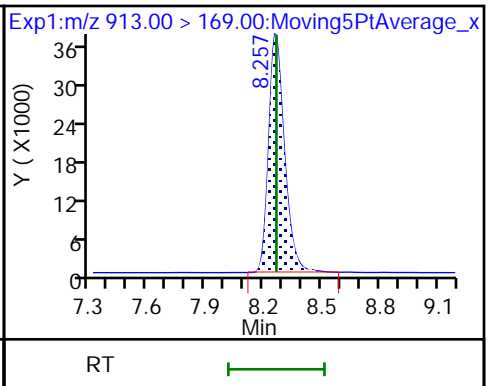
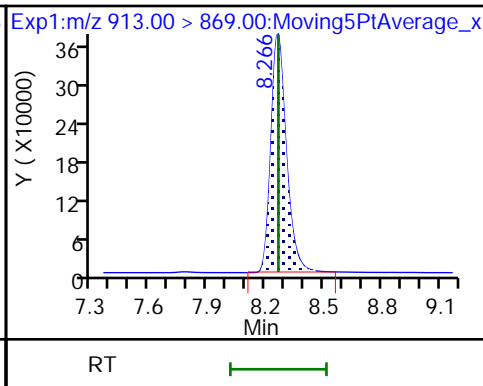
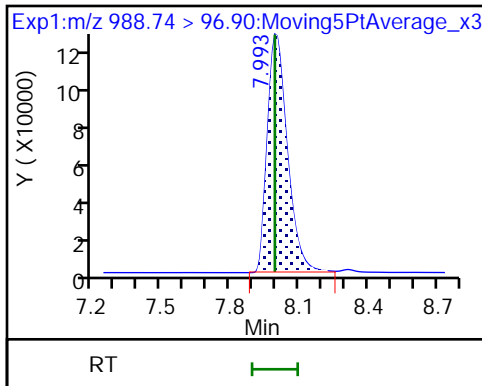
116 8:2 diPAP



116 8:2 diPAP

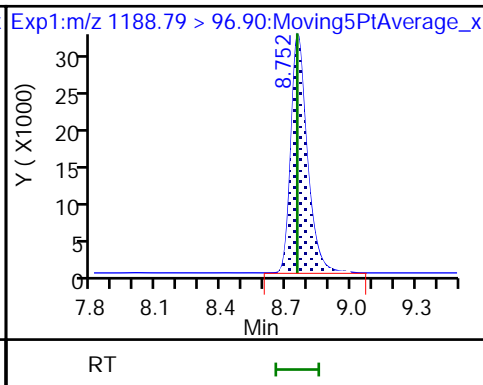
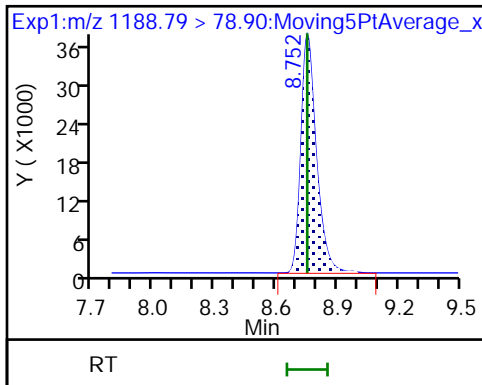
108 Perfluorooctadecanoic acid

108 Perfluorooctadecanoic acid



117 10:2 diPAP

117 10:2 diPAP



Eurofins Sacramento

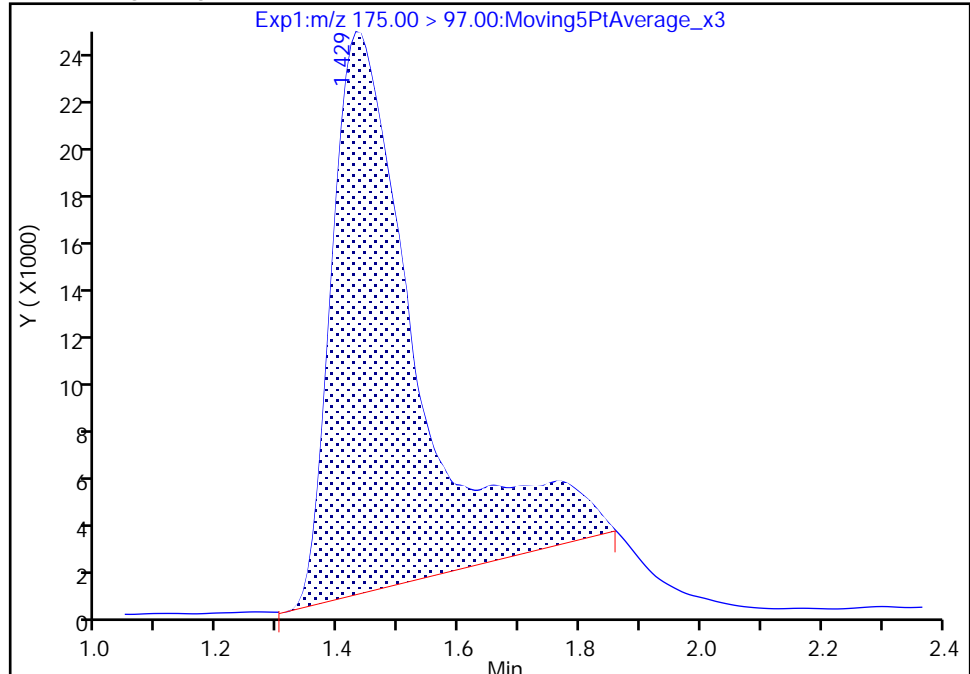
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Injection Date: 22-Dec-2022 11:00:09 Instrument ID: A18
Lims ID: CCV L4
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 52 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

1 MTP, CAS: 93449-21-9

Signal: 1

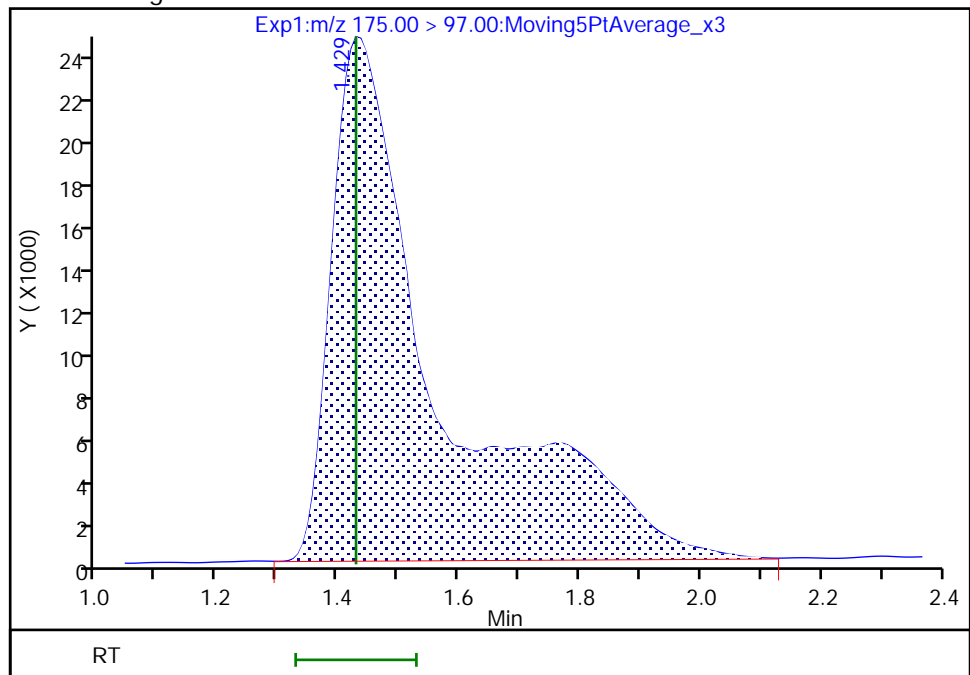
RT: 1.43
Area: 227269
Amount: 0.772425
Amount Units: ng/ml

Processing Integration Results



RT: 1.43
Area: 295717
Amount: 1.001180
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:20:31

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

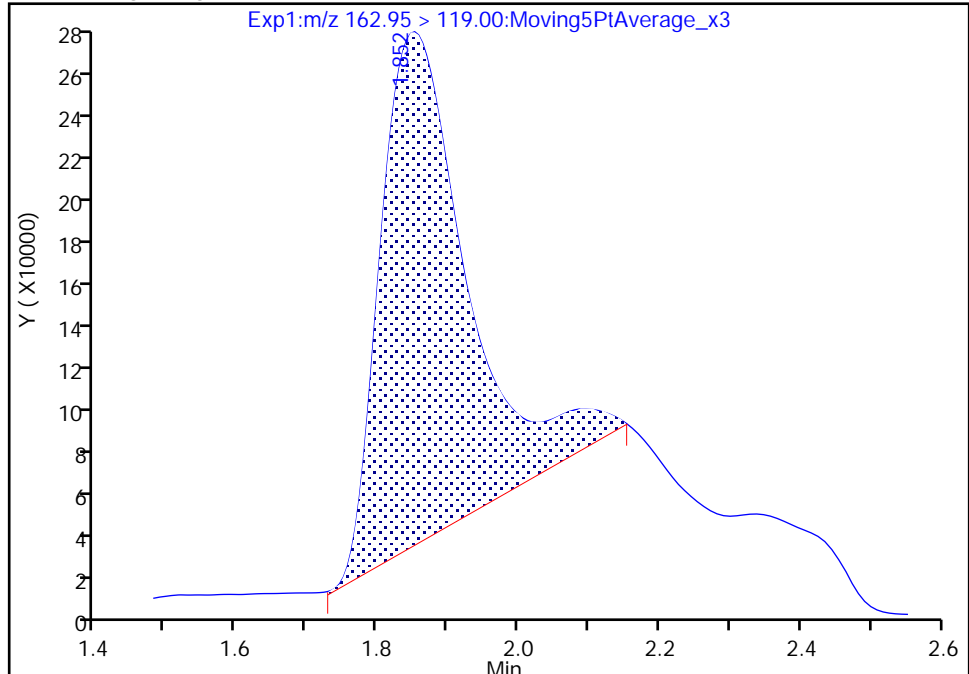
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Injection Date: 22-Dec-2022 11:00:09 Instrument ID: A18
Lims ID: CCV L4
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 52 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

2 PPF Acid, CAS: 422-64-0

Signal: 1

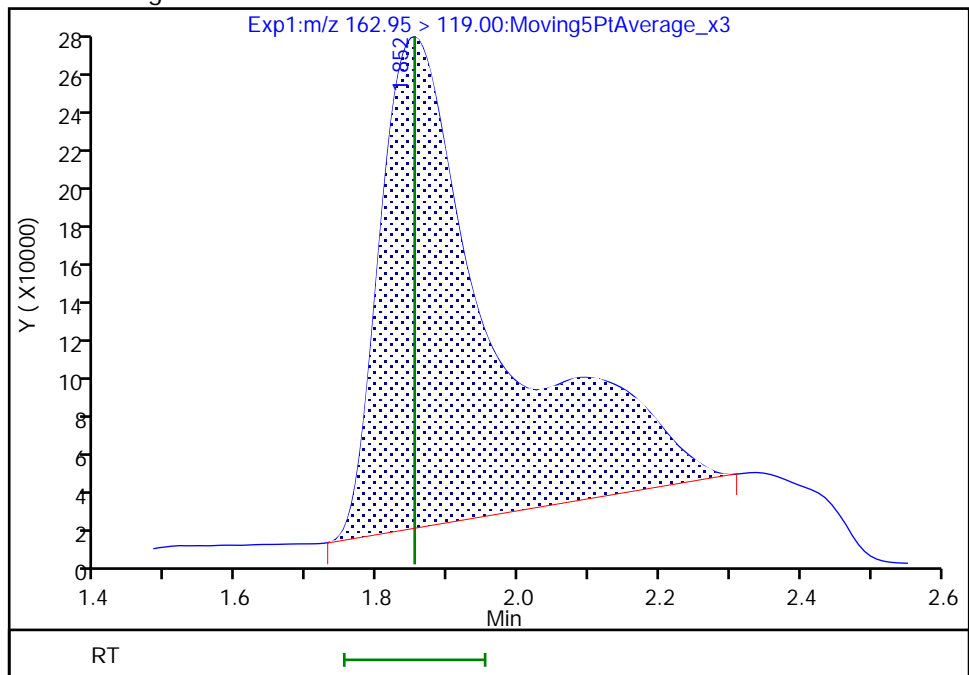
RT: 1.85
Area: 2114725
Amount: 0.673079
Amount Units: ng/ml

Processing Integration Results



RT: 1.85
Area: 2987418
Amount: 0.938784
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:20:34
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 1422 of 1632

12/29/2022
3:43 PM

Eurofins Sacramento

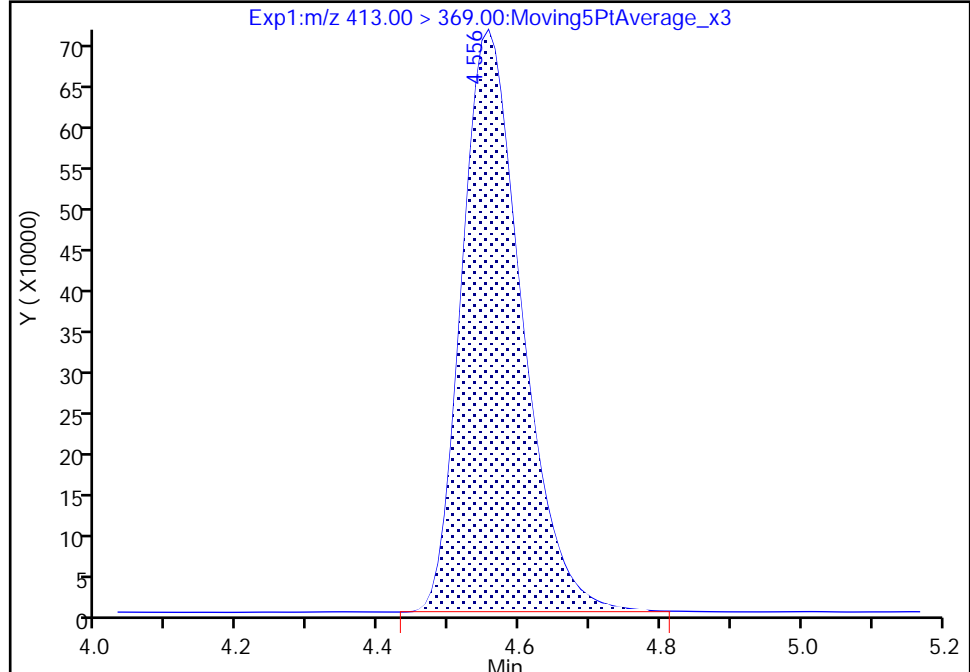
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_006.d
Injection Date: 22-Dec-2022 11:00:09 Instrument ID: A18
Lims ID: CCV L4
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 52 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

58 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

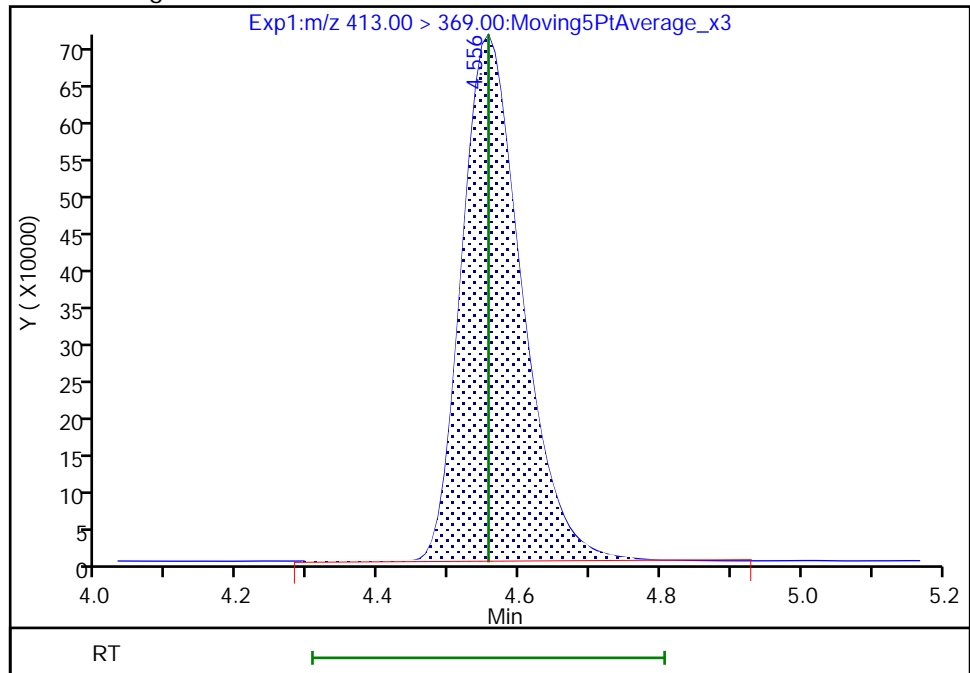
RT: 4.56
Area: 4209584
Amount: 1.023040
Amount Units: ng/ml

Processing Integration Results



RT: 4.56
Area: 4226033
Amount: 1.027038
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:20:48
Audit Action: Manually Integrated

Audit Reason: Baseline
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12/29/2022
3:43 PM

Eurofins Sacramento

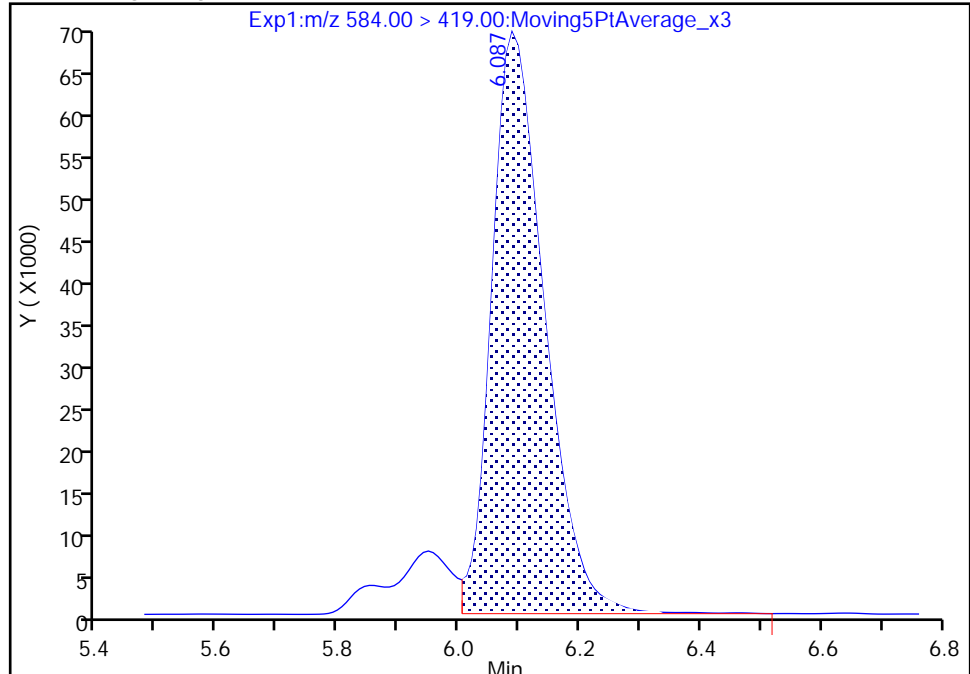
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_006.d
Injection Date: 22-Dec-2022 11:00:09 Instrument ID: A18
Lims ID: CCV L4
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 52 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

84 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 1

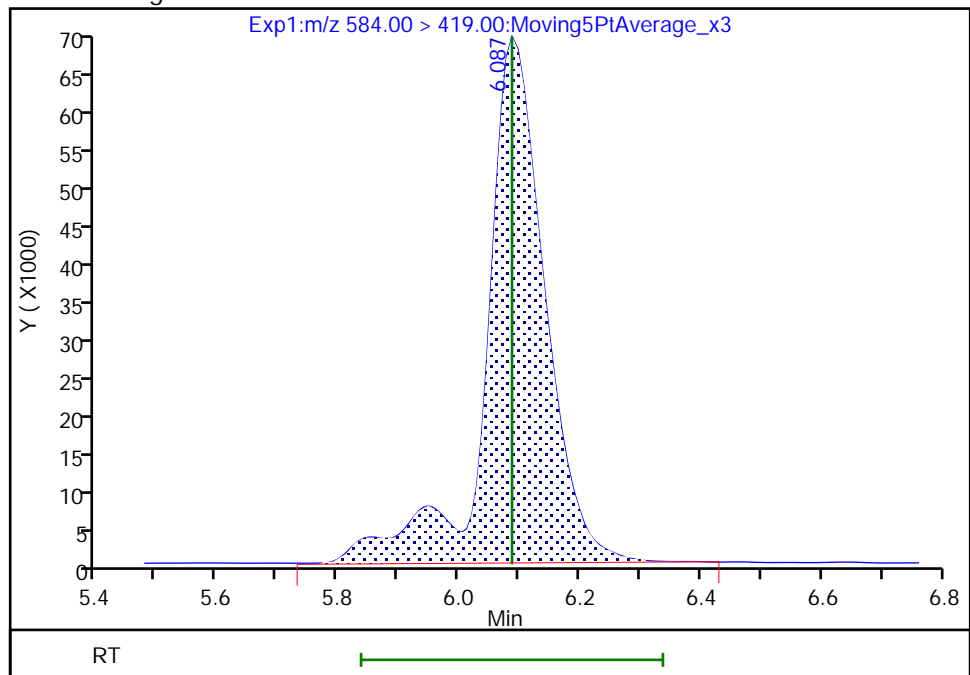
RT: 6.09
Area: 425077
Amount: 0.949738
Amount Units: ng/ml

Processing Integration Results



RT: 6.09
Area: 477989
Amount: 1.067958
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:20:58
Audit Action: Manually Integrated

Audit Reason: Baseline
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12/29/2022
3:43 PM

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: CCV 320-642490/20 Calibration Date: 12/22/2022 15:33

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC_A_034.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
MTP	L1ID		0.0840		2.87	2.50	14.9	30.0
PFPrA	L1ID		0.8942		2.72	2.43	12.1	30.0
PFMOAA	AveID	0.5606	0.6089		2.72	2.50	8.6	30.0
R-EVE	AveID	0.3419	0.3693		2.70	2.50	8.0	30.0
R-PSDA	AveID	0.1346	0.1537		2.86	2.50	14.2	30.0
Hydrolyzed PSDA	AveID	0.4284	0.4564		2.66	2.50	6.5	30.0
Perfluorobutanoic acid (PFBA)	AveID	1.112	1.078		2.42	2.50	-3.0	30.0
PMPA	AveID	1.149	1.252		2.72	2.50	8.9	30.0
PFPrS	AveID	0.9349	0.9440		2.32	2.30	1.0	30.0
NVHOS	AveID	0.0289	0.0316		2.74	2.50	9.5	30.0
PFMPA	AveID	0.6578	0.6753		2.57	2.50	2.7	30.0
PFO2HxA	AveID	0.1374	0.1420		2.58	2.50	3.4	30.0
Perfluoropentanoic acid (PFPeA)	AveID	1.045	1.004		2.40	2.50	-3.9	30.0
3:3 FTCA	AveID	0.0768	0.0817		2.66	2.50	6.3	30.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9820	0.9798		2.21	2.22	-0.2	30.0
PEPA	AveID	1.111	1.129		2.54	2.50	1.7	30.0
PFMBA	AveID	1.110	1.126		2.54	2.50	1.4	30.0
PFEEA	AveID	3.265	3.362		2.30	2.23	3.0	30.0
FBSA	AveID	0.3707	0.3883		2.62	2.50	4.7	30.0
NFDHA	AveID	0.1732	0.1787		2.58	2.50	3.2	30.0
4:2 FTS	AveID	2.336	2.378		2.39	2.35	1.8	30.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9423	0.9685		2.57	2.50	2.8	30.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8041	0.8449		2.47	2.35	5.1	30.0
PFO3OA	AveID	0.0552	0.0562		2.55	2.50	1.8	30.0
HFPO-DA (GenX)	AveID	1.057	1.139		2.70	2.50	7.8	30.0
R-PSDCA	AveID	0.2943	0.3023		2.57	2.50	2.7	30.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9100	0.9321		2.56	2.50	2.4	30.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	0.9649	0.9885		2.34	2.28	2.4	30.0
Hydro-EVE Acid	AveID	1.386	1.444		2.60	2.50	4.2	30.0
Hydro-PS Acid	AveID	1.235	1.296		2.62	2.50	4.9	30.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	6.660	7.087		2.51	2.36	6.4	30.0
5:3 FTCA	AveID	3.349	3.709		2.77	2.50	10.8	30.0
PFPE-1	AveID	9.767	10.88		2.78	2.50	11.3	30.0
6:2 FTUCA	AveID	1.012	1.030		2.54	2.50	1.7	30.0
6:2 FTCA	AveID	0.2612	0.2915		2.79	2.50	11.6	30.0
PFO4DA	AveID	0.0555	0.0583		2.63	2.50	5.2	30.0
PS Acid	AveID	0.4158	0.4203		2.53	2.50	1.1	30.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: CCV 320-642490/20 Calibration Date: 12/22/2022 15:33

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC_A_034.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
EVE Acid	AveID	1.281	1.292		2.52	2.50	0.9	30.0
FHxSA	AveID	1.998	2.082		2.61	2.50	4.2	30.0
PFECHS	AveID	0.8798	0.9366		2.46	2.31	6.5	30.0
6:2 FTS	AveID	2.031	2.145		2.51	2.38	5.6	50.0
Perfluoroheptanesulfonic acid (PFHpS)	AveID	1.200	1.222		2.43	2.39	1.8	30.0
Perfluorooctanoic acid (PFOA)	AveID	0.9328	0.9505		2.55	2.50	1.9	30.0
PFO5DA	AveID	0.0374	0.0417		2.79	2.50	11.6	30.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.039	1.065		2.38	2.33	2.6	30.0
Perfluorononanoic acid (PFNA)	AveID	0.8673	0.9096		2.62	2.50	4.9	30.0
7:3 FTCA	AveID	5.294	5.426		2.56	2.50	2.5	30.0
8:2 FTUCA	AveID	0.9523	0.9731		2.55	2.50	2.2	30.0
8:2 FTCA	AveID	1.013	0.9896		2.44	2.50	-2.3	30.0
9Cl-PF3ONS	AveID	2.498	2.824		2.64	2.34	13.1	30.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9532	0.9804		2.57	2.50	2.8	30.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7759	0.8581		2.66	2.41	10.6	30.0
8:2 FTS	AveID	1.647	1.676		2.44	2.40	1.8	30.0
Perfluorodecanoic acid (PFDA)	AveID	0.6577	0.7005		2.66	2.50	6.5	30.0
NMeFOSAA	AveID	0.7907	0.8320		2.63	2.50	5.2	30.0
Perfluorodecanesulfonic acid (PFDS)	L1ID		0.7988		2.65	2.41	10.0	30.0
NETFOSAA	AveID	0.7522	0.7518		2.50	2.50	-0.0	30.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.6838	0.7263		2.66	2.50	6.2	30.0
10:2 FTUCA	AveID	0.7067	0.6955		2.46	2.50	-1.6	30.0
10:2 FTCA	L1ID		0.8711		2.26	2.50	-9.4	30.0
11Cl-PF3OUdS	AveID	3.190	3.519		2.60	2.36	10.3	30.0
NMeFOSE	AveID	0.9853	1.070		2.71	2.50	8.6	30.0
NMeFOSA	AveID	0.9700	0.9864		2.54	2.50	1.7	30.0
Perfluorododecanoic acid (PFDoA)	AveID	0.8630	0.9256		2.68	2.50	7.3	30.0
10:2 FTS	AveID	1.304	1.314		2.43	2.42	0.8	30.0
NETFOSE	AveID	0.9495	1.027		2.70	2.50	8.1	30.0
NETFOSA	AveID	0.9338	0.9807		2.63	2.50	5.0	30.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2502	0.2904		2.81	2.43	16.1	30.0
Perfluorotridecanoic acid (PFTrDA)	AveID	0.7853	0.8226		2.62	2.50	4.7	30.0
6:2 Fluorotelomer phosphate diester	AveID	0.9649	1.018		2.57	2.43	5.5	30.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.0982	0.1019		2.60	2.50	3.8	30.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: CCV 320-642490/20 Calibration Date: 12/22/2022 15:33

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC_A_034.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
6:2/8:2 Fluorotelomer phosphate diester	AveID	0.9673	0.9821		2.48	2.44	1.5	30.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.8946		2.60	2.50	3.9	50.0
8:2 Fluorotelomer phosphate diester	AveID	0.9361	0.995		2.60	2.45	6.3	30.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.4772	0.5875		3.08	2.50	23.1	50.0
10:2 Fluorotelomer phosphate diester	AveID	0.0970	0.1601		4.15	2.51	65.0*	30.0
13C4 PFBA	Ave	0.8859	0.9107		1.29	1.25	2.8	50.0
13C5 PFPeA	Ave	0.7929	0.8168		1.29	1.25	3.0	50.0
13C3 PFBS	Ave	0.5464	0.5594		1.19	1.17	2.4	50.0
M2-4:2 FTS	Ave	0.1273	0.1194		1.10	1.17	-6.2	50.0
13C2 PFHxA	Ave	0.8726	0.8879		1.27	1.25	1.8	50.0
13C3 HFPO-DA	Ave	0.0293	0.0292		1.25	1.25	-0.3	50.0
13C4 PFHpA	Ave	0.9246	0.9347		1.26	1.25	1.1	50.0
18O2 PFHxS	Ave	0.3615	0.3578		1.17	1.18	-1.0	50.0
13C-6:2 FTUCA	Ave	0.5484	0.5274		1.20	1.25	-3.8	50.0
13C-6:2 FTCA	Ave	0.0424	0.0392		1.15	1.25	-7.6	50.0
M2-6:2 FTS	Ave	0.1342	0.1241		1.10	1.19	-7.5	50.0
13C4 PFOA	Ave	1.010	1.011		1.25	1.25	0.1	50.0
13C4 PFOS	Ave	0.2437	0.2370		1.16	1.20	-2.7	50.0
13C5 PFNA	Ave	0.9888	1.011		1.28	1.25	2.2	50.0
13C-8:2 FTUCA	Ave	0.5900	0.5942		1.26	1.25	0.7	50.0
13C-8:2 FTCA	Ave	0.0317	0.0328		1.29	1.25	3.5	50.0
13C8 FOSA	Ave	0.3238	0.3312		1.28	1.25	2.3	50.0
M2-8:2 FTS	Ave	0.1350	0.1255		1.12	1.20	-7.1	50.0
13C2 PFDA	Ave	0.9539	0.9919		1.30	1.25	4.0	50.0
d3-NMeFOSAA	Ave	0.1322	0.1285		1.22	1.25	-2.8	50.0
d5-NEtFOSAA	Ave	0.1326	0.1340		1.26	1.25	1.1	50.0
13C2 PFUnA	Ave	0.8946	0.9086		1.27	1.25	1.6	50.0
13C-10:2 FTUCA	Ave	0.5322	0.5423		1.27	1.25	1.9	50.0
13C-10:2 FTCA	Ave	0.0178	0.0178		1.25	1.25	-0.2	50.0
d7-N-MeFOSE-M	Ave	0.1590	0.1664		1.31	1.25	4.7	50.0
d-N-MeFOSA-M	Ave	0.1053	0.1090		1.29	1.25	3.6	50.0
13C2 PFDoA	Ave	0.9837	1.018		1.29	1.25	3.5	50.0
13C2 10:2 FTS	Ave	0.1260	0.1208		1.16	1.21	-4.2	50.0
d9-N-EtFOSE-M	Ave	0.1840	0.1979		1.35	1.25	7.6	50.0
d-N-EtFOSA-M	Ave	0.0980	0.1068		1.36	1.25	8.9	50.0
13C4-6:2 Fluorotelomer phosphate diester	Ave	0.2865	0.2944		1.25	1.22	2.8	50.0
13C2 PFTeDA	Ave	0.8532	0.8243		1.21	1.25	-3.4	50.0
13C2 PFHxDA	Ave	0.7395	0.7393		1.25	1.25	-0.0	50.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
SDG No.: _____
Lab Sample ID: CCV 320-642490/20 Calibration Date: 12/22/2022 15:33
Instrument ID: A18 Calib Start Date: 12/21/2022 12:10
GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11
Lab File ID: 2022.12.21_A18_PFC_A_034.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4-8:2 Fluorotelomer phosphate diester	Ave	0.2076	0.2041		1.20	1.22	-1.7	50.0

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_034.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 22-Dec-2022 15:33:30 ALS Bottle#: 53 Worklist Smp#: 20
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5 (09)
 Misc. Info.: Plate: 3 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Sublist: chrom-PFAS+_A18*sub3
 Method: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 23-Dec-2022 12:36:02 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1657

First Level Reviewer: sanjumnair

Date: 23-Dec-2022 12:36:02

Ratio Calibration: Initial Calibration Level: 4

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 MTP										
175.00 > 97.00	1.437	1.445	-0.008	0.538	826189	2.87		115	2464	
2 PPF Acid										
162.95 > 119.00	1.858	1.875	-0.017	0.696	8529514	2.72		112	638	
3 PFMOAA										
179.00 > 84.90	2.377	2.386	-0.009	0.890	5988144	2.72		109	1912	
4 R-PSDA										
441.00 > 241.00	2.561	2.560	0.001	0.959	1511707	2.86		114	27080	
5 R-EVE										
405.00 > 217.00	2.561	2.568	-0.007	0.959	3631573	2.70		108	54911	
6 Hydrolyzed PSDA										
439.10 > 342.90	2.569	2.568	0.001	0.962	4488165	2.66		107	54563	
D 8 13C4 PFBA										
217.00 > 172.00	2.671	2.678	-0.007	0.585	4916875	1.29		103	16421	
7 Perfluorobutanoic acid										
212.90 > 169.00	2.671	2.678	-0.007	1.000	10600497	2.42		97.0	315	
10 PMPA										
229.00 > 185.00	2.743	2.750	-0.007	1.027	12310758	2.72		109	6593	
11 PFPrS										
249.10 > 80.00	2.752	2.750	0.002	0.891	5245845	2.32		101	27777	
12 NVHOS										
297.00 > 135.00	2.770	2.777	-0.007	1.037	311041	2.74		110	4916	
13 PFECA F										
229.00 > 85.00	2.807	2.814	-0.007	0.923	5955476	2.57		103	20476	
14 PFO2HxA										
245.00 > 85.00	2.955	2.953	0.002	0.971	1252675	2.58		103	4538	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 16 13C5 PFPeA										
267.90 > 223.00	3.042	3.048	-0.006	0.666	4409783	1.29		103	29988	
15 Perfluoropentanoic acid										
262.90 > 219.00	3.042	3.048	-0.006	1.000	8859010	2.40		96.1	10817	
17 3:3 FTCA										
241.00 > 177.10	3.051	3.057	-0.006	0.988	493306	2.66	Target=1.29	106	5402	
241.00 > 116.90	3.051	3.057	-0.006	0.988	387658		1.27(0.64-1.93)		2881	
19 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.088	3.085	0.003	1.000	5255202	2.21	Target=2.33	99.8	17698	
298.90 > 99.00	3.088	3.085	0.003	1.000	2288955		2.30(1.16-3.49)		7145	
D 18 13C3 PFBS										
301.90 > 80.00	3.088	3.085	0.003	0.676	2814687	1.19		102	20949	
20 PEPA										
278.90 > 234.90	3.154	3.152	0.002	1.037	9959703	2.54		102	2125	
21 PFECA A										
278.95 > 84.90	3.164	3.171	-0.007	1.040	9931405	2.54		101	58693	
22 PES										
314.80 > 135.00	3.262	3.268	-0.006	1.057	18111738	2.30		103	113678	
23 FBSA										
297.90 > 78.00	3.317	3.323	-0.006	0.592	1388665	2.62		105	13511	
24 PFECA B										
295.20 > 201.00	3.406	3.403	0.003	0.979	1712837	2.58		103	30037	
26 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.433	3.430	0.003	1.003	2874303	2.39	Target=1.90	102	56091	
327.00 > 79.96	3.433	3.430	0.003	1.003	1443898		1.99(0.95-2.85)		16075	
D 25 M2-4:2 FTS										
329.00 > 81.00	3.424	3.430	-0.006	0.750	604390	1.10		93.8	3455	
28 Perfluorohexanoic acid										
313.00 > 269.00	3.478	3.483	-0.005	1.000	9285599	2.57	Target=13.49	103	9502	
313.00 > 119.00	3.478	3.483	-0.005	1.000	663825		13.99(6.75-20.24)		6533	
D 27 13C2 PFHxA										
315.00 > 270.00	3.478	3.483	-0.005	0.762	4793727	1.27		102	30105	
29 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.513	3.510	0.003	1.138	4797114	2.47	Target=3.01	105	28765	
349.00 > 99.00	3.513	3.510	0.003	1.138	1473626		3.26(1.50-4.51)		19643	
30 PFO3OA										
311.10 > 85.20	3.558	3.555	0.003	1.023	539140	2.55		102	6785	
31 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.642	3.648	-0.006	1.000	359306	2.70	Target=0.88	108	16071	
285.00 > 185.00	3.642	3.648	-0.006	1.000	433471		0.83(0.44-1.31)		4734	
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.642	3.648	-0.006	0.798	157665	1.25		99.7	4065	
33 R-PSDCA										
397.00 > 217.00	3.956	3.963	-0.007	0.988	3050435	2.57		103	36632	
D 35 13C4 PFHpA										
367.00 > 322.00	4.003	4.009	-0.006	0.877	5045953	1.26		101	28275	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
36 Perfluoroheptanoic acid										
363.00 > 319.00	4.003	4.009	-0.006	1.000	9406714	2.56	Target=3.51	102	11209	
363.00 > 169.00	4.003	4.009	-0.006	1.000	2619911		3.59(1.75-5.26)		15759	
38 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.021	4.027	-0.006	1.000	3482978	2.34	Target=3.29	102	19727	
399.00 > 99.00	4.021	4.027	-0.006	1.000	1012642		3.44(1.64-4.93)		4776	
D 37 18O2 PFHxS										
403.00 > 84.00	4.021	4.027	-0.006	0.881	1827469	1.17		99.0	18389	
34 Hydro-EVE Acid										
427.00 > 282.90	4.046	4.052	-0.006	1.011	14573539	2.60		104	57059	
39 Hydro-PS Acid										
463.00 > 263.00	4.071	4.077	-0.006	1.017	13074263	2.62		105	159011	
41 5:3 FTCA										
340.88 > 236.90	4.080	4.086	-0.006	0.979	1570187	2.77	Target=1.13	111	15559	
340.88 > 216.90	4.080	4.086	-0.006	0.979	1425090		1.10(0.56-1.69)		8117	
40 DONA										
377.00 > 251.00	4.080	4.094	-0.014	0.799	17123599	2.51	Target=2.17	106	42330	
377.00 > 85.00	4.080	4.094	-0.014	0.799	7689333		2.23(1.09-3.26)		935	
42 PFECA G										
378.90 > 184.90	4.114	4.120	-0.006	0.988	4603790	2.78		111	22244	
43 6:2 FTUCA										
356.86 > 292.90	4.140	4.145	-0.005	1.000	5864444	2.54	Target=14.13	102	19421	
356.86 > 243.00	4.140	4.145	-0.005	1.000	439375		13.35(7.07-21.20)		10838	
D 44 13C-6:2 FTUCA										
358.86 > 293.90	4.140	4.145	-0.005	0.907	2847434	1.20		96.2	26735	
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.166	4.171	-0.005	0.913	211651	1.15		92.4	904	
45 6:2 FTCA										
377.10 > 313.10	4.166	4.171	-0.005	1.000	123399	2.79	Target=0.64	112	2966	
377.10 > 63.00	4.166	4.171	-0.005	1.000	176999		0.70(0.32-0.96)		4891	
47 PFO4DA										
376.90 > 85.00	4.263	4.271	-0.008	1.065	588649	2.63		105	0.6	
48 PS Acid										
442.80 > 146.80	4.369	4.374	-0.005	0.959	4590012	2.53		101	14104	
49 EVE Acid										
407.00 > 262.90	4.378	4.383	-0.005	0.961	14109296	2.52		101	61421	
51 PFECHS										
460.80 > 380.90	4.484	4.490	-0.006	0.984	9451528	2.46	Target=2.14	106	63789	
460.80 > 98.90	4.484	4.490	-0.006	0.984	4584096		2.06(1.07-3.21)		48860	
50 FHxSA										
397.90 > 78.00	4.484	4.490	-0.006	0.801	7446466	2.61		104	13028	
53 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.529	4.535	-0.006	1.000	2736962	2.51	Target=2.29	106	28652	
427.00 > 79.96	4.520	4.535	-0.015	0.998	1165501		2.35(1.15-3.44)		10402	
D 52 M2-6:2 FTS										
429.00 > 81.00	4.529	4.535	-0.006	0.992	636689	1.10		92.5	10885	
\$ 54 13C8 PFOA										
421.00 > 376.00	4.556	4.569	-0.013	0.998	4303798	1.22		97.2	13571	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 56 13C4 PFOA										
417.00 > 372.00	4.556	4.569	-0.013	0.998	5460644	1.25		100	17979	
58 Perfluorooctanoic acid										M
413.00 > 369.00	4.565	4.569	-0.004	1.002	10380619	2.55	Target=2.76	102	7381	M
413.00 > 169.00	4.565	4.569	-0.004	1.002	3766865		2.76(1.38-4.14)		16617	
* 55 13C2 PFOA										
415.00 > 370.00	4.565	4.569	-0.004		5398725	1.25			17812	
57 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.565	4.578	-0.013	0.894	2982847	2.43	Target=4.72	102	26751	
449.00 > 99.00	4.565	4.578	-0.013	0.894	648409		4.60(2.36-7.08)		9296	
59 TAF										
442.90 > 85.00	4.978	4.983	-0.005	1.093	455666	2.79		112	8867	
D 61 13C4 PFOS										
503.00 > 80.00	5.104	5.116	-0.012	1.118	1225952	1.16		97.3	7719	
\$ 60 13C8 PFOS										
507.00 > 99.00	5.104	5.116	-0.012	1.118	544599	1.21		101	8851	
62 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.104	5.116	-0.012	1.000	2535614	2.38	Target=4.87	103	5574	
499.00 > 99.00	5.104	5.116	-0.012	1.000	527984		4.80(2.43-7.30)		5935	
D 64 13C5 PFNA										
468.00 > 423.00	5.111	5.123	-0.012	1.120	5456048	1.28		102	31902	
63 Perfluorononanoic acid										
463.00 > 419.00	5.111	5.123	-0.012	1.000	9925307	2.62	Target=7.86	105	11583	
463.00 > 169.00	5.111	5.123	-0.012	1.000	1309754		7.58(3.93-11.78)		16479	
65 7:3 FTCA										
441.00 > 337.00	5.240	5.246	-0.006	0.988	1921403	2.56	Target=1.24	103	7575	
441.00 > 317.00	5.240	5.246	-0.006	0.988	1595872		1.20(0.62-1.87)		5832	
D 67 13C-8:2 FTUCA										
458.86 > 393.90	5.278	5.284	-0.006	1.156	3207674	1.26		101	10004	
66 8:2 FTUCA										
456.86 > 392.90	5.278	5.284	-0.006	1.000	6242455	2.55	Target=35.99	102	28597	
456.86 > 343.00	5.278	5.284	-0.006	1.000	174247		35.83(17.99-53.98)		4182	
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.306	5.312	-0.006	1.162	177052	1.29		103	740	
69 8:2 FTCA										
477.00 > 393.10	5.306	5.321	-0.015	1.000	350427	2.44	Target=2.79	97.7	666	
477.00 > 63.20	5.306	5.321	-0.015	1.000	134438		2.61(1.39-4.18)		4400	
70 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	5.411	5.417	-0.006	1.060	6751473	2.64		113	70024	
D 72 13C8 FOSA										
506.00 > 78.00	5.599	5.605	-0.006	1.227	1788297	1.28		102	16991	
73 Perfluorononanesulfonic acid										
549.00 > 80.00	5.607	5.613	-0.006	1.099	2112847	2.66	Target=2.88	111	17886	
549.00 > 99.00	5.607	5.613	-0.006	1.099	715168		2.95(1.44-4.32)		18212	
71 Perfluorooctanesulfonamide										
498.00 > 78.00	5.599	5.613	-0.014	1.000	3506422	2.57		103	20891	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.615	5.621	-0.006	1.230	650229	1.12		92.9	12416	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	5.615	5.621	-0.006	1.000	2179163	2.44	Target=2.38	102	34211	
527.00 > 79.96	5.615	5.621	-0.006	1.000	911192		2.39(1.19-3.58)		11227	
D 76 13C2 PFDA										
515.00 > 470.00	5.623	5.630	-0.007	1.232	5354740	1.30		104	26800	
77 Perfluorodecanoic acid										
513.00 > 469.00	5.623	5.638	-0.015	1.000	7501698	2.66	Target=7.41	107	13181	
513.00 > 169.00	5.623	5.638	-0.015	1.000	997689		7.52(3.70-11.11)		12676	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.850	5.858	-0.008	1.282	693697	1.22		97.2	3190	
79 N-methylperfluorooctanesulfonami										
570.00 > 419.00	5.858	5.866	-0.008	1.001	1154256	2.63	Target=0.78	105	7071	
570.00 > 483.00	5.858	5.866	-0.008	1.001	1474053		0.78(0.39-1.17)		9437	
80 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.059	6.067	-0.008	1.187	1970763	2.65	Target=2.82	110	34035	
599.00 > 99.00	6.059	6.067	-0.008	1.187	660962		2.98(1.41-4.23)		12653	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.085	6.095	-0.010	1.333	723494	1.26		101	2524	
D 82 13C2 PFUnA										
565.00 > 520.00	6.095	6.095	0.0	1.335	4905177	1.27		102	21061	
83 Perfluoroundecanoic acid										
563.00 > 519.00	6.095	6.095	0.0	1.000	7125330	2.66	Target=7.89	106	18655	
563.00 > 169.00	6.095	6.095	0.0	1.000	888870		8.02(3.95-11.84)		18619	
84 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	6.095	6.105	-0.010	1.002	1087865	2.50	Target=0.75	99.9	8060	M
584.00 > 526.10	6.095	6.105	-0.010	1.002	1463870		0.74(0.38-1.13)		8288	M
D 89 13C-10:2 FTUCA										
558.86 > 493.90	6.258	6.266	-0.008	1.371	2927509	1.27		102	10829	
90 10:2 FTUCA										
556.86 > 492.90	6.258	6.266	-0.008	1.000	4071979	2.46		98.4	42907	
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.267	6.275	-0.008	1.373	95866	1.25		99.8	634	
92 10:2 FTCA										
576.80 > 493.00	6.276	6.284	-0.008	1.001	167025	2.26	Target=2.41	90.6	350	
576.80 > 63.10	6.276	6.284	-0.008	1.001	73015		2.29(1.20-3.61)		224	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.320	6.319	0.001	1.384	898489	1.31		105	6573	
93 11-Chloroeicosafuoro-3-oxaundec										
631.00 > 451.00	6.311	6.319	-0.008	1.236	8502400	2.60		110	92740	
86 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	6.329	6.337	-0.008	1.001	1922712	2.71		109	11600	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.338	6.337	0.001	1.388	588660	1.29		104	2563	
88 NMeFOSA										
512.00 > 169.00	6.338	6.346	-0.008	1.000	1161345	2.54	Target=2.06	102	2646	
512.00 > 218.99	6.338	6.346	-0.008	1.000	583621		1.99(1.03-3.09)		4805	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
99 Perfluorododecanoic acid										
613.00 > 569.00	6.506	6.515	-0.009	1.000	10177240	2.68	Target=7.83	107	14334	
613.00 > 169.00	6.506	6.515	-0.009	1.000	1250168		8.14(3.91-11.74)		15774	
D 98 13C2 PFDaA										
615.00 > 570.00	6.506	6.515	-0.009	1.425	5497521	1.29		104	18009	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.516	6.525	-0.009	1.427	629313	1.16		95.8	7888	
101 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	6.525	6.535	-0.010	1.002	1655819	2.43	Target=1.80	101	10911	
627.00 > 79.96	6.525	6.535	-0.010	1.002	951173		1.74(0.90-2.70)		14019	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.565	6.575	-0.010	1.438	1068636	1.35		108	4464	
95 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	6.585	6.595	-0.010	1.003	2194114	2.70		108	9771	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.595	6.605	-0.010	1.445	576353	1.36		109	1715	
97 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	6.605	6.615	-0.010	1.002	1130485	2.63	Target=1.83	105	5117	
526.00 > 218.99	6.605	6.615	-0.010	1.002	605981		1.87(0.92-2.75)		6552	
102 Perfluorododecanesulfonic acid (
699.00 > 80.00	6.841	6.852	-0.011	1.340	721046	2.81	Target=0.66	116	7503	
699.00 > 99.00	6.851	6.852	-0.001	1.342	930136		0.78(0.33-0.99)		11975	
103 Perfluorotridecanoic acid										
663.00 > 619.00	6.880	6.889	-0.009	1.058	9044853	2.62	Target=6.66	105	15056	
663.00 > 169.00	6.880	6.889	-0.009	1.058	1249103		7.24(3.33-9.99)		13128	
D 112 13C4-6:2 diPAP										
792.82 > 78.90	7.111	7.118	-0.007	1.558	1546769	1.25		103	4163	
114 6:2 diPAP										
788.79 > 78.90	7.119	7.125	-0.006	1.001	3147533	2.57	Target=1.89	105	4404	
788.79 > 96.90	7.111	7.125	-0.014	1.000	1656146		1.90(0.95-2.84)		2878	
105 Perfluorotetradecanoic acid										
713.00 > 169.00	7.214	7.222	-0.008	1.000	907116	2.60	Target=0.92	104	6757	
713.00 > 219.00	7.214	7.222	-0.008	1.000	913281		0.99(0.46-1.38)		3221	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.214	7.222	-0.008	1.580	4450028	1.21		96.6	6605	
115 6:2/8:2 diPAP										
888.70 > 78.90	7.598	7.605	-0.007	1.068	3046956	2.48	Target=1.35	102	4731	
888.70 > 96.90	7.598	7.605	-0.007	1.068	2179369		1.40(0.68-2.03)		4778	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.776	7.784	-0.008	1.704	3991470	1.25		100.0	4788	
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.776	7.784	-0.008	1.000	7141536	2.60	Target=8.78	104	5045	
813.00 > 169.00	7.776	7.784	-0.008	1.000	807304		8.85(4.39-13.18)		4954	
D 113 13C4-8:2 diPAP										
992.77 > 96.90	7.999	8.007	-0.008	1.752	1077804	1.20		98.3	2650	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
116 8:2 diPAP										
988.74 > 78.90	7.999	8.007	-0.008	1.000	2144749	2.60	Target=1.18	106	2981	
988.74 > 96.90	7.999	8.007	-0.008	1.000	1894516		1.13(0.59-1.77)		3655	
108 Perfluorooctadecanoic acid										
913.00 > 869.00	8.262	8.269	-0.007	1.062	4689872	3.08	Target=10.05	123	3931	
913.00 > 169.00	8.262	8.269	-0.007	1.062	457117		10.26(5.02-15.07)		3244	
117 10:2 diPAP										
1188.79 > 78.90	8.750	8.756	-0.006	1.094	354508	4.15	Target=1.13	165	9624	
1188.79 > 96.90	8.750	8.756	-0.006	1.094	315524		1.12(0.57-1.70)		9962	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

LCPFC+6C_LL5_00009

Amount Added: 1.00

Units: mL

Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_034.d

Injection Date: 22-Dec-2022 15:33:30

Instrument ID: A18

Lims ID: CCV L5

Client ID:

Operator ID: TAISACA18-PC\A-18

ALS Bottle#: 53

Worklist Smp#: 20

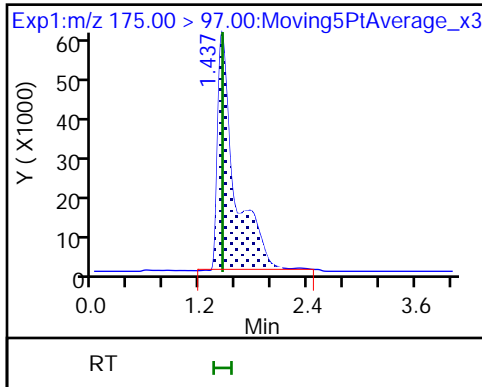
Injection Vol: 20.0 ul

Dil. Factor: 1.0000

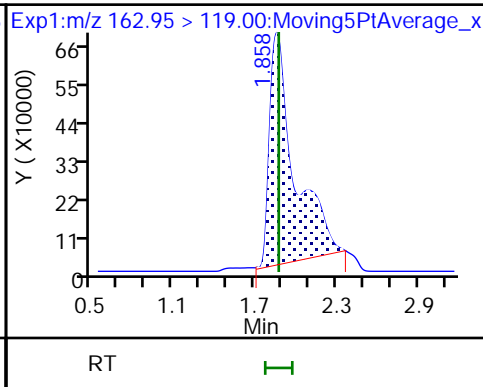
Method: PFAS+_A18

Limit Group: LC PFC ICAL

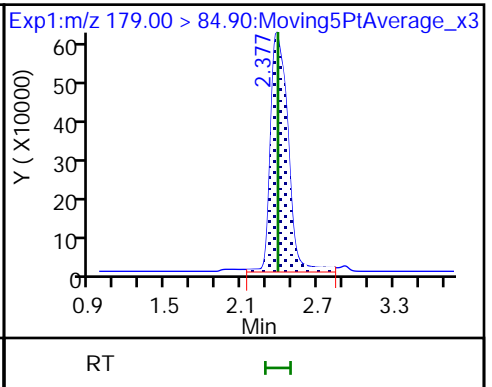
1 MTP



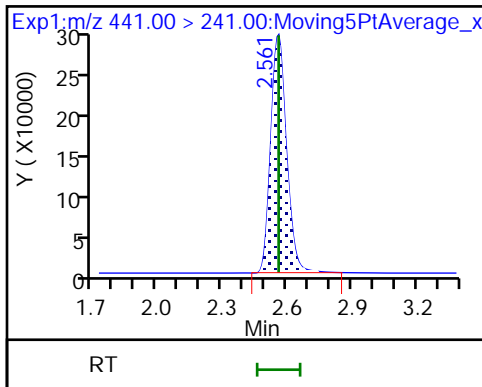
2 PPF Acid



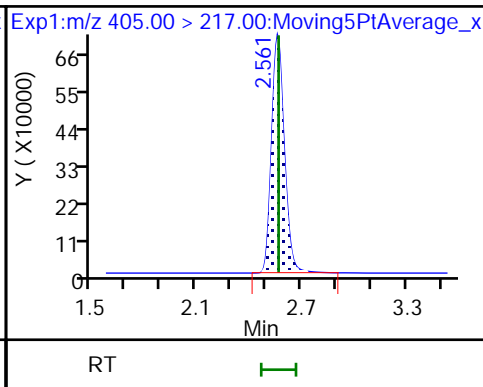
3 PFMOAA



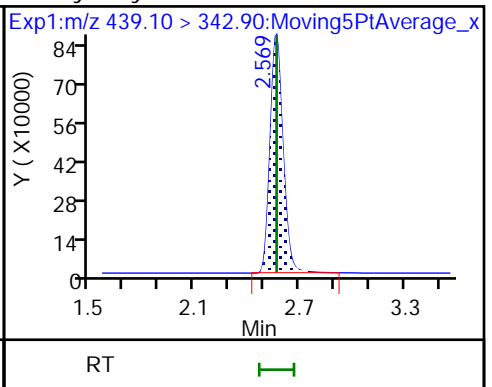
4 R-PSDA



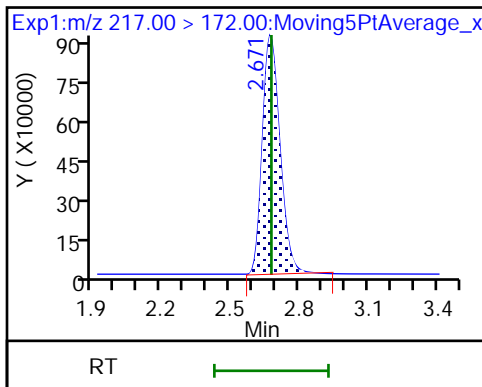
5 R-EVE



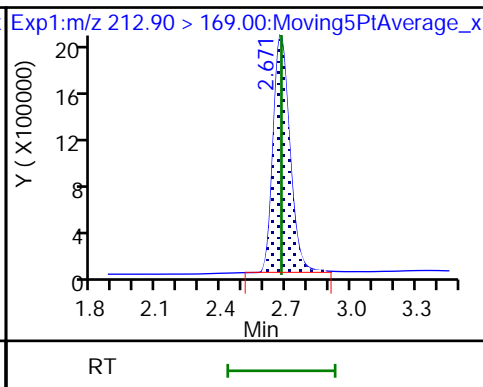
6 Hydrolyzed PSDA



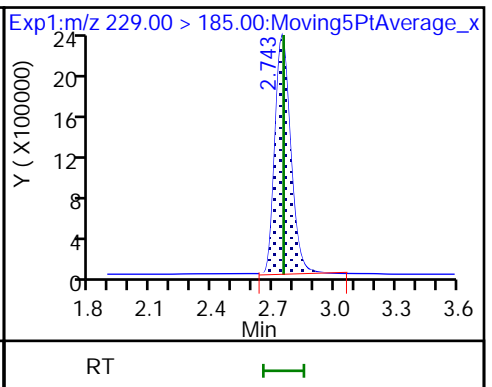
D 8 13C4 PFBA



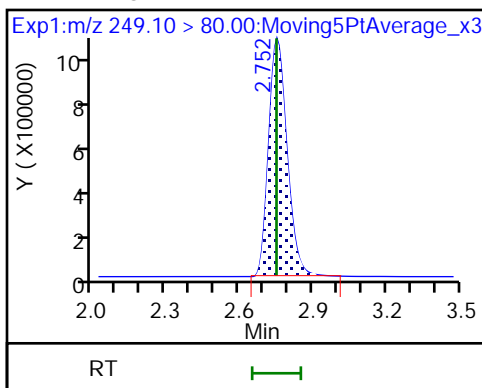
7 Perfluorobutanoic acid



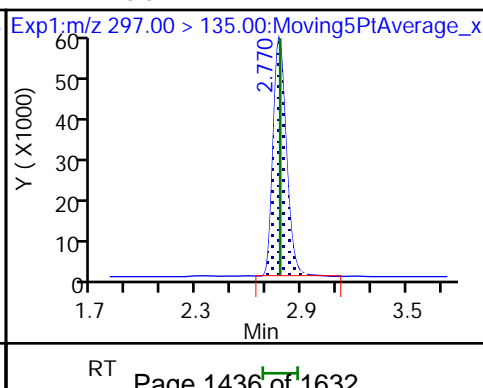
10 PMPA



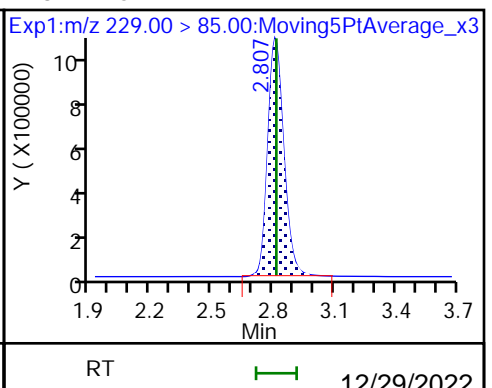
11 PFPrS

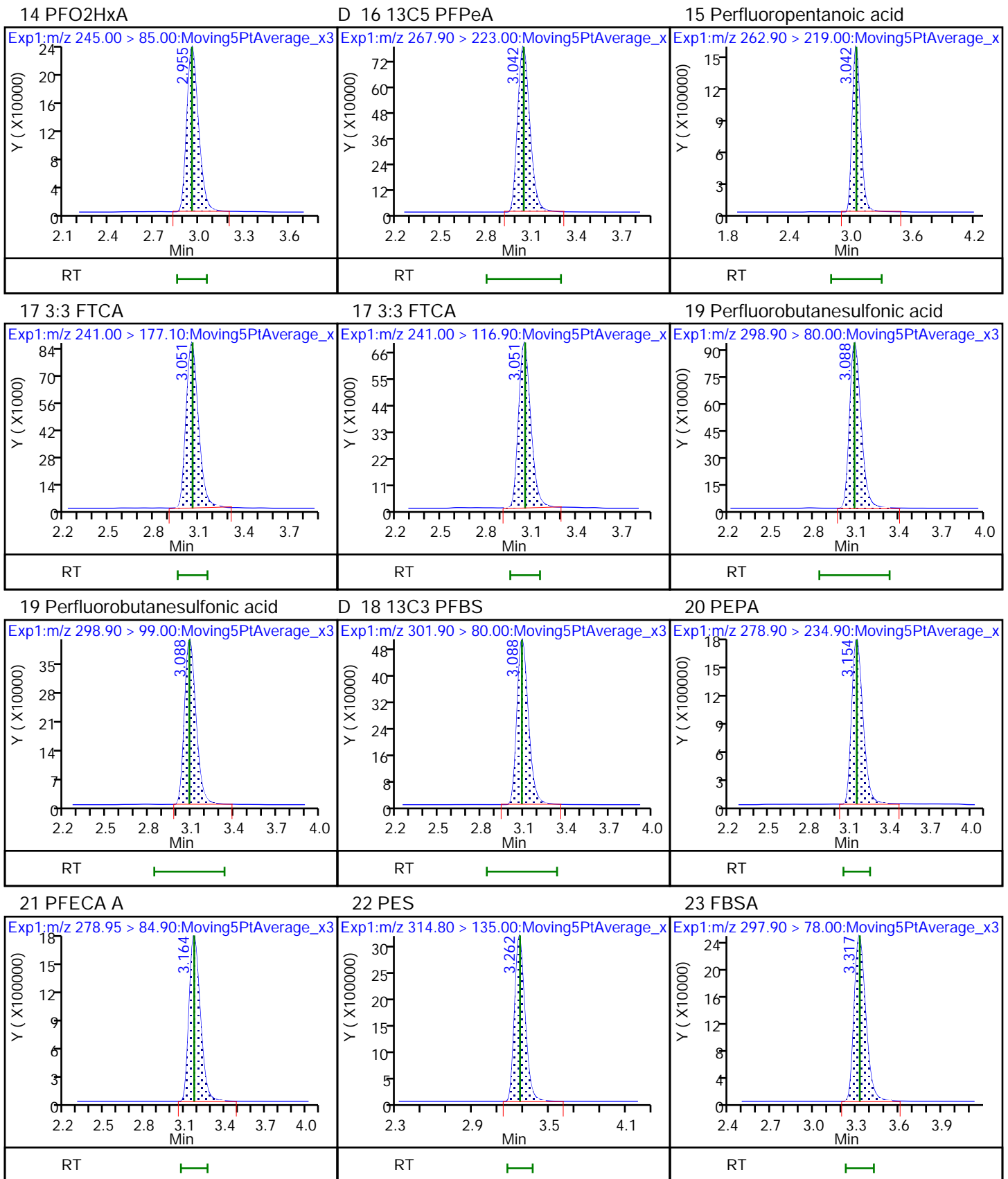


12 NVHOS



13 PFECA F

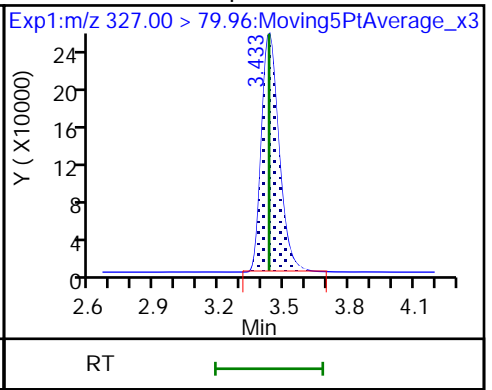
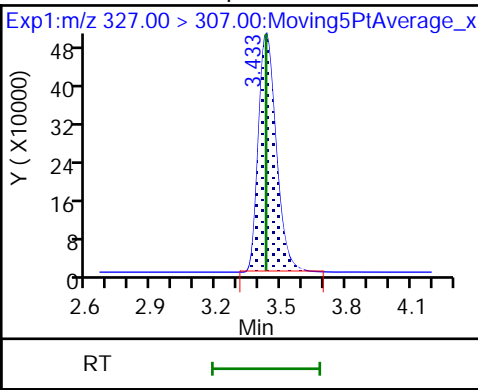
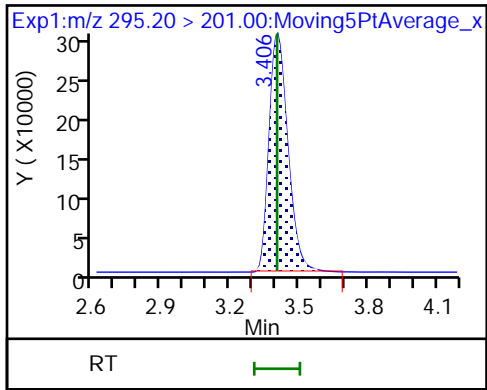




24 PFECA B

26 1H,1H,2H,2H-perfluorohexanesulfo

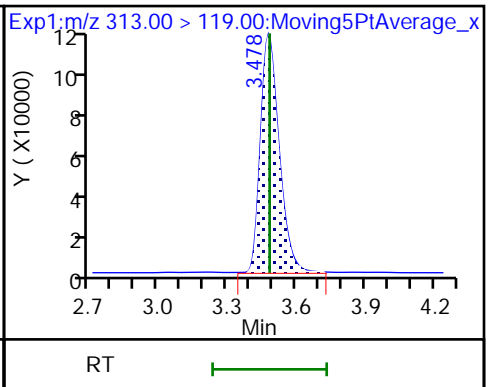
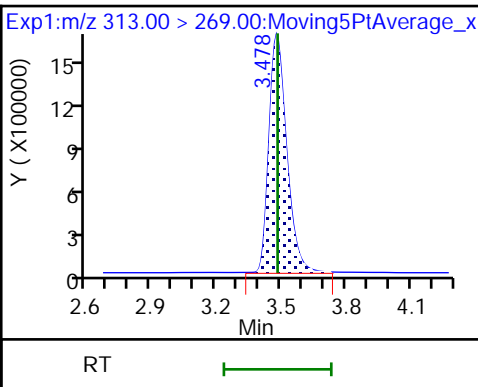
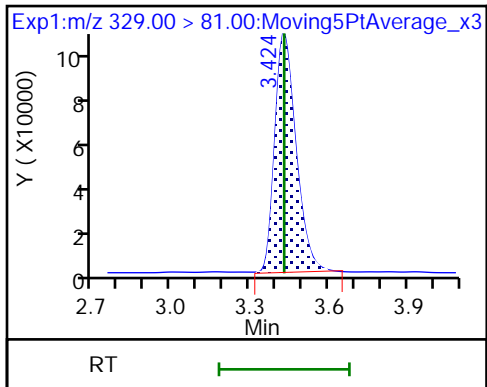
26 1H,1H,2H,2H-perfluorohexanesulfo



D 25 M2-4:2 FTS

28 Perfluorohexanoic acid

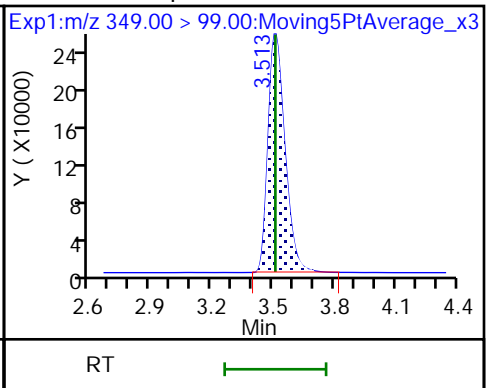
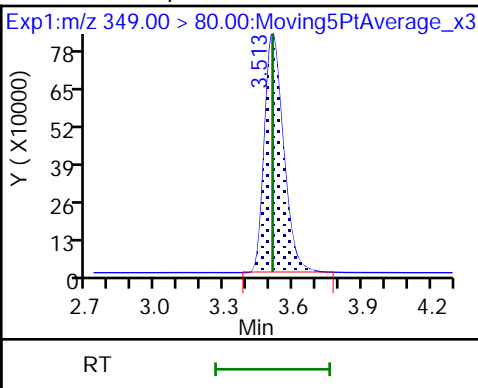
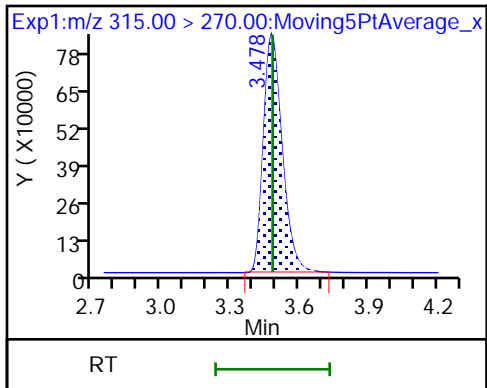
28 Perfluorohexanoic acid



D 27 13C2 PFHxA

29 Perfluoropentanesulfonic acid

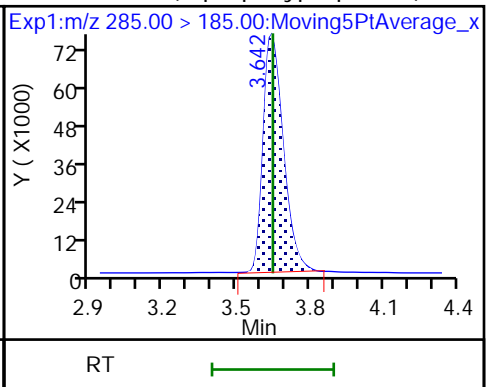
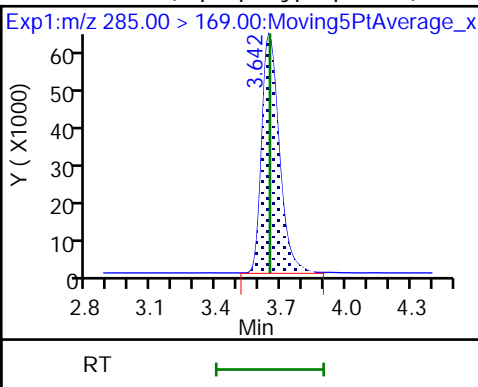
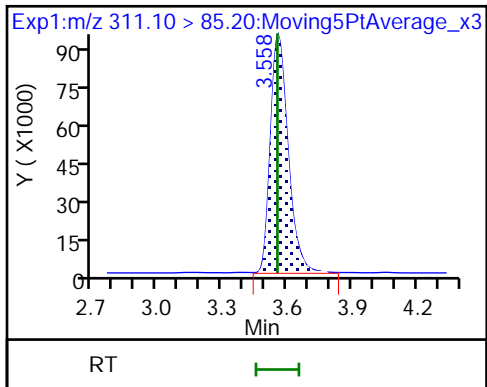
29 Perfluoropentanesulfonic acid



30 PFO3OA

31 Perfluoro(2-propoxypropanoic) ac

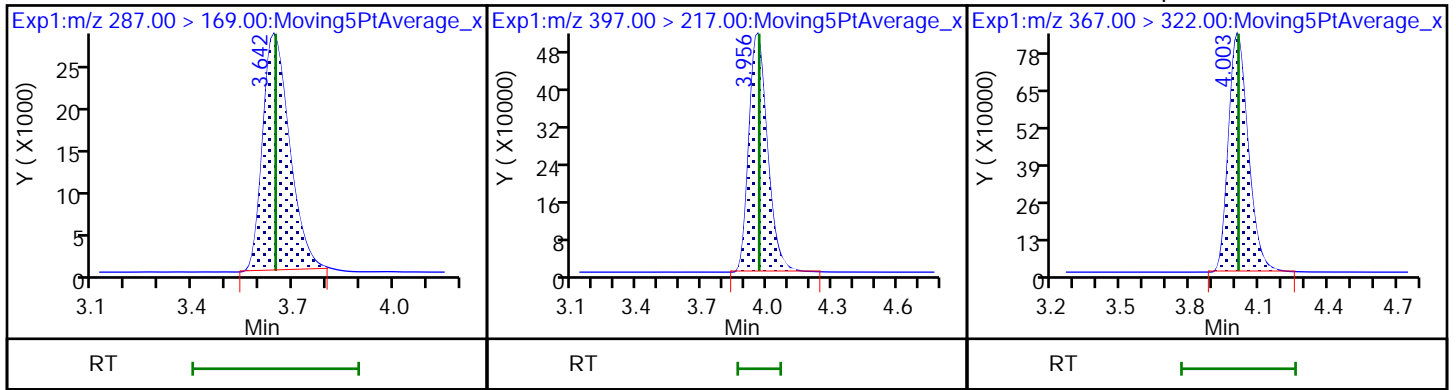
31 Perfluoro(2-propoxypropanoic) ac



D 32 13C3 HFPO-DA

33 R-PSDCA

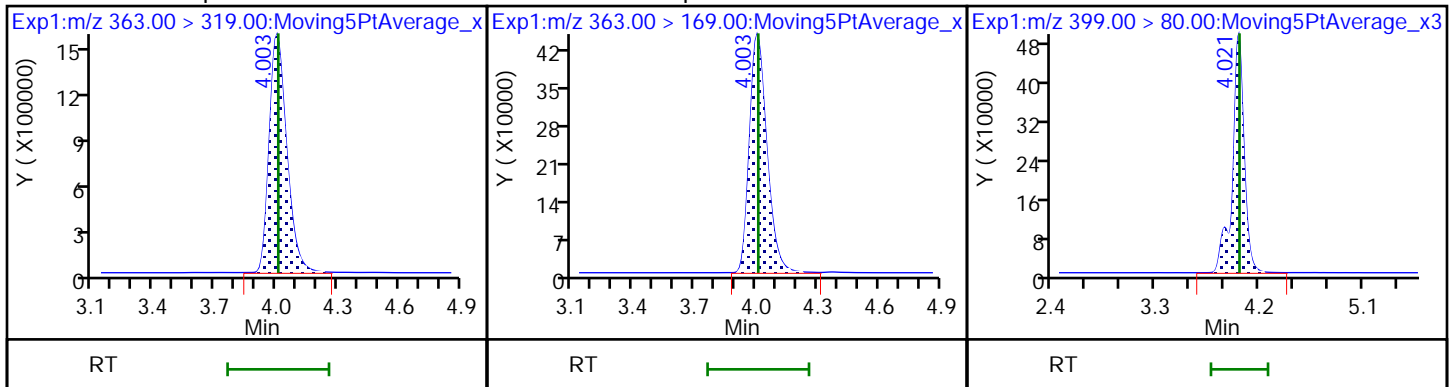
D 35 13C4 PFHpA



36 Perfluoroheptanoic acid

36 Perfluoroheptanoic acid

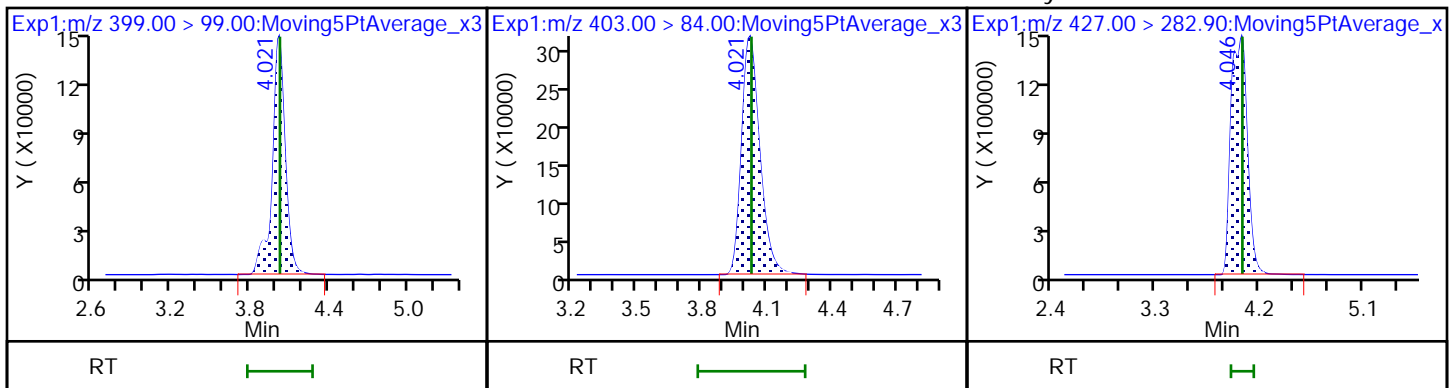
38 Perfluorohexanesulfonic acid



38 Perfluorohexanesulfonic acid

D 37 18O2 PFHxS

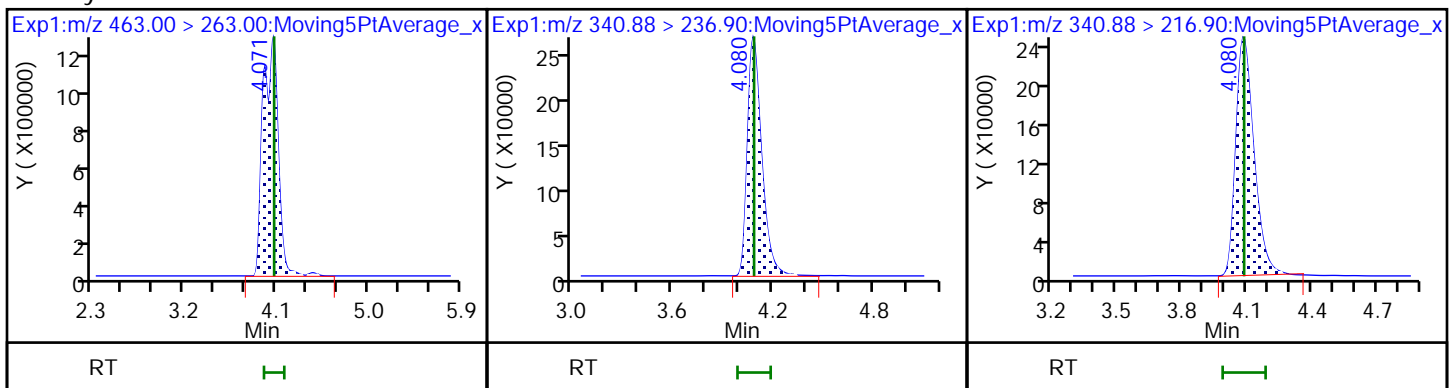
34 Hydro-EVE Acid

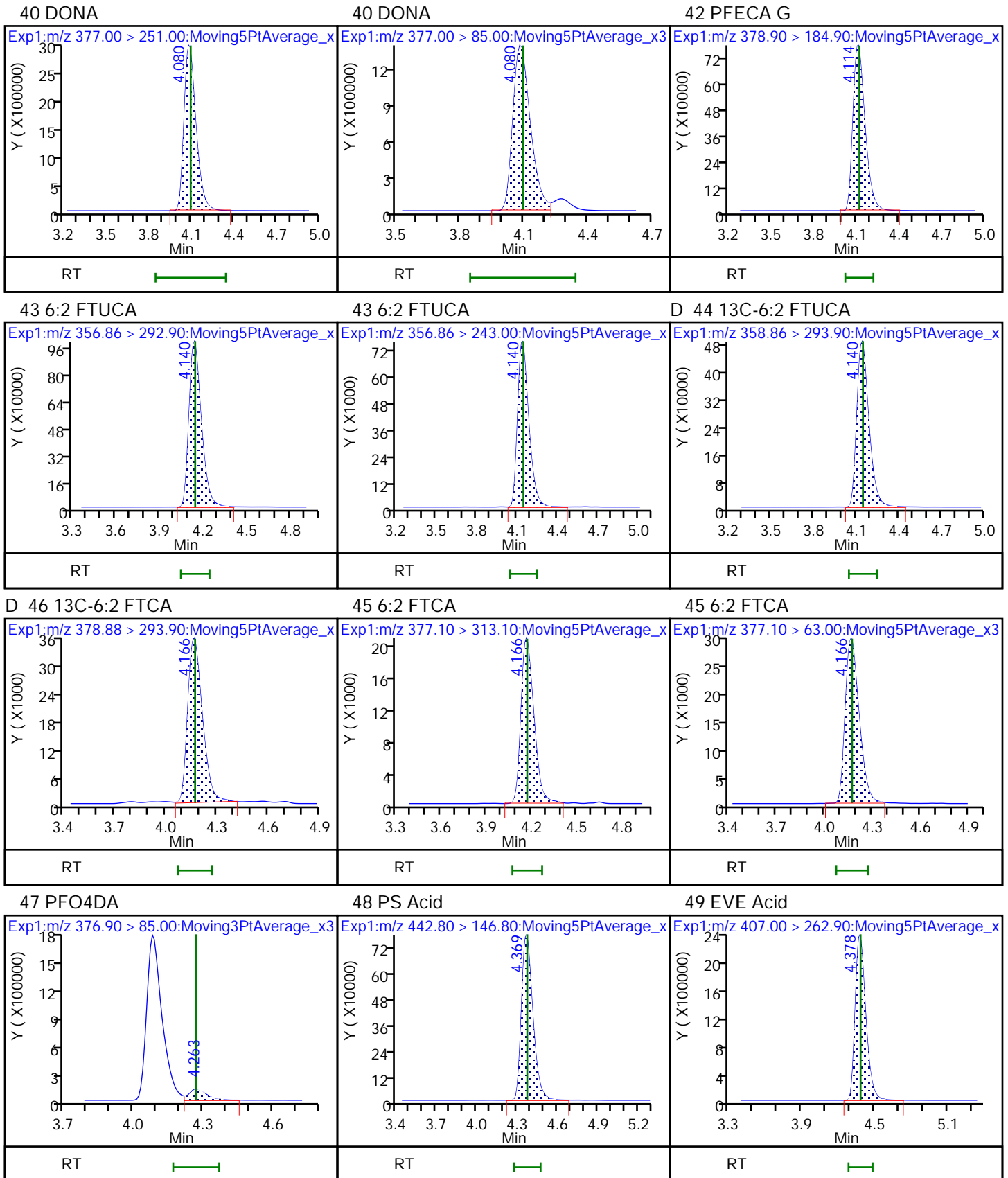


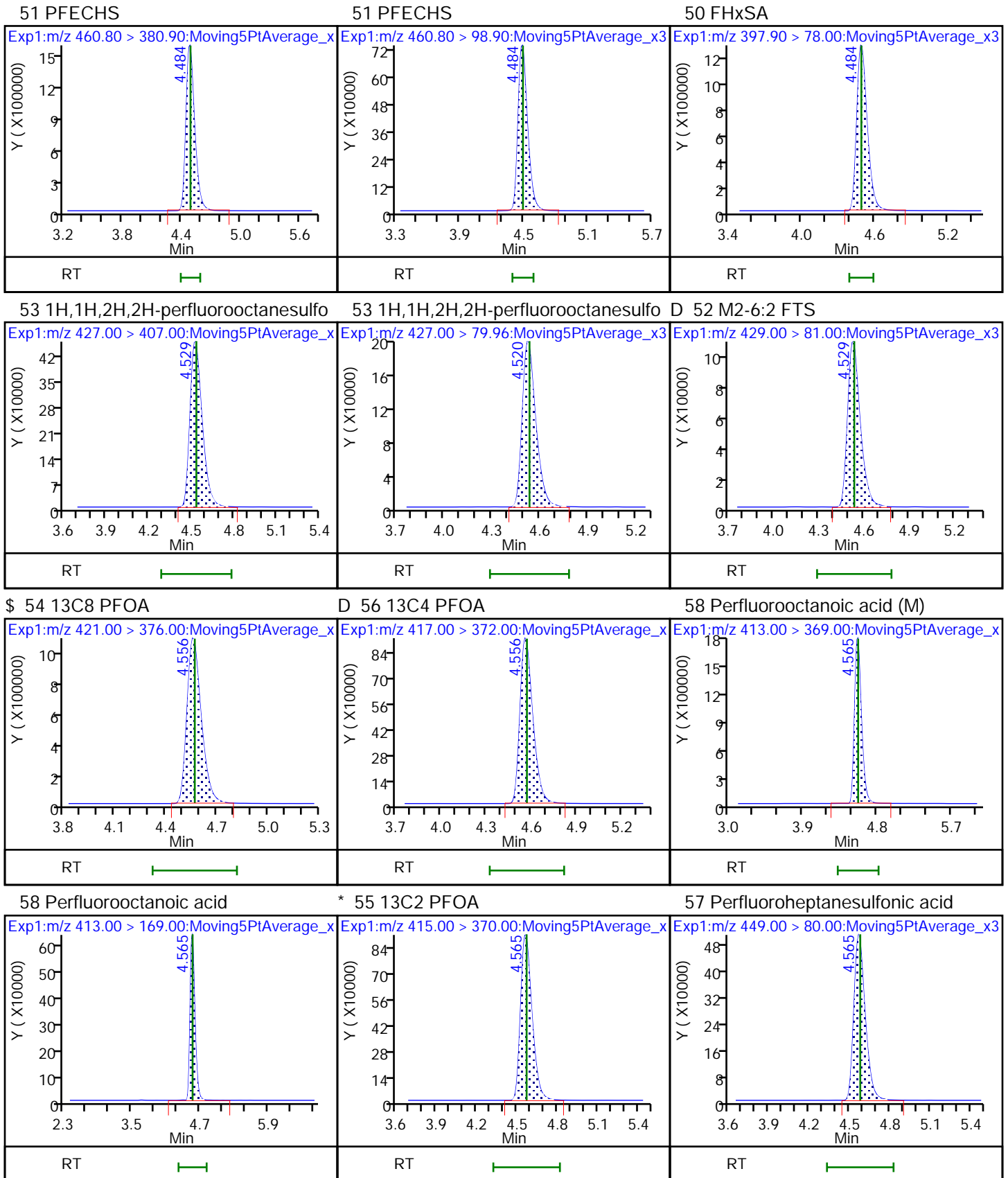
39 Hydro-PS Acid

41 5:3 FTCA

41 5:3 FTCA



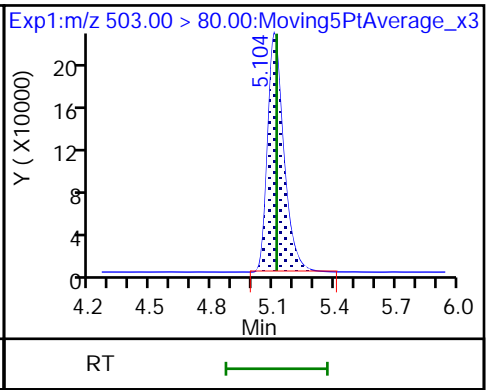
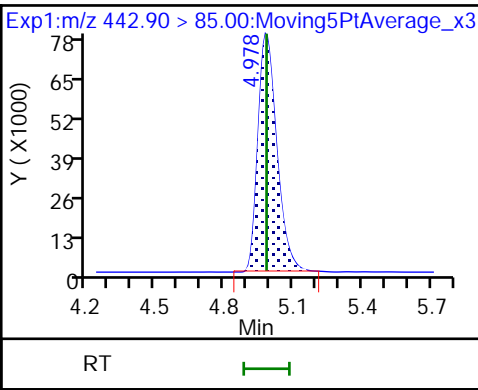
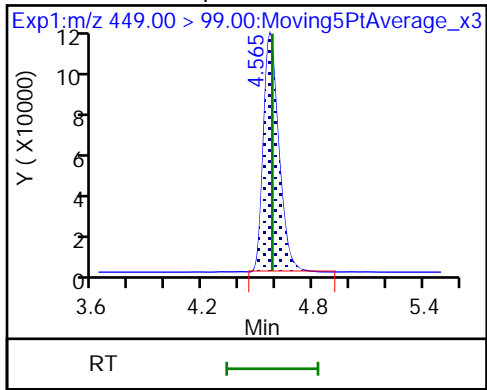




57 Perfluoroheptanesulfonic acid

59 TAF

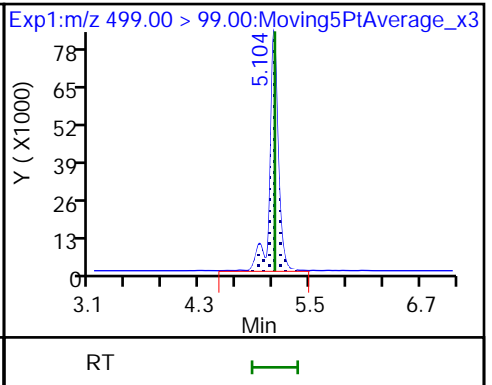
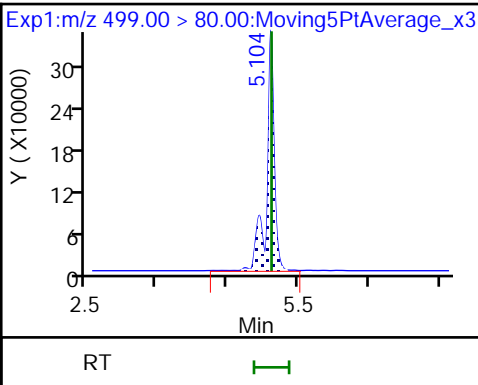
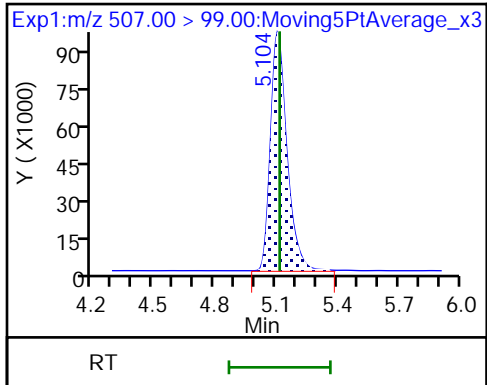
D 61 13C4 PFOS



\$ 60 13C8 PFOS

62 Perfluorooctanesulfonic acid

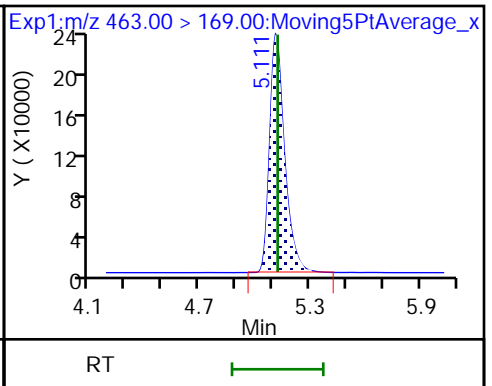
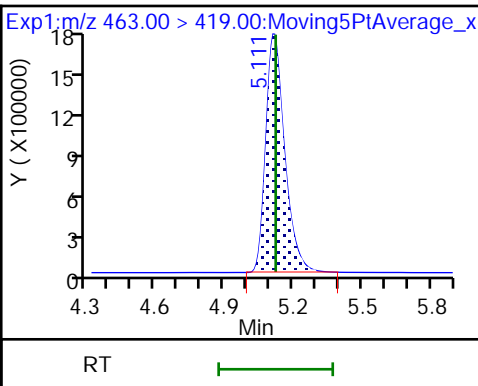
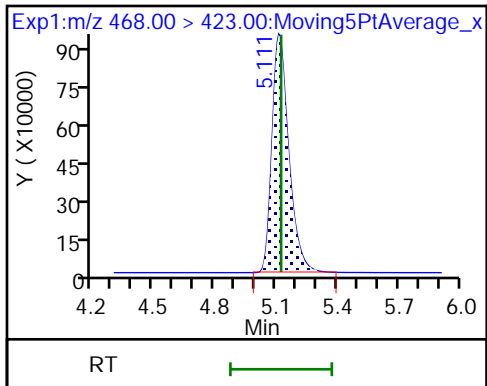
62 Perfluorooctanesulfonic acid



D 64 13C5 PFNA

63 Perfluorononanoic acid

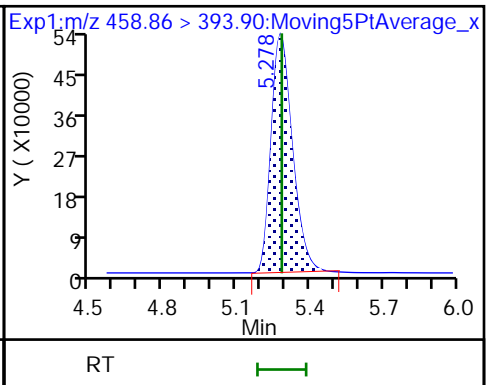
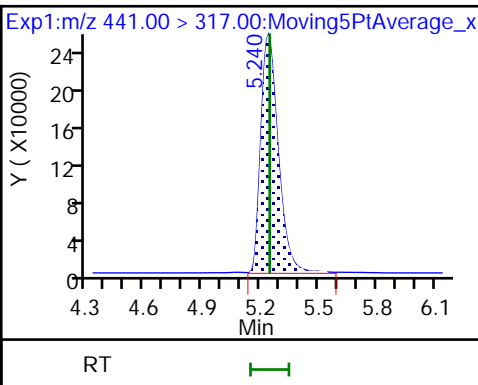
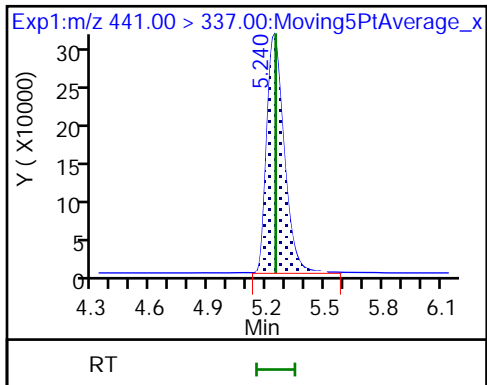
63 Perfluorononanoic acid

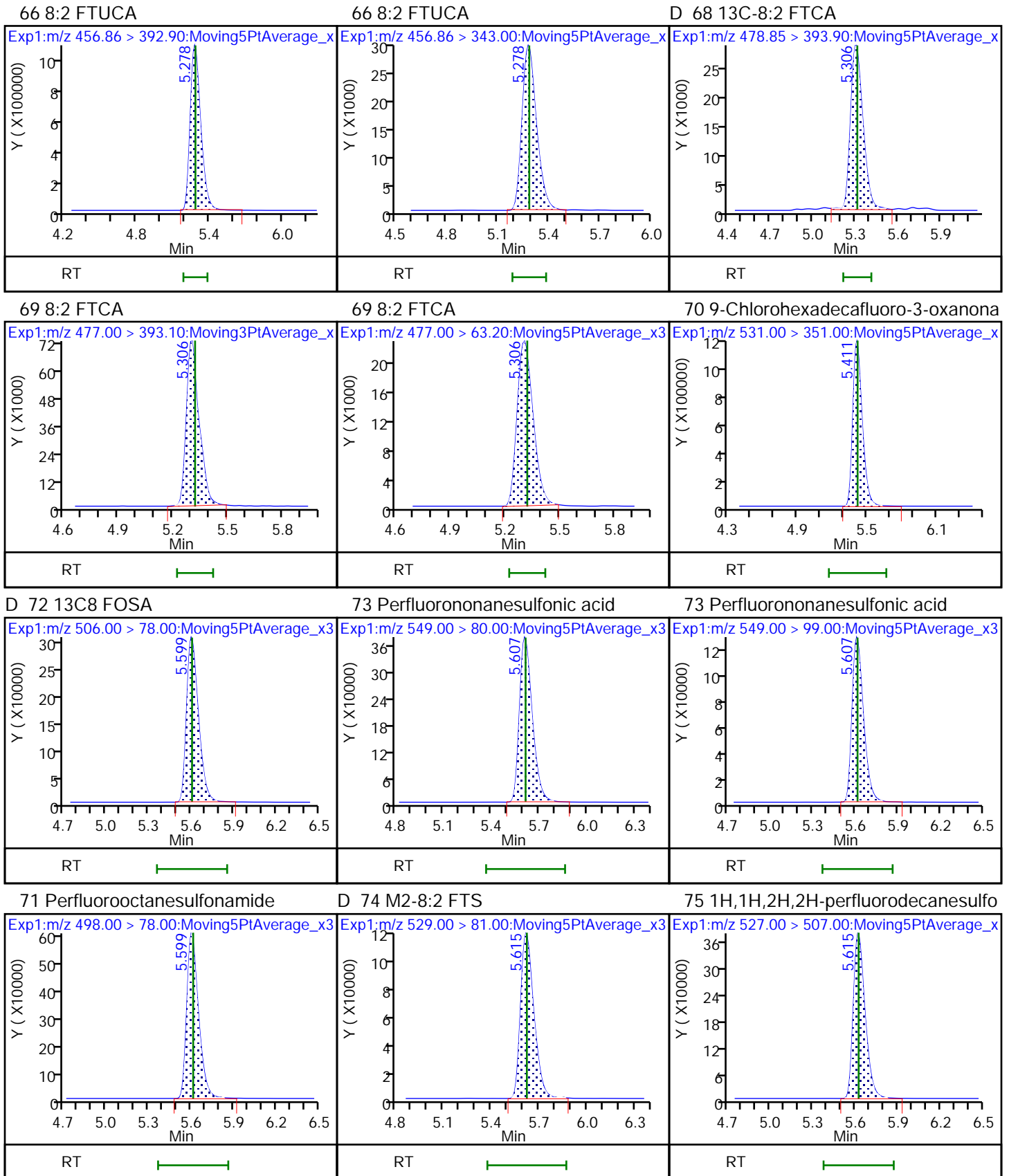


65 7:3 FTCA

65 7:3 FTCA

D 67 13C-8:2 FTUCA

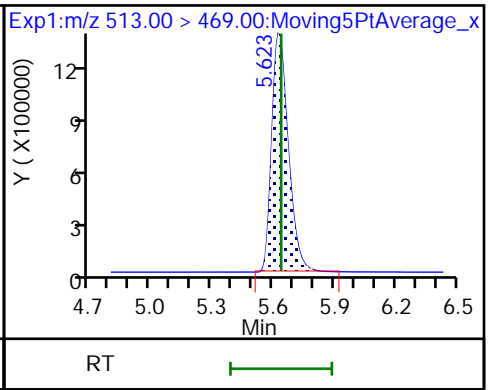
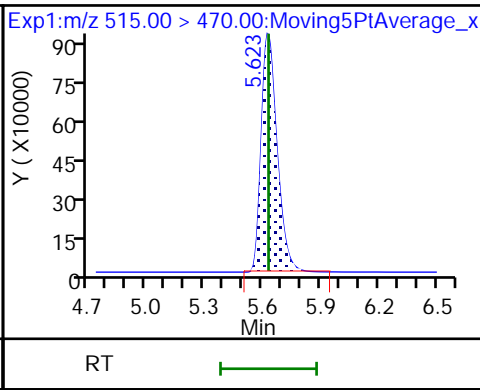
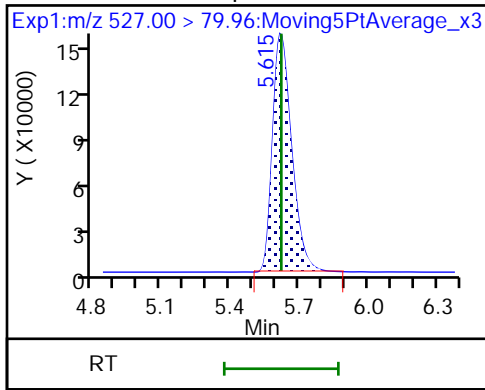




75 1H,1H,2H,2H-perfluorodecanesulfo D

76 13C2 PFDA

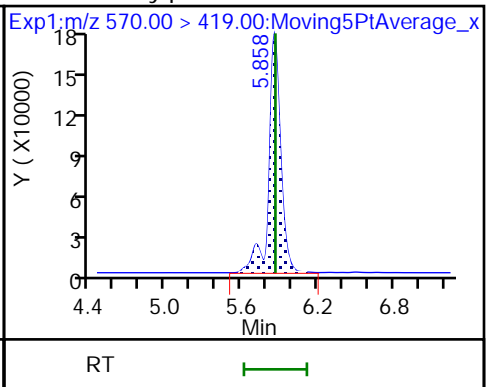
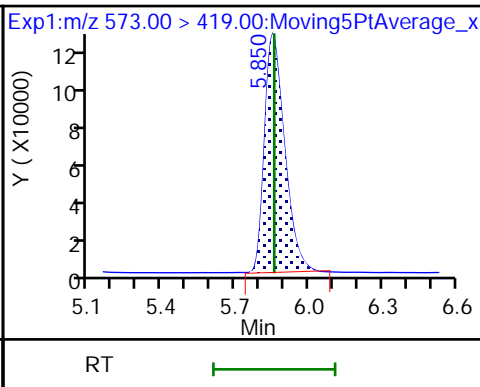
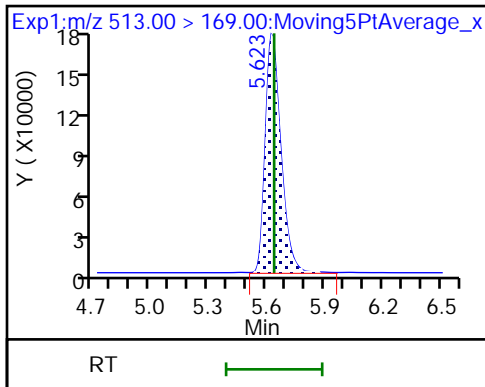
77 Perfluorodecanoic acid



77 Perfluorodecanoic acid

D 78 d3-NMeFOSAA

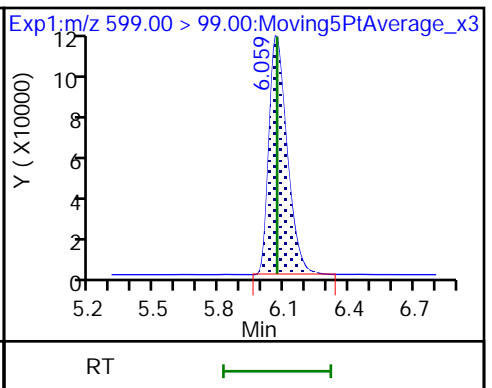
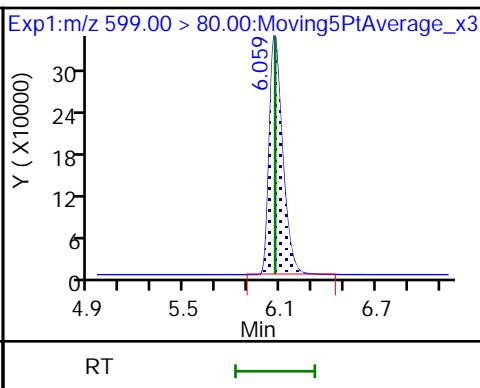
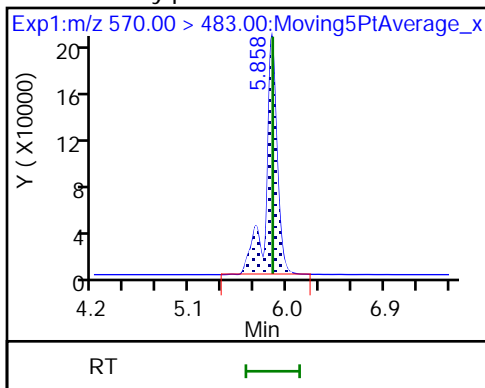
79 N-methylperfluorooctanesulfonami



79 N-methylperfluorooctanesulfonami

80 Perfluorodecanesulfonic acid

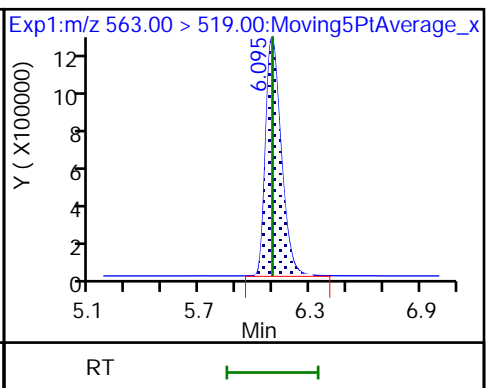
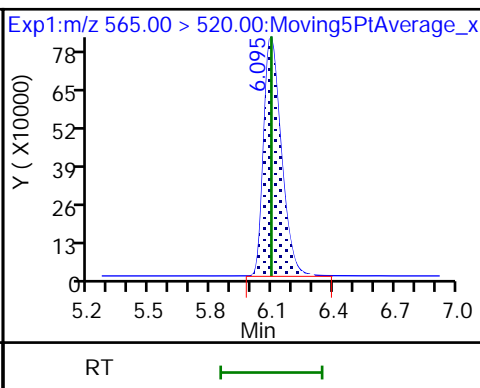
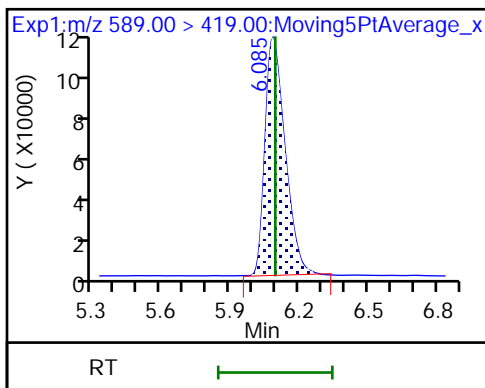
80 Perfluorodecanesulfonic acid



D 81 d5-NEtFOSAA

D 82 13C2 PFUnA

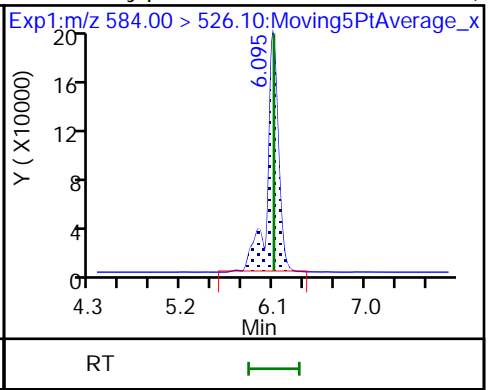
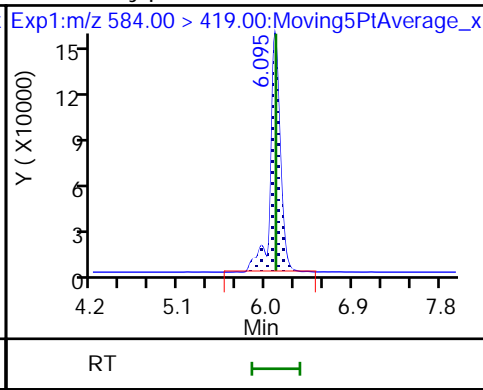
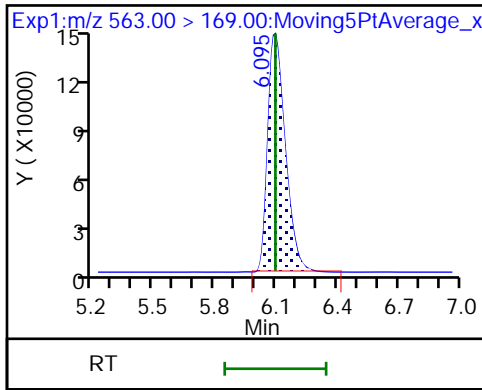
83 Perfluoroundecanoic acid



83 Perfluoroundecanoic acid

84 N-ethylperfluorooctanesulfonamid

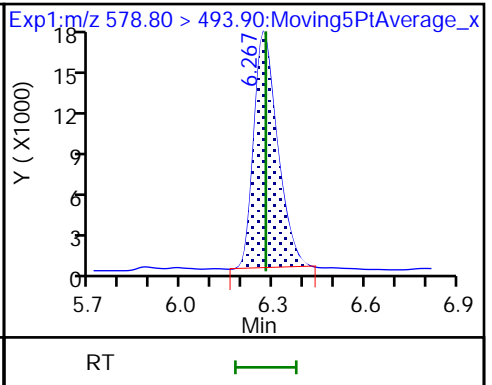
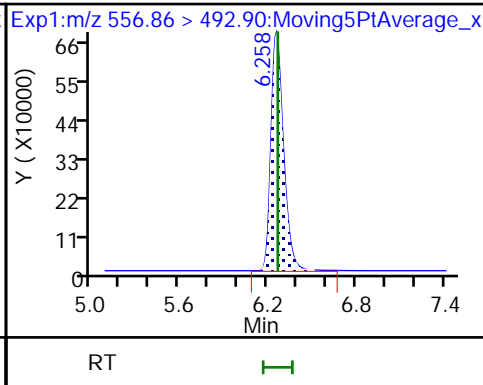
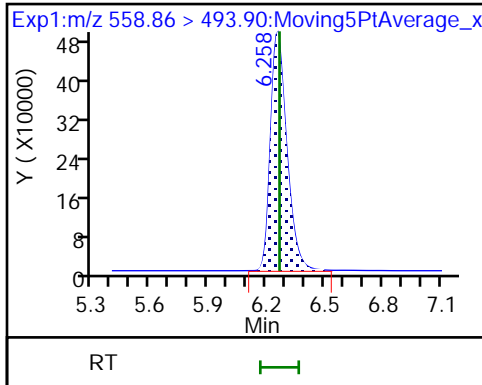
84 N-ethylperfluorooctanesulfonamid (M)



D 89 13C-10:2 FTUCA

90 10:2 FTUCA

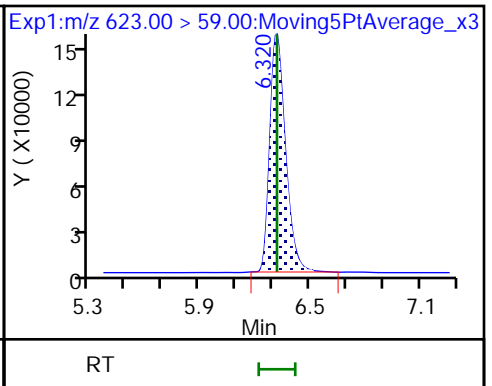
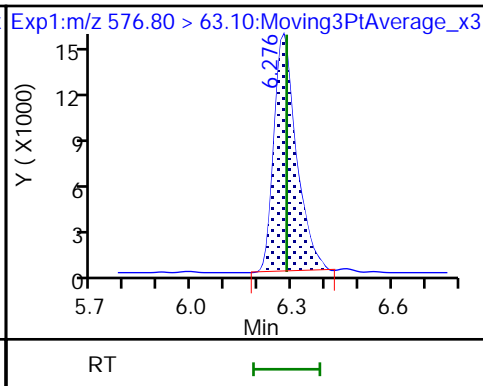
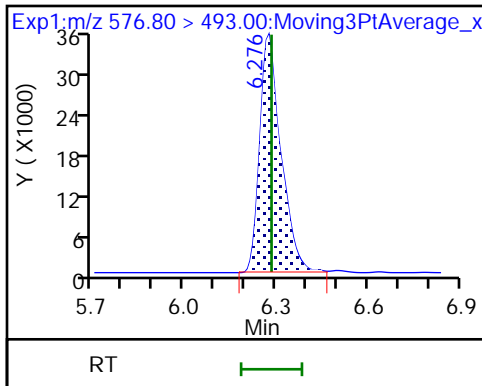
D 91 13C-10:2 FTCA



92 10:2 FTCA

92 10:2 FTCA

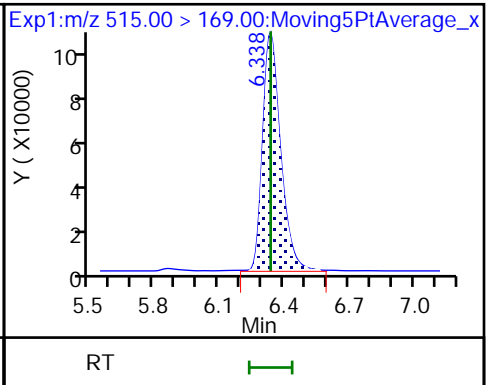
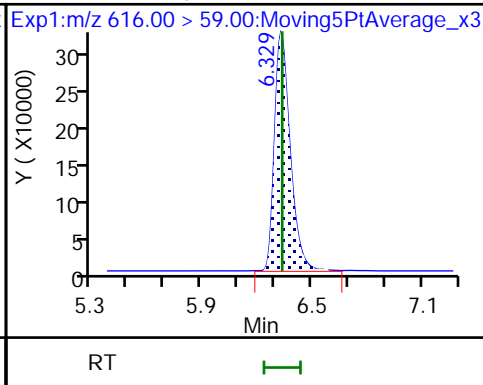
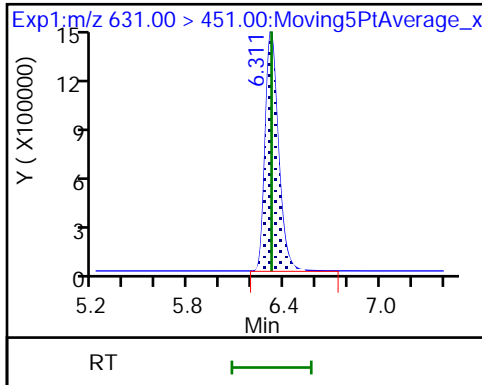
D 85 d7-N-MeFOSE-M

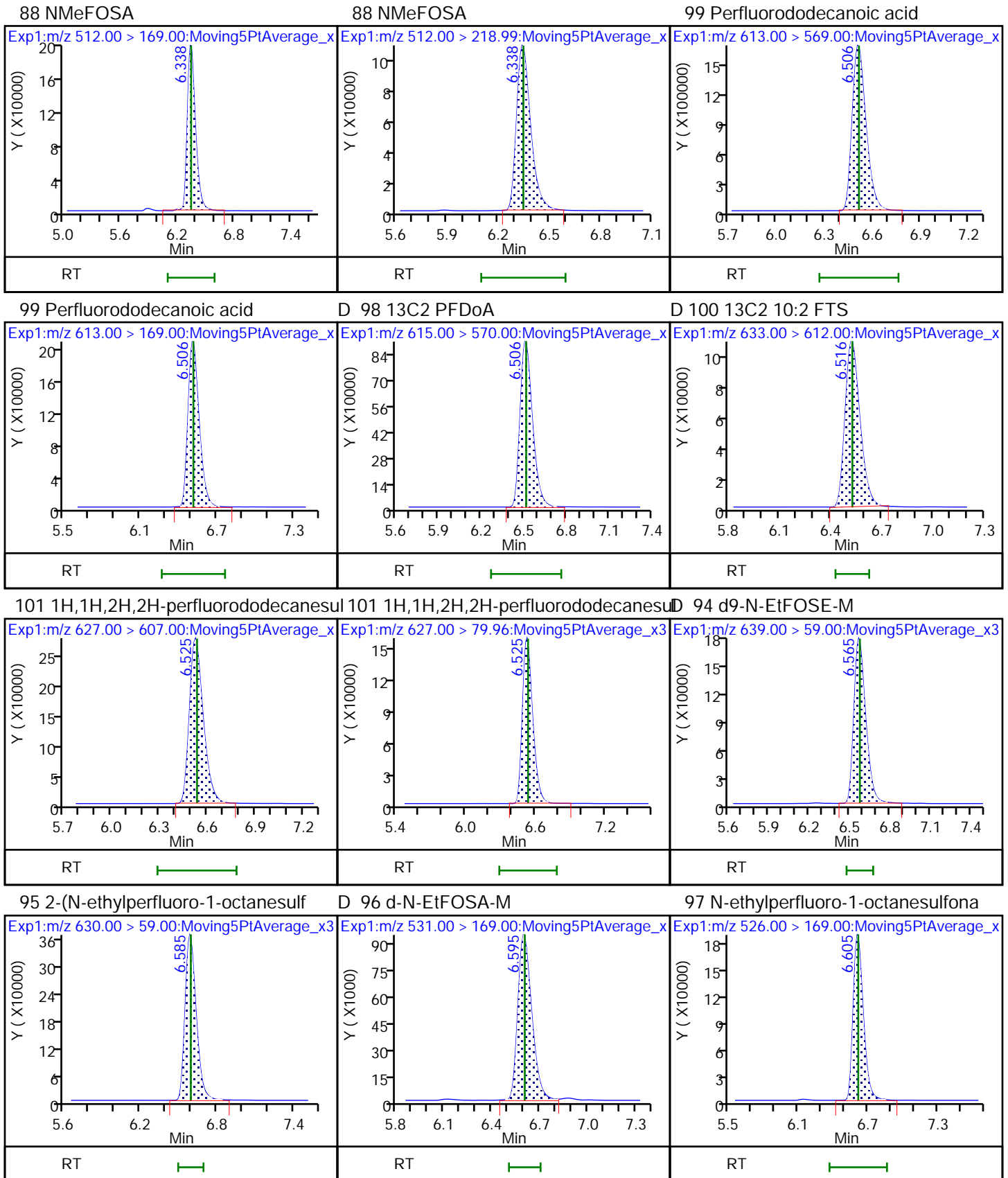


93 11-Chloroeicosafluoro-3-oxaundec

86 2-(N-methylperfluoro-1-octanesul

D 87 d-N-MeFOSA-M

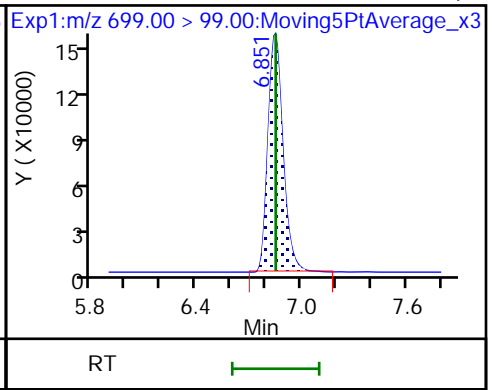
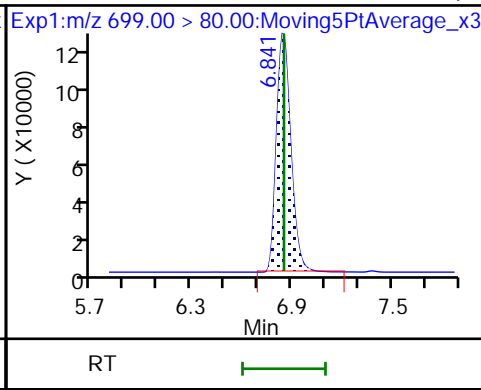
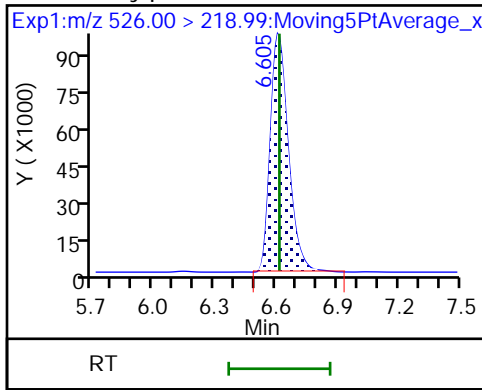




97 N-ethylperfluoro-1-octanesulfona

102 Perfluorododecanesulfonic acid (

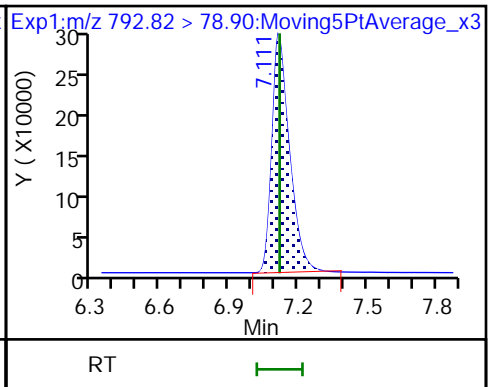
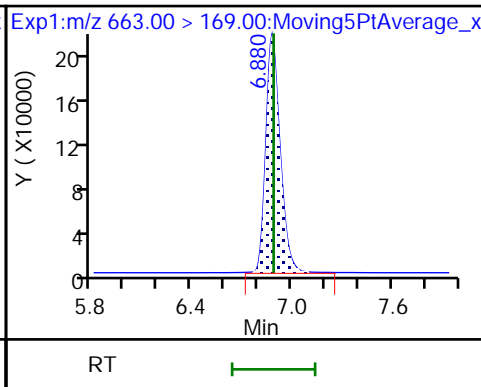
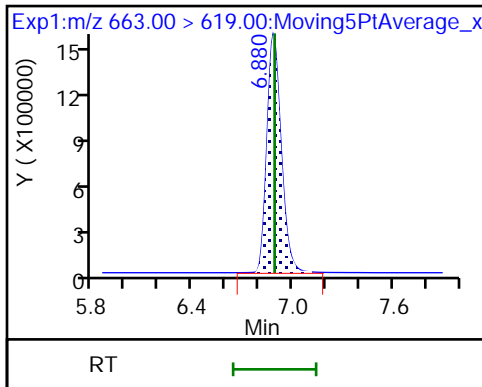
102 Perfluorododecanesulfonic acid (



103 Perfluorotridecanoic acid

103 Perfluorotridecanoic acid

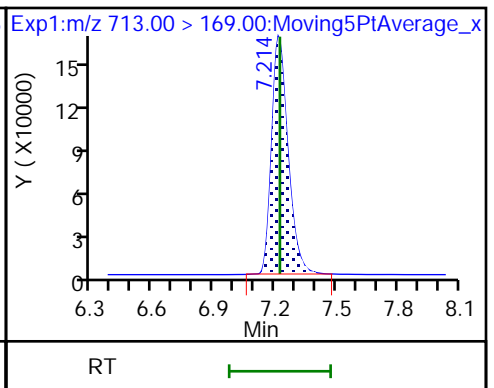
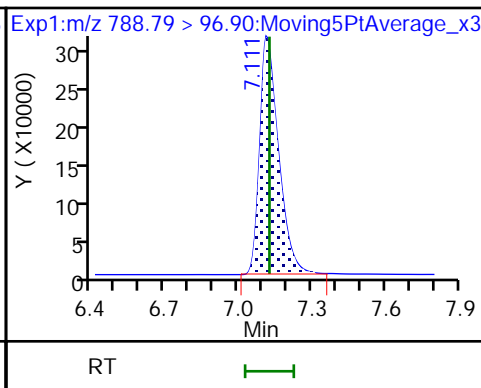
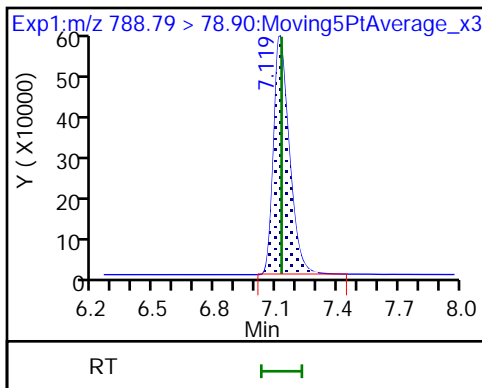
D 112 13C4-6:2 diPAP



114 6:2 diPAP

114 6:2 diPAP

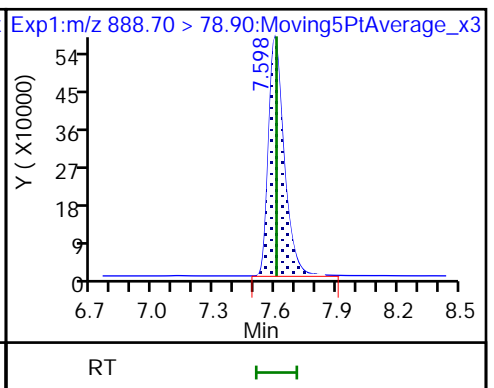
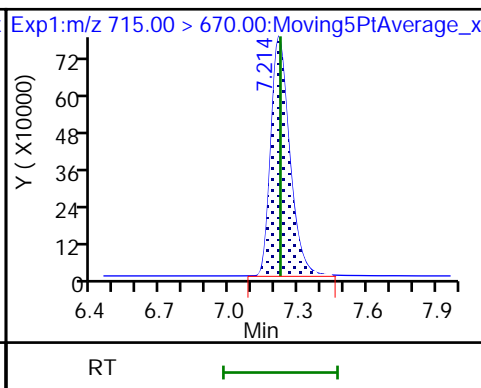
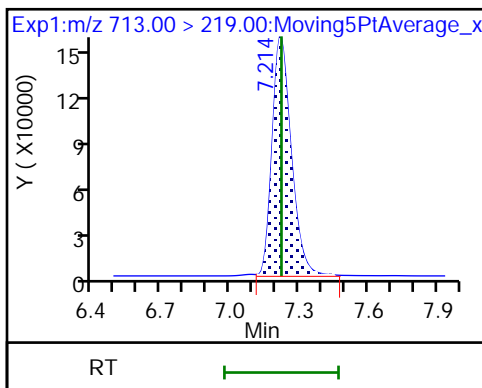
105 Perfluorotetradecanoic acid



105 Perfluorotetradecanoic acid

D 104 13C2 PFTeDA

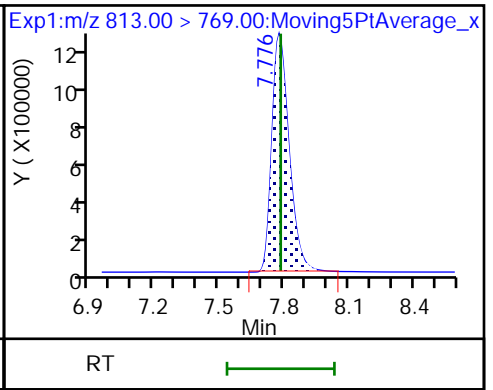
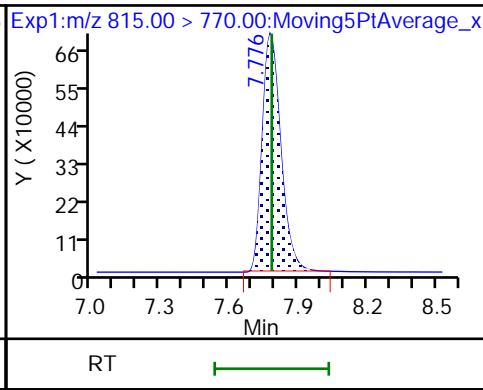
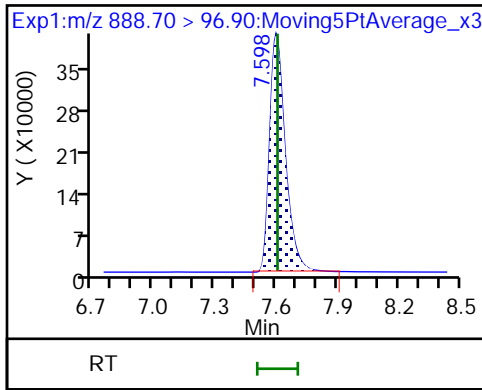
115 6:2/8:2 diPAP



115 6:2/8:2 diPAP

D 106 13C2 PFHxDA

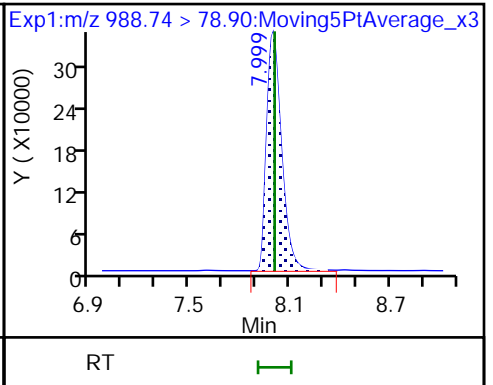
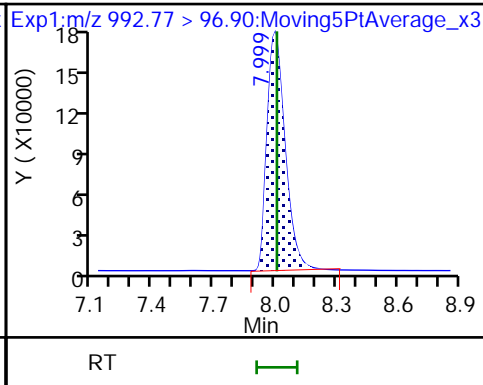
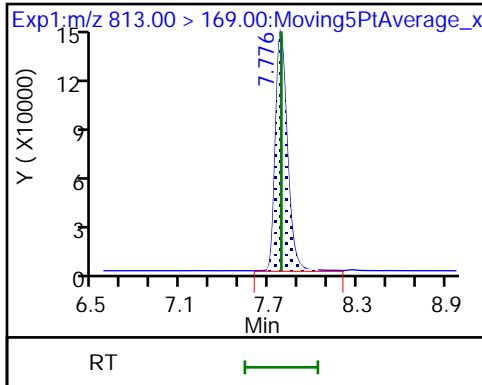
107 Perfluorohexadecanoic acid



107 Perfluorohexadecanoic acid

D 113 13C4-8:2 diPAP

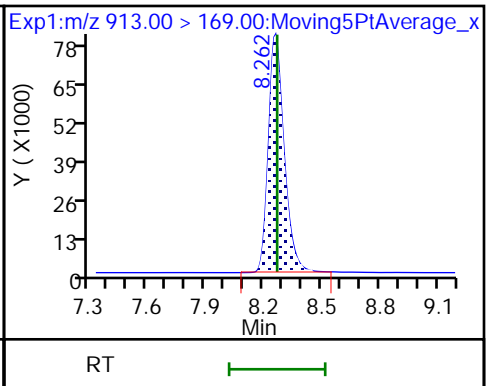
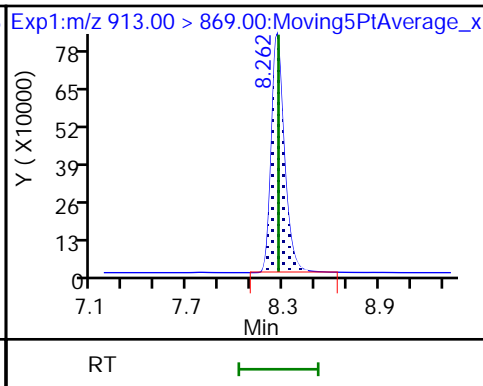
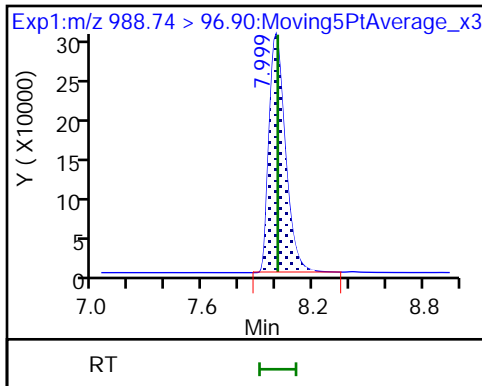
116 8:2 diPAP



116 8:2 diPAP

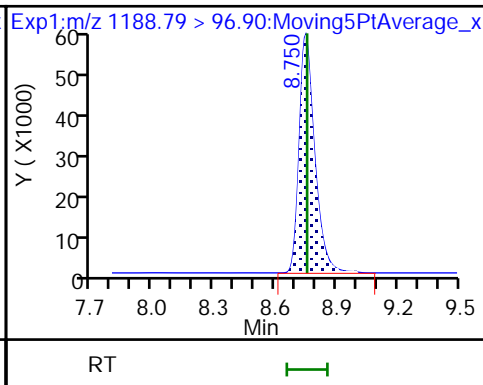
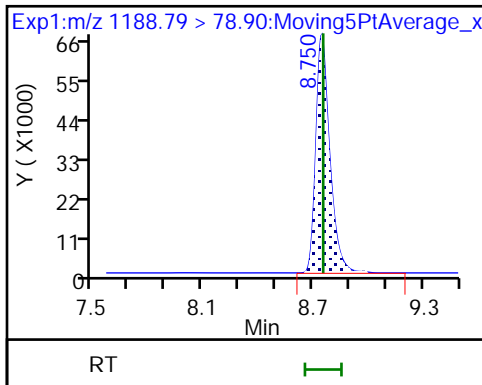
108 Perfluorooctadecanoic acid

108 Perfluorooctadecanoic acid



117 10:2 diPAP

117 10:2 diPAP



Eurofins Sacramento

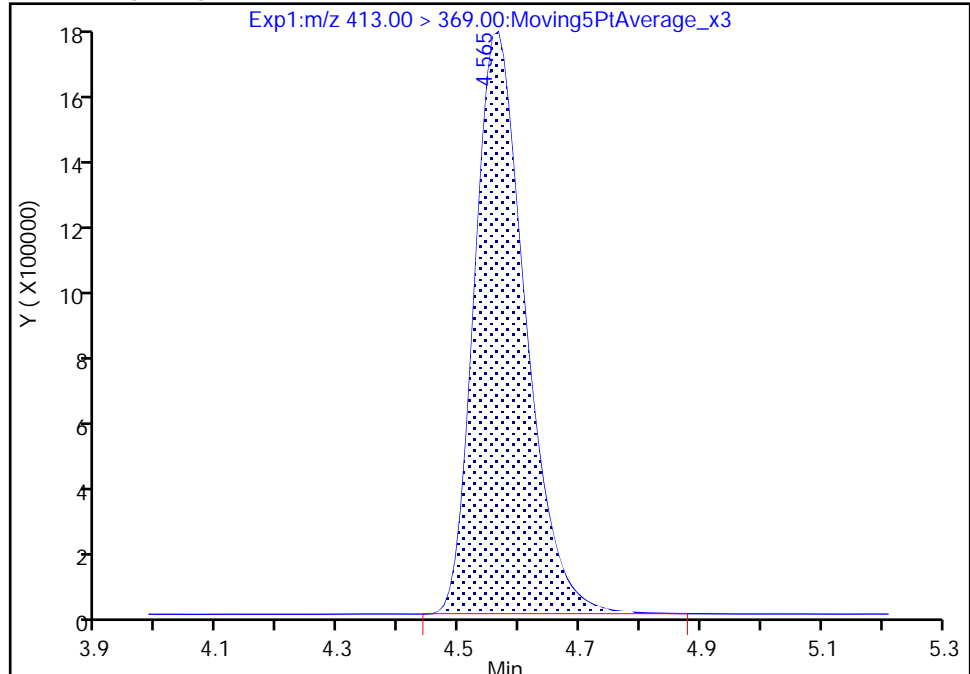
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Injection Date: 22-Dec-2022 15:33:30 Instrument ID: A18
Lims ID: CCV L5
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 53 Worklist Smp#: 20
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

58 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

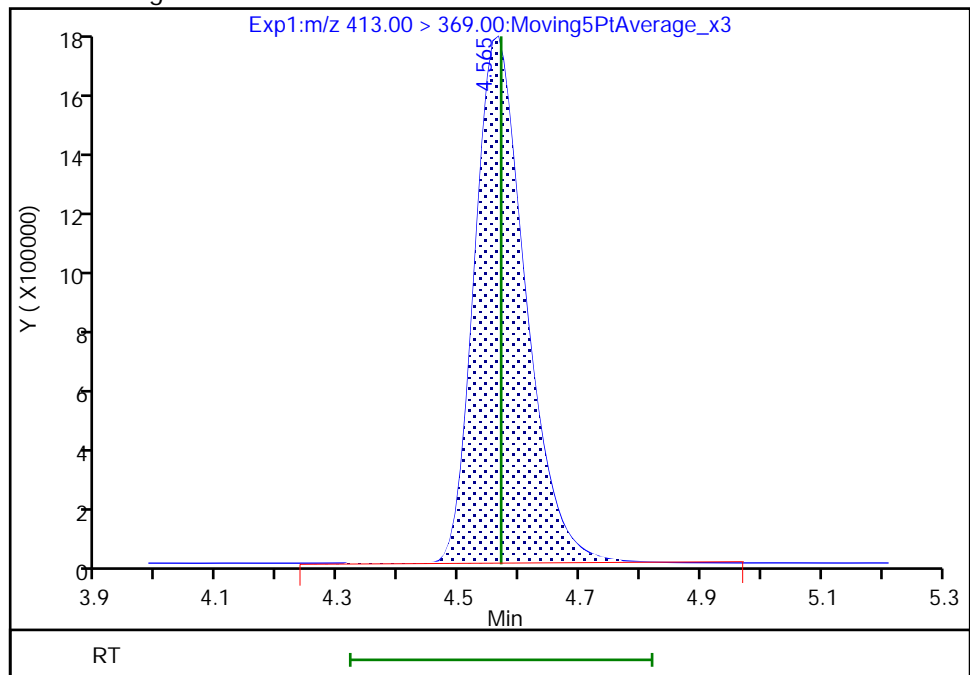
RT: 4.56
Area: 10352541
Amount: 2.540489
Amount Units: ng/ml

Processing Integration Results



RT: 4.56
Area: 10380619
Amount: 2.547379
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:35:33

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

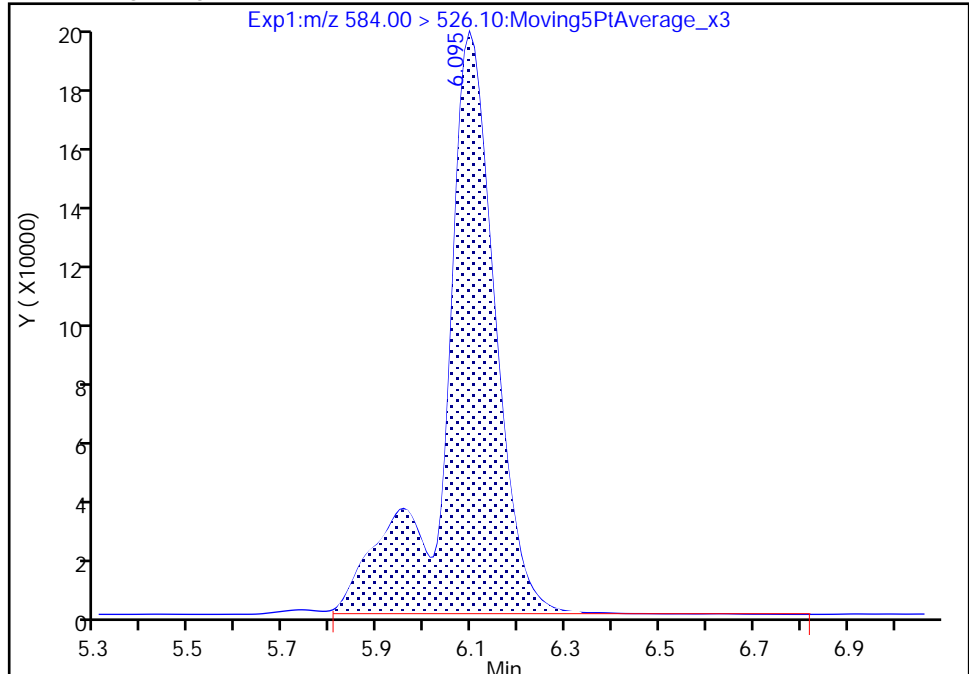
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Injection Date: 22-Dec-2022 15:33:30 Instrument ID: A18
Lims ID: CCV L5
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 53 Worklist Smp#: 20
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

84 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 2

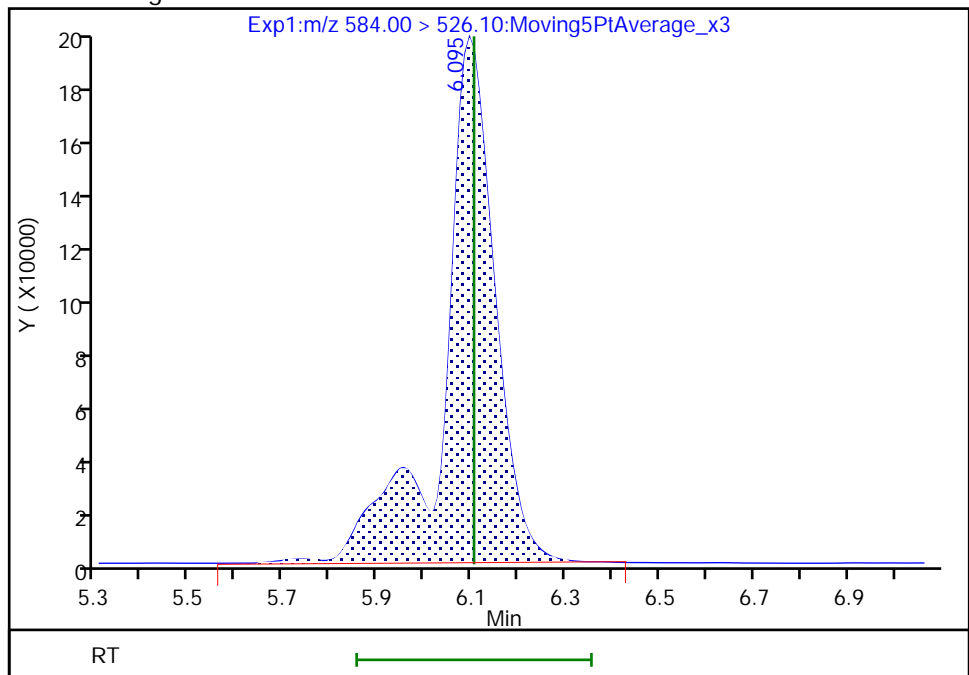
RT: 6.10
Area: 1464208
Amount: 2.498643
Amount Units: ng/ml

Processing Integration Results



RT: 6.10
Area: 1463870
Amount: 2.498643
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:35:54
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 1450 of 1632

12/29/2022
3:43 PM

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: CCV 320-642490/21 Calibration Date: 12/22/2022 15:43

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC_A_035.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
MTP	L1ID		0.0802		2.74	2.50	9.6	30.0
PFPrA	L1ID		0.8513		2.59	2.43	6.8	30.0
PFMOAA	AveID	0.5606	0.5470		2.44	2.50	-2.4	30.0
R-EVE	AveID	0.3419	0.3450		2.52	2.50	0.9	30.0
R-PSDA	AveID	0.1346	0.1508		2.80	2.50	12.0	30.0
Hydrolyzed PSDA	AveID	0.4284	0.4362		2.55	2.50	1.8	30.0
Perfluorobutanoic acid (PFBA)	AveID	1.112	1.087		2.45	2.50	-2.2	30.0
PMPA	AveID	1.149	1.199		2.61	2.50	4.3	30.0
PFPrS	AveID	0.9349	0.9499		2.34	2.30	1.6	30.0
NVHOS	AveID	0.0289	0.0272		2.35	2.50	-5.9	30.0
PFMPA	AveID	0.6578	0.7188		2.73	2.50	9.3	30.0
PFO2HxA	AveID	0.1374	0.1589		2.89	2.50	15.6	30.0
Perfluoropentanoic acid (PFPeA)	AveID	1.045	1.051		2.52	2.50	0.6	30.0
3:3 FTCA	AveID	0.0768	0.0854		2.78	2.50	11.1	30.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9820	0.9820		2.22	2.22	-0.0	30.0
PEPA	AveID	1.111	1.150		2.59	2.50	3.6	30.0
PFMBA	AveID	1.110	1.152		2.59	2.50	3.7	30.0
PFEEA	AveID	3.265	3.466		2.37	2.23	6.2	30.0
FBSA	AveID	0.3707	0.3939		2.66	2.50	6.3	30.0
NFDHA	AveID	0.1732	0.2008		2.90	2.50	16.0	30.0
4:2 FTS	AveID	2.336	2.438		2.45	2.35	4.3	30.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9423	0.9318		2.47	2.50	-1.1	30.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8041	0.8045		2.35	2.35	0.0	30.0
PFO3OA	AveID	0.0552	0.0546		2.47	2.50	-1.1	30.0
HFPO-DA (GenX)	AveID	1.057	1.133		2.68	2.50	7.2	30.0
R-PSDCA	AveID	0.2943	0.2738		2.33	2.50	-7.0	30.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9100	0.9586		2.63	2.50	5.3	30.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	0.9649	0.9717		2.30	2.28	0.7	30.0
Hydro-EVE Acid	AveID	1.386	1.439		2.59	2.50	3.8	30.0
Hydro-PS Acid	AveID	1.235	1.255		2.54	2.50	1.6	30.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	6.660	7.444		2.64	2.36	11.8	30.0
5:3 FTCA	AveID	3.349	3.612		2.70	2.50	7.9	30.0
PFPE-1	AveID	9.767	10.32		2.64	2.50	5.7	30.0
6:2 FTUCA	AveID	1.012	1.036		2.56	2.50	2.3	30.0
6:2 FTCA	AveID	0.2612	0.2938		2.81	2.50	12.5	30.0
PFO4DA	AveID	0.0555	0.0635		2.86	2.50	14.5	30.0
PS Acid	AveID	0.4158	0.4279		2.57	2.50	2.9	30.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: CCV 320-642490/21 Calibration Date: 12/22/2022 15:43

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC_A_035.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
EVE Acid	AveID	1.281	1.314		2.56	2.50	2.6	30.0
PFECHS	AveID	0.8798	0.8817		2.31	2.31	0.2	30.0
FHxSA	AveID	1.998	1.973		2.47	2.50	-1.2	30.0
6:2 FTS	AveID	2.031	2.228		2.61	2.38	9.7	50.0
Perfluorooctanoic acid (PFOA)	AveID	0.9328	0.9115		2.44	2.50	-2.3	30.0
Perfluoroheptanesulfonic acid (PFHpS)	AveID	1.200	1.265		2.51	2.39	5.4	30.0
PFO5DA	AveID	0.0374	0.0384		2.56	2.50	2.6	30.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.039	1.068		2.39	2.33	2.9	30.0
Perfluorononanoic acid (PFNA)	AveID	0.8673	0.9035		2.60	2.50	4.2	30.0
7:3 FTCA	AveID	5.294	6.387		3.02	2.50	20.6	30.0
8:2 FTUCA	AveID	0.9523	0.9761		2.56	2.50	2.5	30.0
8:2 FTCA	AveID	1.013	1.090		2.69	2.50	7.7	30.0
9Cl-PF3ONS	AveID	2.498	2.777		2.60	2.34	11.2	30.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9532	1.003		2.63	2.50	5.2	30.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7759	0.8649		2.68	2.41	11.5	30.0
8:2 FTS	AveID	1.647	1.652		2.41	2.40	0.3	30.0
Perfluorodecanoic acid (PFDA)	AveID	0.6577	0.7146		2.72	2.50	8.7	30.0
NMeFOSAA	AveID	0.7907	0.7801		2.47	2.50	-1.3	30.0
Perfluorodecanesulfonic acid (PFDS)	L1ID		0.8075		2.68	2.41	11.2	30.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.6838	0.7424		2.71	2.50	8.6	30.0
NETFOSAA	AveID	0.7522	0.7535		2.50	2.50	0.2	30.0
10:2 FTUCA	AveID	0.7067	0.7032		2.49	2.50	-0.5	30.0
10:2 FTCA	L1ID		0.9333		2.42	2.50	-3.0	30.0
11Cl-PF3OUdS	AveID	3.190	3.517		2.60	2.36	10.2	30.0
NMeFOSE	AveID	0.9853	0.9716		2.47	2.50	-1.4	30.0
NMeFOSA	AveID	0.9700	1.004		2.59	2.50	3.5	30.0
Perfluorododecanoic acid (PFDoA)	AveID	0.8630	0.8824		2.56	2.50	2.3	30.0
10:2 FTS	AveID	1.304	1.269		2.35	2.42	-2.7	30.0
NETFOSE	AveID	0.9495	1.023		2.69	2.50	7.7	30.0
NETFOSA	AveID	0.9338	0.9706		2.60	2.50	3.9	30.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2502	0.2776		2.69	2.43	10.9	30.0
Perfluorotridecanoic acid (PFTrDA)	AveID	0.7853	0.8395		2.67	2.50	6.9	30.0
6:2 Fluorotelomer phosphate diester	AveID	0.9649	1.001		2.52	2.43	3.7	30.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.0982	0.1026		2.61	2.50	4.5	30.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: CCV 320-642490/21 Calibration Date: 12/22/2022 15:43

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC_A_035.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
6:2/8:2 Fluorotelomer phosphate diester	AveID	0.9673	1.042		2.63	2.44	7.7	30.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.8256		2.40	2.50	-4.2	50.0
8:2 Fluorotelomer phosphate diester	AveID	0.9361	0.9922		2.59	2.45	6.0	30.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.4772	0.5418		2.84	2.50	13.5	50.0
10:2 Fluorotelomer phosphate diester	AveID	0.0970	0.1589		4.11	2.51	63.7*	30.0
13C4 PFBA	Ave	0.8859	0.9523		1.34	1.25	7.5	50.0
13C5 PFPeA	Ave	0.7929	0.8035		1.27	1.25	1.3	50.0
13C3 PFBS	Ave	0.5464	0.5499		1.17	1.17	0.6	50.0
M2-4:2 FTS	Ave	0.1273	0.1172		1.08	1.17	-7.9	50.0
13C2 PFHxA	Ave	0.8726	0.8969		1.28	1.25	2.8	50.0
13C3 HFPO-DA	Ave	0.0293	0.0296		1.26	1.25	1.2	50.0
13C4 PFHpA	Ave	0.9246	0.9537		1.29	1.25	3.1	50.0
18O2 PFHxS	Ave	0.3615	0.3585		1.17	1.18	-0.8	50.0
13C-6:2 FTUCA	Ave	0.5484	0.5516		1.26	1.25	0.6	50.0
13C-6:2 FTCA	Ave	0.0424	0.0401		1.18	1.25	-5.5	50.0
M2-6:2 FTS	Ave	0.1342	0.1222		1.08	1.19	-8.9	50.0
13C4 PFOA	Ave	1.010	1.033		1.28	1.25	2.3	50.0
13C4 PFOS	Ave	0.2437	0.2302		1.13	1.20	-5.5	50.0
13C5 PFNA	Ave	0.9888	0.997		1.26	1.25	0.8	50.0
13C-8:2 FTUCA	Ave	0.5900	0.5814		1.23	1.25	-1.5	50.0
13C-8:2 FTCA	Ave	0.0317	0.0277		1.09	1.25	-12.6	50.0
13C8 FOSA	Ave	0.3238	0.3250		1.25	1.25	0.4	50.0
M2-8:2 FTS	Ave	0.1350	0.1251		1.11	1.20	-7.3	50.0
13C2 PFDA	Ave	0.9539	1.002		1.31	1.25	5.1	50.0
d3-NMeFOSAA	Ave	0.1322	0.1305		1.23	1.25	-1.3	50.0
13C2 PFUnA	Ave	0.8946	0.8905		1.24	1.25	-0.5	50.0
d5-NEtFOSAA	Ave	0.1326	0.1340		1.26	1.25	1.0	50.0
13C-10:2 FTUCA	Ave	0.5322	0.5474		1.29	1.25	2.9	50.0
13C-10:2 FTCA	Ave	0.0178	0.0177		1.25	1.25	-0.4	50.0
d7-N-MeFOSE-M	Ave	0.1590	0.1731		1.36	1.25	8.9	50.0
d-N-MeFOSA-M	Ave	0.1053	0.1068		1.27	1.25	1.5	50.0
13C2 PFDoA	Ave	0.9837	1.032		1.31	1.25	4.9	50.0
13C2 10:2 FTS	Ave	0.1260	0.1263		1.21	1.21	0.2	50.0
d9-N-EtFOSE-M	Ave	0.1840	0.1976		1.34	1.25	7.4	50.0
d-N-EtFOSA-M	Ave	0.0980	0.1038		1.32	1.25	5.9	50.0
13C4-6:2 Fluorotelomer phosphate diester	Ave	0.2865	0.2888		1.23	1.22	0.8	50.0
13C2 PFTeDA	Ave	0.8532	0.8372		1.23	1.25	-1.9	50.0
13C2 PFHxDA	Ave	0.7395	0.7763		1.31	1.25	5.0	50.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
SDG No.: _____
Lab Sample ID: CCV 320-642490/21 Calibration Date: 12/22/2022 15:43
Instrument ID: A18 Calib Start Date: 12/21/2022 12:10
GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11
Lab File ID: 2022.12.21_A18_PFC_A_035.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4-8:2 Fluorotelomer phosphate diester	Ave	0.2076	0.2057		1.21	1.22	-0.9	50.0

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_035.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 22-Dec-2022 15:43:39 ALS Bottle#: 53 Worklist Smp#: 21
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5 (09)
 Misc. Info.: Plate: 3 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Sublist: chrom-PFAS+_A18*sub3
 Method: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 23-Dec-2022 12:37:34 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1657

First Level Reviewer: sanjumnair

Date: 23-Dec-2022 12:37:34

Ratio Calibration: Initial Calibration Level: 4

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 MTP										
175.00 > 97.00	1.429	1.445	-0.016	0.535	828622	2.74		110	2480	
2 PPF Acid										M
162.95 > 119.00	1.858	1.875	-0.017	0.696	8536073	2.59		107	613	M
3 PFMOAA										M
179.00 > 84.90	2.367	2.386	-0.019	0.886	5654580	2.44		97.6	1077	M
4 R-PSDA										
441.00 > 241.00	2.552	2.560	-0.008	0.956	1558689	2.80		112	23914	
5 R-EVE										
405.00 > 217.00	2.552	2.568	-0.016	0.956	3566154	2.52		101	43589	
6 Hydrolyzed PSDA										
439.10 > 342.90	2.560	2.568	-0.008	0.959	4509705	2.55		102	55104	
D 8 13C4 PFBA										
217.00 > 172.00	2.670	2.678	-0.008	0.585	5168812	1.34		108	15568	
7 Perfluorobutanoic acid										
212.90 > 169.00	2.670	2.678	-0.008	1.000	11239487	2.45		97.8	333	
10 PMPA										
229.00 > 185.00	2.741	2.750	-0.009	1.027	12396417	2.61		104	6928	
11 PFPrS										
249.10 > 80.00	2.750	2.750	0.0	0.891	5216890	2.34		102	28510	
12 NVHOS										
297.00 > 135.00	2.769	2.777	-0.008	1.037	280987	2.35		94.1	4409	
13 PFECA F										
229.00 > 85.00	2.805	2.814	-0.009	0.923	6269233	2.73		109	22305	
14 PFO2HxA										
245.00 > 85.00	2.945	2.953	-0.008	0.969	1385876	2.89		116	4670	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 16 13C5 PFPeA										
267.90 > 223.00	3.039	3.048	-0.009	0.666	4361039	1.27		101	32270	
15 Perfluoropentanoic acid										
262.90 > 219.00	3.039	3.048	-0.009	1.000	9168755	2.52		101	15086	
17 3:3 FTCA										
241.00 > 177.10	3.049	3.057	-0.008	0.988	509622	2.78	Target=1.29	111	5924	
241.00 > 116.90	3.049	3.057	-0.008	0.988	392335		1.30(0.64-1.93)		2580	
19 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.085	3.085	0.0	1.000	5205242	2.22	Target=2.33	100	19756	
298.90 > 99.00	3.085	3.085	0.0	1.000	2276721		2.29(1.16-3.49)		8290	
D 18 13C3 PFBS										
301.90 > 80.00	3.085	3.085	0.0	0.676	2781758	1.17		101	15179	
20 PEPA										
278.90 > 234.90	3.142	3.152	-0.010	1.034	10033448	2.59		104	2022	
21 PFECA A										
278.95 > 84.90	3.161	3.171	-0.010	1.040	10043510	2.59		104	55840	
22 PES										
314.80 > 135.00	3.260	3.268	-0.008	1.057	18457618	2.37		106	124827	
23 FBSA										
297.90 > 78.00	3.315	3.323	-0.008	0.592	1389585	2.66		106	15271	
24 PFECA B										
295.20 > 201.00	3.395	3.403	-0.008	0.977	1955242	2.90		116	35954	
26 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.431	3.430	0.001	1.003	2908195	2.45	Target=1.90	104	64364	
327.00 > 79.96	3.431	3.430	0.001	1.003	1441985		2.02(0.95-2.85)		14743	
D 25 M2-4:2 FTS										
329.00 > 81.00	3.422	3.430	-0.008	0.750	596545	1.08		92.1	3760	
28 Perfluorohexanoic acid										
313.00 > 269.00	3.476	3.483	-0.007	1.000	9071938	2.47	Target=13.49	98.9	9343	
313.00 > 119.00	3.476	3.483	-0.007	1.000	668713		13.57(6.75-20.24)		6968	
D 27 13C2 PFHxA										
315.00 > 270.00	3.476	3.483	-0.007	0.762	4867899	1.28		103	29311	
29 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.511	3.510	0.001	1.138	4514422	2.35	Target=3.01	100	34712	
349.00 > 99.00	3.511	3.510	0.001	1.138	1427347		3.16(1.50-4.51)		17900	
30 PFO3OA										
311.10 > 85.20	3.556	3.555	0.001	1.023	531953	2.47		98.9	9250	
31 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.641	3.648	-0.007	1.000	364662	2.68	Target=0.88	107	15871	
285.00 > 185.00	3.641	3.648	-0.007	1.000	420627		0.87(0.44-1.31)		5234	
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.641	3.648	-0.007	0.798	160925	1.26		101	5585	
33 R-PSDCA										
397.00 > 217.00	3.955	3.963	-0.008	0.988	2834117	2.33		93.0	52764	
D 35 13C4 PFHpA										
367.00 > 322.00	4.002	4.009	-0.007	0.877	5176056	1.29		103	23910	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
36 Perfluoroheptanoic acid										
363.00 > 319.00	4.002	4.009	-0.007	1.000	9923719	2.63	Target=3.51	105	12916	
363.00 > 169.00	4.002	4.009	-0.007	1.000	2620505		3.79(1.75-5.26)		14302	
38 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.019	4.027	-0.008	1.000	3448390	2.30	Target=3.29	101	35417	
399.00 > 99.00	4.019	4.027	-0.008	1.000	1006929		3.42(1.64-4.93)		5987	
D 37 18O2 PFHxS										
403.00 > 84.00	4.019	4.027	-0.008	0.881	1840630	1.17		99.2	18466	
34 Hydro-EVE Acid										
427.00 > 282.90	4.045	4.052	-0.007	1.011	14891717	2.59		104	43518	
39 Hydro-PS Acid										
463.00 > 263.00	4.070	4.077	-0.007	1.017	12987805	2.54		102	184046	
41 5:3 FTCA										
340.88 > 236.90	4.079	4.086	-0.007	0.979	1572444	2.70	Target=1.13	108	15684	
340.88 > 216.90	4.079	4.086	-0.007	0.979	1432322		1.10(0.56-1.69)		8695	
40 DONA										
377.00 > 251.00	4.079	4.094	-0.015	0.798	17563363	2.64	Target=2.17	112	43297	
377.00 > 85.00	4.079	4.094	-0.015	0.798	7690798		2.28(1.09-3.26)		821	
42 PFECA G										
378.90 > 184.90	4.113	4.120	-0.007	0.988	4492261	2.64		106	26939	
43 6:2 FTUCA										
356.86 > 292.90	4.138	4.145	-0.007	1.000	6202679	2.56	Target=14.13	102	22435	
356.86 > 243.00	4.138	4.145	-0.007	1.000	448620		13.83(7.07-21.20)		9289	
D 44 13C-6:2 FTUCA										
358.86 > 293.90	4.138	4.145	-0.007	0.907	2994076	1.26		101	33991	
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.164	4.171	-0.007	0.913	217664	1.18		94.5	862	
45 6:2 FTCA										
377.10 > 313.10	4.164	4.171	-0.007	1.000	127883	2.81	Target=0.64	112	3649	
377.10 > 63.00	4.164	4.171	-0.007	1.000	189438		0.68(0.32-0.96)		6561	
47 PFO4DA										
376.90 > 85.00	4.270	4.271	-0.001	1.067	657332	2.86		114	0.8	
48 PS Acid										
442.80 > 146.80	4.368	4.374	-0.006	0.957	4799750	2.57		103	14035	
49 EVE Acid										
407.00 > 262.90	4.377	4.383	-0.006	0.959	14733969	2.56		103	48662	
51 PFECHS										
460.80 > 380.90	4.483	4.490	-0.007	0.982	9137987	2.31	Target=2.14	100	48076	
460.80 > 98.90	4.483	4.490	-0.007	0.982	4432174		2.06(1.07-3.21)		55346	
50 FHxSA										
397.90 > 78.00	4.492	4.490	0.002	0.802	6959797	2.47		98.8	16781	
53 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.528	4.535	-0.007	1.000	2814352	2.61	Target=2.29	110	32225	
427.00 > 79.96	4.528	4.535	-0.007	1.000	1089845		2.58(1.15-3.44)		9706	
D 52 M2-6:2 FTS										
429.00 > 81.00	4.528	4.535	-0.007	0.992	630241	1.08		91.1	13429	
\$ 54 13C8 PFOA										
421.00 > 376.00	4.563	4.569	-0.006	1.000	4470411	1.24		99.3	17429	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 56 13C4 PFOA										
417.00 > 372.00	4.563	4.569	-0.006	1.000	5608124	1.28		102	15622	
58 Perfluorooctanoic acid										M
413.00 > 369.00	4.563	4.569	-0.006	1.000	10223080	2.44	Target=2.76	97.7	6462	M
413.00 > 169.00	4.563	4.569	-0.006	1.000	3958775		2.58(1.38-4.14)		21789	
* 55 13C2 PFOA										
415.00 > 370.00	4.563	4.569	-0.006		5427508	1.25			25004	
57 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.572	4.578	-0.006	0.895	3016441	2.51	Target=4.72	105	19920	
449.00 > 99.00	4.563	4.578	-0.015	0.893	613550		4.92(2.36-7.08)		9572	
59 TAF										
442.90 > 85.00	4.977	4.983	-0.006	1.091	430196	2.56		103	7982	
D 61 13C4 PFOS										
503.00 > 80.00	5.111	5.116	-0.005	1.120	1197157	1.13		94.5	6926	
\$ 60 13C8 PFOS										
507.00 > 99.00	5.111	5.116	-0.005	1.120	528910	1.17		97.6	7960	
62 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.111	5.116	-0.005	1.000	2483402	2.39	Target=4.87	103	6031	
499.00 > 99.00	5.111	5.116	-0.005	1.000	518155		4.79(2.43-7.30)		8971	
D 64 13C5 PFNA										
468.00 > 423.00	5.118	5.123	-0.005	1.121	5409092	1.26		101	30801	
63 Perfluorononanoic acid										
463.00 > 419.00	5.118	5.123	-0.005	1.000	9774384	2.60	Target=7.86	104	11835	
463.00 > 169.00	5.118	5.123	-0.005	1.000	1257289		7.77(3.93-11.78)		14708	
65 7:3 FTCA										
441.00 > 337.00	5.238	5.246	-0.008	0.988	1920791	3.02	Target=1.24	121	8340	
441.00 > 317.00	5.238	5.246	-0.008	0.988	1613884		1.19(0.62-1.87)		5582	
D 67 13C-8:2 FTUCA										
458.86 > 393.90	5.276	5.284	-0.008	1.156	3155543	1.23		98.5	10798	
66 8:2 FTUCA										
456.86 > 392.90	5.276	5.284	-0.008	1.000	6160058	2.56	Target=35.99	102	24035	
456.86 > 343.00	5.276	5.284	-0.008	1.000	178849		34.44(17.99-53.98)		5969	
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.304	5.312	-0.008	1.162	150372	1.09		87.4	602	
69 8:2 FTCA										
477.00 > 393.10	5.304	5.321	-0.017	1.000	327947	2.69	Target=2.79	108	524	
477.00 > 63.20	5.304	5.321	-0.017	1.000	126028		2.60(1.39-4.18)		2617	
70 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	5.410	5.417	-0.007	1.059	6482916	2.60		111	47274	
D 72 13C8 FOSA										
506.00 > 78.00	5.598	5.605	-0.007	1.227	1763744	1.25		100	10617	
73 Perfluorononanesulfonic acid										
549.00 > 80.00	5.606	5.613	-0.007	1.097	2079434	2.68	Target=2.88	111	19674	
549.00 > 99.00	5.606	5.613	-0.007	1.097	714068		2.91(1.44-4.32)		14348	
71 Perfluorooctanesulfonamide										
498.00 > 78.00	5.598	5.613	-0.015	1.000	3537735	2.63		105	23645	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.614	5.621	-0.007	1.230	652023	1.11		92.7	9747	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	5.614	5.621	-0.007	1.000	2154419	2.41	Target=2.38	100	28776	
527.00 > 79.96	5.614	5.621	-0.007	1.000	936028		2.30(1.19-3.58)		10321	
D 76 13C2 PFDA										
515.00 > 470.00	5.622	5.630	-0.008	1.232	5439272	1.31		105	38284	
77 Perfluorodecanoic acid										
513.00 > 469.00	5.622	5.638	-0.016	1.000	7774320	2.72	Target=7.41	109	12989	
513.00 > 169.00	5.622	5.638	-0.016	1.000	975399		7.97(3.70-11.11)		12445	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.850	5.858	-0.008	1.282	708298	1.23		98.7	2691	
79 N-methylperfluorooctanesulfonami										
570.00 > 419.00	5.858	5.866	-0.008	1.001	1105044	2.47	Target=0.78	98.7	7994	
570.00 > 483.00	5.858	5.866	-0.008	1.001	1477339		0.75(0.39-1.17)		8093	
80 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.060	6.067	-0.007	1.186	1945620	2.68	Target=2.82	111	28530	
599.00 > 99.00	6.060	6.067	-0.007	1.186	644156		3.02(1.41-4.23)		16134	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.086	6.095	-0.009	1.334	727043	1.26		101	2712	
D 82 13C2 PFUnA										
565.00 > 520.00	6.086	6.095	-0.009	1.334	4833237	1.24		99.5	21751	
83 Perfluoroundecanoic acid										
563.00 > 519.00	6.086	6.095	-0.009	1.000	7176615	2.71	Target=7.89	109	30822	
563.00 > 169.00	6.086	6.095	-0.009	1.000	848315		8.46(3.95-11.84)		9578	
84 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	6.096	6.105	-0.009	1.002	1095639	2.50	Target=0.75	100	5679	M
584.00 > 526.10	6.096	6.105	-0.009	1.002	1427354		0.77(0.38-1.13)		5989	M
D 89 13C-10:2 FTUCA										
558.86 > 493.90	6.249	6.266	-0.017	1.369	2971137	1.29		103	11816	
90 10:2 FTUCA										
556.86 > 492.90	6.258	6.266	-0.008	1.001	4178797	2.49		99.5	23995	
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.267	6.275	-0.008	1.373	96184	1.25		99.6	418	
92 10:2 FTCA										
576.80 > 493.00	6.267	6.284	-0.017	1.000	179543	2.42	Target=2.41	97.0	861	
576.80 > 63.10	6.276	6.284	-0.008	1.001	80743		2.22(1.20-3.61)		374	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.311	6.319	-0.008	1.383	939317	1.36		109	8872	
93 11-Chloroeicosafuoro-3-oxaundec										
631.00 > 451.00	6.311	6.319	-0.008	1.235	8296966	2.60		110	46656	
86 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	6.329	6.337	-0.008	1.003	1825241	2.47		98.6	7468	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.329	6.337	-0.008	1.387	579873	1.27		102	2390	
88 NMeFOSA										
512.00 > 169.00	6.338	6.346	-0.008	1.001	1164201	2.59	Target=2.06	103	2653	
512.00 > 218.99	6.338	6.346	-0.008	1.001	572870		2.03(1.03-3.09)		4286	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
99 Perfluorododecanoic acid										
613.00 > 569.00	6.506	6.515	-0.009	1.000	9882534	2.56	Target=7.83	102	13815	
613.00 > 169.00	6.506	6.515	-0.009	1.000	1267829		7.79(3.91-11.74)		14085	
D 98 13C2 PFDaA										
615.00 > 570.00	6.506	6.515	-0.009	1.426	5599779	1.31		105	22760	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.516	6.525	-0.009	1.428	661310	1.21		100	15117	
101 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	6.526	6.535	-0.009	1.002	1679768	2.35	Target=1.80	97.3	8839	
627.00 > 79.96	6.526	6.535	-0.009	1.002	1019330		1.65(0.90-2.70)		12884	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.566	6.575	-0.009	1.439	1072720	1.34		107	5811	
95 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	6.585	6.595	-0.010	1.003	2194231	2.69		108	12446	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.595	6.605	-0.010	1.445	563375	1.32		106	1858	
97 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	6.605	6.615	-0.010	1.002	1093573	2.60	Target=1.83	104	6436	
526.00 > 218.99	6.605	6.615	-0.010	1.002	587237		1.86(0.92-2.75)		5427	
102 Perfluorododecanesulfonic acid (
699.00 > 80.00	6.841	6.852	-0.011	1.339	672965	2.69	Target=0.66	111	11151	
699.00 > 99.00	6.841	6.852	-0.011	1.339	868303		0.78(0.33-0.99)		11814	
103 Perfluorotridecanoic acid										
663.00 > 619.00	6.880	6.889	-0.009	1.058	9402453	2.67	Target=6.66	107	12519	
663.00 > 169.00	6.871	6.889	-0.018	1.056	1155431		8.14(3.33-9.99)		8992	
D 112 13C4-6:2 diPAP										
792.82 > 78.90	7.106	7.118	-0.012	1.557	1525078	1.23		101	3704	
114 6:2 diPAP										
788.79 > 78.90	7.112	7.125	-0.013	1.001	3053016	2.52	Target=1.89	104	3063	
788.79 > 96.90	7.112	7.125	-0.013	1.001	1685128		1.81(0.95-2.84)		2773	
105 Perfluorotetradecanoic acid										
713.00 > 169.00	7.214	7.222	-0.008	1.000	932223	2.61	Target=0.92	105	6050	
713.00 > 219.00	7.214	7.222	-0.008	1.000	950489		0.98(0.46-1.38)		2921	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.214	7.222	-0.008	1.581	4544051	1.23		98.1	6921	
115 6:2/8:2 diPAP										
888.70 > 78.90	7.591	7.605	-0.014	1.068	3186695	2.63	Target=1.35	108	6553	
888.70 > 96.90	7.591	7.605	-0.014	1.068	2318828		1.37(0.68-2.03)		5159	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.777	7.784	-0.007	1.704	4213313	1.31		105	5709	
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.777	7.784	-0.007	1.000	6957441	2.40	Target=8.78	95.8	5231	
813.00 > 169.00	7.777	7.784	-0.007	1.000	811942		8.57(4.39-13.18)		6670	
D 113 13C4-8:2 diPAP										
992.77 > 96.90	7.988	8.007	-0.019	1.751	1092103	1.21		99.1	2833	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
116 8:2 diPAP										
988.74 > 78.90	7.988	8.007	-0.019	1.000	2166945	2.59	Target=1.18	106	3443	
988.74 > 96.90	7.999	8.007	-0.008	1.001	1818531		1.19(0.59-1.77)		4588	
108 Perfluorooctadecanoic acid										
913.00 > 869.00	8.253	8.269	-0.016	1.061	4565958	2.84	Target=10.05	114	3530	
913.00 > 169.00	8.253	8.269	-0.016	1.061	435942		10.47(5.02-15.07)		3626	
117 10:2 diPAP										
1188.79 > 78.90	8.744	8.756	-0.012	1.095	356451	4.11	Target=1.13	164	8518	
1188.79 > 96.90	8.744	8.756	-0.012	1.095	313179		1.14(0.57-1.70)		5970	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

LCPFC+6C_LL5_00009

Amount Added: 1.00

Units: mL

Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_035.d

Injection Date: 22-Dec-2022 15:43:39

Instrument ID: A18

Lims ID: CCV L5

Client ID:

Operator ID: TAISACA18-PC\A-18

ALS Bottle#: 53

Worklist Smp#: 21

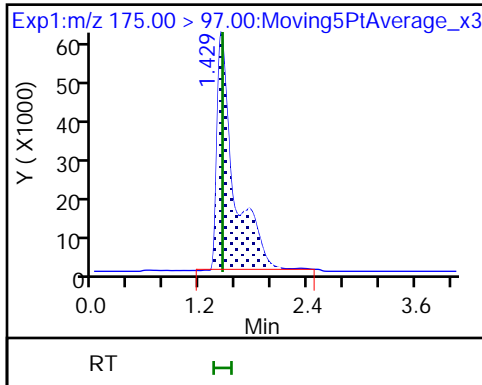
Injection Vol: 20.0 ul

Dil. Factor: 1.0000

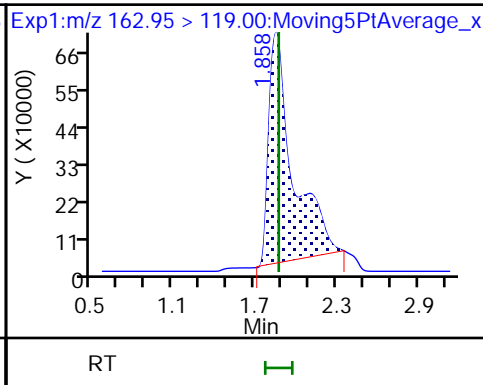
Method: PFAS+_A18

Limit Group: LC PFC ICAL

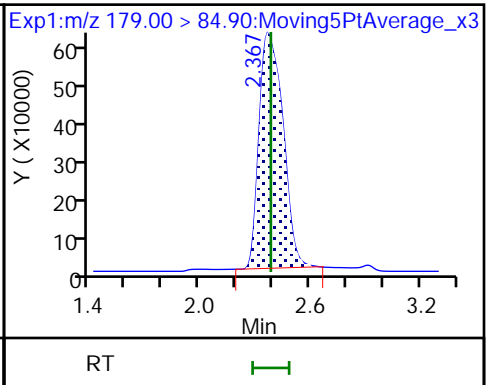
1 MTP



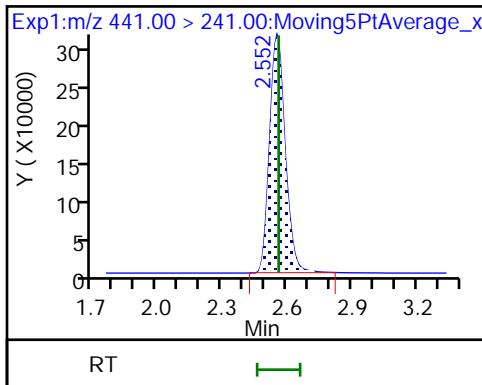
2 PPF Acid (M)



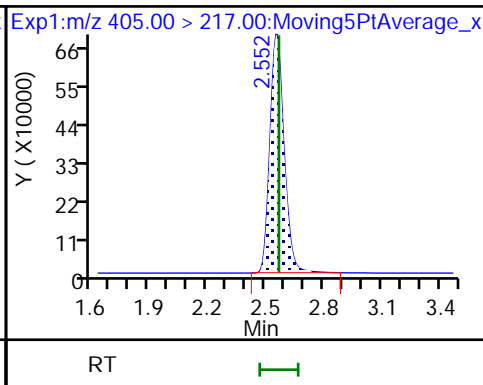
3 PFMOAA (M)



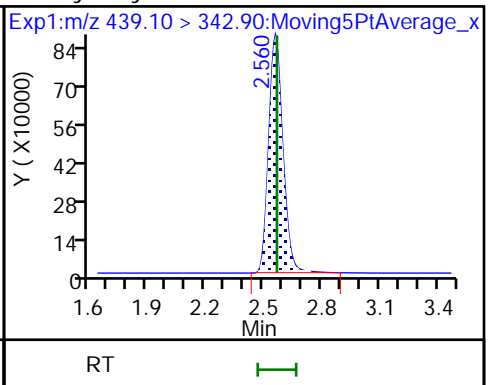
4 R-PSDA



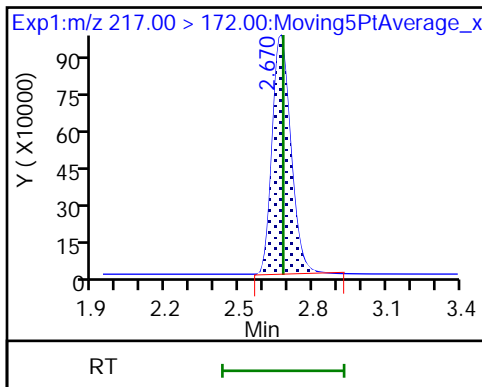
5 R-EVE



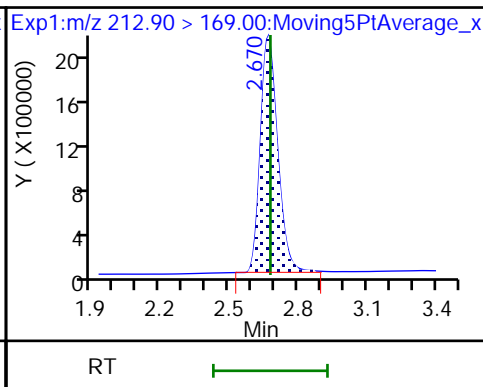
6 Hydrolyzed PSDA



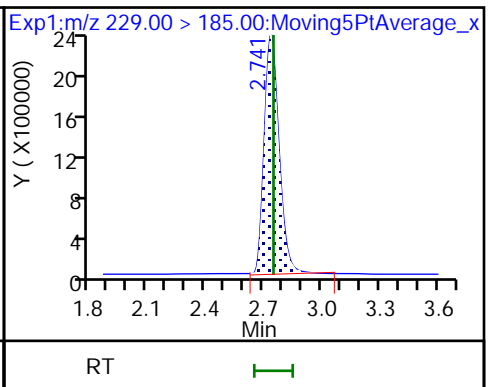
D 8 13C4 PFBA



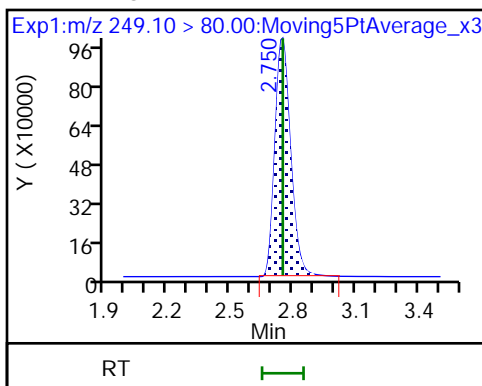
7 Perfluorobutanoic acid



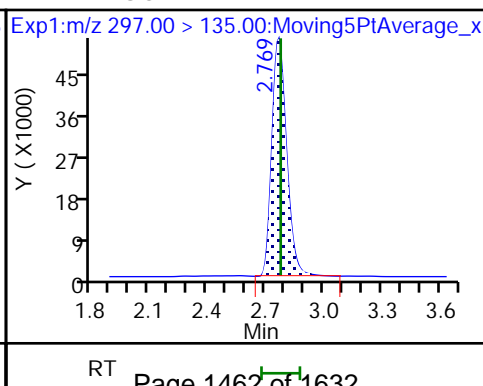
10 PMPA



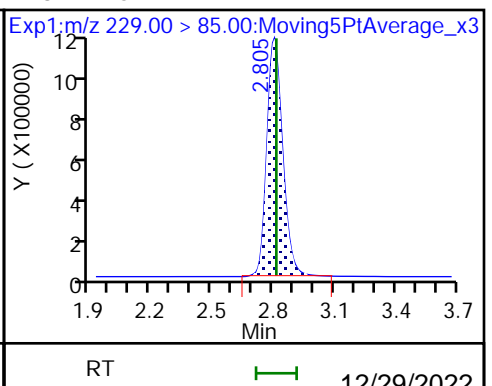
11 PFPrS

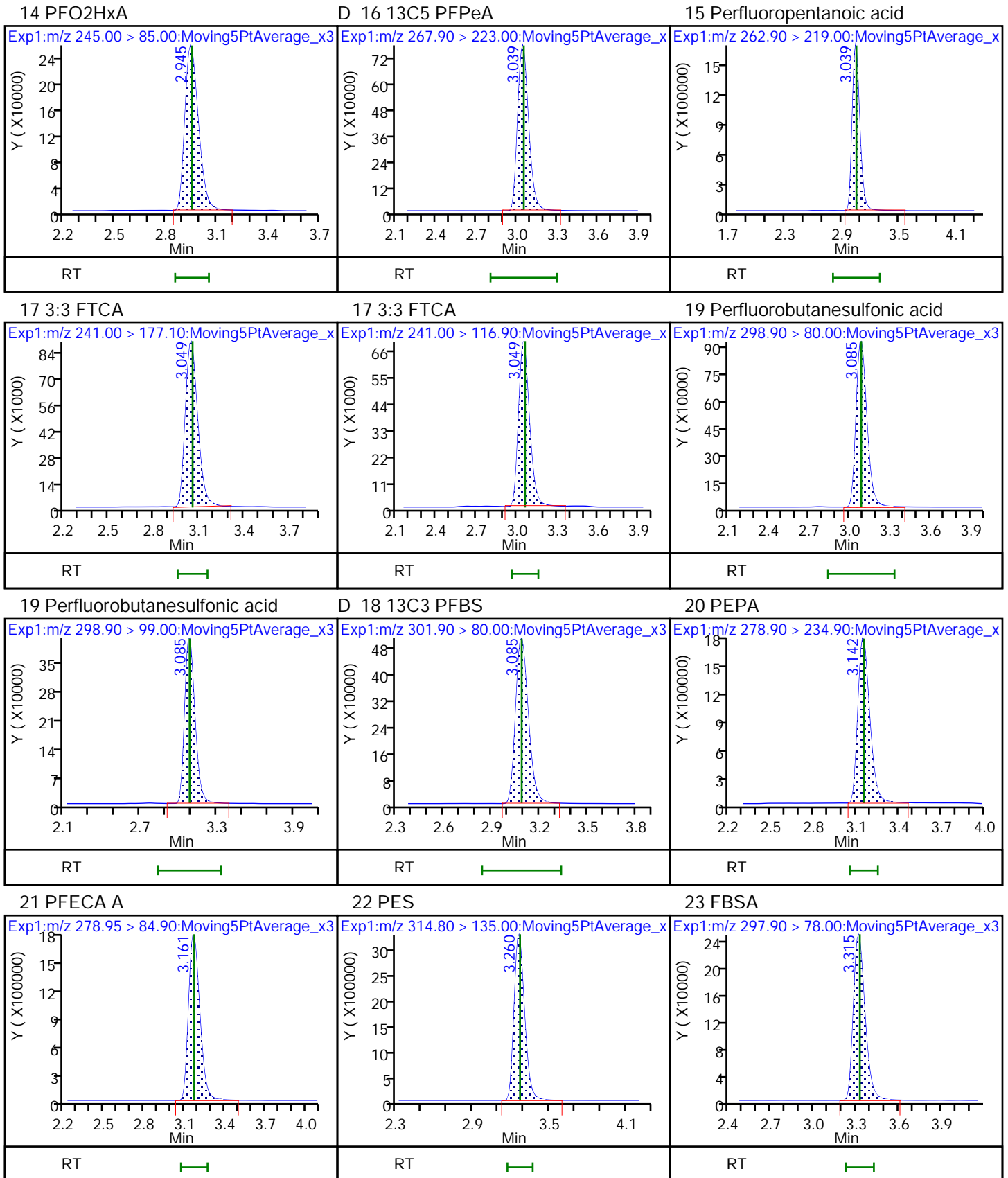


12 NVHOS



13 PFECA F

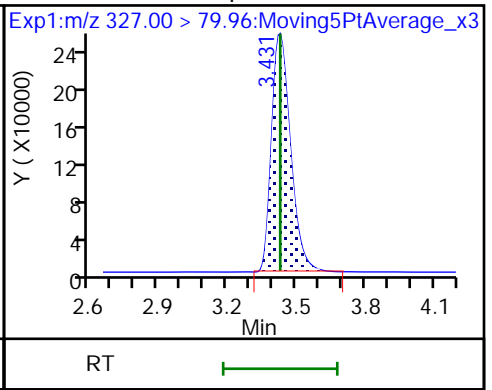
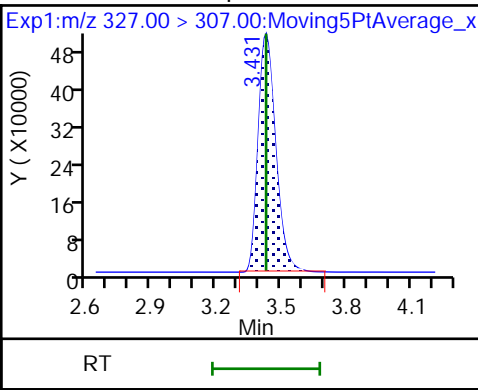
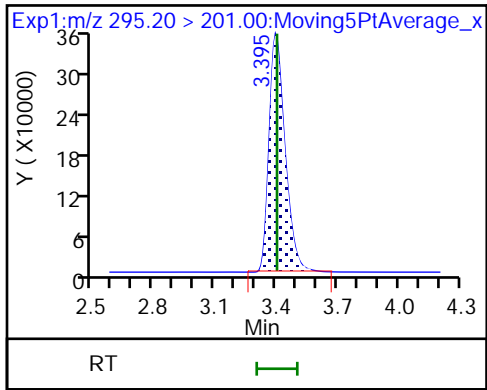




24 PFECAB

26 1H,1H,2H,2H-perfluorohexanesulfo

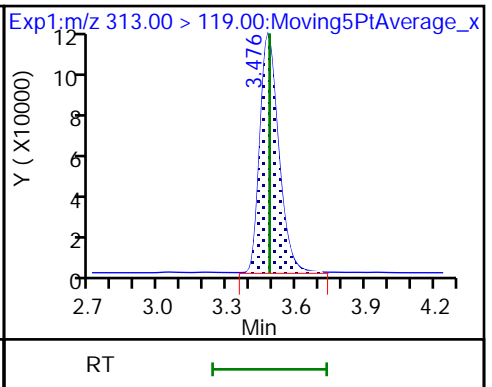
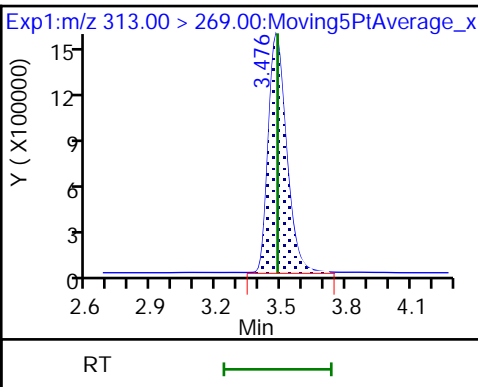
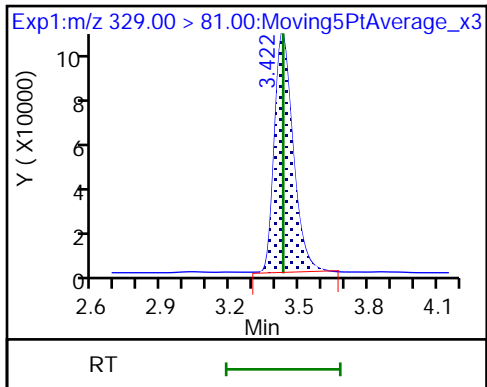
26 1H,1H,2H,2H-perfluorohexanesulfo



D 25 M2-4:2 FTS

28 Perfluorohexanoic acid

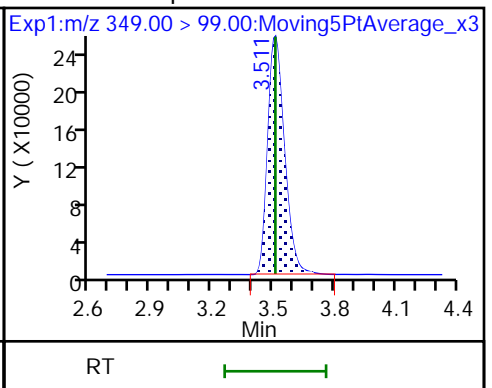
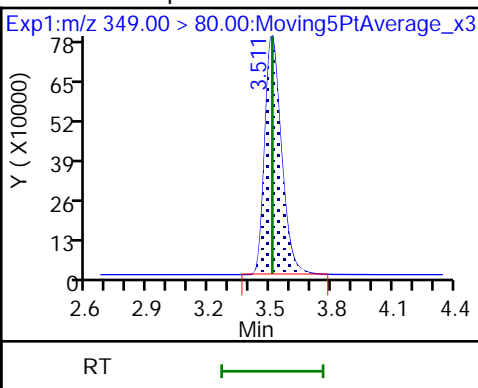
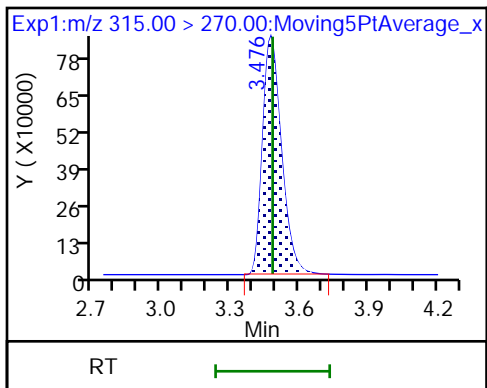
28 Perfluorohexanoic acid



D 27 13C2 PFHxA

29 Perfluoropentanesulfonic acid

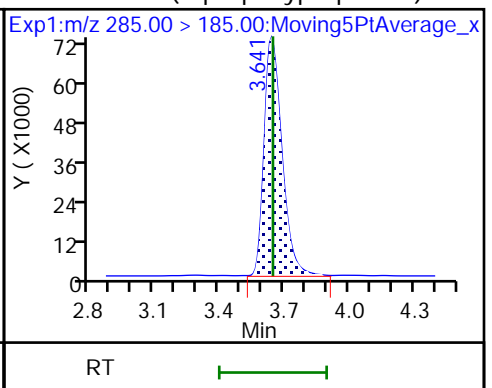
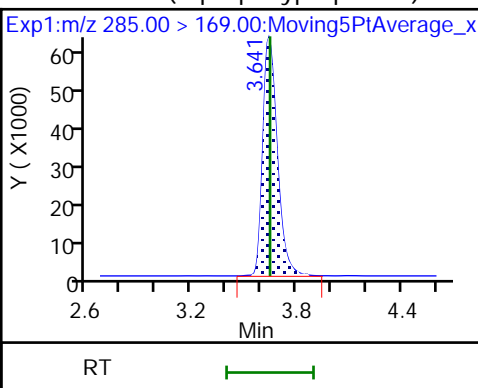
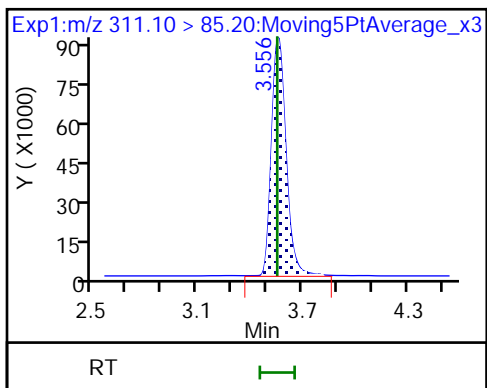
29 Perfluoropentanesulfonic acid



30 PFO3OA

31 Perfluoro(2-propoxypropanoic) ac

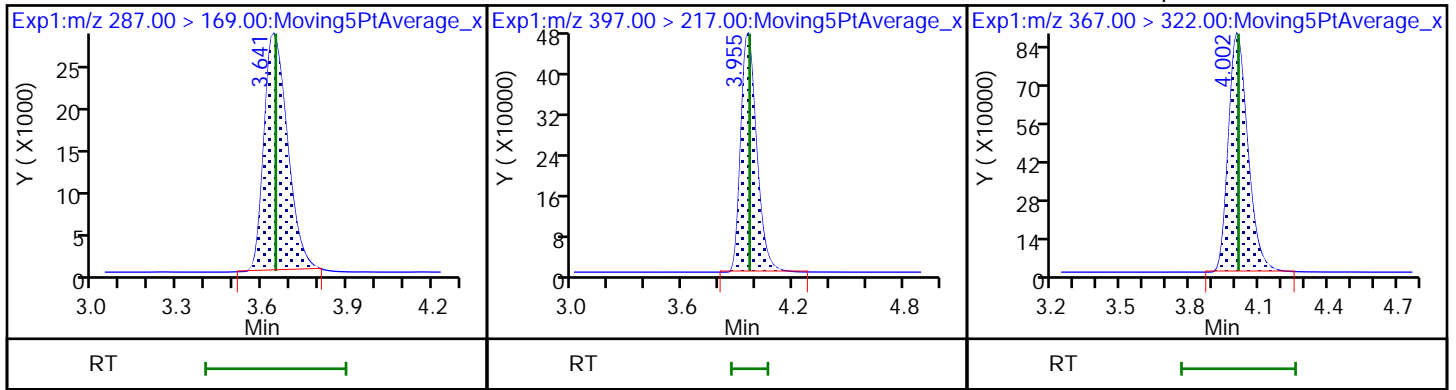
31 Perfluoro(2-propoxypropanoic) ac



D 32 13C3 HFPO-DA

33 R-PSDCA

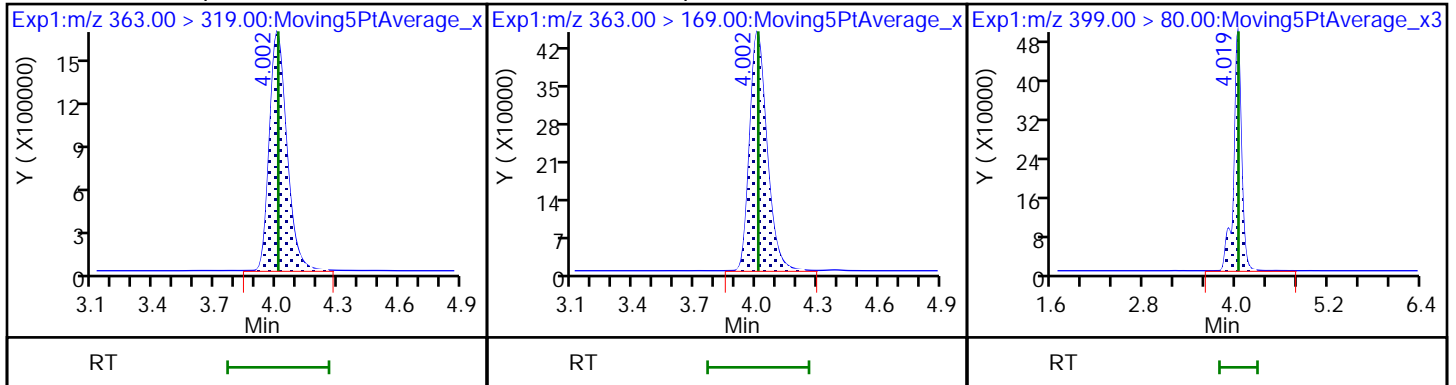
D 35 13C4 PFHpA



36 Perfluoroheptanoic acid

36 Perfluoroheptanoic acid

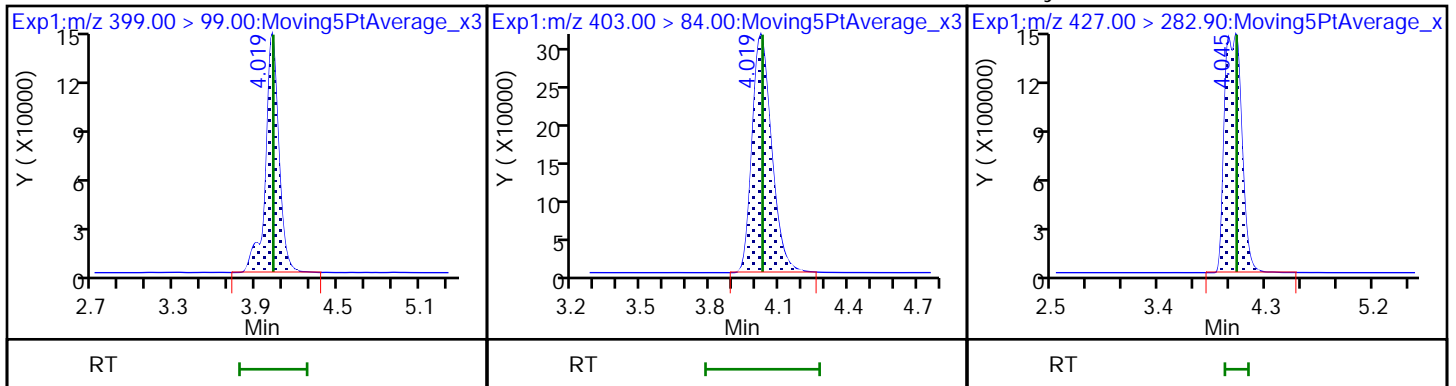
38 Perfluorohexanesulfonic acid



38 Perfluorohexanesulfonic acid

D 37 18O2 PFHxS

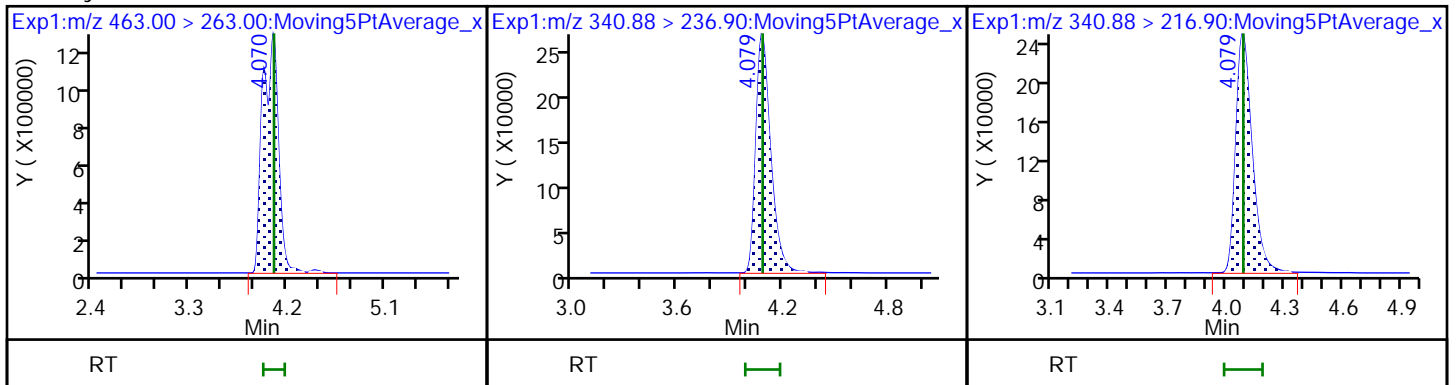
34 Hydro-EVE Acid

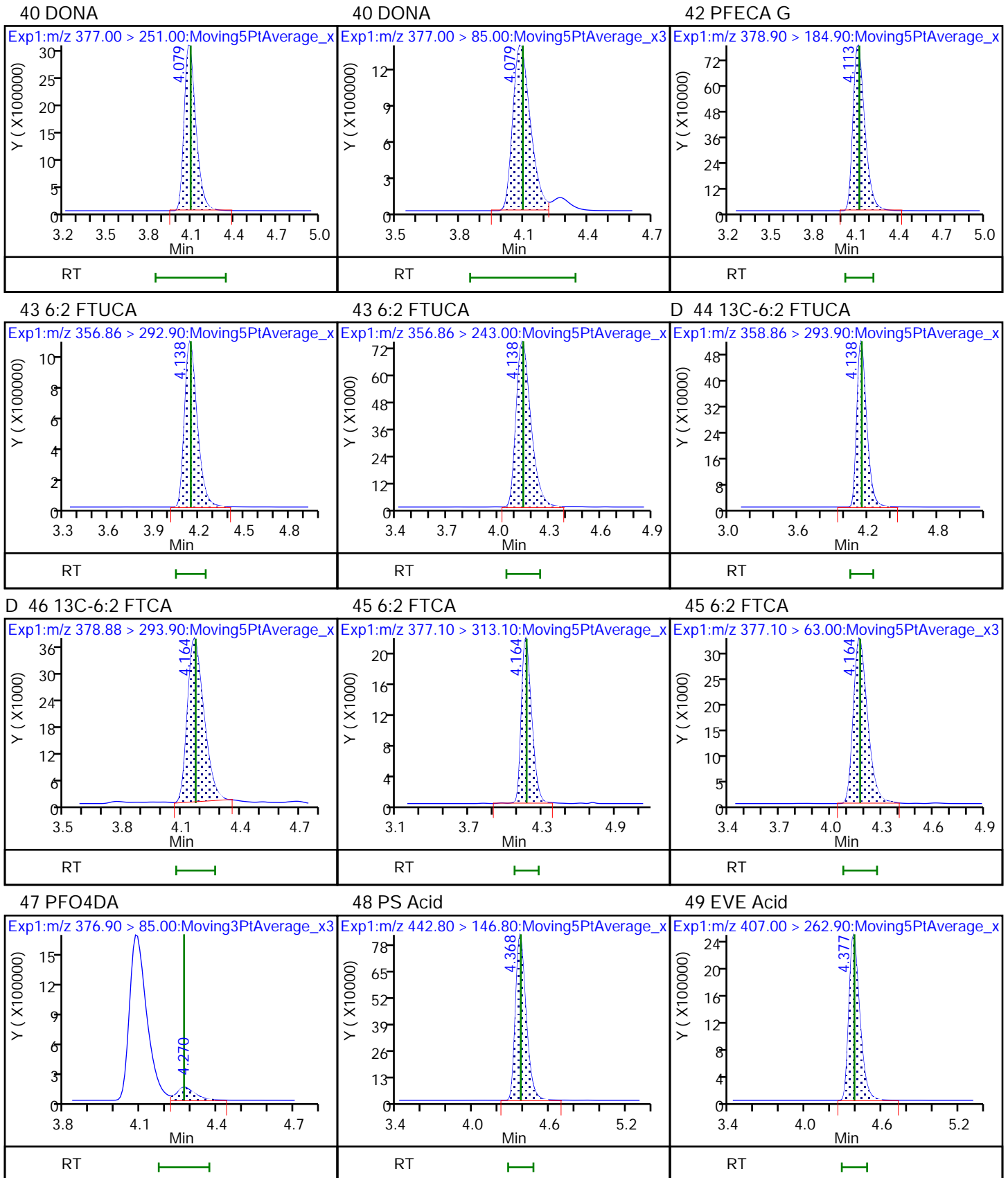


39 Hydro-PS Acid

41 5:3 FTCA

41 5:3 FTCA

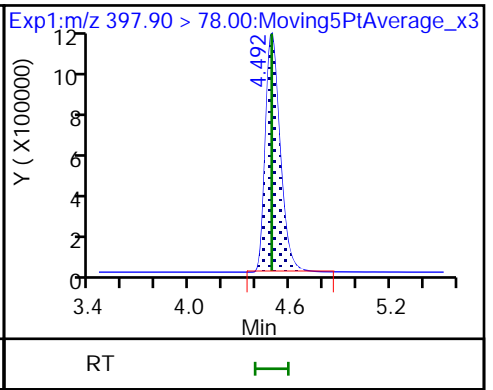
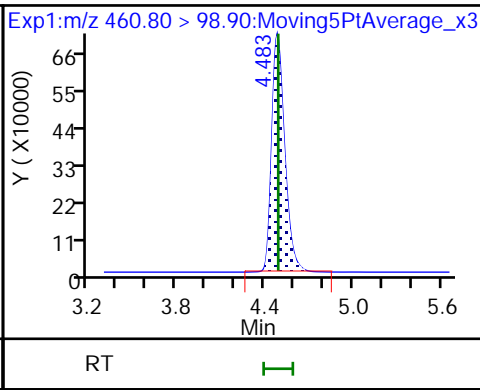
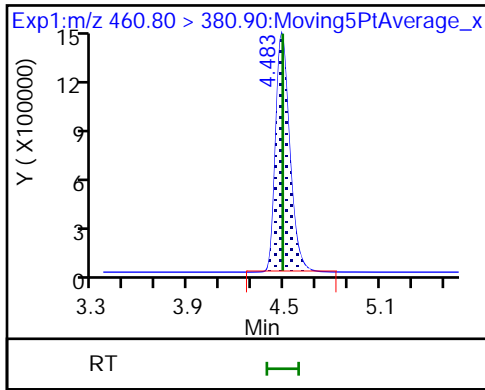




51 PFECHS

51 PFECHS

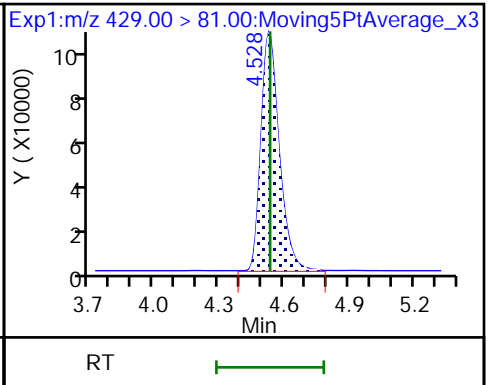
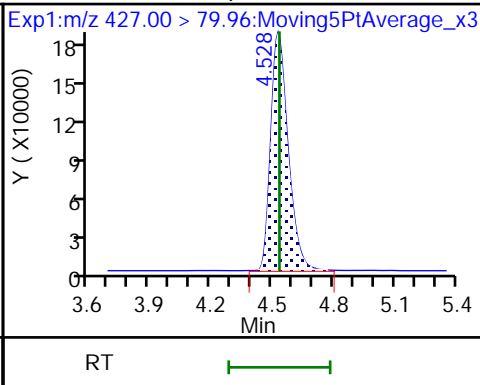
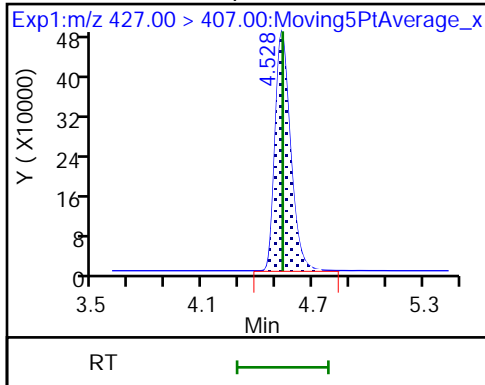
50 FHxSA



53 1H,1H,2H,2H-perfluorooctanesulfo

53 1H,1H,2H,2H-perfluorooctanesulfo

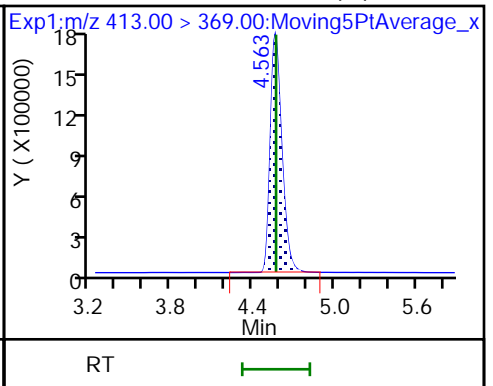
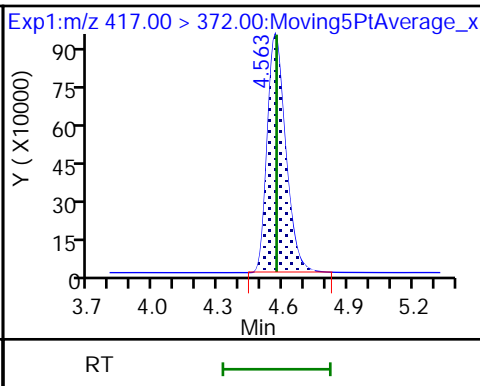
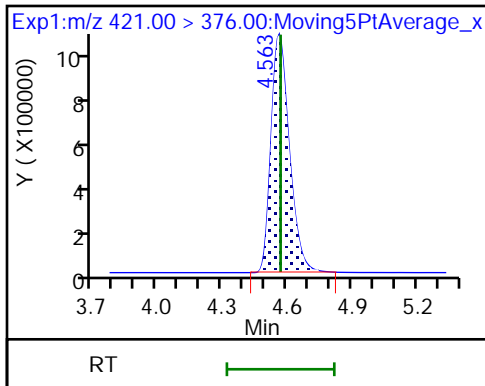
D 52 M2-6:2 FTS



\$ 54 13C8 PFOA

D 56 13C4 PFOA

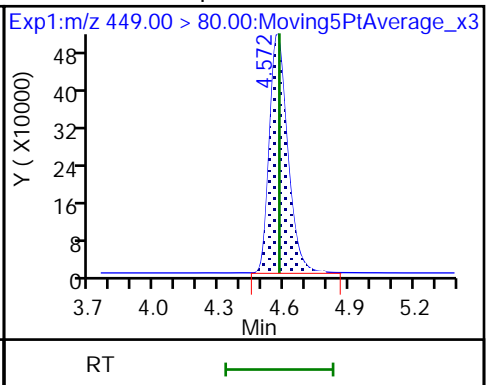
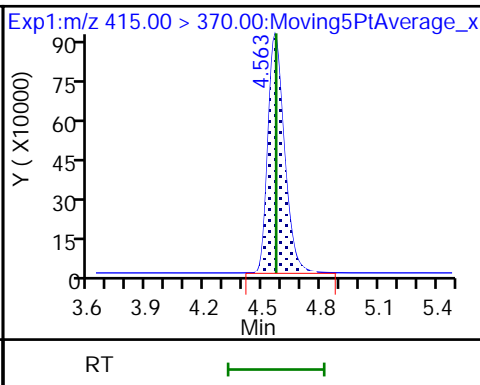
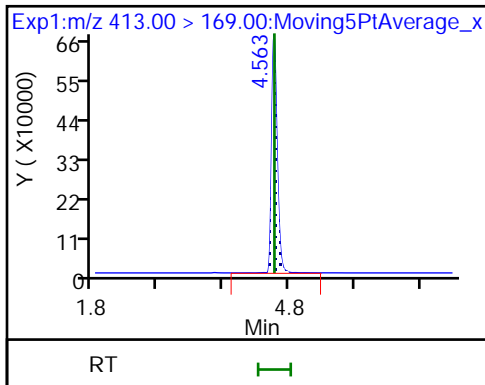
58 Perfluorooctanoic acid (M)



58 Perfluorooctanoic acid

* 55 13C2 PFOA

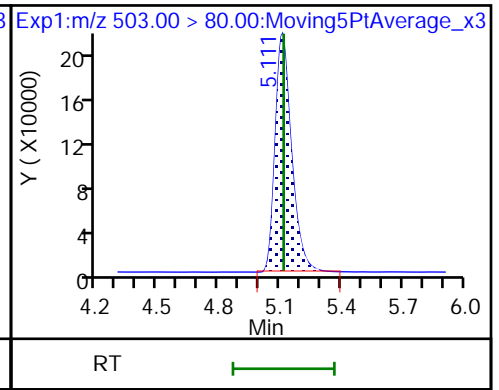
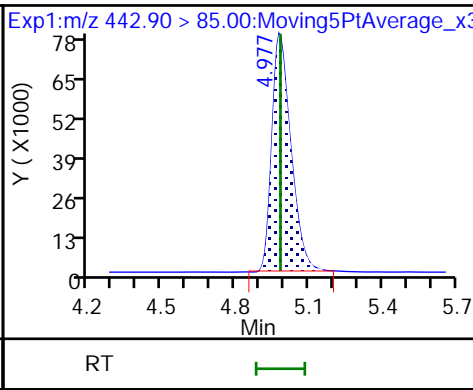
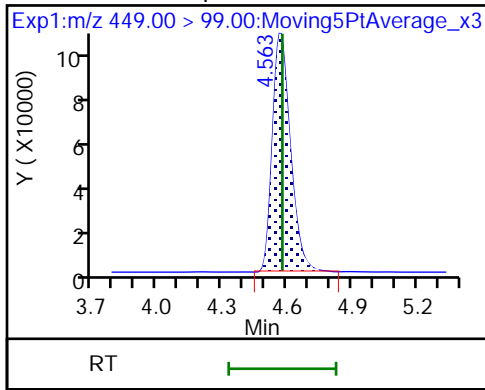
57 Perfluoroheptanesulfonic acid



57 Perfluoroheptanesulfonic acid

59 TAF

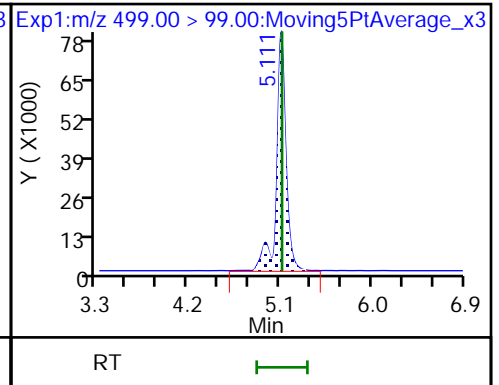
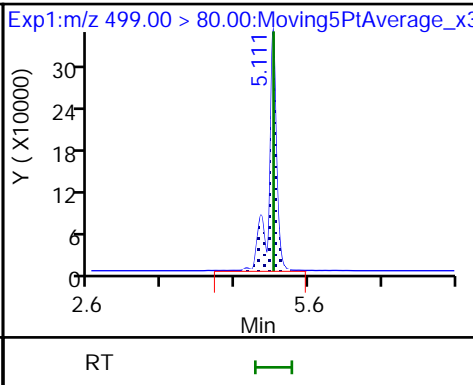
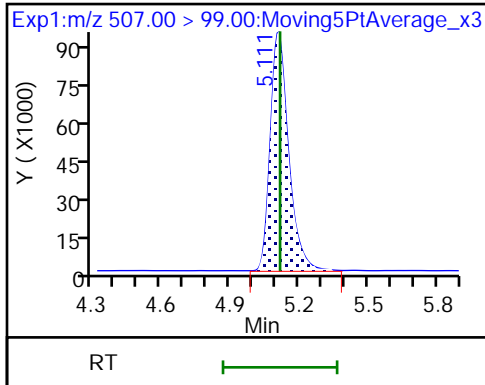
D 61 13C4 PFOS



\$ 60 13C8 PFOS

62 Perfluorooctanesulfonic acid

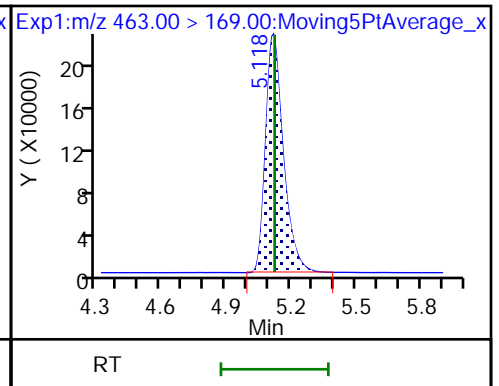
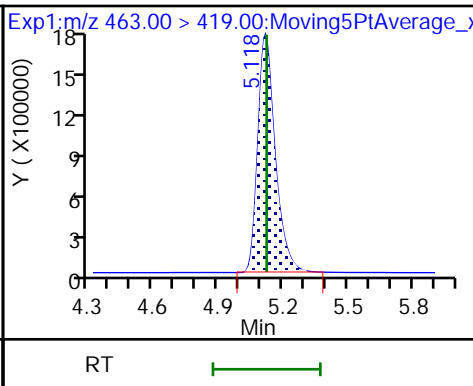
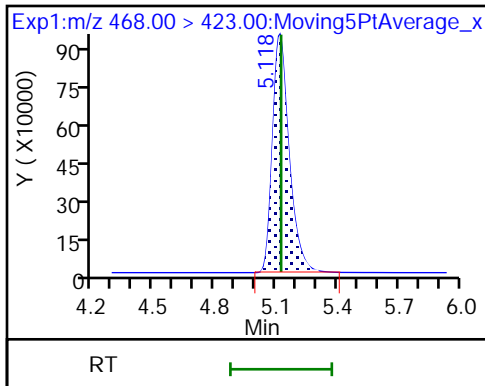
62 Perfluorooctanesulfonic acid



D 64 13C5 PFNA

63 Perfluorononanoic acid

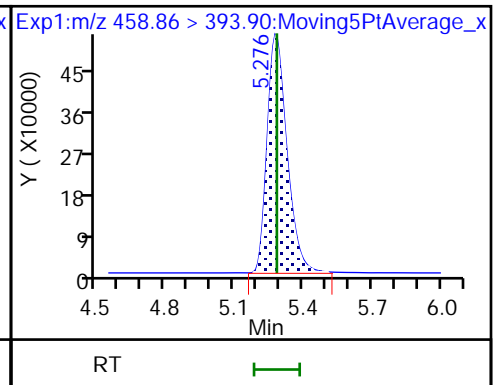
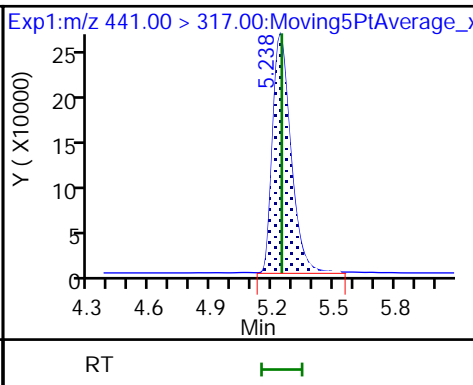
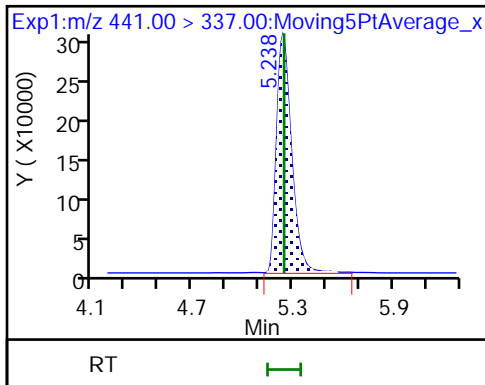
63 Perfluorononanoic acid

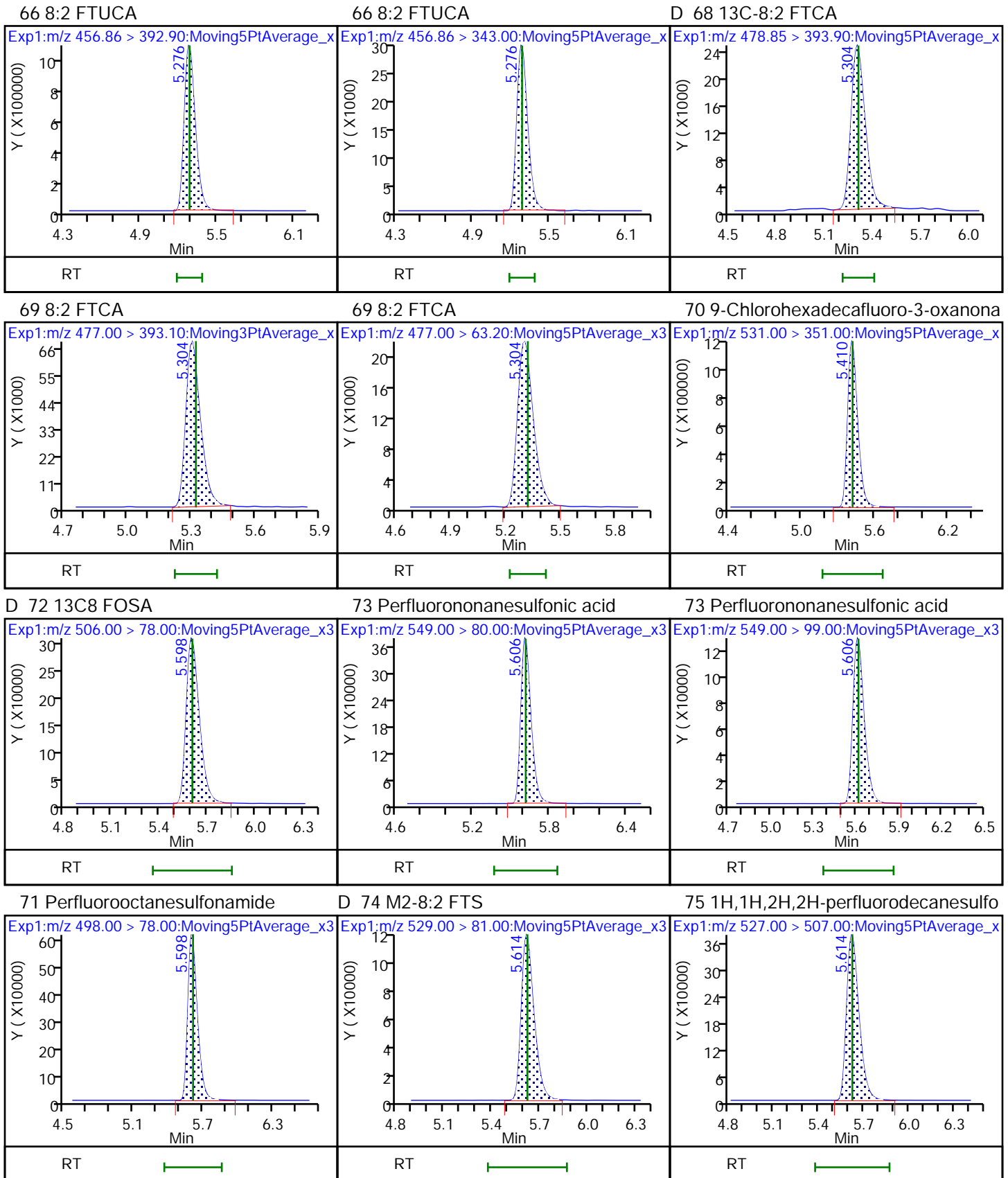


65 7:3 FTCA

65 7:3 FTCA

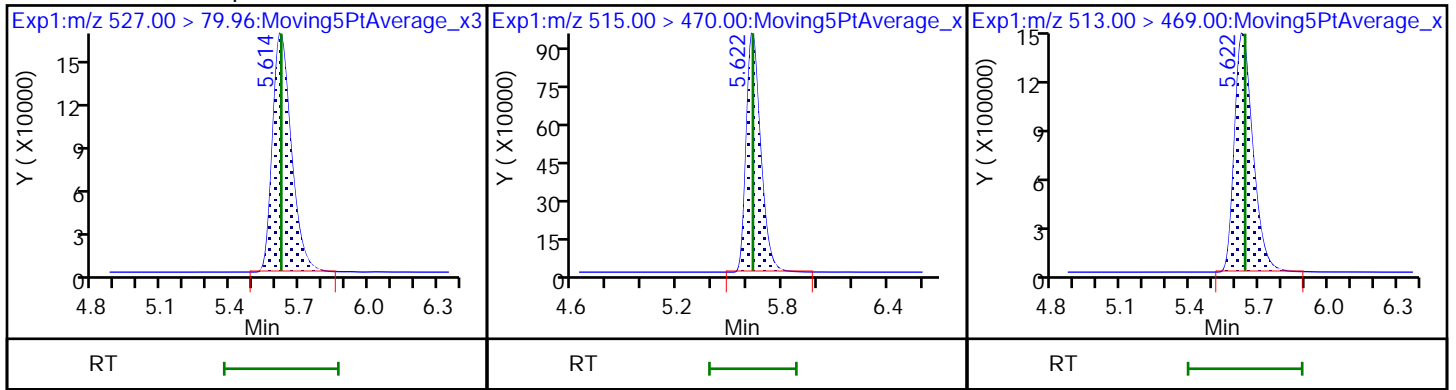
D 67 13C-8:2 FTUCA





75 1H,1H,2H,2H-perfluorodecanesulfo D 76 13C2 PFDA

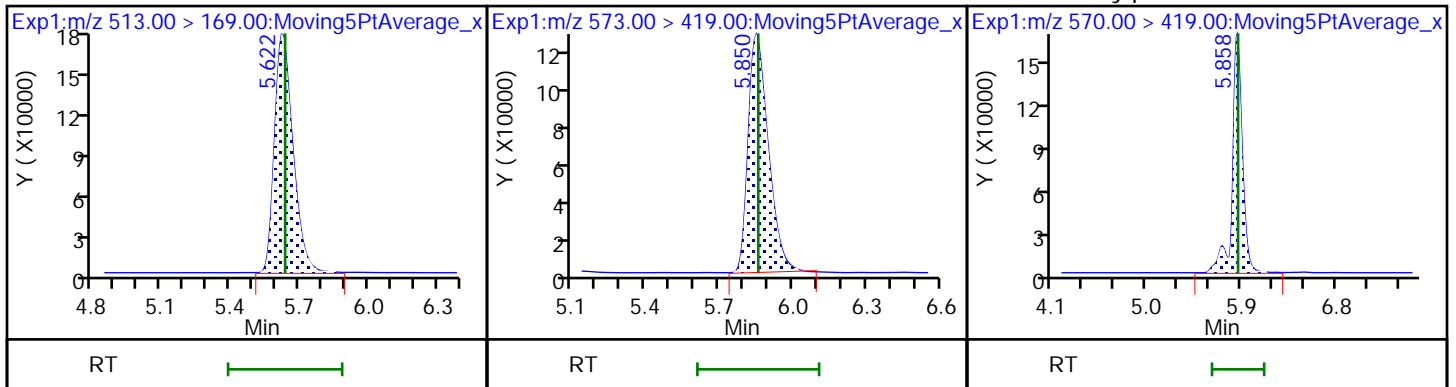
77 Perfluorodecanoic acid



77 Perfluorodecanoic acid

D 78 d3-NMeFOSAA

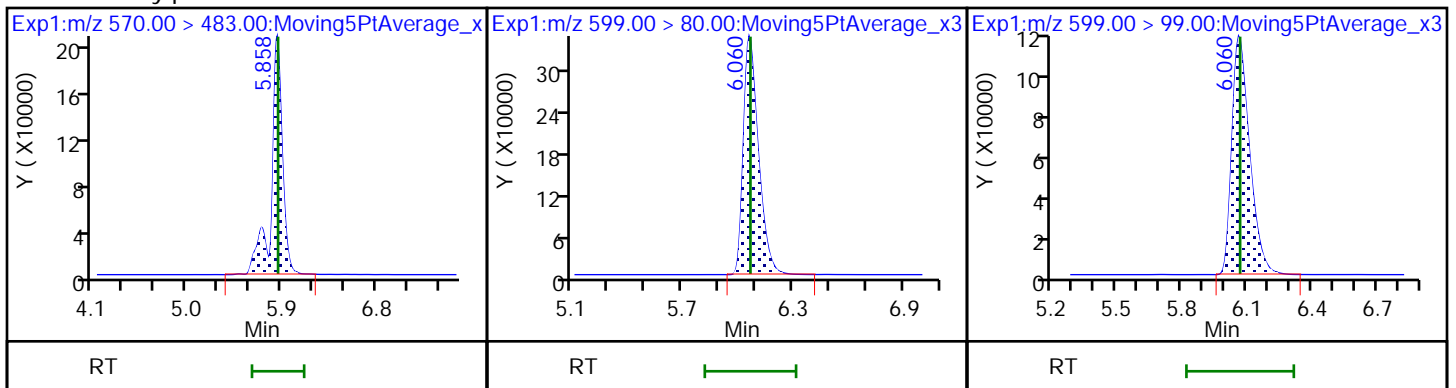
79 N-methylperfluorooctanesulfonami



79 N-methylperfluorooctanesulfonami

80 Perfluorodecanesulfonic acid

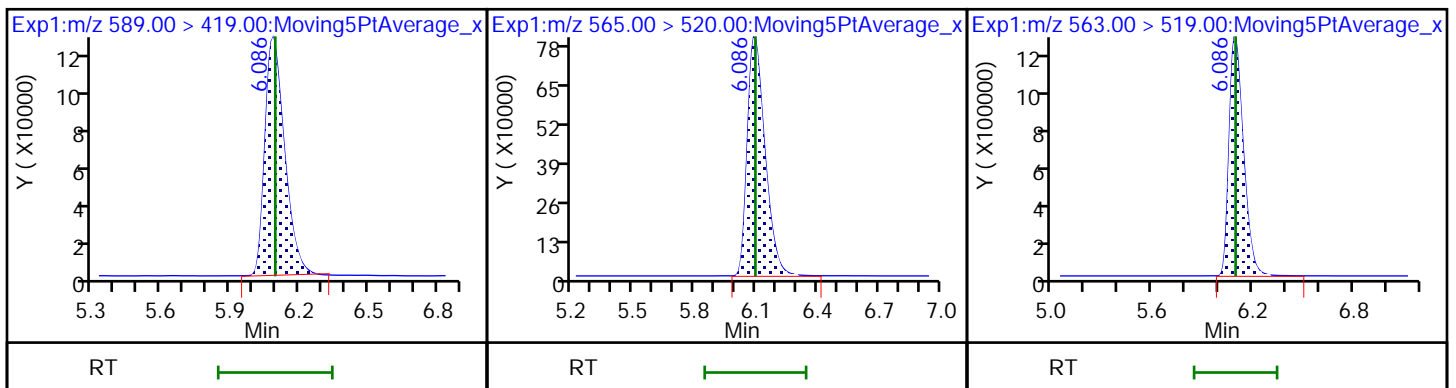
80 Perfluorodecanesulfonic acid



D 81 d5-NEtFOSAA

D 82 13C2 PFUnA

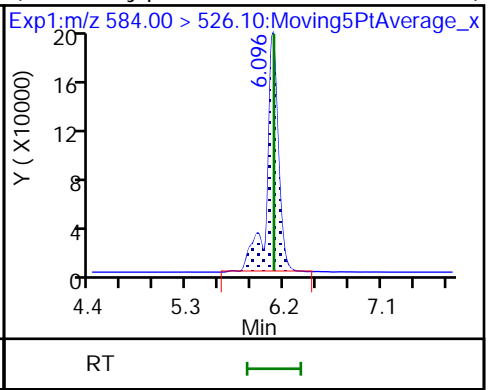
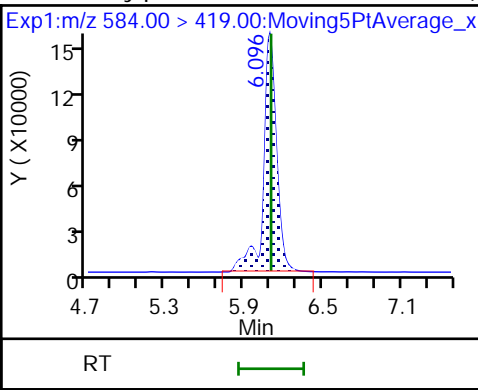
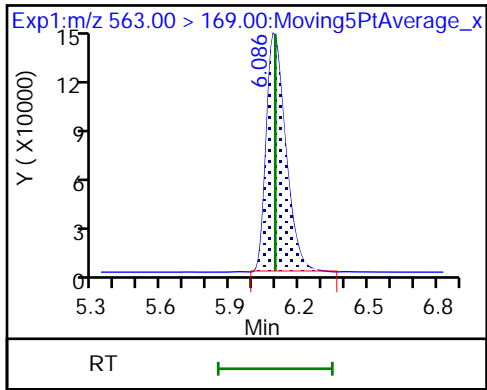
83 Perfluoroundecanoic acid



83 Perfluoroundecanoic acid

84 N-ethylperfluorooctanesulfonamid (M)

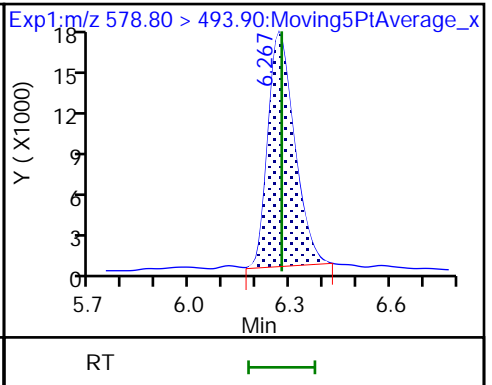
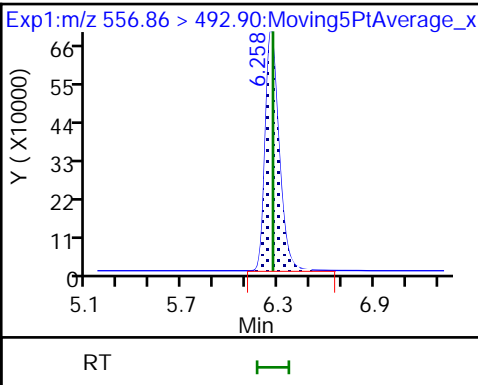
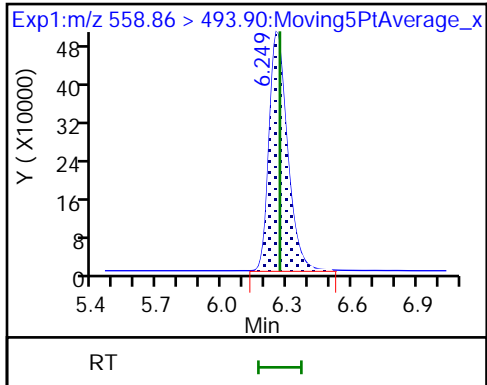
84 N-ethylperfluorooctanesulfonamid (M)



D 89 13C-10:2 FTUCA

90 10:2 FTUCA

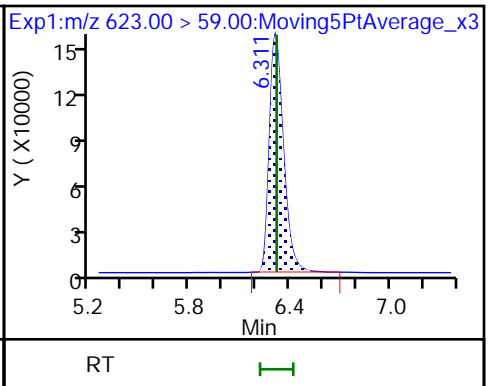
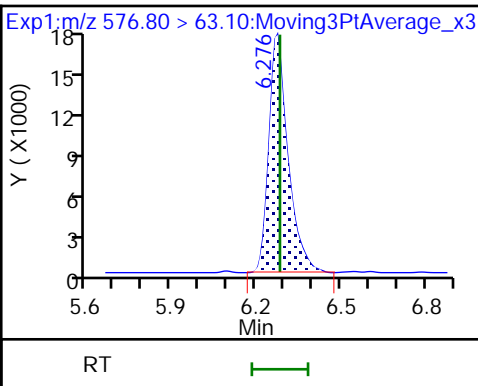
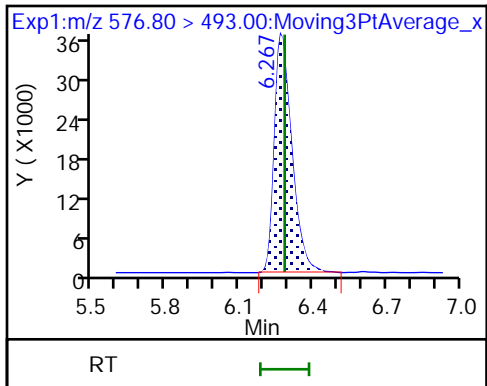
D 91 13C-10:2 FTCA



92 10:2 FTCA

92 10:2 FTCA

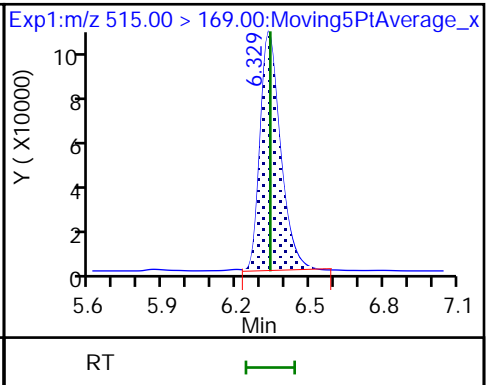
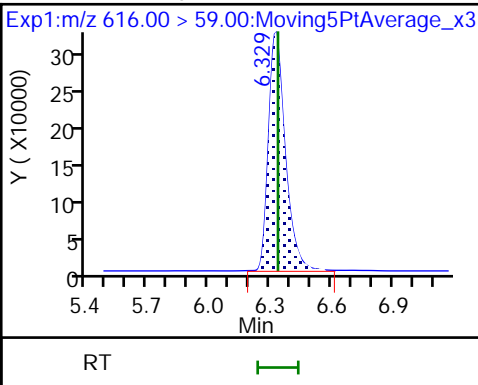
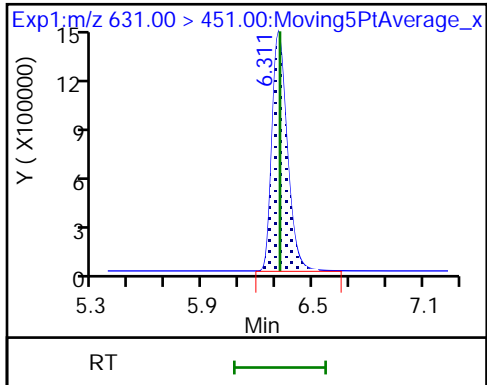
D 85 d7-N-MeFOSE-M

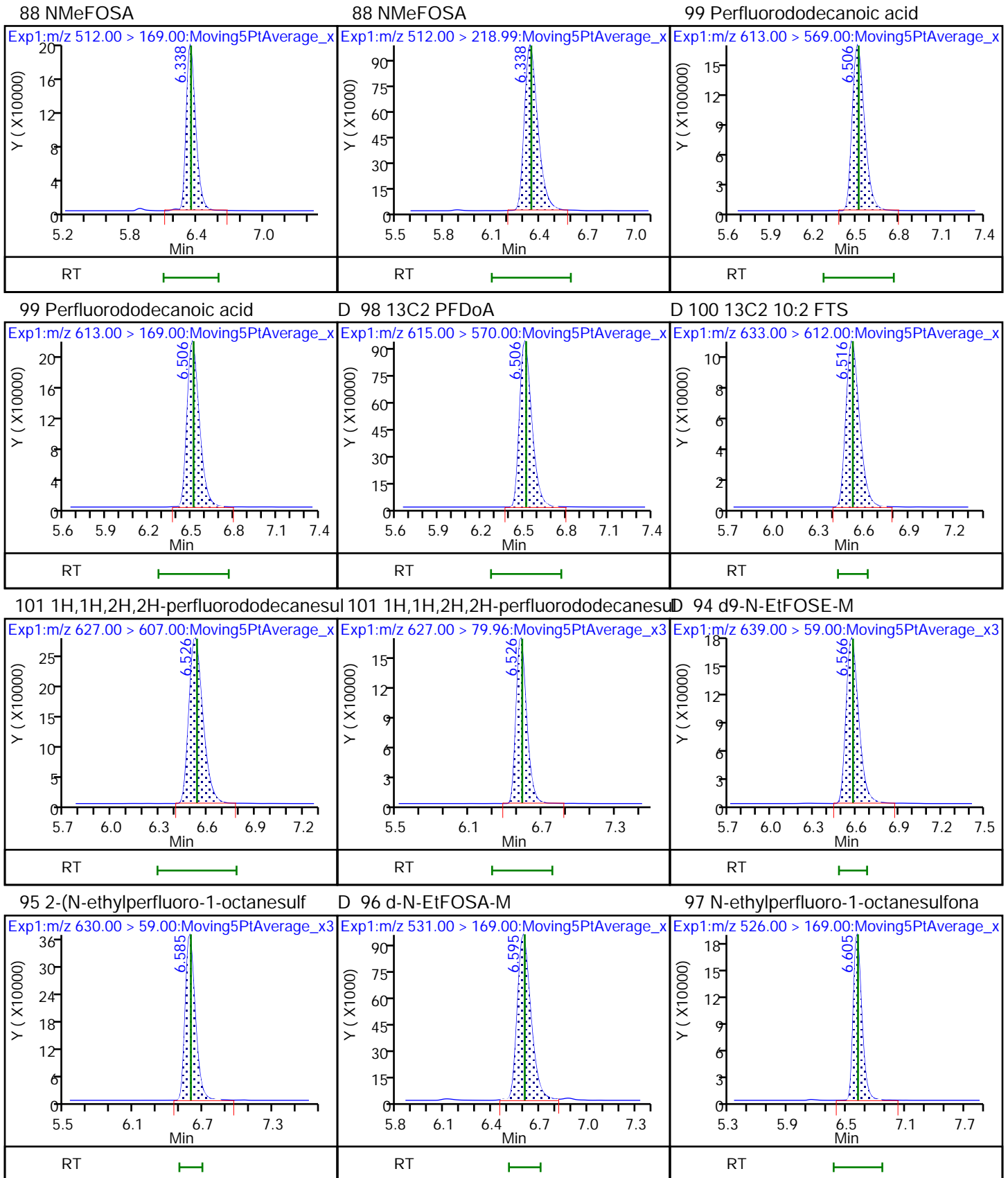


93 11-Chloroeicosafluoro-3-oxaundec

86 2-(N-methylperfluoro-1-octanesul

D 87 d-N-MeFOSA-M

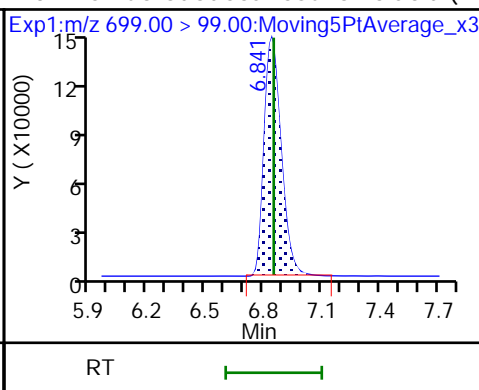
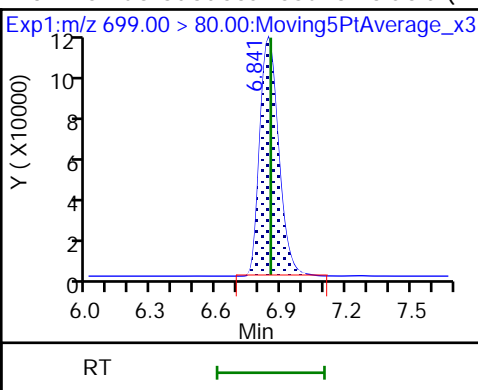
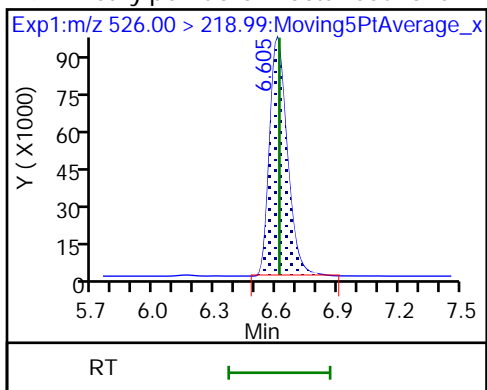




97 N-ethylperfluoro-1-octanesulfona

102 Perfluorododecanesulfonic acid (

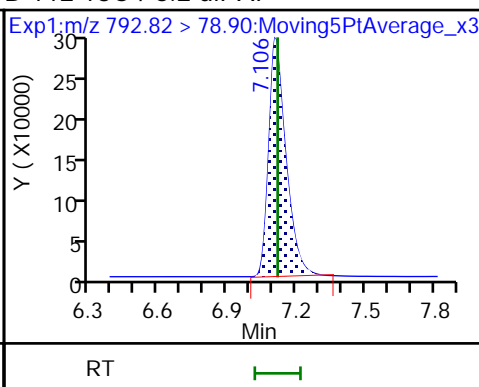
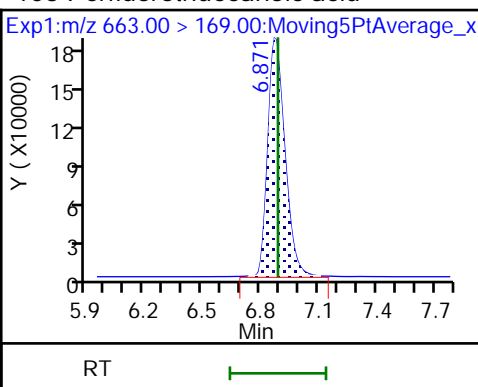
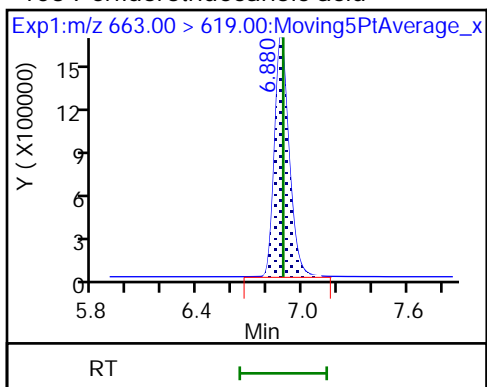
102 Perfluorododecanesulfonic acid (



103 Perfluorotridecanoic acid

103 Perfluorotridecanoic acid

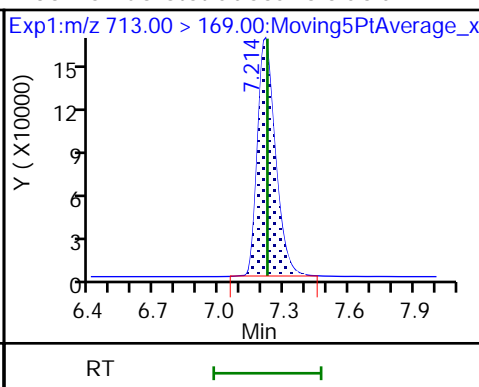
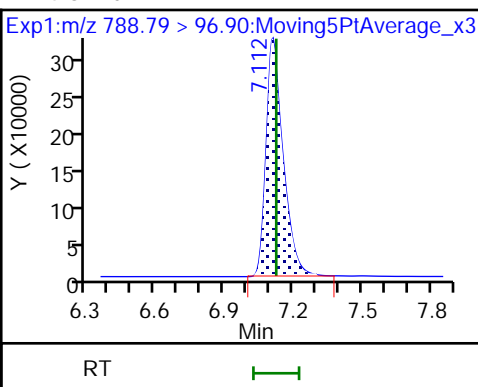
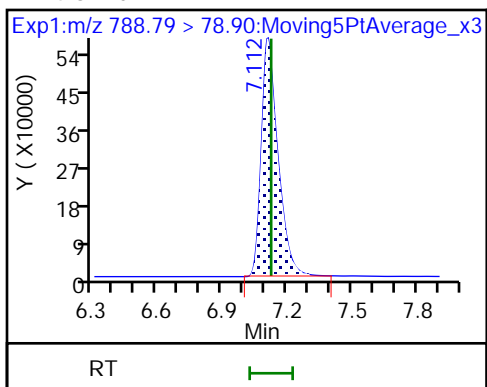
D 112 13C4-6:2 diPAP



114 6:2 diPAP

114 6:2 diPAP

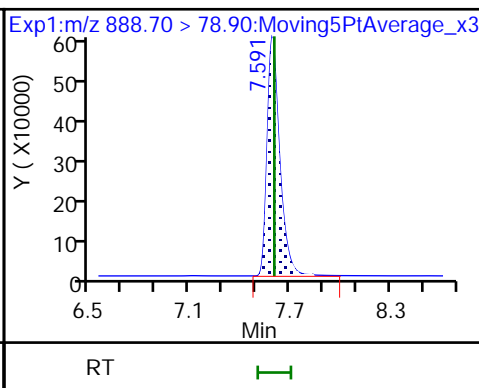
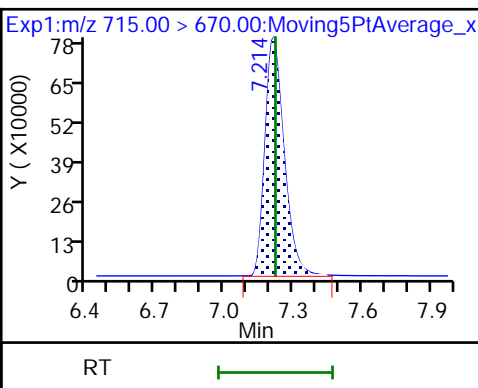
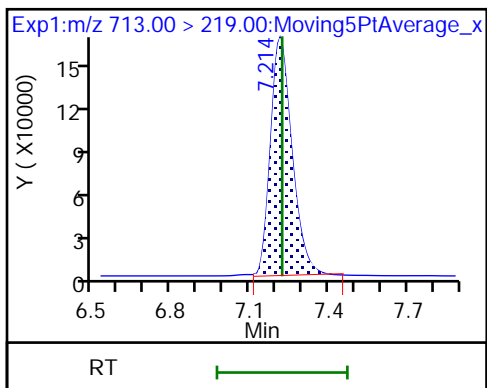
105 Perfluorotetradecanoic acid



105 Perfluorotetradecanoic acid

D 104 13C2 PFTeDA

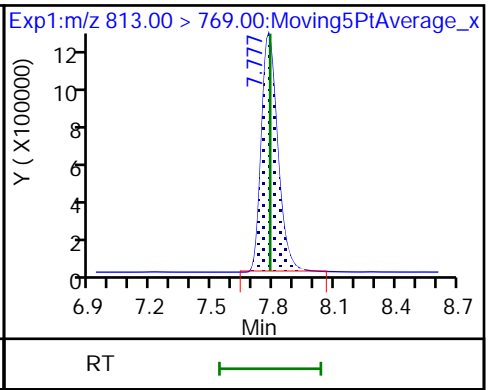
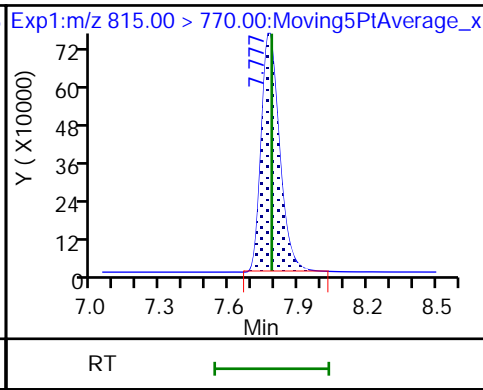
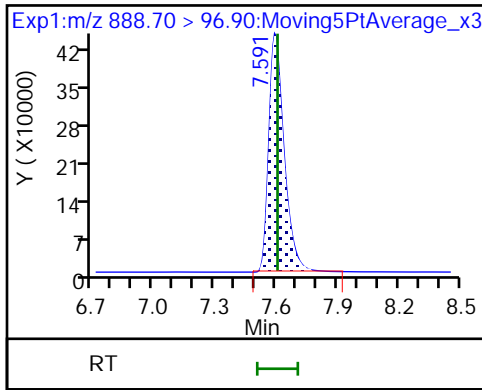
115 6:2/8:2 diPAP



115 6:2/8:2 diPAP

D 106 13C2 PFHxDA

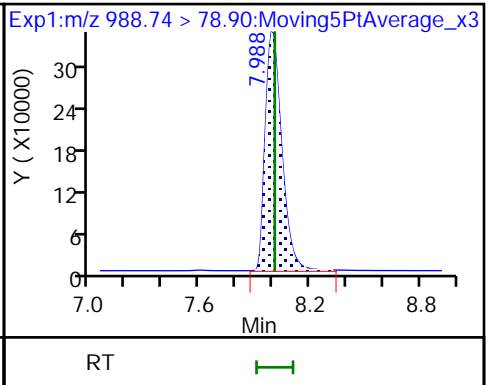
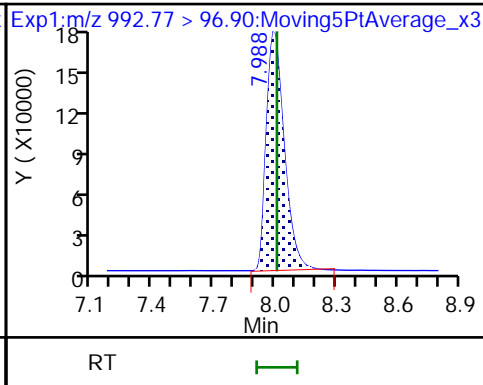
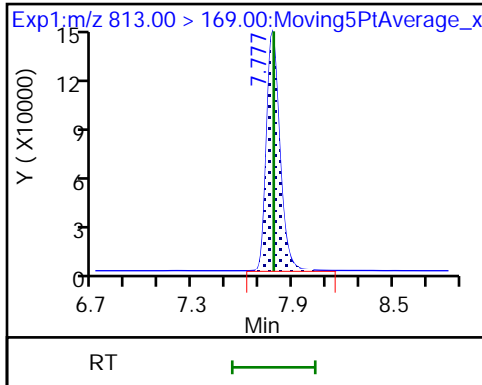
107 Perfluorohexadecanoic acid



107 Perfluorohexadecanoic acid

D 113 13C4-8:2 diPAP

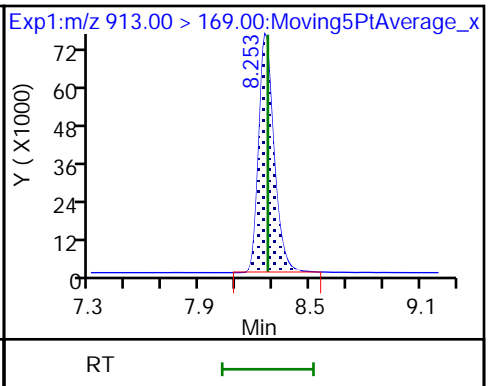
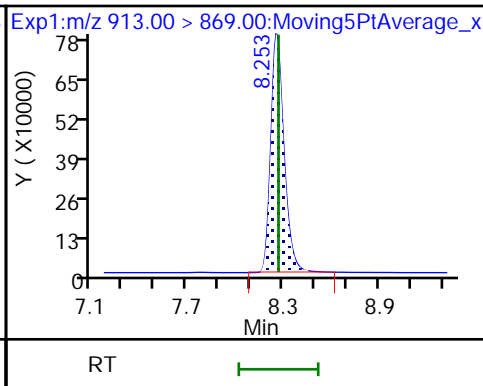
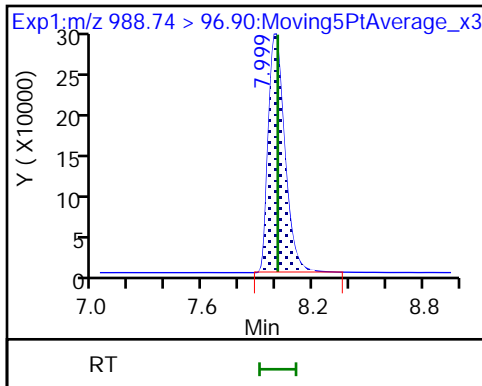
116 8:2 diPAP



116 8:2 diPAP

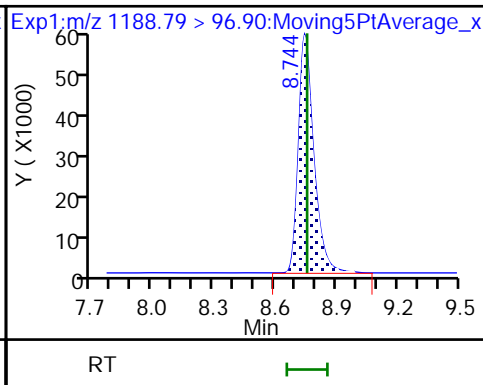
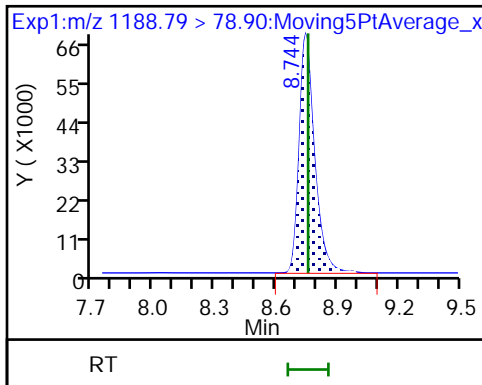
108 Perfluorooctadecanoic acid

108 Perfluorooctadecanoic acid



117 10:2 diPAP

117 10:2 diPAP



Eurofins Sacramento

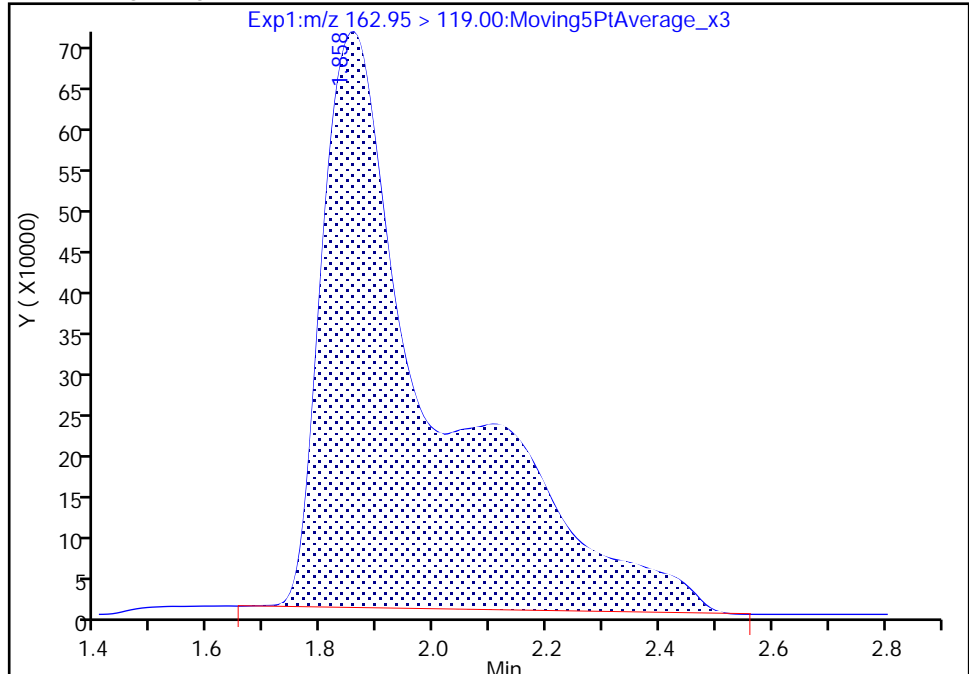
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_035.d
Injection Date: 22-Dec-2022 15:43:39 Instrument ID: A18
Lims ID: CCV L5
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 53 Worklist Smp#: 21
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

2 PPF Acid, CAS: 422-64-0

Signal: 1

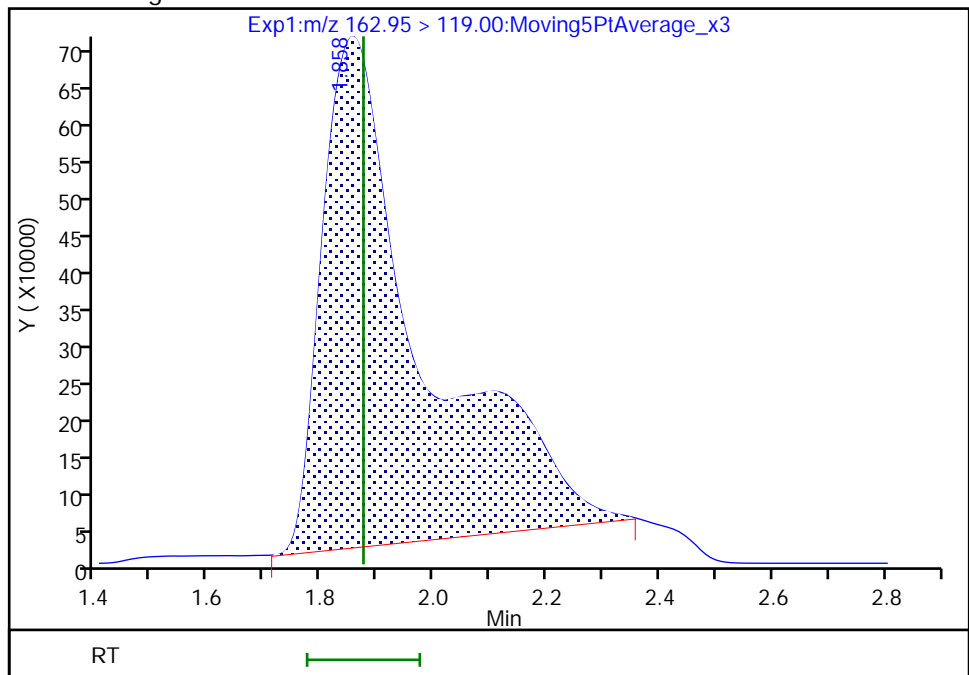
RT: 1.86
Area: 10043652
Amount: 3.041911
Amount Units: ng/ml

Processing Integration Results



RT: 1.86
Area: 8536073
Amount: 2.589698
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:37:25
Audit Action: Manually Integrated

Audit Reason: Baseline
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3:43 PM

Eurofins Sacramento

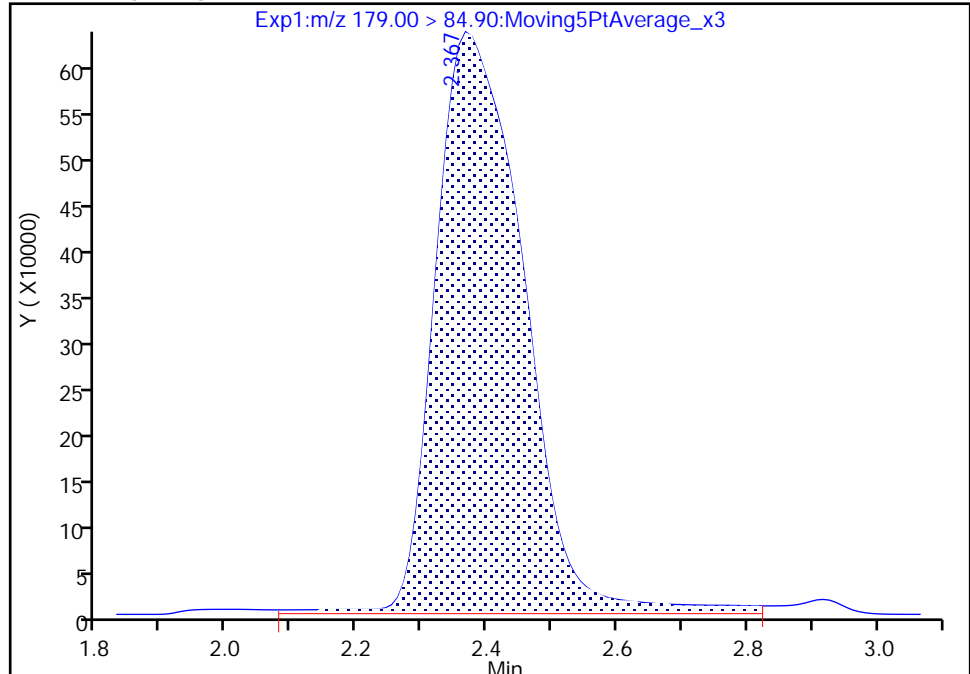
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Injection Date: 22-Dec-2022 15:43:39 Instrument ID: A18
Lims ID: CCV L5
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 53 Worklist Smp#: 21
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

3 PFMOAA, CAS: 674-13-5

Signal: 1

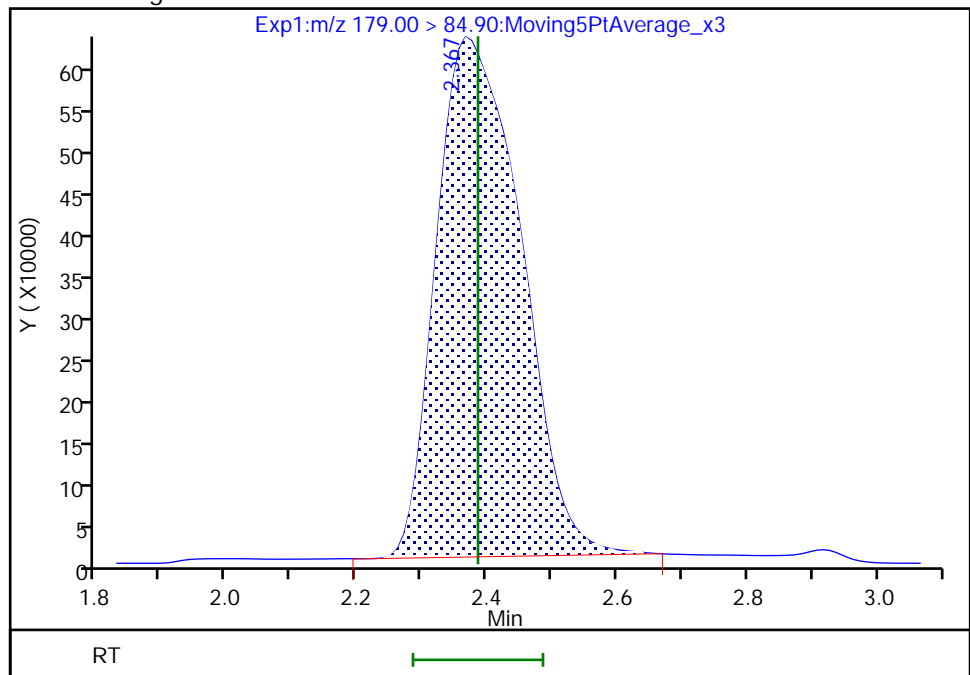
RT: 2.37
Area: 6021271
Amount: 2.597460
Amount Units: ng/ml

Processing Integration Results



RT: 2.37
Area: 5654580
Amount: 2.439277
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:37:20
Audit Action: Manually Integrated

Audit Reason: Baseline
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3:43 PM

Eurofins Sacramento

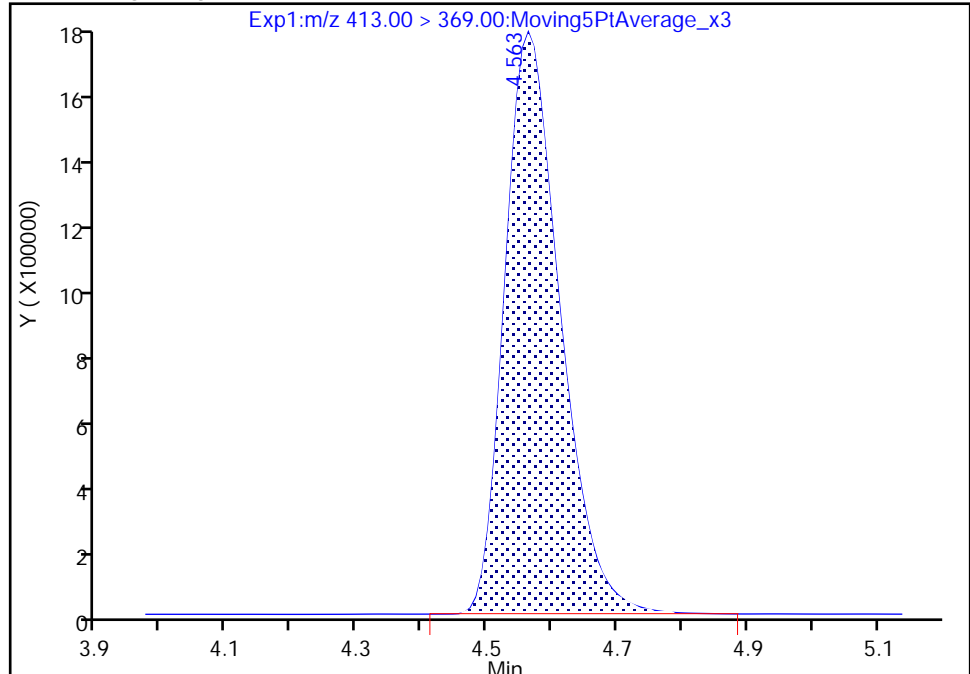
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_035.d
Injection Date: 22-Dec-2022 15:43:39 Instrument ID: A18
Lims ID: CCV L5
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 53 Worklist Smp#: 21
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

58 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

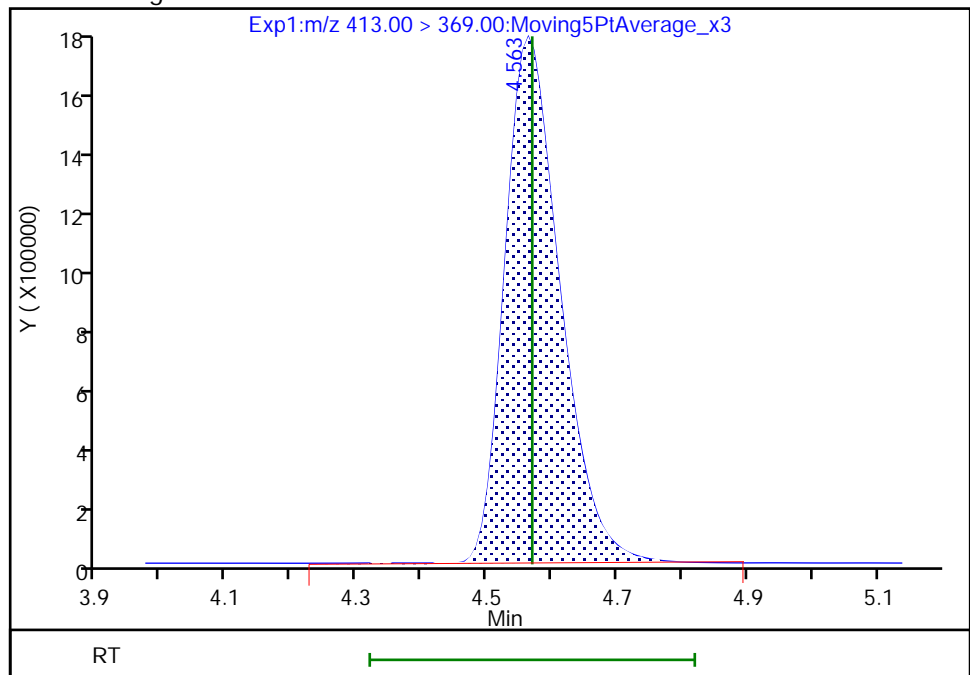
RT: 4.56
Area: 10211576
Amount: 2.439998
Amount Units: ng/ml

Processing Integration Results



RT: 4.56
Area: 10223080
Amount: 2.442746
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:36:58
Audit Action: Manually Integrated

Audit Reason: Baseline
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Eurofins Sacramento

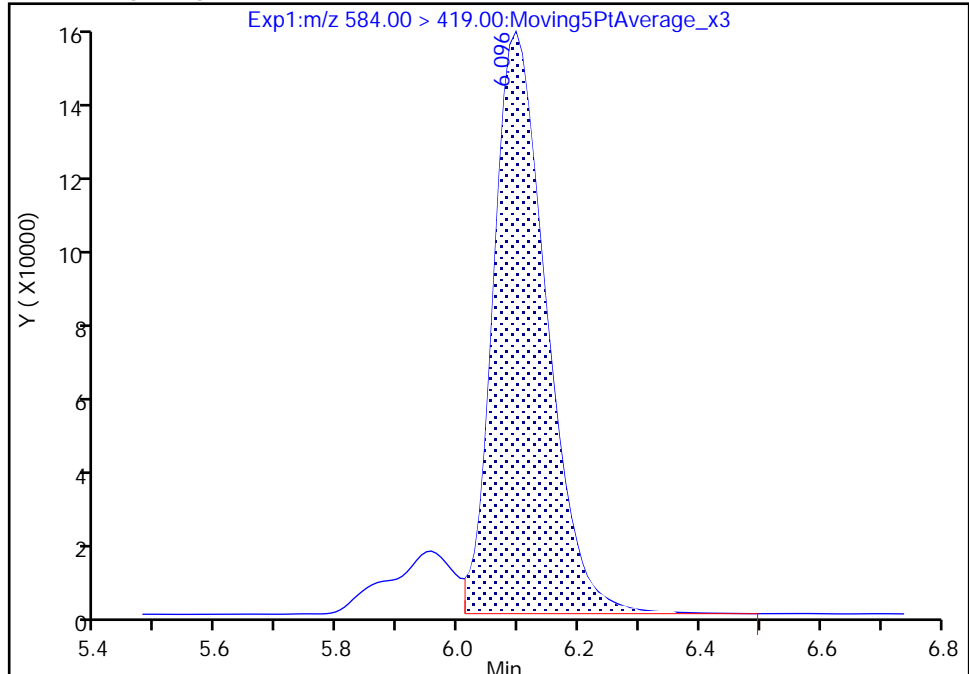
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Injection Date: 22-Dec-2022 15:43:39 Instrument ID: A18
Lims ID: CCV L5
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 53 Worklist Smp#: 21
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

84 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 1

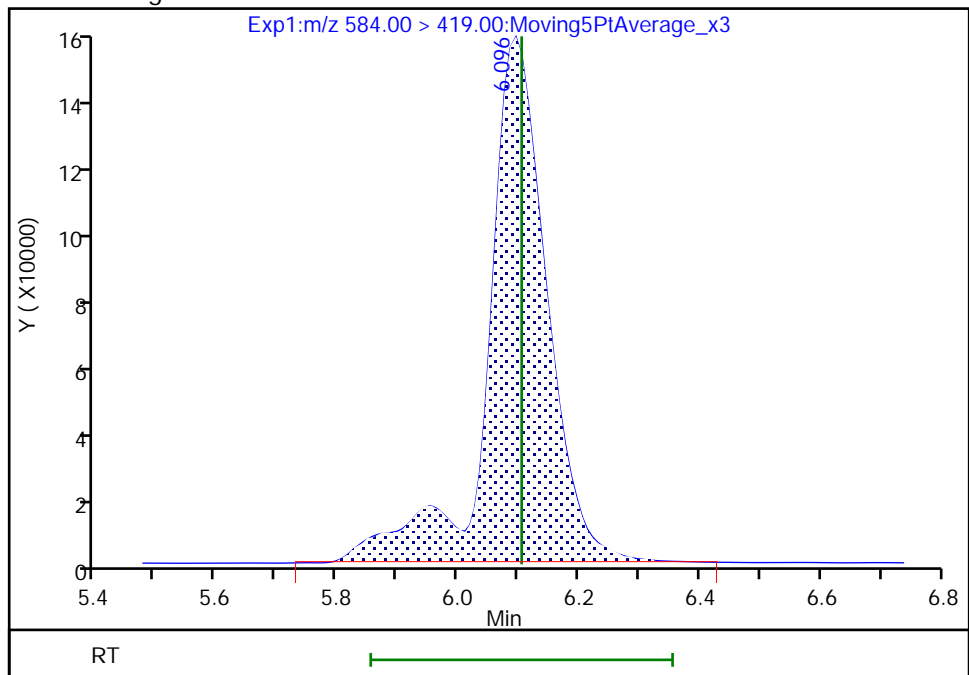
RT: 6.10
Area: 970673
Amount: 2.218590
Amount Units: ng/ml

Processing Integration Results



RT: 6.10
Area: 1095639
Amount: 2.504215
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:36:38
Audit Action: Manually Integrated

Audit Reason: Baseline
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3:43 PM

Eurofins Sacramento

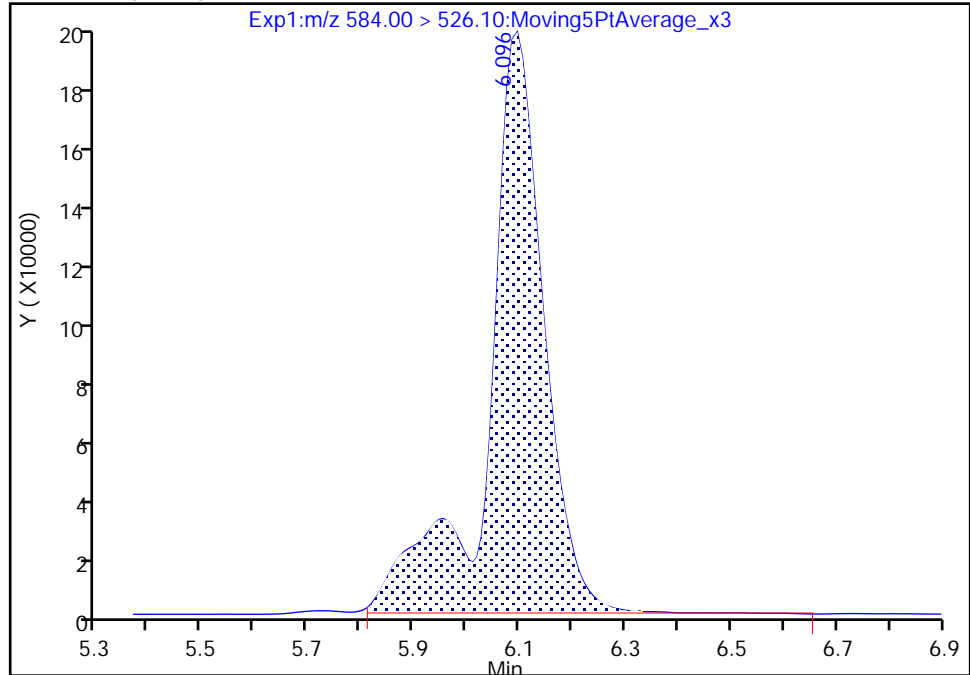
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Injection Date: 22-Dec-2022 15:43:39 Instrument ID: A18
Lims ID: CCV L5
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 53 Worklist Smp#: 21
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

84 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 2

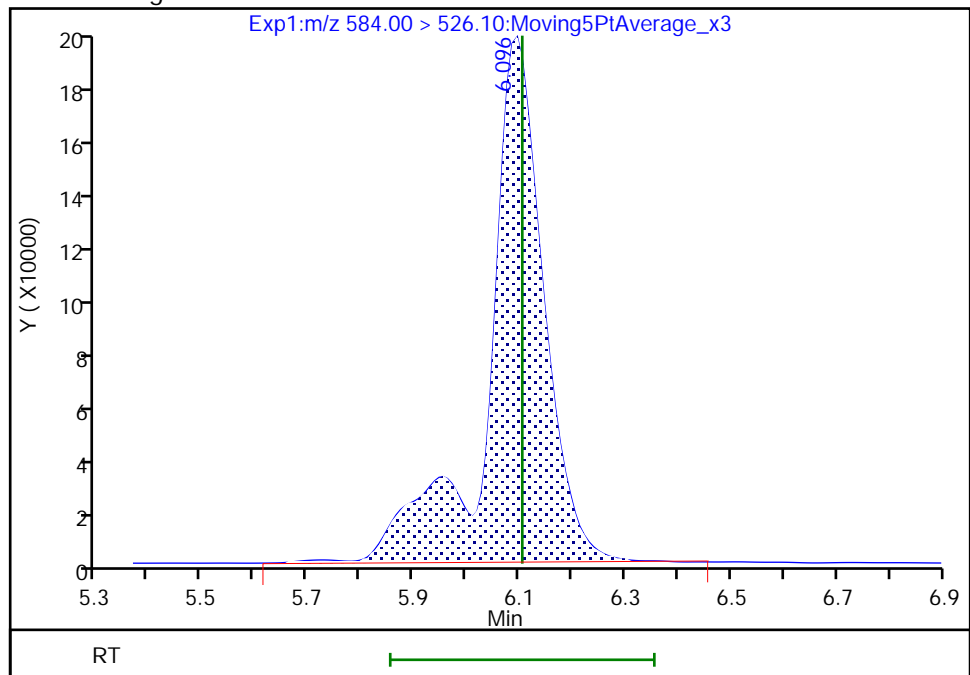
RT: 6.10
Area: 1431868
Amount: 2.218590
Amount Units: ng/ml

Processing Integration Results



RT: 6.10
Area: 1427354
Amount: 2.504215
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:36:42

Audit Action: Manually Integrated

Audit Reason: Baseline

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3:43 PM

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: CCV 320-642490/28 Calibration Date: 12/22/2022 16:54

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC_A_042.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
MTP	L1ID		0.0801		1.10	1.00	10.3	30.0
PFPrA	L1ID		0.7684		0.954	0.970	-1.7	30.0
PFMOAA	AveID	0.5606	0.5708		1.02	1.00	1.8	30.0
R-PSDA	AveID	0.1346	0.1364		1.01	1.00	1.3	30.0
Hydrolyzed PSDA	AveID	0.4284	0.4279		0.999	1.00	-0.1	30.0
R-EVE	AveID	0.3419	0.3275		0.958	1.00	-4.2	30.0
Perfluorobutanoic acid (PFBA)	AveID	1.112	1.063		0.956	1.00	-4.4	30.0
PFPrS	AveID	0.9349	0.9123		0.898	0.920	-2.4	30.0
PMPA	AveID	1.149	1.179		1.03	1.00	2.6	30.0
NVHOS	AveID	0.0289	0.0334		1.16	1.00	15.7	30.0
PFMPA	AveID	0.6578	0.6834		1.04	1.00	3.9	30.0
PFO2HxA	AveID	0.1374	0.1496		1.09	1.00	8.9	30.0
Perfluoropentanoic acid (PFPeA)	AveID	1.045	1.031		0.987	1.00	-1.3	30.0
3:3 FTCA	AveID	0.0768	0.0824		1.07	1.00	7.3	30.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9820	0.9494		0.858	0.888	-3.3	30.0
PEPA	AveID	1.111	1.137		1.02	1.00	2.4	30.0
PFMBA	AveID	1.110	1.119		1.01	1.00	0.8	30.0
PFEEA	AveID	3.265	3.266		0.892	0.892	0.0	30.0
FBSA	AveID	0.3707	0.3589		0.968	1.00	-3.2	30.0
NFDHA	AveID	0.1732	0.2016		1.16	1.00	16.4	30.0
4:2 FTS	AveID	2.336	2.324		0.933	0.938	-0.5	30.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9423	0.9584		1.02	1.00	1.7	30.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8041	0.7913		0.925	0.940	-1.6	30.0
PFO3OA	AveID	0.0552	0.0581		1.05	1.00	5.2	30.0
HFPO-DA (GenX)	AveID	1.057	1.087		1.03	1.00	2.8	30.0
R-PSDCA	AveID	0.2943	0.2584		0.878	1.00	-12.2	30.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9100	0.8819		0.969	1.00	-3.1	30.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	0.9649	0.9468		0.895	0.912	-1.9	30.0
Hydro-EVE Acid	AveID	1.386	1.353		0.976	1.00	-2.4	30.0
Hydro-PS Acid	AveID	1.235	1.174		0.951	1.00	-4.9	30.0
5:3 FTCA	AveID	3.349	3.722		1.11	1.00	11.1	30.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	6.660	7.054		1.00	0.944	5.9	30.0
PFPE-1	AveID	9.767	10.13		1.04	1.00	3.7	30.0
6:2 FTUCA	AveID	1.012	1.021		1.01	1.00	0.9	30.0
6:2 FTCA	AveID	0.2612	0.2676		1.02	1.00	2.5	30.0
PFO4DA	AveID	0.0555	0.0538		0.970	1.00	-3.0	30.0
PS Acid	AveID	0.4158	0.4073		0.980	1.00	-2.0	30.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: CCV 320-642490/28 Calibration Date: 12/22/2022 16:54

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC_A_042.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
EVE Acid	AveID	1.281	1.274		0.994	1.00	-0.6	30.0
FHxSA	AveID	1.998	1.925		0.963	1.00	-3.7	30.0
PFECHS	AveID	0.8798	0.8838		0.928	0.924	0.4	30.0
6:2 FTS	AveID	2.031	2.106		0.987	0.952	3.7	50.0
Perfluorooctanoic acid (PFOA)	AveID	0.9328	0.9280		0.995	1.00	-0.5	30.0
Perfluoroheptanesulfonic acid (PFHpS)	AveID	1.200	1.213		0.965	0.954	1.1	30.0
PFO5DA	AveID	0.0374	0.0420		1.12	1.00	12.3	30.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.039	0.9936		0.890	0.930	-4.3	30.0
Perfluorononanoic acid (PFNA)	AveID	0.8673	0.8752		1.01	1.00	0.9	30.0
7:3 FTCA	AveID	5.294	5.599		1.06	1.00	5.8	30.0
8:2 FTUCA	AveID	0.9523	0.9590		1.01	1.00	0.7	30.0
8:2 FTCA	AveID	1.013	1.003		0.991	1.00	-0.9	30.0
9Cl-PF3ONS	AveID	2.498	2.729		1.02	0.934	9.2	30.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7759	0.8254		1.02	0.962	6.4	30.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9532	0.9402		0.986	1.00	-1.4	30.0
8:2 FTS	AveID	1.647	1.656		0.966	0.960	0.6	30.0
Perfluorodecanoic acid (PFDA)	AveID	0.6577	0.6564		0.998	1.00	-0.2	30.0
NMeFOSAA	AveID	0.7907	0.7517		0.951	1.00	-4.9	30.0
Perfluorodecanesulfonic acid (PFDS)	L1ID		0.7627		1.01	0.964	5.1	30.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.6838	0.6781		0.992	1.00	-0.8	30.0
NETFOSAA	AveID	0.7522	0.7617		1.01	1.00	1.3	30.0
10:2 FTUCA	AveID	0.7067	0.7109		1.01	1.00	0.6	30.0
10:2 FTCA	L1ID		1.134		1.19	1.00	18.6	30.0
11Cl-PF3OUdS	AveID	3.190	3.398		1.01	0.944	6.5	30.0
NMeFOSE	AveID	0.9853	1.005		1.02	1.00	2.0	30.0
NMeFOSA	AveID	0.9700	0.9623		0.992	1.00	-0.8	30.0
Perfluorododecanoic acid (PFDoA)	AveID	0.8630	0.8495		0.984	1.00	-1.6	30.0
10:2 FTS	AveID	1.304	1.255		0.930	0.966	-3.7	30.0
NETFOSE	AveID	0.9495	0.9830		1.04	1.00	3.5	30.0
NETFOSA	AveID	0.9338	0.9606		1.03	1.00	2.9	30.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2502	0.2773		1.08	0.970	10.8	30.0
Perfluorotridecanoic acid (PFTrDA)	AveID	0.7853	0.8274		1.05	1.00	5.4	30.0
6:2 Fluorotelomer phosphate diester	AveID	0.9649	0.9133		0.921	0.973	-5.4	30.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.0982	0.1004		1.02	1.00	2.3	30.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Lab Sample ID: CCV 320-642490/28 Calibration Date: 12/22/2022 16:54

Instrument ID: A18 Calib Start Date: 12/21/2022 12:10

GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11

Lab File ID: 2022.12.21_A18_PFC_A_042.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
6:2/8:2 Fluorotelomer phosphate diester	AveID	0.9673	0.8999		0.908	0.976	-7.0	30.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.8710		1.00	1.00	0.4	50.0
8:2 Fluorotelomer phosphate diester	AveID	0.9361	0.9708		1.01	0.978	3.7	30.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.4772	0.5653		1.18	1.00	18.5	50.0
10:2 Fluorotelomer phosphate diester	AveID	0.0970	0.1987		2.06	1.00	104.8*	30.0
13C4 PFBA	Ave	0.8859	0.9497		1.34	1.25	7.2	50.0
13C5 PFPeA	Ave	0.7929	0.8208		1.29	1.25	3.5	50.0
13C3 PFBS	Ave	0.5464	0.5584		1.19	1.17	2.2	50.0
M2-4:2 FTS	Ave	0.1273	0.1269		1.17	1.17	-0.3	50.0
13C2 PFHxA	Ave	0.8726	0.8969		1.28	1.25	2.8	50.0
13C3 HFPO-DA	Ave	0.0293	0.0297		1.27	1.25	1.3	50.0
13C4 PFHpA	Ave	0.9246	1.002		1.35	1.25	8.4	50.0
18O2 PFHxS	Ave	0.3615	0.3591		1.17	1.18	-0.7	50.0
13C-6:2 FTUCA	Ave	0.5484	0.5560		1.27	1.25	1.4	50.0
13C-6:2 FTCA	Ave	0.0424	0.0407		1.20	1.25	-4.1	50.0
M2-6:2 FTS	Ave	0.1342	0.1289		1.14	1.19	-3.9	50.0
13C4 PFOA	Ave	1.010	1.034		1.28	1.25	2.3	50.0
13C4 PFOS	Ave	0.2437	0.2377		1.17	1.20	-2.5	50.0
13C5 PFNA	Ave	0.9888	1.020		1.29	1.25	3.1	50.0
13C-8:2 FTUCA	Ave	0.5900	0.5975		1.27	1.25	1.3	50.0
13C-8:2 FTCA	Ave	0.0317	0.0314		1.24	1.25	-1.0	50.0
13C8 FOSA	Ave	0.3238	0.3443		1.33	1.25	6.3	50.0
M2-8:2 FTS	Ave	0.1350	0.1303		1.16	1.20	-3.5	50.0
13C2 PFDA	Ave	0.9539	1.008		1.32	1.25	5.7	50.0
d3-NMeFOSAA	Ave	0.1322	0.1379		1.30	1.25	4.4	50.0
13C2 PFUnA	Ave	0.8946	0.8998		1.26	1.25	0.6	50.0
d5-NEtFOSAA	Ave	0.1326	0.1347		1.27	1.25	1.6	50.0
13C-10:2 FTUCA	Ave	0.5322	0.5462		1.28	1.25	2.6	50.0
13C-10:2 FTCA	Ave	0.0178	0.0149		1.05	1.25	-16.4	50.0
d7-N-MeFOSE-M	Ave	0.1590	0.1686		1.33	1.25	6.1	50.0
d-N-MeFOSA-M	Ave	0.1053	0.1127		1.34	1.25	7.1	50.0
13C2 PFDoA	Ave	0.9837	1.041		1.32	1.25	5.8	50.0
13C2 10:2 FTS	Ave	0.1260	0.1299		1.24	1.21	3.0	50.0
d9-N-EtFOSE-M	Ave	0.1840	0.1997		1.36	1.25	8.5	50.0
d-N-EtFOSA-M	Ave	0.0980	0.1051		1.34	1.25	7.3	50.0
13C4-6:2 Fluorotelomer phosphate diester	Ave	0.2865	0.3215		1.37	1.22	12.2	50.0
13C2 PFTeDA	Ave	0.8532	0.8417		1.23	1.25	-1.3	50.0
13C2 PFHxDA	Ave	0.7395	0.7916		1.34	1.25	7.0	50.0

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
SDG No.: _____
Lab Sample ID: CCV 320-642490/28 Calibration Date: 12/22/2022 16:54
Instrument ID: A18 Calib Start Date: 12/21/2022 12:10
GC Column: Gemini C18 3x50 ID: 3.00 (mm) Calib End Date: 12/21/2022 13:11
Lab File ID: 2022.12.21_A18_PFC_A_042.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4-8:2 Fluorotelomer phosphate diester	Ave	0.2076	0.2209		1.30	1.22	6.4	50.0

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_042.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 22-Dec-2022 16:54:34 ALS Bottle#: 52 Worklist Smp#: 28
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4 (08)
 Misc. Info.: Plate: 3 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Sublist: chrom-PFAS+_A18*sub3
 Method: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 23-Dec-2022 12:42:38 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1657

First Level Reviewer: sanjumnair

Date: 23-Dec-2022 12:42:38

Ratio Calibration: Initial Calibration Level: 4

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 MTP										
175.00 > 97.00	1.445	1.445	0.0	0.540	346592	1.10		110	704	
2 PPF Acid										M
162.95 > 119.00	1.875	1.875	0.0	0.700	3225614	0.9537		98.3	191	M
3 PFMOAA										
179.00 > 84.90	2.386	2.386	0.0	0.891	2470321	1.02		102	608	
4 R-PSDA										
441.00 > 241.00	2.560	2.560	0.0	0.956	590183	1.01		101	10897	
5 R-EVE										
405.00 > 217.00	2.568	2.568	0.0	0.959	1417469	0.9579		95.8	21782	
6 Hydrolyzed PSDA										
439.10 > 342.90	2.568	2.568	0.0	0.959	1851679	1.00		99.9	28643	
D 8 13C4 PFBA										
217.00 > 172.00	2.678	2.678	0.0	0.586	5409528	1.34		107	17608	
7 Perfluorobutanoic acid										
212.90 > 169.00	2.678	2.678	0.0	1.000	4599537	0.9560		95.6	168	
10 PMPA										
229.00 > 185.00	2.750	2.750	0.0	1.027	5104282	1.03		103	3012	
11 PFPrS										
249.10 > 80.00	2.750	2.750	0.0	0.891	2135528	0.8977		97.6	11544	
12 NVHOS										
297.00 > 135.00	2.777	2.777	0.0	1.037	144685	1.16		116	2699	
13 PFECA F										
229.00 > 85.00	2.814	2.814	0.0	0.923	2556201	1.04		104	11601	
14 PFO2HxA										
245.00 > 85.00	2.953	2.953	0.0	0.969	559518	1.09		109	2086	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 16 13C5 PFPeA										
267.90 > 223.00	3.048	3.048	0.0	0.667	4675462	1.29		104	29558	
15 Perfluoropentanoic acid										
262.90 > 219.00	3.048	3.048	0.0	1.000	3855950	0.9867		98.7	5466	
17 3:3 FTCA										
241.00 > 177.10	3.057	3.057	0.0	0.991	209728	1.07	Target=1.29	107	2059	
241.00 > 116.90	3.048	3.057	-0.009	0.988	154056		1.36(0.64-1.93)		877	
19 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.085	3.085	0.0	1.000	2145080	0.8585	Target=2.33	96.7	9142	
298.90 > 99.00	3.085	3.085	0.0	1.000	925475		2.32(1.16-3.49)		4657	
D 18 13C3 PFBS										
301.90 > 80.00	3.085	3.085	0.0	0.675	2964269	1.19		102	19173	
20 PEPA										
278.90 > 234.90	3.152	3.152	0.0	1.034	4252680	1.02		102	1023	
21 PFECA A										
278.95 > 84.90	3.171	3.171	0.0	1.040	4184077	1.01		101	32215	
22 PES										
314.80 > 135.00	3.268	3.268	0.0	1.059	7412563	0.8923		100	70180	
23 FBSA										
297.90 > 78.00	3.323	3.323	0.0	0.593	563007	0.9680		96.8	9688	
24 PFECA B										
295.20 > 201.00	3.403	3.403	0.0	0.977	823906	1.16		116	15937	
26 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.430	3.430	0.0	1.000	1260552	0.9330	Target=1.90	99.5	21768	
327.00 > 79.96	3.430	3.430	0.0	1.000	641623		1.96(0.95-2.85)		6443	
D 25 M2-4:2 FTS										
329.00 > 81.00	3.430	3.430	0.0	0.751	678128	1.17		99.7	3125	
28 Perfluorohexanoic acid										
313.00 > 269.00	3.483	3.483	0.0	1.000	3917086	1.02	Target=13.49	102	4638	
313.00 > 119.00	3.483	3.483	0.0	1.000	290405		13.49(6.75-20.24)		2747	
D 27 13C2 PFHxA										
315.00 > 270.00	3.483	3.483	0.0	0.762	5108868	1.28		103	34648	
29 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.510	3.510	0.0	1.138	1892508	0.9250	Target=3.01	98.4	16389	
349.00 > 99.00	3.510	3.510	0.0	1.138	608110		3.11(1.50-4.51)		9624	
30 PFO3OA										
311.10 > 85.20	3.555	3.555	0.0	1.020	237338	1.05		105	3222	
31 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.648	3.648	0.0	1.000	147014	1.03	Target=0.88	103	6190	
285.00 > 185.00	3.648	3.648	0.0	1.000	179994		0.82(0.44-1.31)		2050	
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.648	3.648	0.0	0.798	169114	1.27		101	3610	
33 R-PSDCA										
397.00 > 217.00	3.963	3.963	0.0	0.988	1179728	0.8780		87.8	21567	
D 35 13C4 PFHpA										
367.00 > 322.00	4.009	4.009	0.0	0.877	5707434	1.35		108	28896	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
36 Perfluoroheptanoic acid										
363.00 > 319.00	4.009	4.009	0.0	1.000	4026857	0.9691	Target=3.51	96.9	5200	
363.00 > 169.00	4.009	4.009	0.0	1.000	1136839		3.54(1.75-5.26)		9909	
38 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.027	4.027	0.0	1.000	1413019	0.8949	Target=3.29	98.1	11200	
399.00 > 99.00	4.027	4.027	0.0	1.000	424597		3.33(1.64-4.93)		2779	
D 37 18O2 PFHxS										
403.00 > 84.00	4.027	4.027	0.0	0.881	1935116	1.17		99.3	16091	
34 Hydro-EVE Acid										
427.00 > 282.90	4.052	4.052	0.0	1.011	6177763	0.9760		97.6	12251	
39 Hydro-PS Acid										
463.00 > 263.00	4.077	4.077	0.0	1.017	5362355	0.9510		95.1	3984	
41 5:3 FTCA										
340.88 > 236.90	4.086	4.086	0.0	0.979	690385	1.11	Target=1.13	111	9343	
340.88 > 216.90	4.094	4.086	0.008	0.981	618162		1.12(0.56-1.69)		5405	
40 DONA										
377.00 > 251.00	4.094	4.094	0.0	0.800	7211567	1.00	Target=2.17	106	25874	
377.00 > 85.00	4.086	4.094	-0.008	0.799	3298337		2.19(1.09-3.26)		916	
42 PFECA G										
378.90 > 184.90	4.120	4.120	0.0	0.988	1878948	1.04		104	18195	
43 6:2 FTUCA										
356.86 > 292.90	4.145	4.145	0.0	1.000	2586279	1.01	Target=14.13	101	13084	
356.86 > 243.00	4.145	4.145	0.0	1.000	190355		13.59(7.07-21.20)		5166	
D 44 13C-6:2 FTUCA										
358.86 > 293.90	4.145	4.145	0.0	0.907	3166968	1.27		101	30838	
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.171	4.171	0.0	0.913	231881	1.20		95.9	914	
45 6:2 FTCA										
377.10 > 313.10	4.171	4.171	0.0	1.000	49648	1.02	Target=0.64	102	2001	
377.10 > 63.00	4.163	4.171	-0.008	0.998	77041		0.64(0.32-0.96)		1926	
47 PFO4DA										
376.90 > 85.00	4.277	4.277	0.0	1.067	245547	0.9697		97.0	0.5	M
48 PS Acid										
442.80 > 146.80	4.374	4.374	0.0	0.957	1918497	0.9796		98.0	5755	
49 EVE Acid										
407.00 > 262.90	4.383	4.383	0.0	0.959	5998356	0.99		99.4	37646	
51 PFECHS										
460.80 > 380.90	4.490	4.490	0.0	0.983	3846127	0.9281	Target=2.14	100	32478	
460.80 > 98.90	4.490	4.490	0.0	0.983	1854295		2.07(1.07-3.21)		19723	
50 FHxSA										
397.90 > 78.00	4.490	4.490	0.0	0.801	3019768	0.9635		96.3	10316	
53 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.535	4.535	0.0	1.000	1177314	0.9872	Target=2.29	104	11573	
427.00 > 79.96	4.535	4.535	0.0	1.000	470076		2.50(1.15-3.44)		4560	
D 52 M2-6:2 FTS										
429.00 > 81.00	4.535	4.535	0.0	0.992	697334	1.14		96.1	14838	
\$ 54 13C8 PFOA										
421.00 > 376.00	4.569	4.569	0.0	1.000	4851447	1.25		100	18395	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 56 13C4 PFOA										
417.00 > 372.00	4.569	4.569	0.0	1.000	5887379	1.28		102	14004	
58 Perfluorooctanoic acid										
413.00 > 369.00	4.569	4.569	0.0	1.000	4370593	0.99	Target=2.76	99.5	2838	M
413.00 > 169.00	4.569	4.569	0.0	1.000	1626071		2.69(1.38-4.14)		8314	M
* 55 13C2 PFOA										
415.00 > 370.00	4.569	4.569	0.0		5696055	1.25			17106	
57 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.578	4.578	0.0	0.895	1253765	0.9645	Target=4.72	101	16154	
449.00 > 99.00	4.578	4.578	0.0	0.895	264718		4.74(2.36-7.08)		5645	
59 TAF										
442.90 > 85.00	4.983	4.983	0.0	1.091	197761	1.12		112	4318	
D 61 13C4 PFOS										
503.00 > 80.00	5.116	5.116	0.0	1.120	1296906	1.17		97.5	7116	
\$ 60 13C8 PFOS										
507.00 > 99.00	5.116	5.116	0.0	1.120	564989	1.19		99.3	8223	
62 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.116	5.116	0.0	1.000	1000719	0.8896	Target=4.87	95.7	2296	
499.00 > 99.00	5.116	5.116	0.0	1.000	208064		4.81(2.43-7.30)		3542	
D 64 13C5 PFNA										
468.00 > 423.00	5.123	5.123	0.0	1.121	5807854	1.29		103	28629	
63 Perfluorononanoic acid										
463.00 > 419.00	5.123	5.123	0.0	1.000	4066500	1.01	Target=7.86	101	5062	
463.00 > 169.00	5.123	5.123	0.0	1.000	536320		7.58(3.93-11.78)		7147	
65 7:3 FTCA										
441.00 > 337.00	5.246	5.246	0.0	0.988	800631	1.06	Target=1.24	106	4276	
441.00 > 317.00	5.246	5.246	0.0	0.988	669462		1.20(0.62-1.87)		2995	
D 67 13C-8:2 FTUCA										
458.86 > 393.90	5.284	5.284	0.0	1.156	3403122	1.27		101	11216	
66 8:2 FTUCA										
456.86 > 392.90	5.284	5.284	0.0	1.000	2610890	1.01	Target=35.99	101	13068	
456.86 > 343.00	5.284	5.284	0.0	1.000	78785		33.14(17.99-53.98)		3250	
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.312	5.312	0.0	1.162	178751	1.24		99.0	1097	
69 8:2 FTCA										
477.00 > 393.10	5.321	5.321	0.0	1.002	143483	0.99	Target=2.79	99.1	842	
477.00 > 63.20	5.312	5.321	-0.009	1.000	49723		2.89(1.39-4.18)		1420	
70 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	5.417	5.417	0.0	1.059	2760102	1.02		109	37068	
D 72 13C8 FOSA										
506.00 > 78.00	5.605	5.605	0.0	1.227	1961148	1.33		106	16646	
73 Perfluorononanesulfonic acid										
549.00 > 80.00	5.613	5.613	0.0	1.097	859972	1.02	Target=2.88	106	9934	
549.00 > 99.00	5.613	5.613	0.0	1.097	290781		2.96(1.44-4.32)		10089	
71 Perfluorooctanesulfonamide										
498.00 > 78.00	5.613	5.613	0.0	1.001	1475036	0.9863		98.6	15364	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.621	5.621	0.0	1.230	712628	1.16		96.5	12249	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	5.621	5.621	0.0	1.000	944194	0.9656	Target=2.38	101	20520	
527.00 > 79.96	5.630	5.621	0.009	1.001	387303		2.44(1.19-3.58)		5397	
D 76 13C2 PFDA										
515.00 > 470.00	5.630	5.630	0.0	1.232	5742291	1.32		106	24481	
77 Perfluorodecanoic acid										
513.00 > 469.00	5.638	5.638	0.0	1.001	3015600	1.00	Target=7.41	99.8	6862	
513.00 > 169.00	5.638	5.638	0.0	1.001	406042		7.43(3.70-11.11)		8691	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.858	5.858	0.0	1.282	785650	1.30		104	4035	
79 N-methylperfluorooctanesulfonami										
570.00 > 419.00	5.866	5.866	0.0	1.001	472478	0.9508	Target=0.78	95.1	5379	
570.00 > 483.00	5.866	5.866	0.0	1.001	617089		0.77(0.39-1.17)		6698	
80 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.067	6.067	0.0	1.186	796289	1.01	Target=2.82	105	15223	
599.00 > 99.00	6.067	6.067	0.0	1.186	269513		2.95(1.41-4.23)		9029	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.095	6.095	0.0	1.334	767420	1.27		102	3943	
D 82 13C2 PFUnA										
565.00 > 520.00	6.095	6.095	0.0	1.334	5125176	1.26		101	36109	
83 Perfluoroundecanoic acid										
563.00 > 519.00	6.095	6.095	0.0	1.000	2780418	0.99	Target=7.89	99.2	9515	
563.00 > 169.00	6.095	6.095	0.0	1.000	362065		7.68(3.95-11.84)		9822	
84 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	6.105	6.105	0.0	1.002	467631	1.01	Target=0.75	101	7326	
584.00 > 526.10	6.105	6.105	0.0	1.002	579389		0.81(0.38-1.13)		8011	
D 89 13C-10:2 FTUCA										
558.86 > 493.90	6.266	6.266	0.0	1.371	3110926	1.28		103	9026	
90 10:2 FTUCA										
556.86 > 492.90	6.266	6.266	0.0	1.000	1769261	1.01		101	24739	
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.275	6.275	0.0	1.373	84710	1.05		83.6	378	
92 10:2 FTCA										
576.80 > 493.00	6.284	6.284	0.0	1.001	76882	1.19	Target=2.41	119	143	
576.80 > 63.10	6.284	6.284	0.0	1.001	35169		2.19(1.20-3.61)		172	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.319	6.319	0.0	1.383	960584	1.33		106	4116	
93 11-Chloroeicosafuoro-3-oxaundec										
631.00 > 451.00	6.319	6.319	0.0	1.235	3473879	1.01		107	45844	
86 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	6.337	6.337	0.0	1.003	772338	1.02		102	4904	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.337	6.337	0.0	1.387	642151	1.34		107	2707	
88 NMeFOSA										
512.00 > 169.00	6.346	6.346	0.0	1.001	494336	0.99	Target=2.06	99.2	2306	
512.00 > 218.99	6.346	6.346	0.0	1.001	235668		2.10(1.03-3.09)		2634	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
99 Perfluorododecanoic acid										
613.00 > 569.00	6.515	6.515	0.0	1.000	4028835	0.9844	Target=7.83	98.4	7515	
613.00 > 169.00	6.515	6.515	0.0	1.000	504179		7.99(3.91-11.74)		11780	
D 98 13C2 PFDaA										
615.00 > 570.00	6.515	6.515	0.0	1.426	5928368	1.32		106	15747	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.525	6.525	0.0	1.428	713894	1.24		103	12716	
101 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	6.535	6.535	0.0	1.002	717751	0.9302	Target=1.80	96.3	7686	
627.00 > 79.96	6.525	6.535	-0.010	1.000	431223		1.66(0.90-2.70)		7609	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.575	6.575	0.0	1.439	1137317	1.36		109	6510	
95 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	6.595	6.595	0.0	1.003	894412	1.04		104	5707	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.605	6.605	0.0	1.445	598750	1.34		107	1621	
97 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	6.615	6.615	0.0	1.002	460127	1.03	Target=1.83	103	3928	
526.00 > 218.99	6.615	6.615	0.0	1.002	243854		1.89(0.92-2.75)		2489	
102 Perfluorododecanesulfonic acid (
699.00 > 80.00	6.852	6.852	0.0	1.339	291295	1.08	Target=0.66	111	7911	
699.00 > 99.00	6.852	6.852	0.0	1.339	440357		0.66(0.33-0.99)		8191	
103 Perfluorotridecanoic acid										
663.00 > 619.00	6.889	6.889	0.0	1.057	3924143	1.05	Target=6.66	105	8067	
663.00 > 169.00	6.880	6.889	-0.009	1.056	549462		7.14(3.33-9.99)		7662	
D 112 13C4-6:2 diPAP										
792.82 > 78.90	7.118	7.118	0.0	1.558	1782212	1.37		112	5149	
114 6:2 diPAP										
788.79 > 78.90	7.125	7.125	0.0	1.001	1301931	0.9209	Target=1.89	94.6	2283	
788.79 > 96.90	7.125	7.125	0.0	1.001	677601		1.92(0.95-2.84)		2225	
105 Perfluorotetradecanoic acid										
713.00 > 169.00	7.222	7.222	0.0	1.000	385164	1.02	Target=0.92	102	4866	
713.00 > 219.00	7.222	7.222	0.0	1.000	402724		0.96(0.46-1.38)		4453	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.222	7.222	0.0	1.581	4794328	1.23		98.7	8226	
115 6:2/8:2 diPAP										
888.70 > 78.90	7.605	7.605	0.0	1.068	1286808	0.9079	Target=1.35	93.0	5475	
888.70 > 96.90	7.605	7.605	0.0	1.068	939697		1.37(0.68-2.03)		4349	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.784	7.784	0.0	1.703	4508843	1.34		107	8238	
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.784	7.784	0.0	1.000	3141719	1.00	Target=8.78	100	4309	
813.00 > 169.00	7.784	7.784	0.0	1.000	346721		9.06(4.39-13.18)		5558	
D 113 13C4-8:2 diPAP										
992.77 > 96.90	8.007	8.007	0.0	1.752	1231321	1.30		106	4175	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
116 8:2 diPAP										
988.74 > 78.90	8.007	8.007	0.0	1.000	956197	1.01	Target=1.18	104	3904	
988.74 > 96.90	8.007	8.007	0.0	1.000	776752		1.23(0.59-1.77)		4233	
108 Perfluorooctadecanoic acid										
913.00 > 869.00	8.269	8.269	0.0	1.062	2038962	1.18	Target=10.05	118	2330	
913.00 > 169.00	8.260	8.269	-0.009	1.061	216570		9.41(5.02-15.07)		3457	
117 10:2 diPAP										
1188.79 > 78.90	8.756	8.756	0.0	1.094	201057	2.06	Target=1.13	205	7448	
1188.79 > 96.90	8.756	8.756	0.0	1.094	177338		1.13(0.57-1.70)		4735	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

LCPFC+6C_LL4_00008

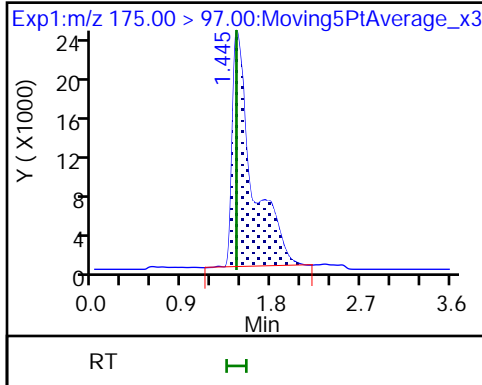
Amount Added: 1.00

Units: mL

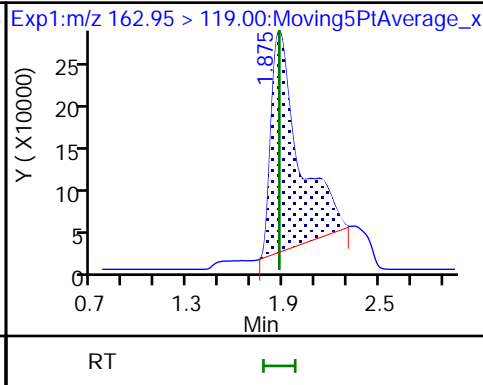
Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_042.d
Injection Date: 22-Dec-2022 16:54:34 Instrument ID: A18
Lims ID: CCV L4
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 52 Worklist Smp#: 28
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL

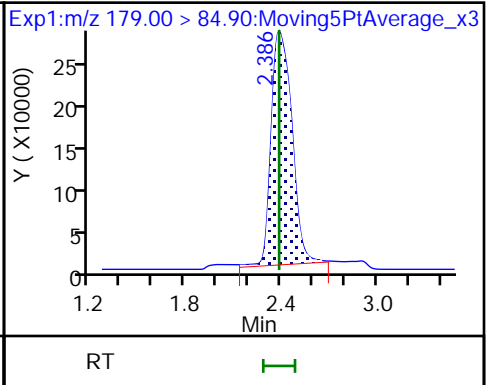
1 MTP



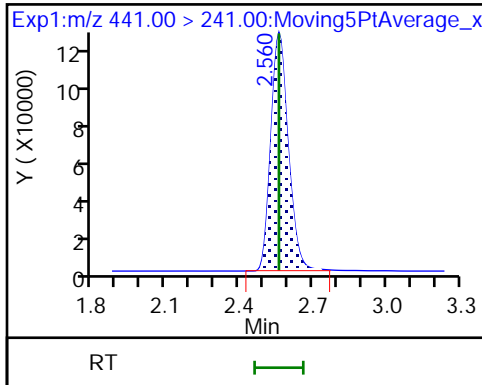
2 PPF Acid (M)



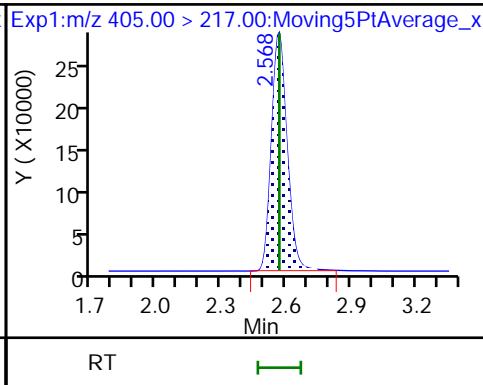
3 PFMOAA



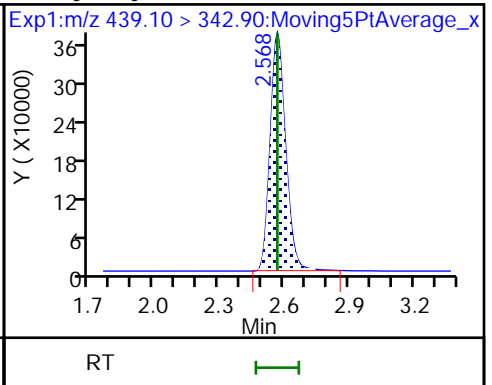
4 R-PSDA



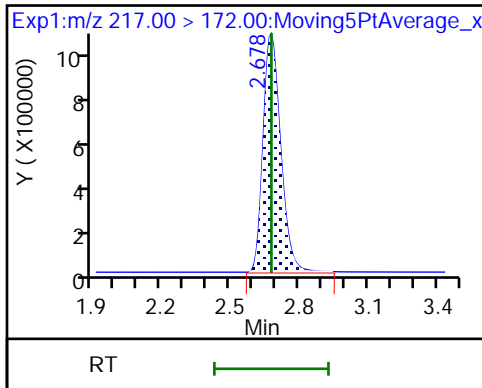
5 R-EVE



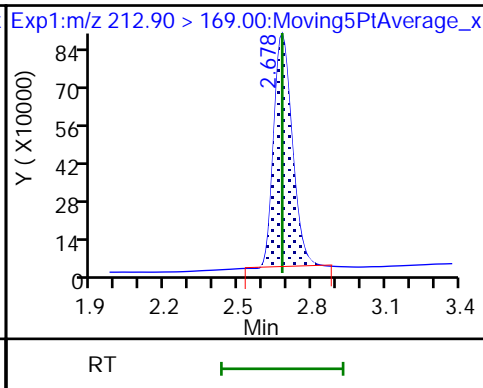
6 Hydrolyzed PSDA



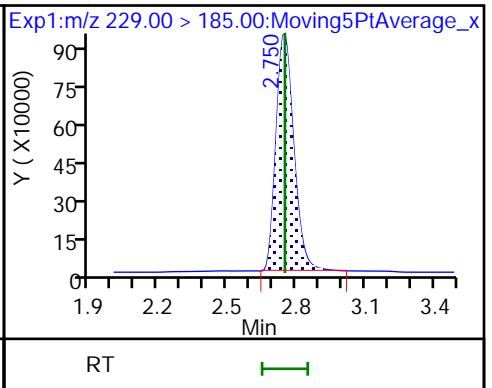
D 8 13C4 PFBA



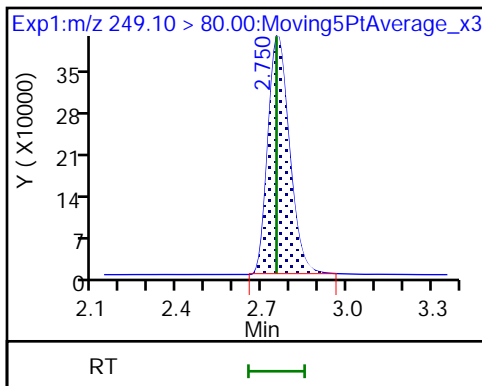
7 Perfluorobutanoic acid



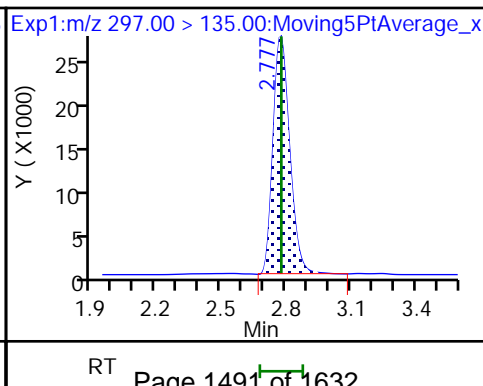
10 PMPA



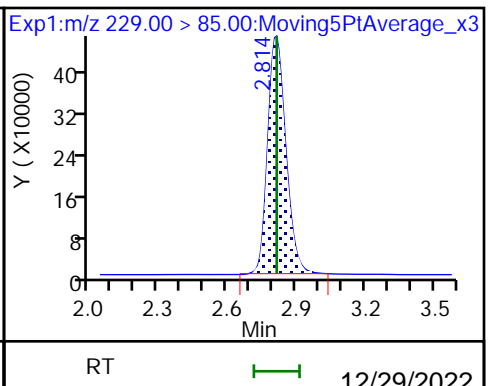
11 PFPrS

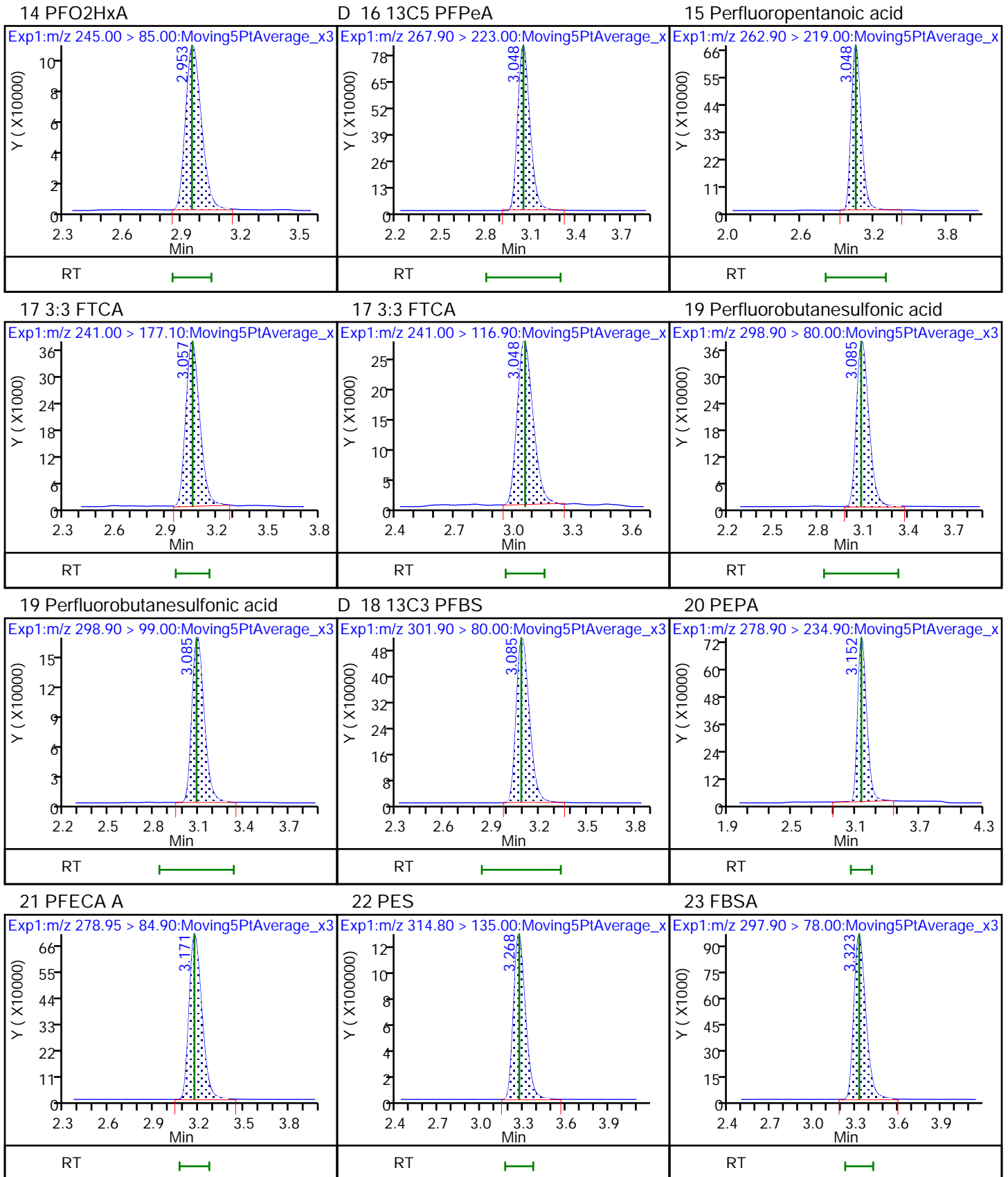


12 NVHOS



13 PFECA F

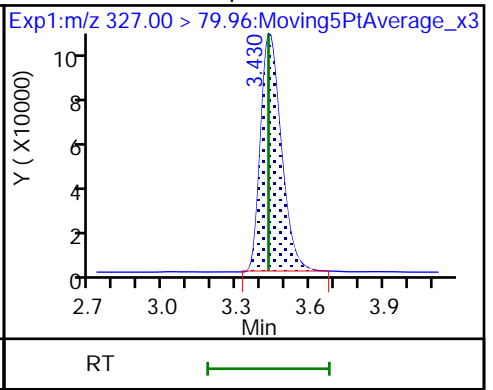
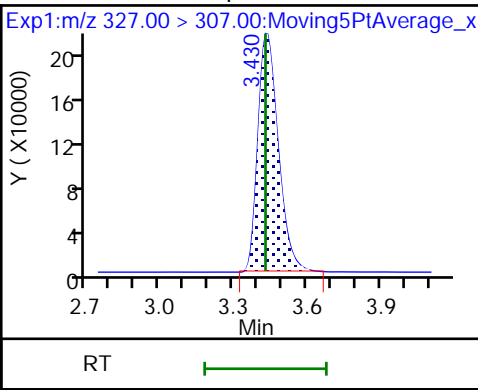
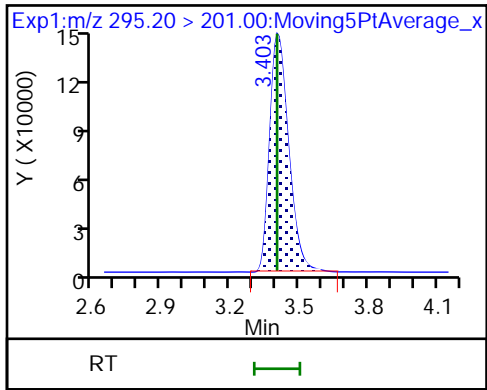




24 PFECAB

26 1H,1H,2H,2H-perfluorohexanesulfo

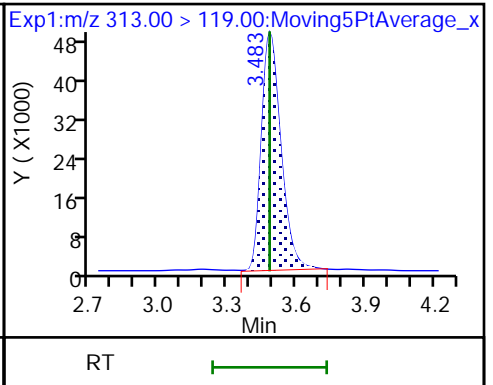
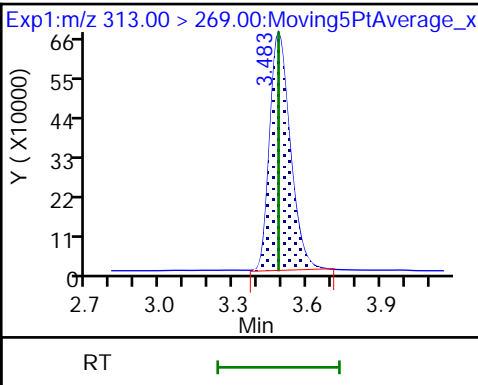
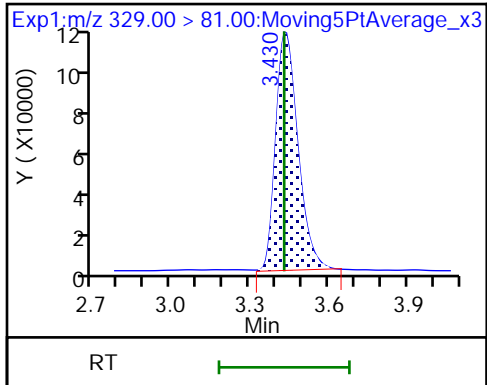
26 1H,1H,2H,2H-perfluorohexanesulfo



D 25 M2-4:2 FTS

28 Perfluorohexanoic acid

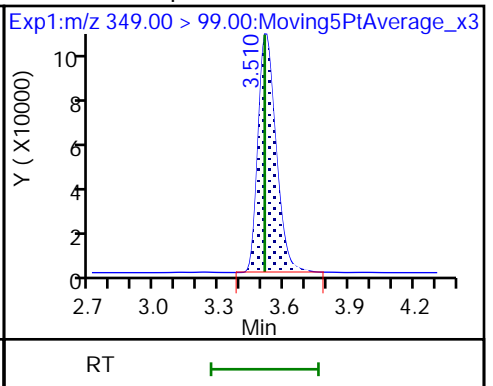
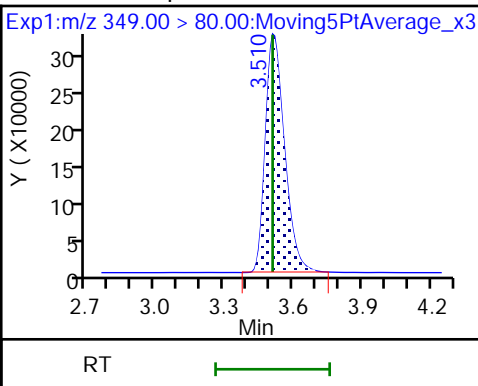
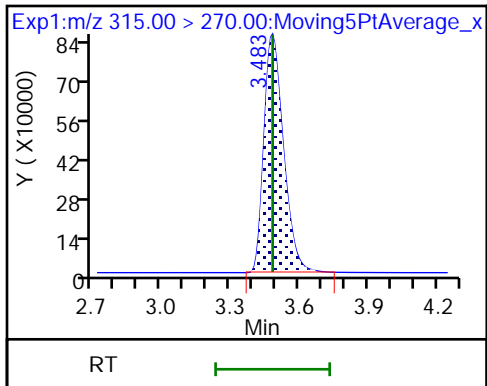
28 Perfluorohexanoic acid



D 27 13C2 PFHxA

29 Perfluoropentanesulfonic acid

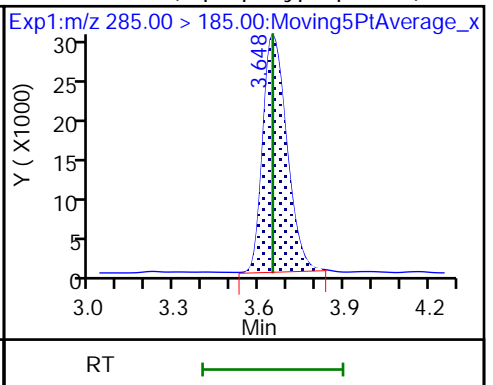
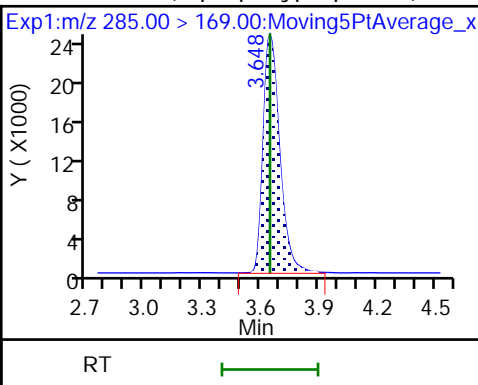
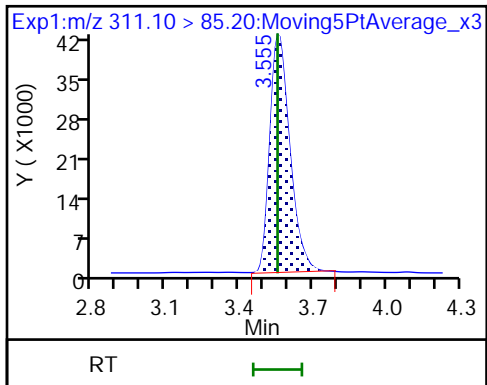
29 Perfluoropentanesulfonic acid



30 PFO3OA

31 Perfluoro(2-propoxypropanoic) ac

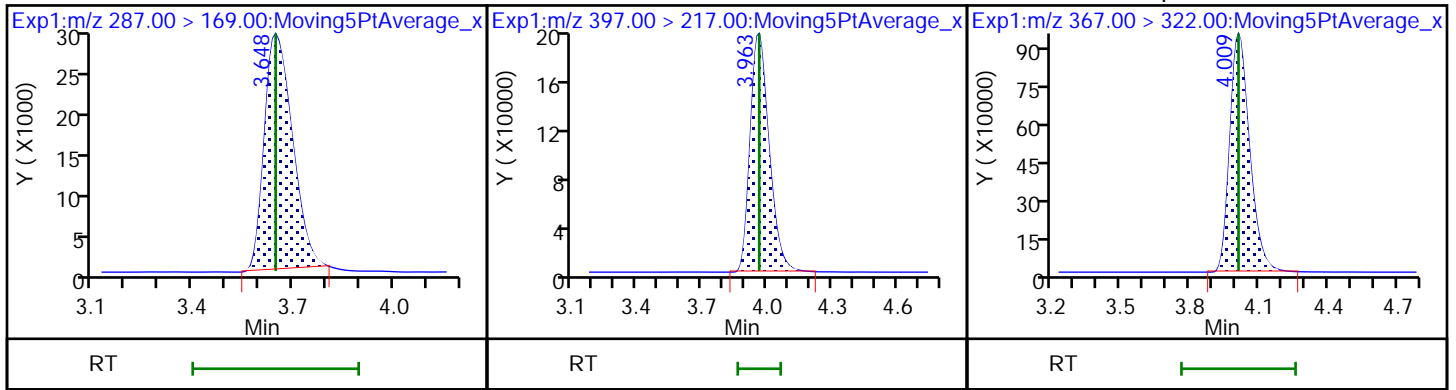
31 Perfluoro(2-propoxypropanoic) ac



D 32 13C3 HFPO-DA

33 R-PSDCA

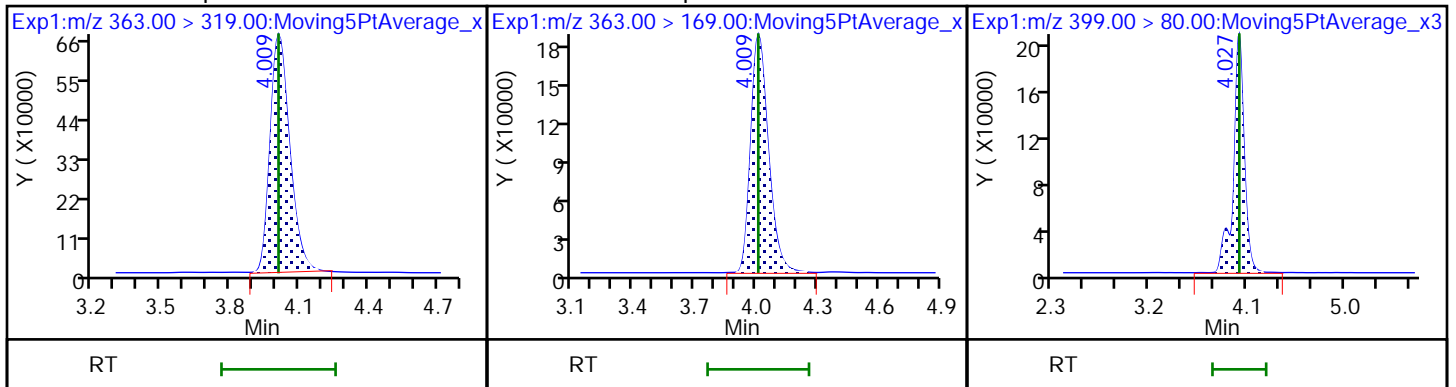
D 35 13C4 PFHpA



36 Perfluoroheptanoic acid

36 Perfluoroheptanoic acid

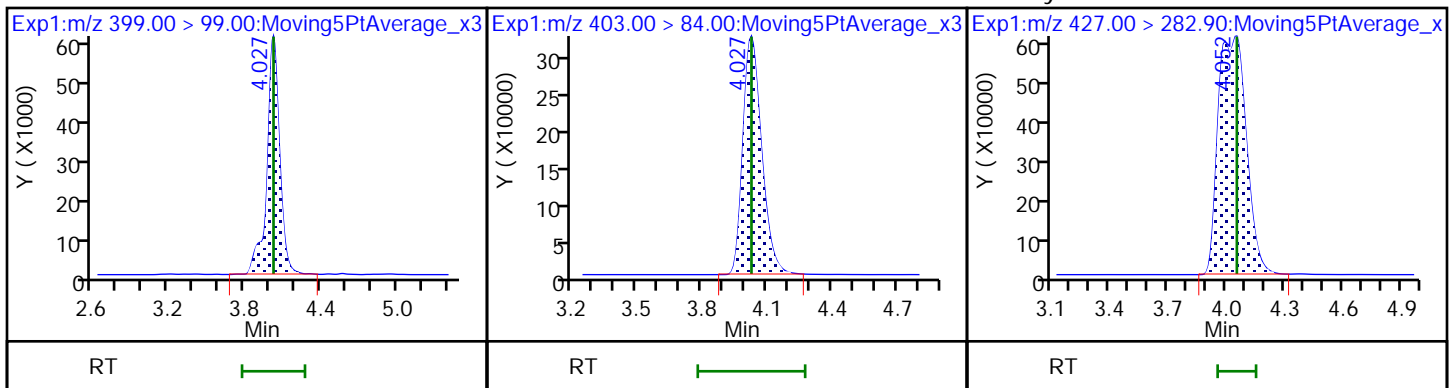
38 Perfluorohexanesulfonic acid



38 Perfluorohexanesulfonic acid

D 37 18O2 PFHxS

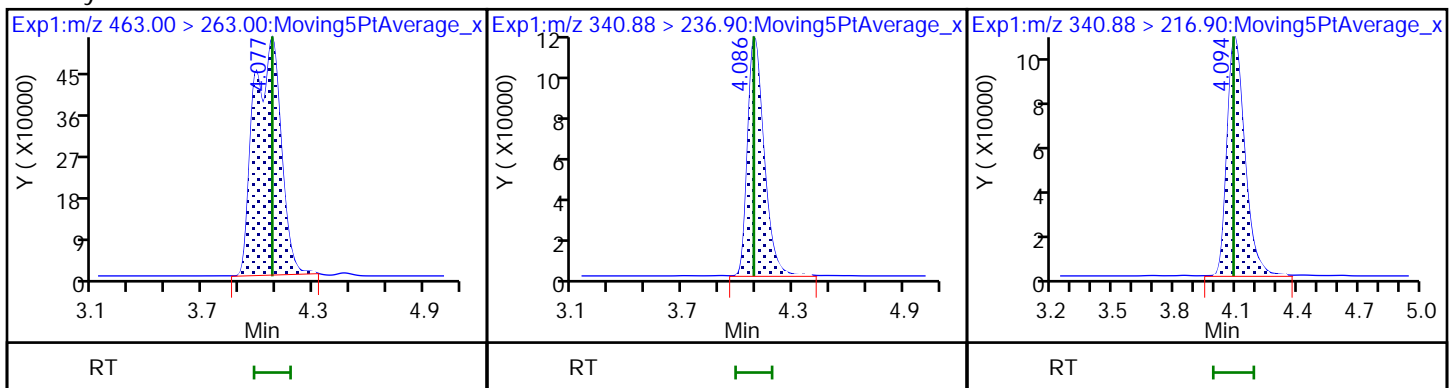
34 Hydro-EVE Acid

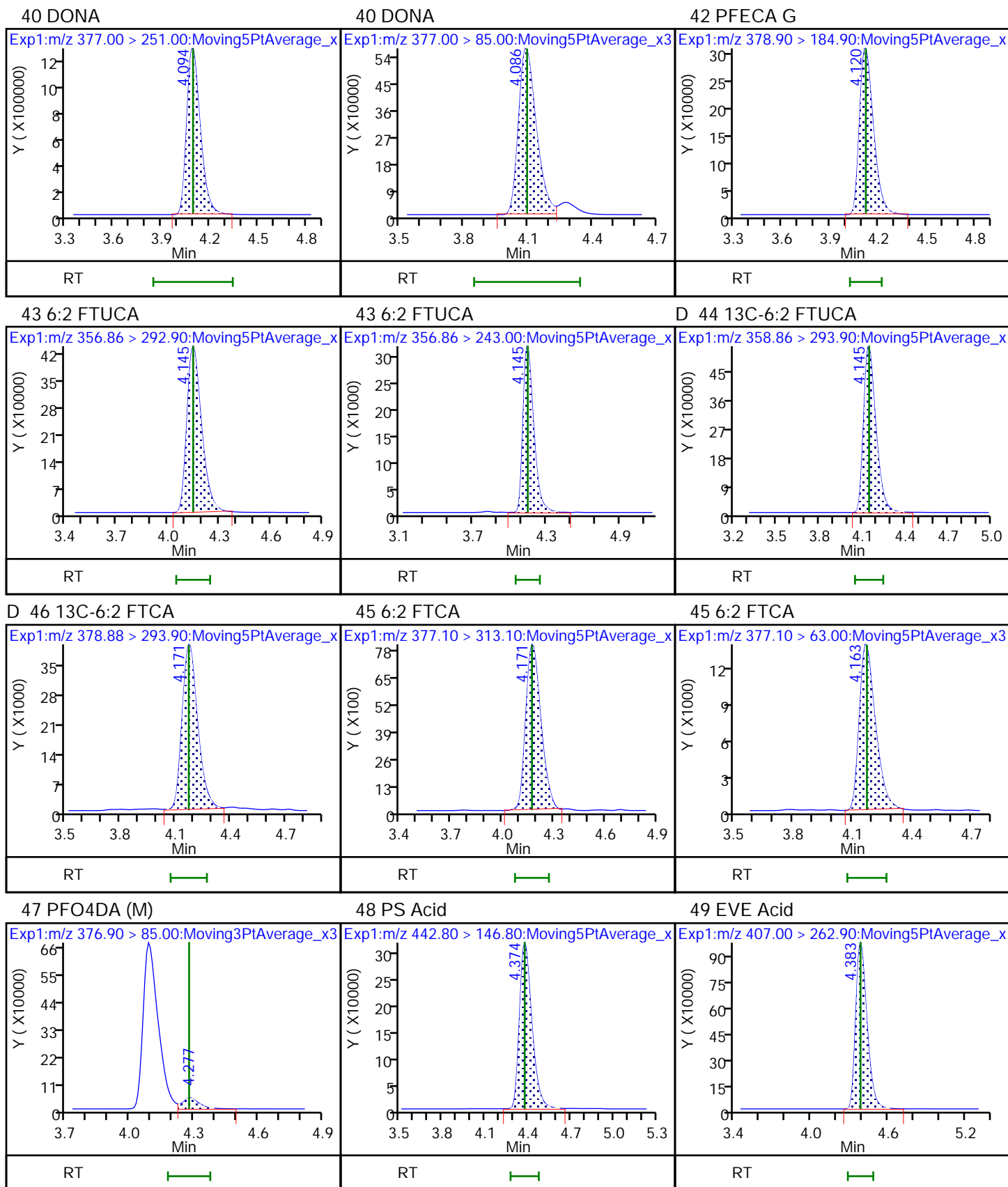


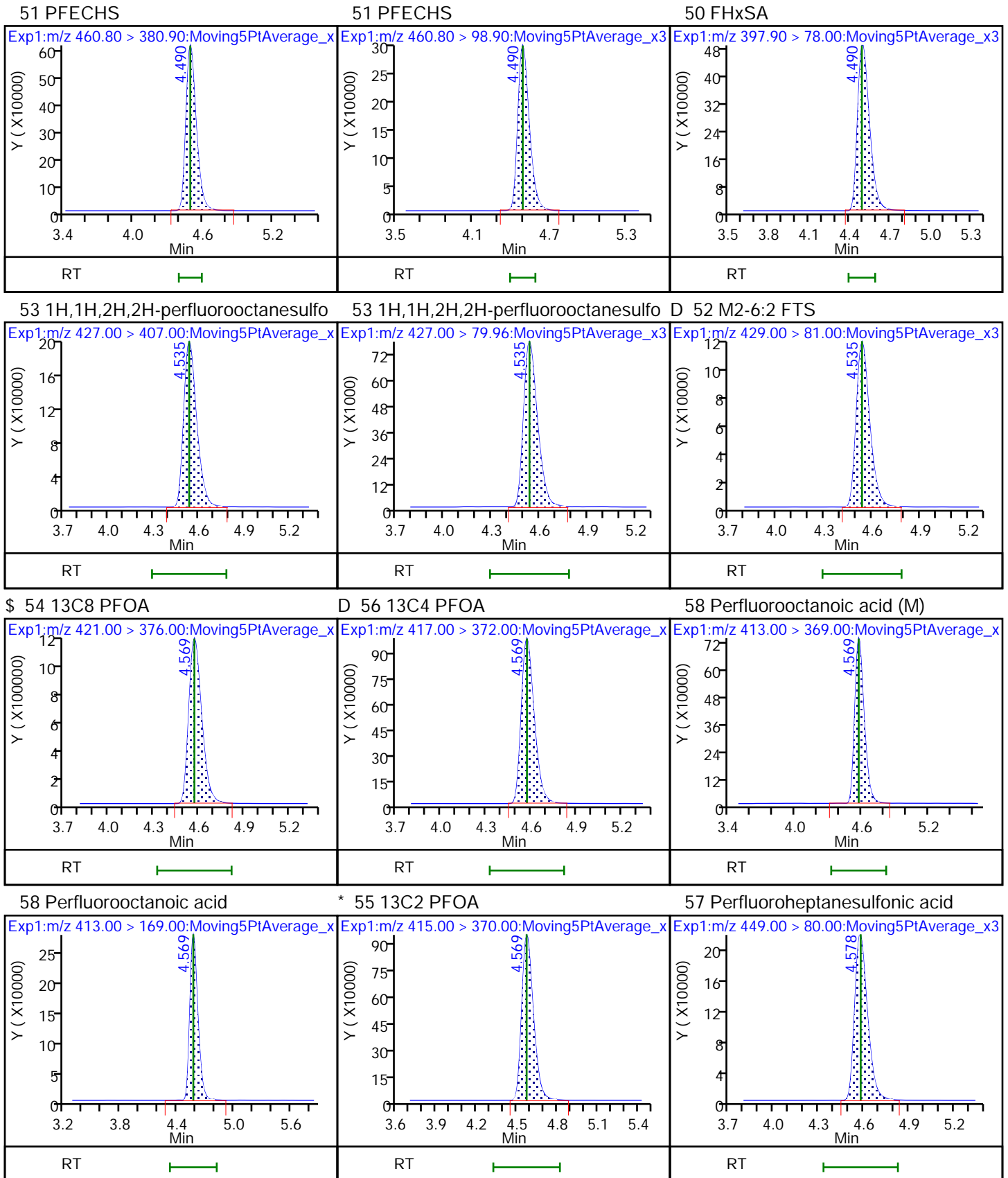
39 Hydro-PS Acid

41 5:3 FTCA

41 5:3 FTCA



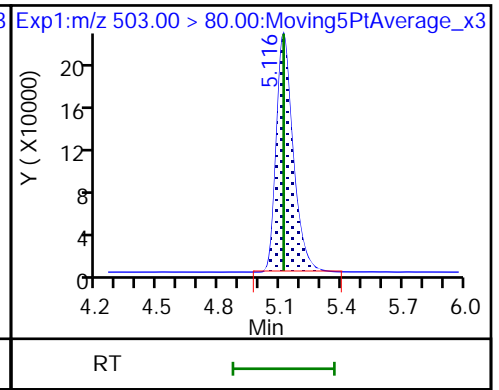
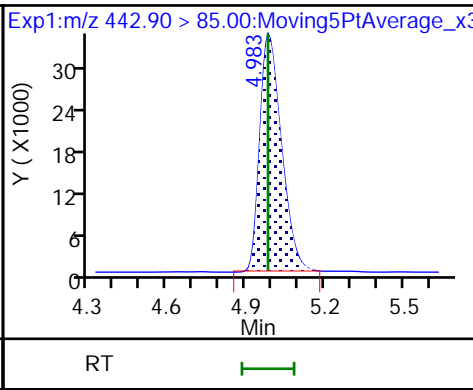
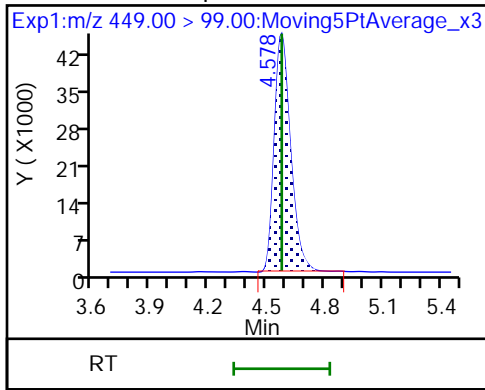




57 Perfluoroheptanesulfonic acid

59 TAF

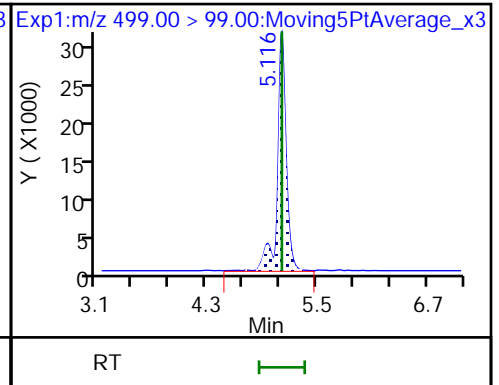
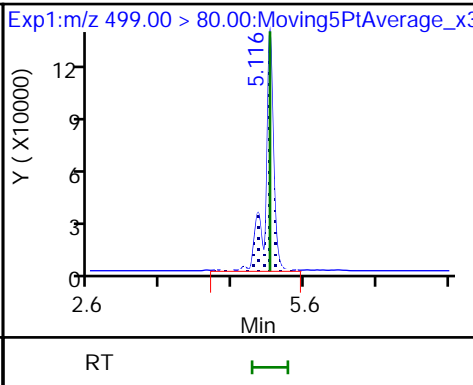
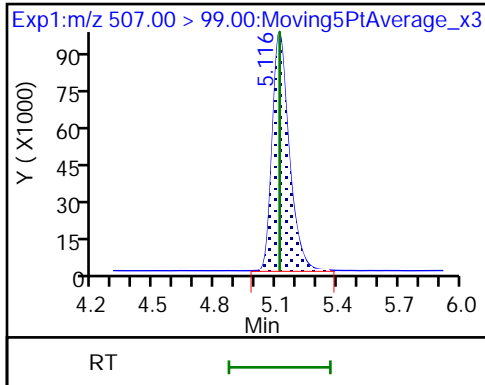
D 61 13C4 PFOS



\$ 60 13C8 PFOS

62 Perfluorooctanesulfonic acid

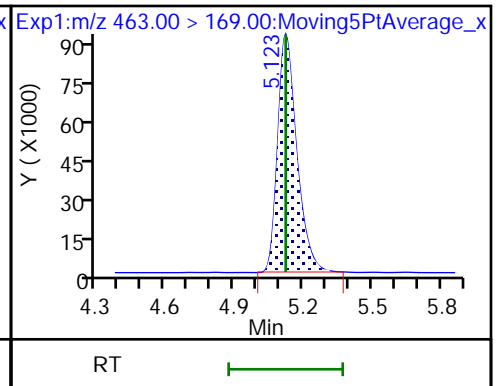
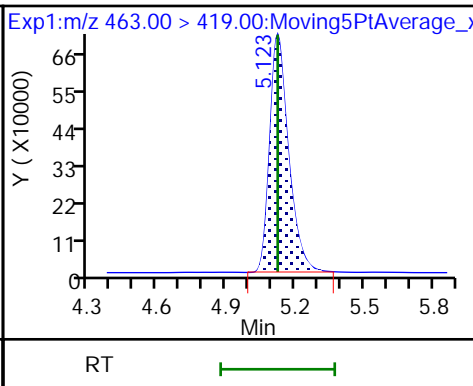
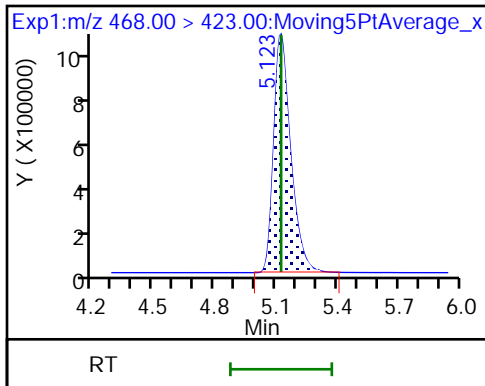
62 Perfluorooctanesulfonic acid



D 64 13C5 PFNA

63 Perfluorononanoic acid

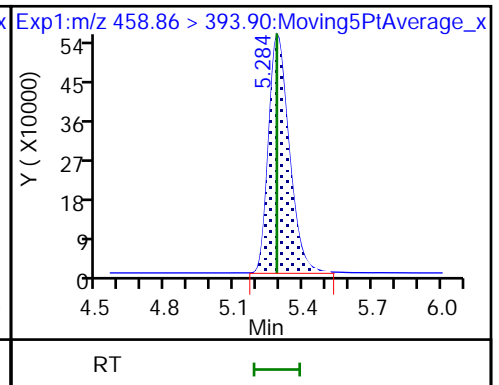
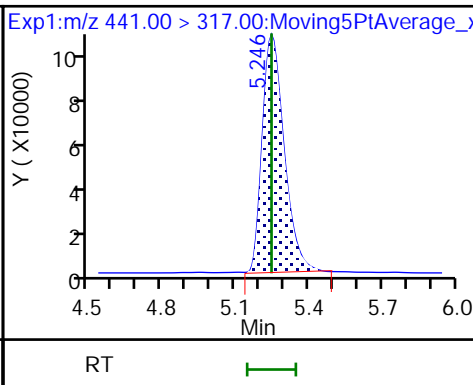
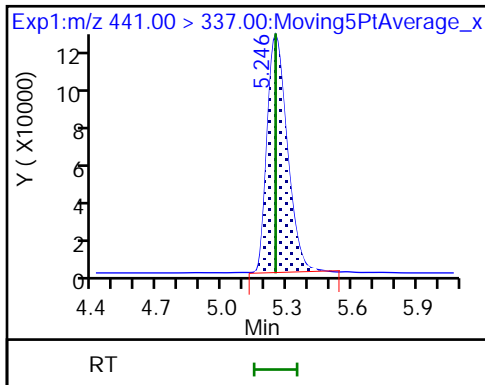
63 Perfluorononanoic acid

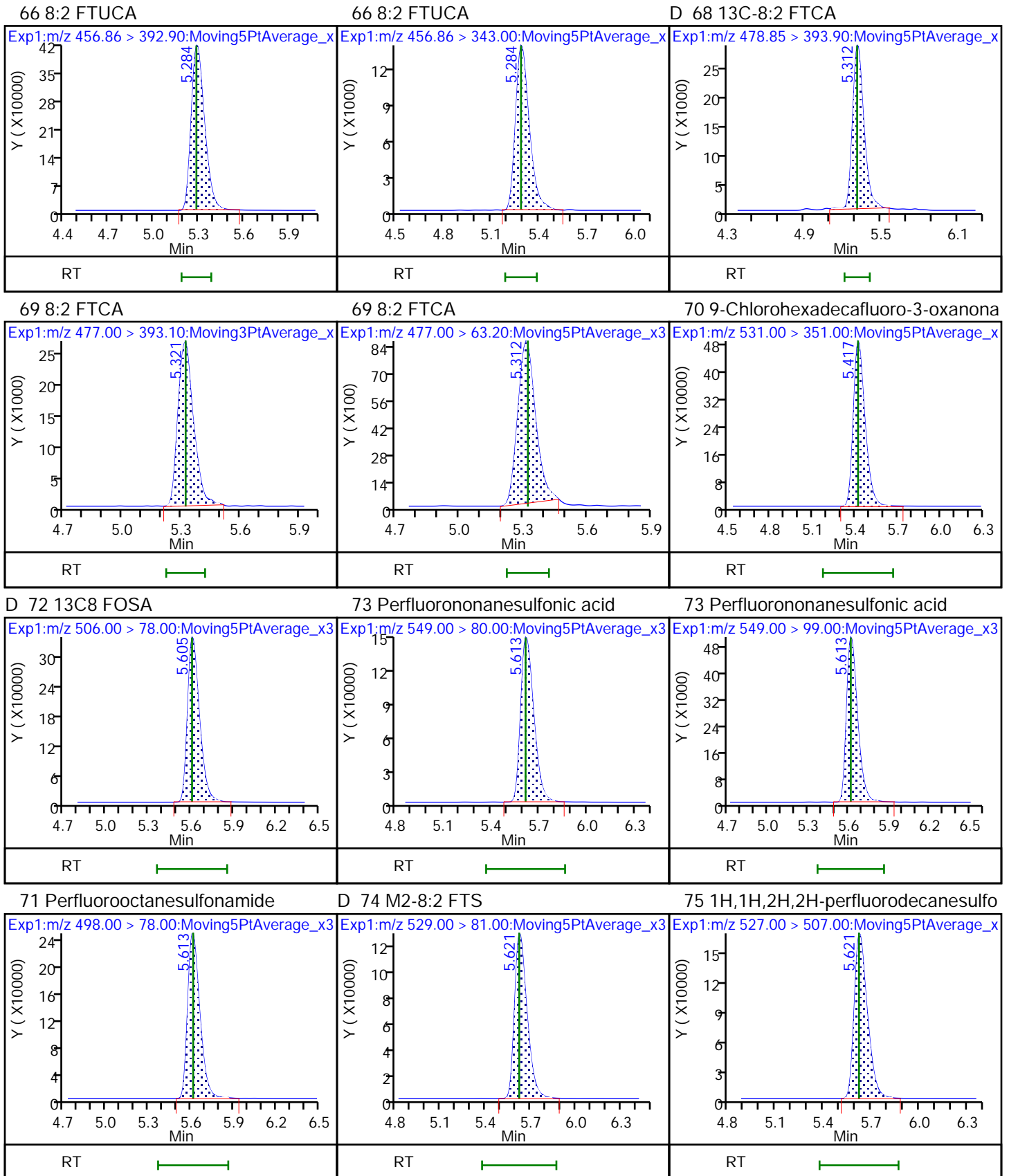


65 7:3 FTCA

65 7:3 FTCA

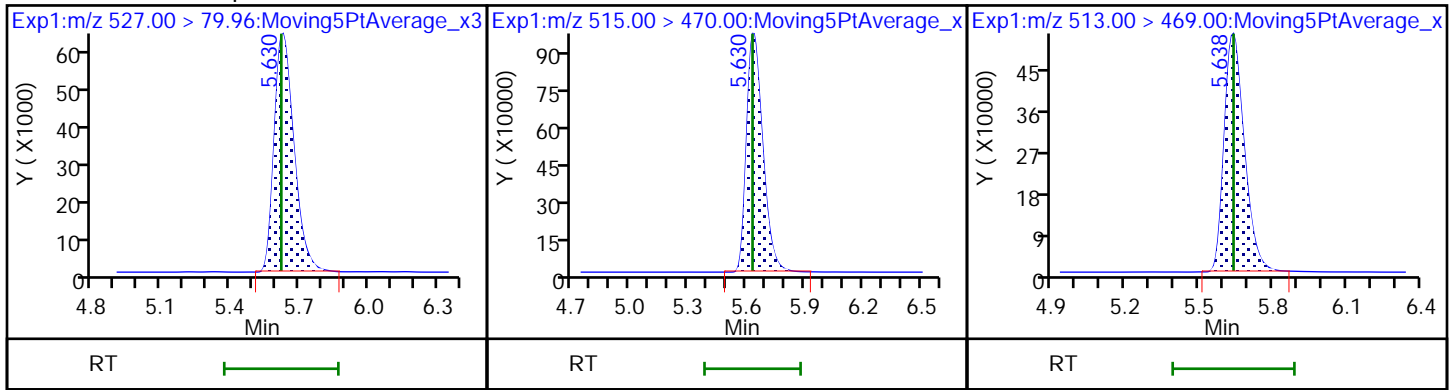
D 67 13C-8:2 FTUCA





75 1H,1H,2H,2H-perfluorodecanesulfo D 76 13C2 PFDA

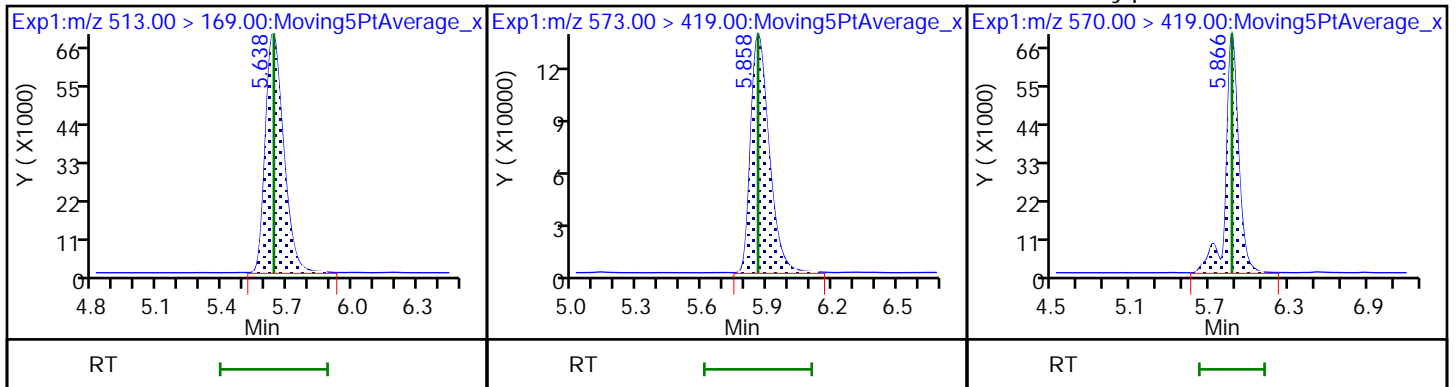
77 Perfluorodecanoic acid



77 Perfluorodecanoic acid

D 78 d3-NMeFOSAA

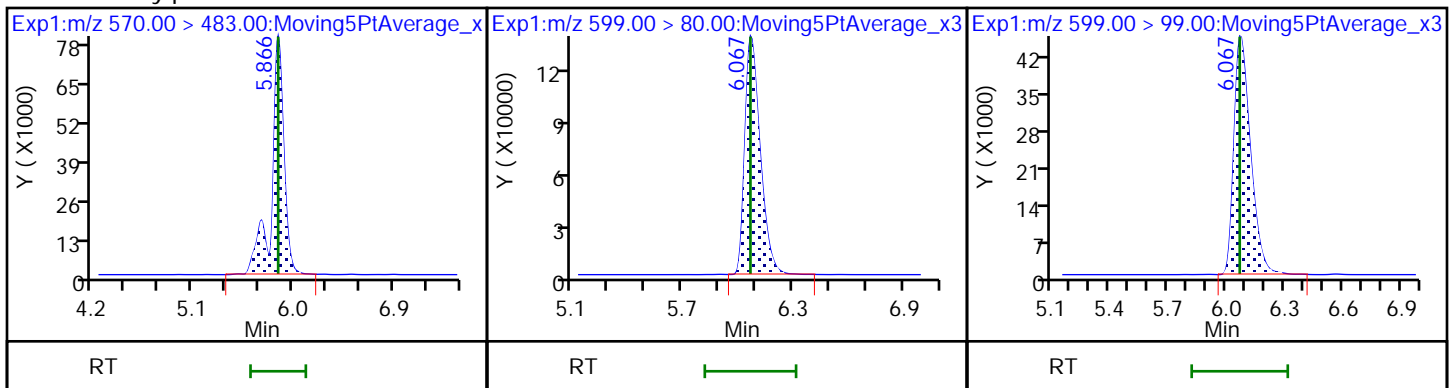
79 N-methylperfluorooctanesulfonami



79 N-methylperfluorooctanesulfonami

80 Perfluorodecanesulfonic acid

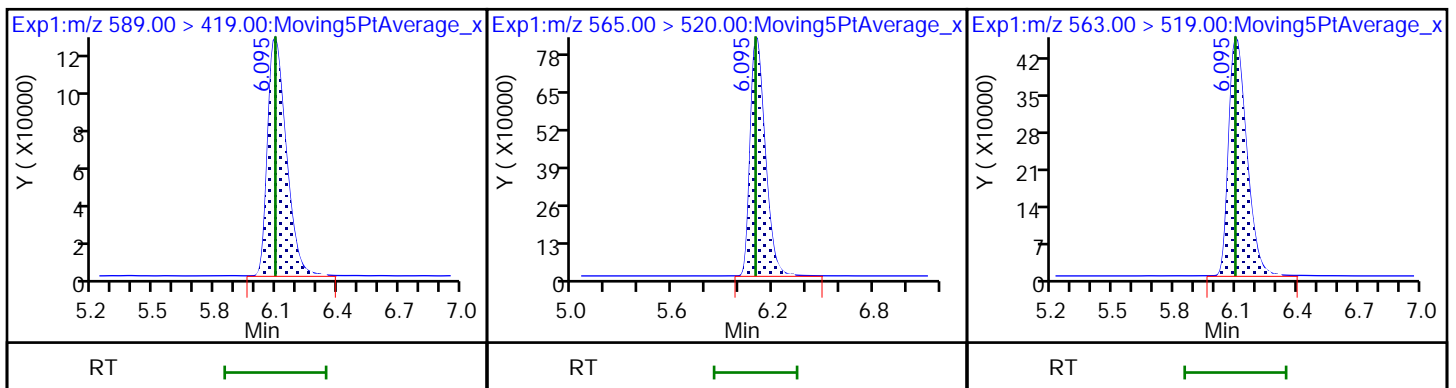
80 Perfluorodecanesulfonic acid



D 81 d5-NEtFOSAA

D 82 13C2 PFUnA

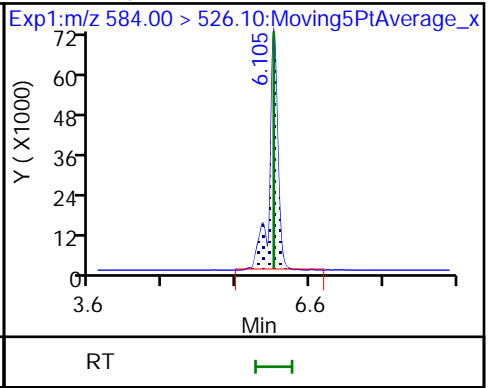
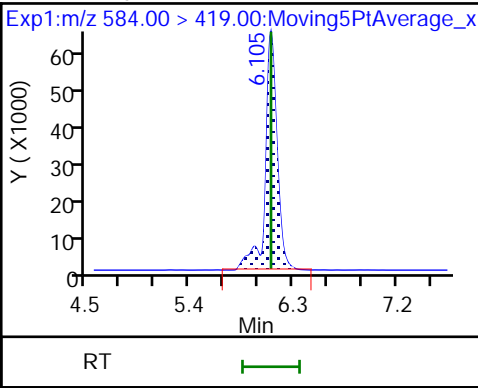
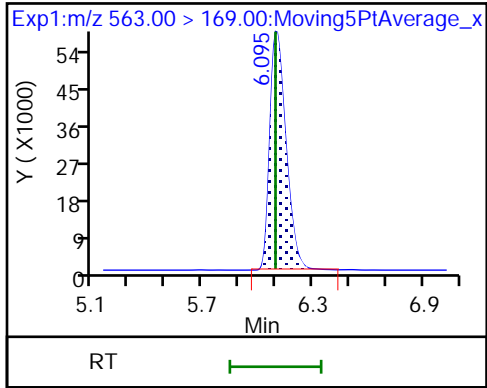
83 Perfluoroundecanoic acid



83 Perfluoroundecanoic acid

84 N-ethylperfluorooctanesulfonamid

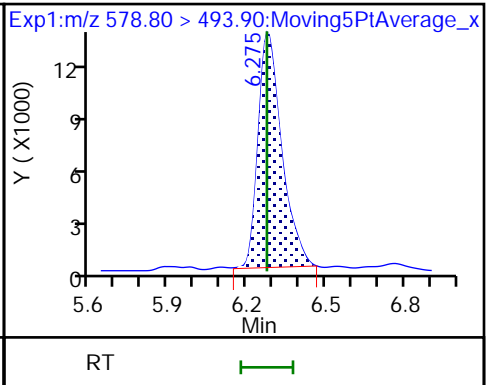
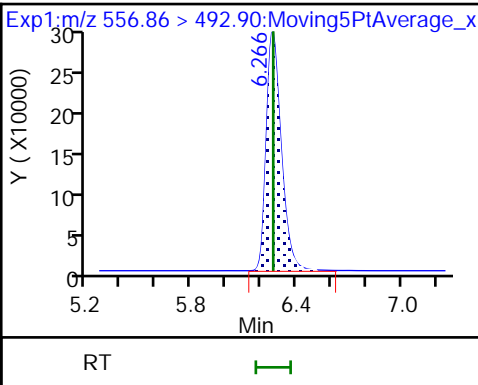
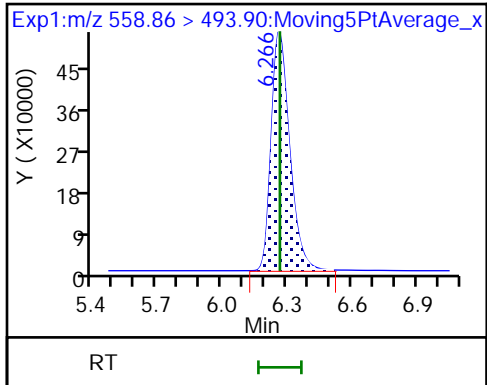
84 N-ethylperfluorooctanesulfonamid



D 89 13C-10:2 FTUCA

90 10:2 FTUCA

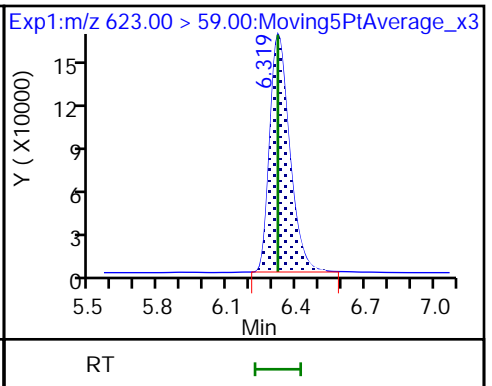
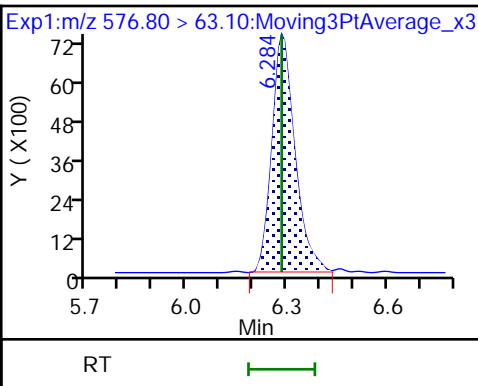
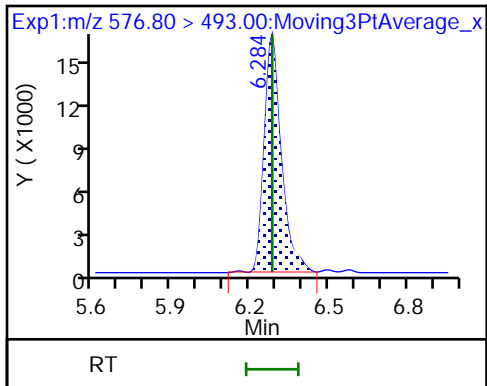
D 91 13C-10:2 FTCA



92 10:2 FTCA

92 10:2 FTCA

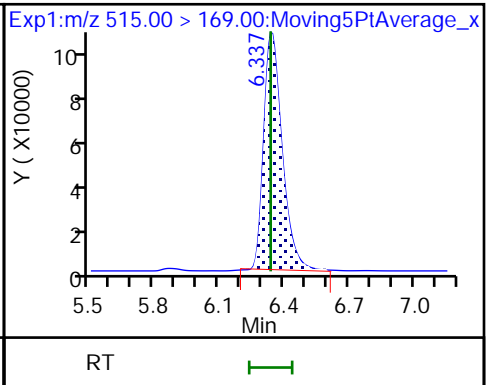
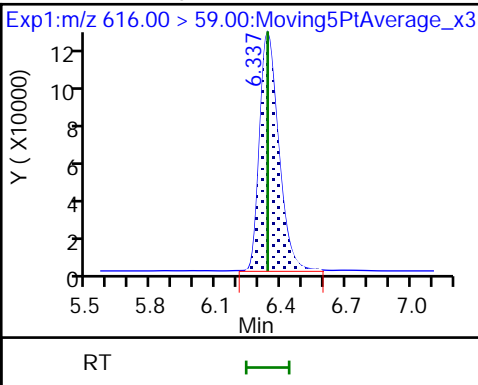
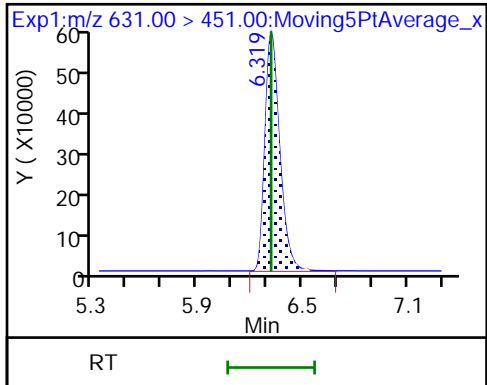
D 85 d7-N-MeFOSE-M

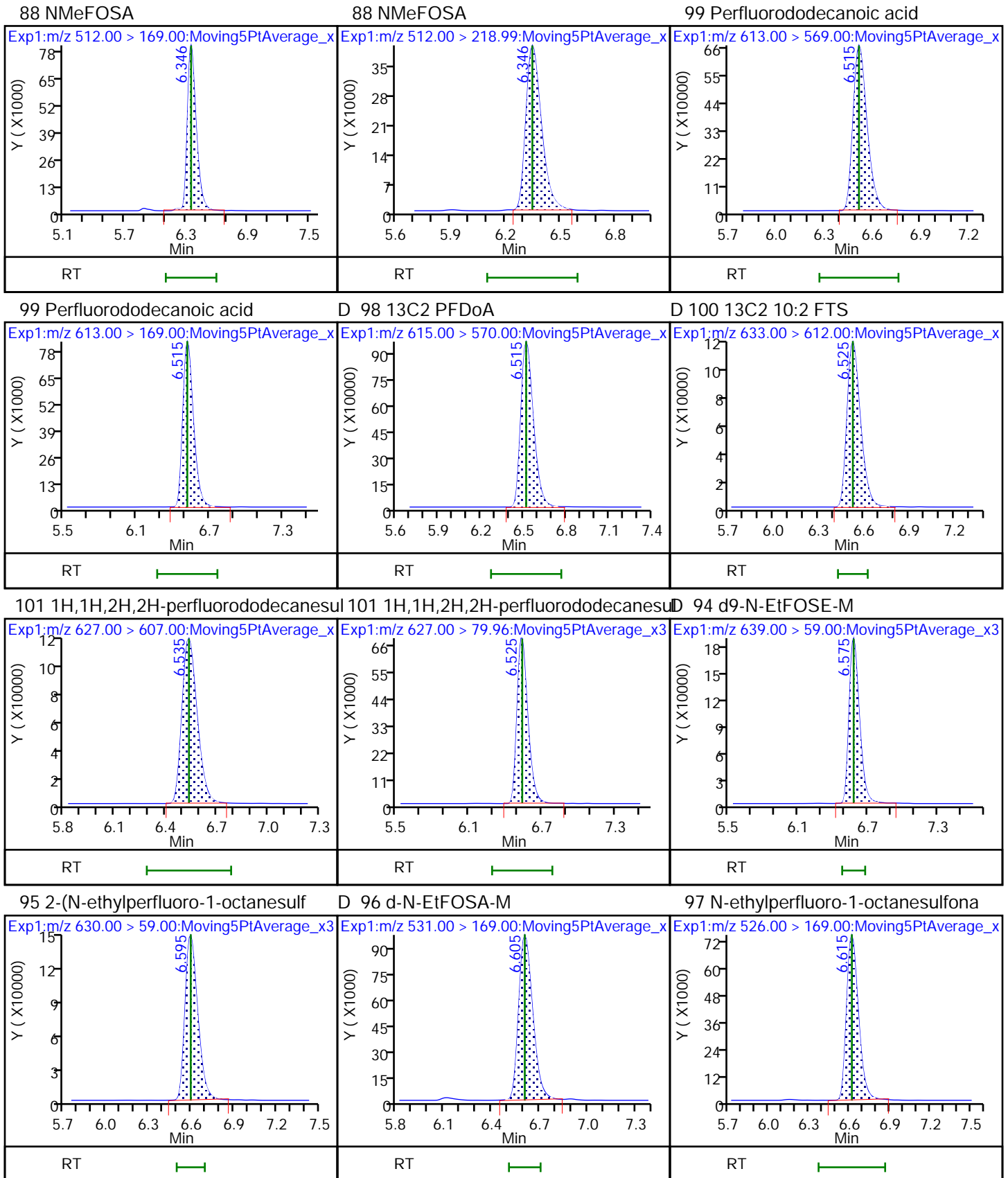


93 11-Chloroeicosafluoro-3-oxaundec

86 2-(N-methylperfluoro-1-octanesul

D 87 d-N-MeFOSA-M

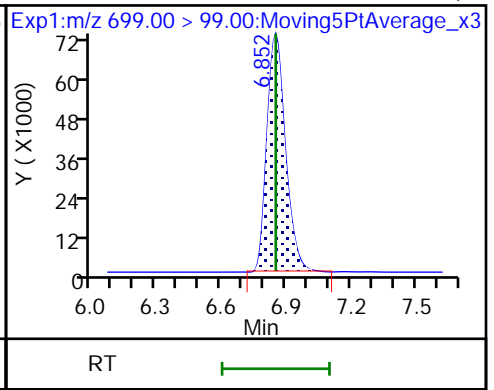
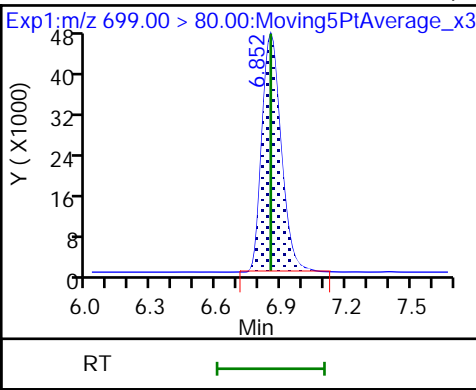
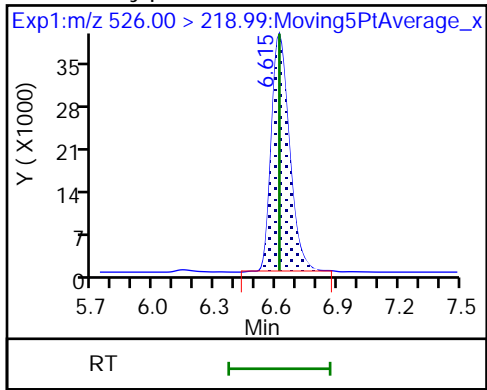




97 N-ethylperfluoro-1-octanesulfona

102 Perfluorododecanesulfonic acid (

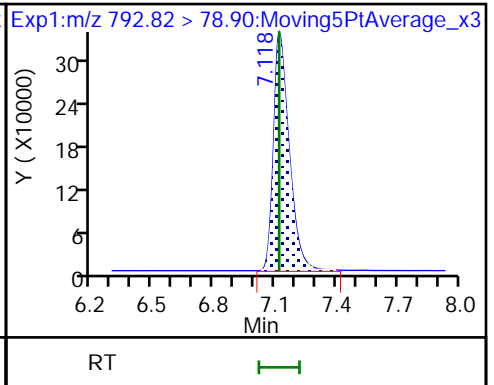
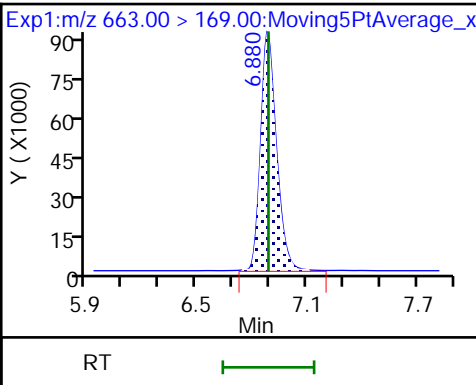
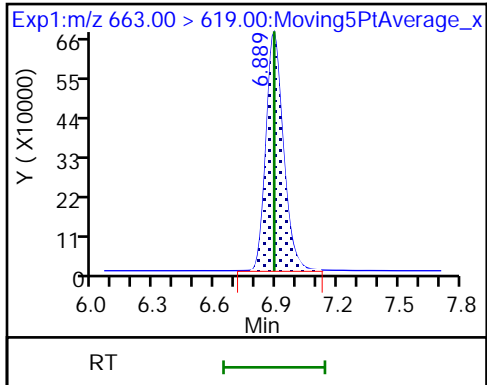
102 Perfluorododecanesulfonic acid (



103 Perfluorotridecanoic acid

103 Perfluorotridecanoic acid

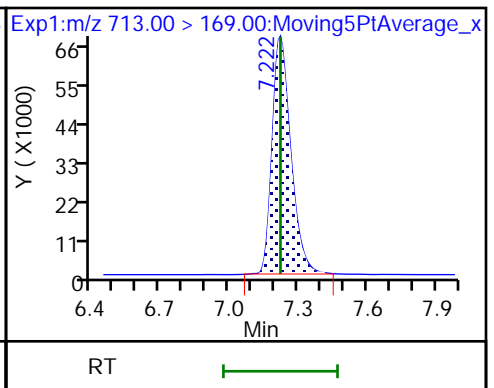
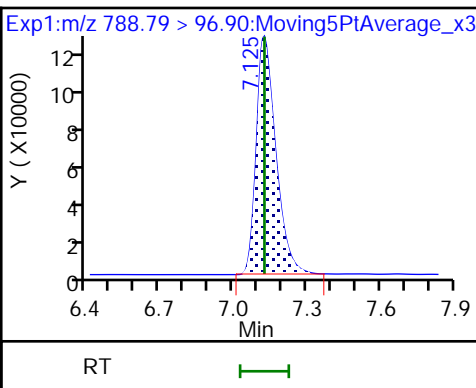
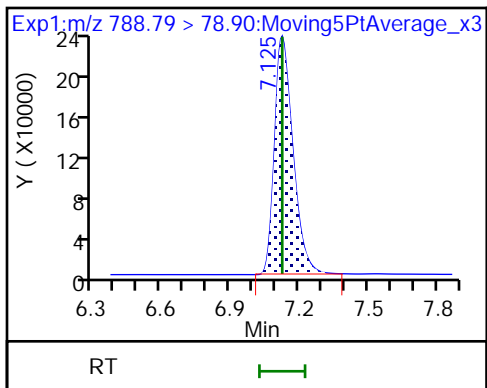
D 112 13C4-6:2 diPAP



114 6:2 diPAP

114 6:2 diPAP

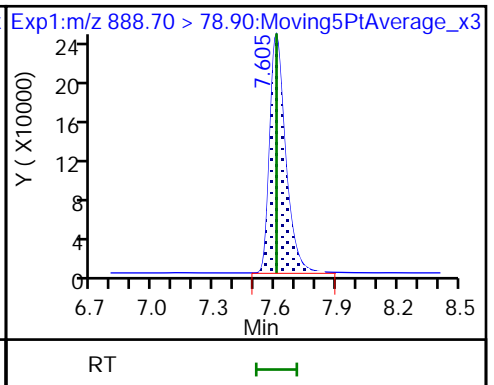
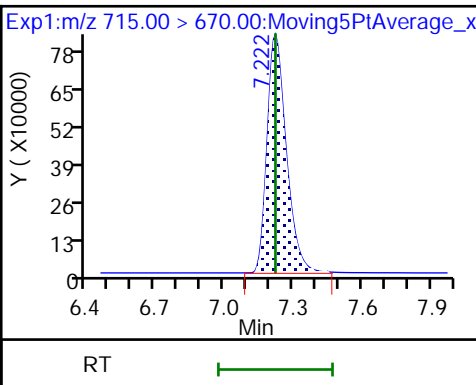
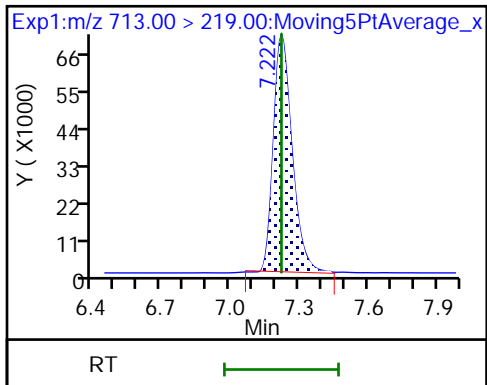
105 Perfluorotetradecanoic acid



105 Perfluorotetradecanoic acid

D 104 13C2 PFTeDA

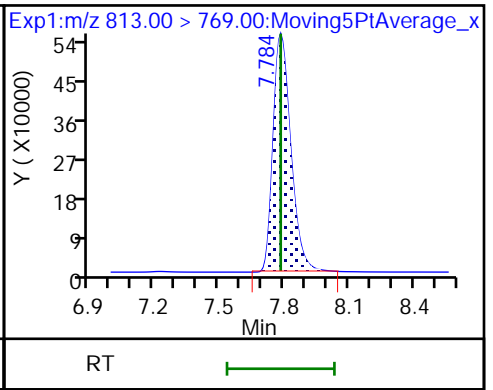
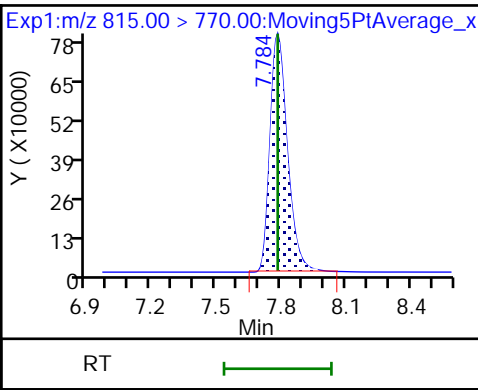
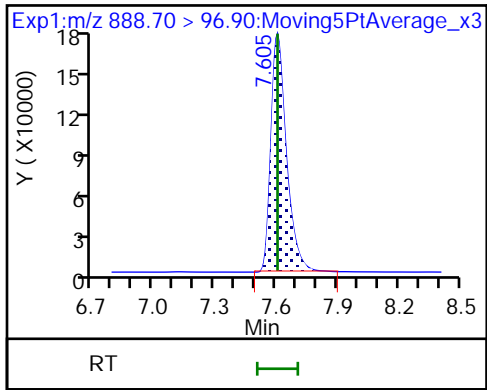
115 6:2/8:2 diPAP



115 6:2/8:2 diPAP

D 106 13C2 PFHxDA

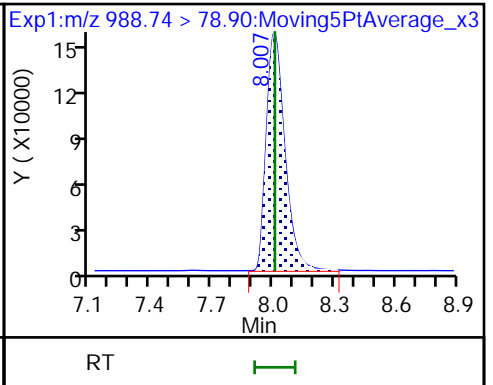
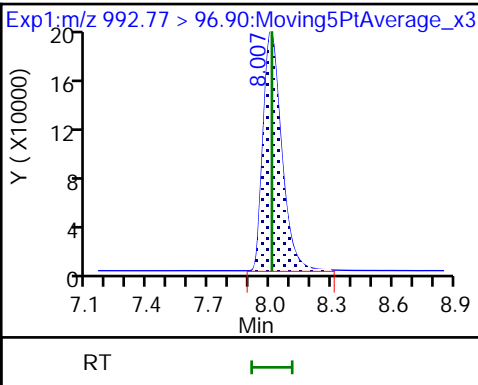
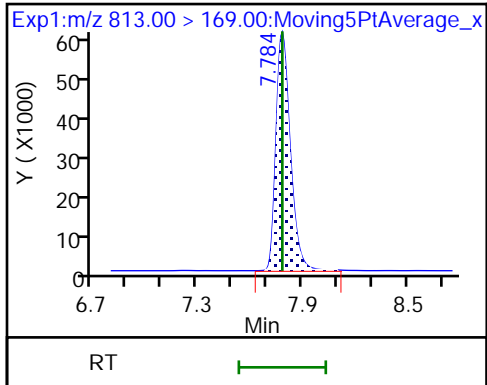
107 Perfluorohexadecanoic acid



107 Perfluorohexadecanoic acid

D 113 13C4-8:2 diPAP

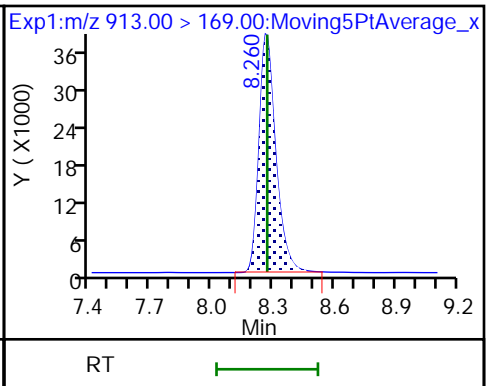
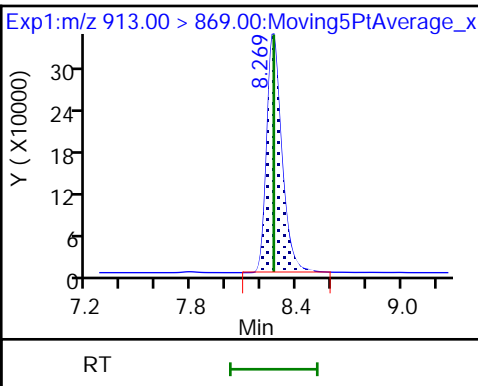
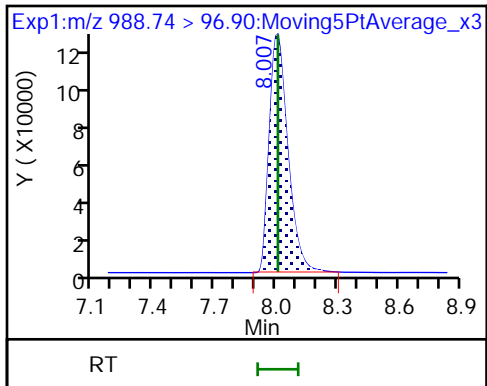
116 8:2 diPAP



116 8:2 diPAP

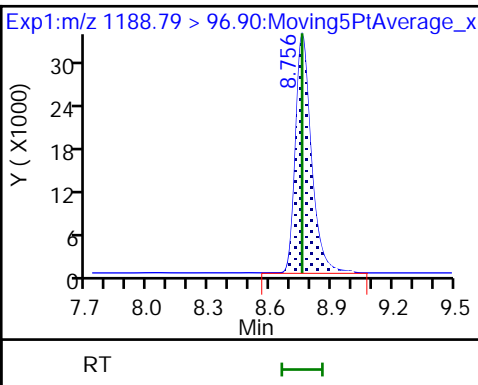
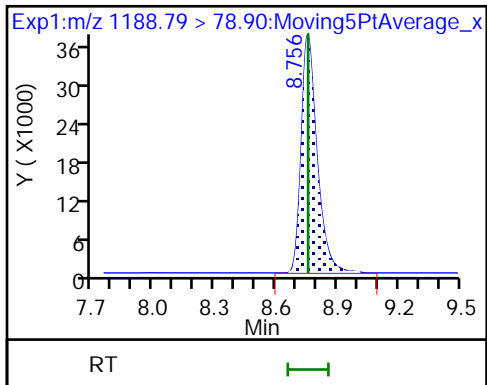
108 Perfluorooctadecanoic acid

108 Perfluorooctadecanoic acid



117 10:2 diPAP

117 10:2 diPAP



Eurofins Sacramento

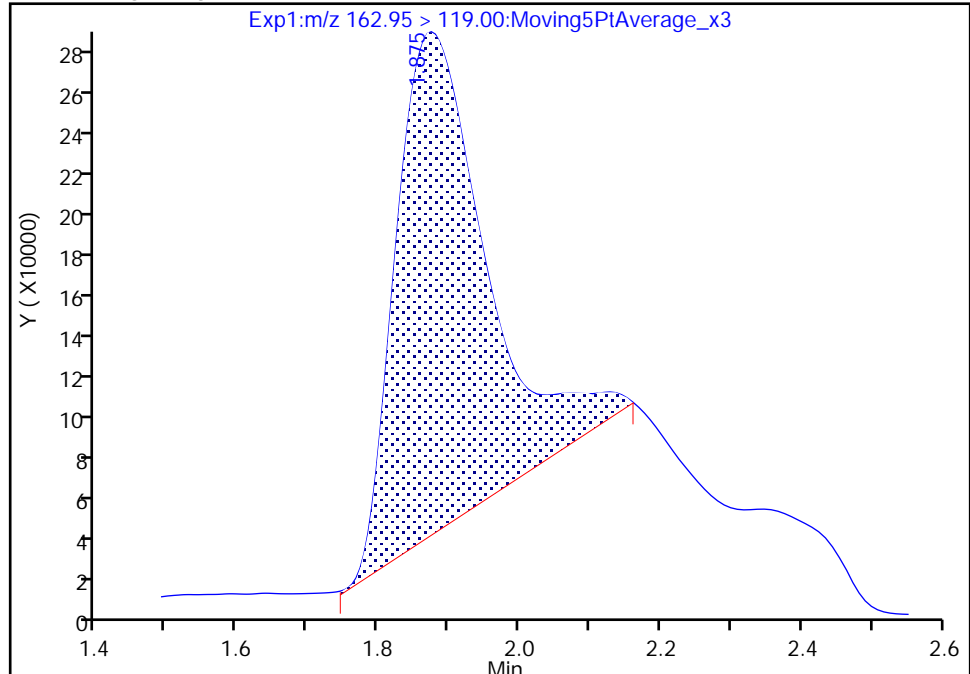
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_042.d
Injection Date: 22-Dec-2022 16:54:34 Instrument ID: A18
Lims ID: CCV L4
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 52 Worklist Smp#: 28
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

2 PPF Acid, CAS: 422-64-0

Signal: 1

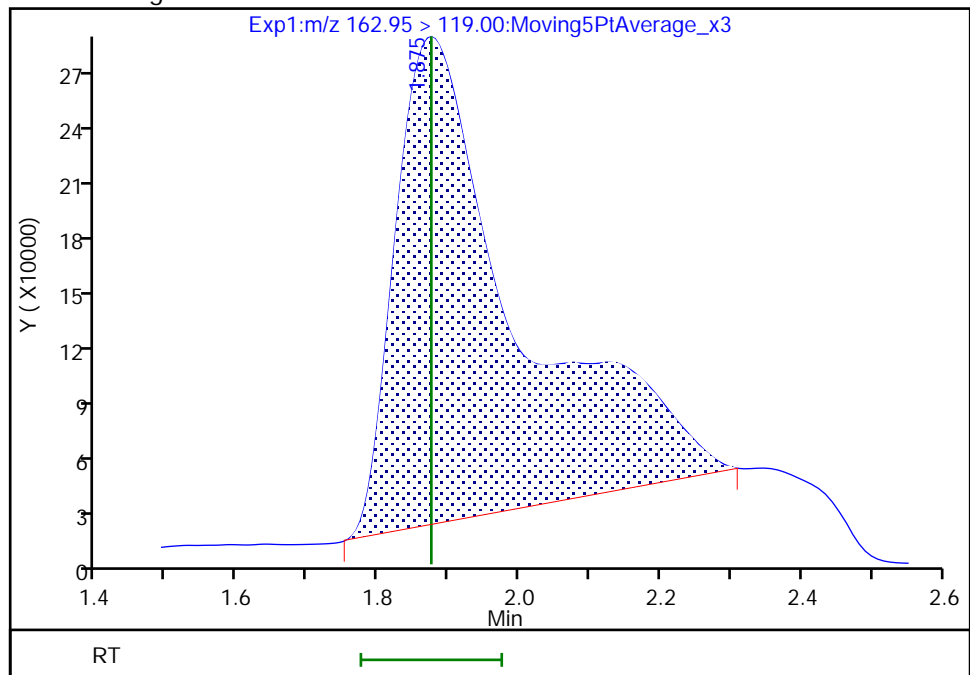
RT: 1.87
Area: 2204790
Amount: 0.661137
Amount Units: ng/ml

Processing Integration Results



RT: 1.87
Area: 3225614
Amount: 0.953718
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:41:18
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 1504 of 1632

12/29/2022
3:43 PM

Eurofins Sacramento

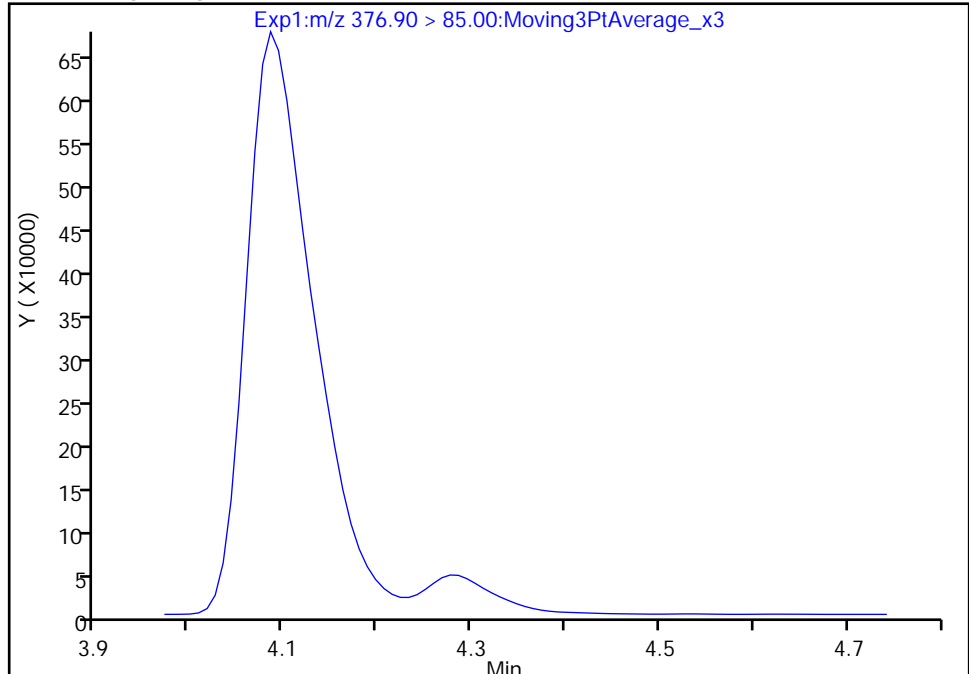
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_042.d
Injection Date: 22-Dec-2022 16:54:34 Instrument ID: A18
Lims ID: CCV L4
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 52 Worklist Smp#: 28
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

47 PFO4DA, CAS: 39492-90-5

Signal: 1

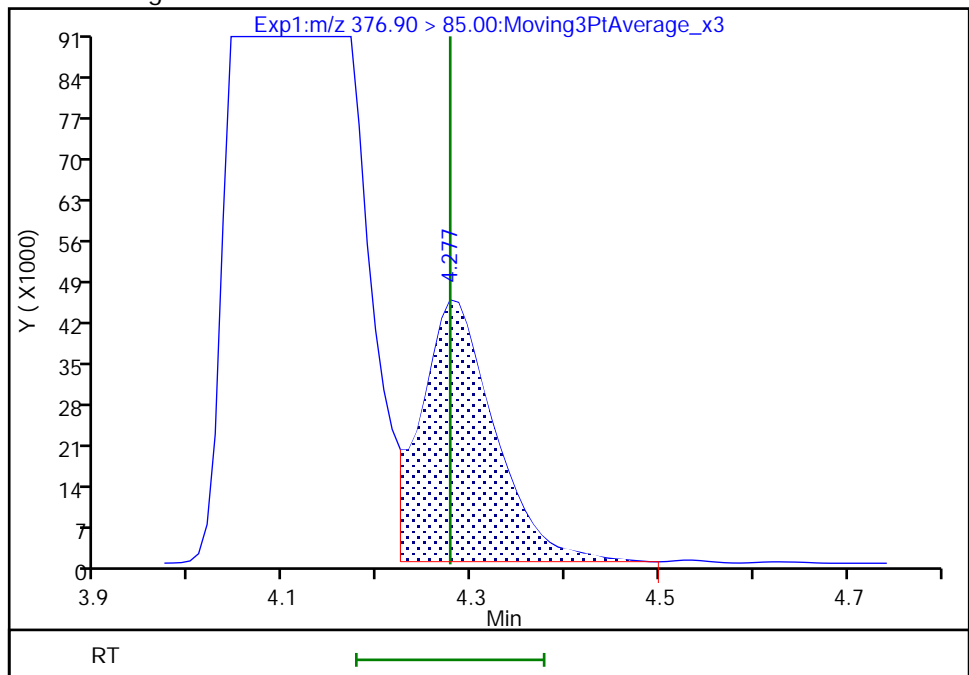
Not Detected
Expected RT: 4.28

Processing Integration Results



RT: 4.28
Area: 245547
Amount: 0.969677
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:42:03
Audit Action: Manually Integrated

Audit Reason: Baseline
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12/29/2022
3:43 PM

Eurofins Sacramento

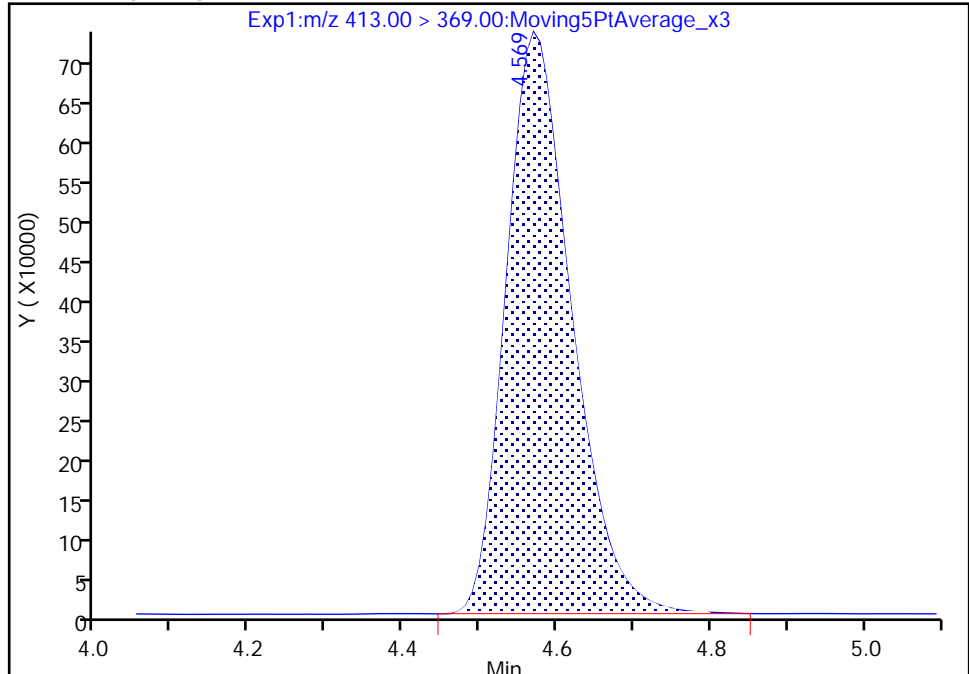
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_042.d
Injection Date: 22-Dec-2022 16:54:34 Instrument ID: A18
Lims ID: CCV L4
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 52 Worklist Smp#: 28
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

58 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

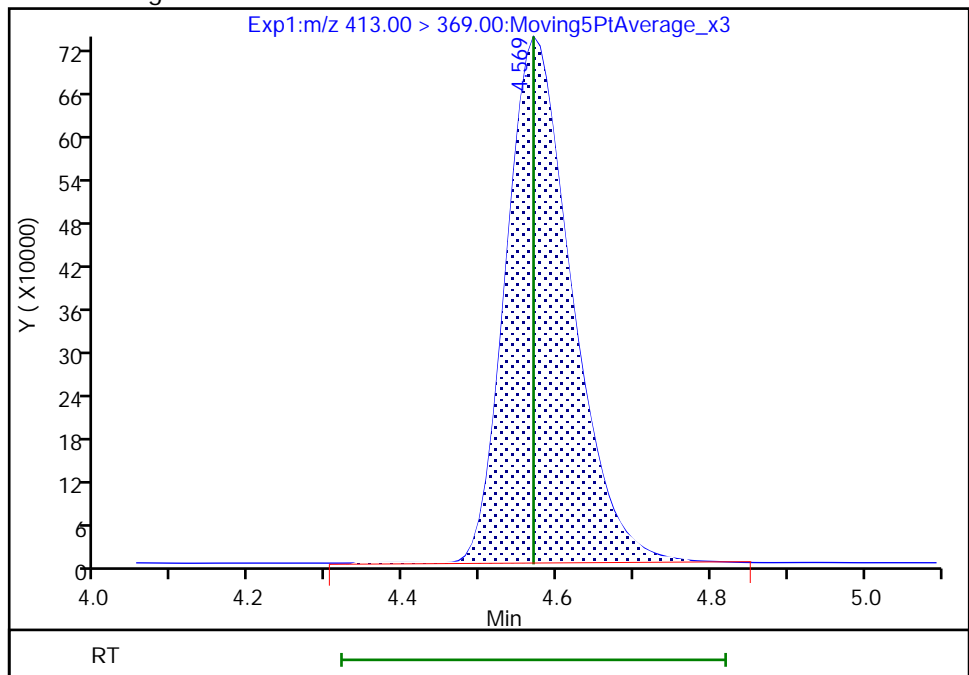
RT: 4.57
Area: 4363893
Amount: 0.993268
Amount Units: ng/ml

Processing Integration Results



RT: 4.57
Area: 4370593
Amount: 0.994793
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:42:28
Audit Action: Manually Integrated

Audit Reason: Baseline
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12/29/2022
3:43 PM

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: MB 320-641482/1-A

Matrix: Water Lab File ID: 2022.12.21_A18_PFC_A_036.d

Analysis Method: 537 (modified) Date Collected: _____

Extraction Method: 3535 Date Extracted: 12/19/2022 18:17

Sample wt/vol: 1.0 (mL) Date Analyzed: 12/22/2022 15:53

Con. Extract Vol.: 10.0 (mL) Dilution Factor: 1

Injection Volume: 20 (uL) GC Column: Gemini C18 3x50 ID: 3 (mm)

% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N

Cleanup Factor: _____

Analysis Batch No.: 642490 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	ND		1300	600
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		500	120
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		500	150
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		500	63
335-67-1	Perfluorooctanoic acid (PFOA)	ND		500	210
375-95-1	Perfluorononanoic acid (PFNA)	ND		500	68
335-76-2	Perfluorodecanoic acid (PFDA)	ND		500	78
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		500	280
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		500	140
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		500	330
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		500	180
67905-19-5	Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		500	220
16517-11-6	Perfluoro-n-octadecanoic acid (PFODA)	ND		500	240
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		500	50
2706-91-4	Perfluoropentanesulfonic acid (PFPeS)	ND		500	75
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		500	140
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)	ND		500	48
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		500	140
68259-12-1	Perfluorononanesulfonic acid (PFNS)	ND		500	93
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		500	80
79780-39-5	Perfluorododecanesulfonic acid (PFDoS)	ND		500	240
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		500	250
2355-31-9	NMeFOSAA	ND		1300	300
2991-50-6	NEtFOSAA	ND		1300	330
757124-72-4	4:2 FTS	ND		500	60
27619-97-2	6:2 FTS	ND		1300	630
39108-34-4	8:2 FTS	ND		500	120
120226-60-0	10:2 FTS	ND		500	170
4151-50-2	NEtFOSA	ND		500	220

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins Sacramento</u>	Job No.: <u>320-95204-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>MB 320-641482/1-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2022.12.21_A18_PFC_A_036.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>12/19/2022 18:17</u>
Sample wt/vol: <u>1.0 (mL)</u>	Date Analyzed: <u>12/22/2022 15:53</u>
Con. Extract Vol.: <u>10.0 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>Gemini C18 3x50</u> ID: <u>3 (mm)</u>
% Moisture: _____ % Solids: _____	GPC Cleanup: (Y/N) <u>N</u>
Cleanup Factor: _____	
Analysis Batch No.: <u>642490</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
31506-32-8	NMeFOSA	ND		500	110
24448-09-7	NMeFOSE	ND		1000	350
1691-99-2	NEtFOSE	ND		500	210
13252-13-6	HFPO-DA (GenX)	ND		1000	380
756426-58-1	9Cl-PF3ONS	ND		500	60
763051-92-9	11Cl-PF3OUdS	ND		500	80
919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		500	100
356-02-5	3:3 FTCA	ND		500	110
914637-49-3	5:3 FTCA	ND		500	83
812-70-4	7:3 FTCA	ND		500	140
53826-12-3	6:2 FTCA	ND		500	240
27854-31-5	8:2 FTCA	ND		500	83
53826-13-4	10:2 FTCA	ND		750	340
133201-07-7	PFECHS	ND		500	110
423-41-6	PFPrS	ND		500	60
151772-58-6	NFDHA	ND		500	160
863090-89-5	PFMBA	ND		500	65
377-73-1	PFMPA	ND		500	70
113507-82-7	PFEESA	ND		500	73
674-13-5	PFMOAA	ND		500	100
801212-59-9	PFPE-1	ND		500	73
39492-90-5	PFO4DA	ND		500	100
39492-89-2	PFO3OA	ND		500	220
39492-88-1	PFO2HxA	ND		500	140
39492-91-6	PFO5DA	ND		500	250
13140-29-9	PMPA	ND		500	85
267239-61-2	PEPA	ND		500	120
422-64-0	PFPrA	ND		500	88
2416366-22-6	R-EVE	ND		500	78
801209-99-4	NVHOS	ND		750	330
773804-62-9	Hydro-EVE Acid	ND		500	60
2416366-21-5	R-PSDCA	ND		750	350

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: MB 320-641482/1-A
Matrix: Water Lab File ID: 2022.12.21_A18_PFC_A_036.d
Analysis Method: 537 (modified) Date Collected: _____
Extraction Method: 3535 Date Extracted: 12/19/2022 18:17
Sample wt/vol: 1.0 (mL) Date Analyzed: 12/22/2022 15:53
Con. Extract Vol.: 10.0 (mL) Dilution Factor: 1
Injection Volume: 20 (uL) GC Column: Gemini C18 3x50 ID: 3 (mm)
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 642490 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
749836-20-2	Hydro-PS Acid	ND		500	110

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: MB 320-641482/1-A

Matrix: Water Lab File ID: 2022.12.21_A18_PFC_A_036.d

Analysis Method: 537 (modified) Date Collected: _____

Extraction Method: 3535 Date Extracted: 12/19/2022 18:17

Sample wt/vol: 1.0 (mL) Date Analyzed: 12/22/2022 15:53

Con. Extract Vol.: 10.0 (mL) Dilution Factor: 1

Injection Volume: 20 (uL) GC Column: Gemini C18 3x50 ID: 3 (mm)

% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N

Cleanup Factor: _____

Analysis Batch No.: 642490 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01056	13C8 FOSA	108		25-150
STL00992	13C4 PFBA	106		25-150
STL01893	13C5 PFPeA	113		25-150
STL00993	13C2 PFHxA	104		25-150
STL01892	13C4 PFHpA	107		25-150
STL00990	13C4 PFOA	104		25-150
STL00995	13C5 PFNA	110		25-150
STL00996	13C2 PFDA	104		25-150
STL00997	13C2 PFUnA	101		25-150
STL00998	13C2 PFDoA	98		25-150
STL02116	13C2 PFTeDA	95		25-150
STL02115	13C2 PFHxDA	88		25-150
STL02337	13C3 PFBS	101		25-150
STL00994	18O2 PFHxS	99		25-150
STL00991	13C4 PFOS	93		25-150
STL02118	d3-NMeFOSAA	99		25-150
STL02117	d5-NEtFOSAA	98		25-150
STL02395	M2-4:2 FTS	103		25-150
STL02279	M2-6:2 FTS	101		25-150
STL02280	M2-8:2 FTS	101		25-150
STL02814	13C2 10:2 FTS	106		25-150
STL02275	d-N-MeFOSA-M	100		20-150
STL02282	d-N-EtFOSA-M	100		20-150
STL02277	d7-N-MeFOSE-M	99		10-120
STL02278	d9-N-EtFOSE-M	112		10-120
STL02255	13C3 HFPO-DA	111		25-150
STL02802	13C-6:2 FTCA	105		25-150
STL02803	13C-8:2 FTCA	123		25-150
STL02804	13C-10:2 FTCA	106		25-150

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_036.d
 Lims ID: MB 320-641482/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 22-Dec-2022 15:53:45 ALS Bottle#: 20 Worklist Smp#: 22
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-641482/1-a DUE 12/29 PFC
 Misc. Info.: Plate: 3 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Method: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 23-Dec-2022 12:43:36 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1657

First Level Reviewer: sanjumnair

Date: 23-Dec-2022 12:43:36

Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_035.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 8 13C4 PFBA										
217.00 > 172.00	2.684	2.678	0.006	0.585	5240203	1.33		106	17099	
D 16 13C5 PFPeA										
267.90 > 223.00	3.055	3.048	0.007	0.666	4966243	1.41		113	33959	
D 18 13C3 PFBS										
301.90 > 80.00	3.102	3.085	0.017	0.676	2868187	1.18		101	16746	
D 25 M2-4:2 FTS										
329.00 > 81.00	3.447	3.430	0.017	0.752	685946	1.21		103	3576	
D 27 13C2 PFHxA										
315.00 > 270.00	3.491	3.483	0.008	0.761	5060941	1.30		104	34131	
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.666	3.648	0.018	0.799	180916	1.39		111	7819	
D 35 13C4 PFHpA										
367.00 > 322.00	4.025	4.009	0.016	0.878	5487278	1.33		107	30744	
D 37 18O2 PFHxS										
403.00 > 84.00	4.034	4.027	0.007	0.880	1884456	1.17		98.9	21317	
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.179	4.171	0.008	0.911	246803	1.31		105	866	
D 52 M2-6:2 FTS										
429.00 > 81.00	4.552	4.535	0.017	0.993	717466	1.20		101	13103	
D 56 13C4 PFOA										
417.00 > 372.00	4.577	4.569	0.008	0.998	5821747	1.30		104	18746	
58 Perfluorooctanoic acid										M
413.00 > 369.00	4.577	4.569	0.008	1.000	11393	0.002622	Target=2.58	6.1		M
413.00 > 169.00	4.585	4.569	0.016	1.002	4498		2.53(1.29-3.87)	36.5		
* 55 13C2 PFOA										
415.00 > 370.00	4.585	4.569	0.016		5559809	1.25		20612		

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 61 13C4 PFOS										
503.00 > 80.00	5.123	5.116	0.007	1.117	1209318	1.12		93.2	8537	
D 64 13C5 PFNA										
468.00 > 423.00	5.137	5.123	0.014	1.120	6070182	1.38		110	27554	
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.320	5.312	0.008	1.160	216590	1.54		123	1102	
D 72 13C8 FOSA										
506.00 > 78.00	5.620	5.605	0.015	1.226	1945113	1.35		108	16050	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.637	5.621	0.016	1.229	726713	1.21		101	11716	
D 76 13C2 PFDA										
515.00 > 470.00	5.645	5.630	0.015	1.231	5511314	1.30		104	38546	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.873	5.858	0.015	1.281	730081	1.24		99.4	4307	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.104	6.095	0.009	1.331	720659	1.22		97.7	2605	
D 82 13C2 PFUnA										
565.00 > 520.00	6.114	6.095	0.019	1.333	5019172	1.26		101	24274	
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.292	6.275	0.017	1.372	104598	1.32		106	494	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.336	6.319	0.017	1.382	874540	1.24		99.0	4374	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.354	6.337	0.017	1.386	585476	1.25		100	1696	
D 98 13C2 PFDoA										
615.00 > 570.00	6.524	6.515	0.009	1.423	5363466	1.23		98.1	17867	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.534	6.525	0.009	1.425	718831	1.28		106	16352	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.584	6.575	0.009	1.436	1147789	1.40		112	8475	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.614	6.605	0.009	1.442	543495	1.25		99.7	2112	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.229	7.222	0.007	1.576	4522337	1.19		95.3	7301	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.792	7.784	0.008	1.699	3602862	1.10		87.6	5324	
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.801	7.784	0.016	1.001	30167	-0.00003118	Target=8.57		75.5	
813.00 > 169.00	7.801	7.784	0.016	1.001	4247		7.10(4.28-12.85)		89.3	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_036.d

Injection Date: 22-Dec-2022 15:53:45

Instrument ID: A18

Lims ID: MB 320-641482/1-A

Client ID:

Operator ID: TAISACA18-PC\A-18

ALS Bottle#: 20

Worklist Smp#: 22

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

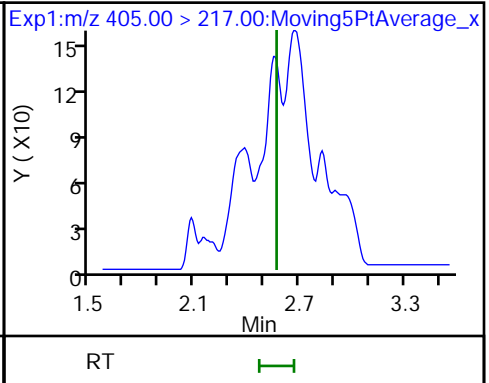
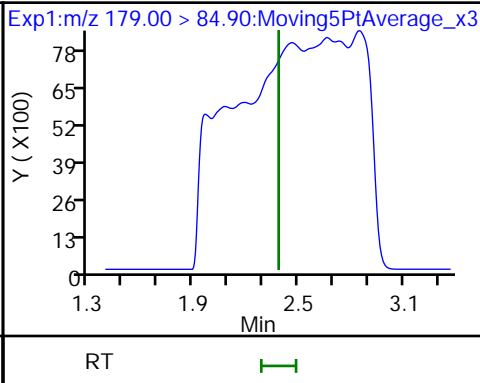
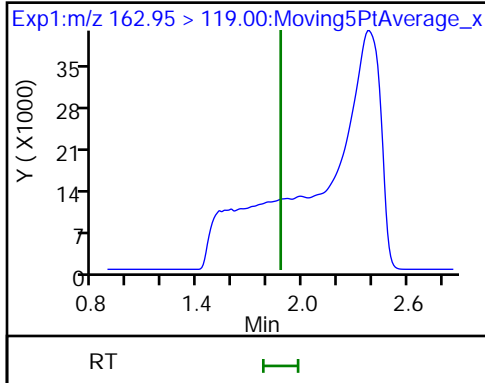
Method: PFAS+_A18

Limit Group: LC PFC ICAL

2 PPF Acid (ND)

3 PFMOAA (ND)

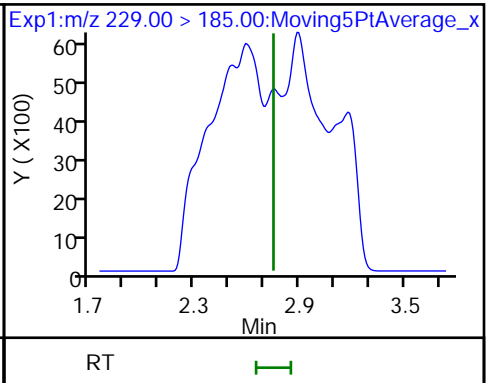
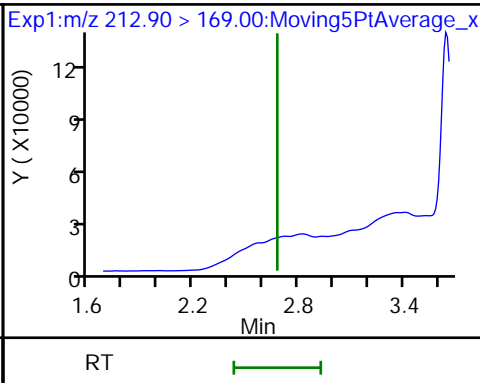
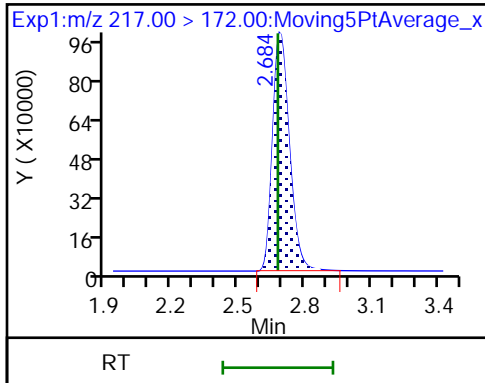
5 R-EVE (ND)



D 8 13C4 PFBA

7 Perfluorobutanoic acid (ND)

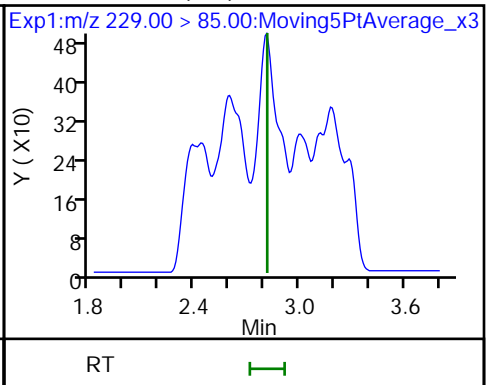
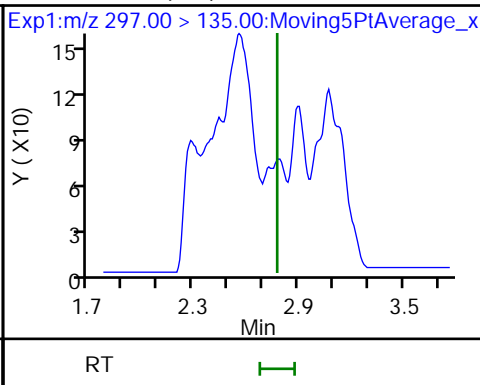
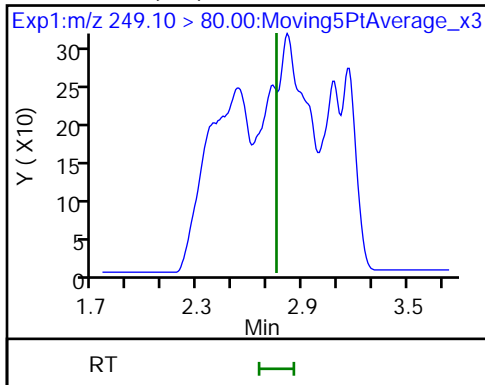
10 PMPA (ND)



11 PFPrS (ND)

12 NVHOS (ND)

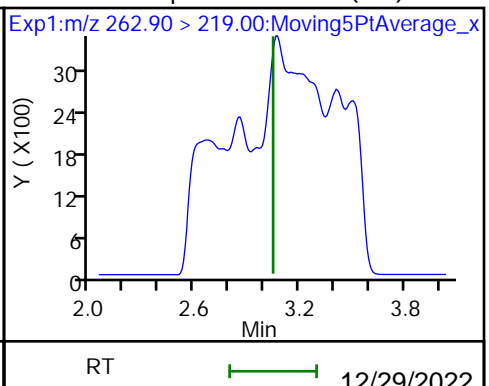
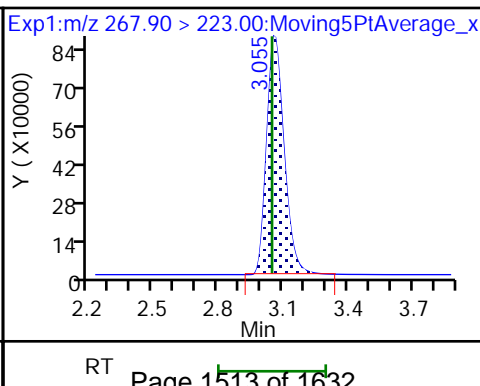
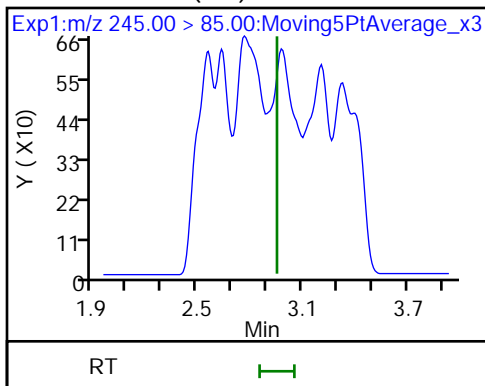
13 PFECa F (ND)

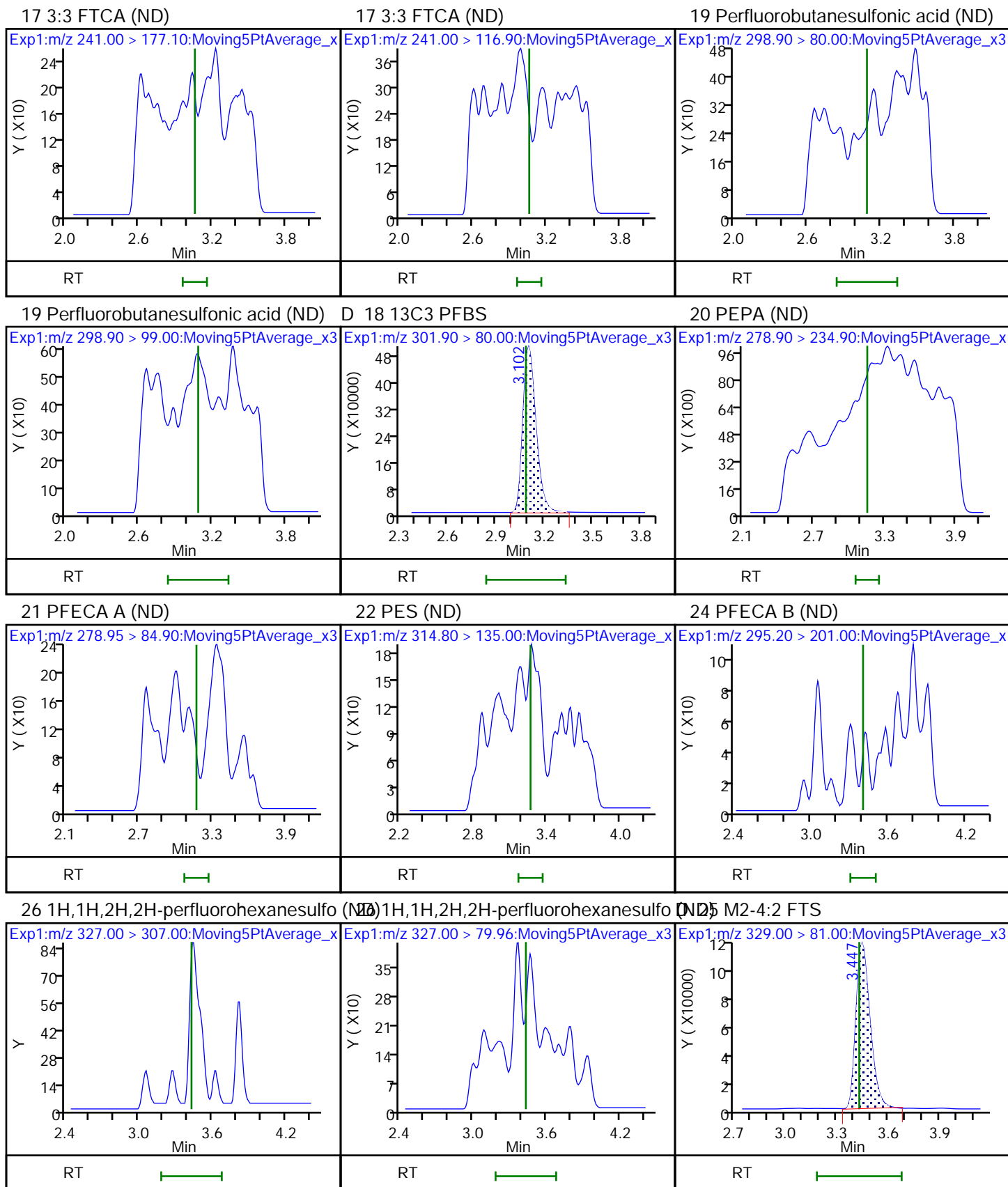


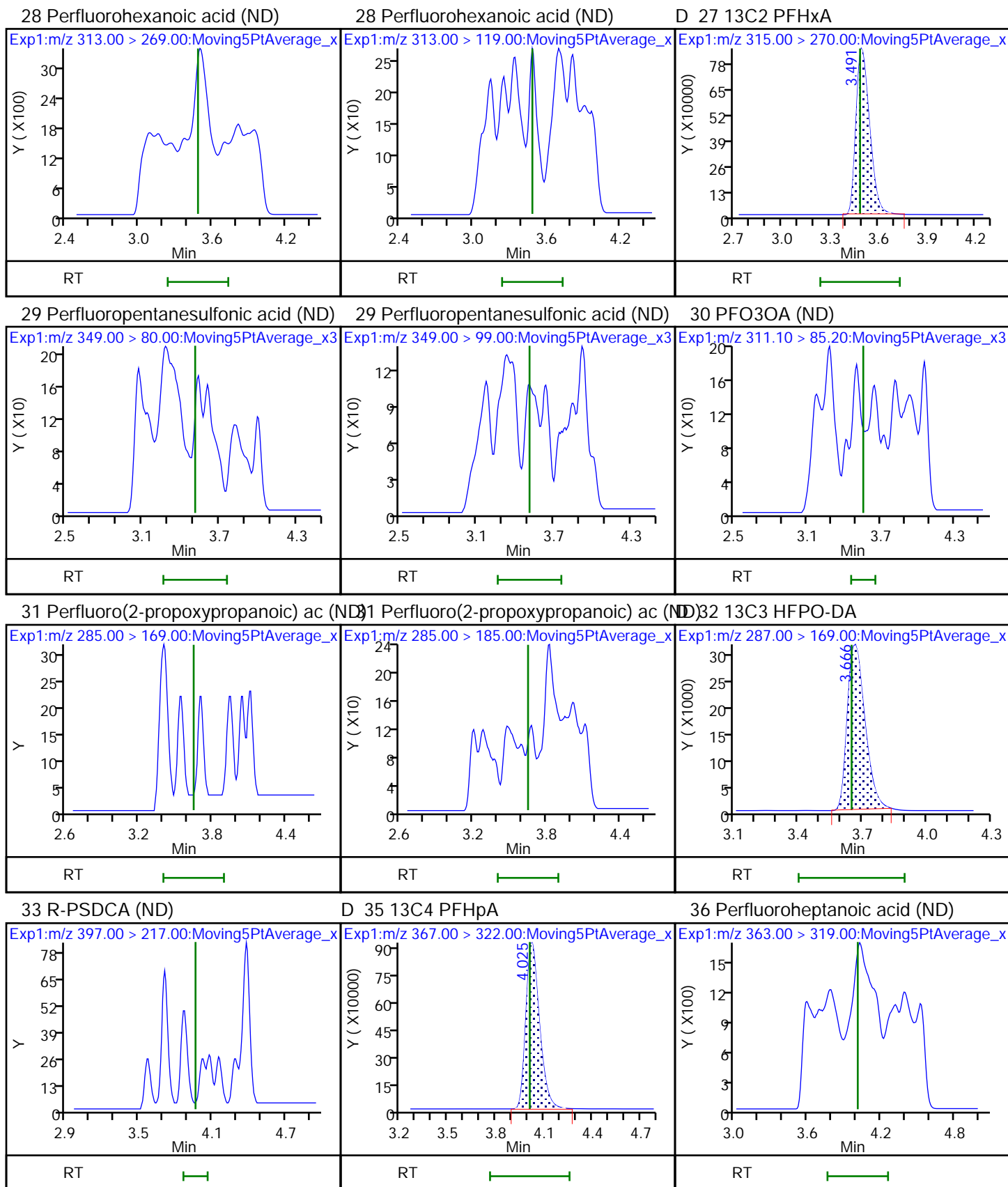
14 PFO2HxA (ND)

D 16 13C5 PFPeA

15 Perfluoropentanoic acid (ND)



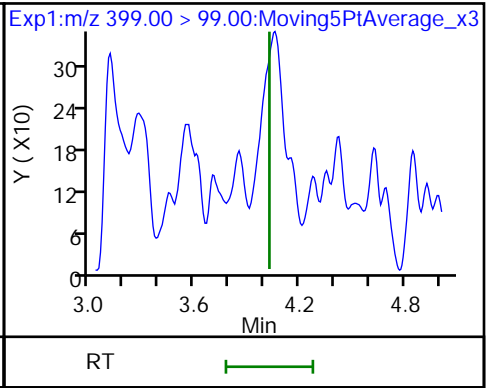
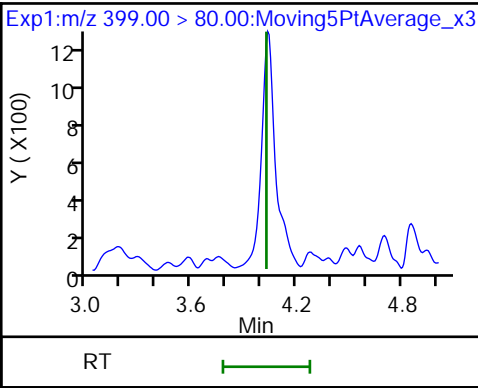
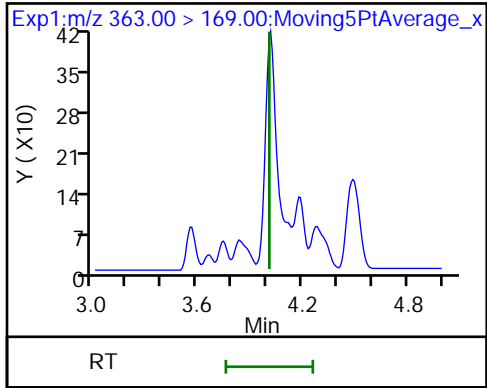




36 Perfluoroheptanoic acid (ND)

38 Perfluorohexanesulfonic acid (ND)

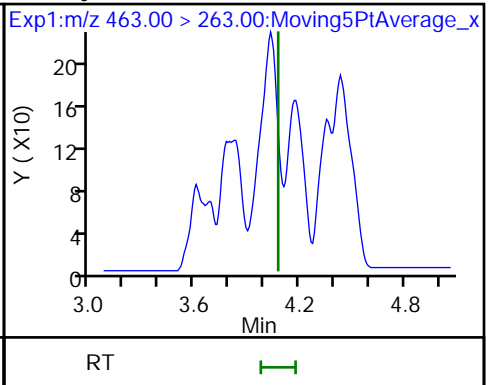
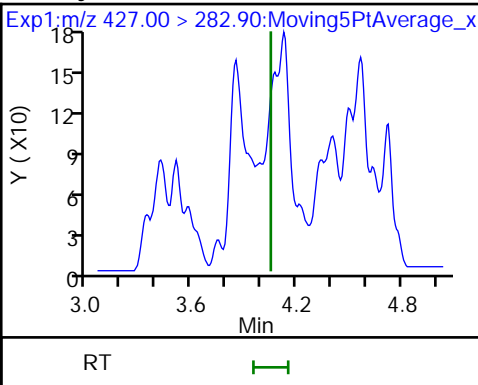
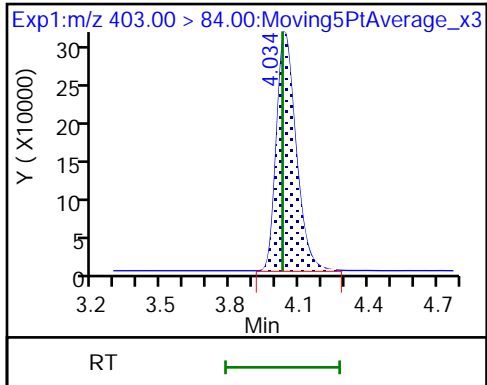
38 Perfluorohexanesulfonic acid (ND)



D 37 18O2 PFHxS

34 Hydro-EVE Acid (ND)

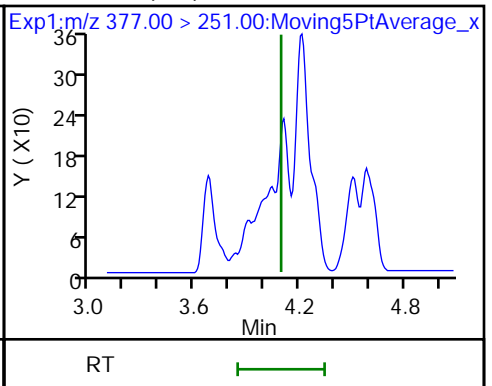
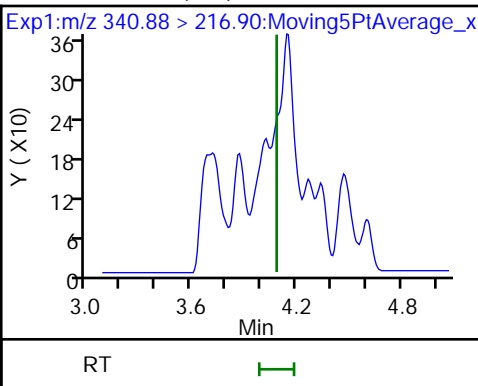
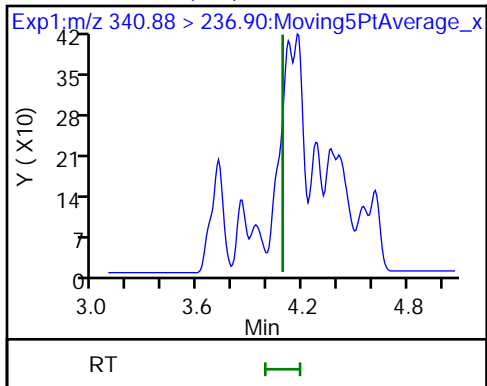
39 Hydro-PS Acid (ND)



41 5:3 FTCA (ND)

41 5:3 FTCA (ND)

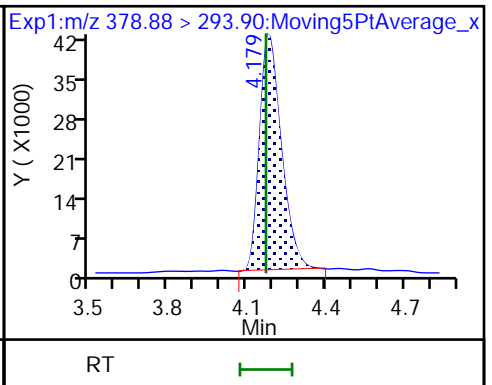
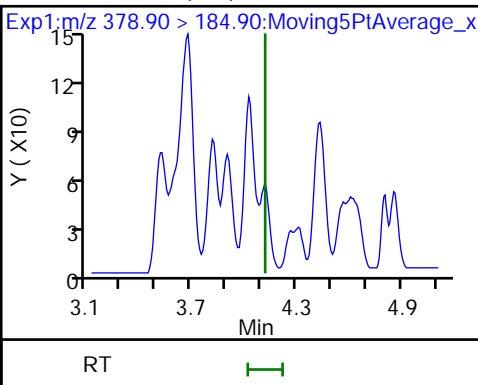
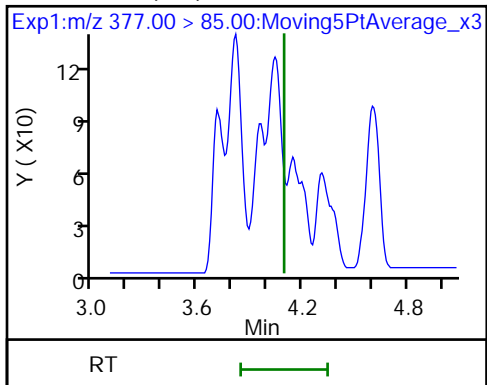
40 DONA (ND)

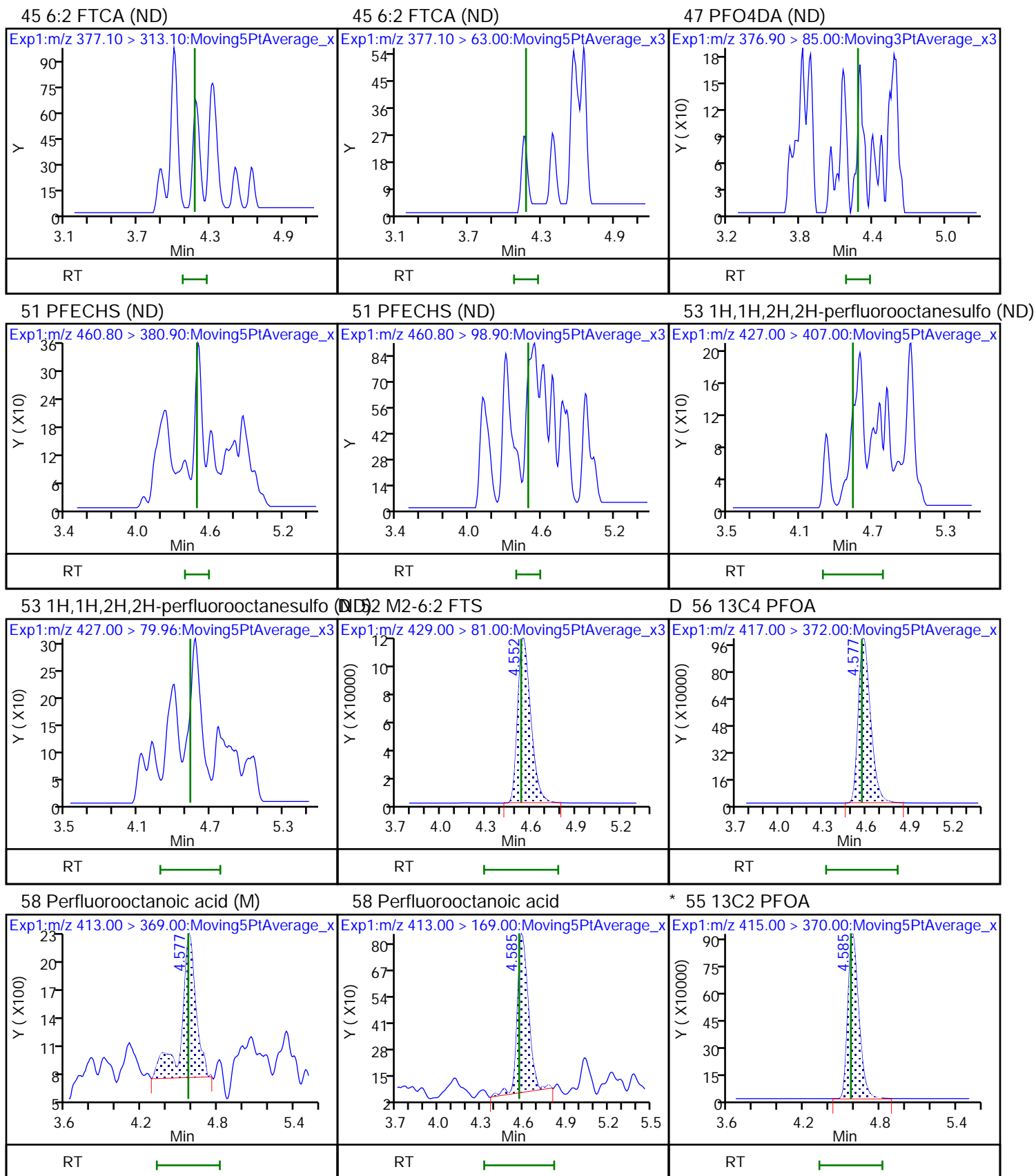


40 DONA (ND)

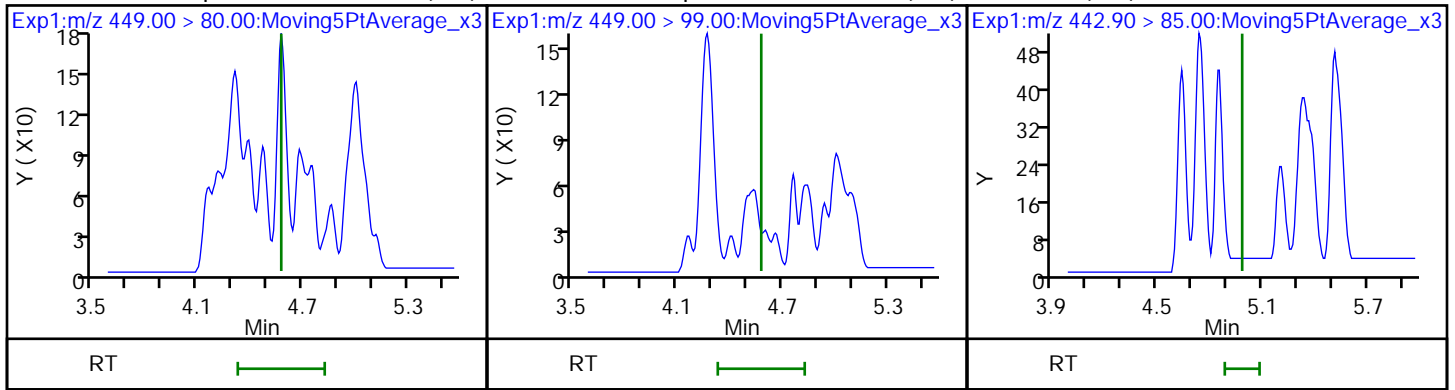
42 PFCA G (ND)

D 46 13C-6:2 FTCA





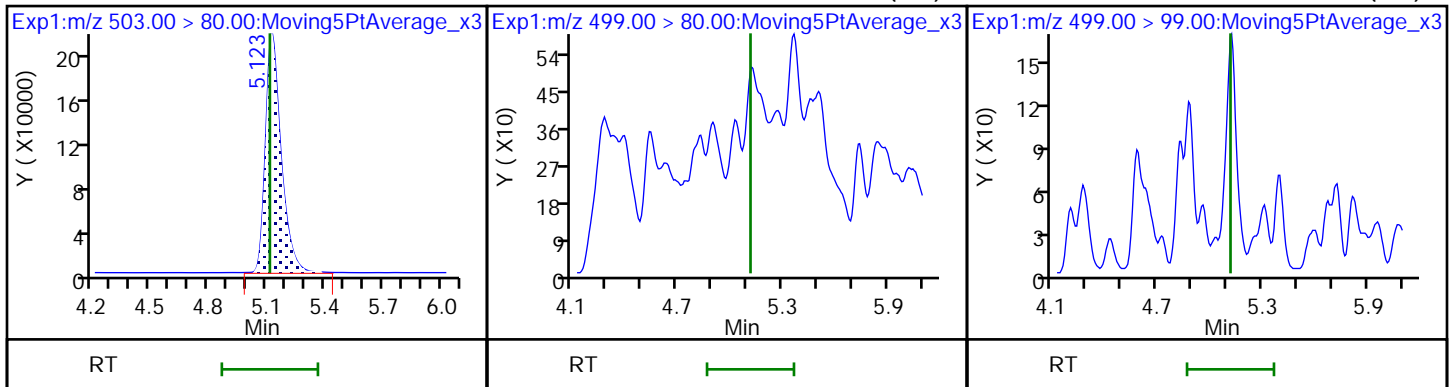
57 Perfluoroheptanesulfonic acid (ND) 57 Perfluoroheptanesulfonic acid (ND) 59 TAF (ND)



D 61 13C4 PFOS

62 Perfluorooctanesulfonic acid (ND)

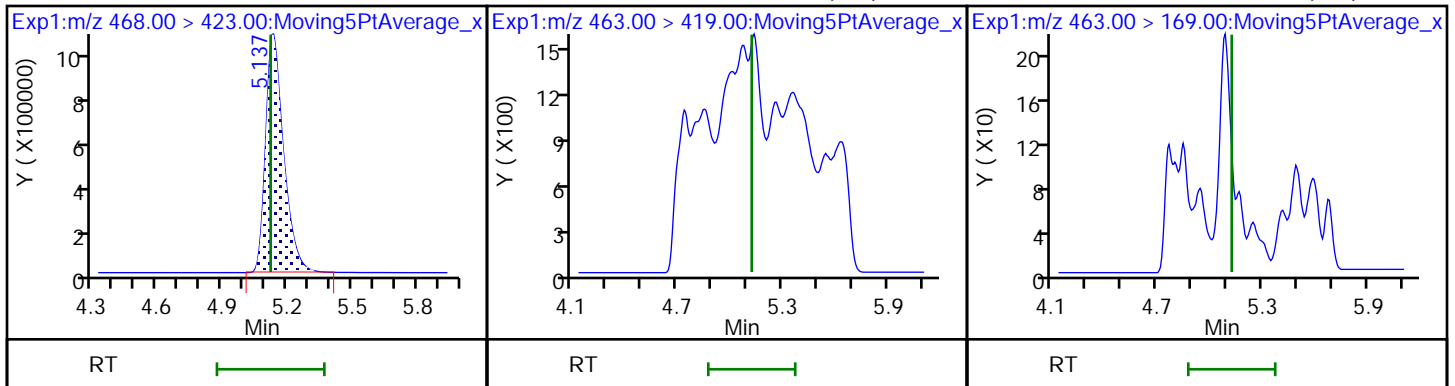
62 Perfluorooctanesulfonic acid (ND)



D 64 13C5 PFNA

63 Perfluorononanoic acid (ND)

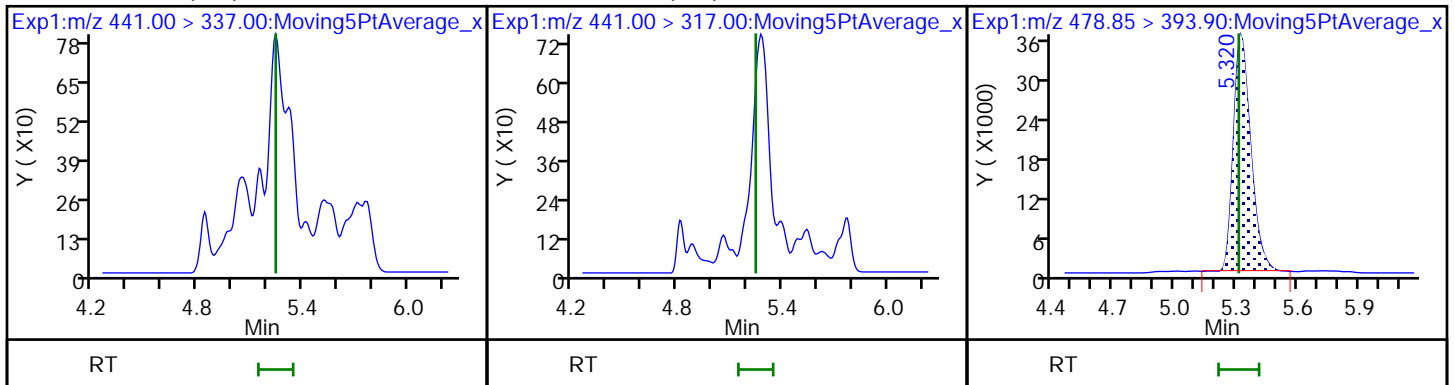
63 Perfluorononanoic acid (ND)



65 7:3 FTCA (ND)

65 7:3 FTCA (ND)

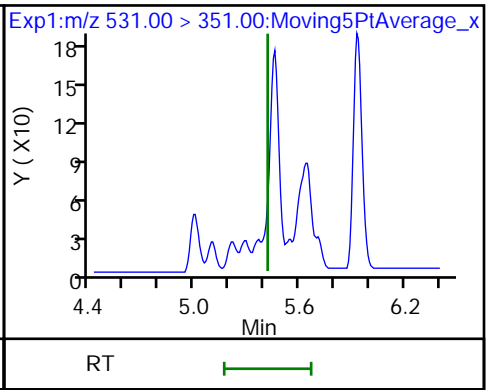
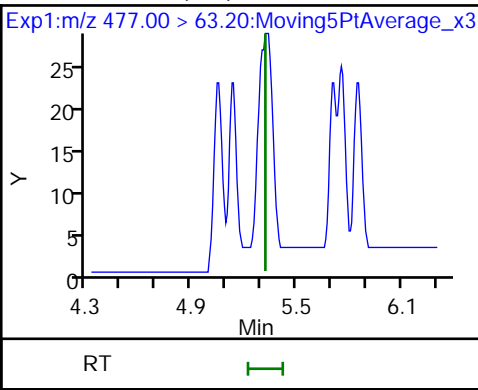
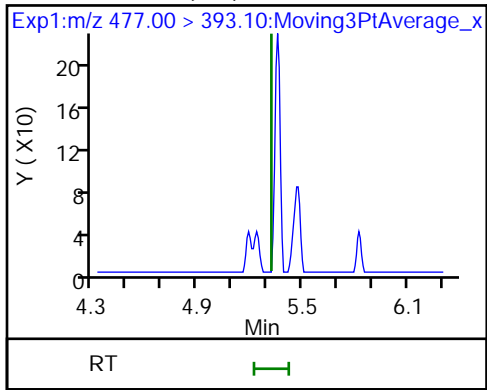
D 68 13C-8:2 FTCA



69 8:2 FTCA (ND)

69 8:2 FTCA (ND)

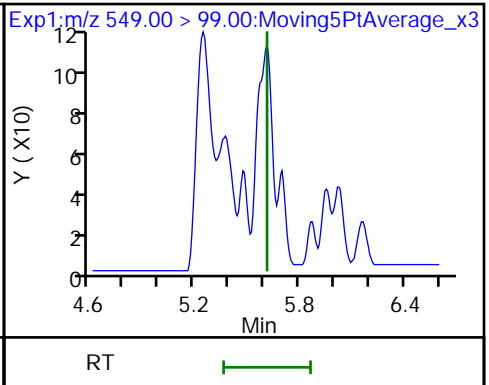
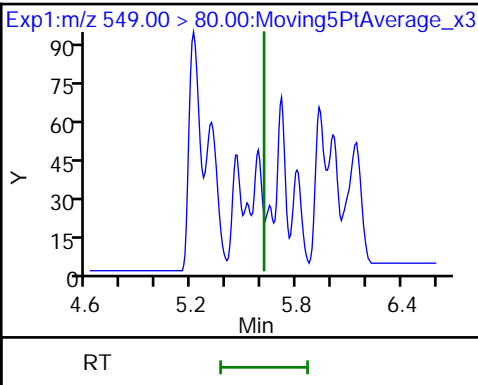
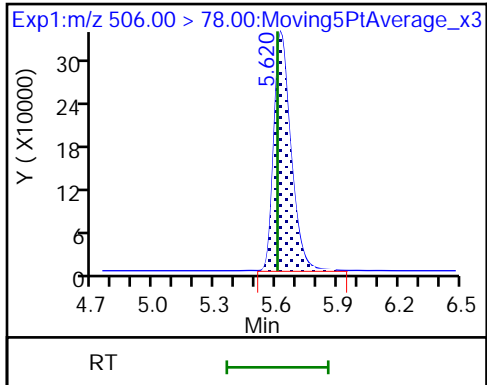
70 9-Chlorohexadecafluoro-3-oxanona (ND)



D 72 13C8 FOSA

73 Perfluorononanesulfonic acid (ND)

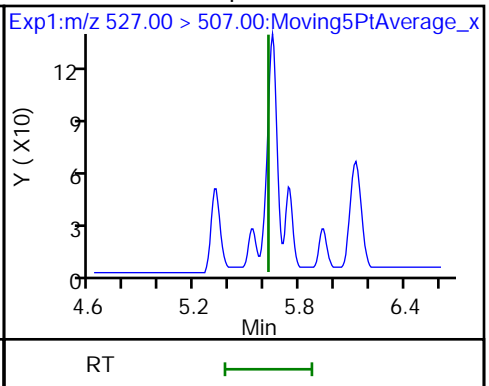
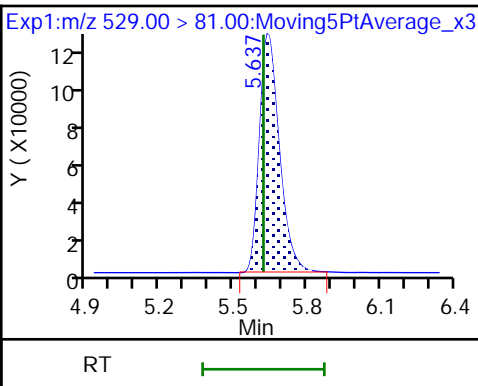
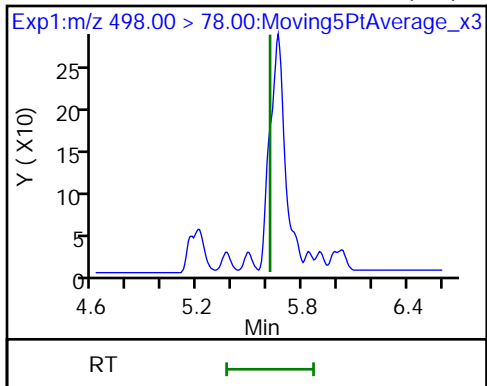
73 Perfluorononanesulfonic acid (ND)



71 Perfluorooctanesulfonamide (ND)

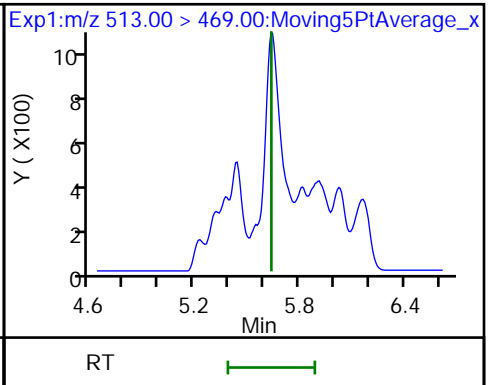
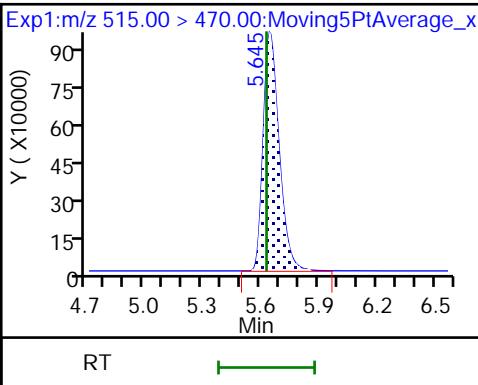
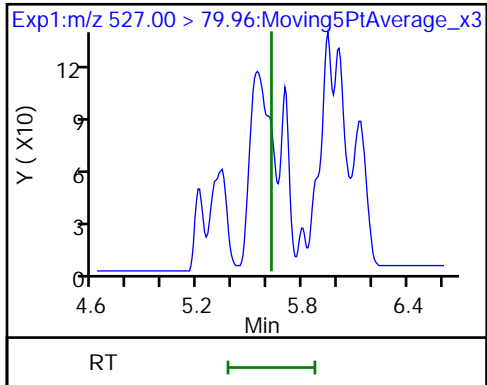
D 74 M2-8:2 FTS

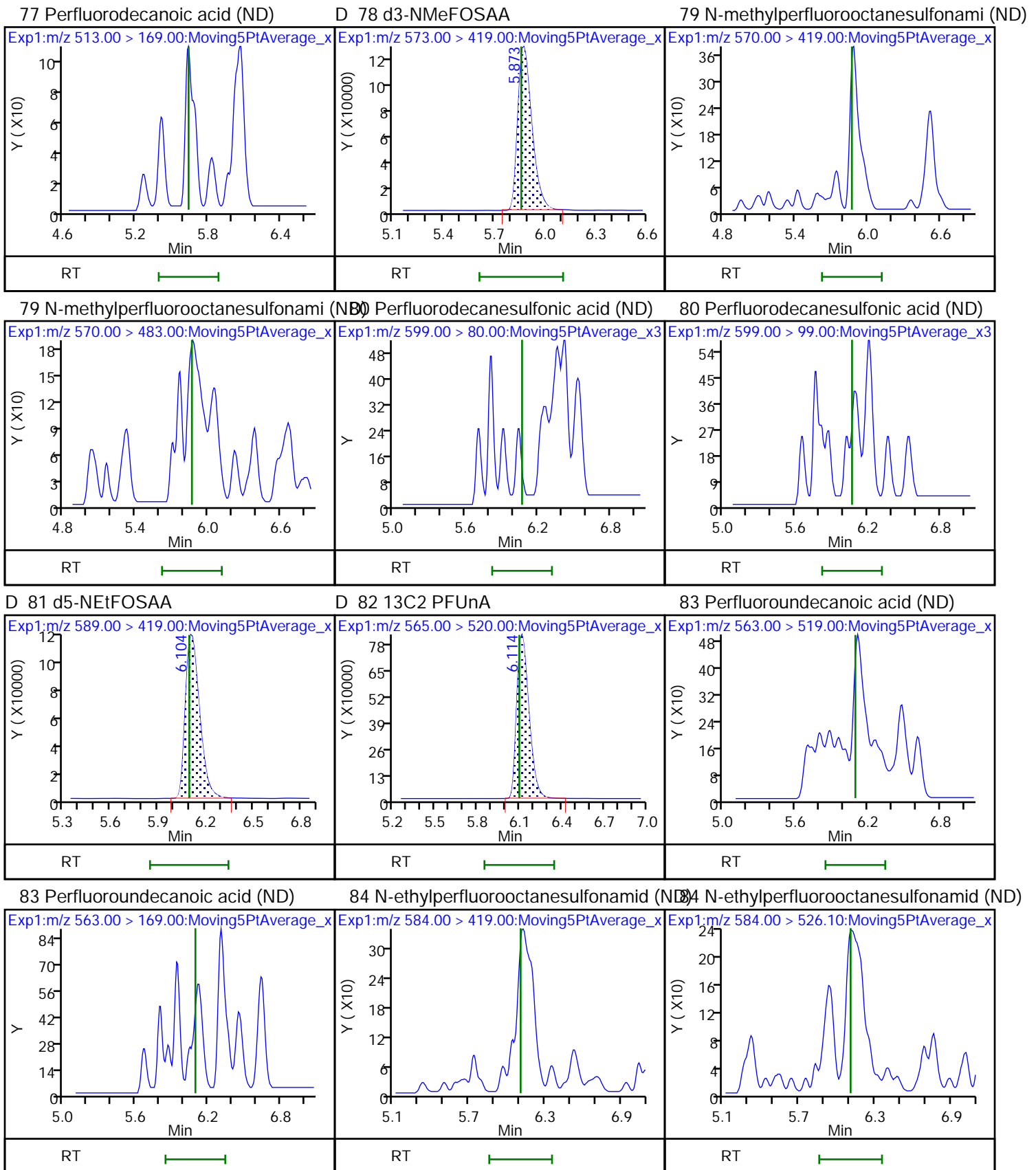
75 1H,1H,2H,2H-perfluorodecanesulfo (ND)



75 1H,1H,2H,2H-perfluorodecanesulfo (ND) 76 13C2 PFDA

77 Perfluorodecanoic acid (ND)

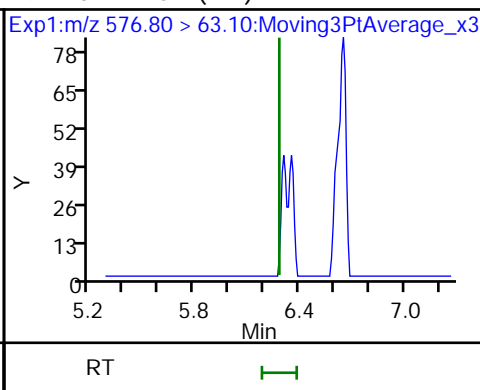
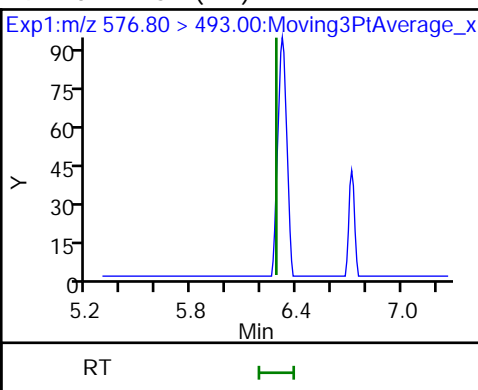
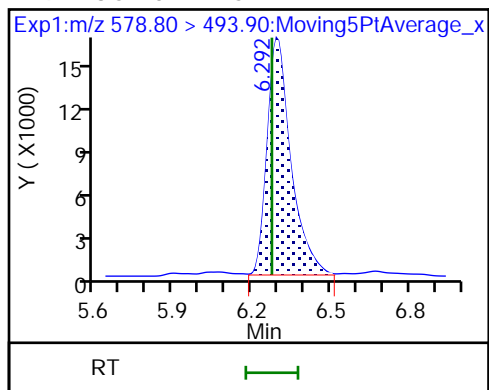




D 91 13C-10:2 FTCA

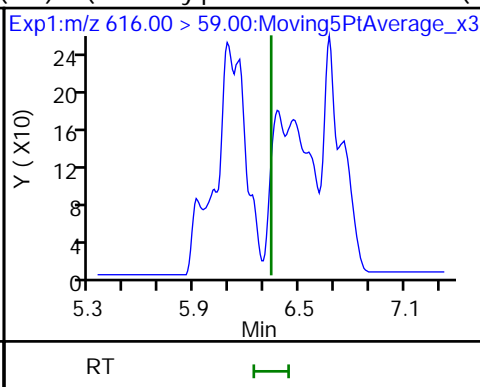
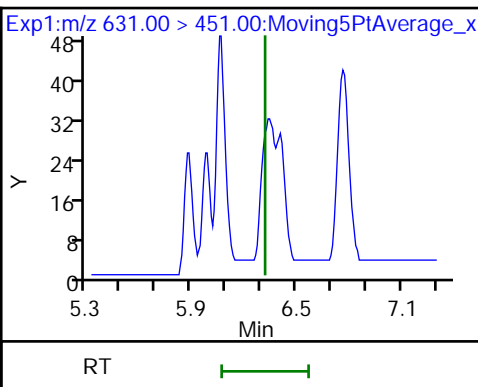
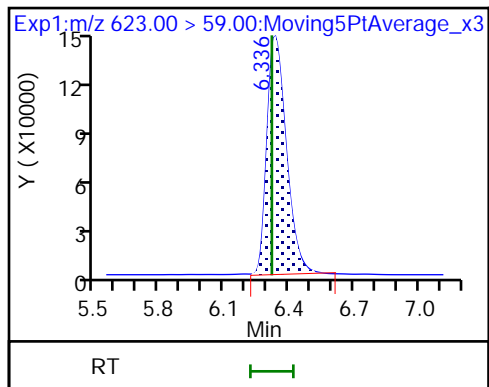
92 10:2 FTCA (ND)

92 10:2 FTCA (ND)



D 85 d7-N-MeFOSE-M

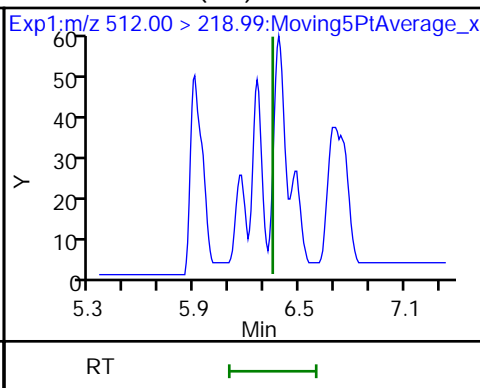
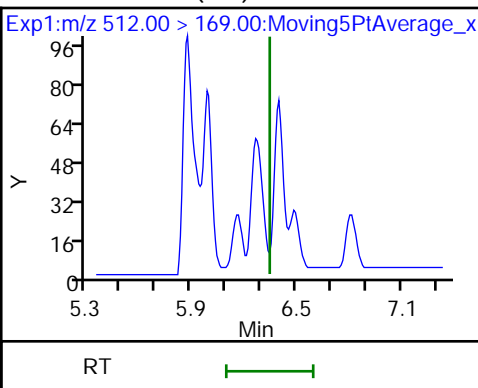
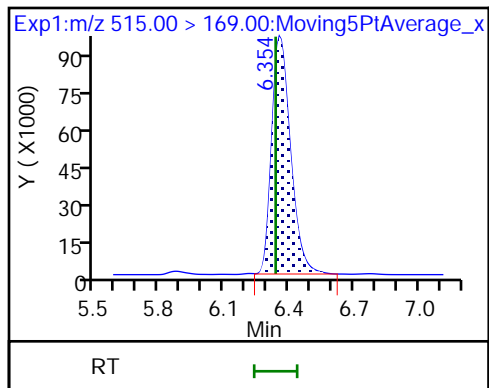
93 11-Chloroeicosafuoro-3-oxaundec (ND) 2-(N-methylperfluoro-1-octanesul (ND)



D 87 d-N-MeFOSA-M

88 NMeFOSA (ND)

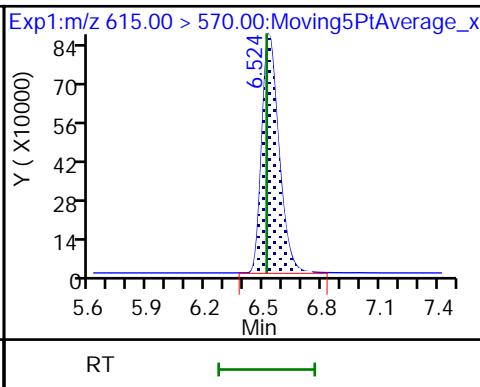
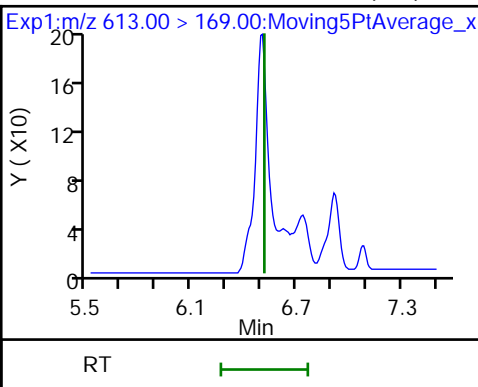
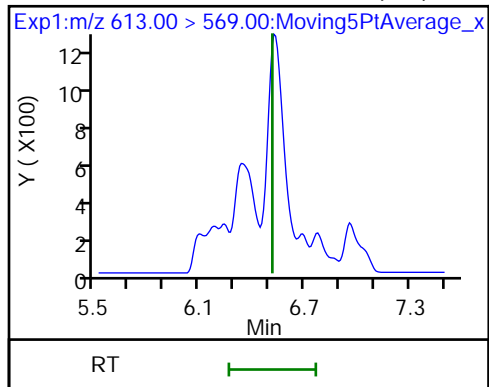
88 NMeFOSA (ND)



99 Perfluorododecanoic acid (ND)

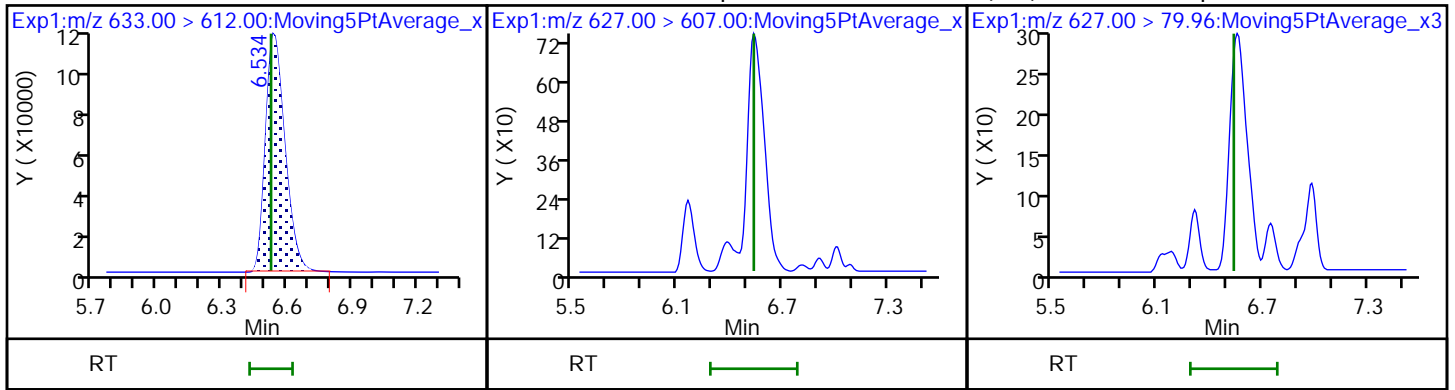
99 Perfluorododecanoic acid (ND)

D 98 13C2 PFDaA



D 100 13C2 10:2 FTS

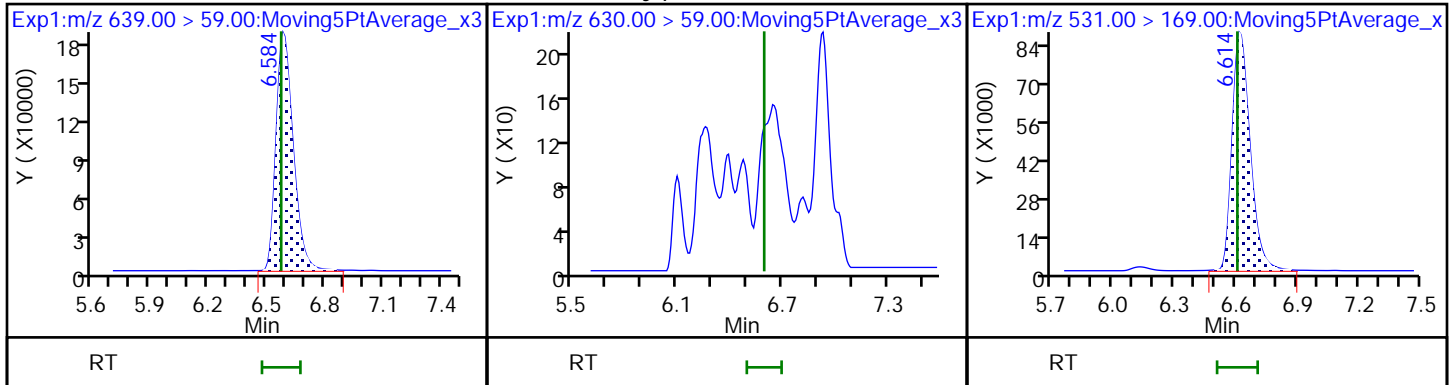
101 1H,1H,2H,2H-perfluorododecanesul (ND) 101 1H,1H,2H,2H-perfluorododecanesul (ND)



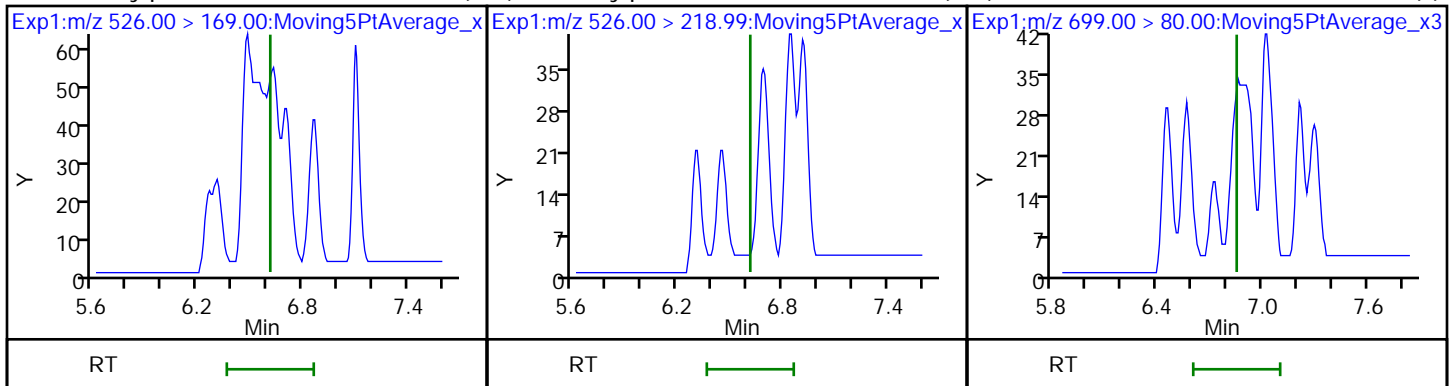
D 94 d9-N-EtFOSE-M

95 2-(N-ethylperfluoro-1-octanesul (ND)

96 d-N-EtFOSA-M

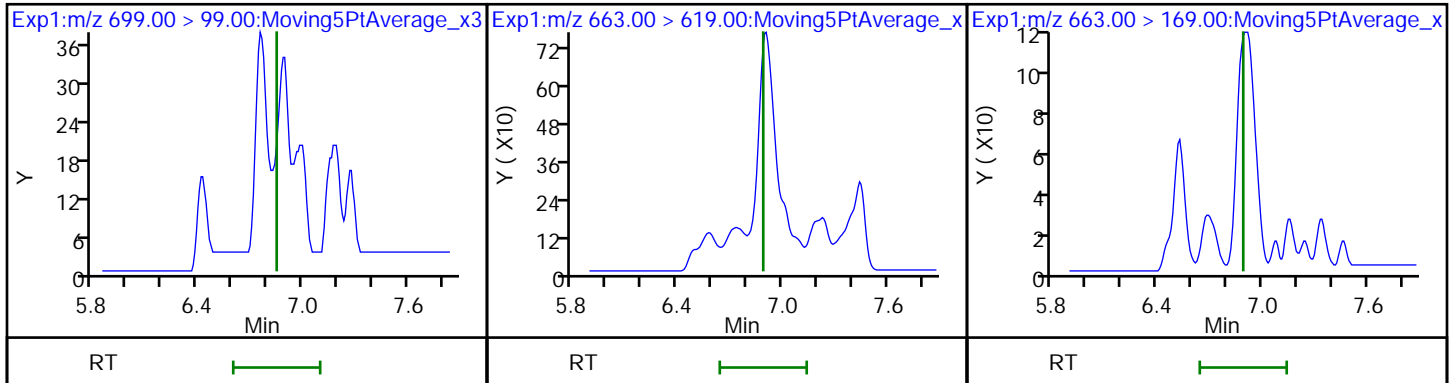


97 N-ethylperfluoro-1-octanesulfona (ND) 97 N-ethylperfluoro-1-octanesulfona (ND) 102 Perfluorododecanesulfonic acid ((ND)



102 Perfluorododecanesulfonic acid ((ND) 103 Perfluorotridecanoic acid (ND)

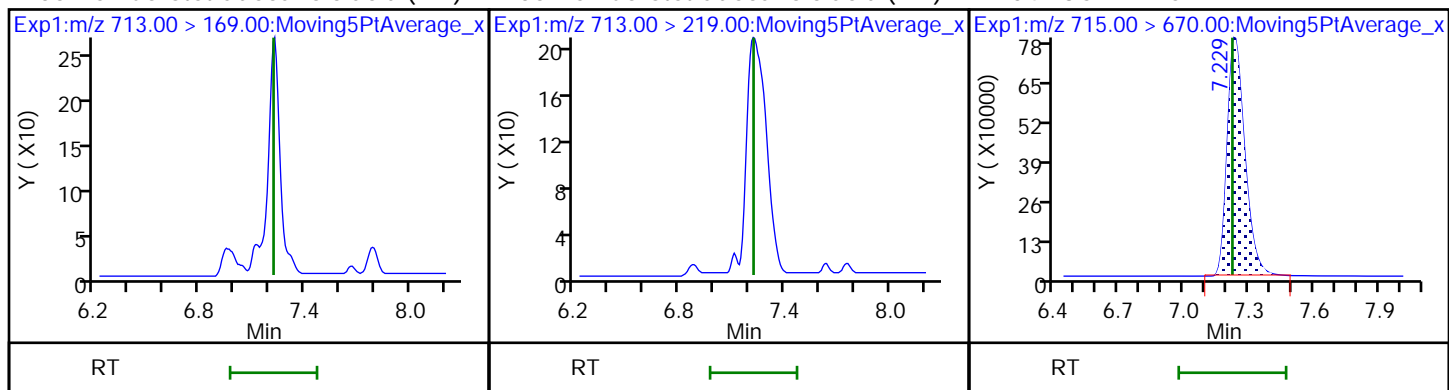
103 Perfluorotridecanoic acid (ND)



105 Perfluorotetradecanoic acid (ND)

105 Perfluorotetradecanoic acid (ND)

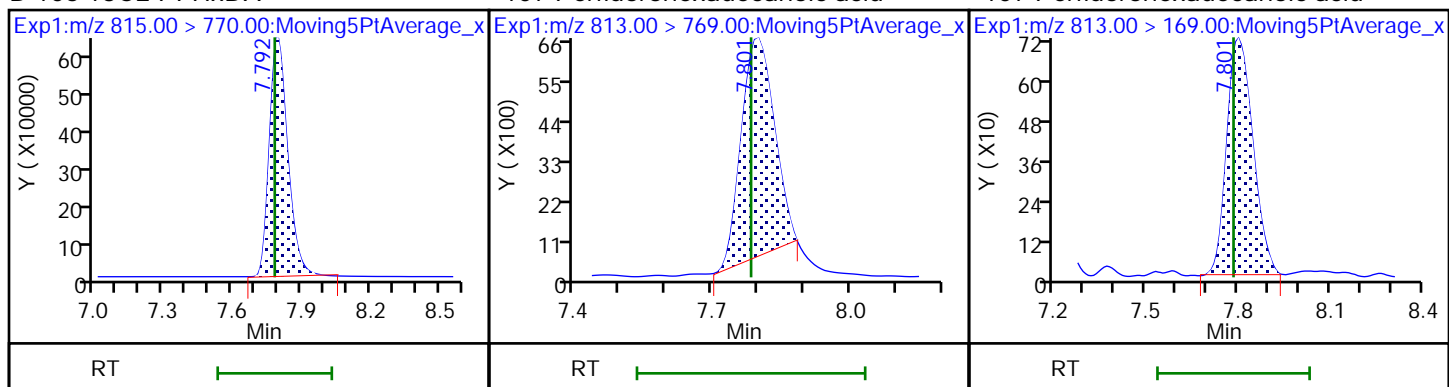
D 104 13C2 PFTeDA



D 106 13C2 PFHxDA

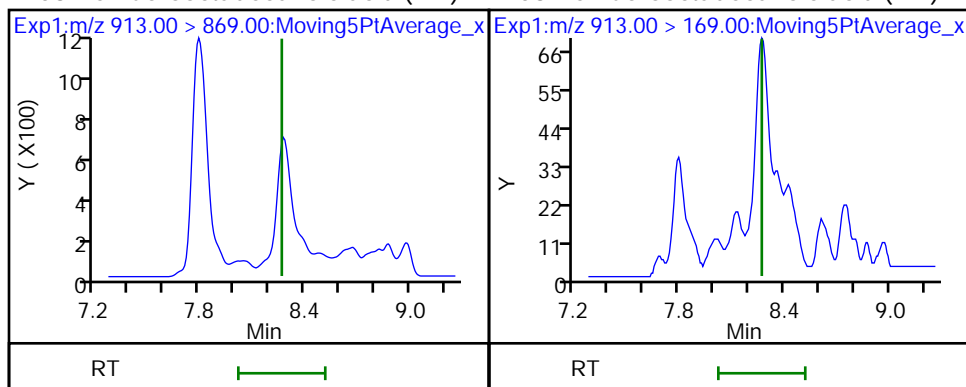
107 Perfluorohexadecanoic acid

107 Perfluorohexadecanoic acid



108 Perfluorooctadecanoic acid (ND)

108 Perfluorooctadecanoic acid (ND)



Eurofins Sacramento

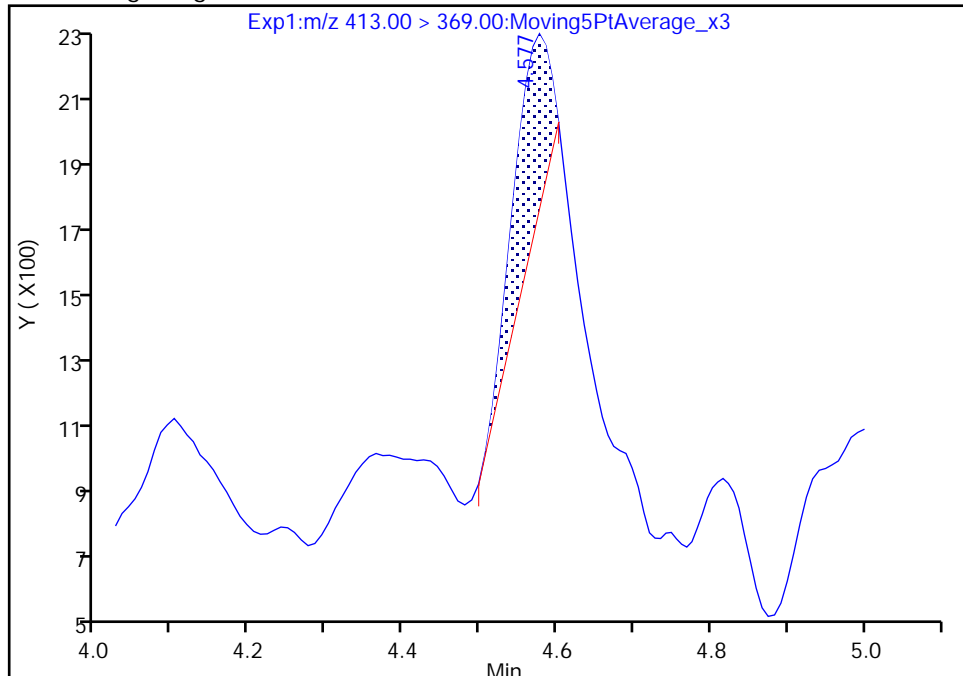
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_036.d
Injection Date: 22-Dec-2022 15:53:45 Instrument ID: A18
Lims ID: MB 320-641482/1-A
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 20 Worklist Smp#: 22
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

58 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

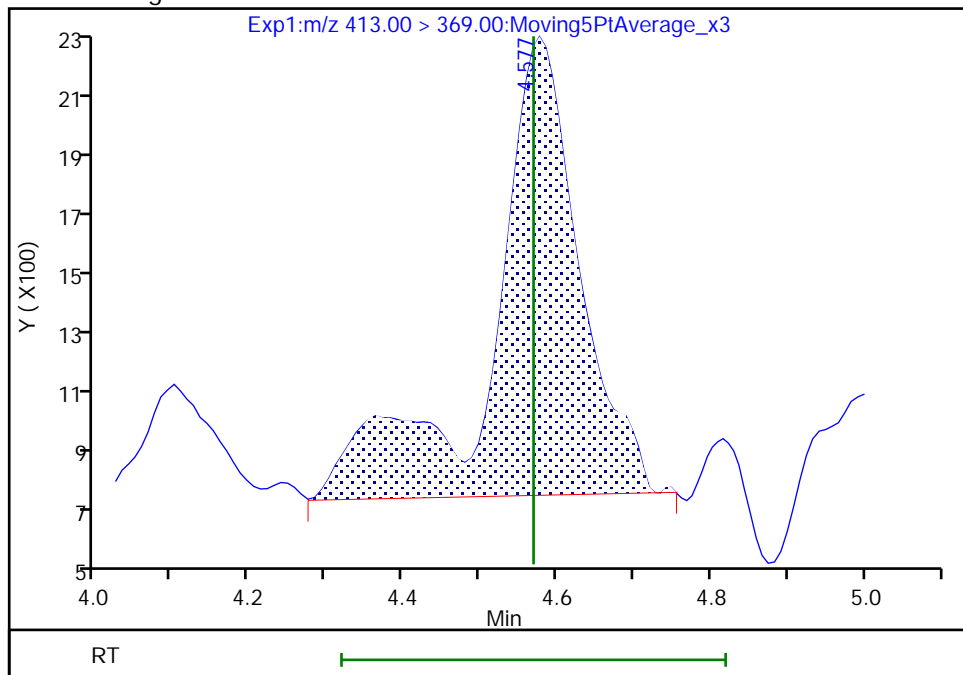
RT: 4.58
Area: 1726
Amount: 0.000397
Amount Units: ng/ml

Processing Integration Results



RT: 4.58
Area: 11393
Amount: 0.002622
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:43:21

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: CCB 320-642483/1

Matrix: Water Lab File ID: 2022.12.21_A18_PFC_A_004.d

Analysis Method: 537 (modified) Date Collected: _____

Extraction Method: _____ Date Extracted: _____

Sample wt/vol: 1(mL) Date Analyzed: 12/22/2022 10:39

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N

Cleanup Factor: _____

Analysis Batch No.: 642483 Units: ng/mL

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	ND		0.13	0.013
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		0.050	0.013
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		0.050	0.013
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		0.050	0.013
335-67-1	Perfluorooctanoic acid (PFOA)	ND		0.050	0.013
375-95-1	Perfluorononanoic acid (PFNA)	ND		0.050	0.013
335-76-2	Perfluorodecanoic acid (PFDA)	ND		0.050	0.013
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		0.050	0.013
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		0.050	0.013
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		0.050	0.013
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		0.050	0.013
67905-19-5	Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		0.050	0.013
16517-11-6	Perfluoro-n-octadecanoic acid (PFODA)	ND		0.050	0.013
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		0.050	0.013
2706-91-4	Perfluoropentanesulfonic acid (PFPeS)	ND		0.050	0.013
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		0.050	0.013
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)	ND		0.050	0.013
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		0.050	0.013
68259-12-1	Perfluorononanesulfonic acid (PFNS)	ND		0.050	0.013
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		0.050	0.013
79780-39-5	Perfluorododecanesulfonic acid (PFDoS)	ND		0.050	0.013
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		0.050	0.013
2355-31-9	NMeFOSAA	ND		0.13	0.013
2991-50-6	NEtFOSAA	ND		0.13	0.013
757124-72-4	4:2 FTS	ND		0.050	0.013
27619-97-2	6:2 FTS	ND		0.13	0.013
39108-34-4	8:2 FTS	ND		0.050	0.013
120226-60-0	10:2 FTS	ND		0.050	0.013
4151-50-2	NEtFOSA	ND		0.050	0.013

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: CCB 320-642483/1

Matrix: Water Lab File ID: 2022.12.21_A18_PFC_A_004.d

Analysis Method: 537 (modified) Date Collected: _____

Extraction Method: _____ Date Extracted: _____

Sample wt/vol: 1 (mL) Date Analyzed: 12/22/2022 10:39

Con. Extract Vol.: 1 (mL) Dilution Factor: 1

Injection Volume: 20 (uL) GC Column: Gemini C18 3x50 ID: 3 (mm)

% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N

Cleanup Factor: _____

Analysis Batch No.: 642483 Units: ng/mL

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
31506-32-8	NMeFOSA	ND		0.050	0.013
24448-09-7	NMeFOSE	ND		0.10	0.013
1691-99-2	NEtFOSE	ND		0.050	0.013
13252-13-6	HFPO-DA (GenX)	ND		0.10	0.013
756426-58-1	9Cl-PF3ONS	ND		0.050	0.013
763051-92-9	11Cl-PF3OUdS	ND		0.050	0.013
919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.050	0.013
356-02-5	3:3 FTCA	ND		0.050	0.013
914637-49-3	5:3 FTCA	ND		0.050	0.013
812-70-4	7:3 FTCA	ND		0.050	0.013
53826-12-3	6:2 FTCA	ND		0.050	0.013
27854-31-5	8:2 FTCA	ND		0.050	0.013
53826-13-4	10:2 FTCA	ND		0.075	0.013
133201-07-7	PFECHS	ND		0.050	0.013
423-41-6	PFPrS	ND		0.050	0.013
151772-58-6	NFDHA	ND		0.050	0.013
863090-89-5	PFMBA	ND		0.050	0.013
377-73-1	PFMPA	ND		0.050	0.013
113507-82-7	PFEESA	ND		0.050	0.013
674-13-5	PFMOAA	ND		0.050	0.013
801212-59-9	PFPE-1	ND		0.050	0.013
39492-90-5	PFO4DA	ND		0.050	0.013
39492-89-2	PFO3OA	ND		0.050	0.013
39492-88-1	PFO2HxA	ND		0.050	0.013
39492-91-6	PFO5DA	ND		0.050	0.013
13140-29-9	PMPA	ND		0.050	0.013
267239-61-2	PEPA	ND		0.050	0.013
422-64-0	PFPrA	ND		0.050	0.013
2416366-22-6	R-EVE	ND		0.050	0.013
801209-99-4	NVHOS	ND		0.075	0.013
773804-62-9	Hydro-EVE Acid	ND		0.050	0.013
2416366-21-5	R-PSDCA	ND		0.075	0.013

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: CCB 320-642483/1
Matrix: Water Lab File ID: 2022.12.21_A18_PFC_A_004.d
Analysis Method: 537 (modified) Date Collected: _____
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 1 (mL) Date Analyzed: 12/22/2022 10:39
Con. Extract Vol.: 1 (mL) Dilution Factor: 1
Injection Volume: 20 (uL) GC Column: Gemini C18 3x50 ID: 3 (mm)
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 642483 Units: ng/mL

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
749836-20-2	Hydro-PS Acid	ND		0.050	0.013

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: CCB 320-642483/1
 Matrix: Water Lab File ID: 2022.12.21_A18_PFC_A_004.d
 Analysis Method: 537 (modified) Date Collected: _____
 Extraction Method: _____ Date Extracted: _____
 Sample wt/vol: 1(mL) Date Analyzed: 12/22/2022 10:39
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)
 % Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
 Cleanup Factor: _____
 Analysis Batch No.: 642483 Units: ng/mL

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01056	13C8 FOSA	103		25-150
STL00992	13C4 PFBA	93		25-150
STL01893	13C5 PFPeA	92		25-150
STL00993	13C2 PFHxA	94		25-150
STL01892	13C4 PFHpA	91		25-150
STL00990	13C4 PFOA	96		25-150
STL00995	13C5 PFNA	96		25-150
STL00996	13C2 PFDA	95		25-150
STL00997	13C2 PFUnA	97		25-150
STL00998	13C2 PFDoA	97		25-150
STL02116	13C2 PFTeDA	93		25-150
STL02115	13C2 PFHxDA	82		25-150
STL02337	13C3 PFBS	97		25-150
STL00994	18O2 PFHxS	99		25-150
STL00991	13C4 PFOS	94		25-150
STL02118	d3-NMeFOSAA	96		25-150
STL02117	d5-NEtFOSAA	99		25-150
STL02395	M2-4:2 FTS	87		25-150
STL02279	M2-6:2 FTS	84		25-150
STL02280	M2-8:2 FTS	93		25-150
STL02814	13C2 10:2 FTS	89		25-150
STL02275	d-N-MeFOSA-M	101		20-150
STL02282	d-N-EtFOSA-M	99		20-150
STL02277	d7-N-MeFOSE-M	98		10-120
STL02278	d9-N-EtFOSE-M	98		10-120
STL02255	13C3 HFPO-DA	93		25-150
STL02802	13C-6:2 FTCA	83		25-150
STL02803	13C-8:2 FTCA	82		25-150
STL02804	13C-10:2 FTCA	86		25-150

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_004.d
 Lims ID: CCB
 Client ID:
 Sample Type: CCB
 Inject. Date: 22-Dec-2022 10:39:57 ALS Bottle#: 50 Worklist Smp#: 1
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCB (31)
 Misc. Info.: Plate: 3 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Method: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 23-Dec-2022 13:05:09 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1679

First Level Reviewer: ruangyotsakuld

Date: 23-Dec-2022 13:05:09

Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A18\20221222-153306.b\2022.12.20_A18_PFC_B1_026.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 8 13C4 PFBA 217.00 > 172.00	2.670	2.662	0.008	0.585	4750236	1.17		93.4	16391	
D 16 13C5 PFPeA 267.90 > 223.00	3.039	3.031	0.008	0.666	4197629	1.15		92.3	26386	
D 18 13C3 PFBS 301.90 > 80.00	3.085	3.077	0.008	0.676	2840596	1.13		97.2	16719	
D 25 M2-4:2 FTS 329.00 > 81.00	3.431	3.422	0.009	0.752	597294	1.02		87.2	3382	
D 27 13C2 PFHxA 315.00 > 270.00	3.476	3.468	0.008	0.761	4705268	1.17		94.0	35420	
D 32 13C3 HFPO-DA 287.00 > 169.00	3.641	3.632	0.009	0.798	155963	1.16		92.7	4601	
D 35 13C4 PFHpA 367.00 > 322.00	4.003	3.994	0.009	0.877	4814445	1.13		90.7	32241	
D 37 18O2 PFHxS 403.00 > 84.00	4.021	4.012	0.009	0.881	1956773	1.18		99.5	22644	
D 44 13C-6:2 FTUCA 358.86 > 293.90	4.140	4.131	0.009	0.907	3343008	1.33		106	26614	
D 46 13C-6:2 FTCA 378.88 > 293.90	4.166	4.157	0.009	0.913	202863	1.04		83.3	879	
D 52 M2-6:2 FTS 429.00 > 81.00	4.529	4.520	0.009	0.992	617555	1.00		84.3	9434	
\$ 54 13C8 PFOA 421.00 > 376.00	4.565	4.547	0.018	1.000	7412862	1.34		108	15241	
D 56 13C4 PFOA 417.00 > 372.00	4.565	4.556	0.009	1.000	5542216	1.19		95.6	16937	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 Perfluorooctanoic acid										M
413.00 > 369.00	4.556	4.556	0.0	0.998	7570	0.001830	Target=2.71	6.8		M
413.00 > 169.00	4.565	4.556	0.009	1.000	3663		2.07(1.35-4.06)	28.7		M
* 55 13C2 PFOA										
415.00 > 370.00	4.565	4.556	0.009		5739037	1.25		17227		
D 61 13C4 PFOS										
503.00 > 80.00	5.111	5.097	0.014	1.120	1261253	1.13		94.1	7674	
\$ 60 13C8 PFOS										
507.00 > 99.00	5.111	5.097	0.014	1.120	521939	1.09		91.1	7804	
D 64 13C5 PFNA										
468.00 > 423.00	5.118	5.104	0.014	1.121	5430460	1.20		95.7	26195	
D 67 13C-8:2 FTUCA										
458.86 > 393.90	5.288	5.269	0.019	1.158	3640900	1.34		108	10555	
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.306	5.297	0.009	1.162	148930	1.02		81.9	767	
D 72 13C8 FOSA										
506.00 > 78.00	5.608	5.592	0.016	1.228	1911135	1.29		103	15119	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.624	5.608	0.016	1.232	693379	1.12		93.2	13599	
D 76 13C2 PFDA										
515.00 > 470.00	5.632	5.616	0.016	1.234	5176136	1.18		94.6	26795	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.858	5.843	0.015	1.283	727367	1.20		95.9	5784	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.096	6.078	0.018	1.335	756806	1.24		99.4	3776	
D 82 13C2 PFUnA										
565.00 > 520.00	6.096	6.087	0.009	1.335	5005490	1.22		97.5	26371	
D 89 13C-10:2 FTUCA										
558.86 > 493.90	6.258	6.251	0.007	1.371	3278976	1.34		107	11456	
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.276	6.269	0.007	1.375	87361	1.07		85.6	458	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.312	6.304	0.008	1.383	892976	1.22		97.9	7666	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.338	6.322	0.016	1.388	611272	1.26		101	3096	
D 98 13C2 PFDoA										
615.00 > 570.00	6.516	6.508	0.008	1.427	5460886	1.21		96.7	20732	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.526	6.518	0.008	1.430	623377	1.08		89.2	14313	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.566	6.558	0.008	1.438	1036094	1.23		98.1	7673	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.596	6.588	0.008	1.445	555664	1.23		98.8	2592	
D 112 13C4-6:2 diPAP										
792.82 > 78.90	7.119	7.108	0.011	1.559	1493874	1.14		93.4	4416	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.222	7.216	0.006	1.582	4555878	1.16		93.0	8581	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
--------	----	-----------	-----------	-----------	----------	-----------------	---------------	------	-----	-------

D 106 13C2 PFHxDA

815.00 > 770.00	7.785	7.779	0.006	1.706	3466965	1.02		81.7	5351	
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107 Perfluorohexadecanoic acid

M

813.00 > 769.00	7.785	7.779	0.006	1.000	32302	0.001345	Target=9.02		121	M
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813.00 > 169.00	7.785	7.779	0.006	1.000	4032		8.01(4.51-13.53)		147	M
-----------------	-------	-------	-------	-------	------	--	------------------	--	-----	---

D 113 13C4-8:2 diPAP

992.77 > 96.90	8.009	7.993	0.016	1.754	1091963	1.15		93.7	3363	
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QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

LCPFC+6C_LL0_00039

Amount Added: 1.00

Units: mL

Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_004.d

Injection Date: 22-Dec-2022 10:39:57

Instrument ID: A18

Lims ID: CCB

Client ID:

Operator ID: TAISACA18-PC\A-18

ALS Bottle#: 50

Worklist Smp#: 1

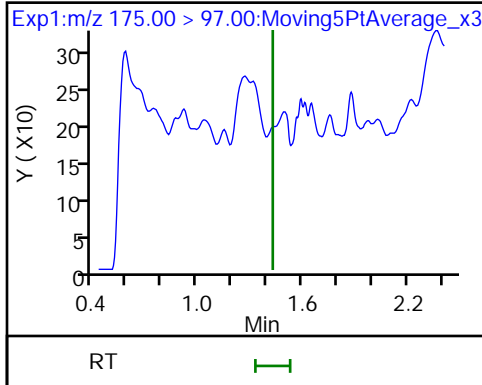
Injection Vol: 20.0 ul

Dil. Factor: 1.0000

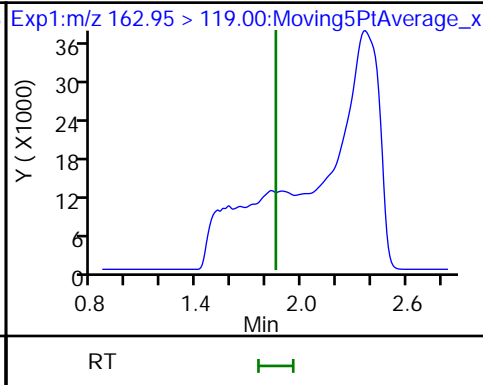
Method: PFAS+_A18

Limit Group: LC PFC ICAL

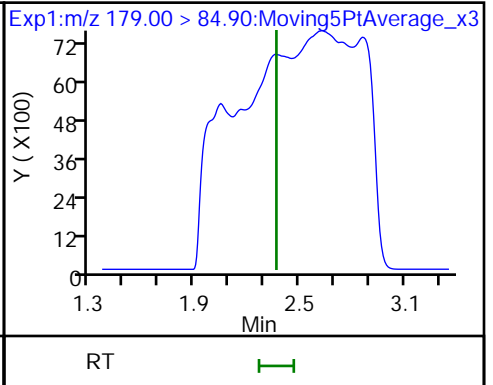
1 MTP (ND)



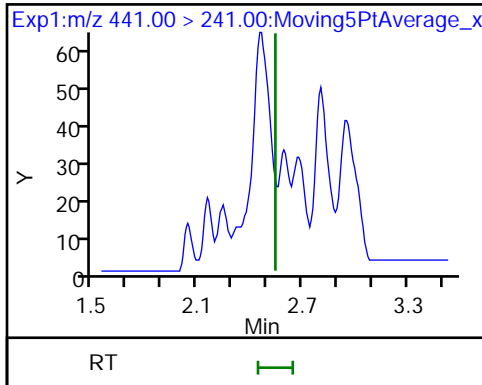
2 PPF Acid (ND)



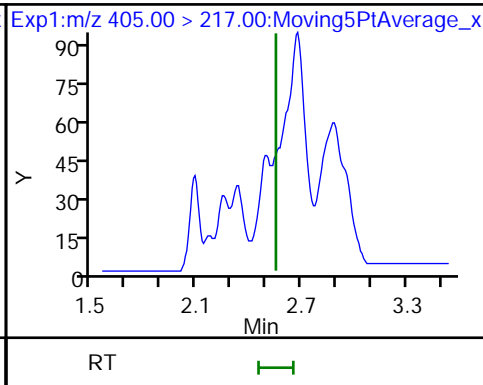
3 PFMOAA (ND)



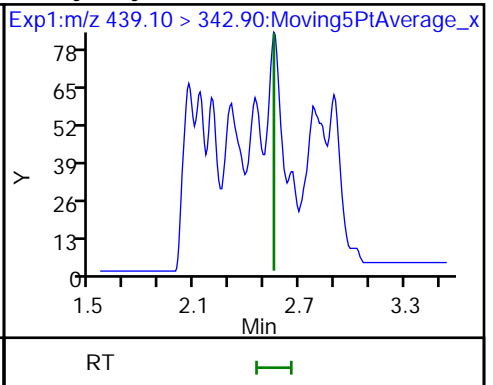
4 R-PSDA (ND)



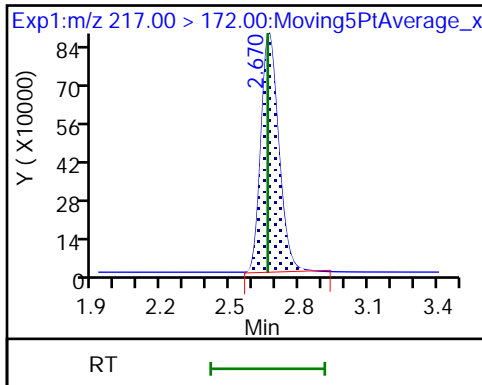
5 R-EVE (ND)



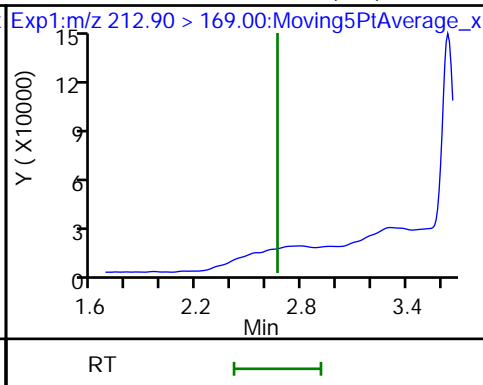
6 Hydrolyzed PSDA (ND)



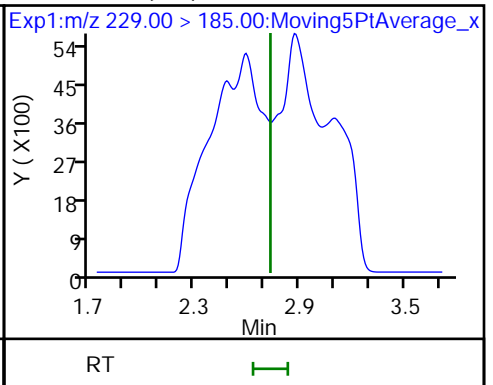
D 8 13C4 PFBA



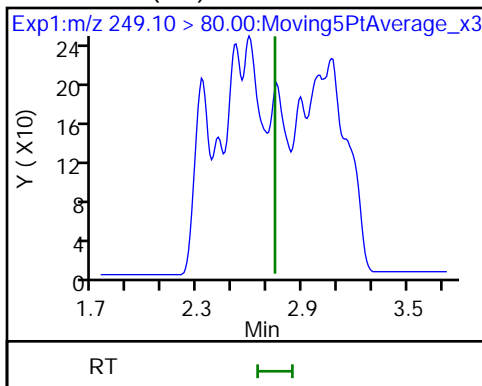
7 Perfluorobutanoic acid (ND)



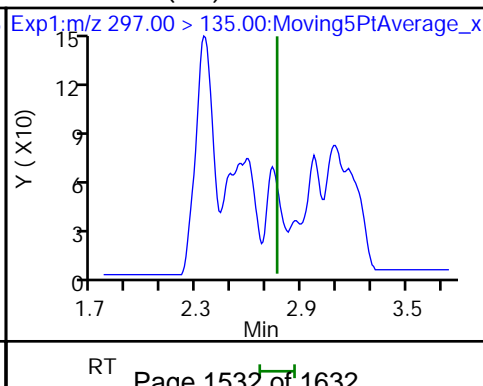
10 PMPA (ND)



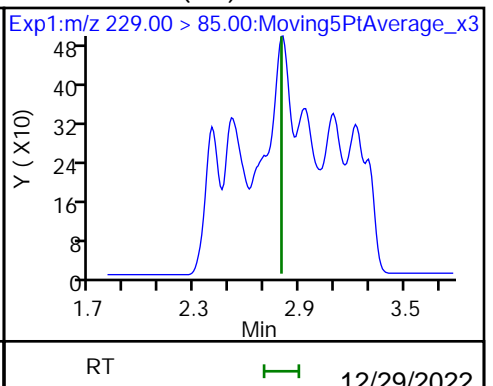
11 PFPrS (ND)

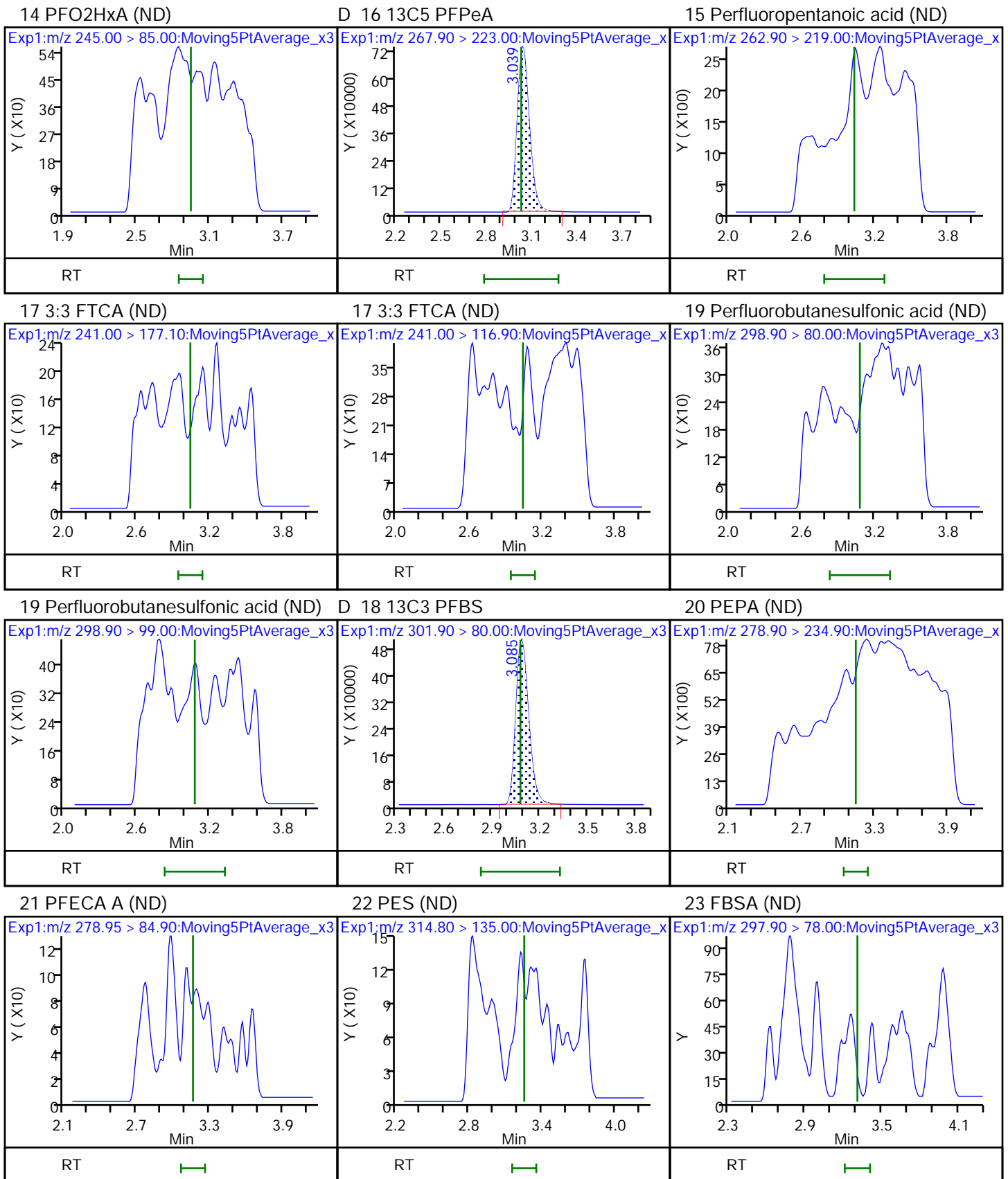


12 NVHOS (ND)

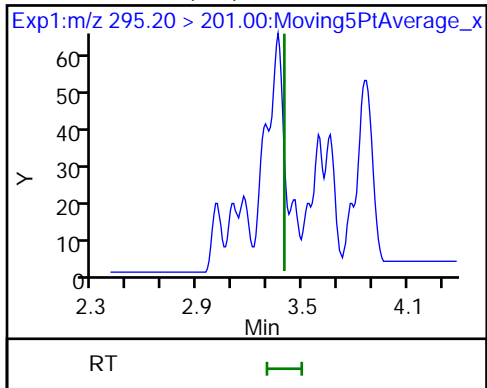


13 PFECA F (ND)

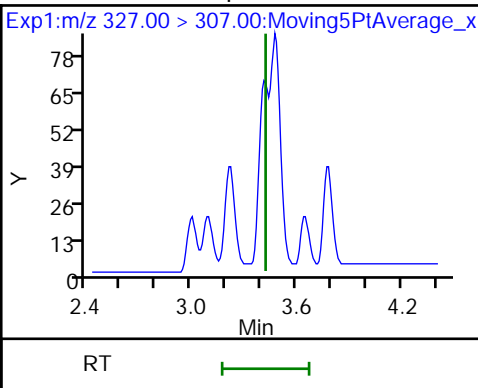




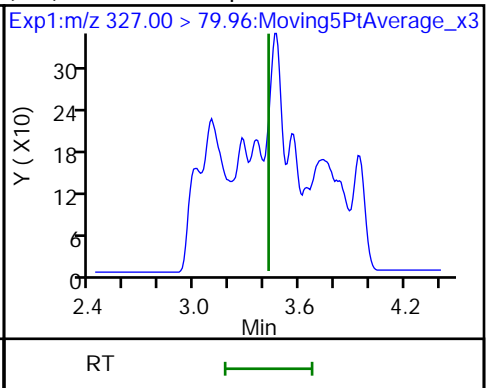
24 PFECA B (ND)



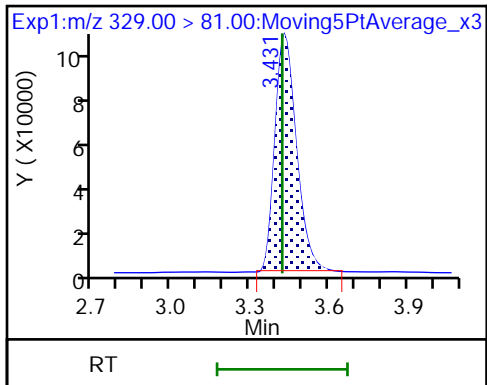
26 1H,1H,2H,2H-perfluorohexanesulfo (ND)



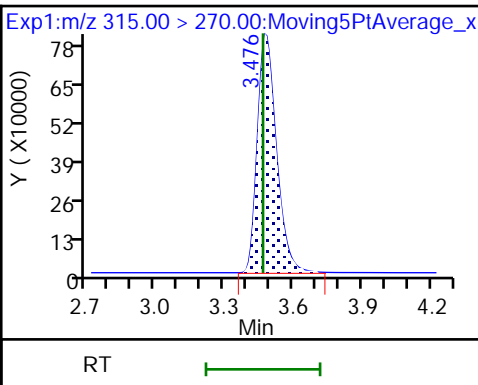
27 1H,1H,2H,2H-perfluorohexanesulfo (ND)



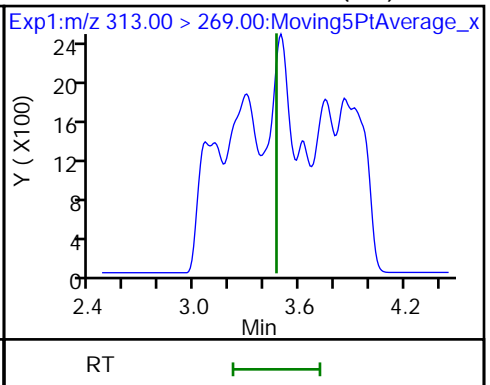
D 25 M2-4:2 FTS



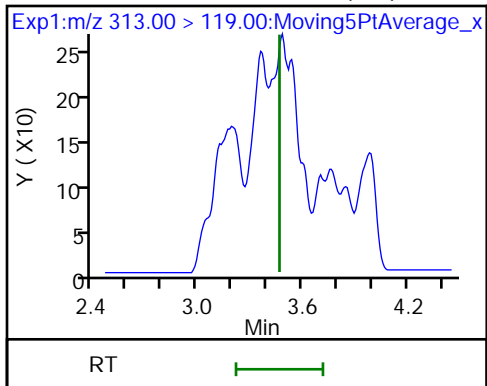
D 27 13C2 PFHxA



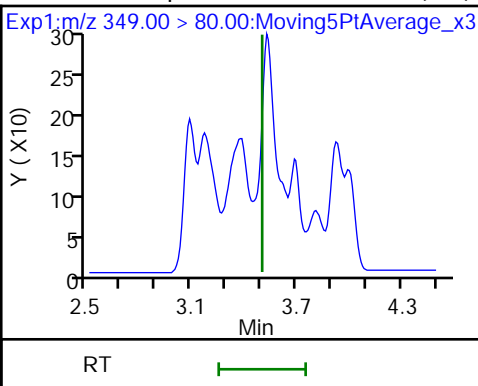
28 Perfluorohexanoic acid (ND)



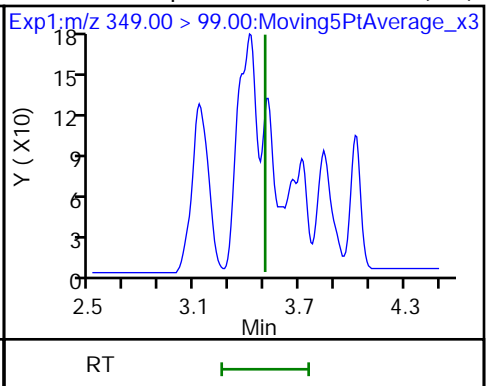
28 Perfluorohexanoic acid (ND)



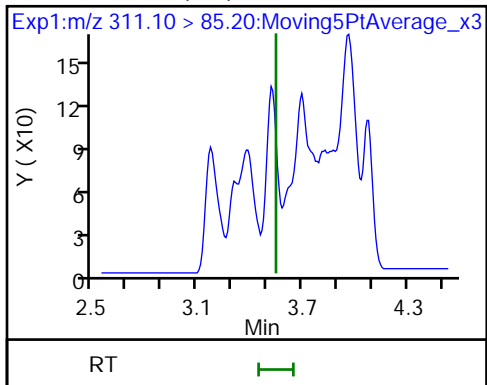
29 Perfluoropentanesulfonic acid (ND)



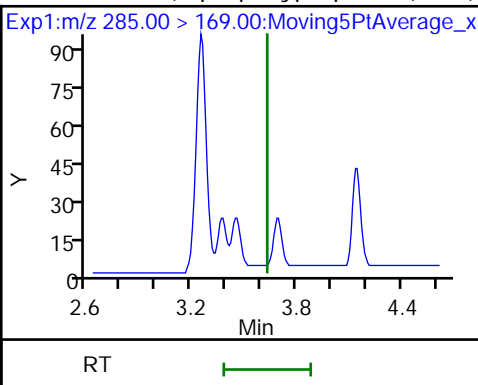
29 Perfluoropentanesulfonic acid (ND)



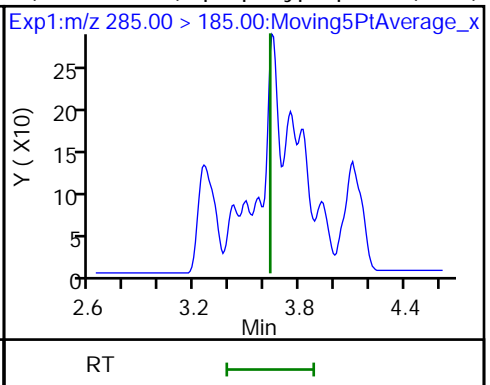
30 PFO3OA (ND)



31 Perfluoro(2-propoxypropanoic) ac (ND)



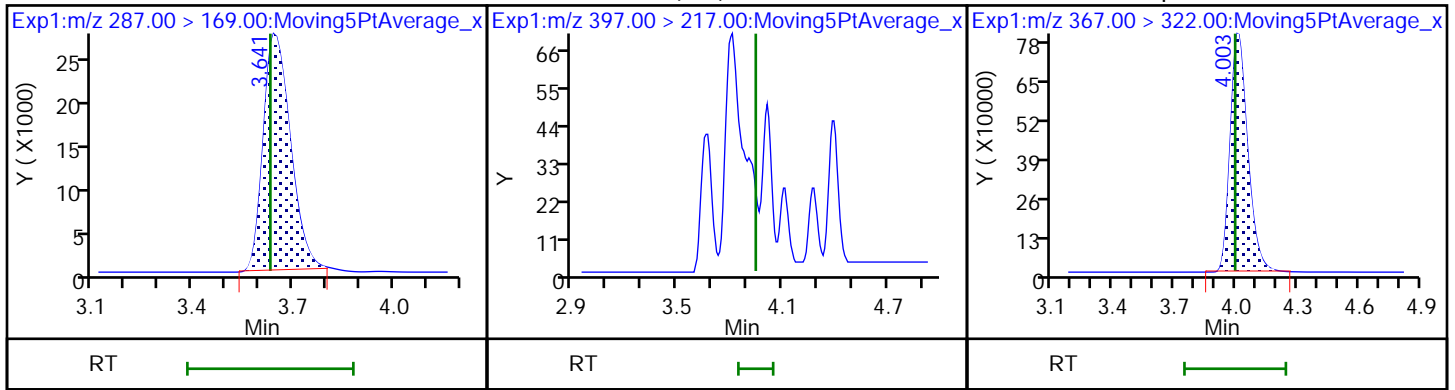
31 Perfluoro(2-propoxypropanoic) ac (ND)



D 32 13C3 HFPO-DA

33 R-PSDCA (ND)

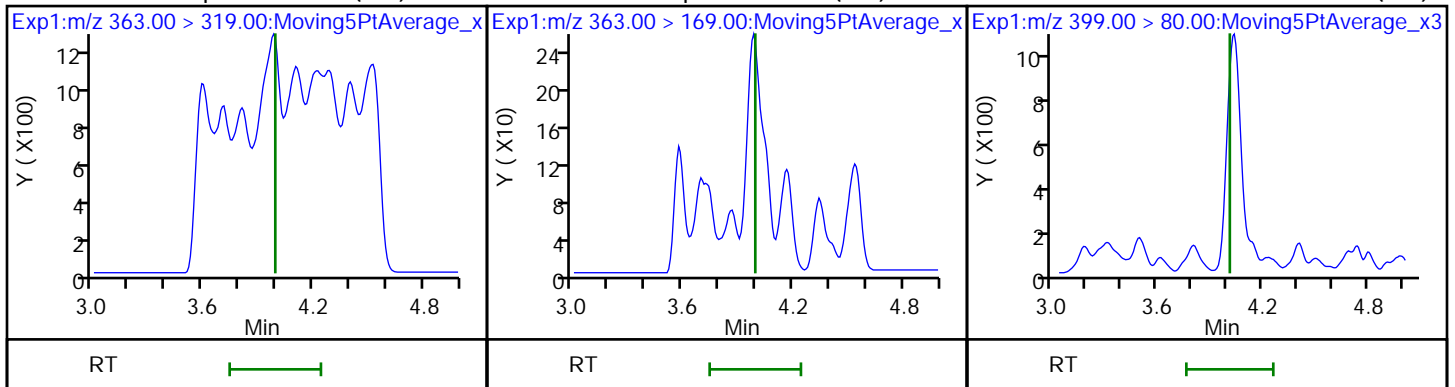
D 35 13C4 PFHpA



36 Perfluoroheptanoic acid (ND)

36 Perfluoroheptanoic acid (ND)

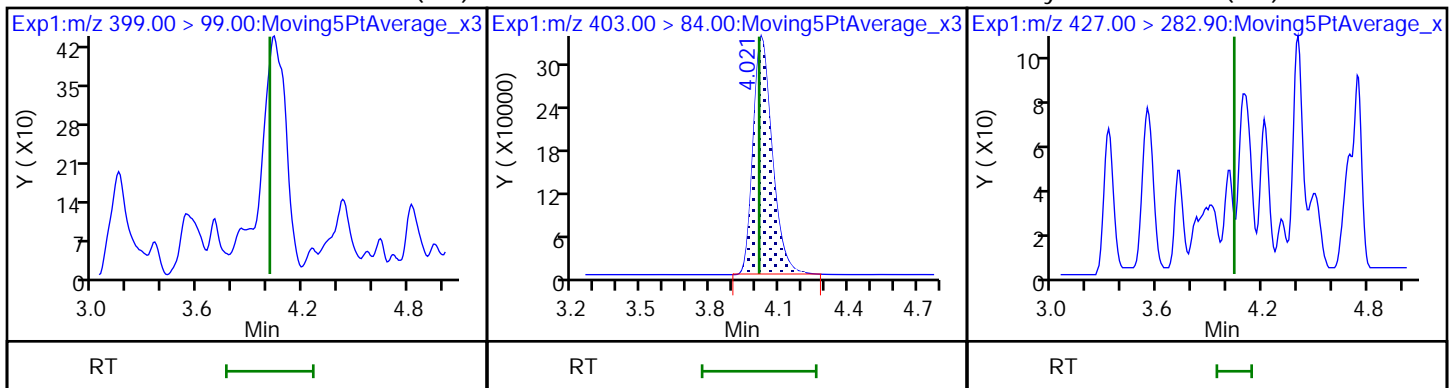
38 Perfluorohexanesulfonic acid (ND)



38 Perfluorohexanesulfonic acid (ND)

D 37 18O2 PFHxS

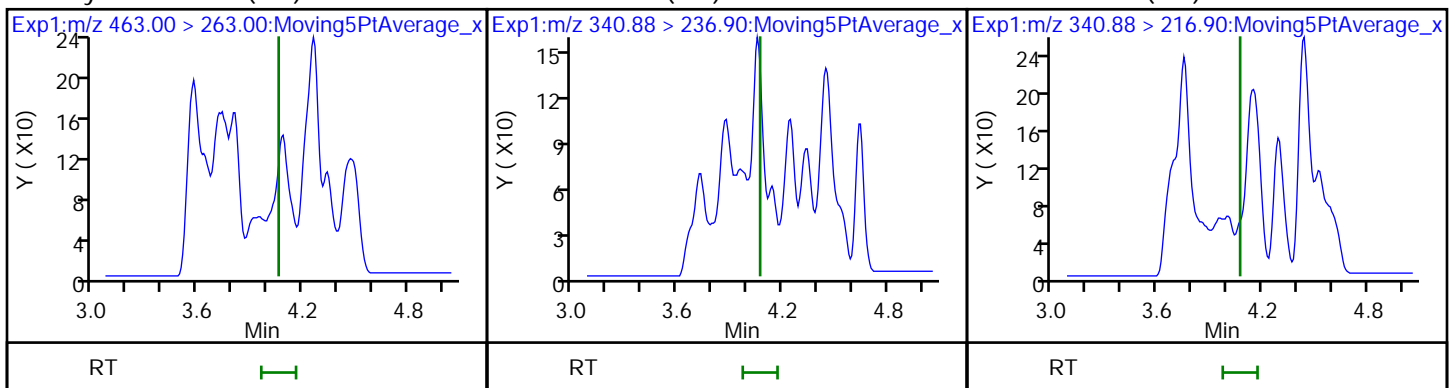
34 Hydro-EVE Acid (ND)

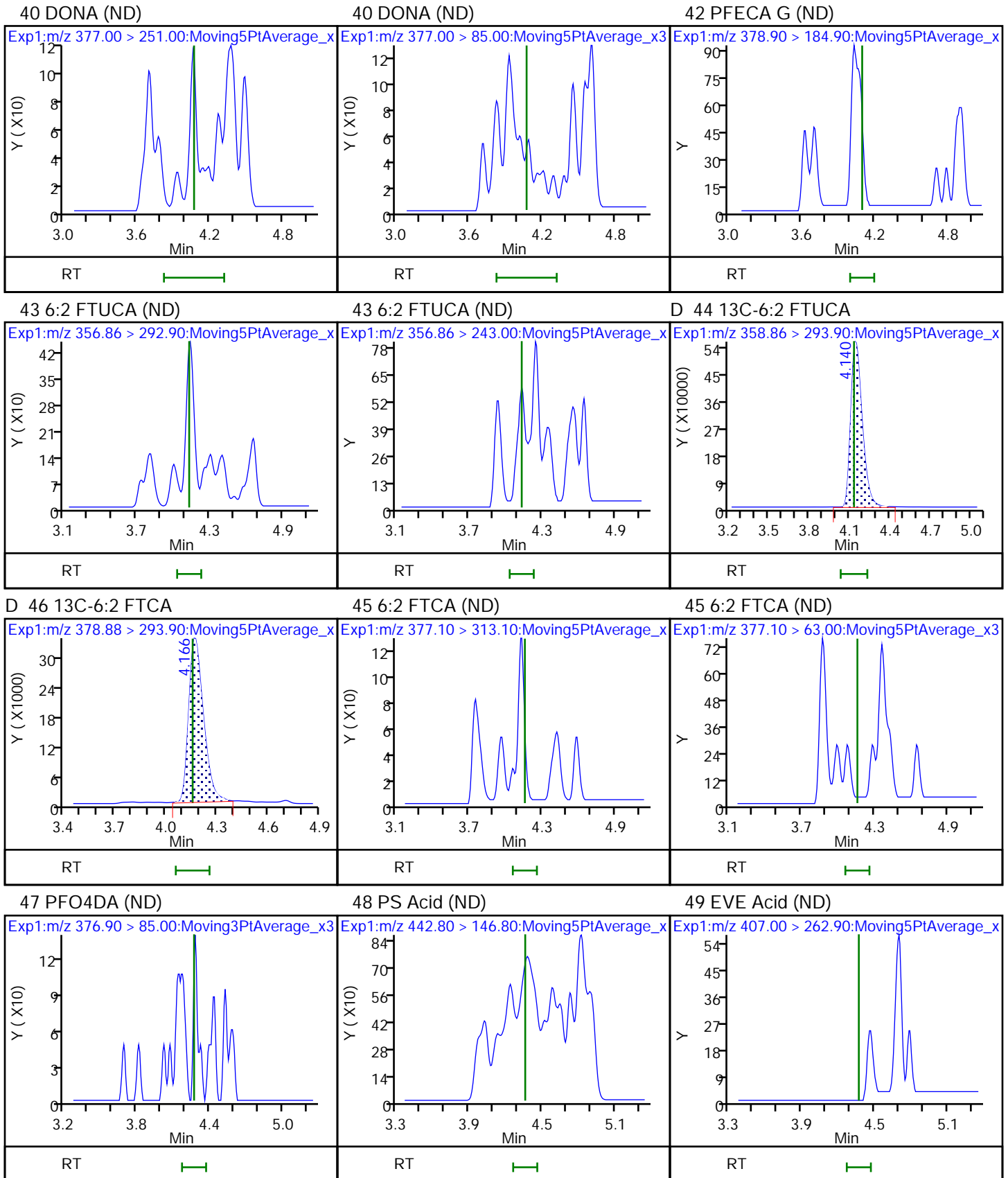


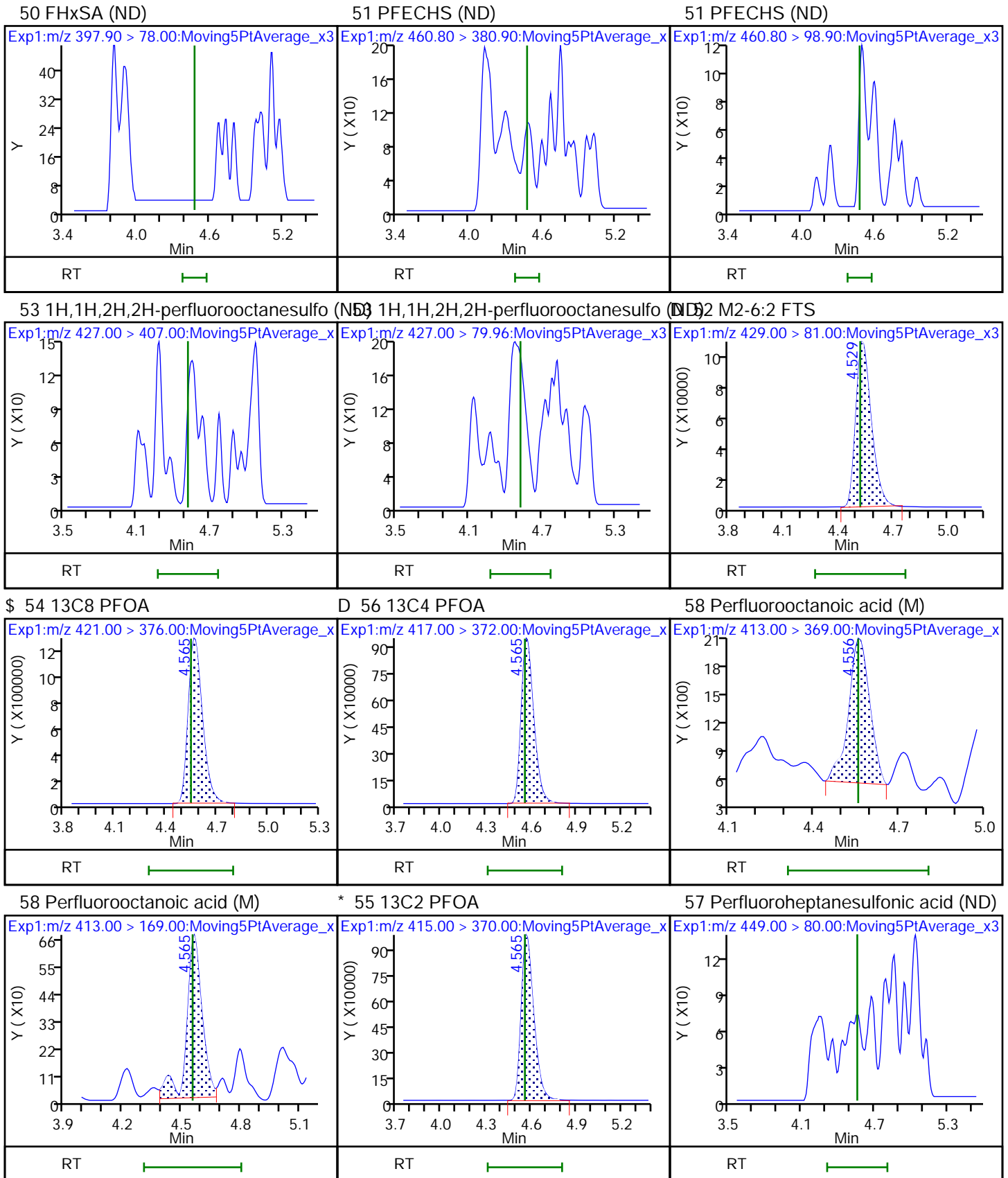
39 Hydro-PS Acid (ND)

41 5:3 FTCA (ND)

41 5:3 FTCA (ND)

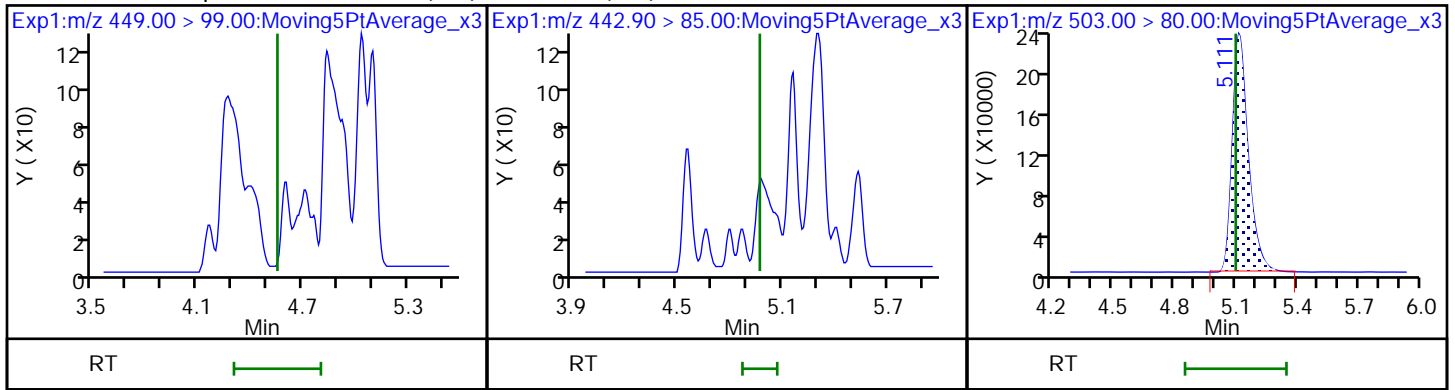






57 Perfluoroheptanesulfonic acid (ND) 59 TAF (ND)

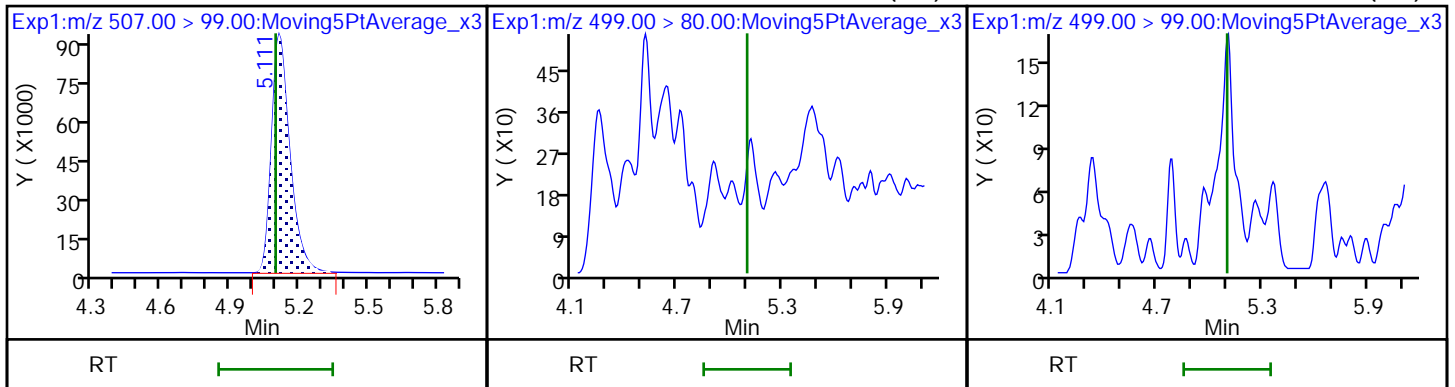
D 61 13C4 PFOS



\$ 60 13C8 PFOS

62 Perfluorooctanesulfonic acid (ND)

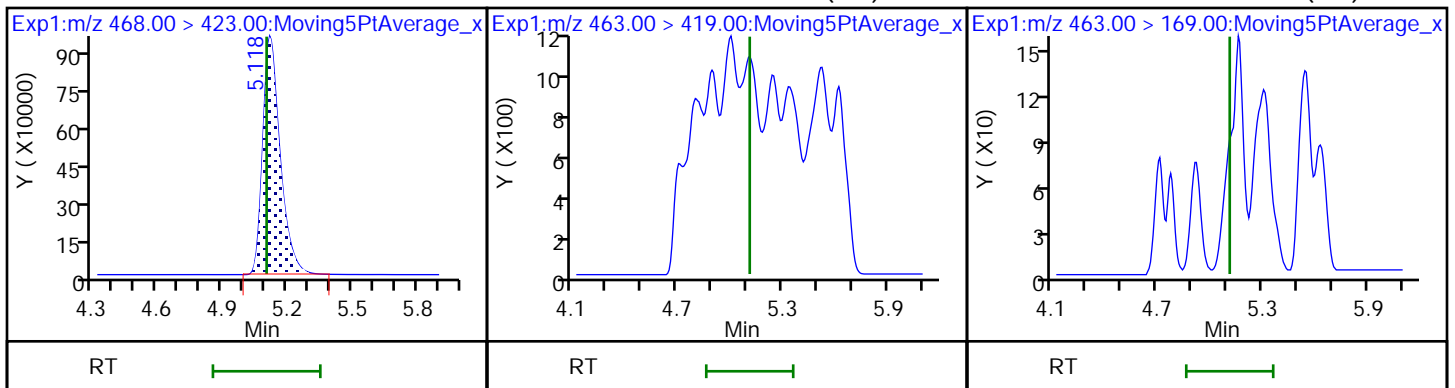
62 Perfluorooctanesulfonic acid (ND)



D 64 13C5 PFNA

63 Perfluorononanoic acid (ND)

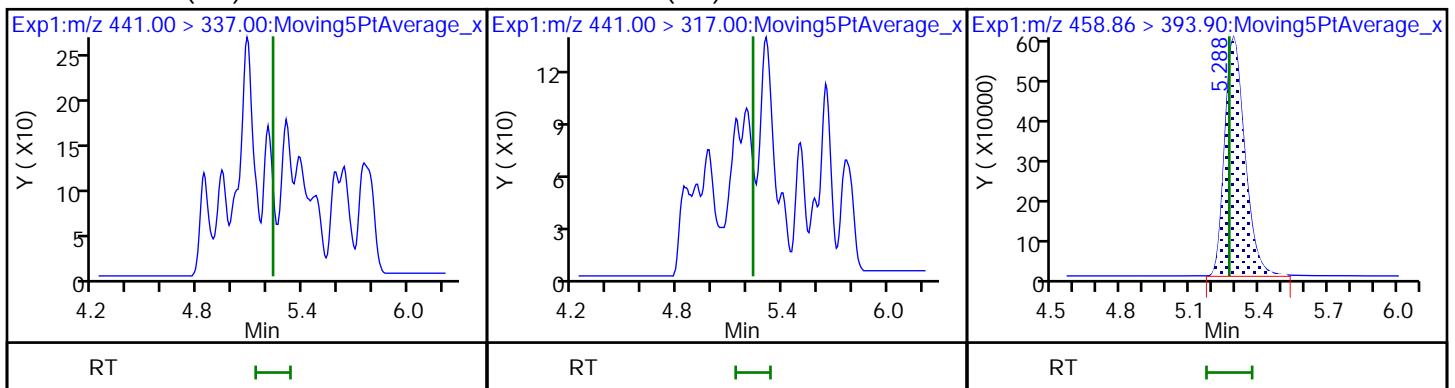
63 Perfluorononanoic acid (ND)

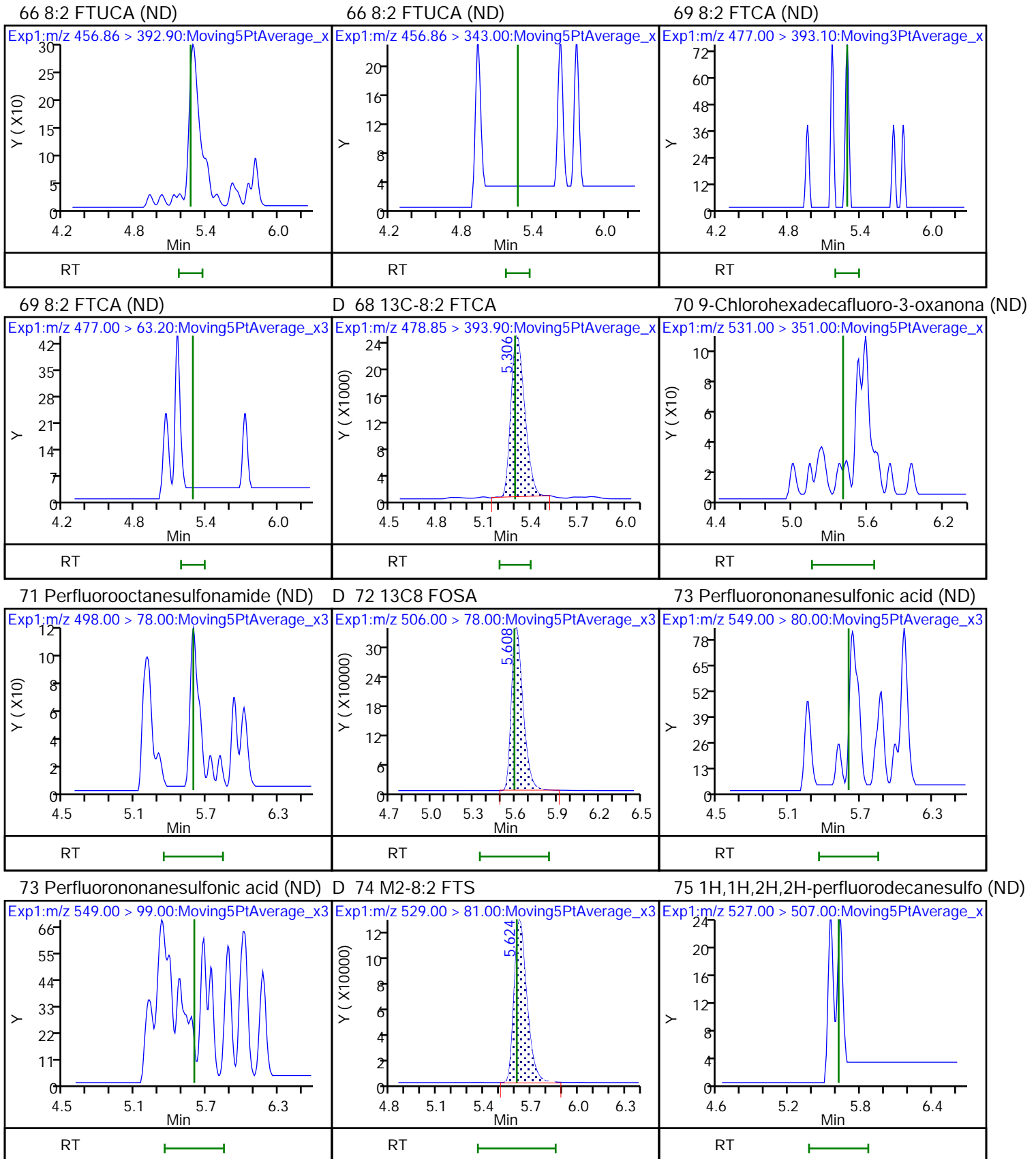


65 7:3 FTCA (ND)

65 7:3 FTCA (ND)

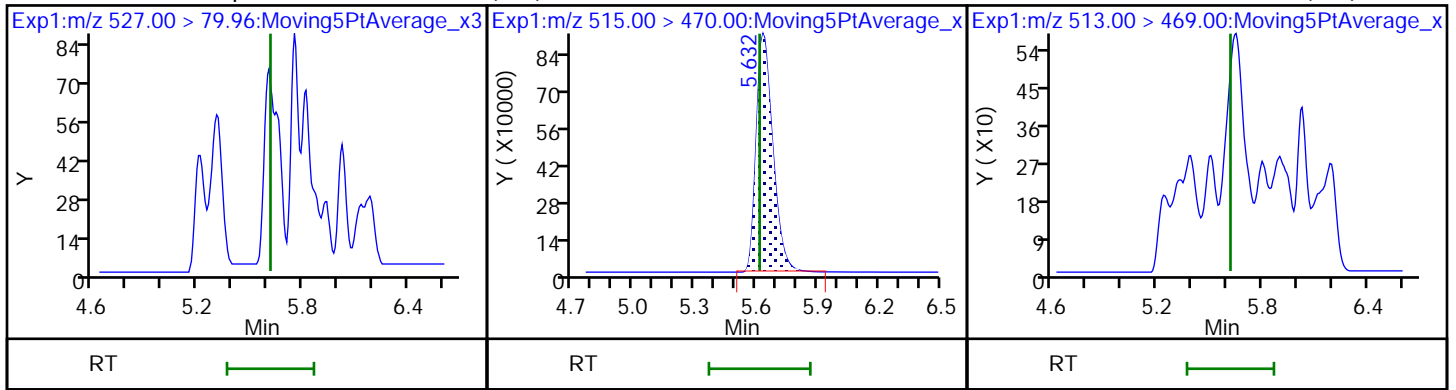
D 67 13C-8:2 FTUCA





75 1H,1H,2H,2H-perfluorodecanesulfo (ND) 13C2 PFDA

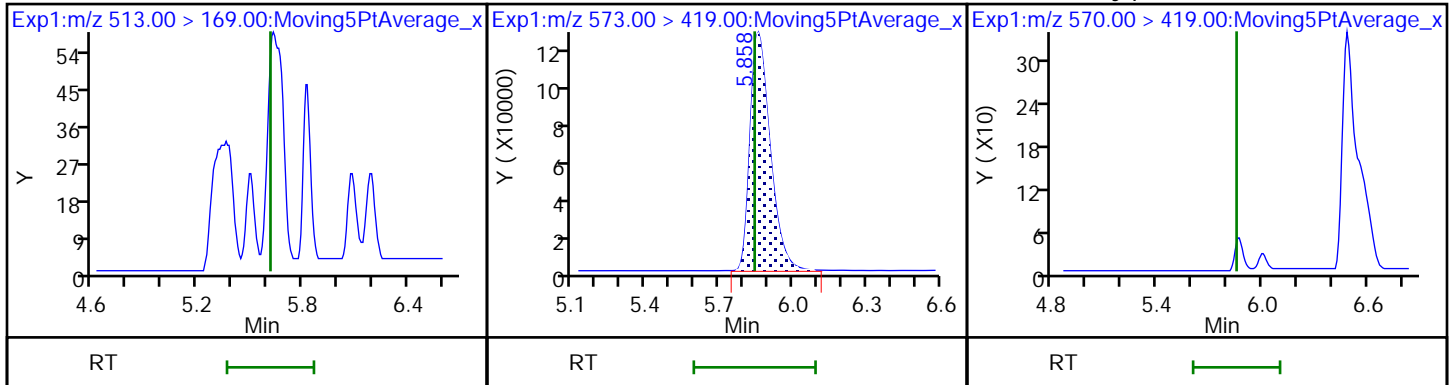
77 Perfluorodecanoic acid (ND)



77 Perfluorodecanoic acid (ND)

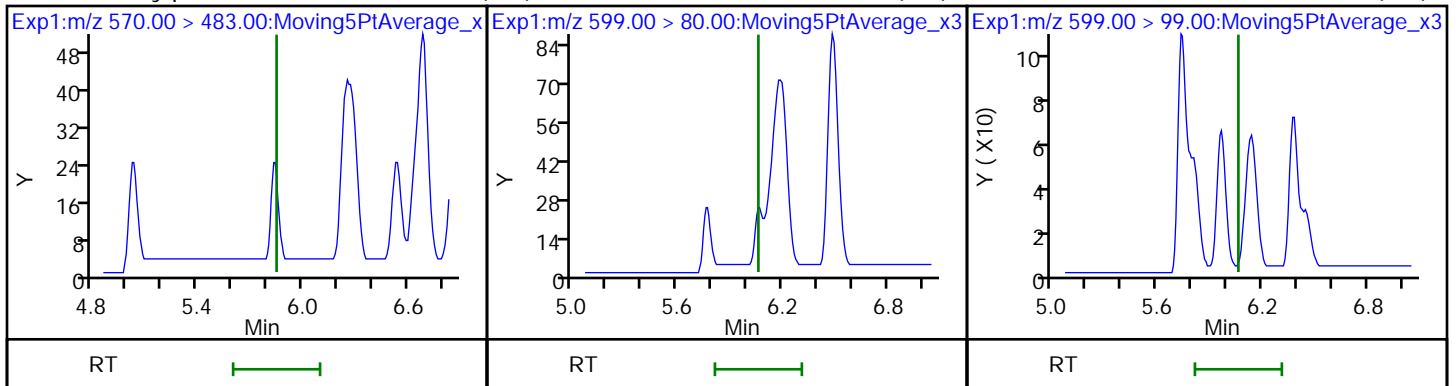
D 78 d3-NMeFOSAA

79 N-methylperfluorooctanesulfonami (ND)



79 N-methylperfluorooctanesulfonami (ND) Perfluorodecanesulfonic acid (ND)

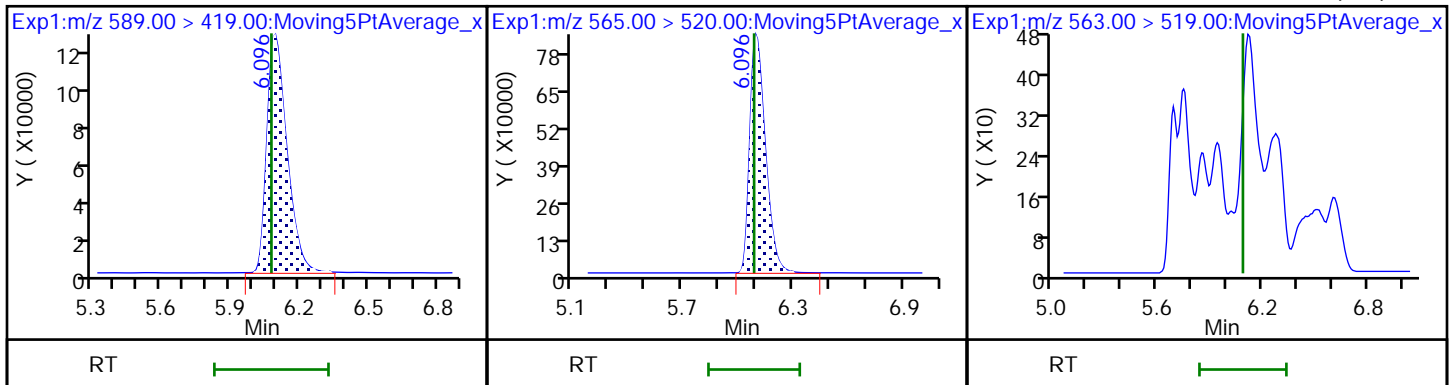
80 Perfluorodecanesulfonic acid (ND)



D 81 d5-NEtFOSAA

D 82 13C2 PFUnA

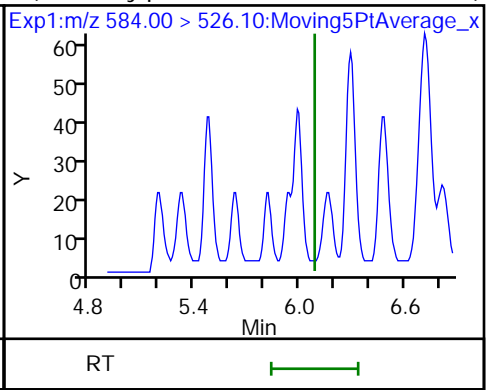
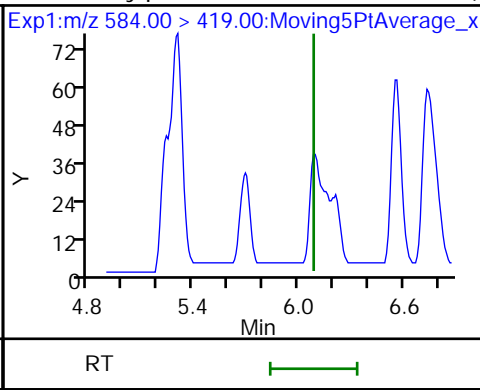
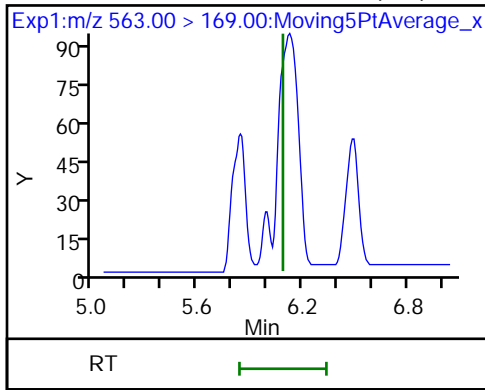
83 Perfluoroundecanoic acid (ND)



83 Perfluoroundecanoic acid (ND)

84 N-ethylperfluorooctanesulfonamid (ND)

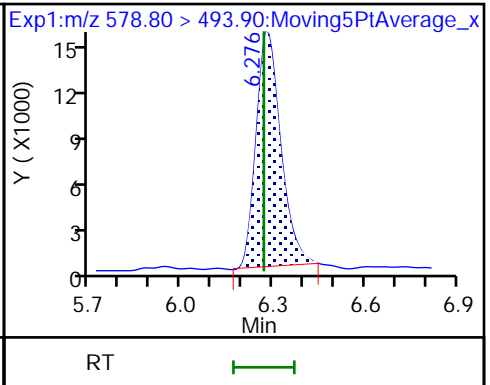
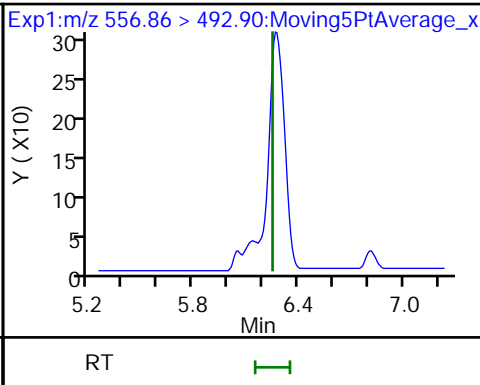
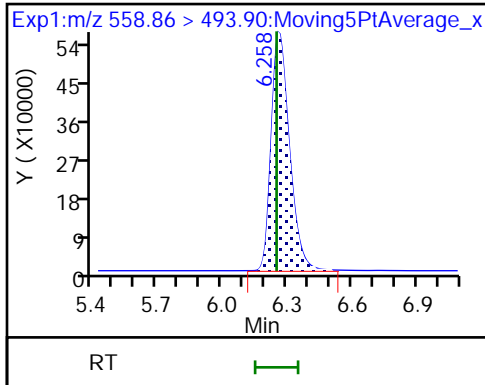
84 N-ethylperfluorooctanesulfonamid (ND)



D 89 13C-10:2 FTUCA

90 10:2 FTUCA (ND)

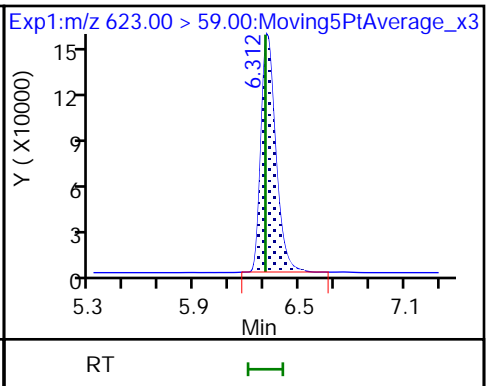
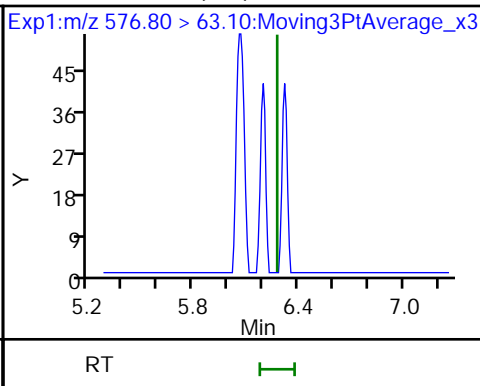
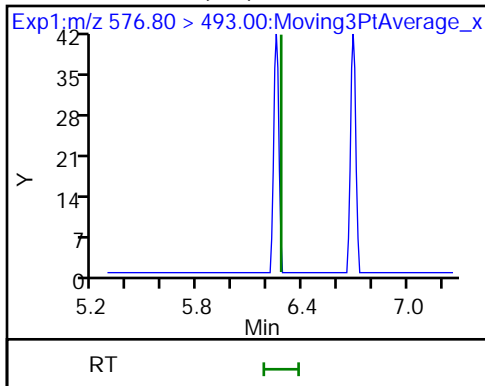
D 91 13C-10:2 FTCA



92 10:2 FTCA (ND)

92 10:2 FTCA (ND)

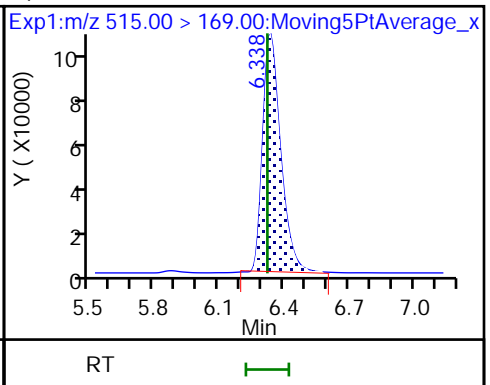
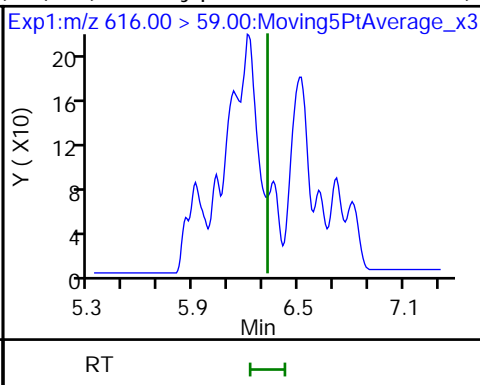
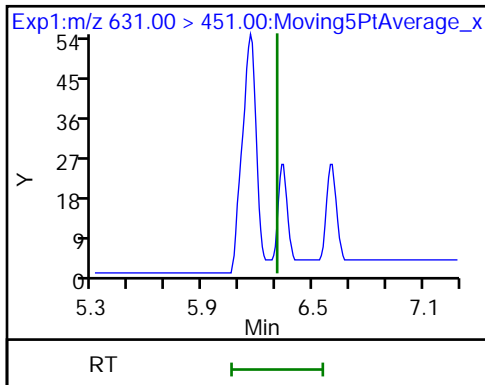
D 85 d7-N-MeFOSE-M

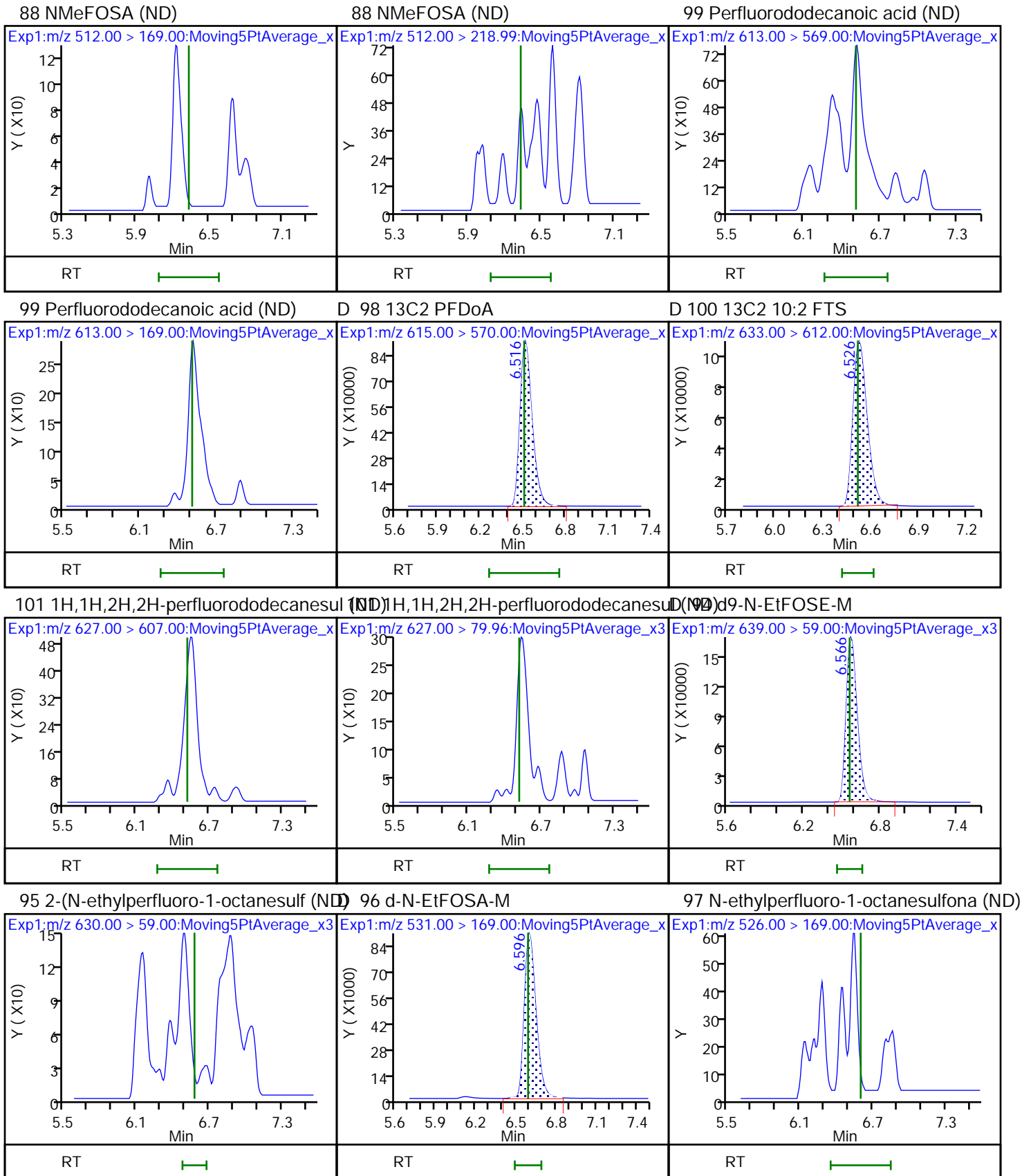


93 11-Chloroeicosafluoro-3-oxaundec (ND)

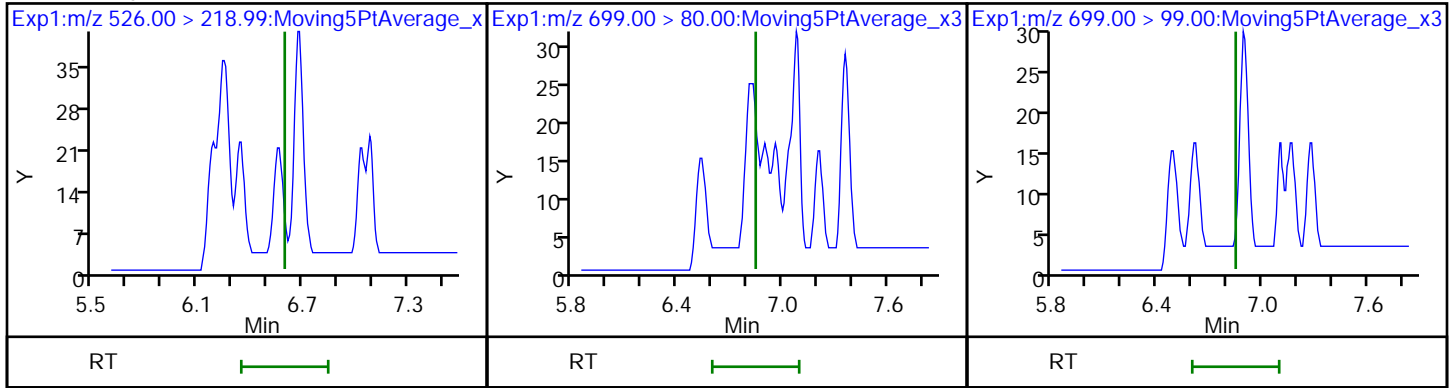
84 2-(N-methylperfluoro-1-octanesul (ND)

87 d-N-MeFOSA-M





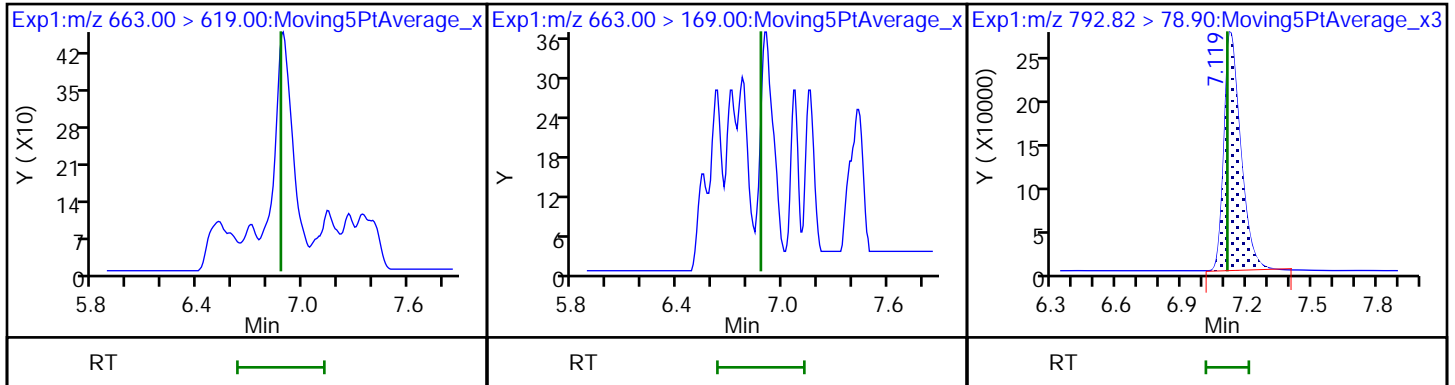
97 N-ethylperfluoro-1-octanesulfona (ND) 102 Perfluorododecanesulfonic acid (ND) 102 Perfluorododecanesulfonic acid (ND)



103 Perfluorotridecanoic acid (ND)

103 Perfluorotridecanoic acid (ND)

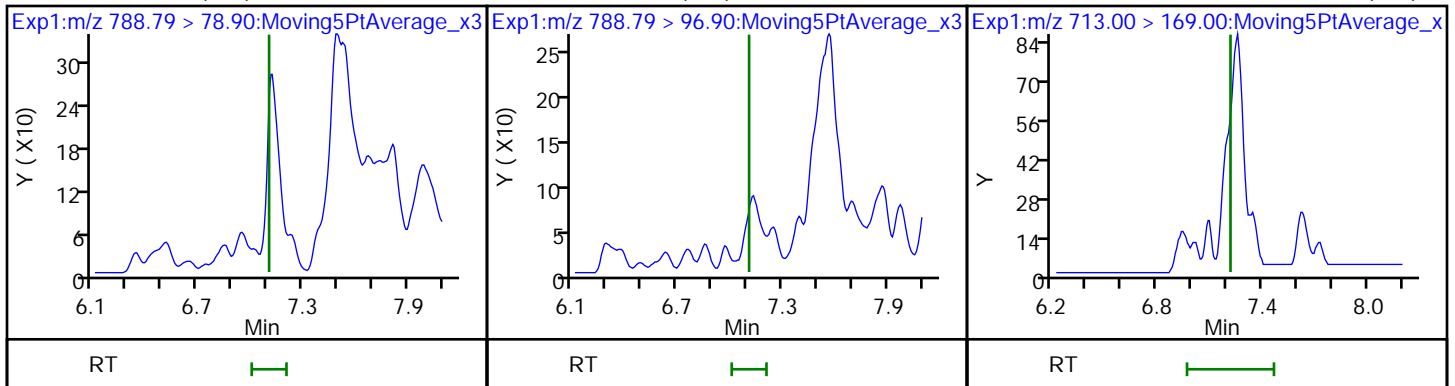
D 112 13C4-6:2 diPAP



114 6:2 diPAP (ND)

114 6:2 diPAP (ND)

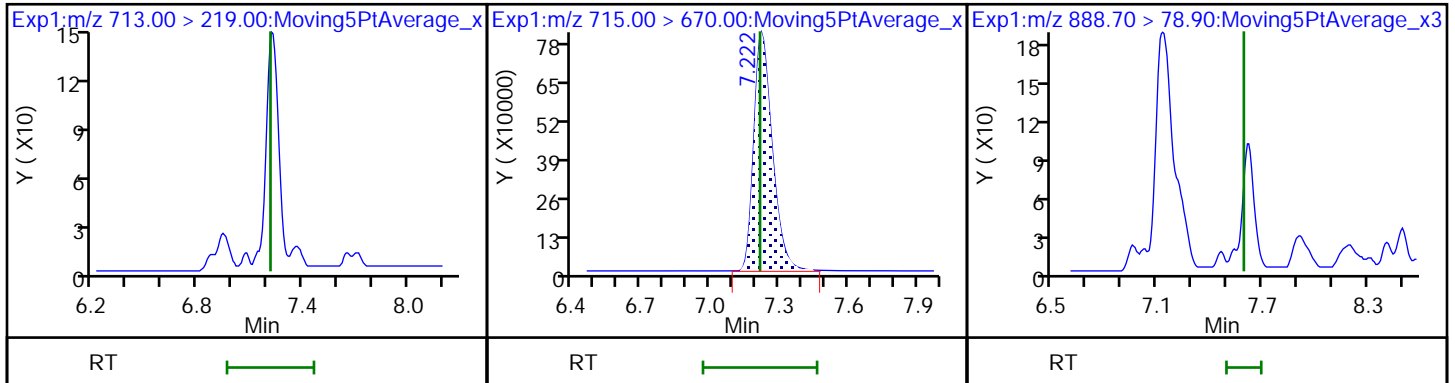
105 Perfluorotetradecanoic acid (ND)



105 Perfluorotetradecanoic acid (ND)

D 104 13C2 PFTeDA

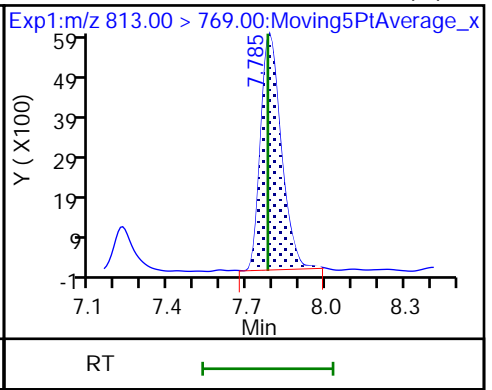
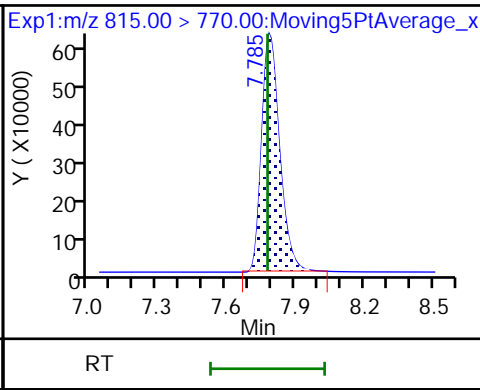
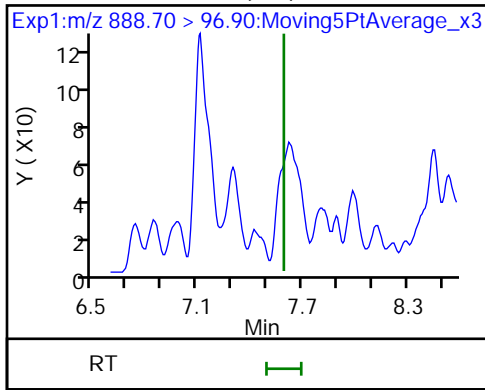
115 6:2/8:2 diPAP (ND)



115 6:2/8:2 diPAP (ND)

D 106 13C2 PFHxDA

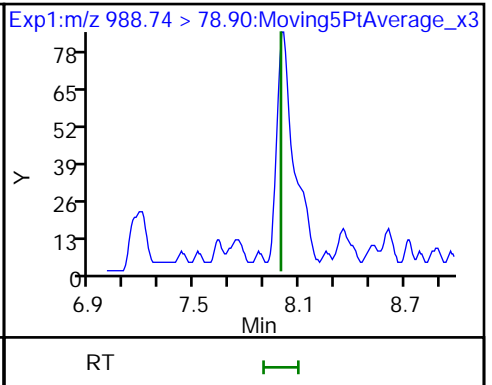
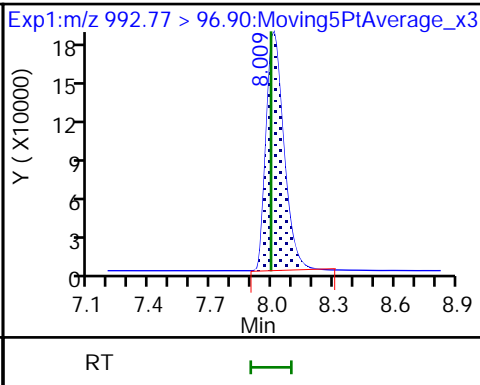
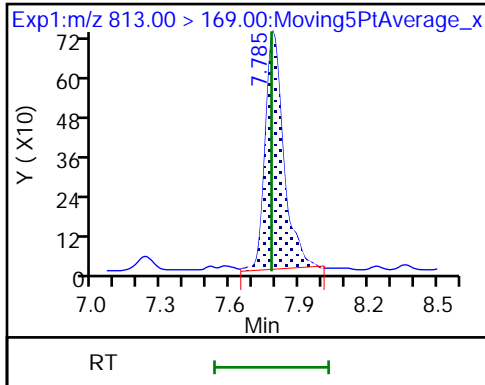
107 Perfluorohexadecanoic acid (M)



107 Perfluorohexadecanoic acid (M)

D 113 13C4-8:2 diPAP

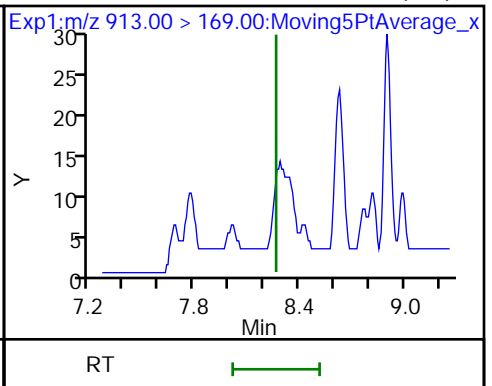
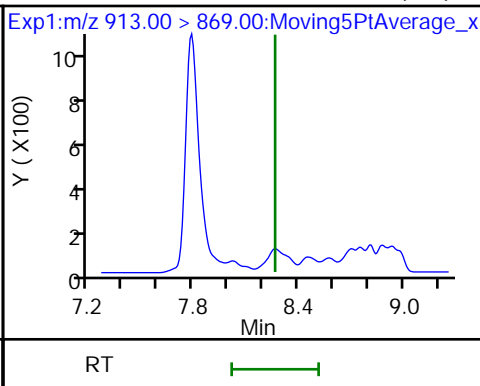
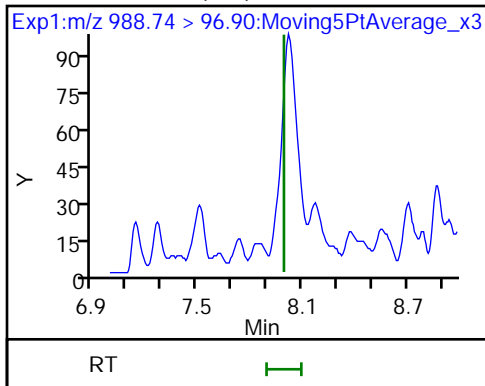
116 8:2 diPAP (ND)



116 8:2 diPAP (ND)

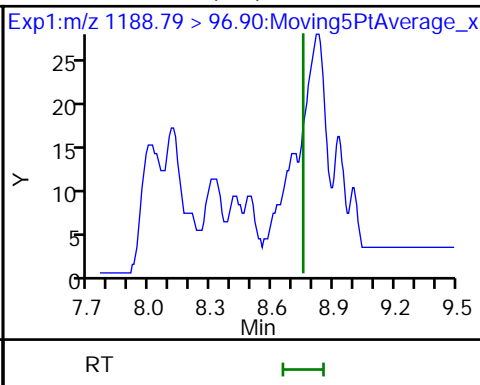
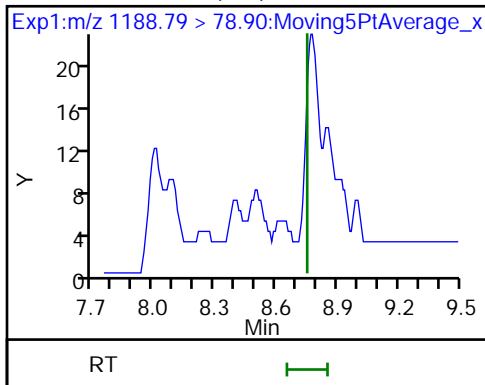
108 Perfluorooctadecanoic acid (ND)

108 Perfluorooctadecanoic acid (ND)



117 10:2 diPAP (ND)

117 10:2 diPAP (ND)



Eurofins Sacramento
Recovery Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_004.d
Lims ID: CCB
Client ID:
Sample Type: CCB
Inject. Date: 22-Dec-2022 10:39:57 ALS Bottle#: 50 Worklist Smp#: 1
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCB (31)
Misc. Info.: Plate: 3 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
Method: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\PFAS+_A18.m
Limit Group: LC PFC ICAL
Last Update: 23-Dec-2022 13:05:09 Calib Date: 21-Dec-2022 13:11:20
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1679

First Level Reviewer: ruangyotsakuld

Date: 23-Dec-2022 13:05:09

Compound	Amount Added	Amount Recovered	% Rec.
\$ 54 13C8 PFOA	1.25	1.34	107.57
\$ 60 13C8 PFOS	1.20	1.09	91.09

Eurofins Sacramento

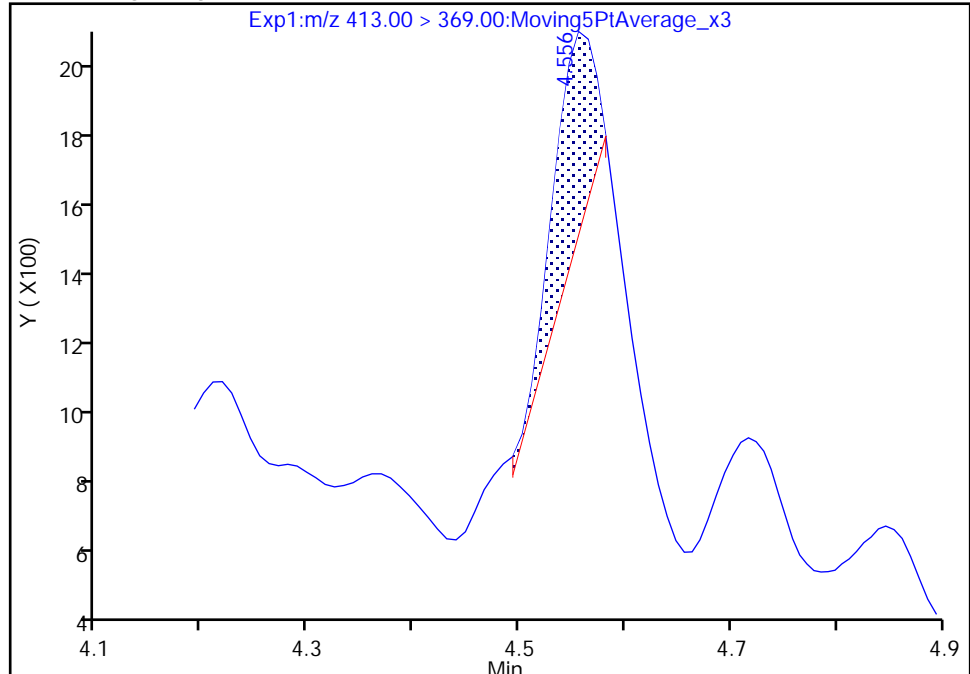
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_004.d
Injection Date: 22-Dec-2022 10:39:57 Instrument ID: A18
Lims ID: CCB
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 50 Worklist Smp#: 1
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

58 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

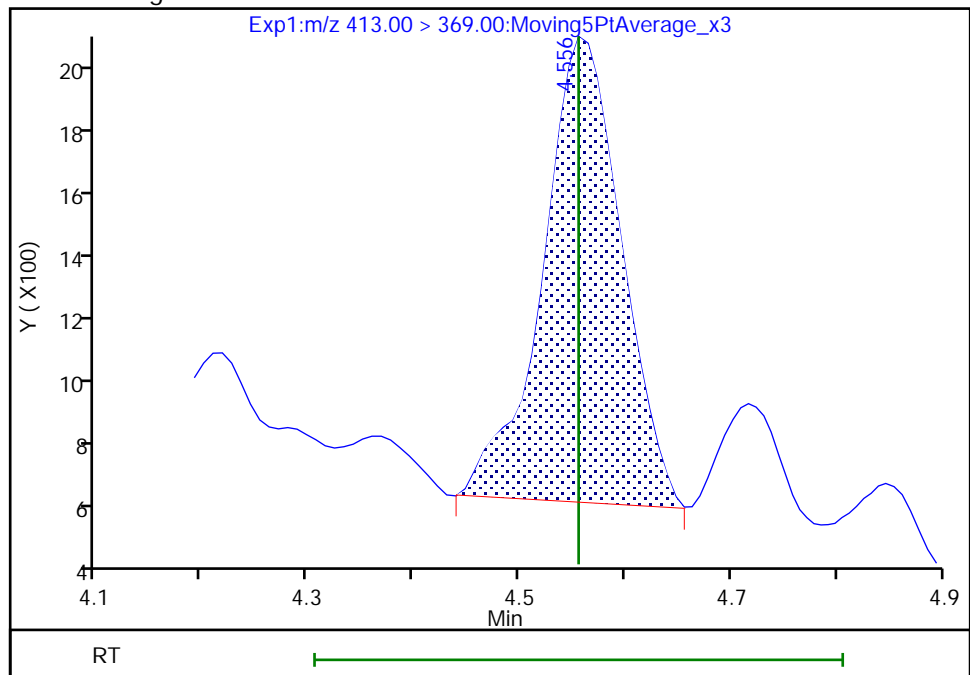
RT: 4.56
Area: 1561
Amount: 0.000377
Amount Units: ng/ml

Processing Integration Results



RT: 4.56
Area: 7570
Amount: 0.001830
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakul, 23-Dec-2022 13:04:54

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

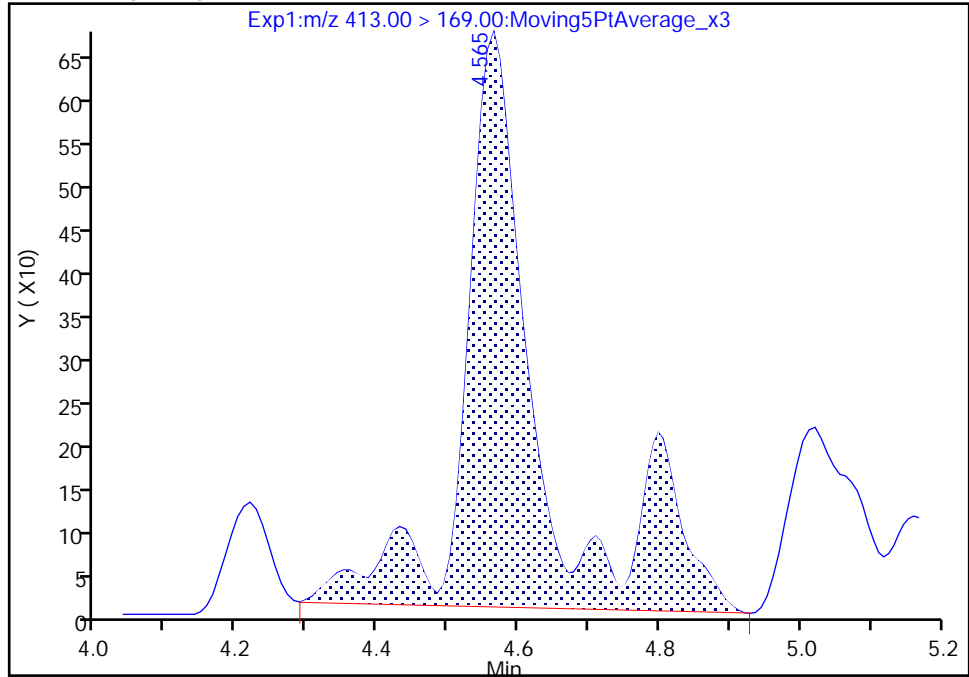
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_004.d
Injection Date: 22-Dec-2022 10:39:57 Instrument ID: A18
Lims ID: CCB
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 50 Worklist Smp#: 1
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

58 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

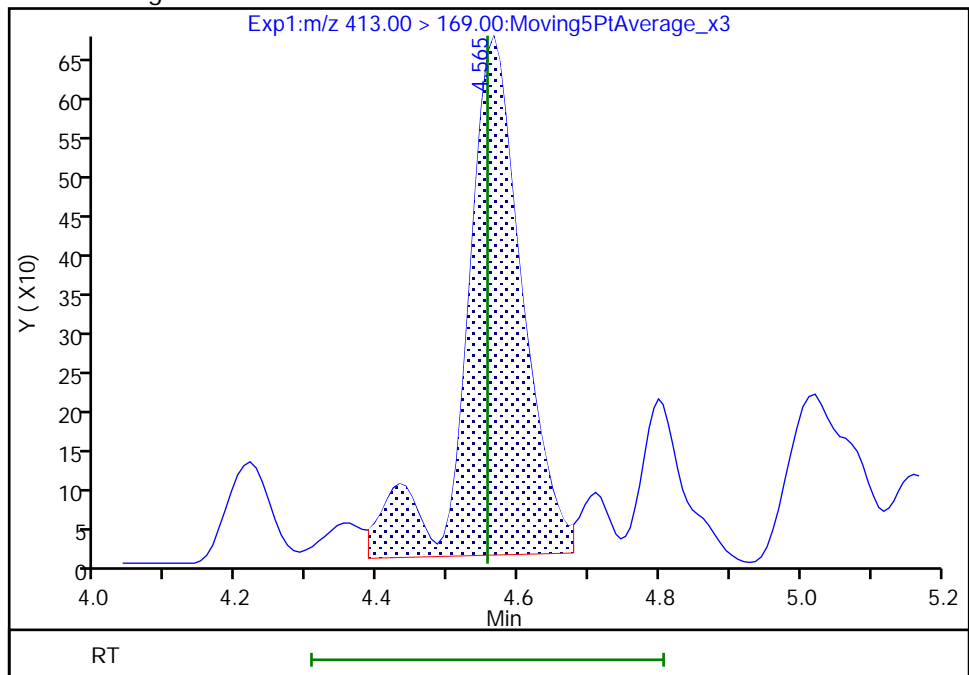
RT: 4.56
Area: 4909
Amount: 0.000377
Amount Units: ng/ml

Processing Integration Results



RT: 4.56
Area: 3663
Amount: 0.001830
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakuld, 23-Dec-2022 13:04:58

Audit Action: Manually Integrated

Audit Reason: Baseline

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Eurofins Sacramento

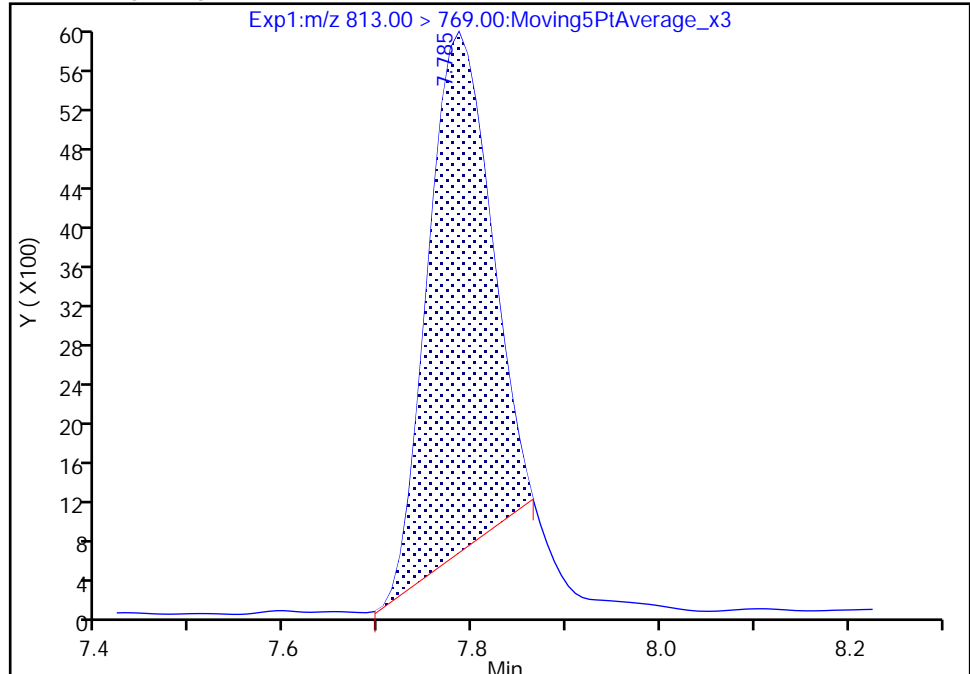
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_004.d
Injection Date: 22-Dec-2022 10:39:57 Instrument ID: A18
Lims ID: CCB
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 50 Worklist Smp#: 1
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

107 Perfluorohexadecanoic acid, CAS: 67905-19-5

Signal: 1

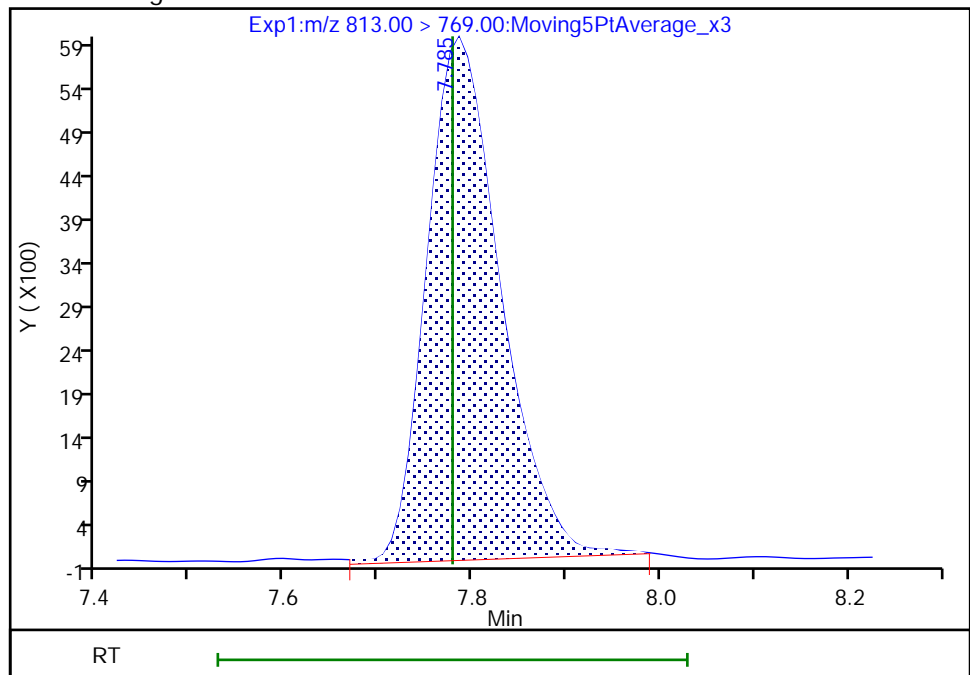
RT: 7.79
Area: 24653
Amount: -0.001872
Amount Units: ng/ml

Processing Integration Results



RT: 7.79
Area: 32302
Amount: 0.001345
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakuld, 23-Dec-2022 13:05:04

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

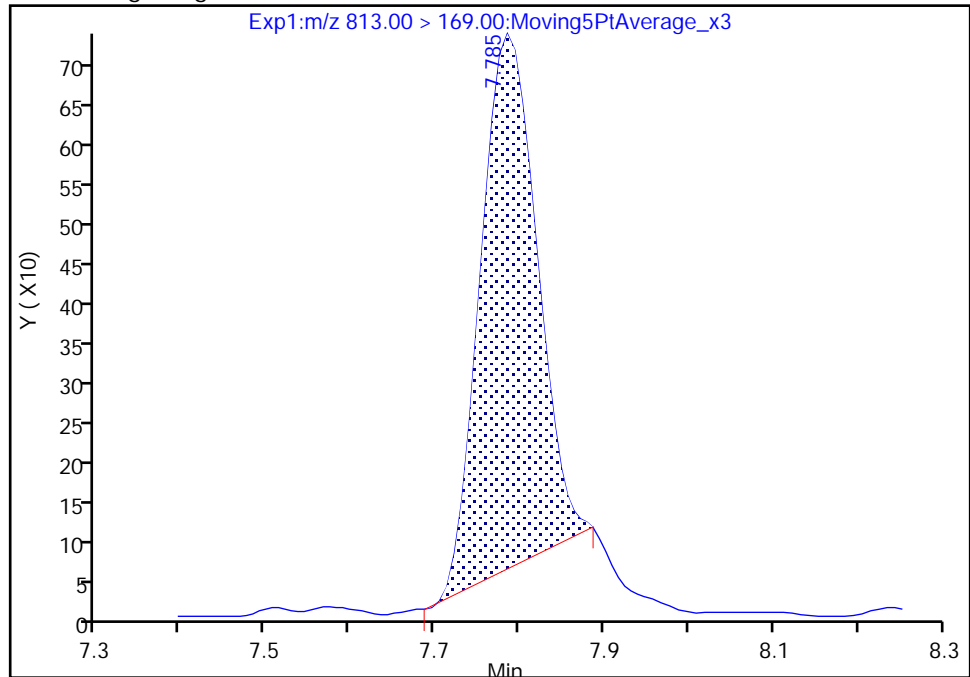
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153307.b\2022.12.21_A18_PFC_A_004.d
Injection Date: 22-Dec-2022 10:39:57 Instrument ID: A18
Lims ID: CCB
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 50 Worklist Smp#: 1
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

107 Perfluorohexadecanoic acid, CAS: 67905-19-5

Signal: 2

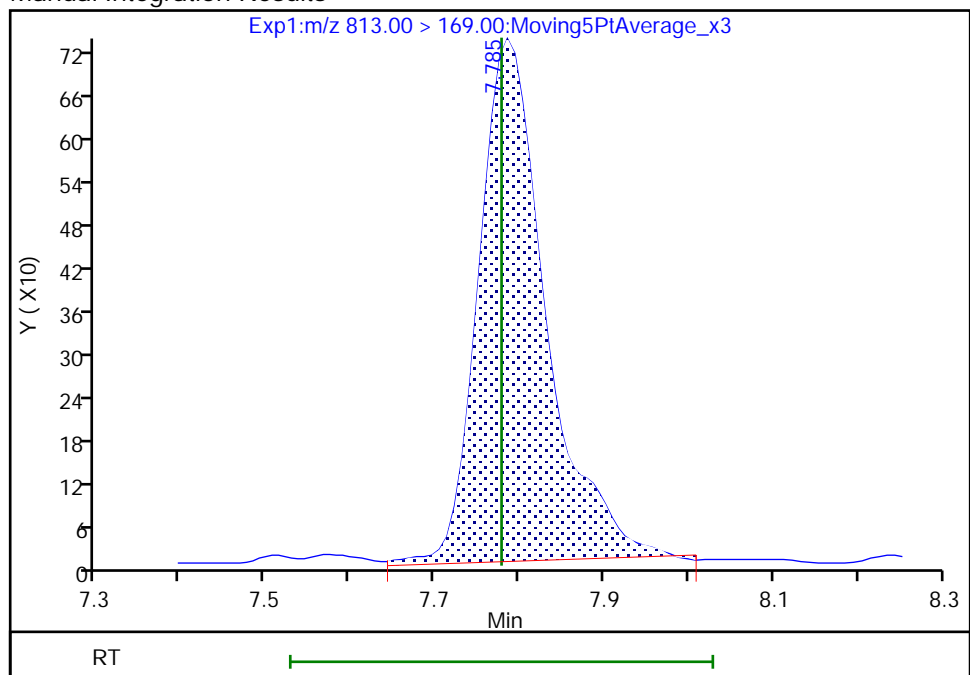
RT: 7.79
Area: 3144
Amount: -0.001872
Amount Units: ng/ml

Processing Integration Results



RT: 7.79
Area: 4032
Amount: 0.001345
Amount Units: ng/ml

Manual Integration Results



Reviewer: ruangyotsakuld, 23-Dec-2022 13:05:06

Audit Action: Manually Integrated

Audit Reason: Baseline

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FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: ICB 320-641843/9

Matrix: Water Lab File ID: 2022.12.21_A18_PFC+_ICAL_016.d

Analysis Method: 537 (modified) Date Collected: _____

Extraction Method: _____ Date Extracted: _____

Sample wt/vol: 1(mL) Date Analyzed: 12/21/2022 13:21

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N

Cleanup Factor: _____

Analysis Batch No.: 641843 Units: ng/mL

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	ND		0.13	0.013
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		0.050	0.013
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		0.050	0.013
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		0.050	0.013
335-67-1	Perfluorooctanoic acid (PFOA)	ND		0.050	0.013
375-95-1	Perfluorononanoic acid (PFNA)	ND		0.050	0.013
335-76-2	Perfluorodecanoic acid (PFDA)	ND		0.050	0.013
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		0.050	0.013
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		0.050	0.013
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		0.050	0.013
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		0.050	0.013
67905-19-5	Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		0.050	0.013
16517-11-6	Perfluoro-n-octadecanoic acid (PFODA)	ND		0.050	0.013
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		0.050	0.013
2706-91-4	Perfluoropentanesulfonic acid (PFPeS)	ND		0.050	0.013
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		0.050	0.013
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)	ND		0.050	0.013
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		0.050	0.013
68259-12-1	Perfluorononanesulfonic acid (PFNS)	ND		0.050	0.013
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		0.050	0.013
79780-39-5	Perfluorododecanesulfonic acid (PFDoS)	ND		0.050	0.013
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		0.050	0.013
2355-31-9	NMeFOSAA	ND		0.13	0.013
2991-50-6	NEtFOSAA	ND		0.13	0.013
757124-72-4	4:2 FTS	ND		0.050	0.013
27619-97-2	6:2 FTS	ND		0.13	0.013
39108-34-4	8:2 FTS	ND		0.050	0.013
120226-60-0	10:2 FTS	ND		0.050	0.013
4151-50-2	NEtFOSA	ND		0.050	0.013

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: ICB 320-641843/9

Matrix: Water Lab File ID: 2022.12.21_A18_PFC+_ICAL_016.d

Analysis Method: 537 (modified) Date Collected: _____

Extraction Method: _____ Date Extracted: _____

Sample wt/vol: 1(mL) Date Analyzed: 12/21/2022 13:21

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N

Cleanup Factor: _____

Analysis Batch No.: 641843 Units: ng/mL

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
31506-32-8	NMeFOSA	ND		0.050	0.013
24448-09-7	NMeFOSE	ND		0.10	0.013
1691-99-2	NEtFOSE	ND		0.050	0.013
13252-13-6	HFPO-DA (GenX)	ND		0.10	0.013
756426-58-1	9Cl-PF3ONS	ND		0.050	0.013
763051-92-9	11Cl-PF3OUdS	ND		0.050	0.013
919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		0.050	0.013
356-02-5	3:3 FTCA	ND		0.050	0.013
914637-49-3	5:3 FTCA	ND		0.050	0.013
812-70-4	7:3 FTCA	0.0185	J	0.050	0.013
53826-12-3	6:2 FTCA	ND		0.050	0.013
27854-31-5	8:2 FTCA	ND		0.050	0.013
53826-13-4	10:2 FTCA	ND		0.075	0.013
133201-07-7	PFECHS	ND		0.050	0.013
423-41-6	PFPrS	ND		0.050	0.013
151772-58-6	NFDHA	ND		0.050	0.013
863090-89-5	PFMBA	ND		0.050	0.013
377-73-1	PFMPA	ND		0.050	0.013
113507-82-7	PFEESA	ND		0.050	0.013
674-13-5	PFMOAA	ND		0.050	0.013
801212-59-9	PFPE-1	ND		0.050	0.013
39492-90-5	PFO4DA	ND		0.050	0.013
39492-89-2	PFO3OA	ND		0.050	0.013
39492-88-1	PFO2HxA	ND		0.050	0.013
39492-91-6	PFO5DA	ND		0.050	0.013
13140-29-9	PMPA	ND		0.050	0.013
267239-61-2	PEPA	ND		0.050	0.013
422-64-0	PFPrA	ND		0.050	0.013
2416366-22-6	R-EVE	ND		0.050	0.013
801209-99-4	NVHOS	ND		0.075	0.013
773804-62-9	Hydro-EVE Acid	ND		0.050	0.013
2416366-21-5	R-PSDCA	ND		0.075	0.013

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: ICB 320-641843/9
Matrix: Water Lab File ID: 2022.12.21_A18_PFC+_ICAL_016.d
Analysis Method: 537 (modified) Date Collected: _____
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 1 (mL) Date Analyzed: 12/21/2022 13:21
Con. Extract Vol.: 1 (mL) Dilution Factor: 1
Injection Volume: 20 (uL) GC Column: Gemini C18 3x50 ID: 3 (mm)
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 641843 Units: ng/mL

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
749836-20-2	Hydro-PS Acid	ND		0.050	0.013

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: ICB 320-641843/9
 Matrix: Water Lab File ID: 2022.12.21_A18_PFC+_ICAL_016.d
 Analysis Method: 537 (modified) Date Collected: _____
 Extraction Method: _____ Date Extracted: _____
 Sample wt/vol: 1(mL) Date Analyzed: 12/21/2022 13:21
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)
 % Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
 Cleanup Factor: _____
 Analysis Batch No.: 641843 Units: ng/mL

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01056	13C8 FOSA	97		25-150
STL00992	13C4 PFBA	94		25-150
STL01893	13C5 PFPeA	96		25-150
STL00993	13C2 PFHxA	96		25-150
STL01892	13C4 PFHpA	94		25-150
STL00990	13C4 PFOA	96		25-150
STL00995	13C5 PFNA	96		25-150
STL00996	13C2 PFDA	99		25-150
STL00997	13C2 PFUnA	100		25-150
STL00998	13C2 PFDoA	98		25-150
STL02116	13C2 PFTeDA	88		25-150
STL02115	13C2 PFHxDA	88		25-150
STL02337	13C3 PFBS	94		25-150
STL00994	18O2 PFHxS	94		25-150
STL00991	13C4 PFOS	93		25-150
STL02118	d3-NMeFOSAA	95		25-150
STL02117	d5-NEtFOSAA	95		25-150
STL02395	M2-4:2 FTS	92		25-150
STL02279	M2-6:2 FTS	94		25-150
STL02280	M2-8:2 FTS	97		25-150
STL02814	13C2 10:2 FTS	99		25-150
STL02275	d-N-MeFOSA-M	99		20-150
STL02282	d-N-EtFOSA-M	97		20-150
STL02277	d7-N-MeFOSE-M	96		10-120
STL02278	d9-N-EtFOSE-M	98		10-120
STL02255	13C3 HFPO-DA	101		25-150
STL02802	13C-6:2 FTCA	84		25-150
STL02803	13C-8:2 FTCA	84		25-150
STL02804	13C-10:2 FTCA	87		25-150

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_016.d
 Lims ID: ICB
 Client ID:
 Sample Type: ICB
 Inject. Date: 21-Dec-2022 13:21:29 ALS Bottle#: 8 Worklist Smp#: 9
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: ICB (30)
 Misc. Info.: Plate: 2 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Method: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Dec-2022 07:41:35 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1678

First Level Reviewer: YS2U

Date: 22-Dec-2022 05:40:11

Ratio Calibration: Initial Calibration Level: 4

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 8 13C4 PFBA 217.00 > 172.00	2.693	2.679	0.015	0.583	4931828	1.18		94.3	16019	
D 16 13C5 PFPeA 267.90 > 223.00	3.073	3.059	0.014	0.665	4490367	1.20		95.9	30805	
D 18 13C3 PFBS 301.90 > 80.00	3.120	3.105	0.015	0.676	2831180	1.10		94.2	14991	
D 25 M2-4:2 FTS 329.00 > 81.00	3.464	3.458	0.006	0.750	645867	1.07		92.1	3198	
D 27 13C2 PFHxA 315.00 > 270.00	3.517	3.502	0.015	0.761	4949905	1.20		96.1	42676	
D 32 13C3 HFPO-DA 287.00 > 169.00	3.691	3.679	0.012	0.799	174636	1.26		101	5517	
D 35 13C4 PFHpA 367.00 > 322.00	4.050	4.037	0.013	0.877	5132701	1.18		94.0	33153	
D 37 18O2 PFHxS 403.00 > 84.00	4.067	4.054	0.013	0.881	1893834	1.11		93.6	17251	
D 44 13C-6:2 FTUCA 358.86 > 293.90	4.187	4.174	0.013	0.907	3497717	1.35		108	20355	
D 46 13C-6:2 FTCA 378.88 > 293.90	4.213	4.200	0.013	0.912	210690	1.05		84.1	988	
D 52 M2-6:2 FTS 429.00 > 81.00	4.585	4.572	0.013	0.993	711564	1.12		94.4	13832	
\$ 54 13C8 PFOA 421.00 > 376.00	4.619	4.606	0.013	1.000	7646975	1.35		108	17852	
* 55 13C2 PFOA 415.00 > 370.00	4.619	4.606	0.013		5903177	1.25			16603	
D 56 13C4 PFOA 417.00 > 372.00	4.619	4.606	0.013	1.000	5720280	1.20		95.9	17962	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
\$ 60 13C8 PFOS										
507.00 > 99.00	5.166	5.153	0.013	1.118	515743	1.05		87.5	6258	
D 61 13C4 PFOS										
503.00 > 80.00	5.166	5.153	0.013	1.118	1278218	1.11		92.8	8493	
D 64 13C5 PFNA										
468.00 > 423.00	5.173	5.160	0.013	1.120	5603296	1.20		96.0	29463	
65 7:3 FTCA										
441.00 > 337.00	5.303	5.287	0.016	0.988	12379	0.0185	Target=1.24		61.2	
441.00 > 317.00	5.312	5.287	0.025	0.990	10221		1.21(0.62-1.87)		77.8	
D 67 13C-8:2 FTUCA										
458.86 > 393.90	5.339	5.333	0.006	1.156	3611290	1.30		104	9940	
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.367	5.360	0.007	1.162	157721	1.05		84.3	1233	
D 72 13C8 FOSA										
506.00 > 78.00	5.638	5.623	0.015	1.221	1860158	1.22		97.3	18130	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.686	5.671	0.015	1.231	741730	1.16		96.9	14758	
D 76 13C2 PFDA										
515.00 > 470.00	5.693	5.687	0.006	1.233	5577009	1.24		99.0	50011	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.923	5.907	0.016	1.282	740458	1.19		94.9	4563	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.158	6.147	0.011	1.333	744174	1.19		95.1	3258	
D 82 13C2 PFUnA										
565.00 > 520.00	6.167	6.158	0.009	1.335	5288154	1.25		100	49479	
D 89 13C-10:2 FTUCA										
558.86 > 493.90	6.329	6.311	0.018	1.370	3382276	1.35		108	12642	
90 10:2 FTUCA										
556.86 > 492.90	6.364	6.320	0.044	1.006	12749	0.006667			78.8	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.338	6.320	0.018	1.372	898392	1.20		95.7	4781	
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.347	6.338	0.009	1.374	91284	1.09		86.9	489	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.355	6.338	0.017	1.376	613137	1.23		98.7	1736	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.585	6.575	0.010	1.426	1067061	1.23		98.3	6675	
D 98 13C2 PFDaA										
615.00 > 570.00	6.585	6.575	0.010	1.426	5682923	1.22		97.9	22828	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.595	6.585	0.010	1.428	709656	1.19		98.7	17831	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.615	6.605	0.010	1.432	560829	1.21		96.9	2133	
D 112 13C4-6:2 diPAP										
792.82 > 78.90	7.196	7.187	0.009	1.558	1493185	1.10		90.7	3330	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
114 6:2 diPAP										
788.79 > 78.90	7.205	7.187	0.018	1.001	17285	0.0146	Target=1.89		37.5	
788.79 > 96.90	7.205	7.187	0.018	1.001	8551		2.02(0.95-2.84)		32.6	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.300	7.291	0.009	1.581	4417272	1.10		87.7	6281	
115 6:2/8:2 diPAP										
888.70 > 78.90	7.694	7.675	0.019	1.069	23504	0.0198	Target=1.35		66.4	
888.70 > 96.90	7.703	7.675	0.028	1.070	17328		1.36(0.68-2.03)		52.1	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.871	7.863	0.007	1.704	3851728	1.10		88.2	6541	
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.878	7.863	0.015	1.001	38913	0.002491	Target=8.78		79.4	
813.00 > 169.00	7.878	7.863	0.015	1.001	4349		8.95(4.39-13.18)		64.0	
D 113 13C4-8:2 diPAP										
992.77 > 96.90	8.101	8.090	0.011	1.754	1184559	1.21		98.8	3580	
116 8:2 diPAP										
988.74 > 78.90	8.111	8.090	0.021	1.001	26305	0.0290	Target=1.18		83.1	
988.74 > 96.90	8.111	8.090	0.021	1.001	23529		1.12(0.59-1.77)		80.0	
108 Perfluorooctadecanoic acid										
913.00 > 869.00	8.386	8.368	0.018	1.066	9076	0.006172	Target=10.05		9.9	M
913.00 > 169.00	8.377	8.368	0.009	1.064	983		9.23(5.02-15.07)		17.1	M
117 10:2 diPAP										
1188.79 > 78.90	8.909	8.902	0.007	1.100	6435	0.0685	Target=1.13		73.5	a
1188.79 > 96.90	8.916	8.902	0.014	1.101	5435		1.18(0.57-1.70)		53.0	a

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

LCPFC+6C_LL0_00033

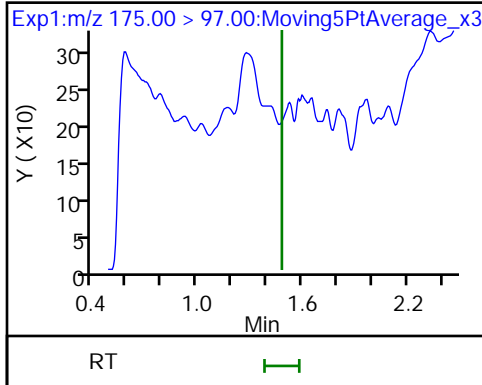
Amount Added: 1.00

Units: mL

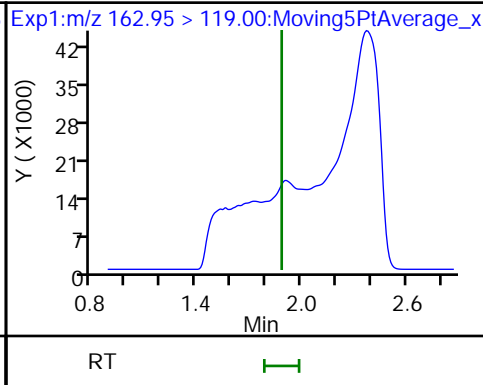
Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_016.d
Injection Date: 21-Dec-2022 13:21:29 Instrument ID: A18
Lims ID: ICB
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL

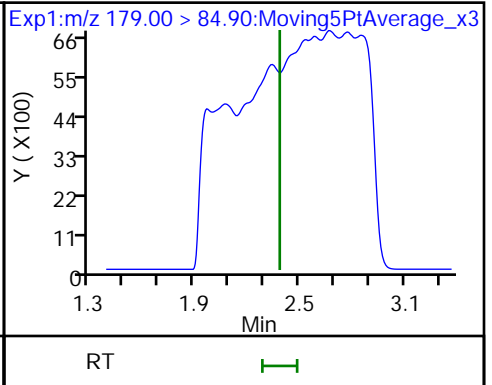
1 MTP (ND)



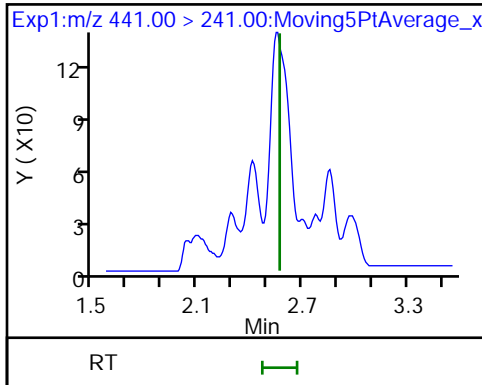
2 PPF Acid (ND)



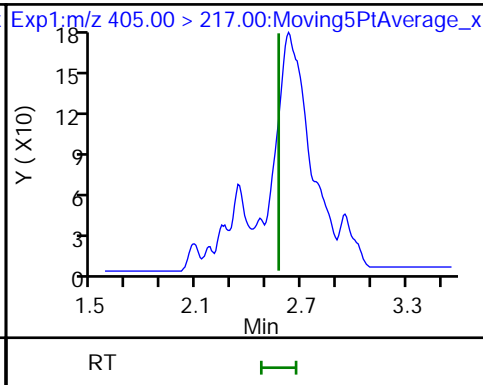
3 PFMOAA (ND)



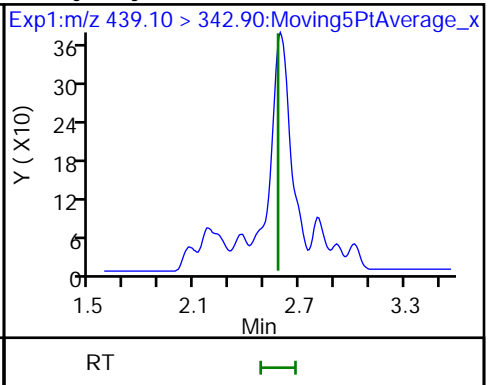
4 R-PSDA (ND)



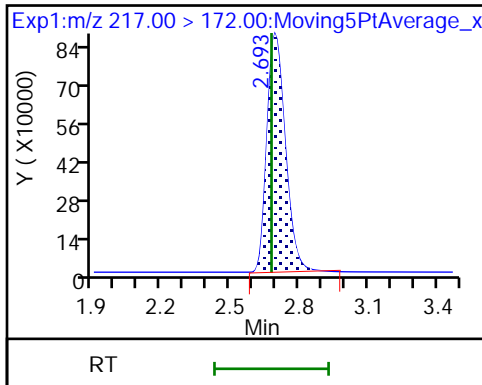
5 R-EVE (ND)



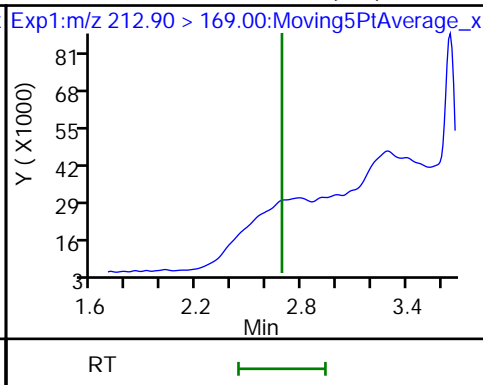
6 Hydrolyzed PSDA (ND)



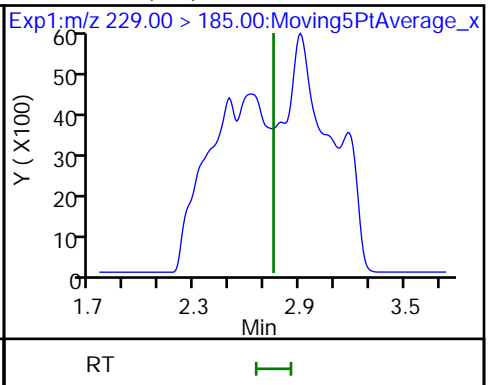
D 8 13C4 PFBA



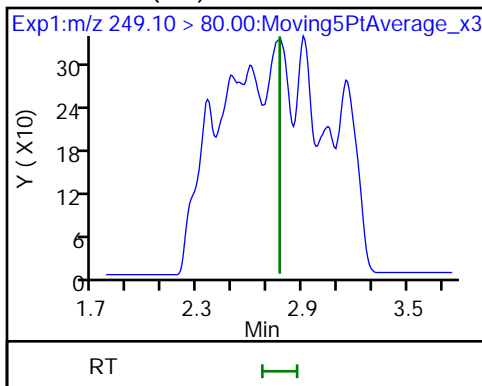
7 Perfluorobutanoic acid (ND)



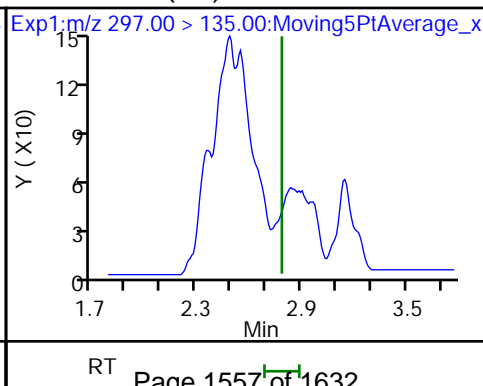
10 PMPA (ND)



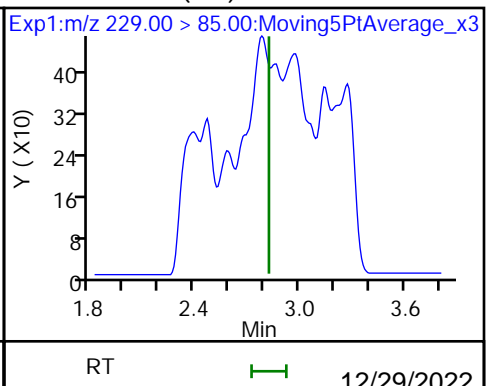
11 PFPrS (ND)

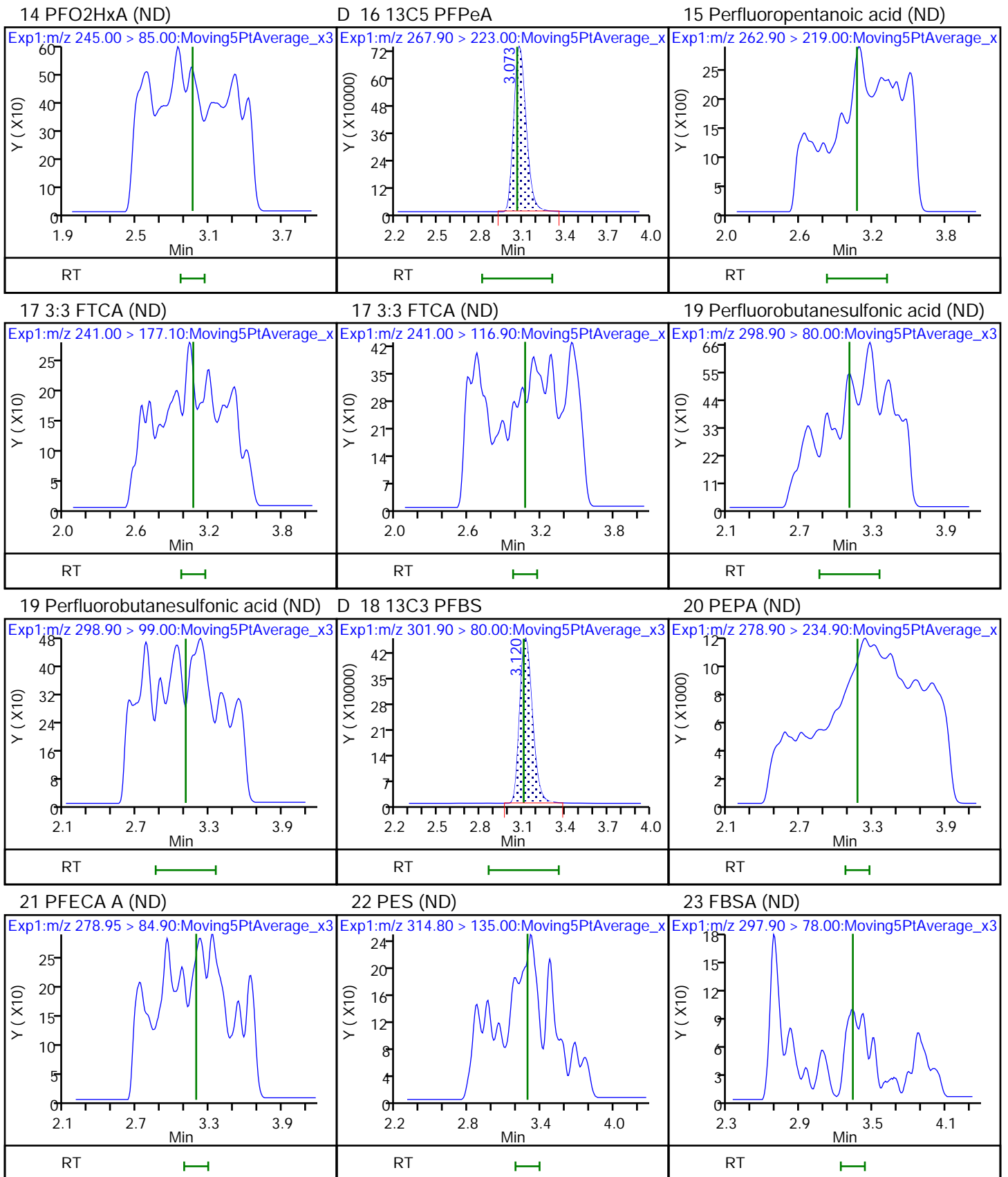


12 NVHOS (ND)

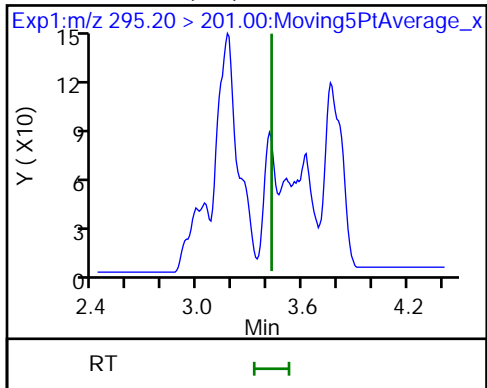


13 PFECA F (ND)

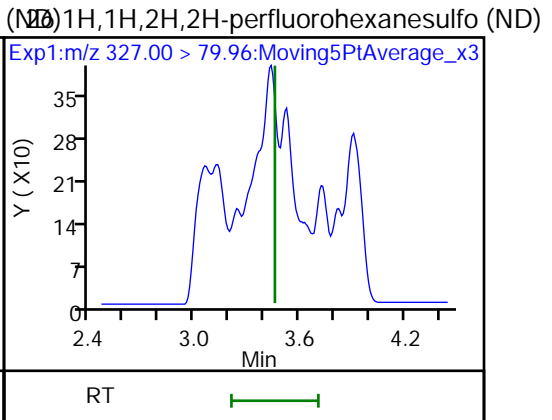
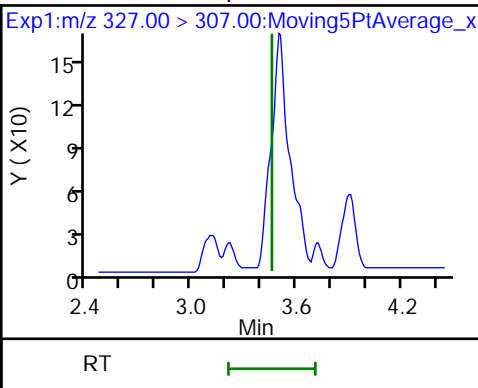




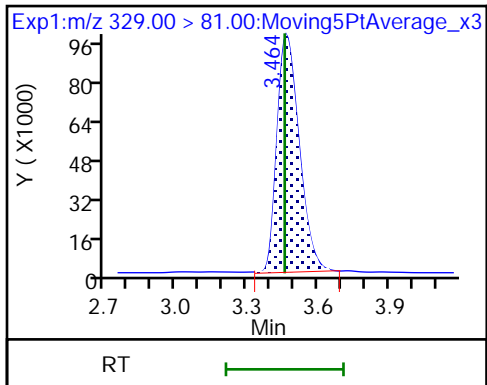
24 PFECA B (ND)



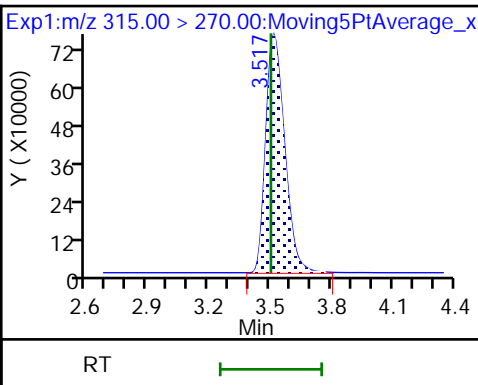
26 1H,1H,2H,2H-perfluorohexanesulfo (ND)



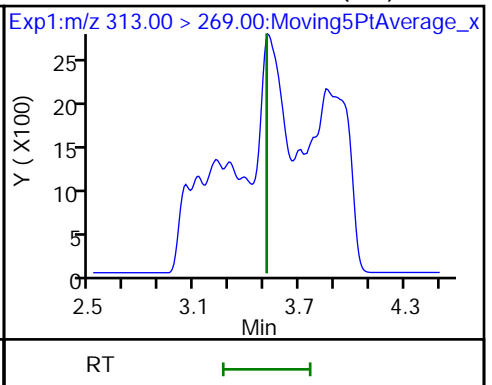
D 25 M2-4:2 FTS



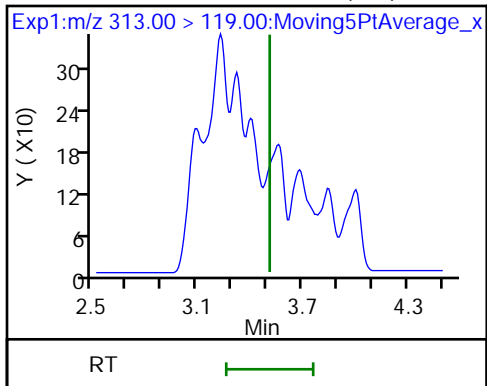
D 27 13C2 PFHxA



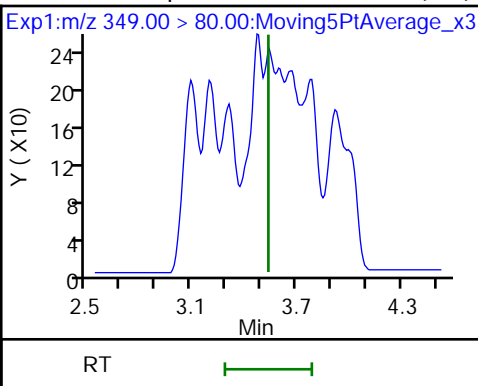
28 Perfluorohexanoic acid (ND)



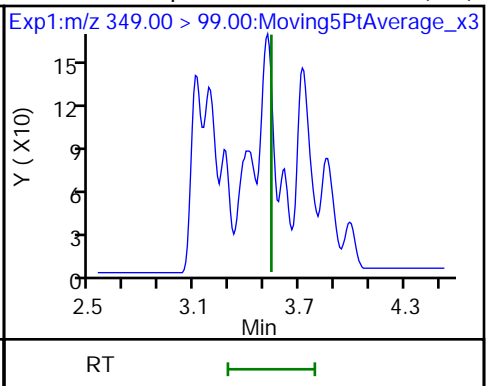
28 Perfluorohexanoic acid (ND)



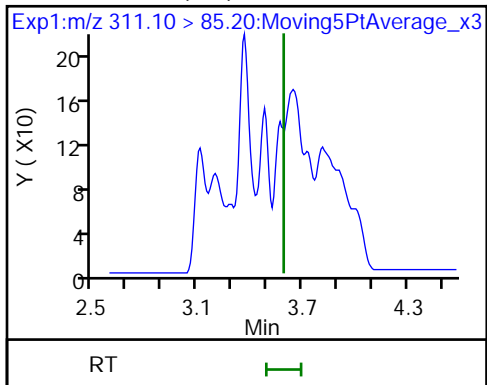
29 Perfluoropentanesulfonic acid (ND)



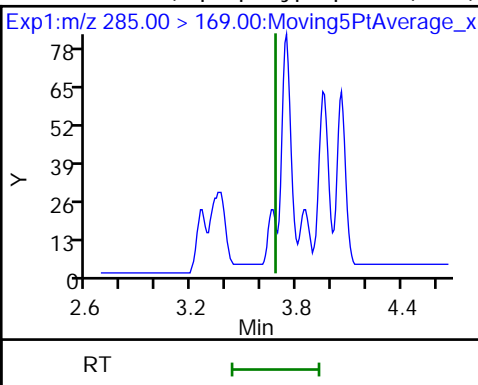
29 Perfluoropentanesulfonic acid (ND)



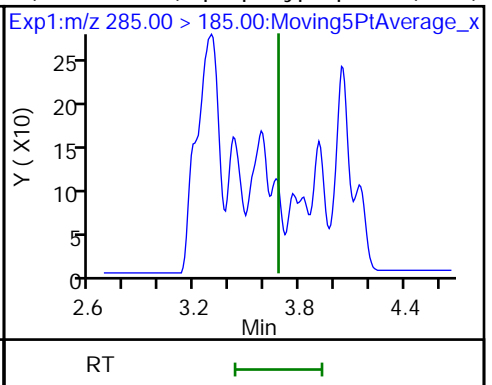
30 PFO3OA (ND)



31 Perfluoro(2-propoxypropanoic) ac (ND)



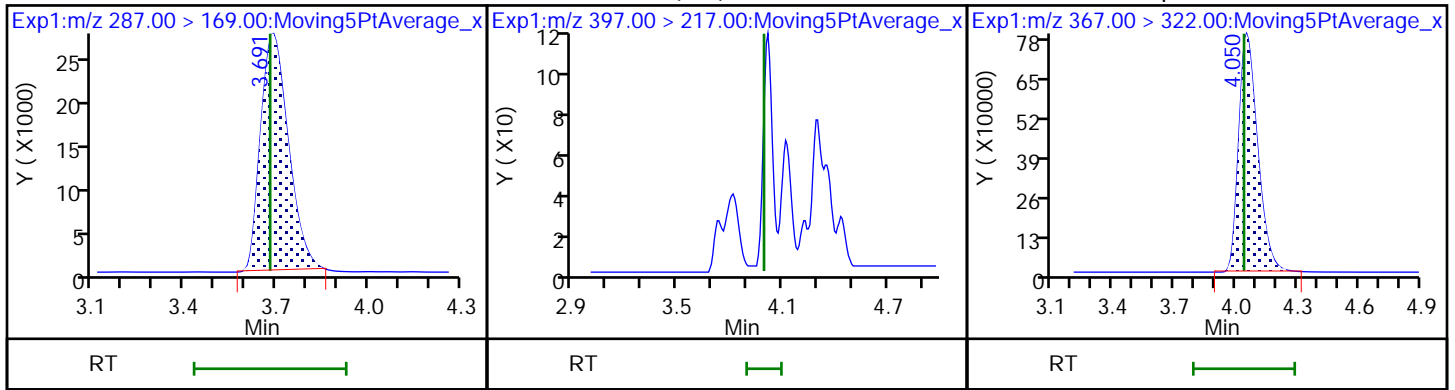
31 Perfluoro(2-propoxypropanoic) ac (ND)



D 32 13C3 HFPO-DA

33 R-PSDCA (ND)

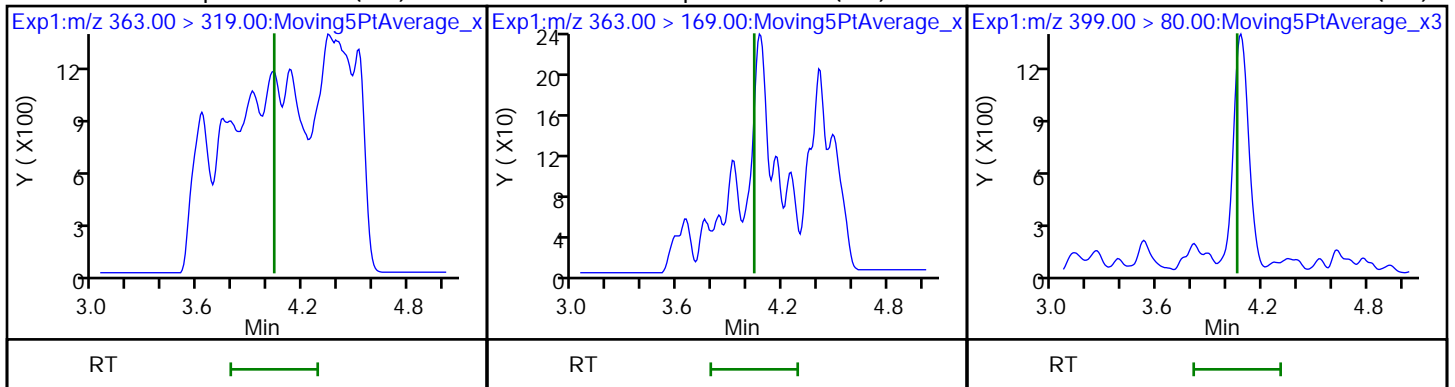
D 35 13C4 PFHpA



36 Perfluoroheptanoic acid (ND)

36 Perfluoroheptanoic acid (ND)

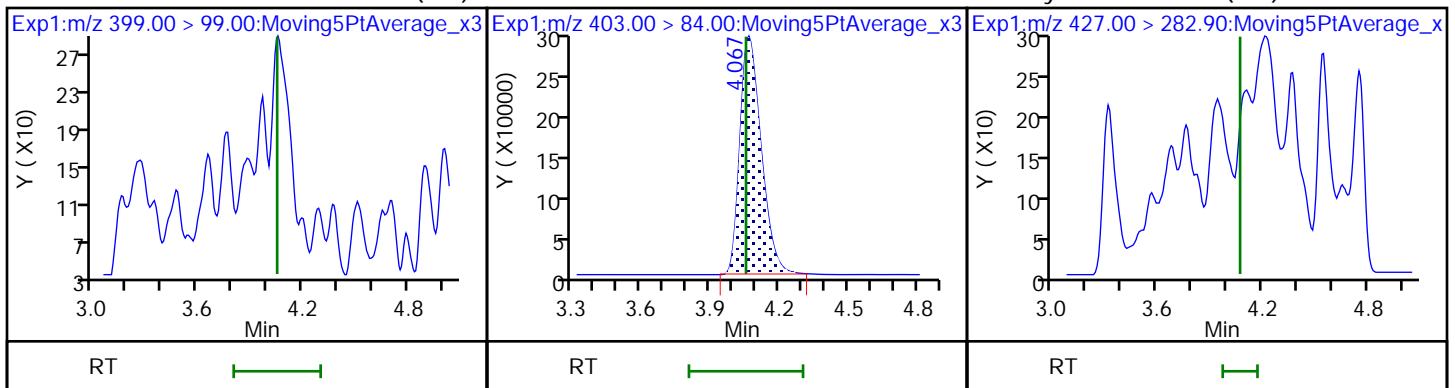
38 Perfluorohexanesulfonic acid (ND)



38 Perfluorohexanesulfonic acid (ND)

D 37 18O2 PFHxS

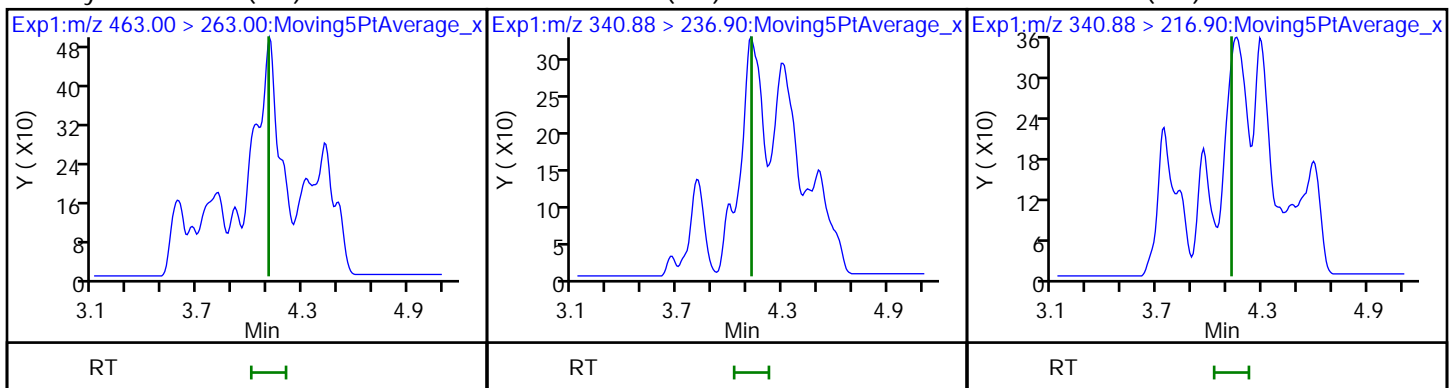
34 Hydro-EVE Acid (ND)

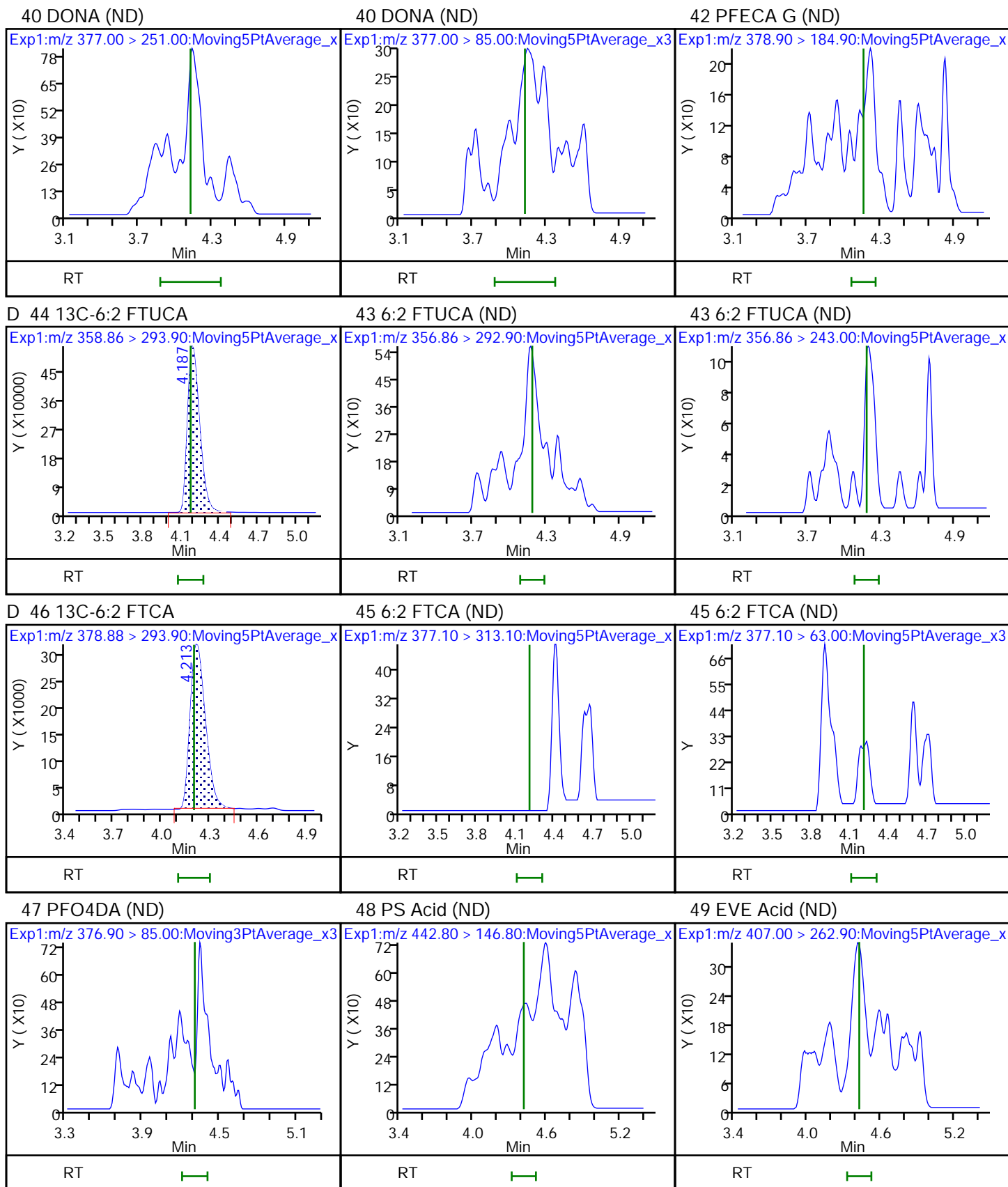


39 Hydro-PS Acid (ND)

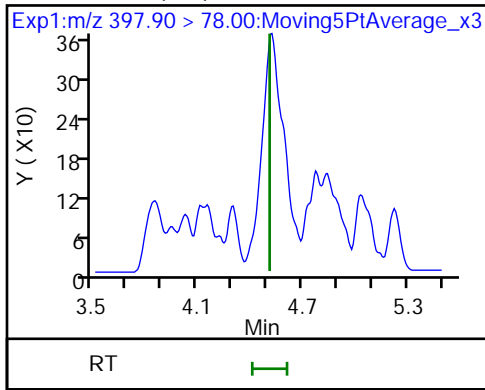
41 5:3 FTCA (ND)

41 5:3 FTCA (ND)

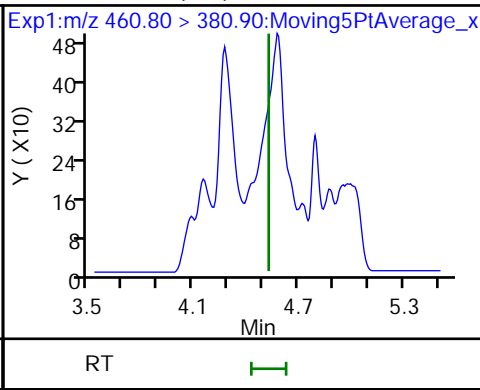




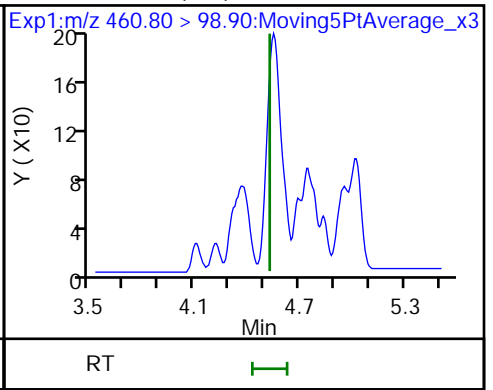
50 FHxSA (ND)



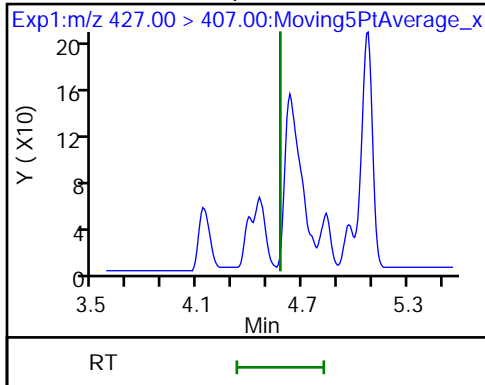
51 PFECHS (ND)



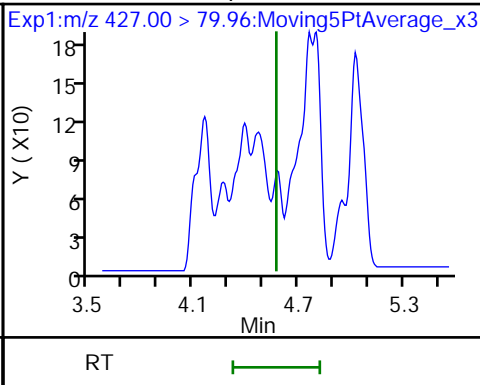
51 PFECHS (ND)



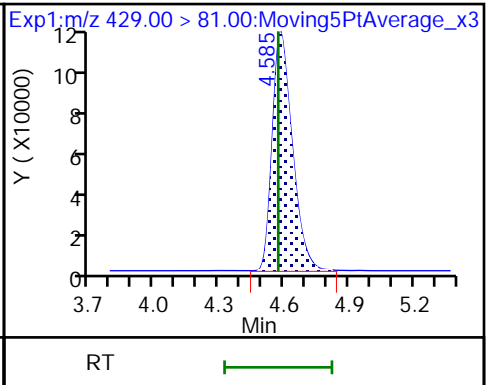
53 1H,1H,2H,2H-perfluorooctanesulfo (ND)



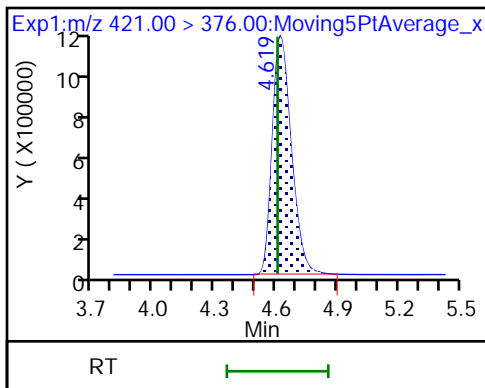
53 1H,1H,2H,2H-perfluorooctanesulfo (ND)



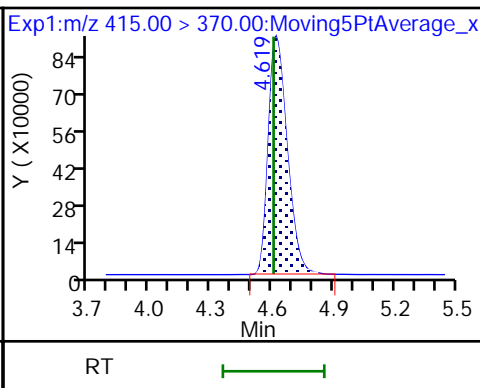
52 M2-6:2 FTS



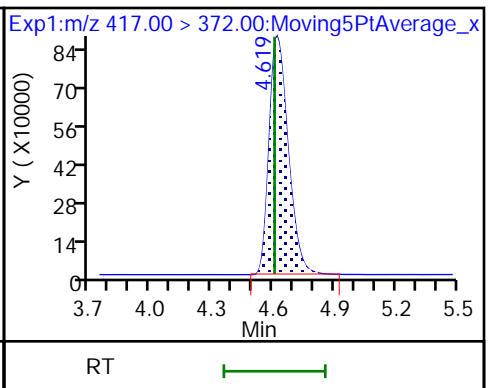
\$ 54 13C8 PFOA



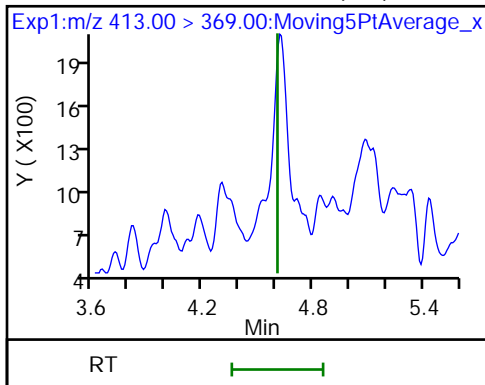
* 55 13C2 PFOA



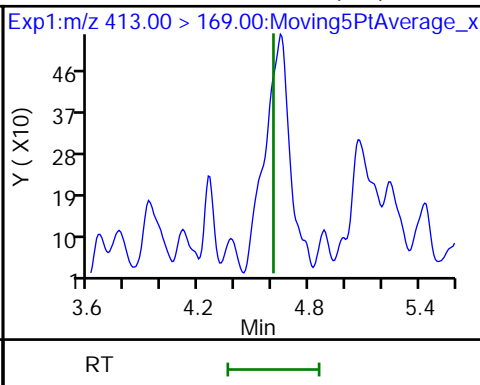
D 56 13C4 PFOA



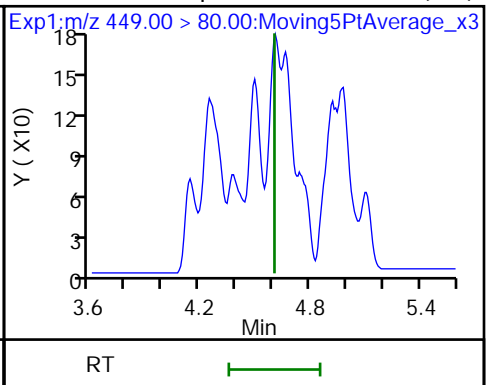
58 Perfluorooctanoic acid (ND)



58 Perfluorooctanoic acid (ND)

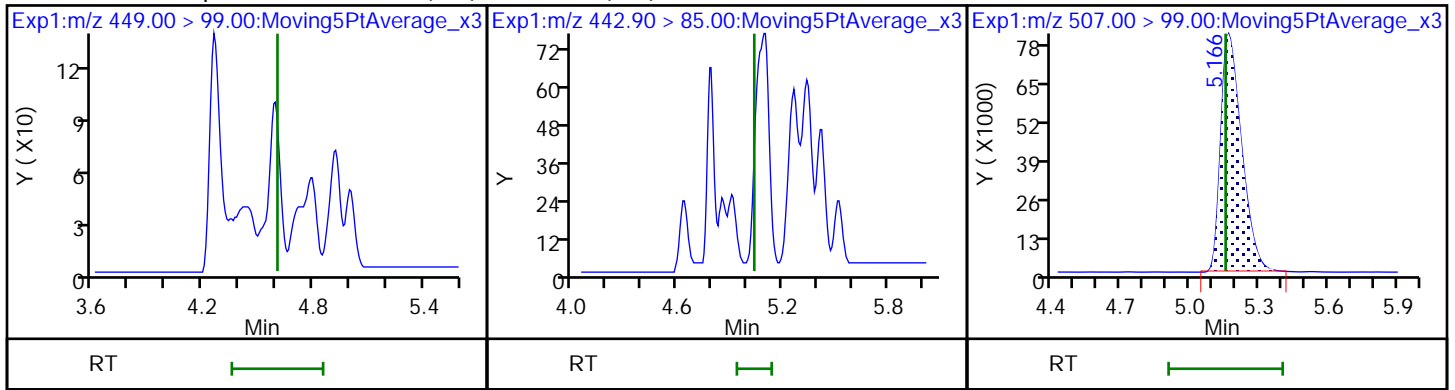


57 Perfluoroheptanesulfonic acid (ND)



57 Perfluoroheptanesulfonic acid (ND) 59 TAF (ND)

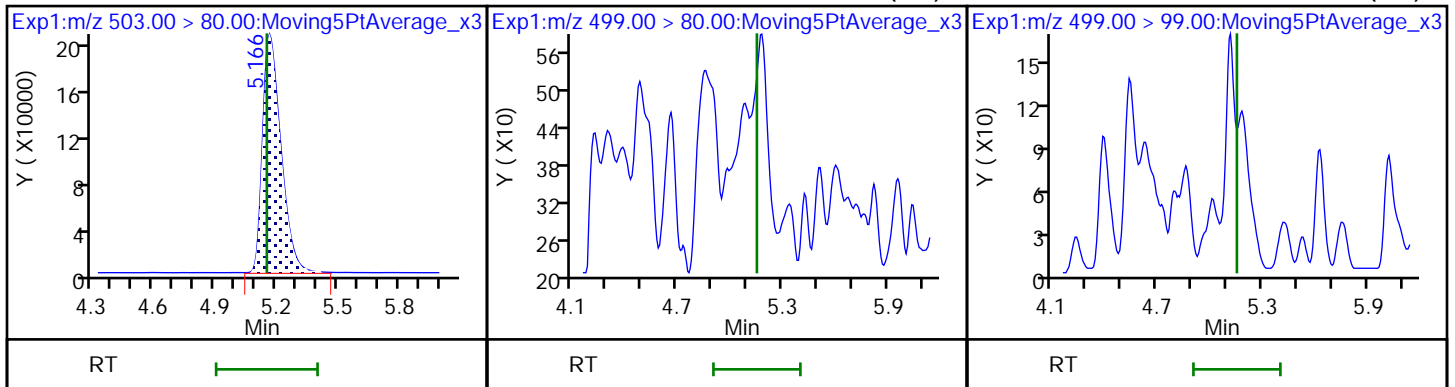
\$ 60 13C8 PFOS



D 61 13C4 PFOS

62 Perfluorooctanesulfonic acid (ND)

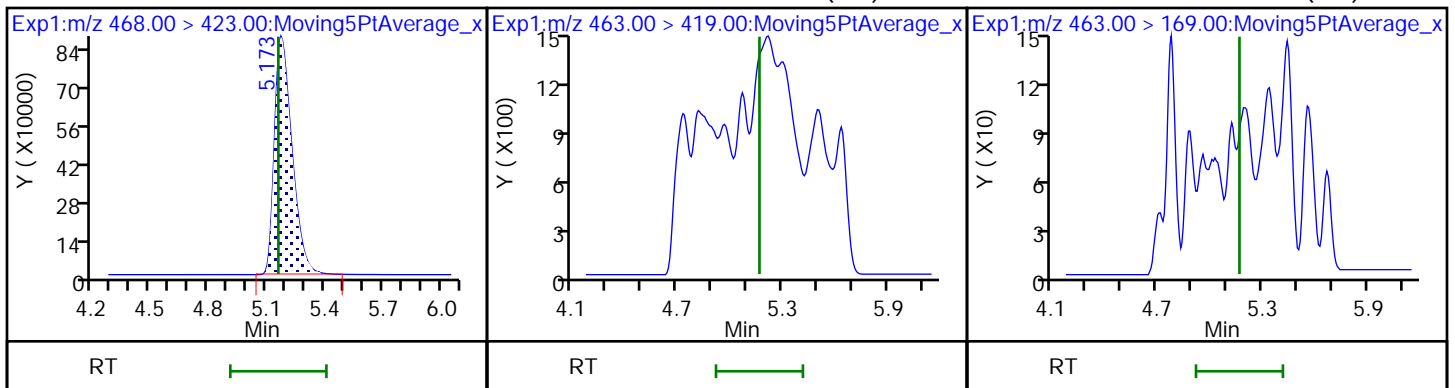
62 Perfluorooctanesulfonic acid (ND)



D 64 13C5 PFNA

63 Perfluorononanoic acid (ND)

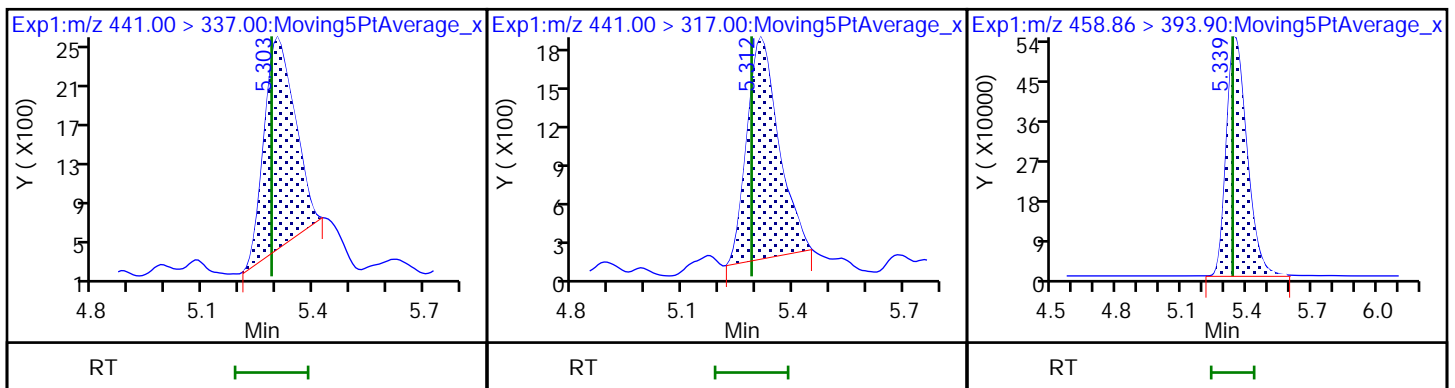
63 Perfluorononanoic acid (ND)

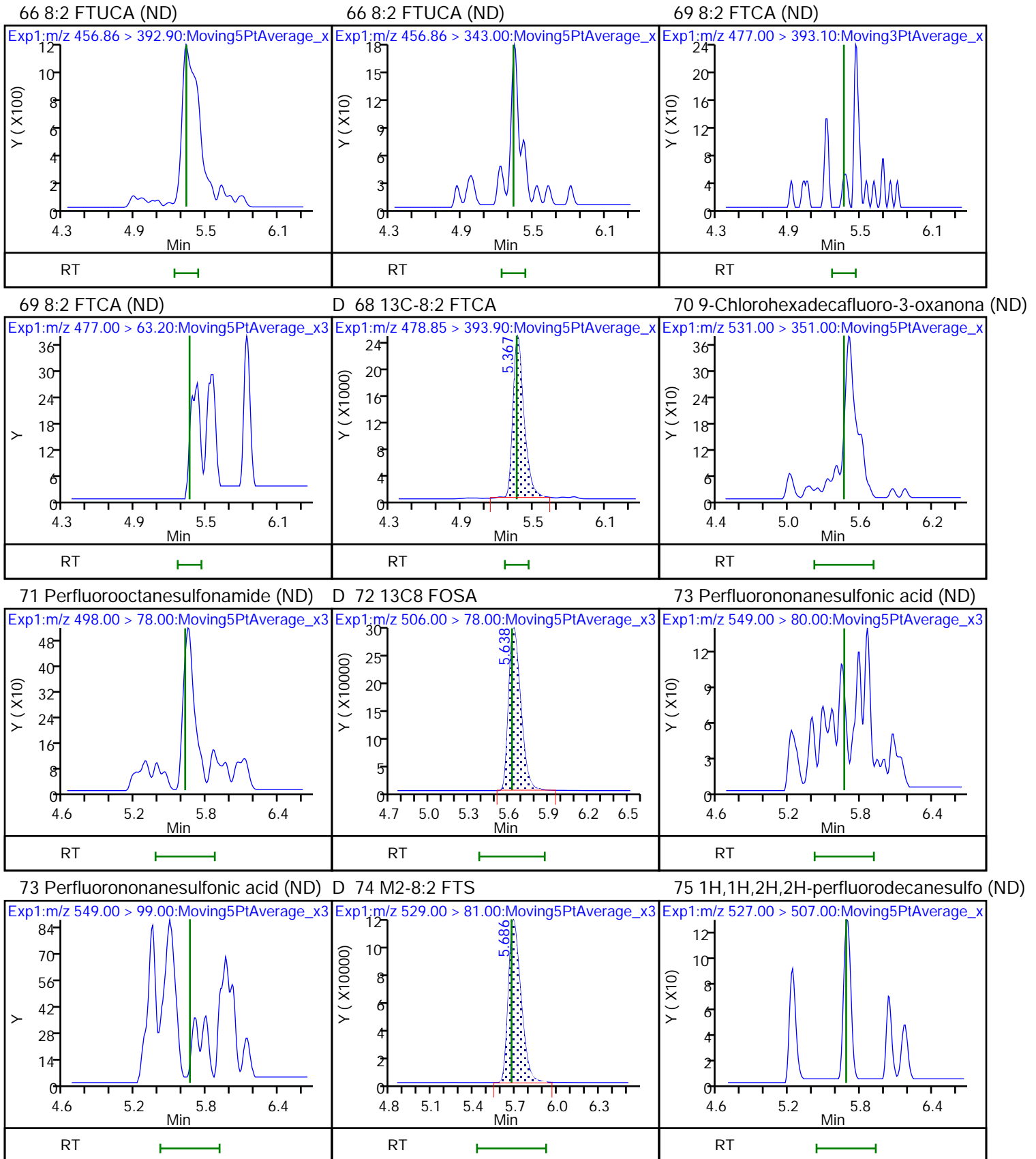


65 7:3 FTCA

65 7:3 FTCA

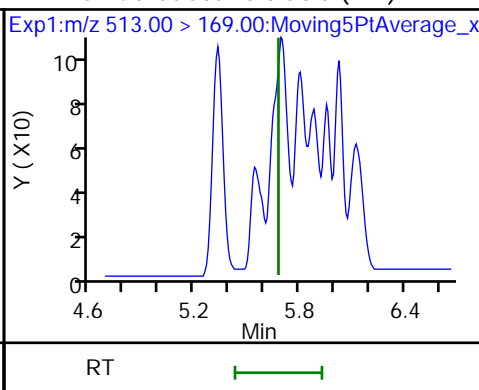
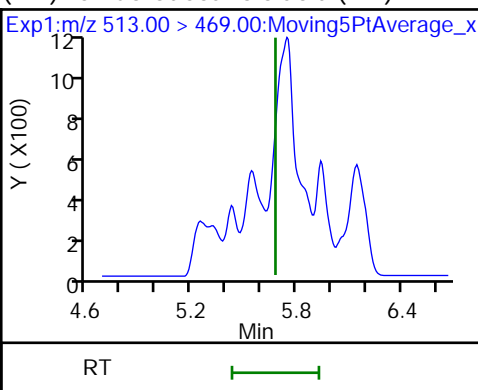
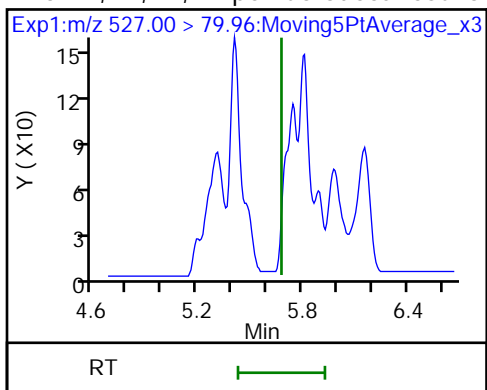
D 67 13C-8:2 FTUCA





75 1H,1H,2H,2H-perfluorodecanesulfo (ND) Perfluorodecanoic acid (ND)

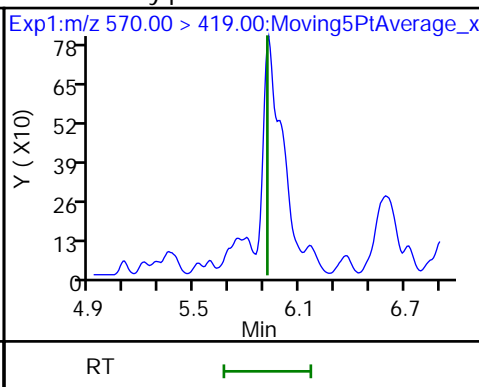
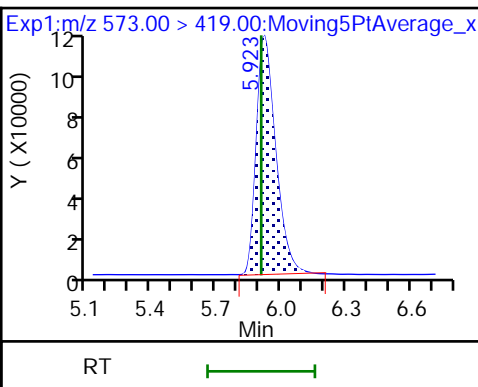
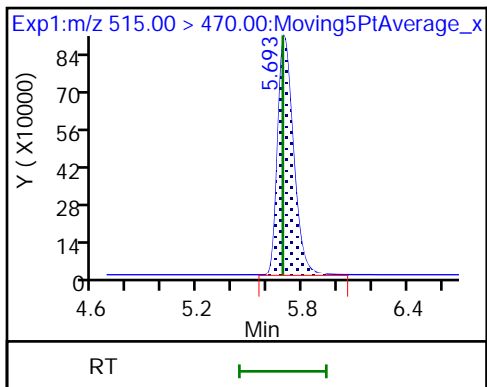
77 Perfluorodecanoic acid (ND)



D 76 13C2 PFDA

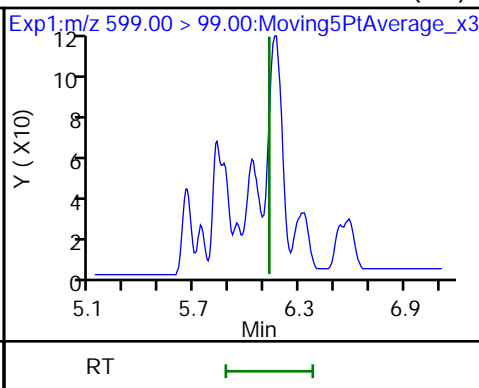
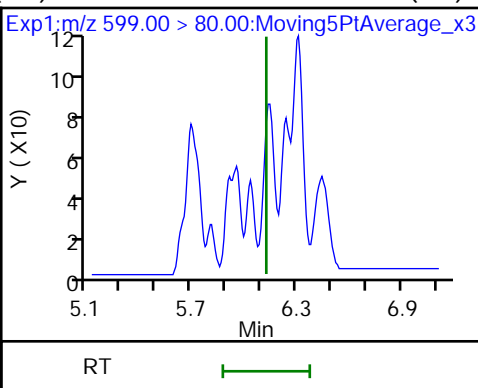
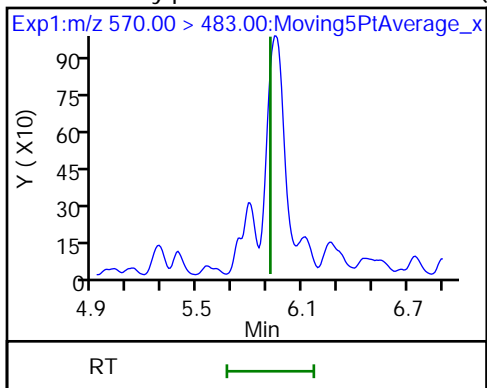
D 78 d3-NMeFOSAA

79 N-methylperfluorooctanesulfonami (ND)



79 N-methylperfluorooctanesulfonami (ND) Perfluorodecanesulfonic acid (ND)

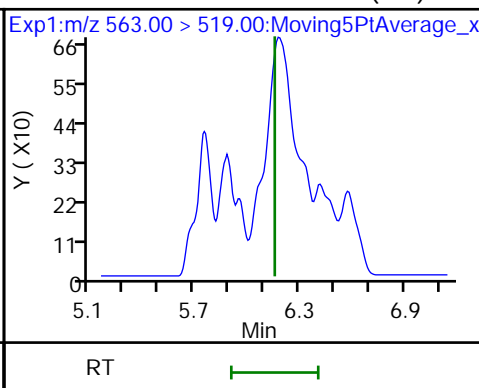
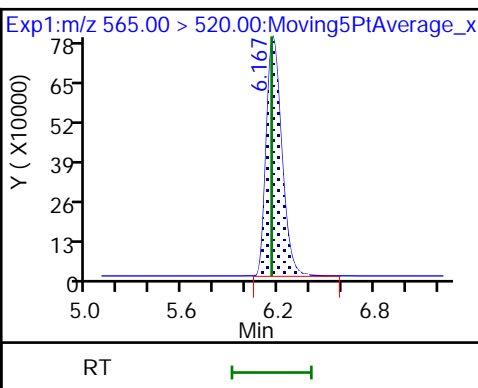
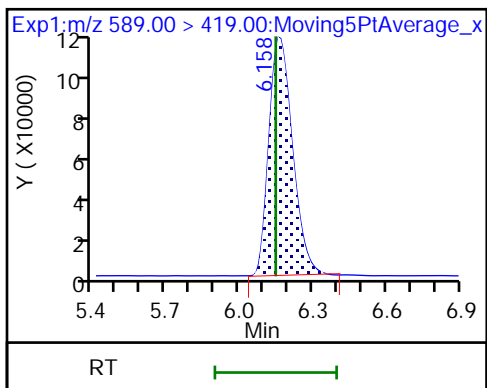
80 Perfluorodecanesulfonic acid (ND)



D 81 d5-NEtFOSAA

D 82 13C2 PFUnA

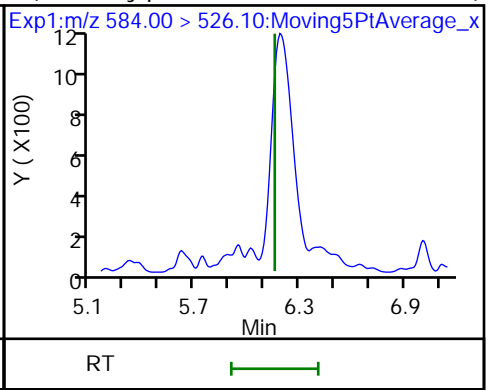
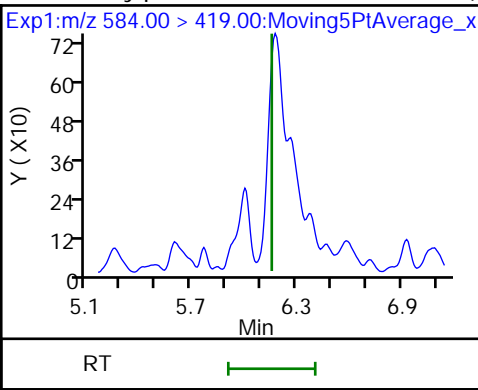
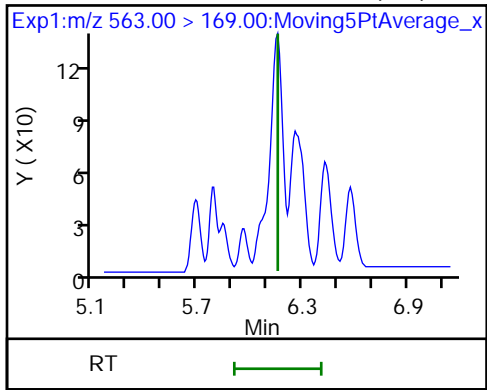
83 Perfluoroundecanoic acid (ND)



83 Perfluoroundecanoic acid (ND)

84 N-ethylperfluorooctanesulfonamid (ND)

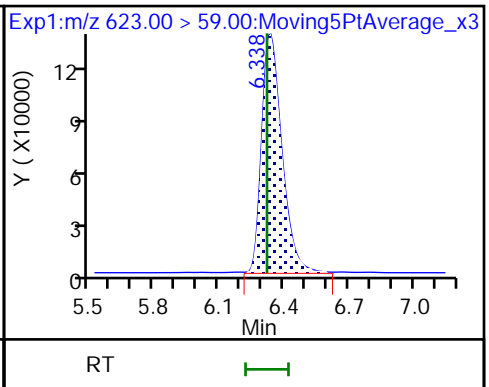
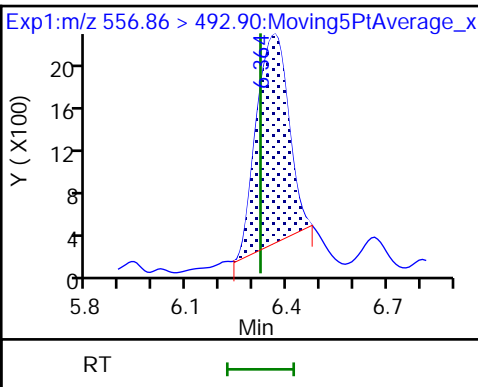
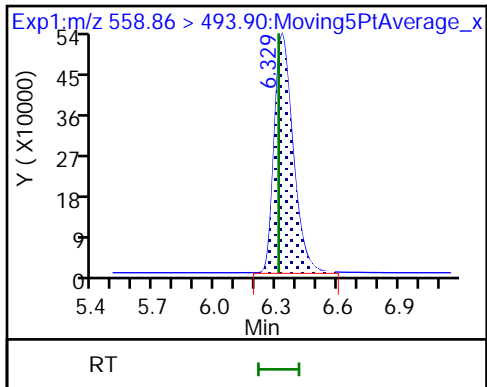
84 N-ethylperfluorooctanesulfonamid (ND)



D 89 13C-10:2 FTUCA

90 10:2 FTUCA

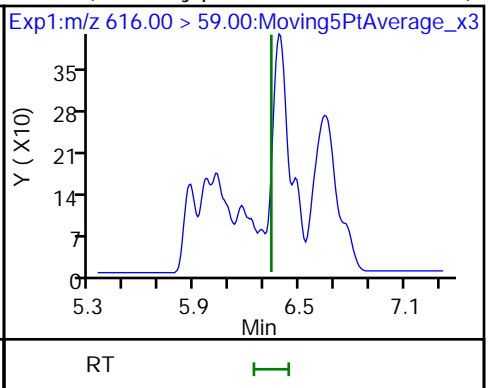
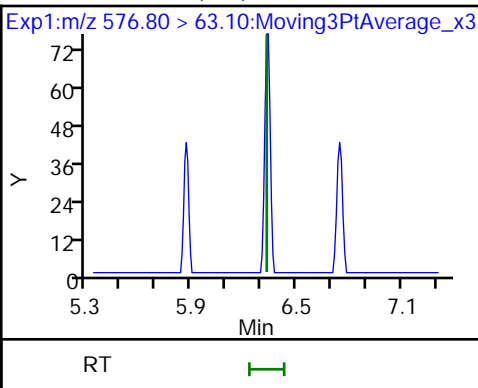
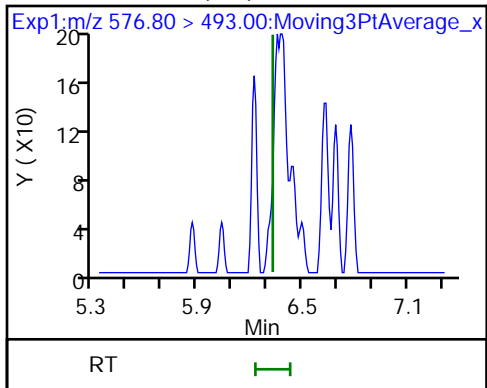
D 85 d7-N-MeFOSE-M



92 10:2 FTCA (ND)

92 10:2 FTCA (ND)

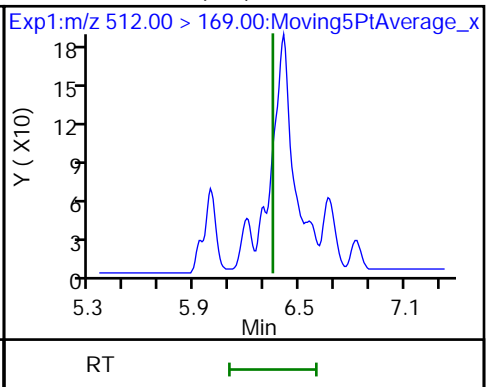
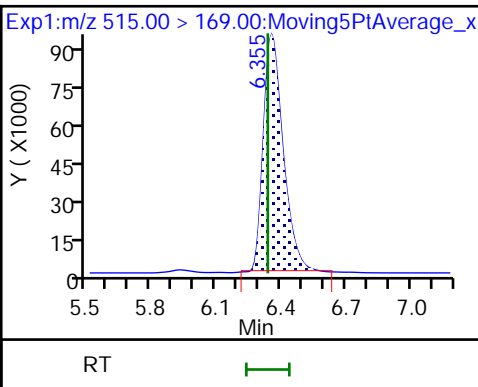
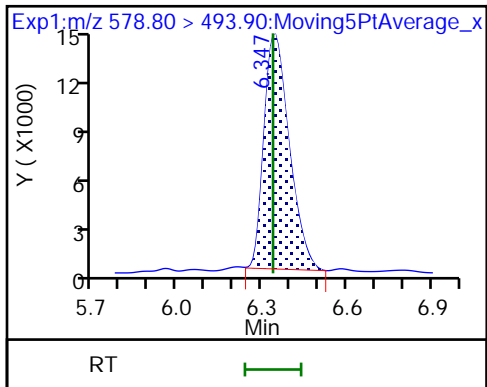
86 2-(N-methylperfluoro-1-octanesul (ND)



D 91 13C-10:2 FTCA

D 87 d-N-MeFOSA-M

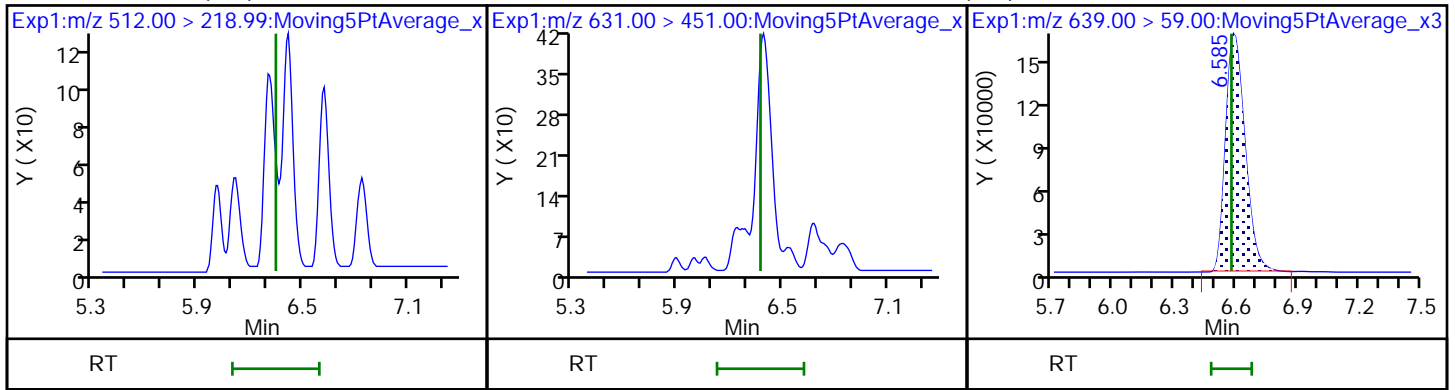
88 NMeFOSA (ND)



88 NMeFOSA (ND)

93 11-Chloroeicosafuoro-3-oxaundec (ND)

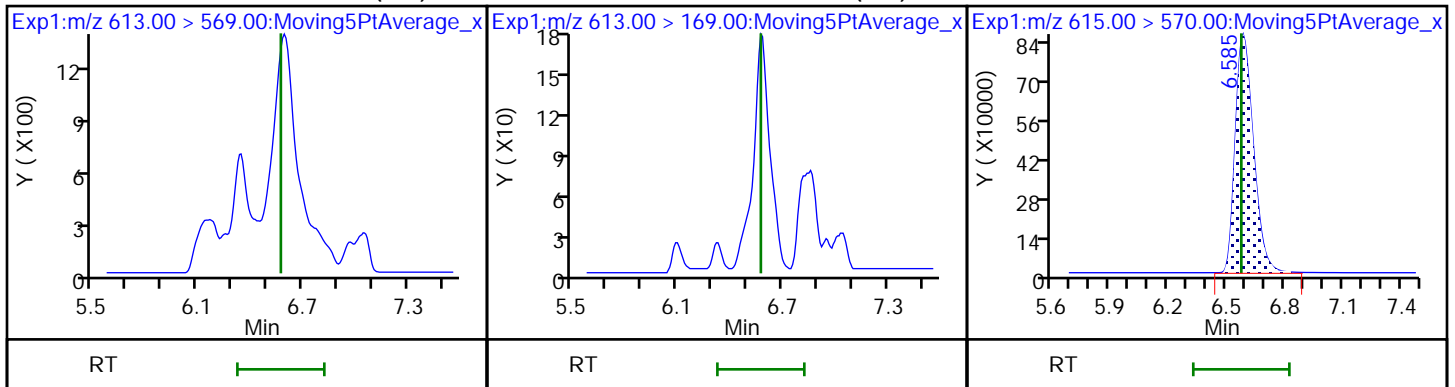
94 d9-N-EtFOSE-M



99 Perfluorododecanoic acid (ND)

99 Perfluorododecanoic acid (ND)

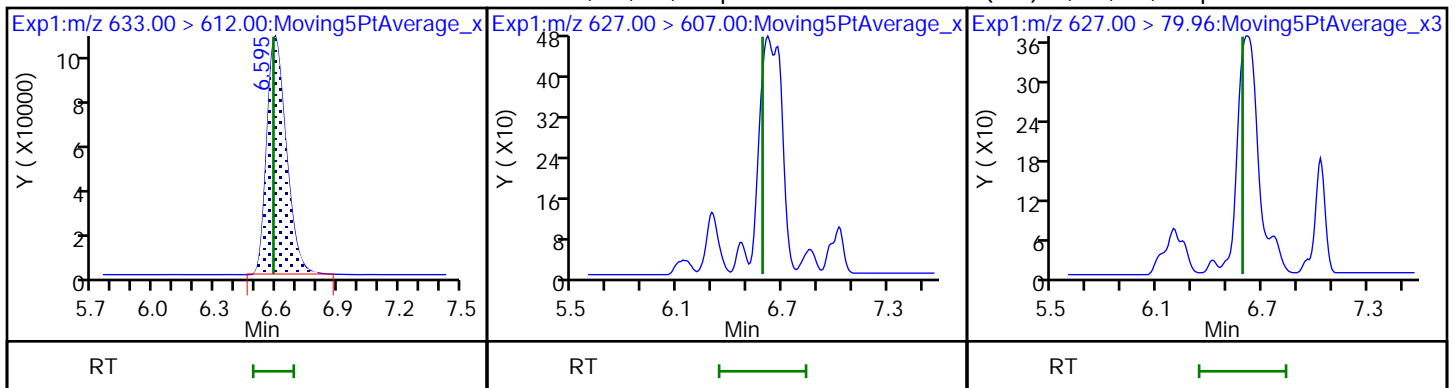
D 98 13C2 PFDa



D 100 13C2 10:2 FTS

101 1H,1H,2H,2H-perfluorododecanesul (ND)

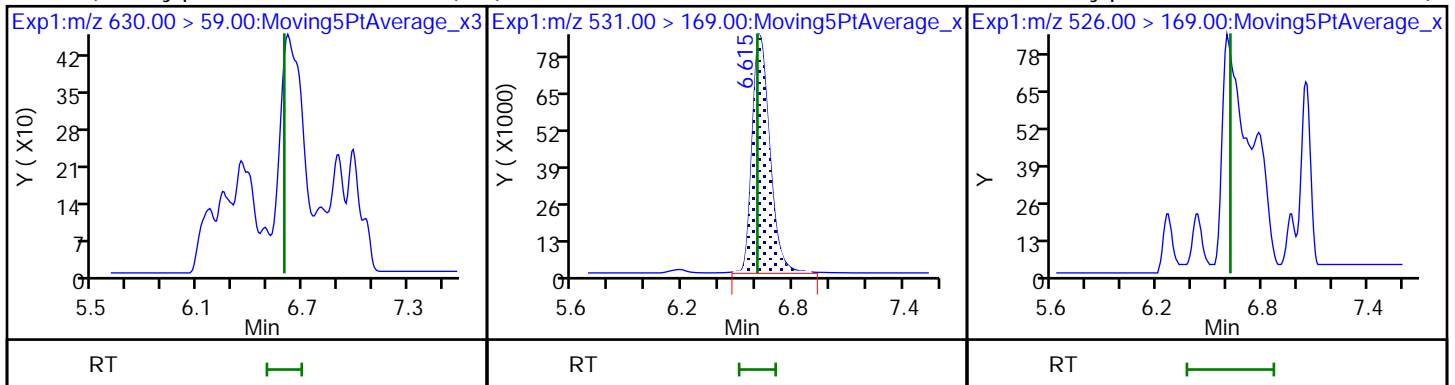
101 1H,1H,2H,2H-perfluorododecanesul (ND)



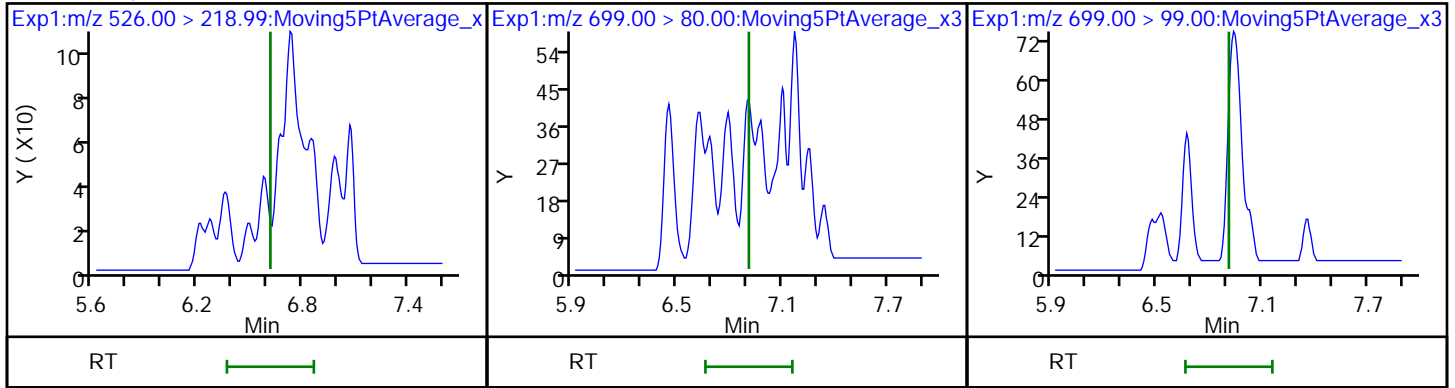
95 2-(N-ethylperfluoro-1-octanesulf (ND)

96 d-N-EtFOSE-M

97 N-ethylperfluoro-1-octanesulfona (ND)



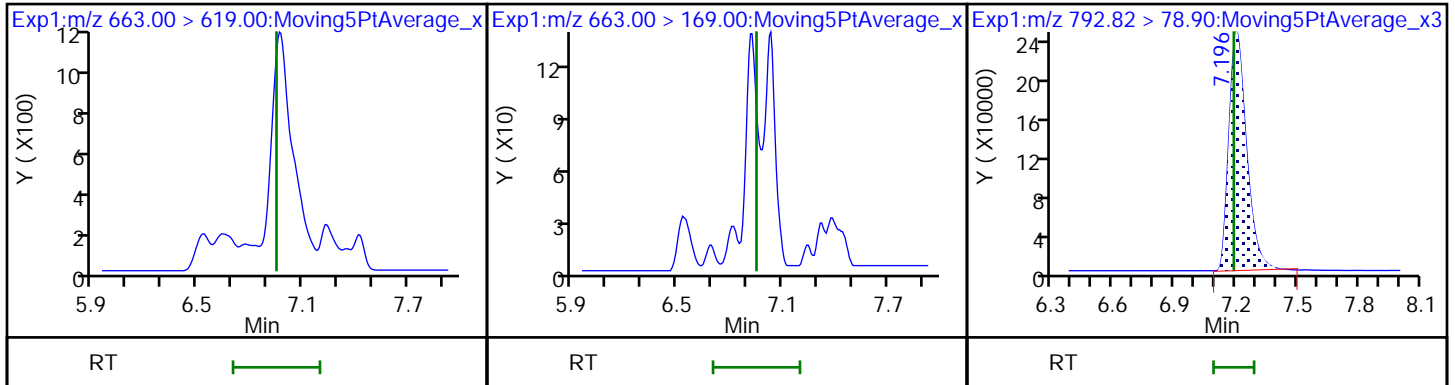
97 N-ethylperfluoro-1-octanesulfona (ND) 102 Perfluorododecanesulfonic acid (ND) 102 Perfluorododecanesulfonic acid (ND)



103 Perfluorotridecanoic acid (ND)

103 Perfluorotridecanoic acid (ND)

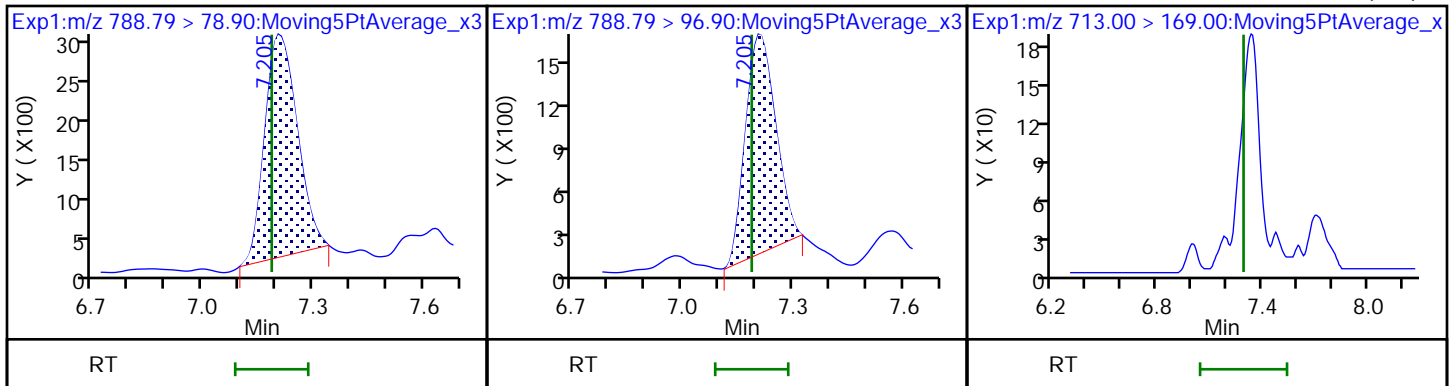
D 112 13C4-6:2 diPAP



114 6:2 diPAP

114 6:2 diPAP

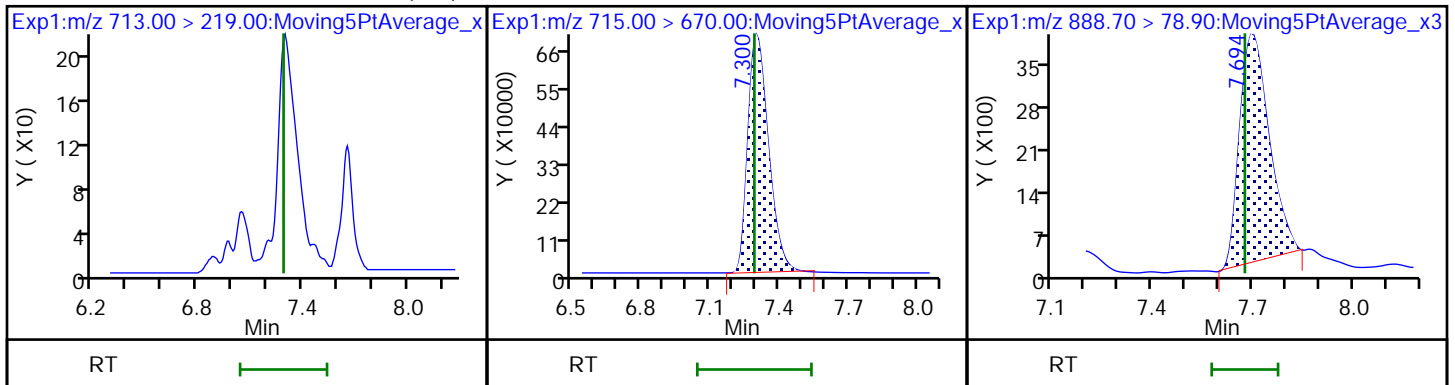
105 Perfluorotetradecanoic acid (ND)



105 Perfluorotetradecanoic acid (ND)

D 104 13C2 PFTeDA

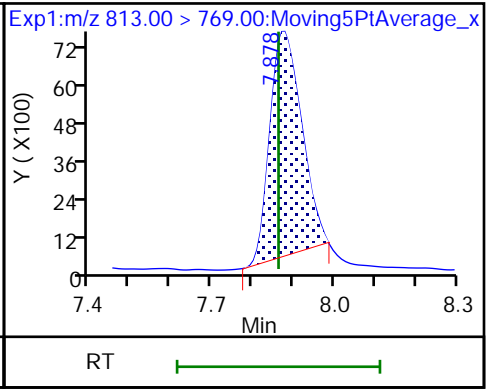
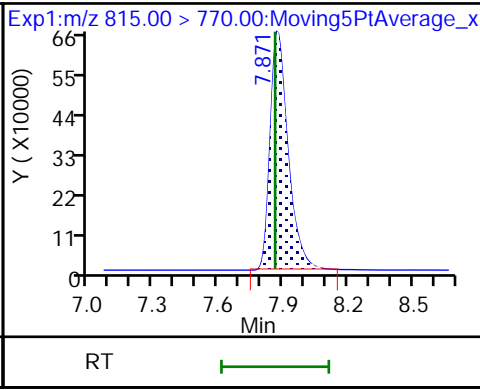
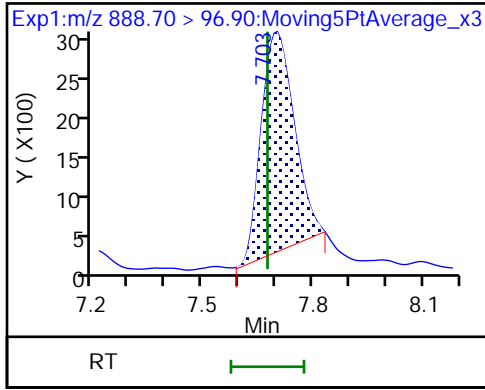
115 6:2/8:2 diPAP



115 6:2/8:2 diPAP

D 106 13C2 PFHxDa

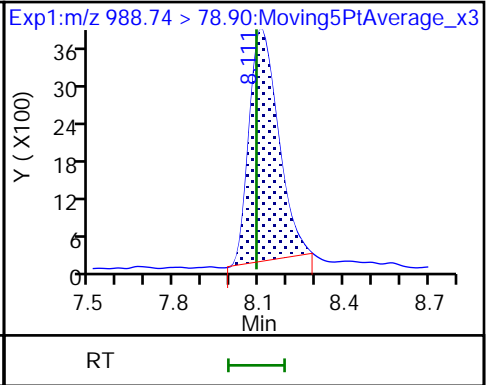
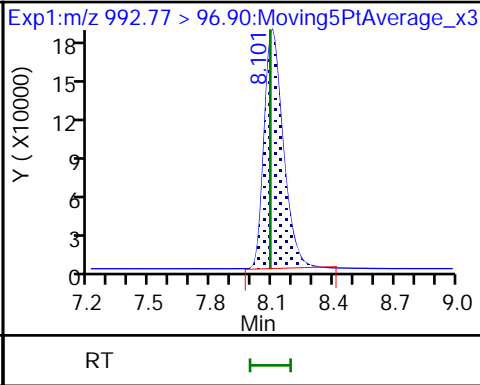
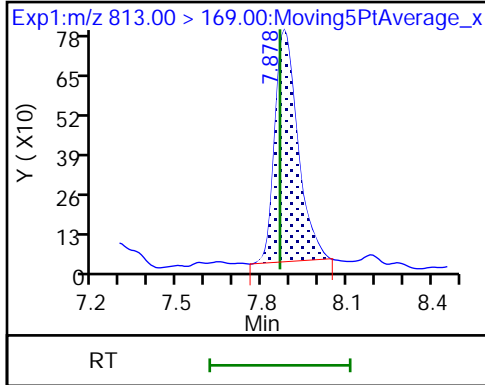
107 Perfluorohexadecanoic acid



107 Perfluorohexadecanoic acid

D 113 13C4-8:2 diPAP

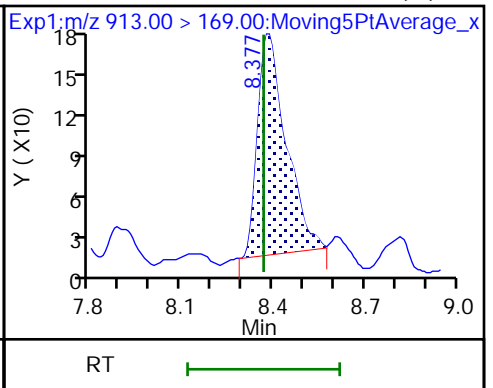
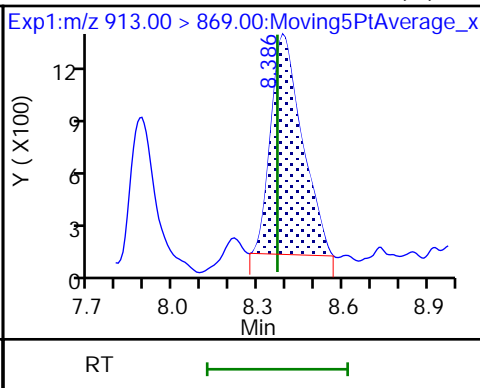
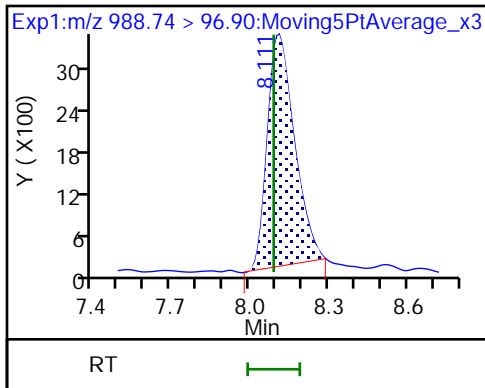
116 8:2 diPAP



116 8:2 diPAP

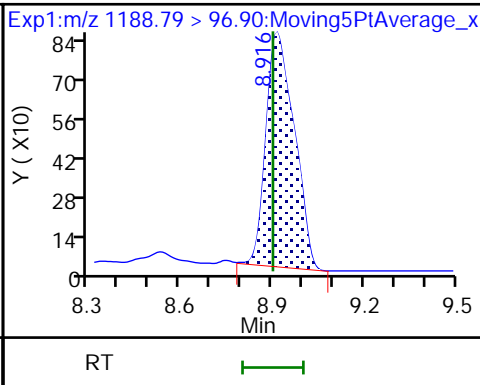
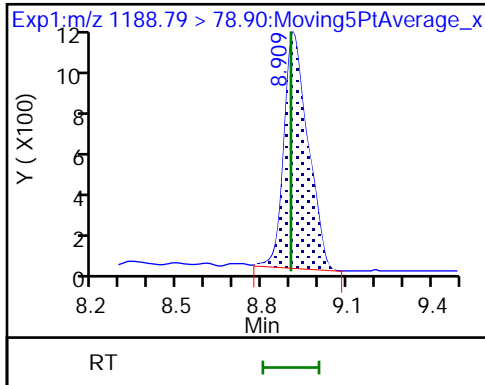
108 Perfluorooctadecanoic acid (M)

108 Perfluorooctadecanoic acid (M)



117 10:2 diPAP (M)

117 10:2 diPAP



Eurofins Sacramento
Recovery Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_016.d
Lims ID: ICB
Client ID:
Sample Type: ICB
Inject. Date: 21-Dec-2022 13:21:29 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: ICB (30)
Misc. Info.: Plate: 2 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
Method: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\PFAS+_A18.m
Limit Group: LC PFC ICAL
Last Update: 22-Dec-2022 07:41:35 Calib Date: 21-Dec-2022 13:11:20
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1678

First Level Reviewer: YS2U

Date: 22-Dec-2022 05:40:11

Compound	Amount Added	Amount Recovered	% Rec.
\$ 54 13C8 PFOA	1.25	1.35	107.88
\$ 60 13C8 PFOS	1.20	1.05	87.51

Eurofins Sacramento

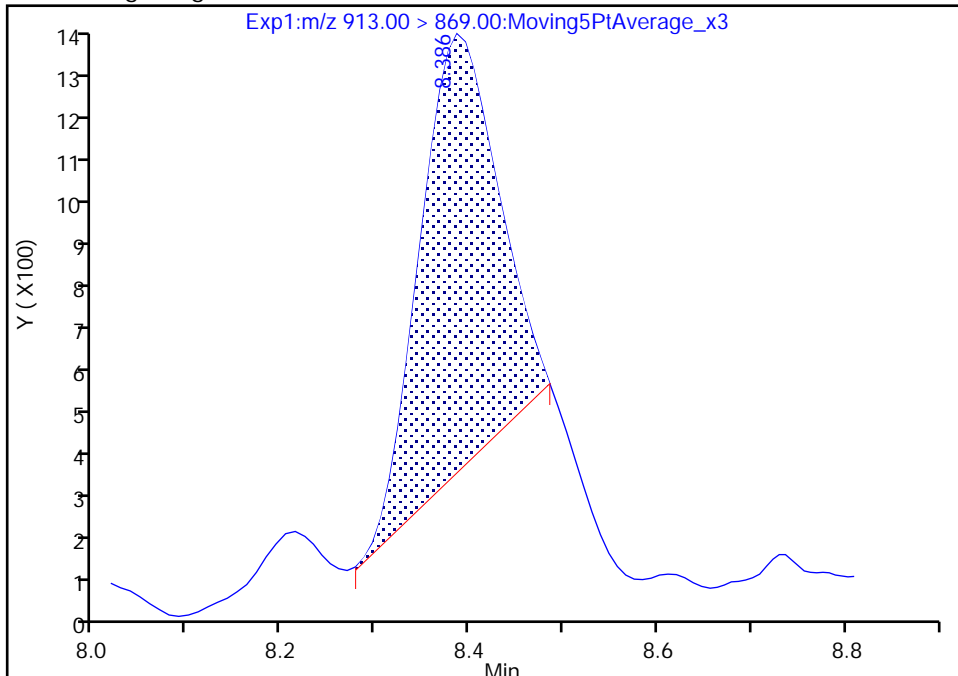
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_016.d
Injection Date: 21-Dec-2022 13:21:29 Instrument ID: A18
Lims ID: ICB
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

108 Perfluorooctadecanoic acid, CAS: 16517-11-6

Signal: 1

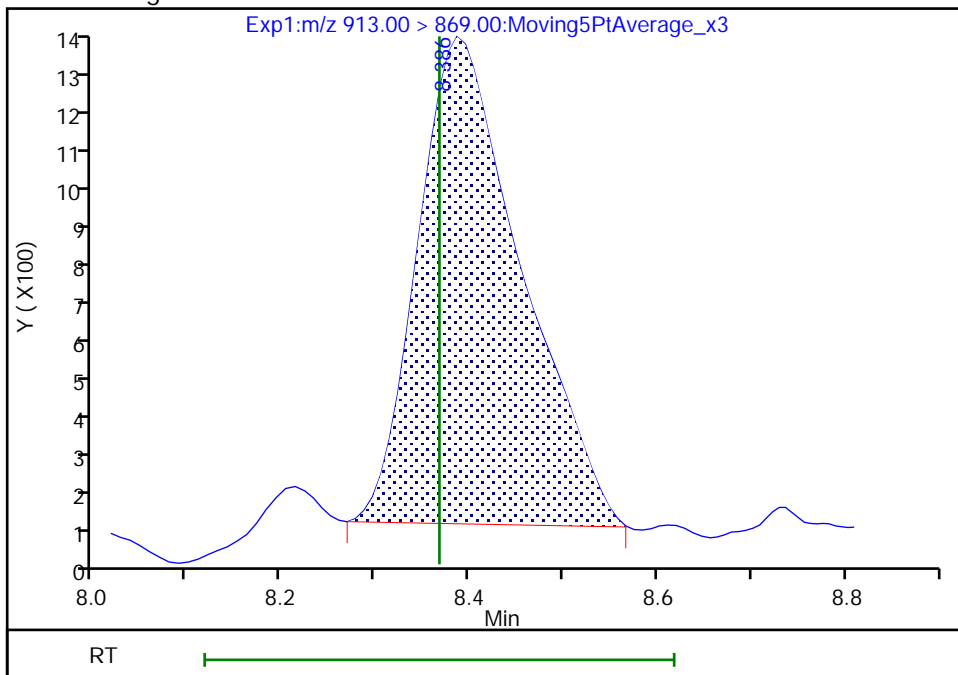
RT: 8.39
Area: 5592
Amount: 0.003803
Amount Units: ng/ml

Processing Integration Results



RT: 8.39
Area: 9076
Amount: 0.006172
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 22-Dec-2022 05:34:45

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

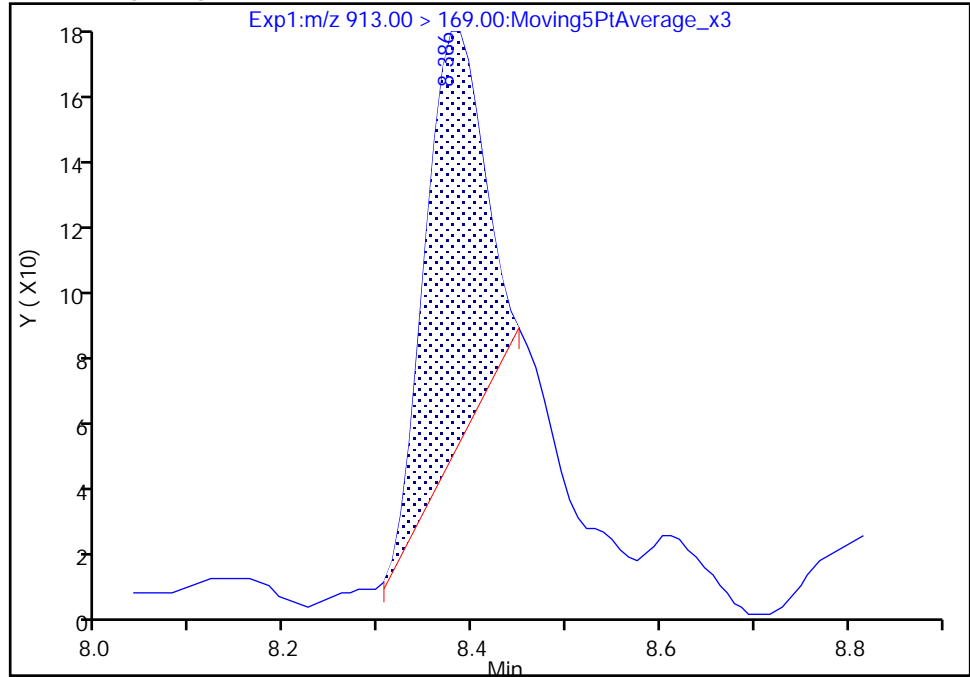
Data File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_016.d
Injection Date: 21-Dec-2022 13:21:29 Instrument ID: A18
Lims ID: ICB
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

108 Perfluorooctadecanoic acid, CAS: 16517-11-6

Signal: 2

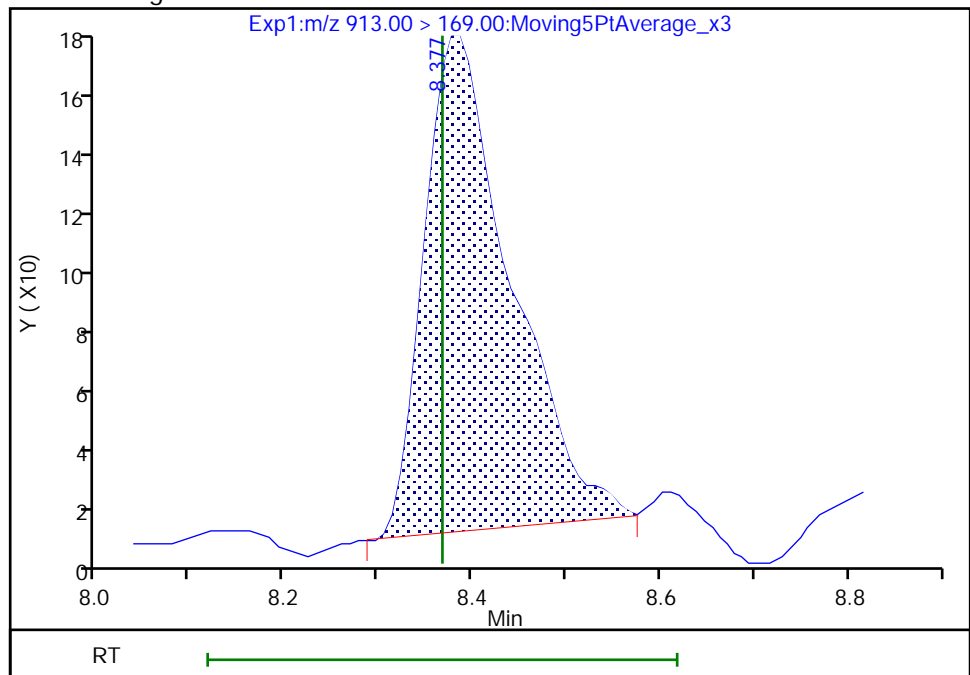
RT: 8.39
Area: 505
Amount: 0.003803
Amount Units: ng/ml

Processing Integration Results



RT: 8.38
Area: 983
Amount: 0.006172
Amount Units: ng/ml

Manual Integration Results



Reviewer: YS2U, 22-Dec-2022 05:34:50

Audit Action: Manually Integrated

Audit Reason: Baseline

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12/29/2022
3:43 PM

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: LCS 320-641482/2-A

Matrix: Water Lab File ID: 2022.12.21_A18_PFC_A_037.d

Analysis Method: 537 (modified) Date Collected: _____

Extraction Method: 3535 Date Extracted: 12/19/2022 18:17

Sample wt/vol: 1.0 (mL) Date Analyzed: 12/22/2022 16:03

Con. Extract Vol.: 10.0 (mL) Dilution Factor: 1

Injection Volume: 20 (uL) GC Column: Gemini C18 3x50 ID: 3 (mm)

% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N

Cleanup Factor: _____

Analysis Batch No.: 642490 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	10100		1300	600
2706-90-3	Perfluoropentanoic acid (PFPeA)	9670		500	120
307-24-4	Perfluorohexanoic acid (PFHxA)	10600		500	150
375-85-9	Perfluoroheptanoic acid (PFHpA)	10700		500	63
335-67-1	Perfluorooctanoic acid (PFOA)	10500		500	210
375-95-1	Perfluorononanoic acid (PFNA)	9840		500	68
335-76-2	Perfluorodecanoic acid (PFDA)	10800		500	78
2058-94-8	Perfluoroundecanoic acid (PFUnA)	10100		500	280
307-55-1	Perfluorododecanoic acid (PFDoA)	12700		500	140
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	13100		500	330
376-06-7	Perfluorotetradecanoic acid (PFTeA)	10900		500	180
67905-19-5	Perfluoro-n-hexadecanoic acid (PFHxDA)	10300		500	220
16517-11-6	Perfluoro-n-octadecanoic acid (PFODA)	9850		500	240
375-73-5	Perfluorobutanesulfonic acid (PFBS)	8860		500	50
2706-91-4	Perfluoropentanesulfonic acid (PFPeS)	9840		500	75
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	9120		500	140
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)	10400		500	48
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	9960		500	140
68259-12-1	Perfluorononanesulfonic acid (PFNS)	11100		500	93
335-77-3	Perfluorodecanesulfonic acid (PFDS)	11100		500	80
79780-39-5	Perfluorododecanesulfonic acid (PFDoS)	9600		500	240
754-91-6	Perfluorooctanesulfonamide (FOSA)	10300		500	250
2355-31-9	NMeFOSAA	10300		1300	300
2991-50-6	NEtFOSAA	10400		1300	330
757124-72-4	4:2 FTS	9270		500	60
27619-97-2	6:2 FTS	10300		1300	630
39108-34-4	8:2 FTS	9530		500	120
120226-60-0	10:2 FTS	9340		500	170
4151-50-2	NEtFOSA	11700		500	220

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins Sacramento</u>	Job No.: <u>320-95204-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCS 320-641482/2-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2022.12.21_A18_PFC_A_037.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>12/19/2022 18:17</u>
Sample wt/vol: <u>1.0 (mL)</u>	Date Analyzed: <u>12/22/2022 16:03</u>
Con. Extract Vol.: <u>10.0 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>Gemini C18 3x50</u> ID: <u>3 (mm)</u>
% Moisture: _____ % Solids: _____	GPC Cleanup: (Y/N) <u>N</u>
Cleanup Factor: _____	
Analysis Batch No.: <u>642490</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
31506-32-8	NMeFOSA	10400		500	110
24448-09-7	NMeFOSE	10700		1000	350
1691-99-2	NEtFOSE	10200		500	210
13252-13-6	HFPO-DA (GenX)	9720		1000	380
756426-58-1	9Cl-PF3ONS	10600		500	60
763051-92-9	11Cl-PF3OUdS	10400		500	80
919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	10400		500	100
356-02-5	3:3 FTCA	11100		500	110
914637-49-3	5:3 FTCA	10400		500	83
812-70-4	7:3 FTCA	9970		500	140
53826-12-3	6:2 FTCA	9220		500	240
27854-31-5	8:2 FTCA	8070		500	83
53826-13-4	10:2 FTCA	8730		750	340
133201-07-7	PFECHS	10300		500	110
423-41-6	PFPrS	9370		500	60
151772-58-6	NFDHA	10700		500	160
863090-89-5	PFMBA	10100		500	65
377-73-1	PFMPA	10200		500	70
113507-82-7	PFEESA	9610		500	73
674-13-5	PFMOAA	10600		500	100
801212-59-9	PFPE-1	10500		500	73
39492-90-5	PFO4DA	11200		500	100
39492-89-2	PFO3OA	11700		500	220
39492-88-1	PFO2HxA	10100		500	140
39492-91-6	PFO5DA	12200		500	250
13140-29-9	PMPA	11500		500	85
267239-61-2	PEPA	10800		500	120
422-64-0	PFPrA	8560		500	88
2416366-22-6	R-EVE	10100		500	78
801209-99-4	NVHOS	10800		750	330
773804-62-9	Hydro-EVE Acid	11000		500	60
2416366-21-5	R-PSDCA	10400		750	350

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: LCS 320-641482/2-A
Matrix: Water Lab File ID: 2022.12.21_A18_PFC_A_037.d
Analysis Method: 537 (modified) Date Collected: _____
Extraction Method: 3535 Date Extracted: 12/19/2022 18:17
Sample wt/vol: 1.0 (mL) Date Analyzed: 12/22/2022 16:03
Con. Extract Vol.: 10.0 (mL) Dilution Factor: 1
Injection Volume: 20 (uL) GC Column: Gemini C18 3x50 ID: 3 (mm)
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 642490 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
749836-20-2	Hydro-PS Acid	11100		500	110

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 320-641482/2-A
 Matrix: Water Lab File ID: 2022.12.21_A18_PFC_A_037.d
 Analysis Method: 537 (modified) Date Collected: _____
 Extraction Method: 3535 Date Extracted: 12/19/2022 18:17
 Sample wt/vol: 1.0 (mL) Date Analyzed: 12/22/2022 16:03
 Con. Extract Vol.: 10.0 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: Gemini C18 3x50 ID: 3 (mm)
 % Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
 Cleanup Factor: _____
 Analysis Batch No.: 642490 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01056	13C8 FOSA	113		25-150
STL00992	13C4 PFBA	109		25-150
STL01893	13C5 PFPeA	112		25-150
STL00993	13C2 PFHxA	105		25-150
STL01892	13C4 PFHpA	103		25-150
STL00990	13C4 PFOA	102		25-150
STL00995	13C5 PFNA	113		25-150
STL00996	13C2 PFDA	105		25-150
STL00997	13C2 PFUnA	106		25-150
STL00998	13C2 PFDoA	81		25-150
STL02116	13C2 PFTeDA	93		25-150
STL02115	13C2 PFHxDA	93		25-150
STL02337	13C3 PFBS	107		25-150
STL00994	18O2 PFHxS	104		25-150
STL00991	13C4 PFOS	99		25-150
STL02118	d3-NMeFOSAA	108		25-150
STL02117	d5-NEtFOSAA	107		25-150
STL02395	M2-4:2 FTS	107		25-150
STL02279	M2-6:2 FTS	101		25-150
STL02280	M2-8:2 FTS	106		25-150
STL02814	13C2 10:2 FTS	91		25-150
STL02275	d-N-MeFOSA-M	108		20-150
STL02282	d-N-EtFOSA-M	87		20-150
STL02277	d7-N-MeFOSE-M	106		10-120
STL02278	d9-N-EtFOSE-M	100		10-120
STL02255	13C3 HFPO-DA	111		25-150
STL02802	13C-6:2 FTCA	108		25-150
STL02803	13C-8:2 FTCA	112		25-150
STL02804	13C-10:2 FTCA	107		25-150

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_037.d
 Lims ID: LCS 320-641482/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 22-Dec-2022 16:03:54 ALS Bottle#: 21 Worklist Smp#: 23
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: lcs 320-641482/2-a
 Misc. Info.: Plate: 3 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Method: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 23-Dec-2022 12:44:42 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1657

First Level Reviewer: sanjumnair

Date: 23-Dec-2022 12:44:42

Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_035.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 PPF Acid										M
162.95 > 119.00	1.857	1.875	-0.018	0.698	2656893	0.8556		88.2	156	M
3 PFMOAA										
179.00 > 84.90	2.366	2.386	-0.020	0.889	2376685	1.06		106	572	
5 R-EVE										
405.00 > 217.00	2.552	2.568	-0.016	0.959	1371437	1.01		101	15820	
D 8 13C4 PFBA										
217.00 > 172.00	2.661	2.678	-0.017	0.585	4984791	1.36		109	15402	
7 Perfluorobutanoic acid										
212.90 > 169.00	2.661	2.678	-0.017	1.000	4460906	1.01		101	148	
10 PMPA										
229.00 > 185.00	2.732	2.750	-0.018	1.027	5275148	1.15		115	3362	
11 PFPrS										
249.10 > 80.00	2.741	2.750	-0.009	0.891	2109655	0.9365		102	11792	
12 NVHOS										
297.00 > 135.00	2.759	2.777	-0.018	1.037	124638	1.08		108	2148	
13 PFCA F										
229.00 > 85.00	2.796	2.814	-0.018	0.923	2446287	1.02		102	13094	
14 PFO2HxA										
245.00 > 85.00	2.944	2.953	-0.009	0.972	506596	1.01		101	1871	
D 16 13C5 PFPeA										
267.90 > 223.00	3.030	3.048	-0.018	0.666	4575423	1.40		112	36744	
15 Perfluoropentanoic acid										
262.90 > 219.00	3.030	3.048	-0.018	1.000	3699351	0.9673		96.7	5388	
17 3:3 FTCA										
241.00 > 177.10	3.039	3.057	-0.018	0.988	205870	1.11	Target=1.30	111	2451	
241.00 > 116.90	3.039	3.057	-0.018	0.988	156885		1.31(0.65-1.95)		1011	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
19 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.075	3.085	-0.010	1.000	2097183	0.8864	Target=2.29 2.31(1.14-3.43)	99.8	10299	
298.90 > 99.00	3.075	3.085	-0.010	1.000	906320				3567	
D 18 13C3 PFBS										
301.90 > 80.00	3.075	3.085	-0.010	0.676	2806955	1.24		107	20650	
20 PEPA										
278.90 > 234.90	3.132	3.152	-0.020	1.034	4395549	1.08		108	994	
21 PFECA A										
278.95 > 84.90	3.151	3.171	-0.020	1.040	4087740	1.01		101	33596	
22 PES										
314.80 > 135.00	3.249	3.268	-0.019	1.057	7560628	0.9611		108	56618	
24 PFECA B										
295.20 > 201.00	3.394	3.403	-0.009	0.979	702098	1.07		107	11251	
26 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.411	3.430	-0.019	0.997	1215549	0.9265	Target=2.02 1.97(1.01-3.03)	98.8	26463	
327.00 > 79.96	3.421	3.430	-0.009	1.000	617580				5658	
D 25 M2-4:2 FTS										
329.00 > 81.00	3.421	3.430	-0.009	0.751	658516	1.25		107	3284	
28 Perfluorohexanoic acid										
313.00 > 269.00	3.466	3.483	-0.017	1.000	3787513	1.06	Target=13.57 13.35(6.78-20.35)	106	4270	
313.00 > 119.00	3.466	3.483	-0.017	1.000	283733				2904	
D 27 13C2 PFHxA										
315.00 > 270.00	3.466	3.483	-0.017	0.761	4726399	1.31		105	38585	
29 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.492	3.510	-0.018	1.135	1906714	0.9841	Target=3.16 3.17(1.58-4.74)	105	19587	
349.00 > 99.00	3.501	3.510	-0.009	1.138	602199				13087	
30 PFO3OA										
311.10 > 85.20	3.545	3.555	-0.010	1.023	243612	1.17		117	3019	
31 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.631	3.648	-0.017	1.000	138276	0.9715	Target=0.87 0.81(0.43-1.30)	97.2	6105	
285.00 > 185.00	3.631	3.648	-0.017	1.000	171728				1888	
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.631	3.648	-0.017	0.797	168340	1.39		111	6049	
33 R-PSDCA										
397.00 > 217.00	3.943	3.963	-0.020	0.988	1209477	1.04		104	28317	
D 35 13C4 PFHpA										
367.00 > 322.00	3.991	4.009	-0.018	0.877	4927602	1.29		103	28419	
36 Perfluoroheptanoic acid										
363.00 > 319.00	3.991	4.009	-0.018	1.000	3831571	1.07	Target=3.79 3.60(1.89-5.68)	107	5184	
363.00 > 169.00	3.991	4.009	-0.018	1.000	1064900				8643	
38 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.009	4.027	-0.018	1.000	1365040	0.9115	Target=3.42 3.25(1.71-5.14)	99.9	7688	
399.00 > 99.00	4.009	4.027	-0.018	1.000	420562				2685	
D 37 18O2 PFHxS										
403.00 > 84.00	4.009	4.027	-0.018	0.881	1839126	1.23		104	19313	
34 Hydro-EVE Acid										
427.00 > 282.90	4.035	4.052	-0.017	1.011	6012578	1.10		110	23475	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
39 Hydro-PS Acid										
463.00 > 263.00	4.060	4.077	-0.017	1.017	5389935	1.11		111	3520	
41 5:3 FTCA										
340.88 > 236.90	4.069	4.086	-0.017	0.979	660995	1.04	Target=1.10	104	5603	
340.88 > 216.90	4.069	4.086	-0.017	0.979	600762		1.10(0.55-1.65)		5596	
40 DONA										
377.00 > 251.00	4.069	4.094	-0.025	0.799	6916498	1.04	Target=2.28	110	28062	
377.00 > 85.00	4.077	4.094	-0.017	0.800	3196195		2.16(1.14-3.43)		923	
42 PFECA G										
378.90 > 184.90	4.103	4.120	-0.017	0.988	1956849	1.05		105	18538	
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.154	4.171	-0.017	0.912	237733	1.36		108	1103	
45 6:2 FTCA										
377.10 > 313.10	4.154	4.171	-0.017	1.000	45817	0.9222	Target=0.68	92.2	1288	
377.10 > 63.00	4.154	4.171	-0.017	1.000	71233		0.64(0.34-1.01)		2446	
47 PFO4DA										
376.90 > 85.00	4.268	4.277	-0.009	1.070	245201	1.12		112	0.7	
51 PFECHS										
460.80 > 380.90	4.472	4.490	-0.018	0.982	3830415	1.03	Target=2.06	111	22308	
460.80 > 98.90	4.472	4.490	-0.018	0.982	1883292		2.03(1.03-3.09)		20441	
53 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.517	4.535	-0.018	1.000	1163920	1.03	Target=2.58	108	10916	
427.00 > 79.96	4.517	4.535	-0.018	1.000	464191		2.51(1.29-3.87)		3984	
D 52 M2-6:2 FTS										
429.00 > 81.00	4.517	4.535	-0.018	0.992	664446	1.20		101	12450	
D 56 13C4 PFOA										
417.00 > 372.00	4.553	4.569	-0.016	1.000	5300267	1.27		102	15435	
58 Perfluorooctanoic acid										
413.00 > 369.00	4.553	4.569	-0.016	1.000	4153428	1.05	Target=2.58	105	2668	
413.00 > 169.00	4.553	4.569	-0.016	1.000	1497482		2.77(1.29-3.87)		10858	
* 55 13C2 PFOA										
415.00 > 370.00	4.553	4.569	-0.016		5163491	1.25			16671	
57 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.553	4.578	-0.025	0.894	1246536	1.04	Target=4.92	109	14383	
449.00 > 99.00	4.553	4.578	-0.025	0.894	266459		4.68(2.46-7.37)		3897	
59 TAF										
442.90 > 85.00	4.975	4.983	-0.008	1.093	193818	1.22		122	3788	
D 61 13C4 PFOS										
503.00 > 80.00	5.094	5.116	-0.022	1.119	1194046	1.19		99.1	7528	
62 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.102	5.116	-0.014	1.002	1031180	1.00	Target=4.79	107	2208	
499.00 > 99.00	5.094	5.116	-0.022	1.000	211589		4.87(2.40-7.19)		4067	
D 64 13C5 PFNA										
468.00 > 423.00	5.102	5.123	-0.021	1.121	5750349	1.41		113	32275	
63 Perfluorononanoic acid										
463.00 > 419.00	5.102	5.123	-0.021	1.000	3926861	0.9842	Target=7.77	98.4	4764	
463.00 > 169.00	5.102	5.123	-0.021	1.000	520032		7.55(3.89-11.66)		8286	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
65 7:3 FTCA										
441.00 > 337.00	5.227	5.246	-0.019	0.987	773087	1.00	Target=1.19	99.7	3168	
441.00 > 317.00	5.227	5.246	-0.019	0.987	650496		1.19(0.60-1.79)		2659	
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.293	5.312	-0.019	1.163	183081	1.40		112	786	
69 8:2 FTCA										
477.00 > 393.10	5.293	5.321	-0.028	1.000	119746	0.8074	Target=2.60	80.7	290	
477.00 > 63.20	5.293	5.321	-0.028	1.000	46955		2.55(1.30-3.90)		1953	
70 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	5.400	5.417	-0.017	1.060	2634669	1.06		113	24408	
D 72 13C8 FOSA										
506.00 > 78.00	5.589	5.605	-0.016	1.228	1890951	1.41		113	13133	
73 Perfluorononanesulfonic acid										
549.00 > 80.00	5.597	5.613	-0.016	1.099	855932	1.11	Target=2.91	115	13863	
549.00 > 99.00	5.597	5.613	-0.016	1.099	295143		2.90(1.46-4.37)		7659	
71 Perfluorooctanesulfonamide										
498.00 > 78.00	5.589	5.613	-0.024	1.000	1485088	1.03		103	12660	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.605	5.621	-0.016	1.231	706692	1.27		106	17560	
75 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	5.605	5.621	-0.016	1.000	923773	0.9526	Target=2.30	99.2	39957	
527.00 > 79.96	5.613	5.621	-0.008	1.001	395799		2.33(1.15-3.45)		6163	
D 76 13C2 PFDA										
515.00 > 470.00	5.613	5.630	-0.017	1.233	5155901	1.31		105	30890	
77 Perfluorodecanoic acid										
513.00 > 469.00	5.613	5.638	-0.025	1.000	2916926	1.08	Target=7.97	108	8277	
513.00 > 169.00	5.613	5.638	-0.025	1.000	398419		7.32(3.99-11.96)		8654	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.841	5.858	-0.017	1.283	735326	1.35		108	4480	
79 N-methylperfluorooctanesulfonami										
570.00 > 419.00	5.841	5.866	-0.025	1.000	477807	1.03	Target=0.75	103	5604	
570.00 > 483.00	5.841	5.866	-0.025	1.000	625748		0.76(0.37-1.12)		6810	
80 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.051	6.067	-0.016	1.188	801611	1.11	Target=3.02	115	17717	
599.00 > 99.00	6.059	6.067	-0.008	1.189	277459		2.89(1.51-4.53)		8015	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.075	6.095	-0.020	1.334	732153	1.34		107	3276	
D 82 13C2 PFUnA										
565.00 > 520.00	6.084	6.095	-0.011	1.336	4878420	1.32		106	42804	
83 Perfluoroundecanoic acid										
563.00 > 519.00	6.075	6.095	-0.020	0.998	2690497	1.01	Target=8.46	101	10387	
563.00 > 169.00	6.084	6.095	-0.011	1.000	353879		7.60(4.23-12.69)		7500	
84 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	6.084	6.105	-0.021	1.002	456139	1.04	Target=0.77	104	5992	M
584.00 > 526.10	6.084	6.105	-0.021	1.002	584569		0.78(0.38-1.15)		4753	M
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.266	6.275	-0.009	1.376	98126	1.34		107	575	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
92 10:2 FTCA										
576.80 > 493.00	6.257	6.284	-0.027	0.999	65224	0.8725	Target=2.22	87.3	356	
576.80 > 63.10	6.266	6.284	-0.018	1.000	29267		2.23(1.11-3.34)		264	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.301	6.319	-0.018	1.384	870990	1.33		106	5964	
93 11-Chloroeicosafuoro-3-oxaundec										
631.00 > 451.00	6.301	6.319	-0.018	1.237	3322655	1.04		111	32015	
86 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	6.319	6.337	-0.018	1.003	731955	1.07		107	4782	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.319	6.337	-0.018	1.388	586401	1.35		108	2850	
88 NMeFOSA										
512.00 > 169.00	6.328	6.346	-0.018	1.001	473558	1.04	Target=2.03	104	3772	
512.00 > 218.99	6.328	6.346	-0.018	1.001	238841		1.98(1.02-3.05)		3366	
99 Perfluorododecanoic acid										
613.00 > 569.00	6.495	6.515	-0.020	1.000	3610576	1.27	Target=7.79	127	8290	
613.00 > 169.00	6.495	6.515	-0.020	1.000	430821		8.38(3.90-11.69)		10208	
D 98 13C2 PFDaA										
615.00 > 570.00	6.495	6.515	-0.020	1.427	4128777	1.02		81.3	20696	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.505	6.525	-0.020	1.429	573909	1.10		91.2	18961	
101 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	6.515	6.535	-0.020	1.002	578572	0.9342	Target=1.65	96.7	7358	
627.00 > 79.96	6.515	6.535	-0.020	1.002	328027		1.76(0.82-2.47)		8772	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.554	6.575	-0.021	1.440	946847	1.25		99.7	4434	
95 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	6.574	6.595	-0.021	1.003	733712	1.02		102	4850	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.594	6.605	-0.011	1.448	440062	1.09		87.0	1863	
97 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	6.594	6.615	-0.021	1.000	384765	1.17	Target=1.86	117	5527	
526.00 > 218.99	6.594	6.615	-0.021	1.000	216616		1.78(0.93-2.79)		4014	
102 Perfluorododecanesulfonic acid (
699.00 > 80.00	6.830	6.852	-0.022	1.341	239566	0.9603	Target=0.78	99.0	5335	
699.00 > 99.00	6.830	6.852	-0.022	1.341	354615		0.68(0.39-1.16)		7886	
103 Perfluorotridecanoic acid										
663.00 > 619.00	6.871	6.889	-0.018	1.058	3397339	1.31	Target=8.14	131	8881	
663.00 > 169.00	6.861	6.889	-0.028	1.056	503156		6.75(4.07-12.21)		6384	
105 Perfluorotetradecanoic acid										
713.00 > 169.00	7.205	7.222	-0.017	1.000	348160	1.09	Target=0.98	109	3600	
713.00 > 219.00	7.205	7.222	-0.017	1.000	361060		0.96(0.49-1.47)		4268	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.205	7.222	-0.017	1.583	4079368	1.16		92.6	8220	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.767	7.784	-0.017	1.706	3546813	1.16		92.9	6321	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.767	7.784	-0.017	1.000	2535388	1.03	Target=8.57	103	2977	
813.00 > 169.00	7.767	7.784	-0.017	1.000	277644		9.13(4.28-12.85)		3500	
108 Perfluorooctadecanoic acid										
913.00 > 869.00	8.244	8.269	-0.025	1.061	1333105	0.9845	Target=10.47	98.5	1618	
913.00 > 169.00	8.253	8.269	-0.016	1.062	128408		10.38(5.24-15.71)		1865	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_037.d

Injection Date: 22-Dec-2022 16:03:54

Instrument ID: A18

Lims ID: LCS 320-641482/2-A

Client ID:

Operator ID: TAISACA18-PC\A-18

ALS Bottle#: 21

Worklist Smp#: 23

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

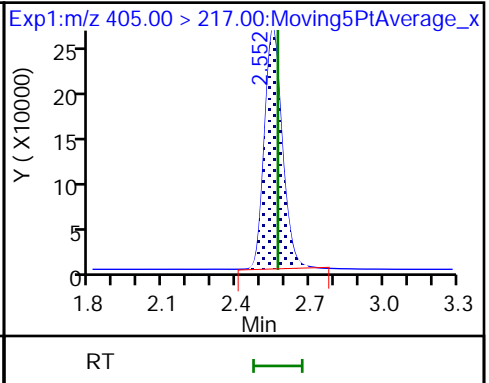
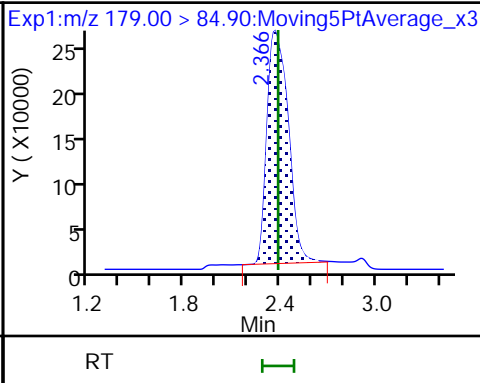
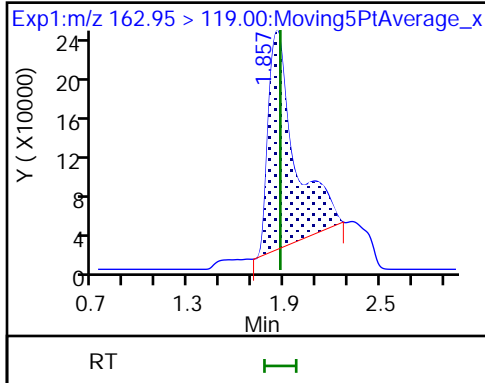
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Limit Group: LC PFC ICAL

2 PPF Acid (M)

3 PFMOAA

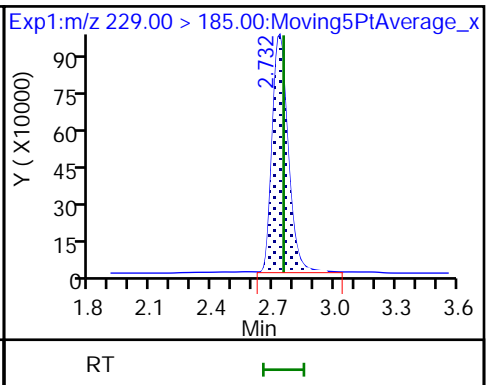
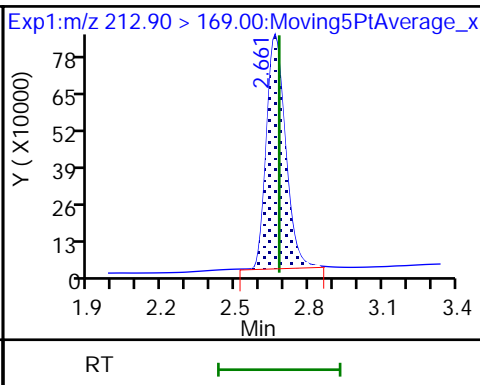
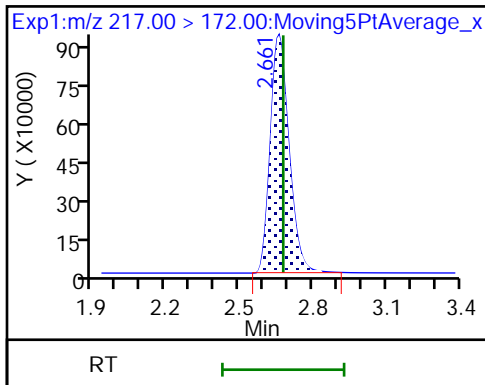
5 R-EVE



D 8 13C4 PFBA

7 Perfluorobutanoic acid

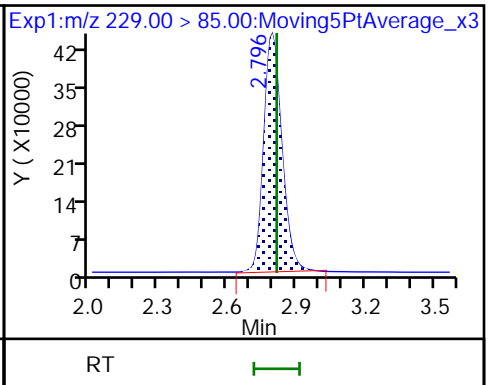
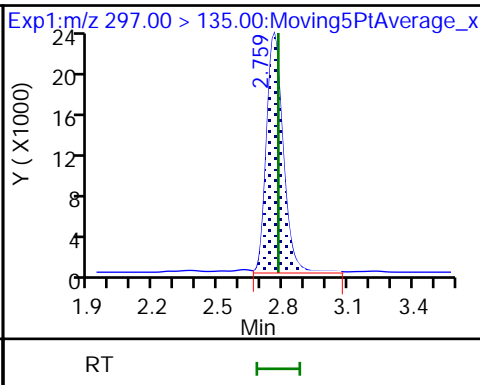
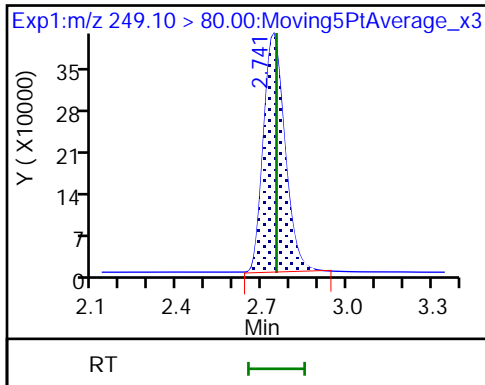
10 PMPA



11 PFPrS

12 NVHOS

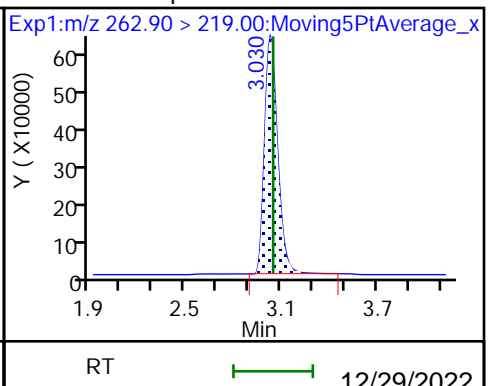
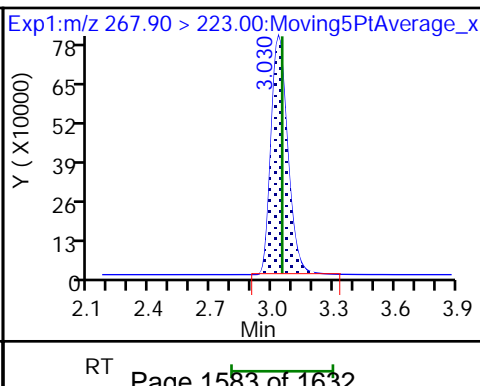
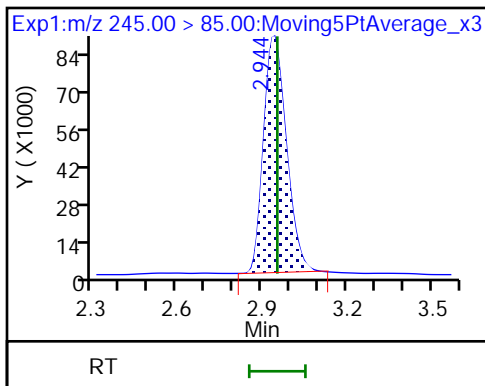
13 PFECa F

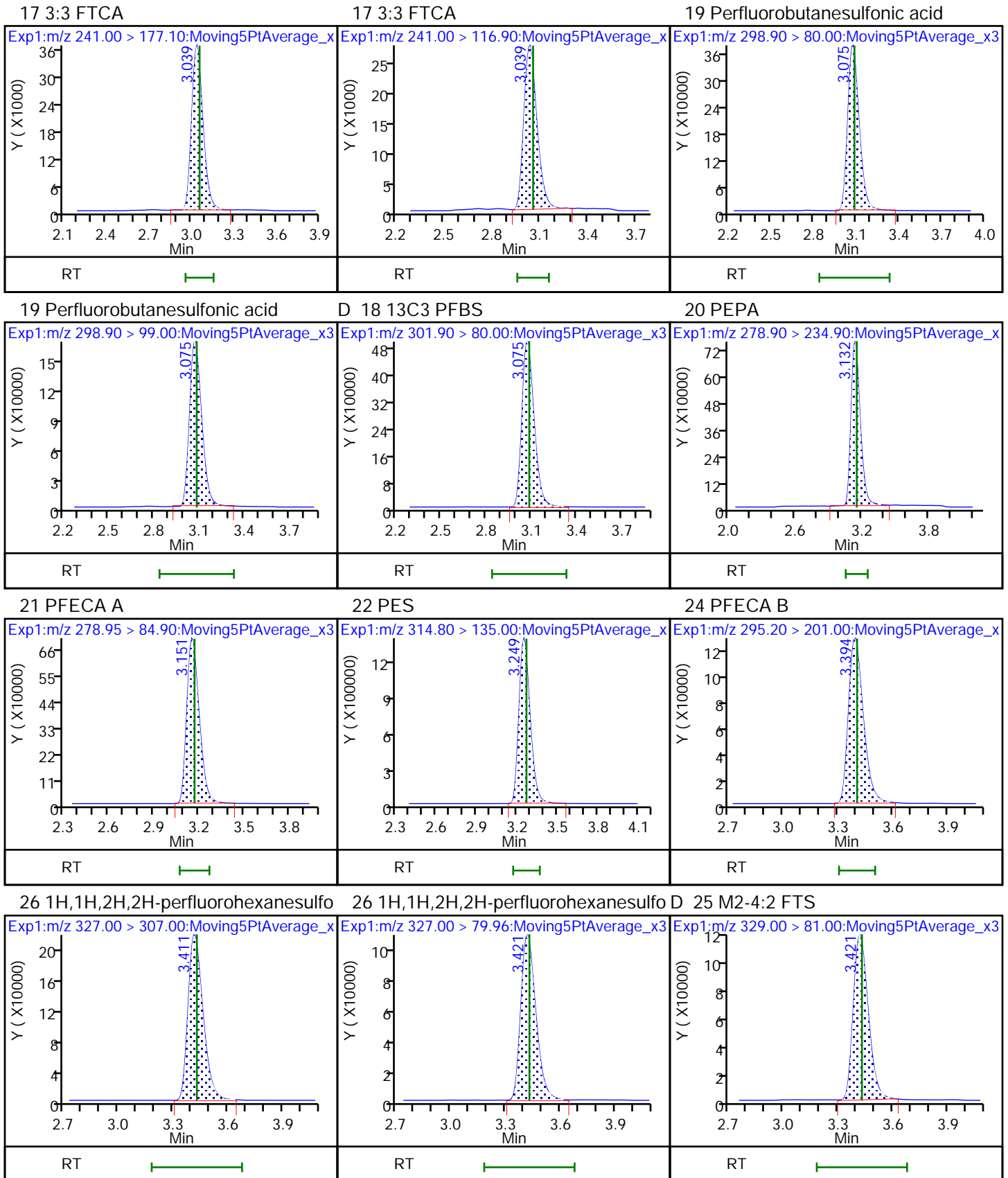


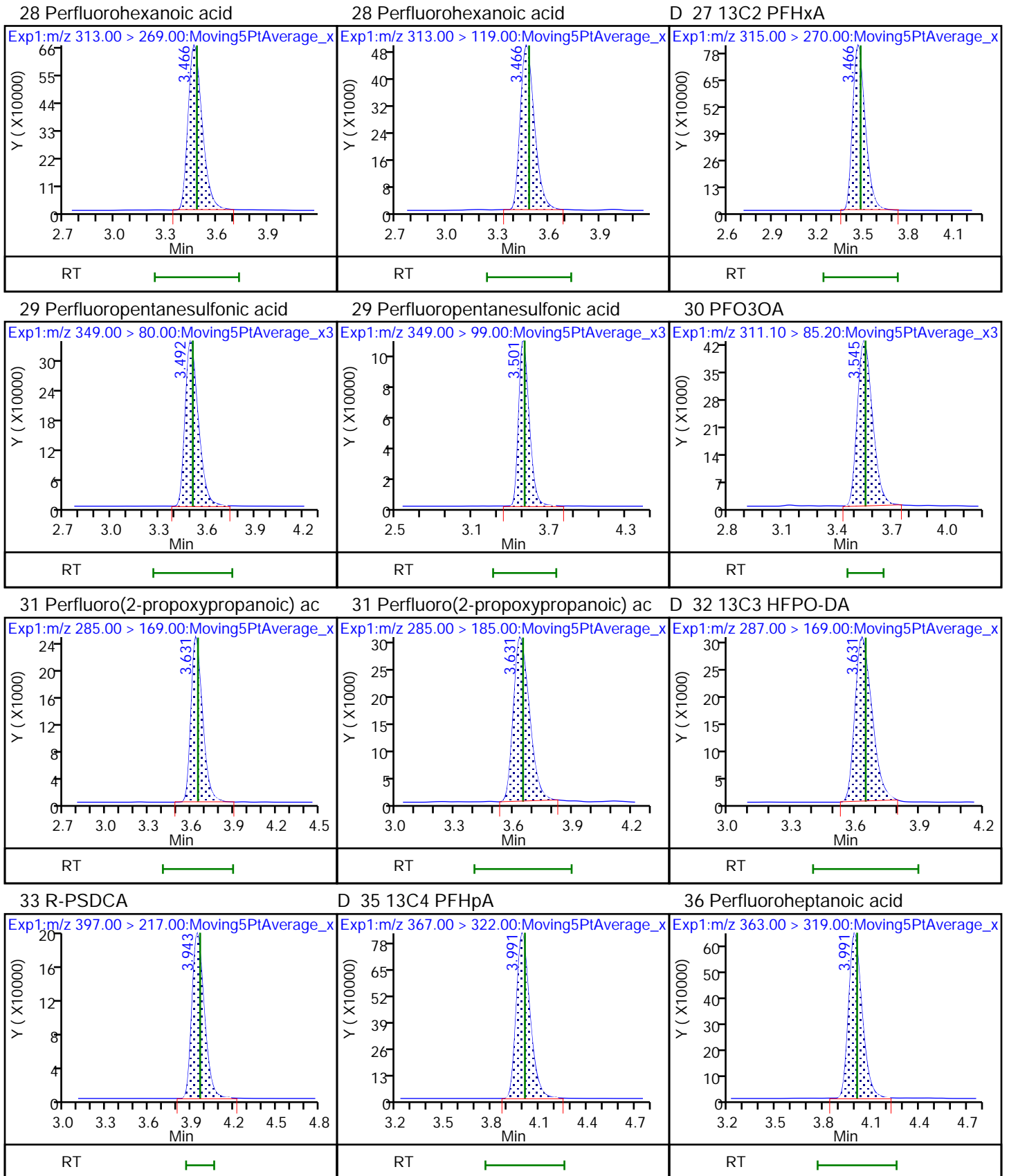
14 PFO2HxA

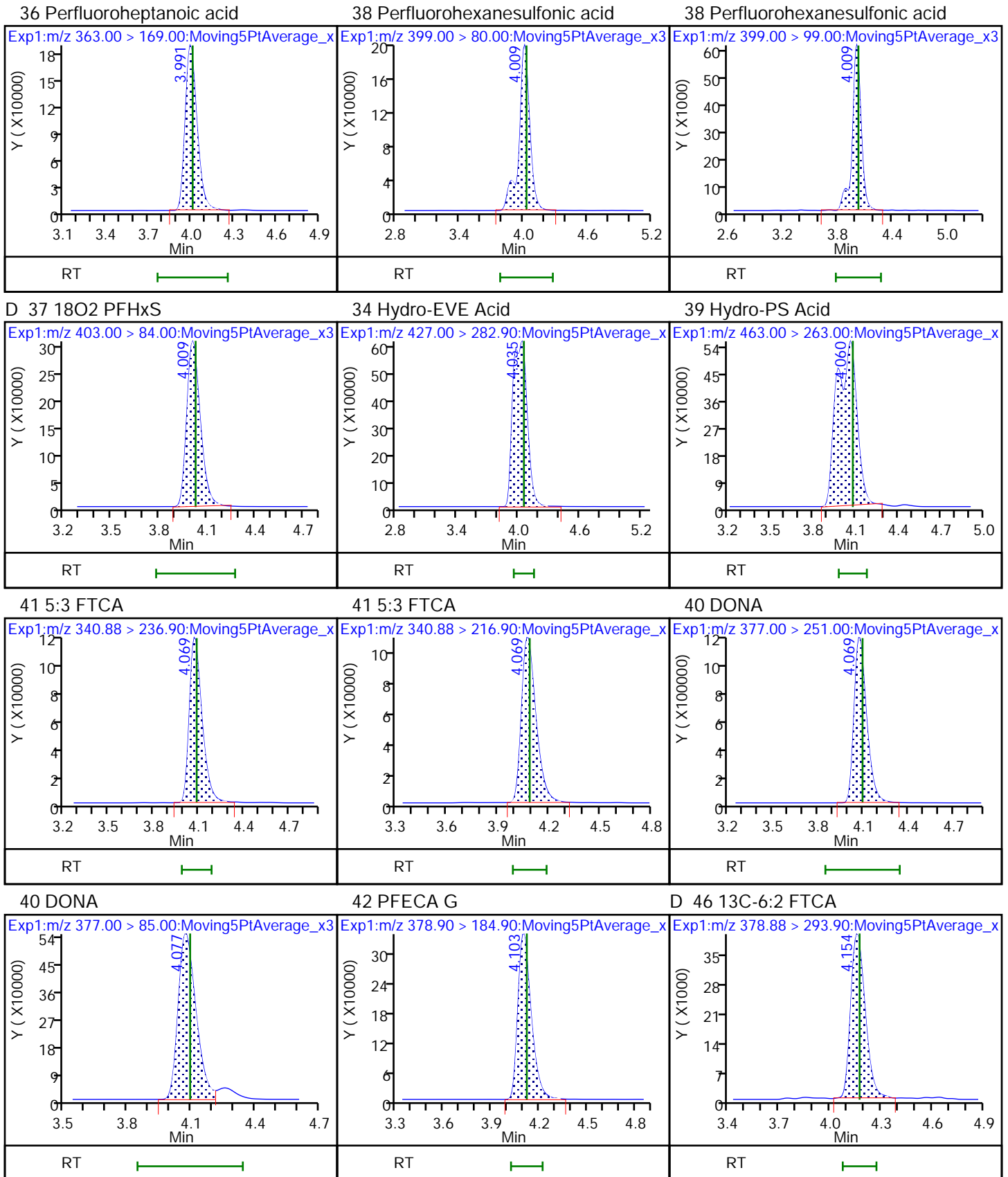
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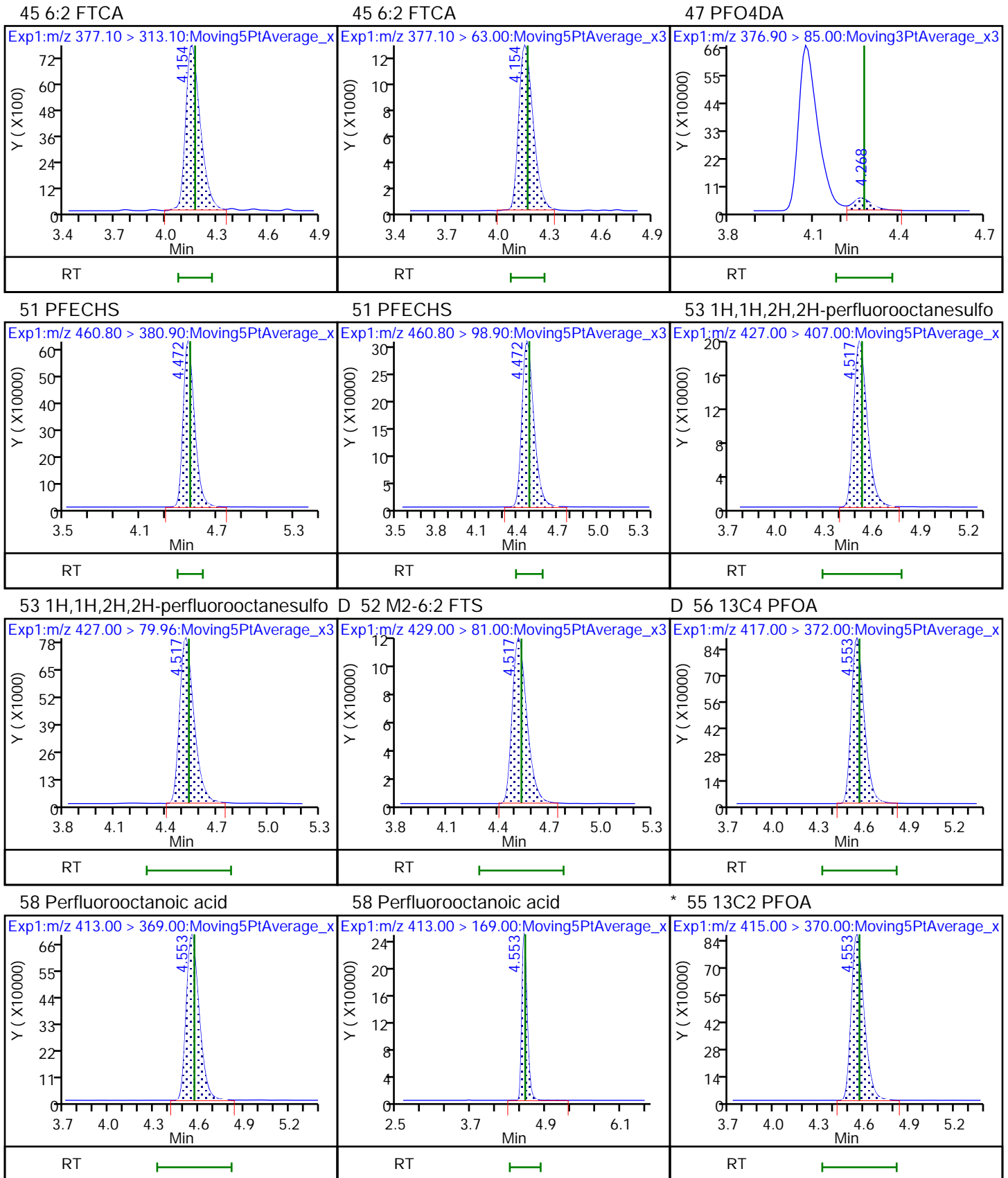
15 Perfluoropentanoic acid

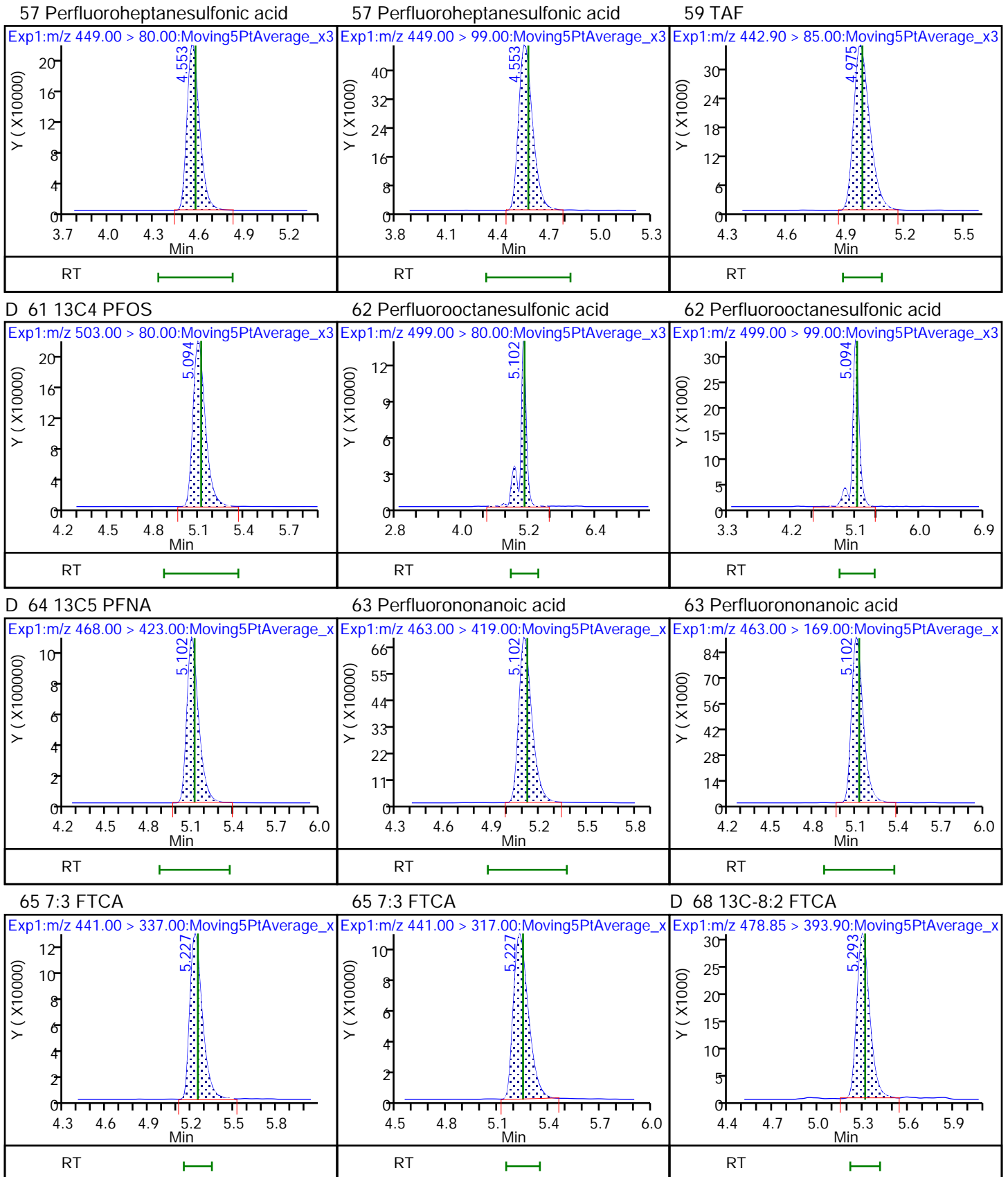








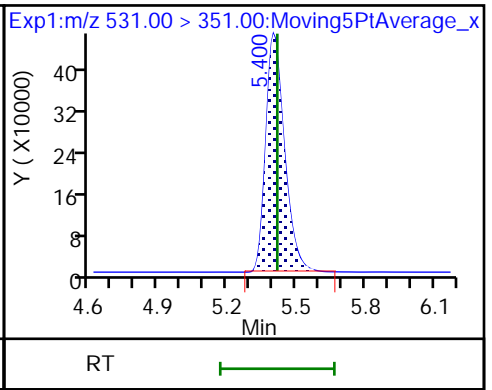
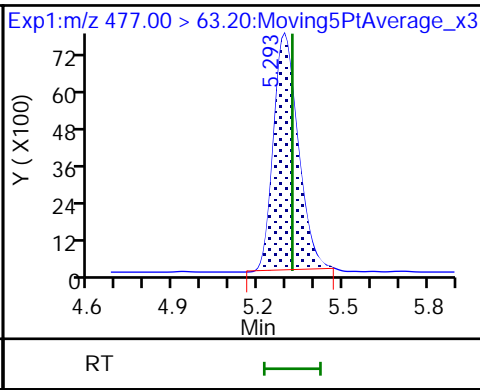
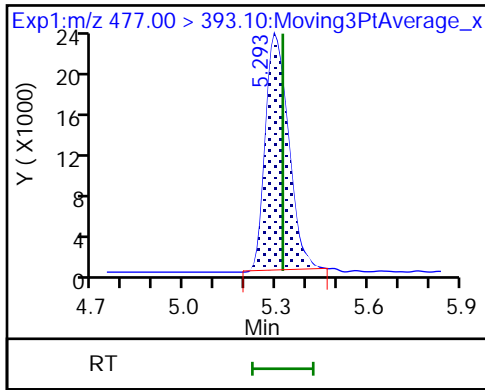




69 8:2 FTCA

69 8:2 FTCA

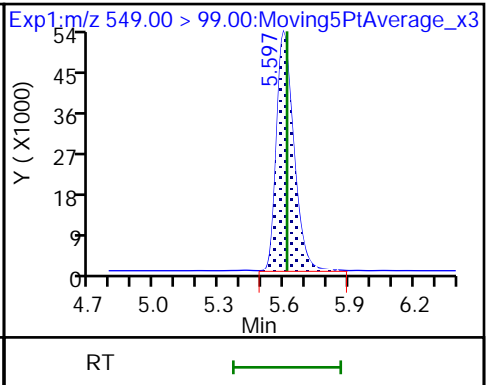
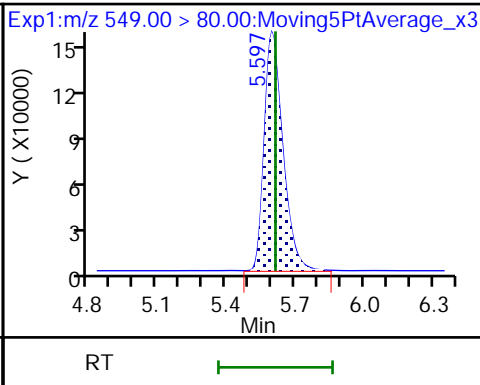
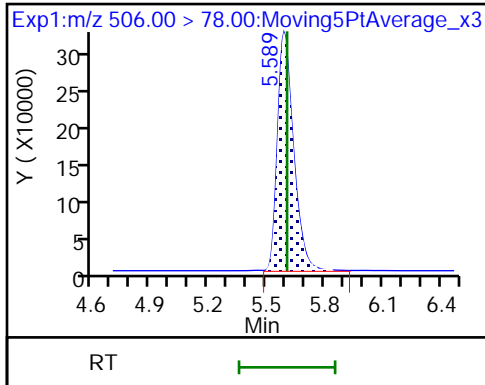
70 9-Chlorohexadecafluoro-3-oxanona



D 72 13C8 FOSA

73 Perfluorononanesulfonic acid

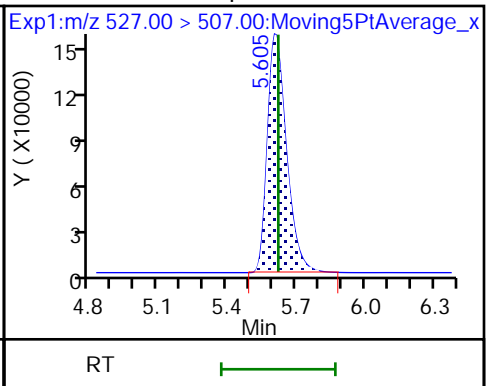
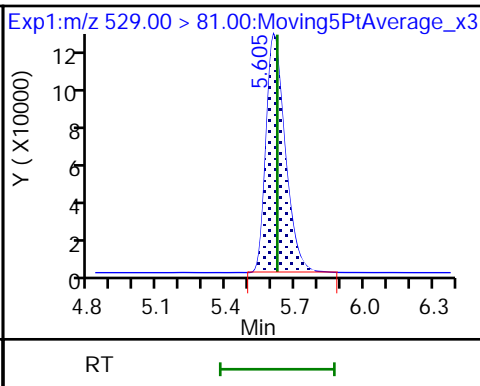
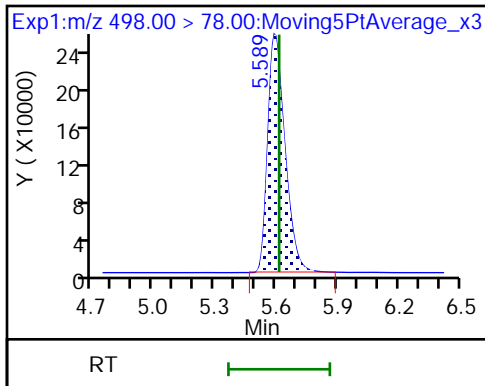
73 Perfluorononanesulfonic acid



71 Perfluorooctanesulfonamide

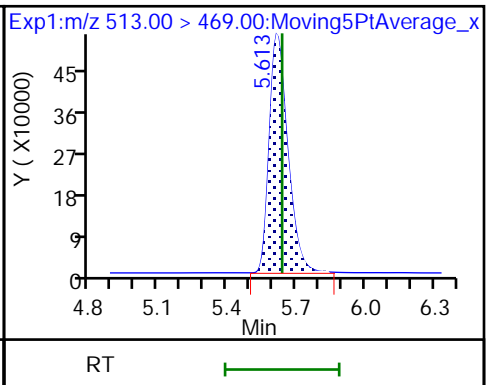
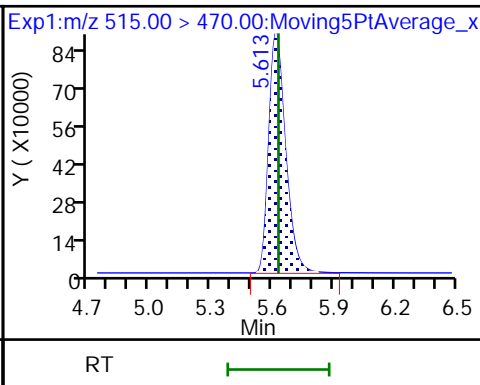
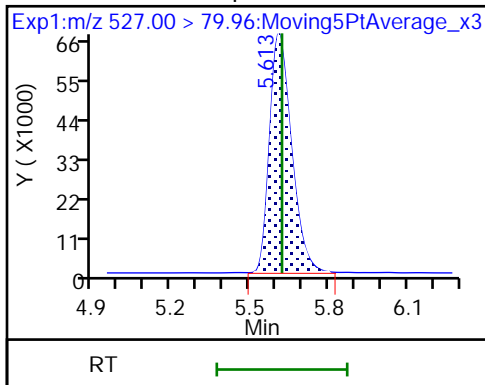
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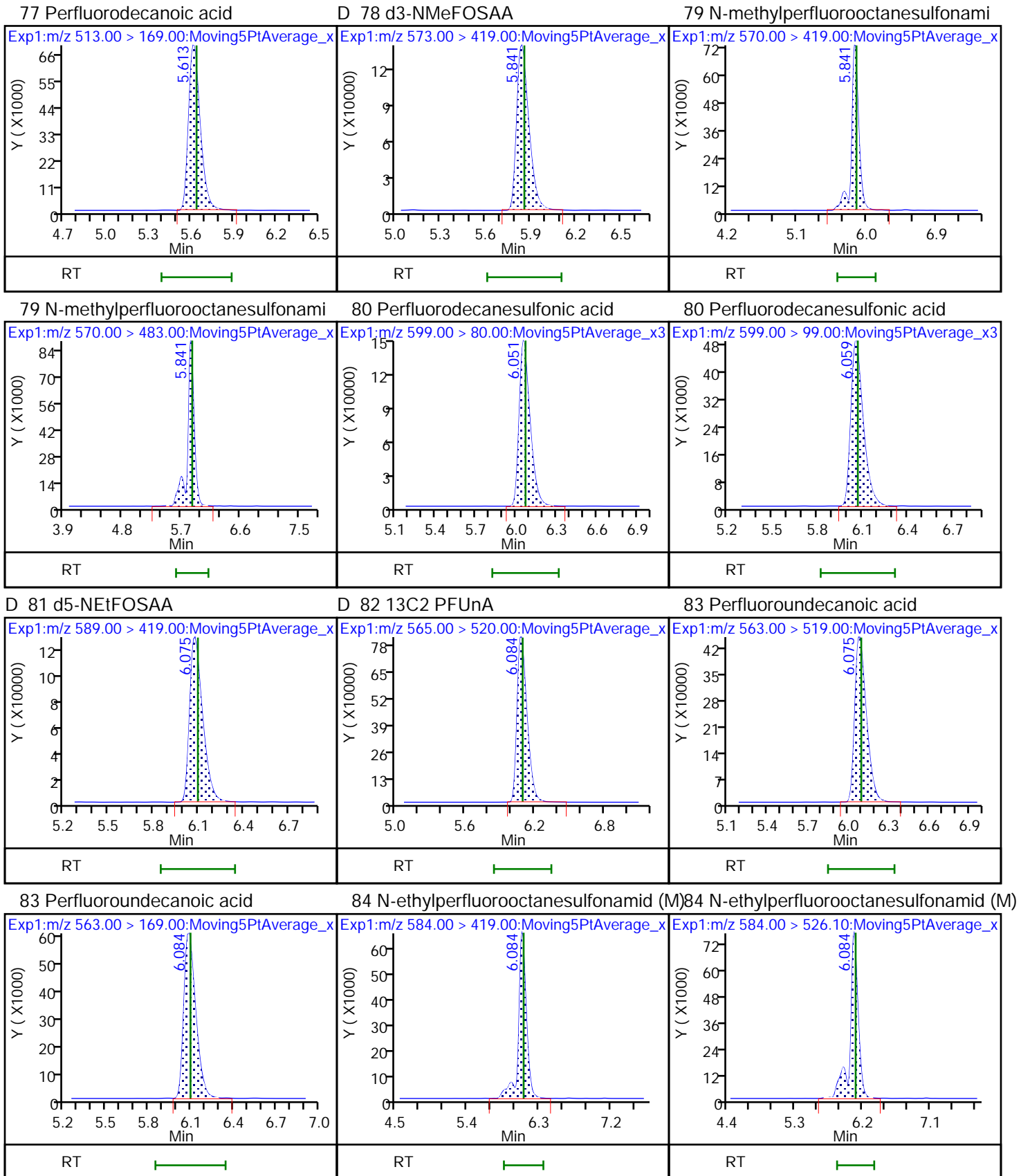
75 1H,1H,2H,2H-perfluorodecanesulfo



75 1H,1H,2H,2H-perfluorodecanesulfo D 76 13C2 PFDA

77 Perfluorodecanoic acid

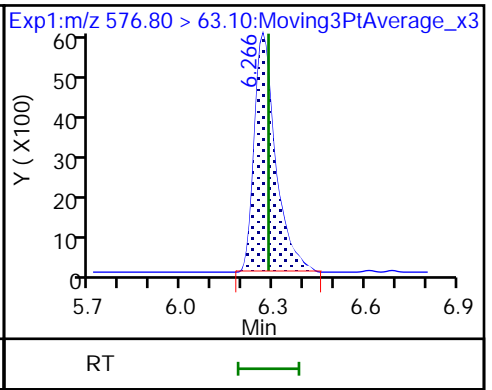
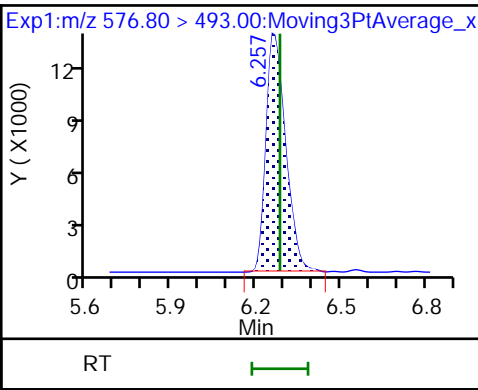
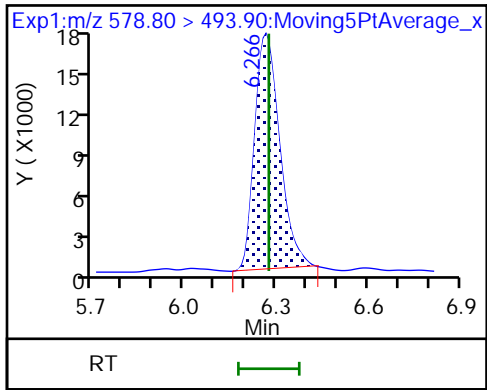




D 91 13C-10:2 FTCA

92 10:2 FTCA

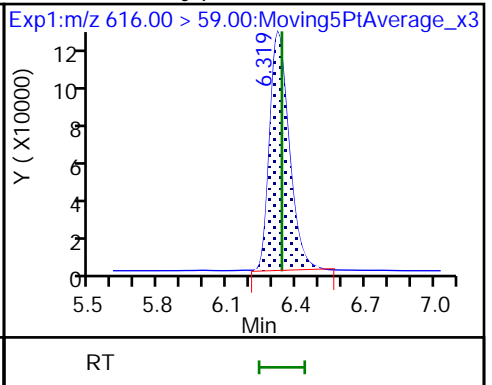
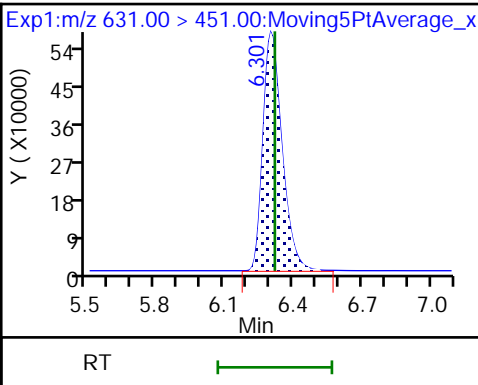
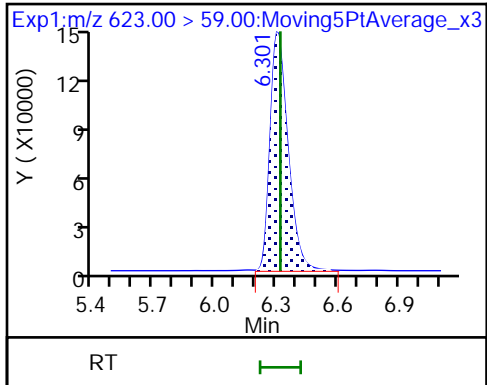
92 10:2 FTCA



D 85 d7-N-MeFOSE-M

93 11-Chloroeicosafuoro-3-oxaundec

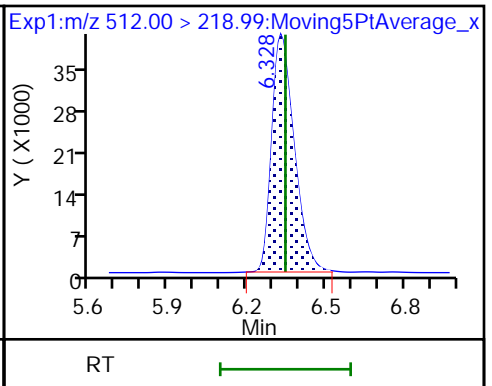
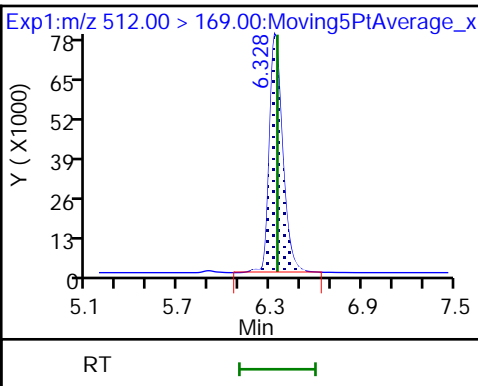
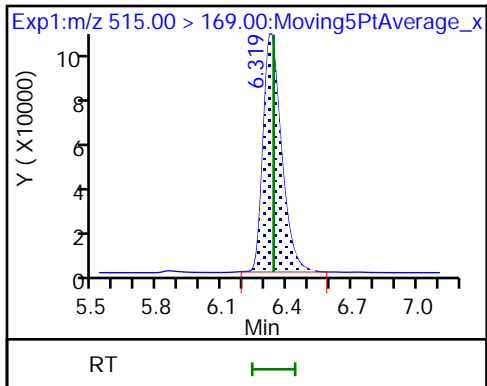
86 2-(N-methylperfluoro-1-octanesul



D 87 d-N-MeFOSA-M

88 NMeFOSA

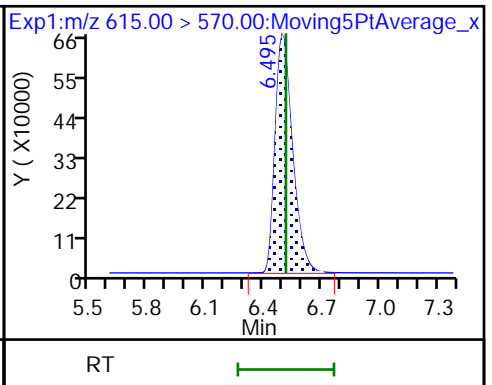
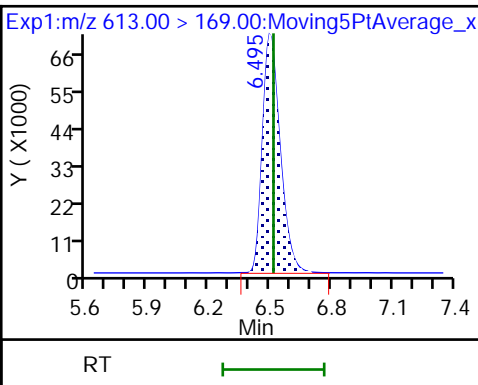
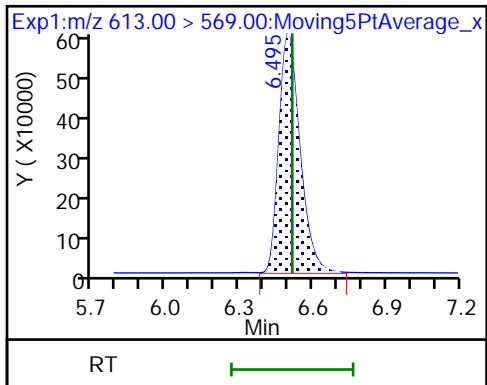
88 NMeFOSA



99 Perfluorododecanoic acid

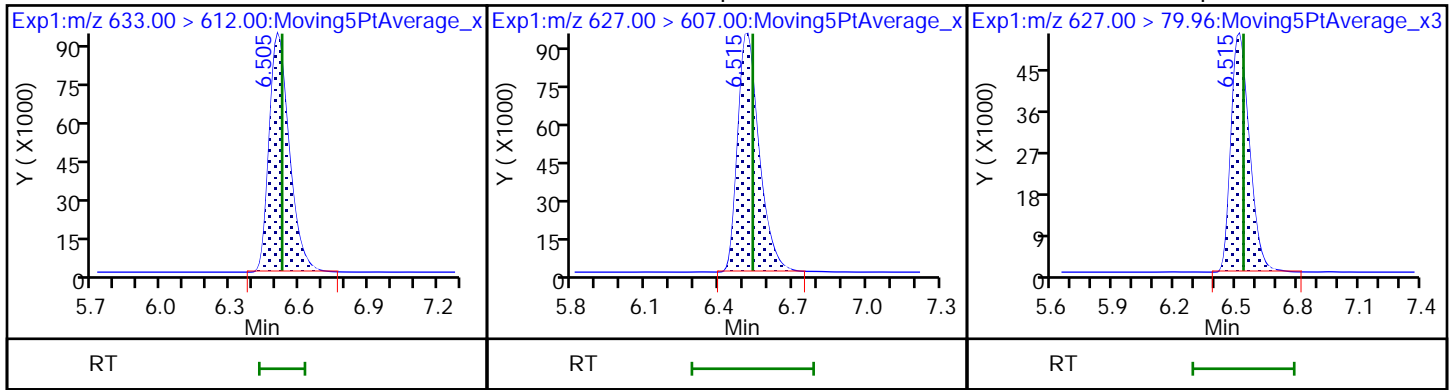
99 Perfluorododecanoic acid

D 98 13C2 PFDa



D 100 13C2 10:2 FTS

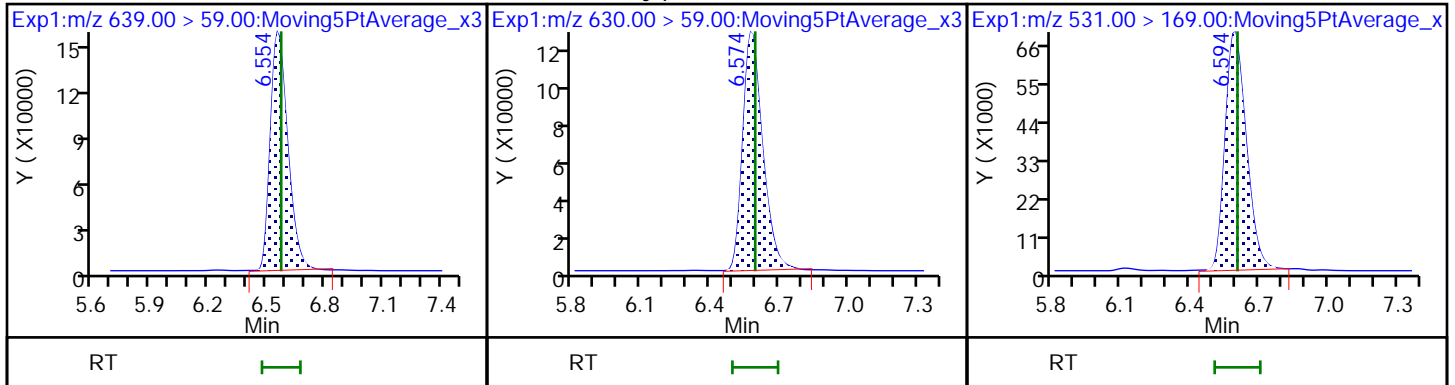
101 1H,1H,2H,2H-perfluorododecanesul 101 1H,1H,2H,2H-perfluorododecanesul



D 94 d9-N-EtFOSE-M

95 2-(N-ethylperfluoro-1-octanesul

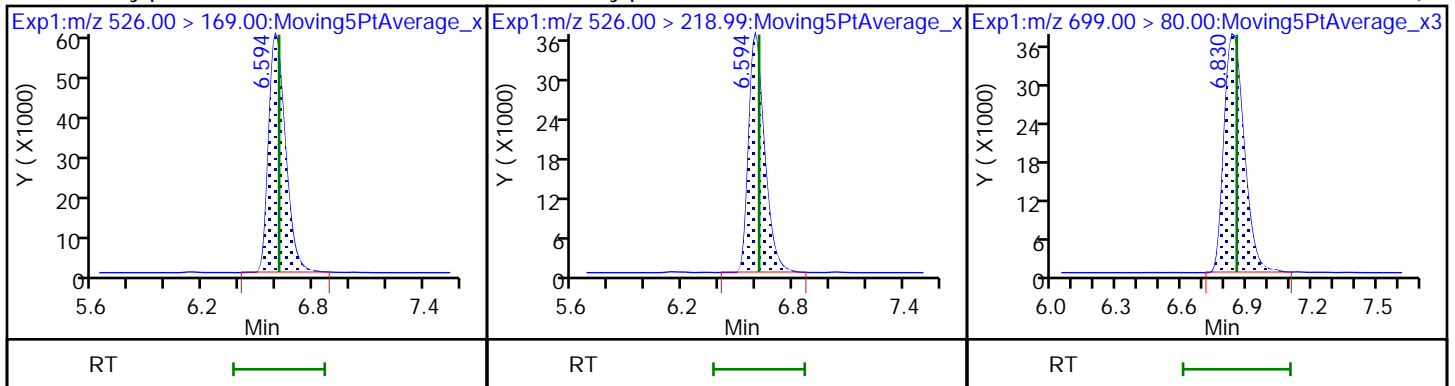
D 96 d-N-EtFOSA-M



97 N-ethylperfluoro-1-octanesulfona

97 N-ethylperfluoro-1-octanesulfona

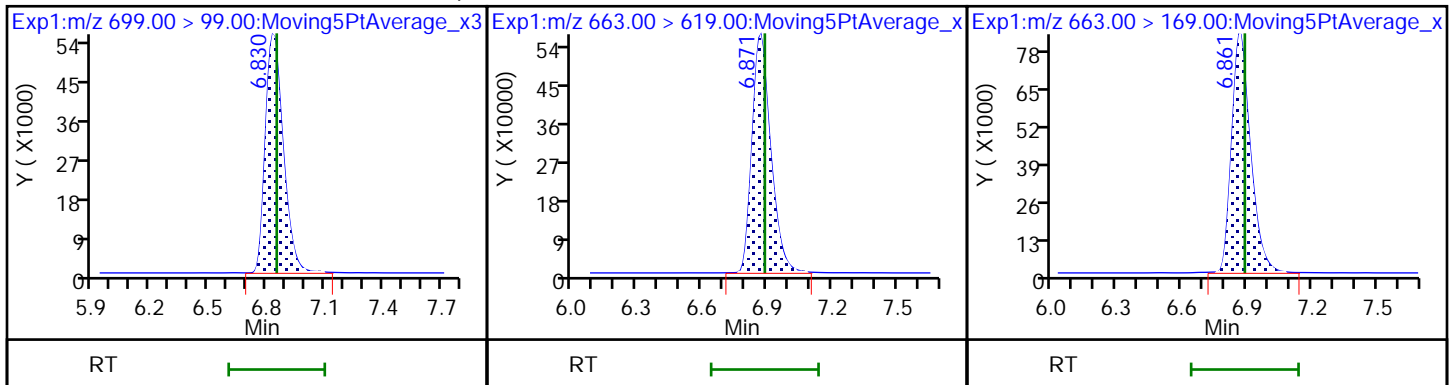
102 Perfluorododecanesulfonic acid (



102 Perfluorododecanesulfonic acid (

103 Perfluorotridecanoic acid

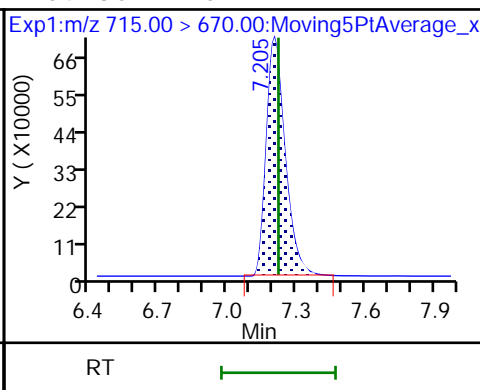
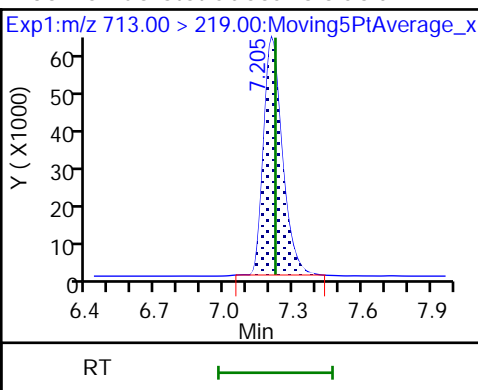
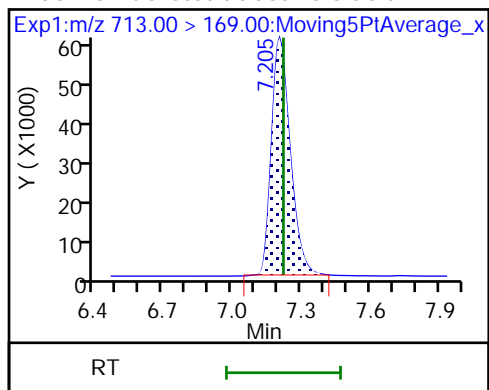
103 Perfluorotridecanoic acid



105 Perfluorotetradecanoic acid

105 Perfluorotetradecanoic acid

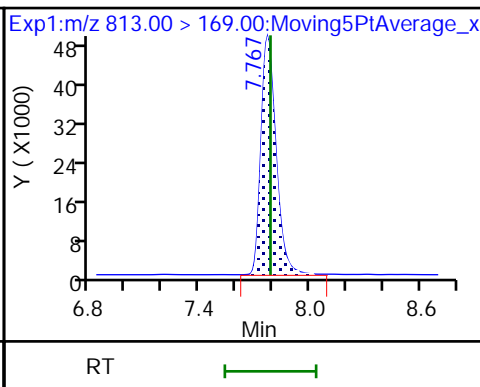
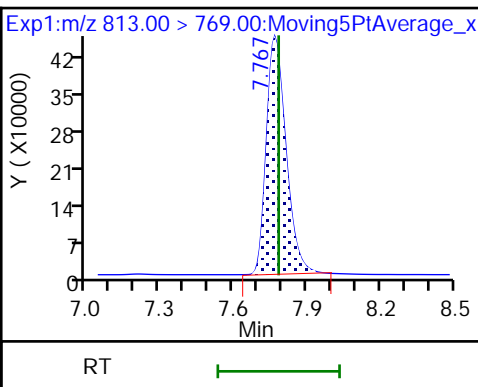
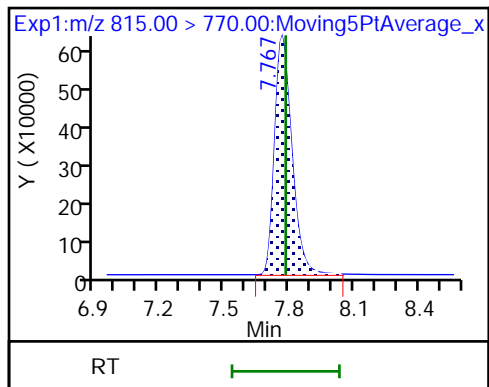
D 104 13C2 PFTeDA



D 106 13C2 PFHxDA

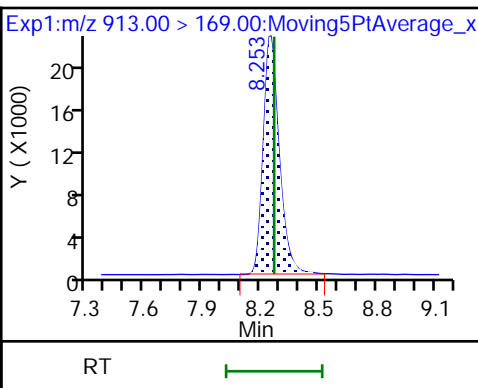
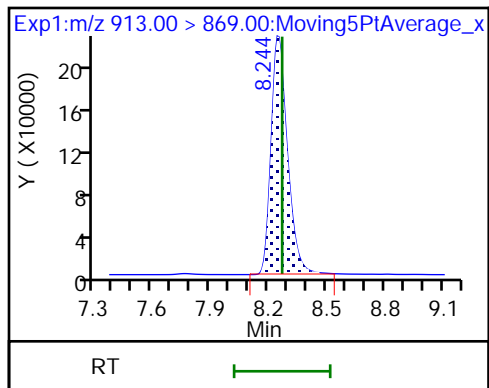
107 Perfluorohexadecanoic acid

107 Perfluorohexadecanoic acid



108 Perfluorooctadecanoic acid

108 Perfluorooctadecanoic acid



Eurofins Sacramento

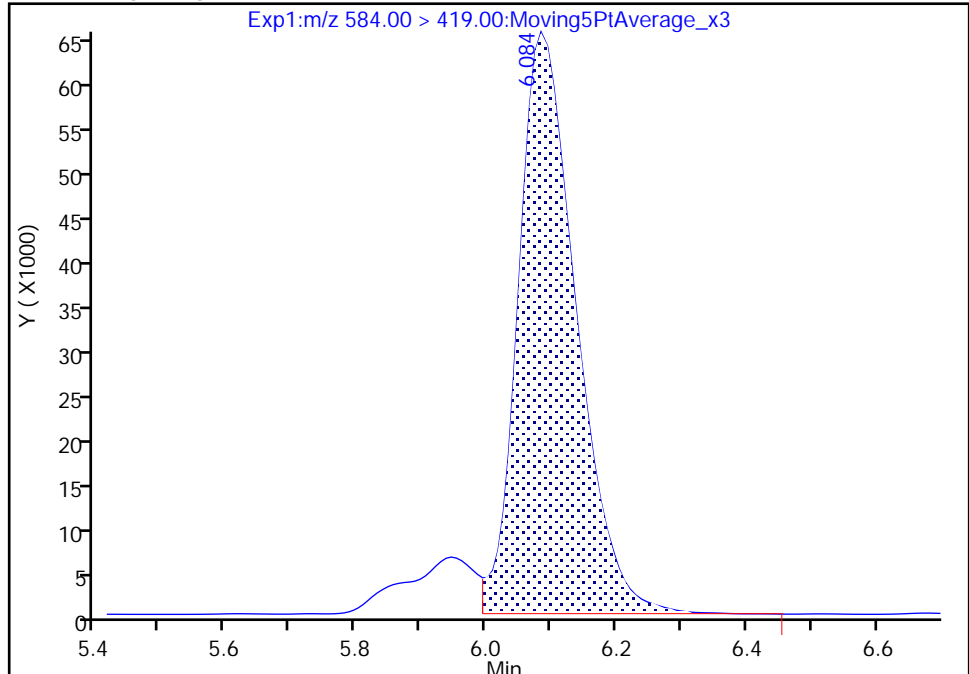
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_037.d
Injection Date: 22-Dec-2022 16:03:54 Instrument ID: A18
Lims ID: LCS 320-641482/2-A
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 21 Worklist Smp#: 23
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

84 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 1

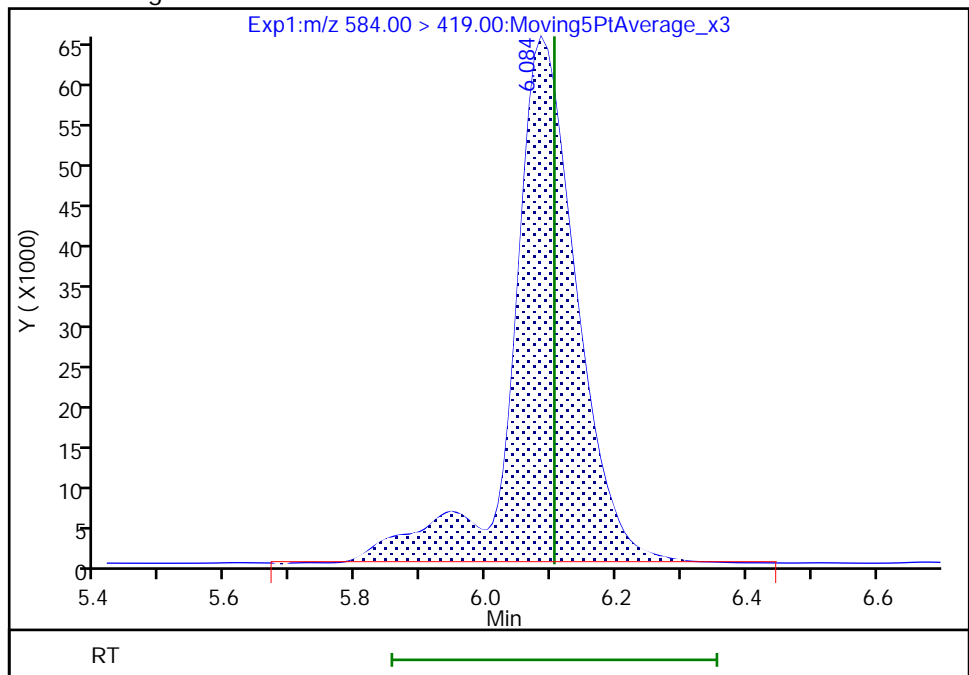
RT: 6.08
Area: 408890
Amount: 0.928045
Amount Units: ng/ml

Processing Integration Results



RT: 6.08
Area: 456139
Amount: 1.035284
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:44:33
Audit Action: Manually Integrated

Audit Reason: Baseline
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3:43 PM

Eurofins Sacramento

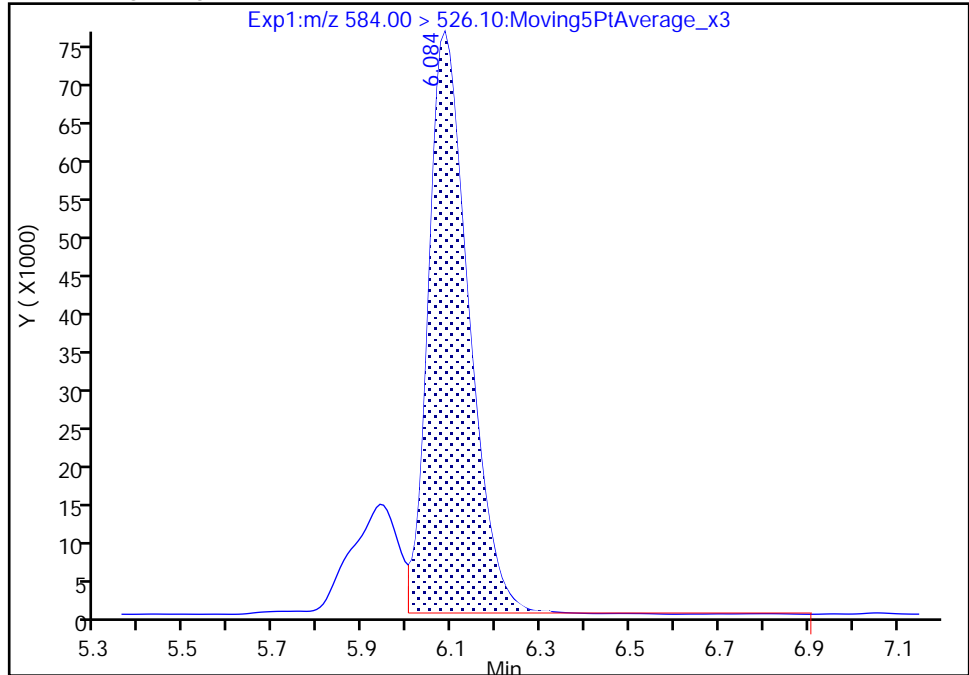
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_037.d
Injection Date: 22-Dec-2022 16:03:54 Instrument ID: A18
Lims ID: LCS 320-641482/2-A
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 21 Worklist Smp#: 23
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

84 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 2

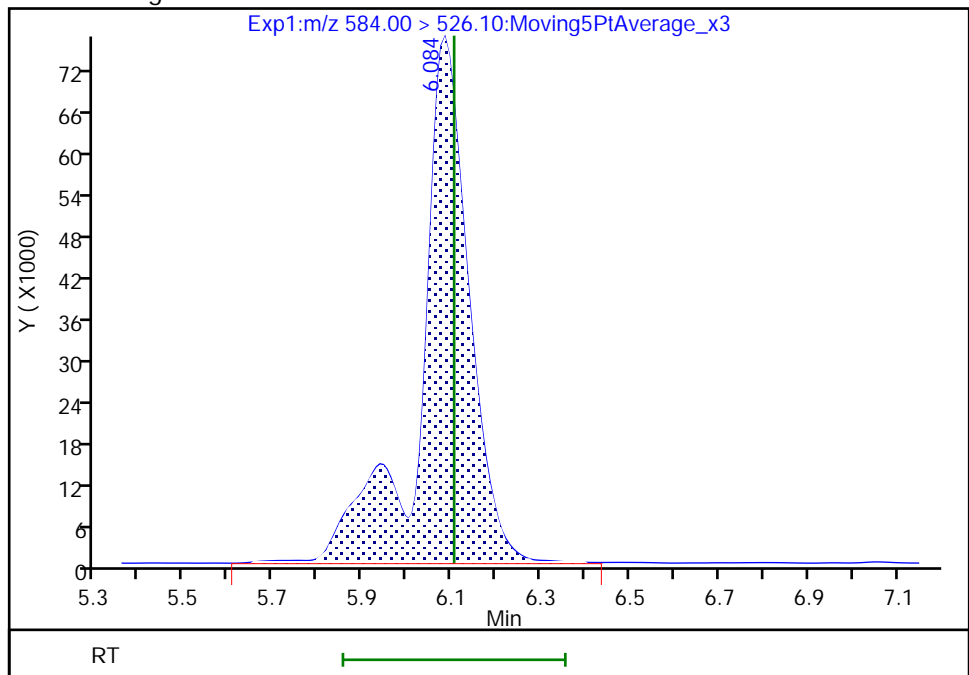
RT: 6.08
Area: 479954
Amount: 0.928045
Amount Units: ng/ml

Processing Integration Results



RT: 6.08
Area: 584569
Amount: 1.035284
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjunair, 23-Dec-2022 12:44:37

Audit Action: Manually Integrated

Audit Reason: Baseline

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3:43 PM

Eurofins Sacramento

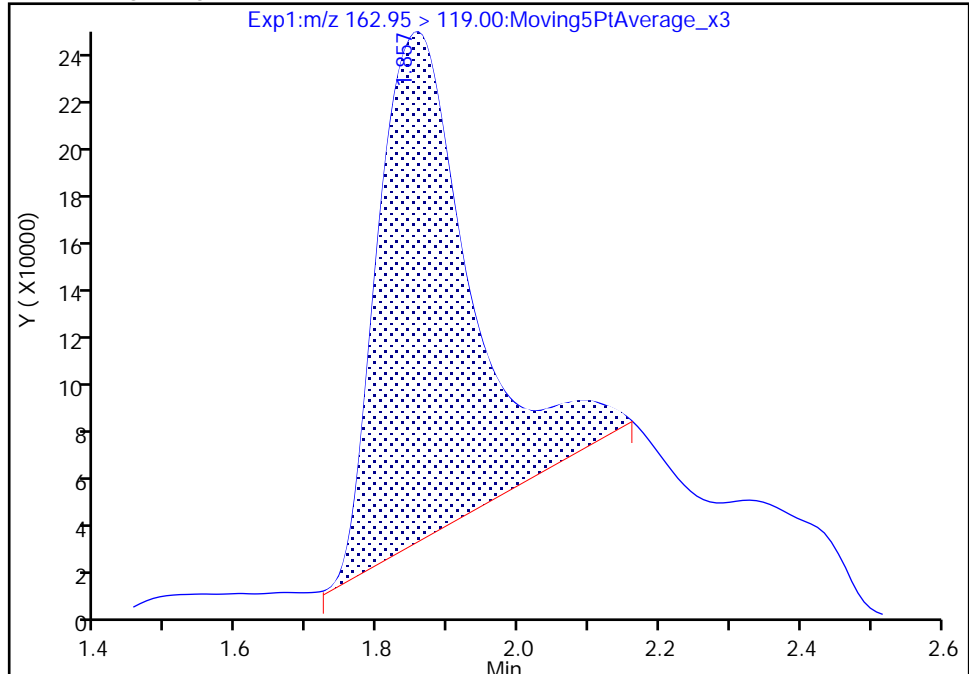
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_037.d
Injection Date: 22-Dec-2022 16:03:54 Instrument ID: A18
Lims ID: LCS 320-641482/2-A
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 21 Worklist Smp#: 23
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

2 PPF Acid, CAS: 422-64-0

Signal: 1

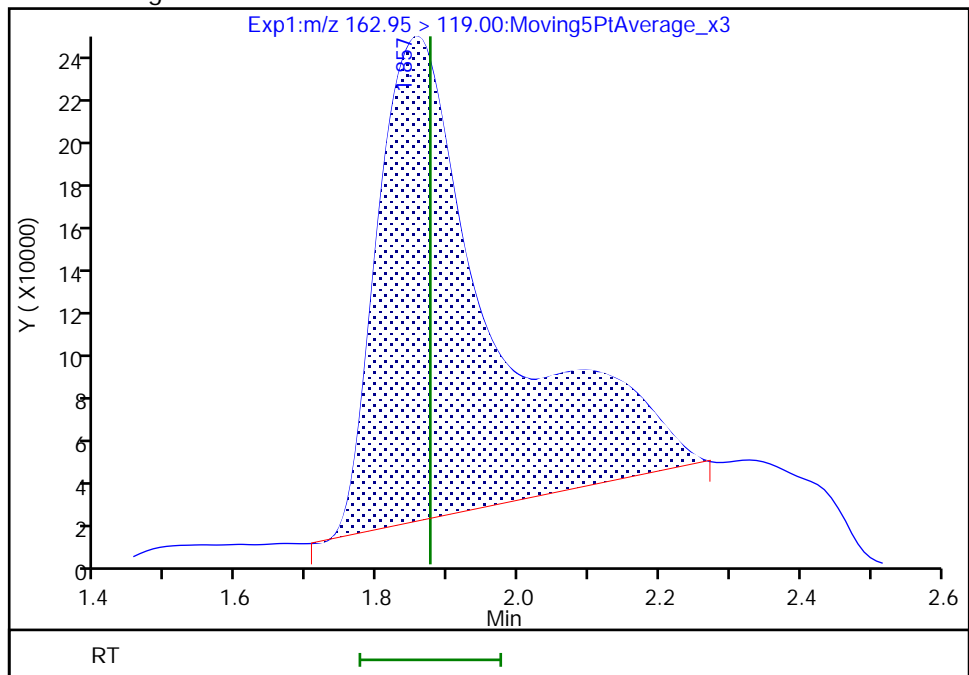
RT: 1.86
Area: 2000536
Amount: 0.651451
Amount Units: ng/ml

Processing Integration Results



RT: 1.86
Area: 2656893
Amount: 0.855600
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:44:08
Audit Action: Manually Integrated

Audit Reason: Baseline
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3:43 PM

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: LCSD 320-641482/3-A

Matrix: Water Lab File ID: 2022.12.21_A18_PFC_A_038.d

Analysis Method: 537 (modified) Date Collected: _____

Extraction Method: 3535 Date Extracted: 12/19/2022 18:17

Sample wt/vol: 1.0 (mL) Date Analyzed: 12/22/2022 16:14

Con. Extract Vol.: 10.0 (mL) Dilution Factor: 1

Injection Volume: 20 (uL) GC Column: Gemini C18 3x50 ID: 3 (mm)

% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N

Cleanup Factor: _____

Analysis Batch No.: 642490 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	9830		1300	600
2706-90-3	Perfluoropentanoic acid (PFPeA)	9610		500	120
307-24-4	Perfluorohexanoic acid (PFHxA)	10300		500	150
375-85-9	Perfluoroheptanoic acid (PFHpA)	10600		500	63
335-67-1	Perfluorooctanoic acid (PFOA)	10400		500	210
375-95-1	Perfluorononanoic acid (PFNA)	9470		500	68
335-76-2	Perfluorodecanoic acid (PFDA)	10700		500	78
2058-94-8	Perfluoroundecanoic acid (PFUnA)	9650		500	280
307-55-1	Perfluorododecanoic acid (PFDoA)	10900		500	140
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	12000		500	330
376-06-7	Perfluorotetradecanoic acid (PFTeA)	9430		500	180
67905-19-5	Perfluoro-n-hexadecanoic acid (PFHxDA)	10200		500	220
16517-11-6	Perfluoro-n-octadecanoic acid (PFODA)	9630		500	240
375-73-5	Perfluorobutanesulfonic acid (PFBS)	9170		500	50
2706-91-4	Perfluoropentanesulfonic acid (PFPeS)	9730		500	75
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	9080		500	140
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)	10400		500	48
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	9490		500	140
68259-12-1	Perfluorononanesulfonic acid (PFNS)	10400		500	93
335-77-3	Perfluorodecanesulfonic acid (PFDS)	10200		500	80
79780-39-5	Perfluorododecanesulfonic acid (PFDoS)	10500		500	240
754-91-6	Perfluorooctanesulfonamide (FOSA)	10000		500	250
2355-31-9	NMeFOSAA	10600		1300	300
2991-50-6	NEtFOSAA	9790		1300	330
757124-72-4	4:2 FTS	9090		500	60
27619-97-2	6:2 FTS	9780		1300	630
39108-34-4	8:2 FTS	9230		500	120
120226-60-0	10:2 FTS	9330		500	170
4151-50-2	NEtFOSA	11000		500	220

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins Sacramento</u>	Job No.: <u>320-95204-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCSD 320-641482/3-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2022.12.21_A18_PFC_A_038.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>12/19/2022 18:17</u>
Sample wt/vol: <u>1.0 (mL)</u>	Date Analyzed: <u>12/22/2022 16:14</u>
Con. Extract Vol.: <u>10.0 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>Gemini C18 3x50</u> ID: <u>3 (mm)</u>
% Moisture: _____ % Solids: _____	GPC Cleanup: (Y/N) <u>N</u>
Cleanup Factor: _____	
Analysis Batch No.: <u>642490</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
31506-32-8	NMeFOSA	10300		500	110
24448-09-7	NMeFOSE	10900		1000	350
1691-99-2	NEtFOSE	10500		500	210
13252-13-6	HFPO-DA (GenX)	9800		1000	380
756426-58-1	9Cl-PF3ONS	10000		500	60
763051-92-9	11Cl-PF3OUdS	9820		500	80
919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	10200		500	100
356-02-5	3:3 FTCA	11500		500	110
914637-49-3	5:3 FTCA	10100		500	83
812-70-4	7:3 FTCA	8770		500	140
53826-12-3	6:2 FTCA	10600		500	240
27854-31-5	8:2 FTCA	7860		500	83
53826-13-4	10:2 FTCA	9090		750	340
133201-07-7	PFECHS	9390		500	110
423-41-6	PFPrS	9660		500	60
151772-58-6	NFDHA	10500		500	160
863090-89-5	PFMBA	10300		500	65
377-73-1	PFMPA	10200		500	70
113507-82-7	PFEESA	9680		500	73
674-13-5	PFMOAA	10900		500	100
801212-59-9	PFPE-1	10400		500	73
39492-90-5	PFO4DA	10400		500	100
39492-89-2	PFO3OA	10800		500	220
39492-88-1	PFO2HxA	11000		500	140
39492-91-6	PFO5DA	10200		500	250
13140-29-9	PMPA	11600		500	85
267239-61-2	PEPA	10900		500	120
422-64-0	PFPrA	8750		500	88
2416366-22-6	R-EVE	9920		500	78
801209-99-4	NVHOS	11400		750	330
773804-62-9	Hydro-EVE Acid	10600		500	60
2416366-21-5	R-PSDCA	10200		750	350

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: LCSD 320-641482/3-A
Matrix: Water Lab File ID: 2022.12.21_A18_PFC_A_038.d
Analysis Method: 537 (modified) Date Collected: _____
Extraction Method: 3535 Date Extracted: 12/19/2022 18:17
Sample wt/vol: 1.0 (mL) Date Analyzed: 12/22/2022 16:14
Con. Extract Vol.: 10.0 (mL) Dilution Factor: 1
Injection Volume: 20 (uL) GC Column: Gemini C18 3x50 ID: 3 (mm)
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 642490 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
749836-20-2	Hydro-PS Acid	10400		500	110

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: LCSD 320-641482/3-A

Matrix: Water Lab File ID: 2022.12.21_A18_PFC_A_038.d

Analysis Method: 537 (modified) Date Collected: _____

Extraction Method: 3535 Date Extracted: 12/19/2022 18:17

Sample wt/vol: 1.0 (mL) Date Analyzed: 12/22/2022 16:14

Con. Extract Vol.: 10.0 (mL) Dilution Factor: 1

Injection Volume: 20 (uL) GC Column: Gemini C18 3x50 ID: 3 (mm)

% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N

Cleanup Factor: _____

Analysis Batch No.: 642490 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL01056	13C8 FOSA	104		25-150
STL00992	13C4 PFBA	101		25-150
STL01893	13C5 PFPeA	103		25-150
STL00993	13C2 PFHxA	99		25-150
STL01892	13C4 PFHpA	101		25-150
STL00990	13C4 PFOA	101		25-150
STL00995	13C5 PFNA	110		25-150
STL00996	13C2 PFDA	98		25-150
STL00997	13C2 PFUnA	104		25-150
STL00998	13C2 PFDoA	97		25-150
STL02116	13C2 PFTeDA	97		25-150
STL02115	13C2 PFHxDA	90		25-150
STL02337	13C3 PFBS	96		25-150
STL00994	18O2 PFHxS	96		25-150
STL00991	13C4 PFOS	94		25-150
STL02118	d3-NMeFOSAA	96		25-150
STL02117	d5-NEtFOSAA	100		25-150
STL02395	M2-4:2 FTS	95		25-150
STL02279	M2-6:2 FTS	97		25-150
STL02280	M2-8:2 FTS	96		25-150
STL02814	13C2 10:2 FTS	102		25-150
STL02275	d-N-MeFOSA-M	99		20-150
STL02282	d-N-EtFOSA-M	99		20-150
STL02277	d7-N-MeFOSE-M	102		10-120
STL02278	d9-N-EtFOSE-M	110		10-120
STL02255	13C3 HFPO-DA	107		25-150
STL02802	13C-6:2 FTCA	102		25-150
STL02803	13C-8:2 FTCA	115		25-150
STL02804	13C-10:2 FTCA	106		25-150

Eurofins Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_038.d
 Lims ID: LCSD 320-641482/3-A
 Client ID:
 Sample Type: LCSD
 Inject. Date: 22-Dec-2022 16:14:01 ALS Bottle#: 22 Worklist Smp#: 24
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: lcsd 320-641482/3-a
 Misc. Info.: Plate: 3 Rack: 1
 Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
 Method: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\PFAS+_A18.m
 Limit Group: LC PFC ICAL
 Last Update: 23-Dec-2022 12:45:51 Calib Date: 21-Dec-2022 13:11:20
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromfs\Sacramento\ChromData\A18\20221221-153184.b\2022.12.21_A18_PFC+_ICAL_015.d
 Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
 Process Host: CTX1657

First Level Reviewer: sanjumnair

Date: 23-Dec-2022 12:45:51

Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_035.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 PPF Acid										M
162.95 > 119.00	1.858	1.875	-0.017	0.696	2754294	0.8752		90.2	177	M
3 PFMOAA										
179.00 > 84.90	2.376	2.386	-0.010	0.890	2459008	1.09		109	549	
5 R-EVE										
405.00 > 217.00	2.560	2.568	-0.008	0.959	1370049	0.99		99.2	22357	
D 8 13C4 PFBA										
217.00 > 172.00	2.670	2.678	-0.008	0.584	5047641	1.26		101	16302	
7 Perfluorobutanoic acid										
212.90 > 169.00	2.678	2.678	0.0	1.003	4412277	0.9829		98.3	154	
10 PMPA										
229.00 > 185.00	2.741	2.750	-0.009	1.027	5361576	1.16		116	3253	
11 PFPrS										
249.10 > 80.00	2.750	2.750	0.0	0.892	2139291	0.9660		105	13180	
12 NVHOS										
297.00 > 135.00	2.768	2.777	-0.009	1.037	133137	1.14		114	2287	
13 PFCA F										
229.00 > 85.00	2.805	2.814	-0.009	0.920	2463113	1.02		102	11887	
14 PFO2HxA										
245.00 > 85.00	2.953	2.953	0.0	0.969	558347	1.10		110	2011	
D 16 13C5 PFPeA										
267.90 > 223.00	3.048	3.048	0.0	0.667	4611240	1.28		103	25492	
15 Perfluoropentanoic acid										
262.90 > 219.00	3.048	3.048	0.0	1.000	3705374	0.9614		96.1	5882	
17 3:3 FTCA										
241.00 > 177.10	3.048	3.057	-0.009	0.988	208711	1.15	Target=1.30	115	2331	
241.00 > 116.90	3.048	3.057	-0.009	0.988	156679		1.33(0.65-1.95)		1197	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
19 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.085	3.085	0.0	1.000	2131906	0.9165	Target=2.29 2.27(1.14-3.43)	103	11837	
298.90 > 99.00	3.085	3.085	0.0	1.000	939803				4450	
D 18 13C3 PFBS										
301.90 > 80.00	3.085	3.085	0.0	0.675	2759439	1.12		95.8	16433	
20 PEPA										
278.90 > 234.90	3.151	3.152	-0.001	1.034	4460501	1.09		109	946	
21 PFECA A										
278.95 > 84.90	3.170	3.171	-0.001	1.040	4210600	1.03		103	35002	
22 PES										
314.80 > 135.00	3.268	3.268	0.0	1.059	7486535	0.9681		109	72673	
24 PFECA B										
295.20 > 201.00	3.403	3.403	0.0	0.977	710284	1.05		105	11238	
26 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.430	3.430	0.0	1.000	1160882	0.9092	Target=2.02 1.92(1.01-3.03)	96.9	25673	
327.00 > 79.96	3.430	3.430	0.0	1.000	603223				7093	
D 25 M2-4:2 FTS										
329.00 > 81.00	3.430	3.430	0.0	0.750	640854	1.11		94.9	3757	
28 Perfluorohexanoic acid										
313.00 > 269.00	3.483	3.483	0.0	1.000	3790601	1.03	Target=13.57 13.10(6.78-20.35)	103	4542	
313.00 > 119.00	3.483	3.483	0.0	1.000	289468				2661	
D 27 13C2 PFHxA										
315.00 > 270.00	3.483	3.483	0.0	0.762	4885635	1.24		99.0	35539	
29 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.509	3.510	-0.001	1.138	1853192	0.9730	Target=3.16 3.13(1.58-4.74)	104	14724	
349.00 > 99.00	3.509	3.510	-0.001	1.138	591466				11470	
30 PFO3OA										
311.10 > 85.20	3.564	3.555	0.009	1.023	232997	1.08		108	3458	
31 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.648	3.648	0.0	1.000	146721	0.9803	Target=0.87 0.88(0.43-1.30)	98.0	8496	
285.00 > 185.00	3.648	3.648	0.0	1.000	167118				1717	
D 32 13C3 HFPO-DA										
287.00 > 169.00	3.648	3.648	0.0	0.798	177022	1.33		107	7837	
33 R-PSDCA										
397.00 > 217.00	3.963	3.963	0.0	0.988	1271543	1.02		102	23789	
D 35 13C4 PFHpA										
367.00 > 322.00	4.009	4.009	0.0	0.877	5295547	1.27		101	33420	
36 Perfluoroheptanoic acid										
363.00 > 319.00	4.009	4.009	0.0	1.000	4096321	1.06	Target=3.79 3.75(1.89-5.68)	106	5834	
363.00 > 169.00	4.009	4.009	0.0	1.000	1091546				10327	
38 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.018	4.027	-0.009	0.998	1371140	0.9081	Target=3.42 3.25(1.71-5.14)	99.6	10962	
399.00 > 99.00	4.027	4.027	0.0	1.000	421612				2455	
D 37 18O2 PFHxS										
403.00 > 84.00	4.027	4.027	0.0	0.881	1854403	1.13		95.6	21223	
34 Hydro-EVE Acid										
427.00 > 282.90	4.052	4.052	0.0	1.011	6243789	1.06		106	21151	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
39 Hydro-PS Acid										
463.00 > 263.00	4.078	4.077	0.001	1.017	5446887	1.04		104	4475	
41 5:3 FTCA										
340.88 > 236.90	4.086	4.086	0.0	0.979	661750	1.01	Target=1.10	101	5903	
340.88 > 216.90	4.086	4.086	0.0	0.979	609260		1.09(0.55-1.65)		6603	
40 DONA										
377.00 > 251.00	4.086	4.094	-0.008	0.800	7057078	1.02	Target=2.28	108	28816	
377.00 > 85.00	4.086	4.094	-0.008	0.800	3193384		2.21(1.14-3.43)		922	
42 PFECA G										
378.90 > 184.90	4.112	4.120	-0.008	0.986	1981740	1.04		104	18395	
D 46 13C-6:2 FTCA										
378.88 > 293.90	4.172	4.171	0.001	0.913	243818	1.27		102	1027	
45 6:2 FTCA										
377.10 > 313.10	4.172	4.171	0.001	1.000	54020	1.06	Target=0.68	106	1588	
377.10 > 63.00	4.172	4.171	0.001	1.000	67647		0.80(0.34-1.01)		1967	
47 PFO4DA										
376.90 > 85.00	4.277	4.277	0.0	1.067	244716	1.04		104	0.6	
51 PFECHS										
460.80 > 380.90	4.490	4.490	0.0	0.983	3796604	0.9385	Target=2.06	102	21417	
460.80 > 98.90	4.490	4.490	0.0	0.983	1785958		2.13(1.03-3.09)		22273	
53 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.535	4.535	0.0	1.000	1164331	0.9783	Target=2.58	103	17900	
427.00 > 79.96	4.535	4.535	0.0	1.000	479789		2.43(1.29-3.87)		5666	
D 52 M2-6:2 FTS										
429.00 > 81.00	4.535	4.535	0.0	0.992	697381	1.15		96.5	12858	
D 56 13C4 PFOA										
417.00 > 372.00	4.570	4.569	0.001	1.000	5747311	1.26		101	14473	
58 Perfluorooctanoic acid										M
413.00 > 369.00	4.570	4.569	0.001	1.000	4481152	1.04	Target=2.58	104	3137	M
413.00 > 169.00	4.570	4.569	0.001	1.000	1544285		2.90(1.29-3.87)		7285	M
* 55 13C2 PFOA										
415.00 > 370.00	4.570	4.569	0.001		5658037	1.25			21472	
57 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.570	4.578	-0.008	0.895	1294226	1.04	Target=4.92	109	15106	
449.00 > 99.00	4.570	4.578	-0.008	0.895	261052		4.96(2.46-7.37)		5644	
59 TAF										
442.90 > 85.00	4.983	4.983	0.0	1.090	174988	1.02		102	4422	
D 61 13C4 PFOS										
503.00 > 80.00	5.109	5.116	-0.007	1.118	1247191	1.13		94.4	7562	
62 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.109	5.116	-0.007	1.000	1026168	0.9486	Target=4.79	102	2163	
499.00 > 99.00	5.109	5.116	-0.007	1.000	214098		4.79(2.40-7.19)		3764	
D 64 13C5 PFNA										
468.00 > 423.00	5.116	5.123	-0.007	1.119	6136198	1.37		110	37708	
63 Perfluorononanoic acid										
463.00 > 419.00	5.123	5.123	0.0	1.001	4033380	0.9474	Target=7.77	94.7	5076	
463.00 > 169.00	5.123	5.123	0.0	1.001	547284		7.37(3.89-11.66)		6348	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
65 7:3 FTCA										
441.00 > 337.00	5.246	5.246	0.0	0.988	763934	0.8768	Target=1.19	87.7	2943	
441.00 > 317.00	5.246	5.246	0.0	0.988	656014		1.16(0.60-1.79)		3115	
D 68 13C-8:2 FTCA										
478.85 > 393.90	5.311	5.312	-0.001	1.162	205735	1.43		115	963	
69 8:2 FTCA										
477.00 > 393.10	5.302	5.321	-0.019	0.998	130979	0.7859	Target=2.60	78.6	603	
477.00 > 63.20	5.302	5.321	-0.019	0.998	45644		2.87(1.30-3.90)		1954	
70 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	5.417	5.417	0.0	1.060	2612558	1.00		108	22199	
D 72 13C8 FOSA										
506.00 > 78.00	5.605	5.605	0.0	1.226	1904428	1.30		104	11409	
73 Perfluorononanesulfonic acid										
549.00 > 80.00	5.613	5.613	0.0	1.099	843759	1.04	Target=2.91	109	12914	
549.00 > 99.00	5.613	5.613	0.0	1.099	280063		3.01(1.46-4.37)		6258	
71 Perfluorooctanesulfonamide										
498.00 > 78.00	5.605	5.613	-0.008	1.000	1457964	1.00		100	12827	
D 74 M2-8:2 FTS										
529.00 > 81.00	5.621	5.621	0.0	1.230	705064	1.15		96.1	10362	
75 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	5.621	5.621	0.0	1.000	892829	0.9229	Target=2.30	96.1	15674	
527.00 > 79.96	5.621	5.621	0.0	1.000	390924		2.28(1.15-3.45)		5774	
D 76 13C2 PFDA										
515.00 > 470.00	5.629	5.630	-0.001	1.232	5304457	1.23		98.3	39964	
77 Perfluorodecanoic acid										
513.00 > 469.00	5.629	5.638	-0.009	1.000	2988146	1.07	Target=7.97	107	6845	
513.00 > 169.00	5.629	5.638	-0.009	1.000	380067		7.86(3.99-11.96)		6738	
D 78 d3-NMeFOSAA										
573.00 > 419.00	5.857	5.858	-0.001	1.282	716617	1.20		95.8	3529	
79 N-methylperfluorooctanesulfonami										
570.00 > 419.00	5.857	5.866	-0.009	1.000	481330	1.06	Target=0.75	106	6184	
570.00 > 483.00	5.857	5.866	-0.009	1.000	641505		0.75(0.37-1.12)		6736	
80 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.067	6.067	0.0	1.188	773804	1.02	Target=3.02	106	22885	
599.00 > 99.00	6.067	6.067	0.0	1.188	261450		2.96(1.51-4.53)		7678	
D 81 d5-NEtFOSAA										
589.00 > 419.00	6.085	6.095	-0.010	1.331	750938	1.25		100	2561	
D 82 13C2 PFUnA										
565.00 > 520.00	6.095	6.095	0.0	1.334	5260573	1.30		104	26458	
83 Perfluoroundecanoic acid										
563.00 > 519.00	6.095	6.095	0.0	1.000	2775592	0.9645	Target=8.46	96.5	12319	
563.00 > 169.00	6.095	6.095	0.0	1.000	354724		7.82(4.23-12.69)		8468	
84 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	6.095	6.105	-0.010	1.002	442245	0.9786	Target=0.77	97.9	5716	M
584.00 > 526.10	6.095	6.105	-0.010	1.002	594347		0.74(0.38-1.15)		5575	M
D 91 13C-10:2 FTCA										
578.80 > 493.90	6.275	6.275	0.0	1.373	106903	1.33		106	528	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
92 10:2 FTCA										
576.80 > 493.00	6.275	6.284	-0.009	1.000	74095	0.9092	Target=2.22	90.9	258	
576.80 > 63.10	6.275	6.284	-0.009	1.000	30034		2.47(1.11-3.34)		175	
D 85 d7-N-MeFOSE-M										
623.00 > 59.00	6.319	6.319	0.0	1.383	914428	1.27		102	5566	
93 11-Chloroeicosafuoro-3-oxaundec										
631.00 > 451.00	6.319	6.319	0.0	1.237	3261669	0.9818		104	20278	
86 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	6.337	6.337	0.0	1.003	782562	1.09		109	4126	
D 87 d-N-MeFOSA-M										
515.00 > 169.00	6.337	6.337	0.0	1.387	590246	1.24		99.1	2559	
88 NMeFOSA										
512.00 > 169.00	6.346	6.346	0.0	1.001	471412	1.03	Target=2.03	103	1825	
512.00 > 218.99	6.346	6.346	0.0	1.001	224836		2.10(1.02-3.05)		2173	
99 Perfluorododecanoic acid										
613.00 > 569.00	6.515	6.515	0.0	1.000	4070150	1.09	Target=7.79	109	8711	
613.00 > 169.00	6.515	6.515	0.0	1.000	504236		8.07(3.90-11.69)		11953	
D 98 13C2 PFDaA										
615.00 > 570.00	6.515	6.515	0.0	1.426	5392881	1.21		96.9	18650	
D 100 13C2 10:2 FTS										
633.00 > 612.00	6.525	6.525	0.0	1.428	702143	1.23		102	11616	
101 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	6.525	6.535	-0.010	1.000	706589	0.9326	Target=1.65	96.5	6839	
627.00 > 79.96	6.525	6.535	-0.010	1.000	404046		1.75(0.82-2.47)		11118	
D 94 d9-N-EtFOSE-M										
639.00 > 59.00	6.565	6.575	-0.010	1.436	1145824	1.38		110	4762	
95 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	6.585	6.595	-0.010	1.003	916180	1.05		105	8336	
D 96 d-N-EtFOSA-M										
531.00 > 169.00	6.604	6.605	-0.001	1.445	550629	1.24		99.3	1696	
97 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	6.614	6.615	-0.001	1.002	450543	1.10	Target=1.86	110	4371	
526.00 > 218.99	6.614	6.615	-0.001	1.002	248655		1.81(0.93-2.79)		2414	
102 Perfluorododecanesulfonic acid (
699.00 > 80.00	6.851	6.852	-0.001	1.341	274613	1.05	Target=0.78	109	5096	
699.00 > 99.00	6.851	6.852	-0.001	1.341	406033		0.68(0.39-1.16)		6702	
103 Perfluorotridecanoic acid										
663.00 > 619.00	6.889	6.889	0.0	1.057	4055285	1.20	Target=8.14	120	8141	
663.00 > 169.00	6.889	6.889	0.0	1.057	577555		7.02(4.07-12.21)		6619	
105 Perfluorotetradecanoic acid										
713.00 > 169.00	7.222	7.222	0.0	1.000	347351	0.9427	Target=0.98	94.3	3072	
713.00 > 219.00	7.213	7.222	-0.009	0.999	386322		0.90(0.49-1.47)		3652	
D 104 13C2 PFTeDA										
715.00 > 670.00	7.222	7.222	0.0	1.580	4692291	1.22		97.2	6254	
D 106 13C2 PFHxDA										
815.00 > 770.00	7.783	7.784	-0.001	1.703	3781336	1.13		90.4	5041	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
107 Perfluorohexadecanoic acid										
813.00 > 769.00	7.783	7.784	-0.001	1.000	2667952	1.02	Target=8.57	102	2935	
813.00 > 169.00	7.783	7.784	-0.001	1.000	296773		8.99(4.28-12.85)		3599	
108 Perfluorooctadecanoic acid										
913.00 > 869.00	8.261	8.269	-0.008	1.061	1389942	0.9628	Target=10.47	96.3	1578	
913.00 > 169.00	8.261	8.269	-0.008	1.061	137823		10.08(5.24-15.71)		1983	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Eurofins Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_038.d

Injection Date: 22-Dec-2022 16:14:01

Instrument ID: A18

Lims ID: LCSD 320-641482/3-A

Client ID:

Operator ID: TAISACA18-PC\A-18

ALS Bottle#: 22

Worklist Smp#: 24

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

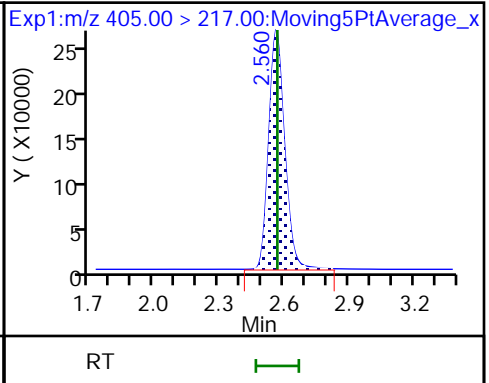
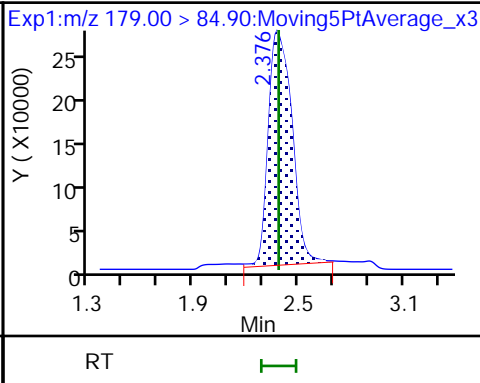
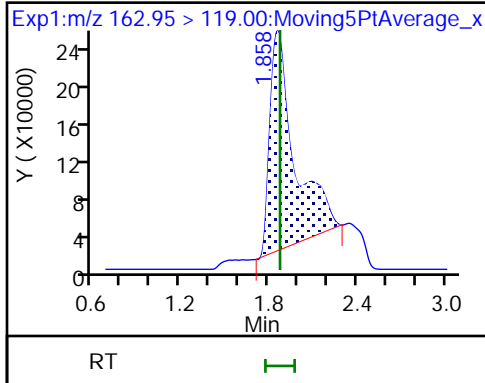
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3 PFMOAA

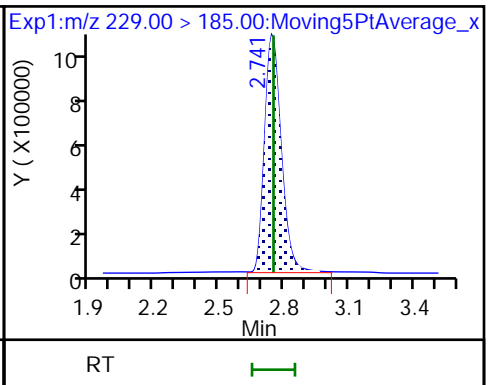
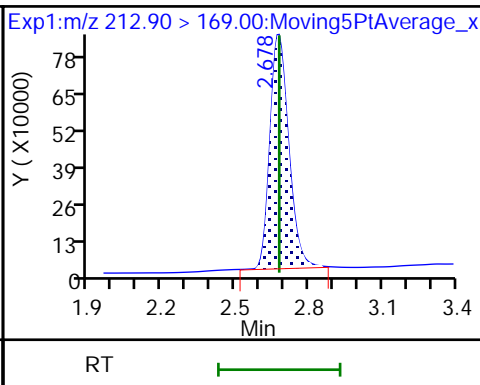
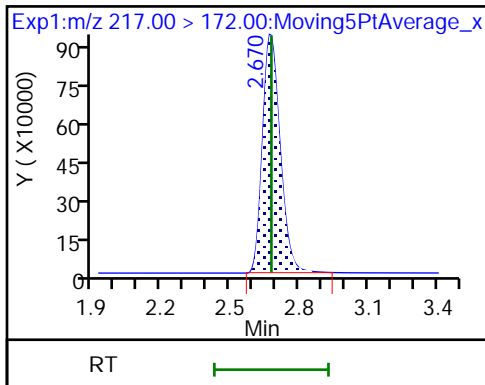
5 R-EVE



D 8 13C4 PFBA

7 Perfluorobutanoic acid

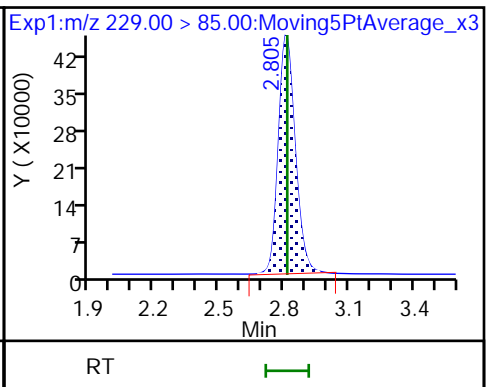
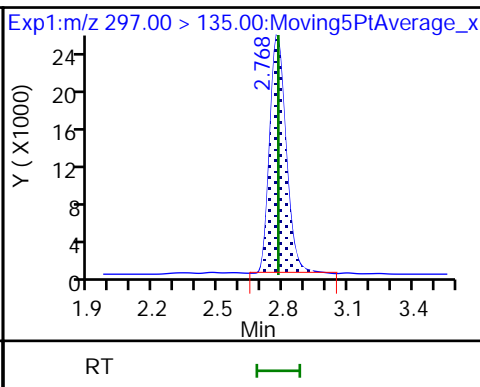
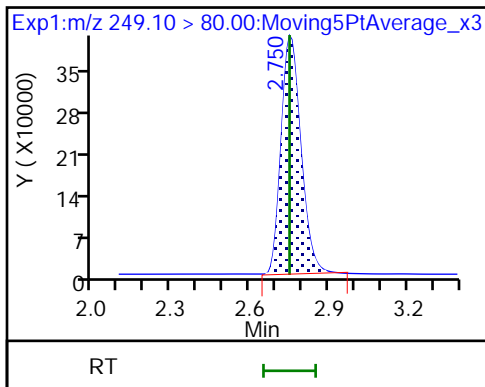
10 PMPA



11 PFPrS

12 NVHOS

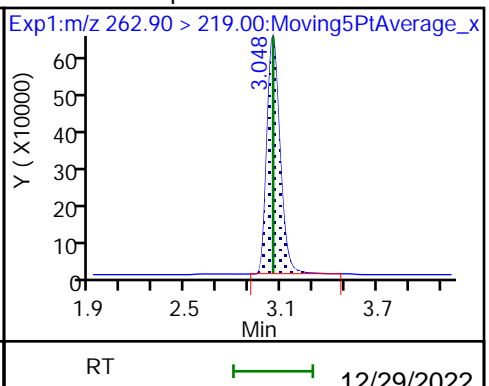
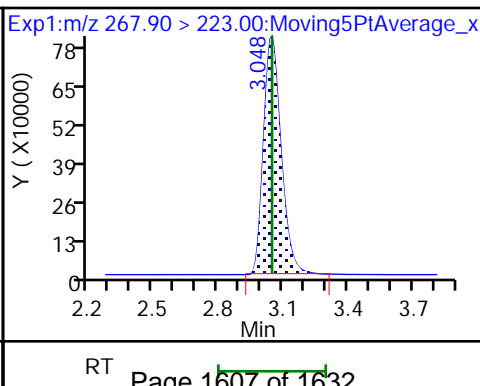
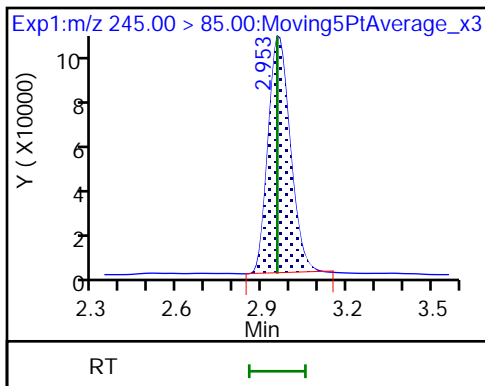
13 PFECa F

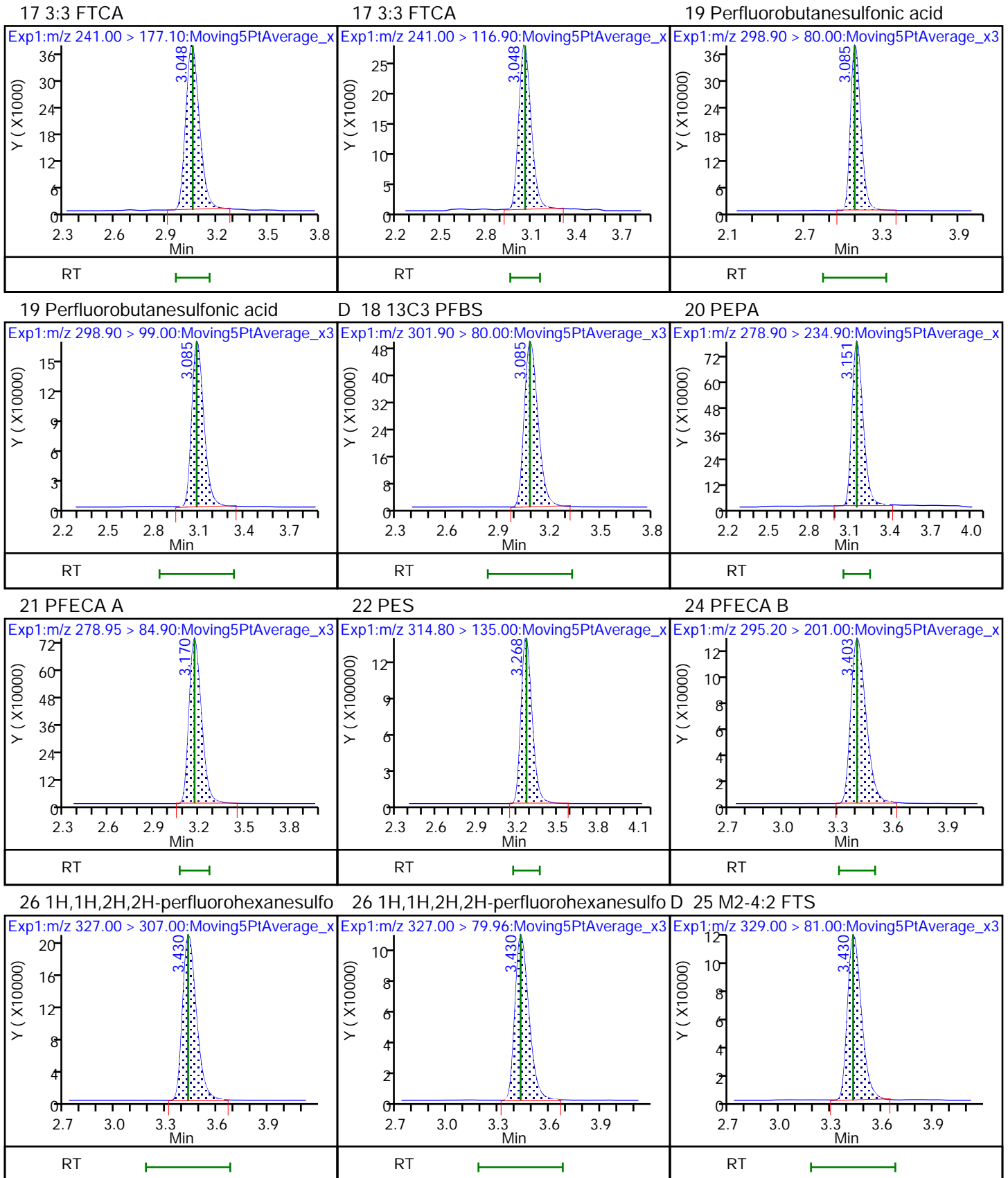


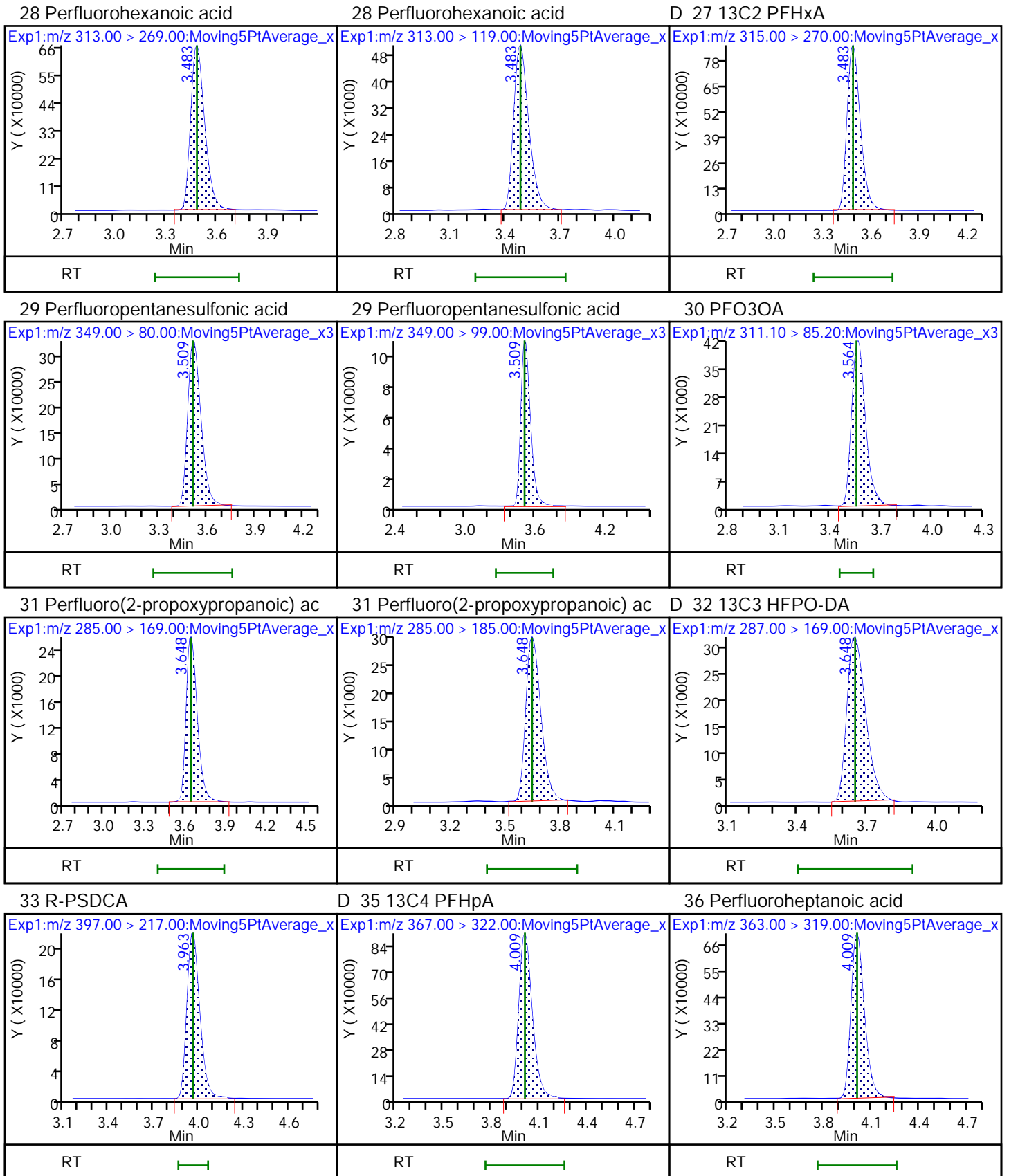
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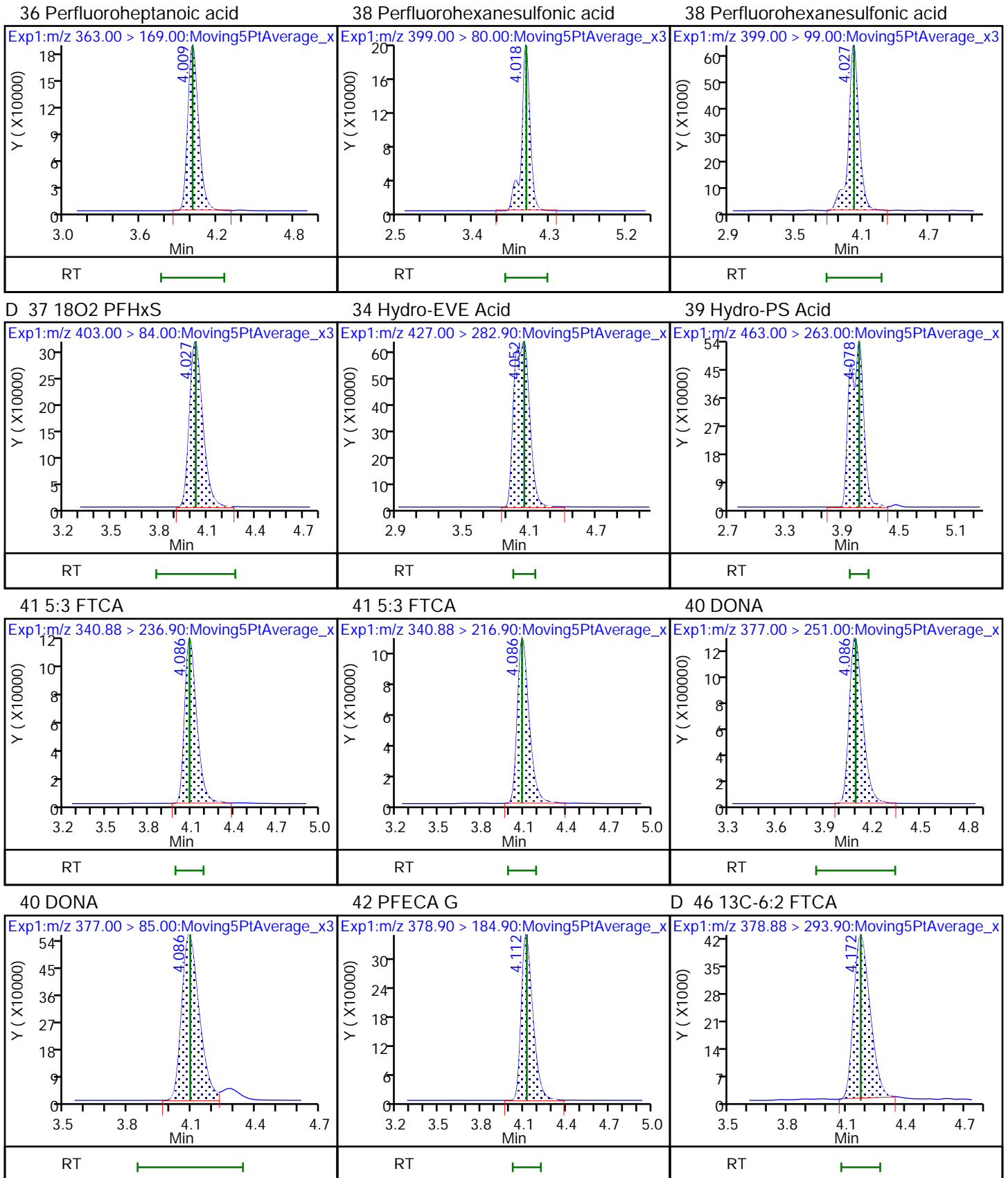
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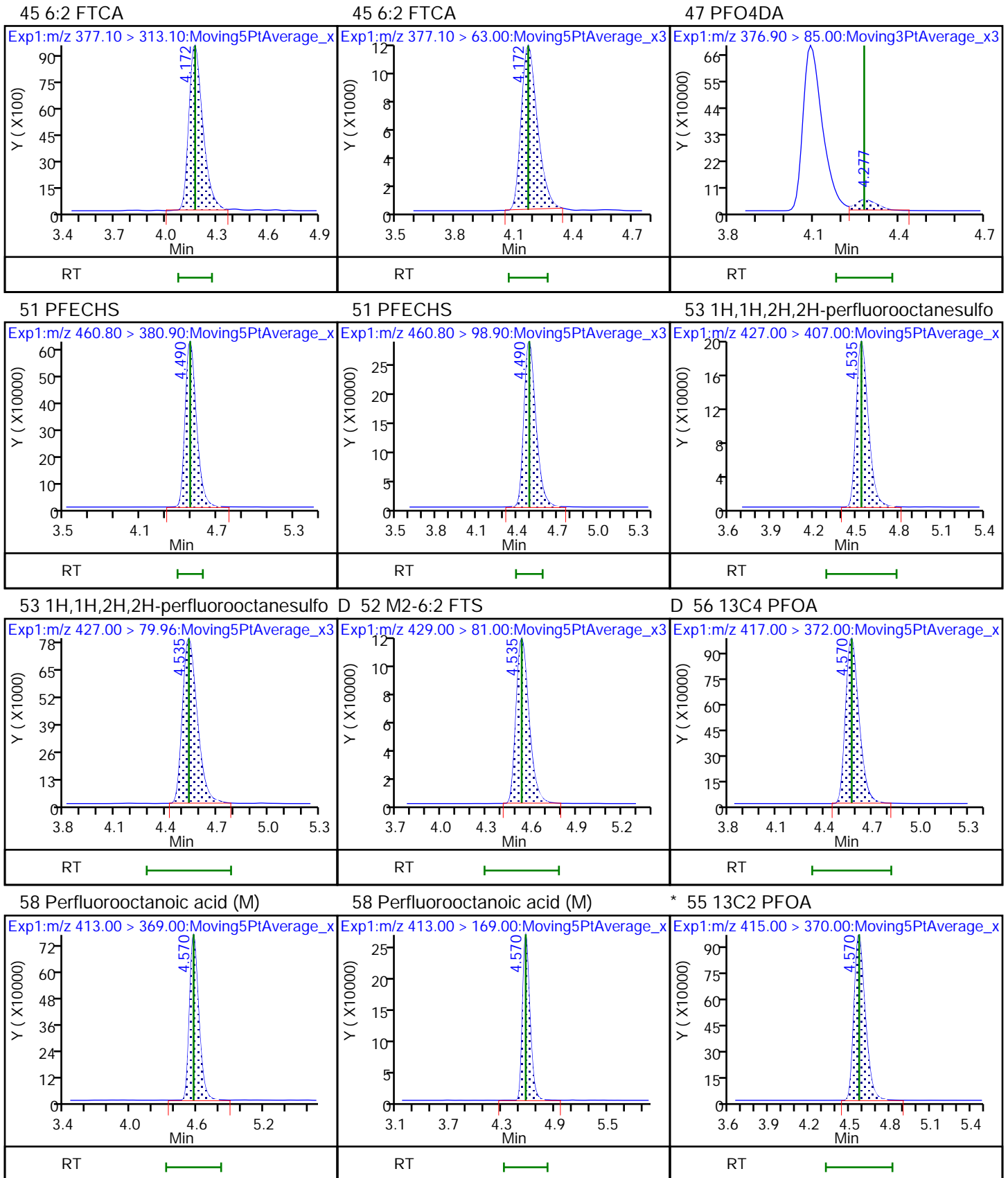
15 Perfluoropentanoic acid

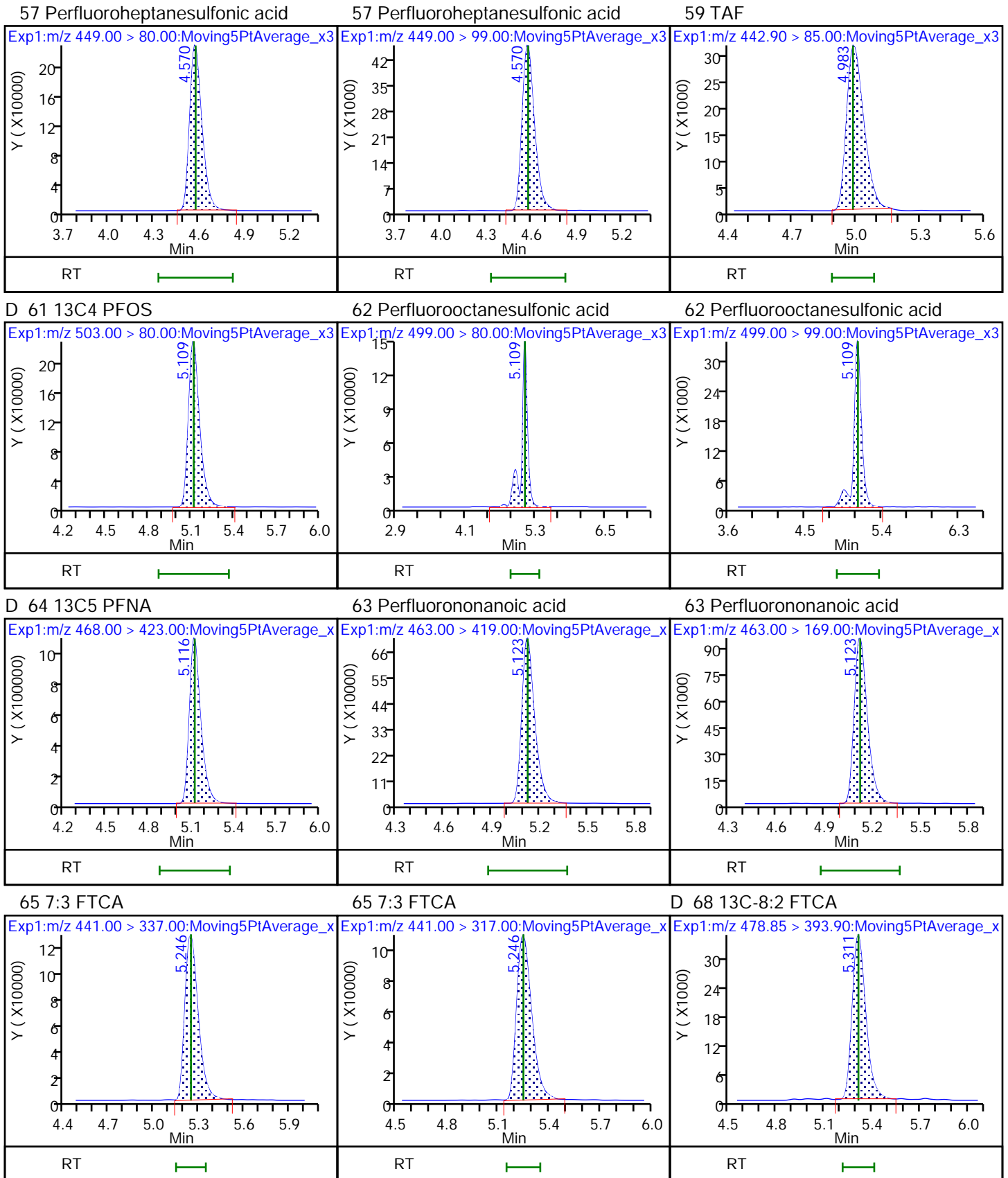


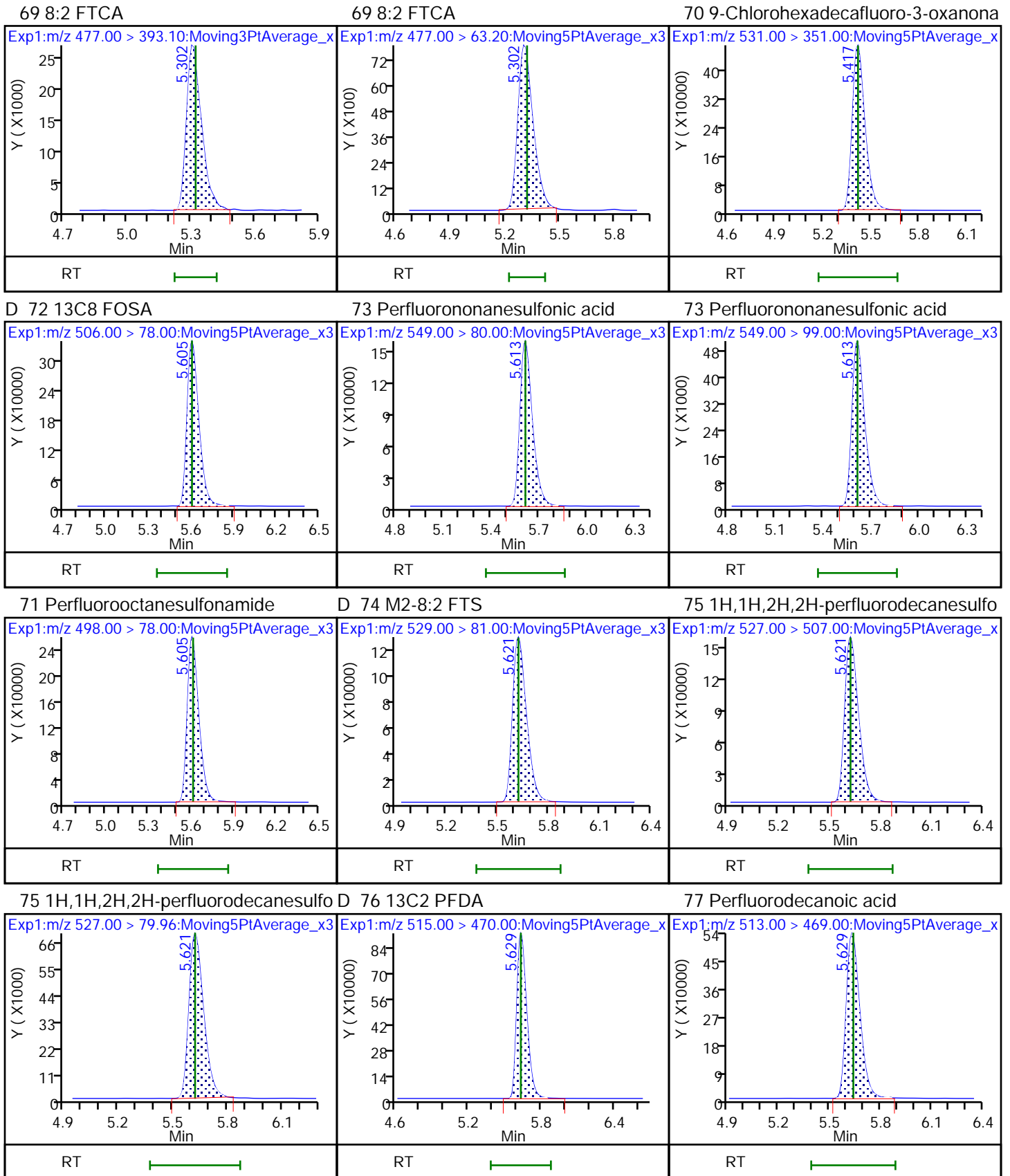


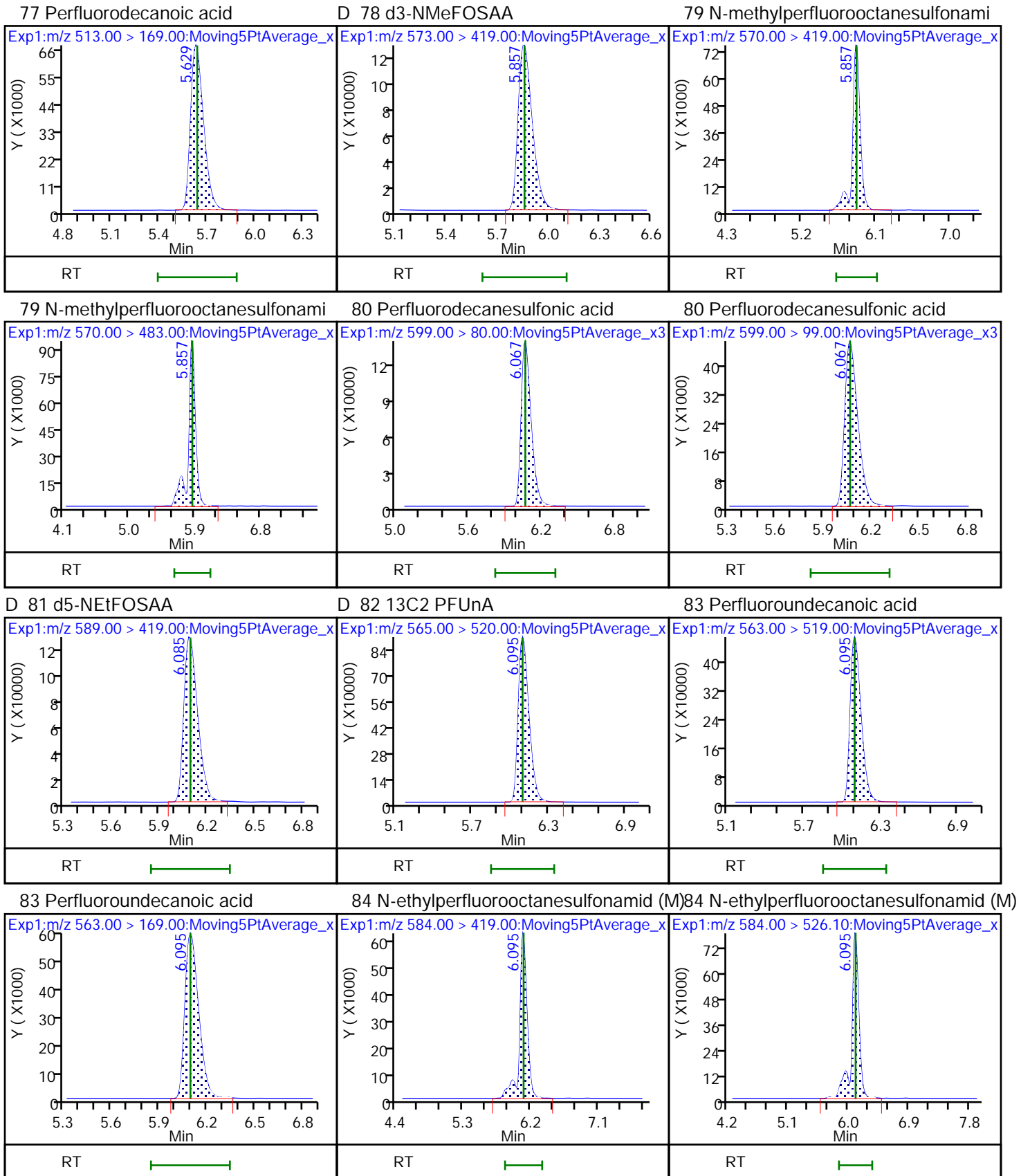








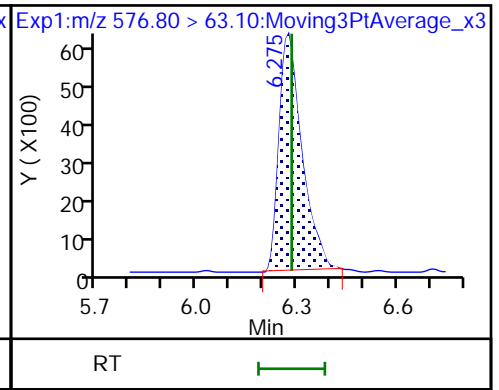
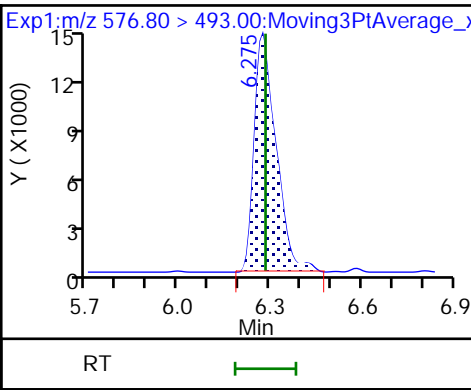
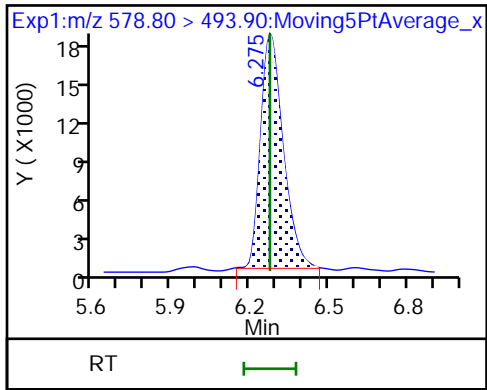




D 91 13C-10:2 FTCA

92 10:2 FTCA

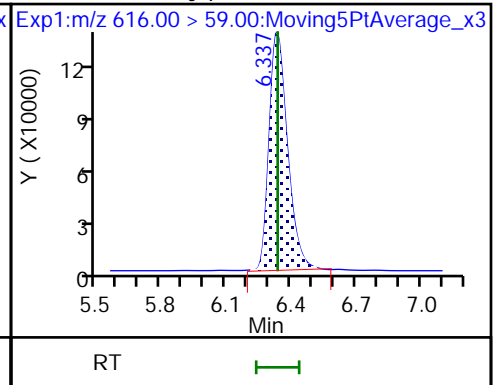
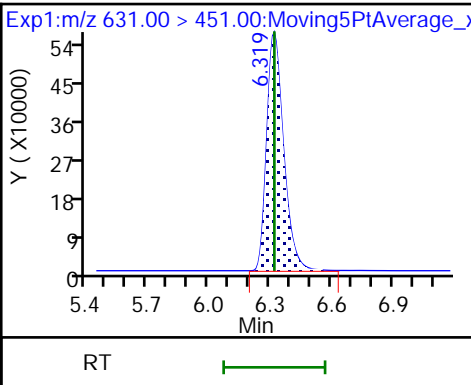
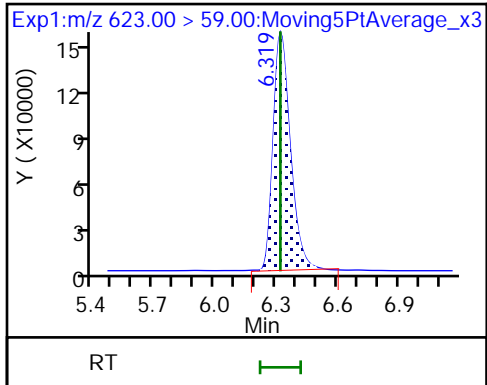
92 10:2 FTCA



D 85 d7-N-MeFOSE-M

93 11-Chloroeicosafuoro-3-oxaundec

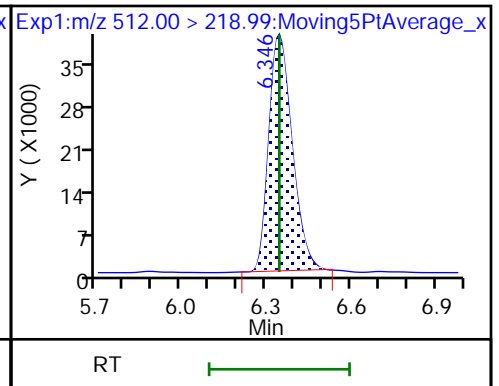
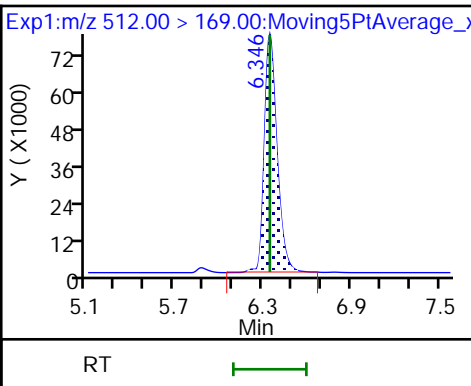
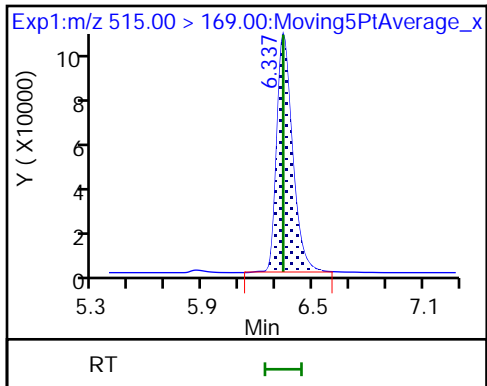
86 2-(N-methylperfluoro-1-octanesul



D 87 d-N-MeFOSA-M

88 NMeFOSA

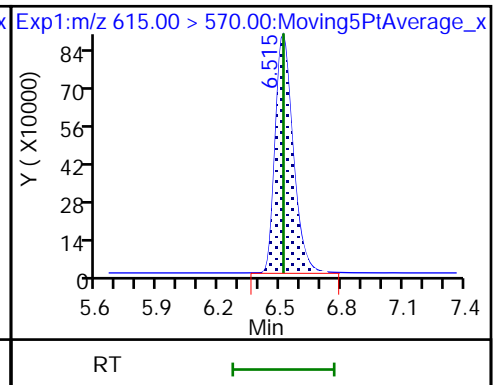
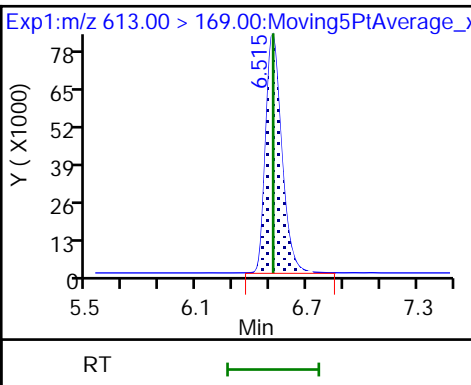
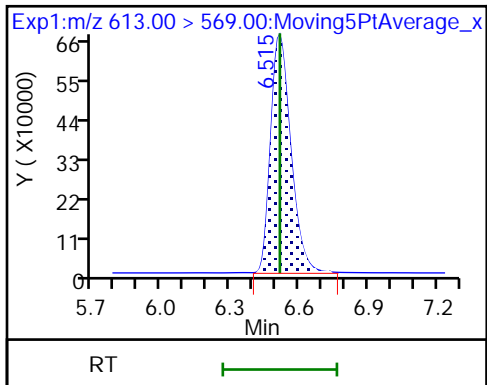
88 NMeFOSA



99 Perfluorododecanoic acid

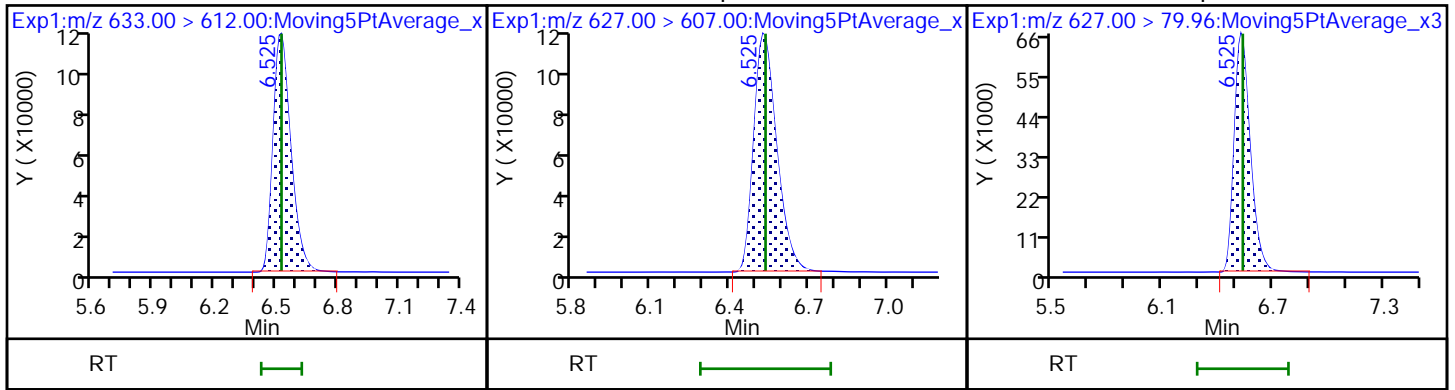
99 Perfluorododecanoic acid

D 98 13C2 PFDaA



D 100 13C2 10:2 FTS

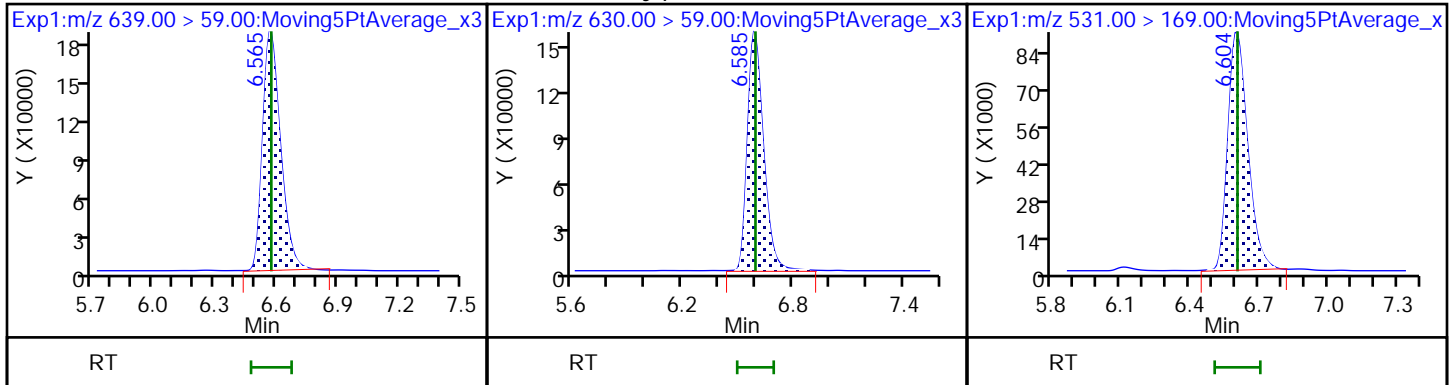
101 1H,1H,2H,2H-perfluorododecanesul 101 1H,1H,2H,2H-perfluorododecanesul



D 94 d9-N-EtFOSE-M

95 2-(N-ethylperfluoro-1-octanesul

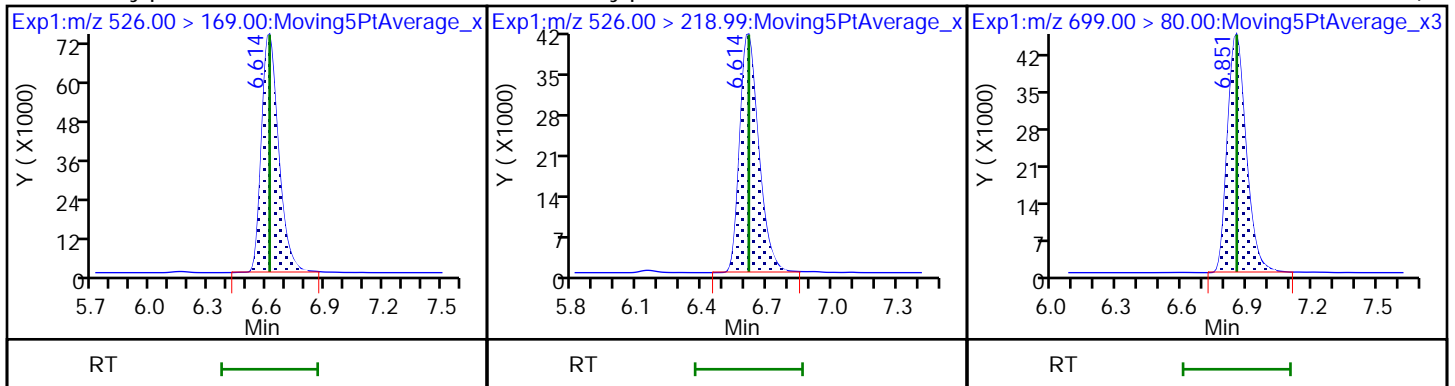
D 96 d-N-EtFOSA-M



97 N-ethylperfluoro-1-octanesulfona

97 N-ethylperfluoro-1-octanesulfona

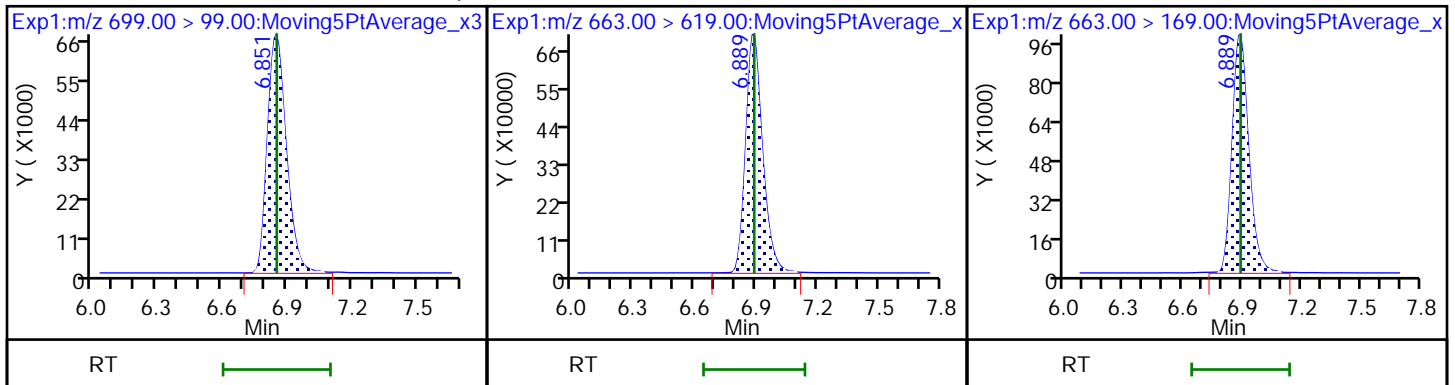
102 Perfluorododecanesulfonic acid (



102 Perfluorododecanesulfonic acid (

103 Perfluorotridecanoic acid

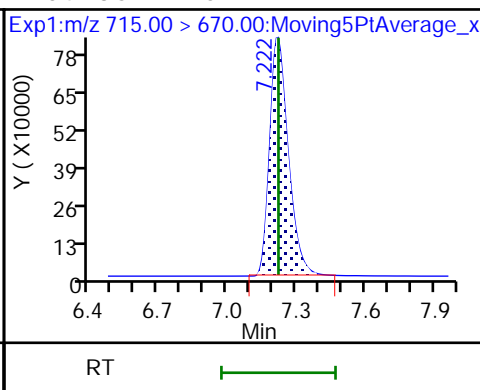
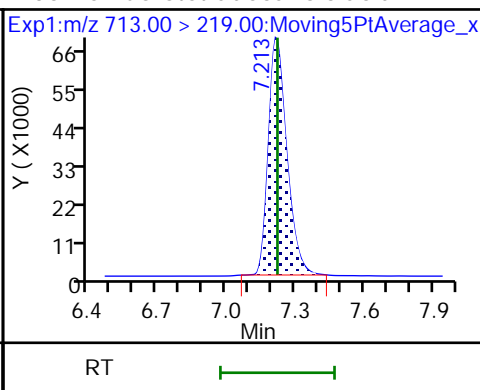
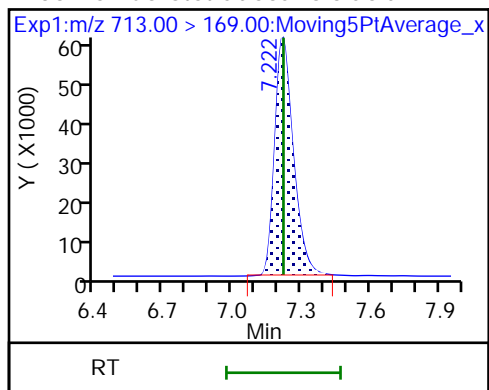
103 Perfluorotridecanoic acid



105 Perfluorotetradecanoic acid

105 Perfluorotetradecanoic acid

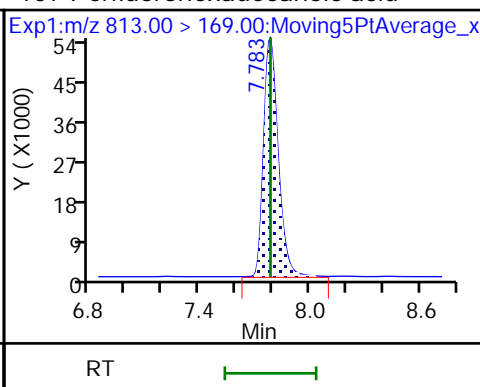
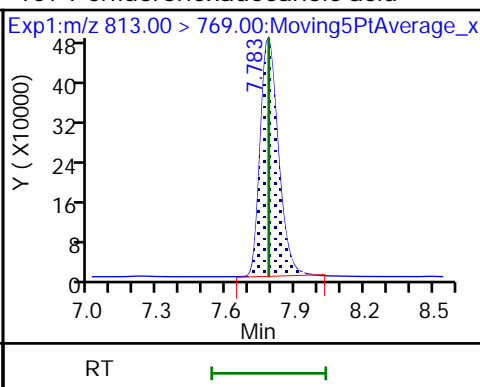
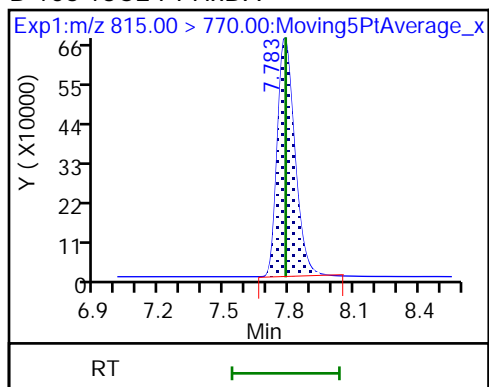
D 104 13C2 PFTeDA



D 106 13C2 PFHxDA

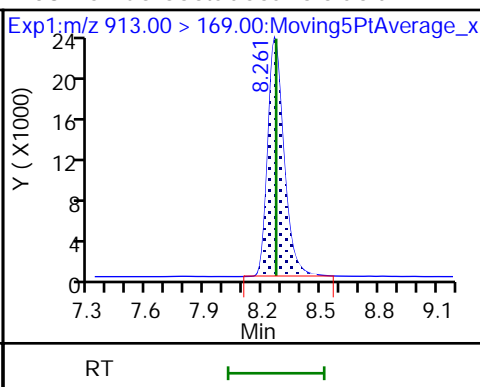
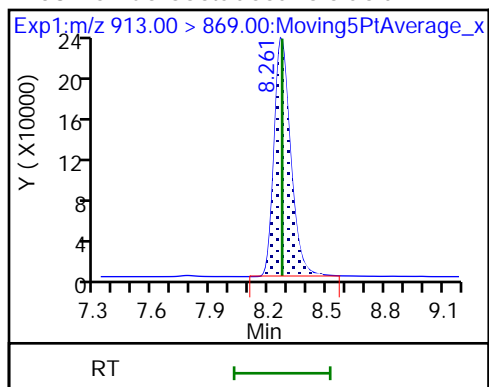
107 Perfluorohexadecanoic acid

107 Perfluorohexadecanoic acid



108 Perfluorooctadecanoic acid

108 Perfluorooctadecanoic acid



Eurofins Sacramento

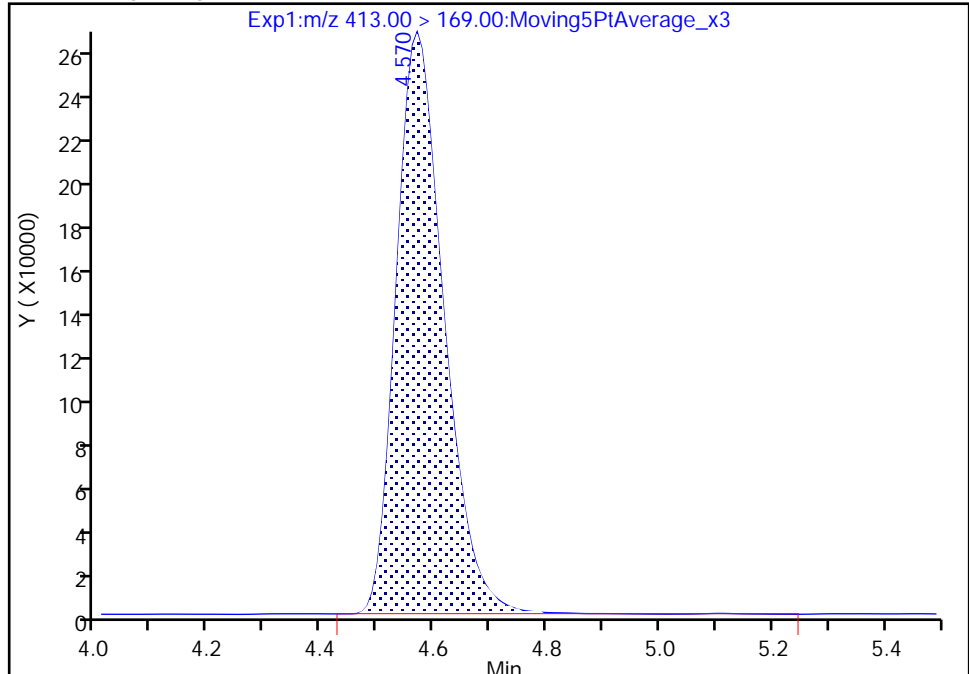
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_038.d
Injection Date: 22-Dec-2022 16:14:01 Instrument ID: A18
Lims ID: LCSD 320-641482/3-A
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 22 Worklist Smp#: 24
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

58 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

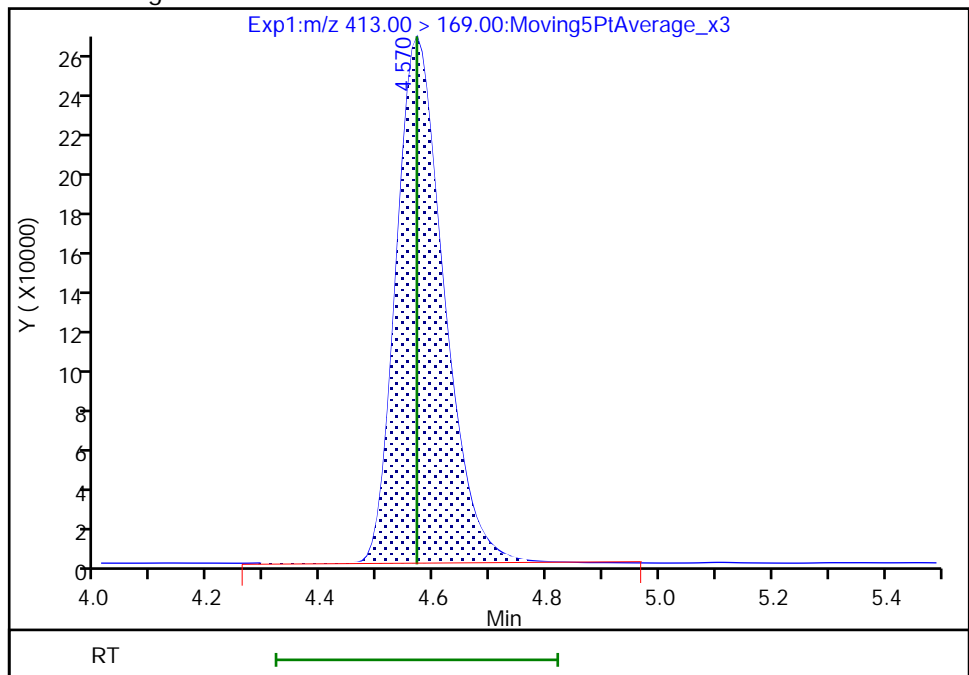
RT: 4.57
Area: 1547567
Amount: 1.040150
Amount Units: ng/ml

Processing Integration Results



RT: 4.57
Area: 1544285
Amount: 1.044815
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:45:22

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

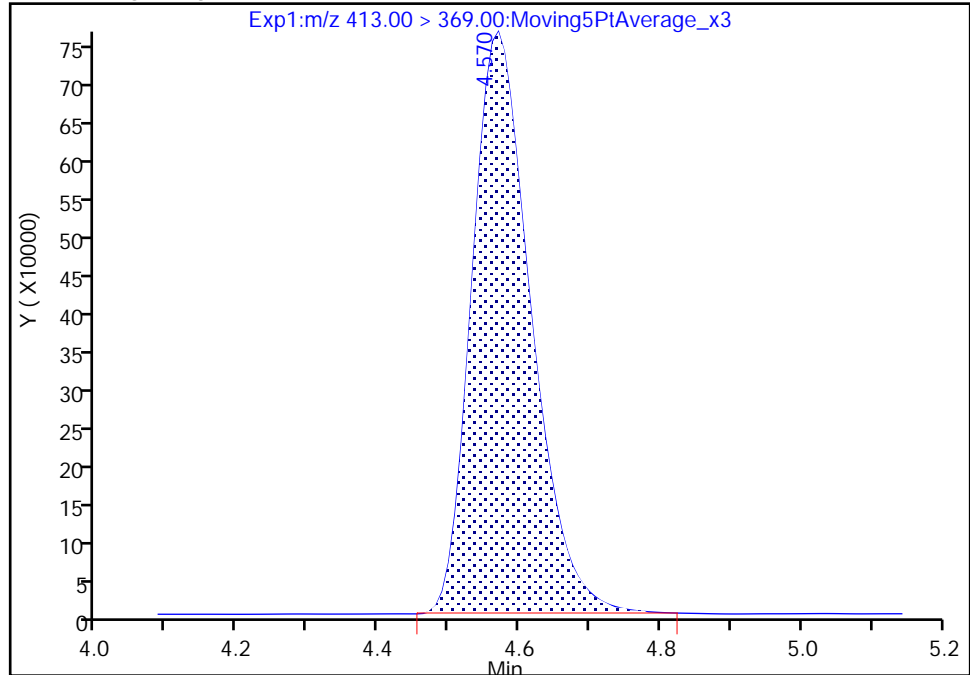
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_038.d
Injection Date: 22-Dec-2022 16:14:01 Instrument ID: A18
Lims ID: LCSD 320-641482/3-A
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 22 Worklist Smp#: 24
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

58 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

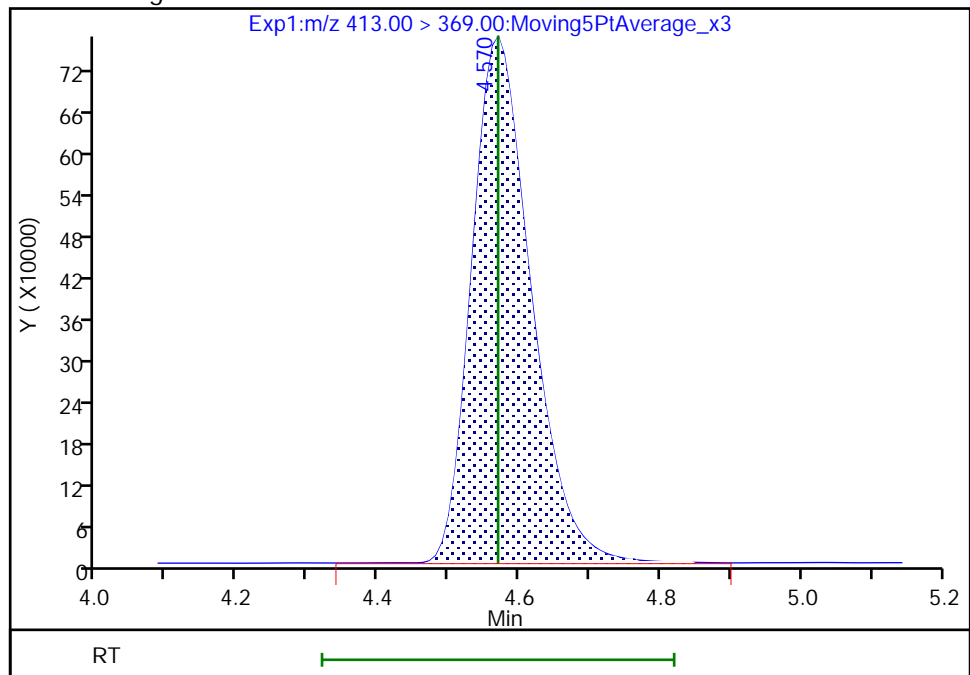
RT: 4.57
Area: 4461144
Amount: 1.040150
Amount Units: ng/ml

Processing Integration Results



RT: 4.57
Area: 4481152
Amount: 1.044815
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjunair, 23-Dec-2022 12:45:27

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

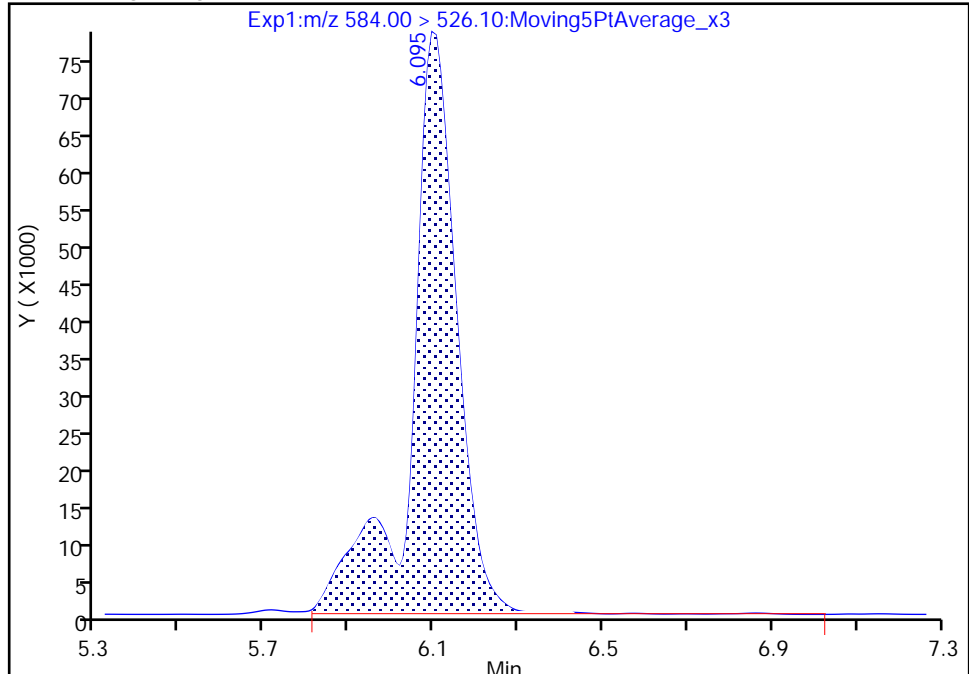
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_038.d
Injection Date: 22-Dec-2022 16:14:01 Instrument ID: A18
Lims ID: LCSD 320-641482/3-A
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 22 Worklist Smp#: 24
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

84 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 2

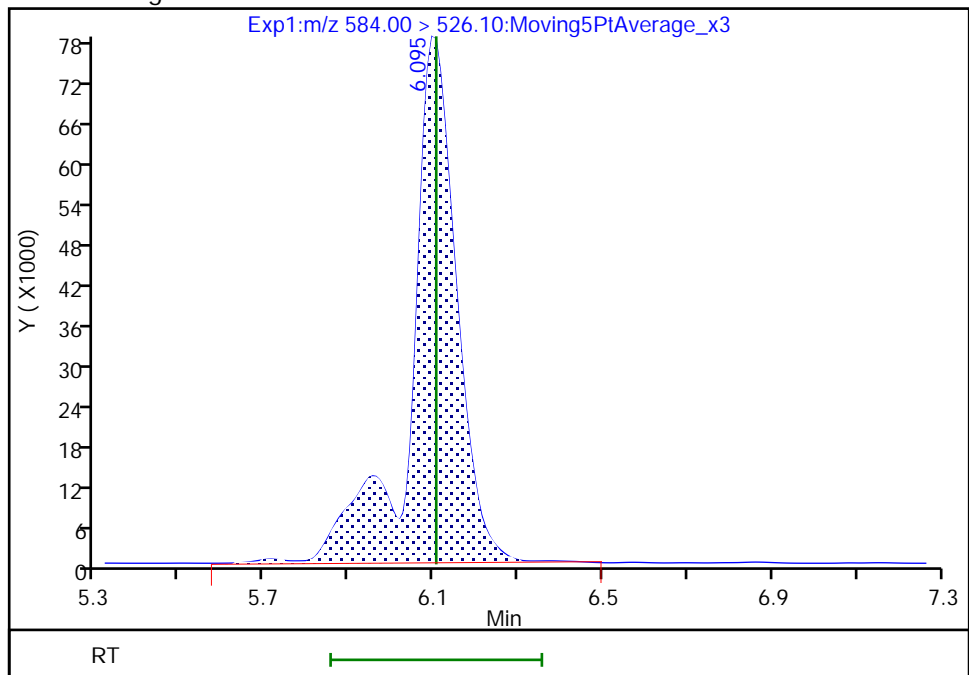
RT: 6.09
Area: 595001
Amount: 0.860598
Amount Units: ng/ml

Processing Integration Results



RT: 6.09
Area: 594347
Amount: 0.978640
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:45:03

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins Sacramento

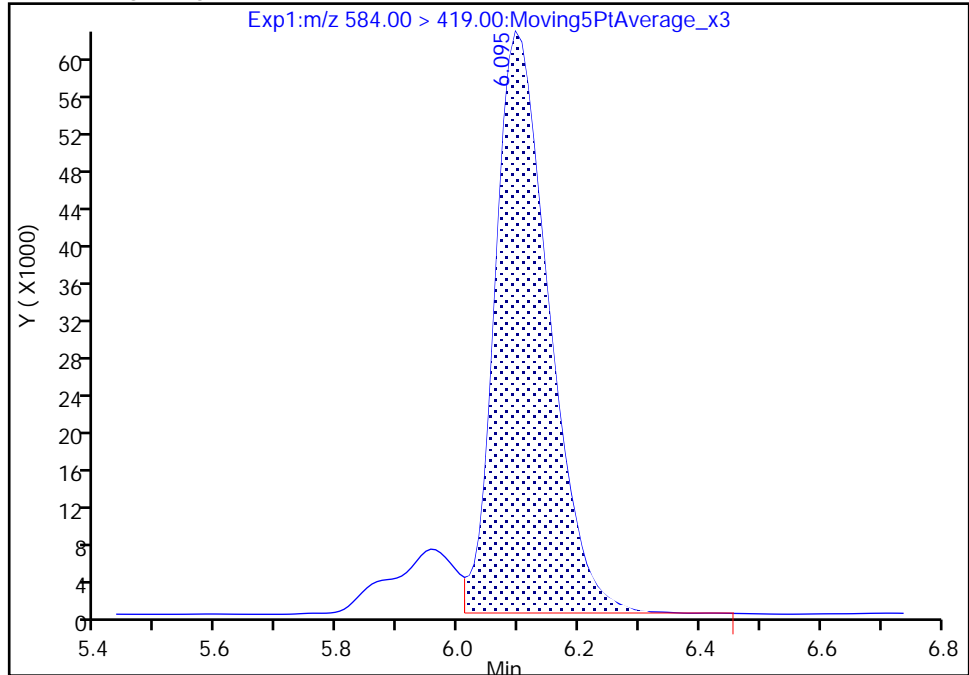
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_038.d
Injection Date: 22-Dec-2022 16:14:01 Instrument ID: A18
Lims ID: LCSD 320-641482/3-A
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 22 Worklist Smp#: 24
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

84 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 1

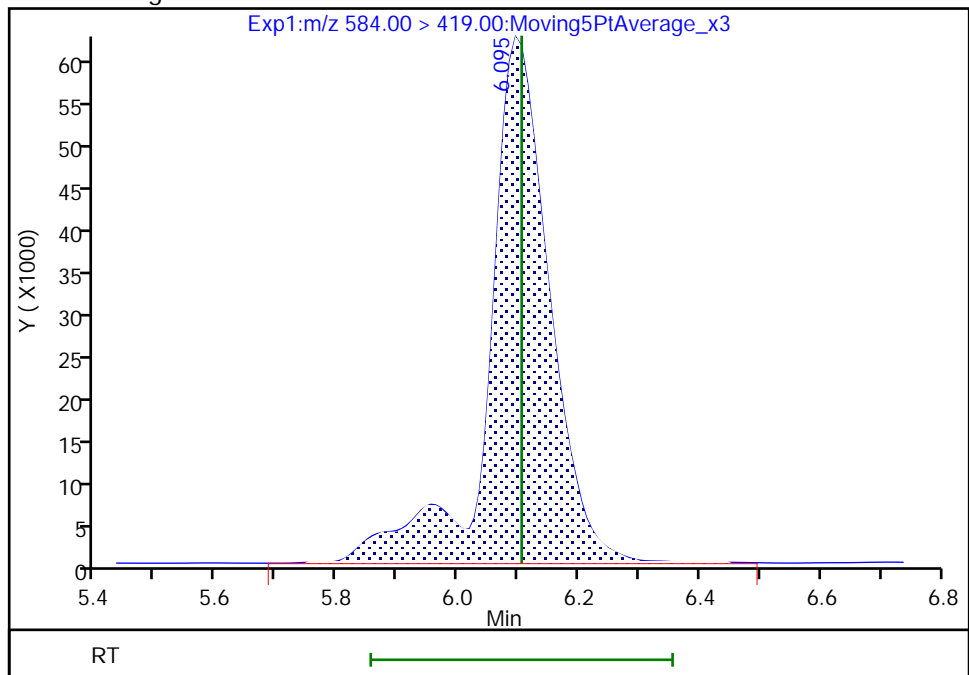
RT: 6.09
Area: 388902
Amount: 0.860598
Amount Units: ng/ml

Processing Integration Results



RT: 6.09
Area: 442245
Amount: 0.978640
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjunair, 23-Dec-2022 12:45:06

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 1621 of 1632

12/29/2022
3:43 PM

Eurofins Sacramento

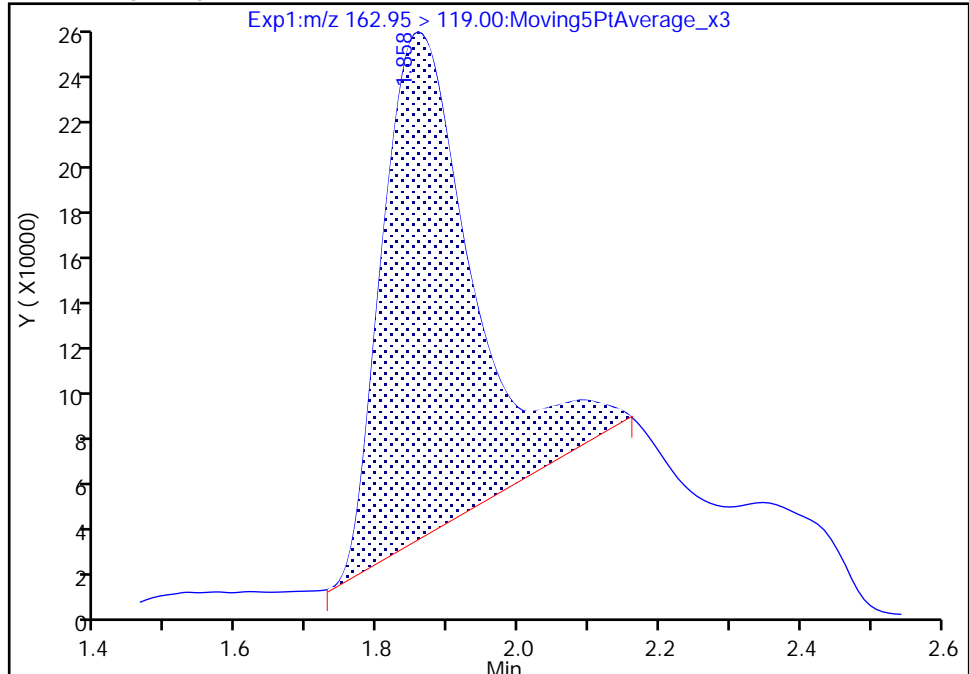
Data File: \\chromfs\Sacramento\ChromData\A18\20221222-153308.b\2022.12.21_A18_PFC_A_038.d
Injection Date: 22-Dec-2022 16:14:01 Instrument ID: A18
Lims ID: LCSD 320-641482/3-A
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 22 Worklist Smp#: 24
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS+_A18 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00um) Detector: EXP1

2 PPF Acid, CAS: 422-64-0

Signal: 1

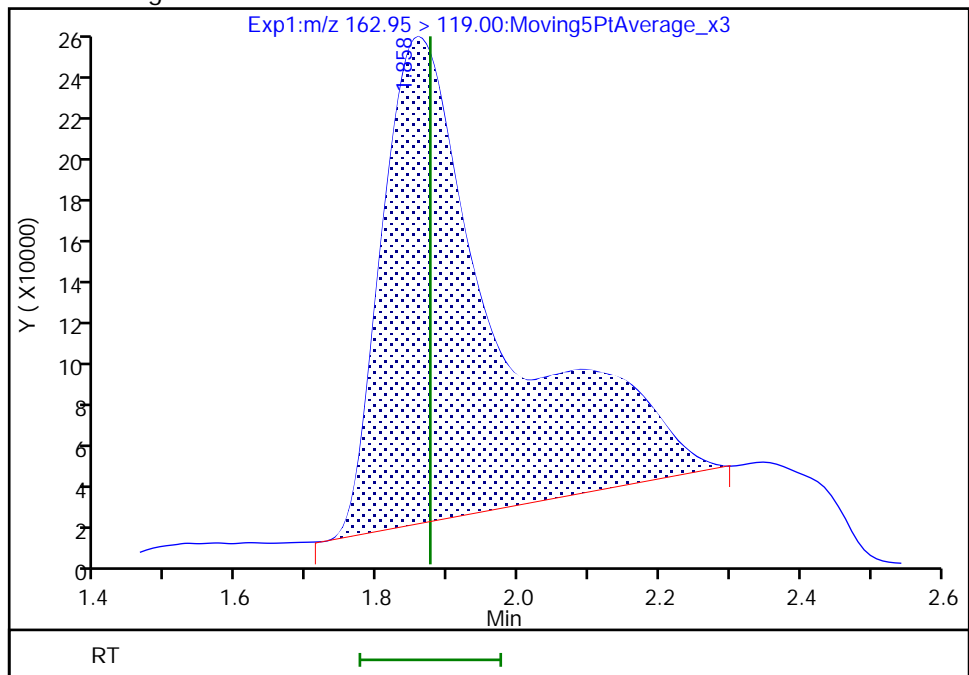
RT: 1.86
Area: 1995141
Amount: 0.642047
Amount Units: ng/ml

Processing Integration Results



RT: 1.86
Area: 2754294
Amount: 0.875228
Amount Units: ng/ml

Manual Integration Results



Reviewer: sanjumnair, 23-Dec-2022 12:45:37

Audit Action: Manually Integrated

Audit Reason: Baseline

PFAS ANALYSIS RUN LOG

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Instrument ID: A18 Start Date: 12/21/2022 12:10
 Analysis Batch Number: 641843 End Date: 12/21/2022 13:41

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-641843/2		12/21/2022 12:10	1	2022.12.21_A18_PFC+ ICAL 009.d	Gemini C18 3x50 3(mm)
IC 320-641843/3		12/21/2022 12:20	1	2022.12.21_A18_PFC+ ICAL 010.d	Gemini C18 3x50 3(mm)
IC 320-641843/4		12/21/2022 12:30	1	2022.12.21_A18_PFC+ ICAL 011.d	Gemini C18 3x50 3(mm)
ICIS 320-641843/5		12/21/2022 12:40	1	2022.12.21_A18_PFC+ ICAL 012.d	Gemini C18 3x50 3(mm)
IC 320-641843/6		12/21/2022 12:51	1	2022.12.21_A18_PFC+ ICAL 013.d	Gemini C18 3x50 3(mm)
IC 320-641843/7		12/21/2022 13:01	1	2022.12.21_A18_PFC+ ICAL 014.d	Gemini C18 3x50 3(mm)
IC 320-641843/8		12/21/2022 13:11	1	2022.12.21_A18_PFC+ ICAL 015.d	Gemini C18 3x50 3(mm)
ICB 320-641843/9		12/21/2022 13:21	1	2022.12.21_A18_PFC+ ICAL 016.d	Gemini C18 3x50 3(mm)
ICV 320-641843/10		12/21/2022 13:31	1	2022.12.21_A18_PFC+ ICAL 017.d	Gemini C18 3x50 3(mm)
ZZZZZ		12/21/2022 13:41	1		Gemini C18 3x50 3(mm)

PFAS ANALYSIS RUN LOG

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Instrument ID: A18 Start Date: 12/22/2022 10:39
 Analysis Batch Number: 642483 End Date: 12/22/2022 12:10

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-642483/1		12/22/2022 10:39	1	2022.12.21_A18_ PFC A 004.d	Gemini C18 3x50 3(mm)
CCVL 320-642483/2		12/22/2022 10:50	1	2022.12.21_A18_ PFC A 005.d	Gemini C18 3x50 3(mm)
CCV 320-642483/3 CCVIS		12/22/2022 11:00	1	2022.12.21_A18_ PFC A 006.d	Gemini C18 3x50 3(mm)
CCB 320-642483/4		12/22/2022 11:10	1		Gemini C18 3x50 3(mm)
ZZZZZ		12/22/2022 11:50	1		Gemini C18 3x50 3(mm)
CCV 320-642483/9		12/22/2022 12:00	1		Gemini C18 3x50 3(mm)
CCB 320-642483/10		12/22/2022 12:10	1		Gemini C18 3x50 3(mm)

PFAS ANALYSIS RUN LOG

Lab Name: Eurofins Sacramento Job No.: 320-95204-1
 SDG No.: _____
 Instrument ID: A18 Start Date: 12/22/2022 12:21
 Analysis Batch Number: 642490 End Date: 12/22/2022 16:54

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-642490/1		12/22/2022 12:21	1		Gemini C18 3x50 3(mm)
ZZZZZ		12/22/2022 14:12	1		Gemini C18 3x50 3(mm)
CCV 320-642490/13		12/22/2022 14:22	1		Gemini C18 3x50 3(mm)
ZZZZZ		12/22/2022 15:23	1		Gemini C18 3x50 3(mm)
CCV 320-642490/20		12/22/2022 15:33	1	2022.12.21_A18_ PFC A 034.d	Gemini C18 3x50 3(mm)
CCV 320-642490/21		12/22/2022 15:43	1	2022.12.21_A18_ PFC A 035.d	Gemini C18 3x50 3(mm)
MB 320-641482/1-A		12/22/2022 15:53	1	2022.12.21_A18_ PFC A 036.d	Gemini C18 3x50 3(mm)
LCS 320-641482/2-A		12/22/2022 16:03	1	2022.12.21_A18_ PFC A 037.d	Gemini C18 3x50 3(mm)
LCSD 320-641482/3-A		12/22/2022 16:14	1	2022.12.21_A18_ PFC A 038.d	Gemini C18 3x50 3(mm)
320-95204-1	ADIT6-PIPE-AFFFN01-22 DEC	12/22/2022 16:24	1	2022.12.21_A18_ PFC A 039.d	Gemini C18 3x50 3(mm)
ZZZZZ		12/22/2022 16:34	1		Gemini C18 3x50 3(mm)
ZZZZZ		12/22/2022 16:44	1		Gemini C18 3x50 3(mm)
CCV 320-642490/28		12/22/2022 16:54	1	2022.12.21_A18_ PFC A 042.d	Gemini C18 3x50 3(mm)

PFAS BATCH WORKSHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Batch Number: 641482 Batch Start Date: 12/20/22 00:17 Batch Analyst: Xiong, Fong CBatch Method: 3535 Batch End Date: 12/20/22 01:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LCMPFC_IDA+ 00430	LCPFC+SP+6 00105	LCPFC-IS+ 00375	LCPFC3SP_P3 00037
MB 320-641482/1		3535, 537 (modified)		1.0 mL	10.0 mL	500 uL		500 uL	
LCS 320-641482/2		3535, 537 (modified)		1.0 mL	10.0 mL	500 uL	500 uL	500 uL	500 uL
LCSD 320-641482/3		3535, 537 (modified)		1.0 mL	10.0 mL	500 uL	500 uL	500 uL	500 uL
320-95204-A-1	ADIT6-PIPE-AFFFN 01-22DEC	3535, 537 (modified)	T	0.002 mL	10.0 mL	500 uL		500 uL	

Batch Notes	
First Start time	12/20/2022 00:17
First End time	12/20/2022 01:30
Pipette/Syringe/Dispenser ID	j38484i
Methanol ID	3304894
H2O ID	12/19/22
Solvent Name	0.3% NH4OH/MeOH
Solvent Lot #	3300215
Analyst ID - Reagent Drop	FX
Analyst ID - IS Reagent Drop	FX
Analyst ID - IS Reagent Drop Witness	PV
Centrifuge Tube ID	220304058-D
Batch Comment	Eurofins labels match client IDs: FX 12/19/22.

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

537 (modified)

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PFAS BATCH WORKSHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Batch Number: 641843 Batch Start Date: 12/21/22 12:10 Batch Analyst: Roy, Kennedy SBatch Method: 537 (modified) Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	LCPFC+6C_ICV 00021	LCPFC+6C_LL0 00033	LCPFC+6C_LL1 00007	LCPFC+6C_LL2 00010	LCPFC+6C_LL3 00006
IC 320-641843/2		537 (modified)		1 mL			1 mL		
IC 320-641843/3		537 (modified)		1 mL				1 mL	
IC 320-641843/4		537 (modified)		1 mL					1 mL
ICIS 320-641843/5		537 (modified)		1 mL					
IC 320-641843/6		537 (modified)		1 mL					
IC 320-641843/7		537 (modified)		1 mL					
IC 320-641843/8		537 (modified)		1 mL					
ICB 320-641843/9		537 (modified)		1 mL		1 mL			
ICV 320-641843/10		537 (modified)		1 mL	1 mL				

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFC+6C_LL4 00008	LCPFC+6C_LL5 00009	LCPFC+6C_LL6 00006	LCPFC+6C_LL7 00006		
IC 320-641843/2		537 (modified)							
IC 320-641843/3		537 (modified)							
IC 320-641843/4		537 (modified)							
ICIS 320-641843/5		537 (modified)		1 mL					
IC 320-641843/6		537 (modified)			1 mL				
IC 320-641843/7		537 (modified)				1 mL			
IC 320-641843/8		537 (modified)					1 mL		
ICB 320-641843/9		537 (modified)							
ICV 320-641843/10		537 (modified)							

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

537 (modified)

Page 1 of 2

PFAS BATCH WORKSHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Batch Number: 641843 Batch Start Date: 12/21/22 12:10 Batch Analyst: Roy, Kennedy S

Batch Method: 537 (modified) Batch End Date: _____

Batch Notes	

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

537 (modified)

PFAS BATCH WORKSHEET

Lab Name: Eurofins Sacramento Job No.: 320-95204-1

SDG No.: _____

Batch Number: 642483 Batch Start Date: 12/22/22 10:39 Batch Analyst: Sanjumnai, RungtipBatch Method: 537 (modified) Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	LCPFC+6C_LL0 00039	LCPFC+6C_LL2 00010	LCPFC+6C_LL4 00008		
CCB 320-642483/1		537 (modified)		1 mL	1 mL				
CCVL 320-642483/2		537 (modified)		1 mL		1 mL			
CCV 320-642483/3 CCVIS		537 (modified)		1 mL			1 mL		

Batch Notes	

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

537 (modified)

Page 1 of 1

Shipping and Receiving Documents

Chain of Custody Record

Client Information		Sampler:	Lab PM:	Carrier Tracking No(s):	GOC No:
Client Contact:		Phone:	Elaine Walker	FedEx	2212W2EU-09
Company:		E-Mail:	M.Elaine.Walker@EurofinsET.com	State of Origin:	Page 1 of 1
Address:		Job #:			
City:		Analysis Requested			
State:		Due Date Requested:			
Zip:		see subcontract			
Phone:		TAT Requested (days):			
Email:		Rush - ASAP			
Project Name:		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No			
Site:		PO #:			
RHSF		WO #:			
ADIT6-PIPE-AFFEN01-22DEC		Project #:			
		SSOW #:			
		Matrix			
		Sample Type (C=Comp, G=grab)			
		Sample Time			
		Sample Date			
		Preservation Code:			
		Product			
		Field Filtered Sample (Yes or No)			
		Perform MS/MSD (Yes or No)			
		PFAS, Extended List (70 Analytes) by 537MOD			
		PFAS for Non-Target Analysis by LC/QTOF/MS by 537MOD			
		Total Number of Containers			
		Special Instructions/Note:			
		Store ALL samples until notified by client to dispose			
		12/12/23			
		Barcode			
		320-95204 Chain of Custody			
		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
		Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For <input type="checkbox"/> Months			
		Special Instructions/QC Requirements: DOD GSM project.			
		Empty Kit Relinquished by:			
		Date:			
		Time:			
		Relinquished by:			
		Date/Time:			
		Relinquished by:			
		Date/Time:			
		Relinquished by:			
		Date/Time:			
		Custody Seal No.:			
		Custody Seal Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No			
		Cooler Temperature(s) °C and Other Remarks:			

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 320-95204-1

Login Number: 95204

List Source: Eurofins Sacramento

List Number: 1

Creator: Oropeza, Salvador

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	
Cooler Temperature is acceptable.	False	Refer to Job Narrative for details.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Refer to Job Narrative for details.
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	