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Electronic Comprehensive Validation Package (eCVP)

9971831

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COMPREHENSIVE VALIDATION PACKAGE

TO-15

INVENTORY SHEET

Work Order #: 1812211

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Comments:

Completed by:

Vera Belitsky	Vera Belitsky / Document Control	12/17/18
(Signature)	(Print Name & Title)	(Date)

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WORK ORDER #: 1812211

Work Order Summary

CLIENT:	Mr. Jeff Wright Weston Solutions, Inc. 13702 Coursey Blvd., Bldg #7, STE A Baton Rouge, LA 70817	**BILL TO:**	Mr. Jeff Wright Weston Solutions, Inc. 13702 Coursey Blvd., Bldg #7, STE A Baton Rouge, LA 70817
PHONE:	225-297-5415	**P.O. #**	0098768
FAX:		**PROJECT #**	20600.012-001-1182-01 Browns Tree Care Dump
DATE RECEIVED:	12/12/2018	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	12/13/2018		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	BVF-SUM-011-20181210-1	TO-15	0.1 psi	5 psi
02A	BVF-SUM-012-20181210-1	TO-15	3.9 "Hg	5 psi
03A	BVF-SUM-013-20181210-1	TO-15	3.9 "Hg	4.9 psi
04A	BVF-SUM-014-20181210-1	TO-15	1.8 "Hg	5 psi
05A	Lab Blank	TO-15	NA	NA
06A	CCV	TO-15	NA	NA
07A	LCS	TO-15	NA	NA
07AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes

Technical Director

DATE: 12/13/18

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
EPA Method TO-15
Weston Solutions, Inc.
Workorder# 1812211

Four 6 Liter Summa Canister (100% Cert Ambient) samples were received on December 12, 2018. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

Despite the use of flow controllers for sample collection, the final canister vacuum for sample BVF-SUM-011-20181210-1 was measured at ambient pressure at the laboratory. A leak test indicated that the canister valve was functioning properly.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds. Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

The reported result for 4-Ethyltoluene in sample BVF-SUM-013-20181210-1 may be biased high due to co-elution with a non target compound with similar characteristic ions. Both the primary and secondary ion for 4-Ethyltoluene exhibited potential interference.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.
UJ- Non-detected compound associated with low bias in the CCV
N - The identification is based on presumptive evidence.
M - Reported value may be biased due to apparent matrix interferences.
CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Table 1

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Sample Holding Time (Days)	Sample Extract Date Analyzed	Sample Extract Holding Time (Days)	Sample Condition
BVF-SUM-011-20181210	1812211-01A	12/11/2018	12/12/2018	NA	1	12/12/2018	NA	Good
BVF-SUM-012-20181210	1812211-02A	12/11/2018	12/12/2018	NA	1	12/12/2018	NA	Good
BVF-SUM-013-20181210	1812211-03A	12/11/2018	12/12/2018	NA	1	12/12/2018	NA	Good
BVF-SUM-014-20181210	1812211-04A	12/11/2018	12/12/2018	NA	1	12/12/2018	NA	Good
Lab Blank	1812211-05A	NA	NA	NA	NA	12/12/2018	NA	Good
CCV	1812211-06A	NA	NA	NA	NA	12/12/2018	NA	Good
LCS	1812211-07A	NA	NA	NA	NA	12/12/2018	NA	Good
LCSD	1812211-07AA	NA	NA	NA	NA	12/12/2018	NA	Good

Sample Results and Raw Data

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: BVF-SUM-011-20181210-1

Lab ID#: 1812211-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	6.6	12	16	28
2-Butanone (Methyl Ethyl Ketone)	2.7	3.2	7.8	9.5
Tetrahydrofuran	0.66	1.4	2.0	4.3
Benzene	0.66	5.6	2.1	18
Toluene	0.66	3.6	2.5	14
m,p-Xylene	0.66	1.0	2.9	4.5

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Client Sample ID: BVF-SUM-011-20181210-1

Lab ID#: 1812211-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p121212**	**Date of Collection:**	**12/11/18 9:45:00 AM**
Dil. Factor:	**1.33**	**Date of Analysis:**	**12/12/18 07:04 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.66	Not Detected	3.3	Not Detected
Freon 114	0.66	Not Detected	4.6	Not Detected
Chloromethane	6.6	Not Detected	14	Not Detected
Vinyl Chloride	0.66	Not Detected	1.7	Not Detected
1,3-Butadiene	0.66	Not Detected	1.5	Not Detected
Bromomethane	6.6	Not Detected	26	Not Detected
Chloroethane	2.7	Not Detected	7.0	Not Detected
Freon 11	0.66	Not Detected	3.7	Not Detected
Ethanol	2.7	Not Detected	5.0	Not Detected
Freon 113	0.66	Not Detected	5.1	Not Detected
1,1-Dichloroethene	0.66	Not Detected	2.6	Not Detected
Acetone	6.6	12	16	28
2-Propanol	2.7	Not Detected	6.5	Not Detected
Carbon Disulfide	2.7	Not Detected	8.3	Not Detected
3-Chloropropene	2.7	Not Detected	8.3	Not Detected
Methylene Chloride	6.6	Not Detected	23	Not Detected
Methyl tert-butyl ether	2.7	Not Detected	9.6	Not Detected
trans-1,2-Dichloroethene	0.66	Not Detected	2.6	Not Detected
Hexane	0.66	Not Detected	2.3	Not Detected
1,1-Dichloroethane	0.66	Not Detected	2.7	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.7	3.2	7.8	9.5
cis-1,2-Dichloroethene	0.66	Not Detected	2.6	Not Detected
Tetrahydrofuran	0.66	1.4	2.0	4.3
Chloroform	0.66	Not Detected	3.2	Not Detected
1,1,1-Trichloroethane	0.66	Not Detected	3.6	Not Detected
Cyclohexane	0.66	Not Detected	2.3	Not Detected
Carbon Tetrachloride	0.66	Not Detected	4.2	Not Detected
2,2,4-Trimethylpentane	0.66	Not Detected	3.1	Not Detected
Benzene	0.66	5.6	2.1	18
1,2-Dichloroethane	0.66	Not Detected	2.7	Not Detected
Heptane	0.66	Not Detected	2.7	Not Detected
Trichloroethene	0.66	Not Detected	3.6	Not Detected
1,2-Dichloropropane	0.66	Not Detected	3.1	Not Detected
1,4-Dioxane	2.7	Not Detected	9.6	Not Detected
Bromodichloromethane	0.66	Not Detected	4.4	Not Detected
cis-1,3-Dichloropropene	0.66	Not Detected	3.0	Not Detected
4-Methyl-2-pentanone	0.66	Not Detected	2.7	Not Detected
Toluene	0.66	3.6	2.5	14
trans-1,3-Dichloropropene	0.66	Not Detected	3.0	Not Detected
1,1,2-Trichloroethane	0.66	Not Detected	3.6	Not Detected
Tetrachloroethene	0.66	Not Detected	4.5	Not Detected
2-Hexanone	2.7	Not Detected	11	Not Detected

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Client Sample ID: BVF-SUM-011-20181210-1

Lab ID#: 1812211-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p121212**	**Date of Collection:**	**12/11/18 9:45:00 AM**
Dil. Factor:	**1.33**	**Date of Analysis:**	**12/12/18 07:04 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.66	Not Detected	5.7	Not Detected
1,2-Dibromoethane (EDB)	0.66	Not Detected	5.1	Not Detected
Chlorobenzene	0.66	Not Detected	3.1	Not Detected
Ethyl Benzene	0.66	Not Detected	2.9	Not Detected
m,p-Xylene	0.66	1.0	2.9	4.5
o-Xylene	0.66	Not Detected	2.9	Not Detected
Styrene	0.66	Not Detected	2.8	Not Detected
Bromoform	0.66	Not Detected	6.9	Not Detected
Cumene	0.66	Not Detected	3.3	Not Detected
1,1,2,2-Tetrachloroethane	0.66	Not Detected	4.6	Not Detected
Propylbenzene	0.66	Not Detected	3.3	Not Detected
4-Ethyltoluene	0.66	Not Detected	3.3	Not Detected
1,3,5-Trimethylbenzene	0.66	Not Detected	3.3	Not Detected
1,2,4-Trimethylbenzene	0.66	Not Detected	3.3	Not Detected
1,3-Dichlorobenzene	0.66	Not Detected	4.0	Not Detected
1,4-Dichlorobenzene	0.66	Not Detected	4.0	Not Detected
alpha-Chlorotoluene	0.66	Not Detected	3.4	Not Detected
1,2-Dichlorobenzene	0.66	Not Detected	4.0	Not Detected
1,2,4-Trichlorobenzene	2.7	Not Detected	20	Not Detected
Hexachlorobutadiene	2.7	Not Detected	28	Not Detected
Methyl Acetate	6.6	Not Detected	20	Not Detected
Methylcyclohexane	2.7	Not Detected	11	Not Detected
Naphthalene	1.3	Not Detected	7.0	Not Detected

Container Type: 6 Liter Summa Canister (100% Cert Ambient)

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	102	70-130

US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/12DEC18.b/p121212.d
Lab Smp Id: 1812211-01A
Inj Date : 12-DEC-2018 19:04
Operator : kk Inst ID: msdp.i
Smp Info : 200ml N1674
Misc Info : 0.1 psi->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/12DEC18.b/p18q1108c.m
Meth Date : 12-Dec-2018 17:11 u7js Quant Type: ISTD
Cal Date : 04-DEC-2018 18:07 Cal File: p120415.d
Als bottle: 3
Dil Factor: 1.33000
Integrator: HP RTE Compound Sublist: Wes23155.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.413 (1.000)	130	84203	25.0000		80.00- 120.00	100.00
5.413	5.413 (1.000)	128	66627			48.70- 108.70	79.13
5.413	5.409 (1.000)	49	116073			130.32- 190.32	137.85
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.294	6.299 (1.000)	114	250695	25.0000		80.00- 120.00	100.00
6.294	6.297 (1.000)	88	34498			0.00- 44.06	13.76
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	289677	25.0000		80.00- 120.00	100.00
8.729	8.736 (1.000)	82	123888			14.84- 74.84	42.77
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
5.943	5.942 (1.098)	65	108265	24.1429	24.143	80.00- 120.00	100.00
5.943	5.943 (1.098)	67	50361			26.40- 86.40	46.52
$ 146 Toluene-d8					CAS #: 2037-26-5		
7.504	7.505 (1.192)	98	254043	24.5272	24.527	80.00- 120.00	100.00
7.504	7.504 (1.192)	70	26733			0.00- 40.19	10.52

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.504	7.505 (1.192)	100	169384			38.92- 98.92	66.68
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.711	9.720 (1.111)	174	188475	25.6262	25.626	80.00- 120.00	100.00
9.711	9.714 (1.111)	95	200381			82.53- 142.53	106.32
9.711	9.720 (1.111)	176	178147			65.10- 125.10	94.52
52 Acetone					CAS #: 67-64-1		
3.357	3.356 (0.620)	58	14800	8.83449	11.750	80.00- 120.00	100.00
3.357	3.357 (0.620)	43	51939			345.31- 405.31	350.93
92 2-Butanone					CAS #: 78-93-3		
5.205	5.200 (0.962)	72	3058	2.41464	3.211	80.00- 120.00	100.00
5.205	5.201 (0.962)	43	18754			669.23- 729.23	613.22
5.198	5.204 (0.960)	57	1407			20.89- 80.89	46.02
99 Tetrahydrofuran					CAS #: 109-99-9		
5.413	5.410 (1.000)	42	4719	1.09149	1.452	80.00- 120.00	100.00
5.413	5.412 (1.000)	71	803			0.00- 54.27	17.03
5.413	5.411 (1.000)	72	1060			0.00- 54.41	22.47
116 Benzene					CAS #: 71-43-2		
5.921	5.927 (0.941)	78	37111	4.18809	5.570	80.00- 120.00	100.00
5.921	5.925 (0.941)	77	9456			0.00- 54.10	25.48
147 Toluene					CAS #: 108-88-3		
7.562	7.562 (1.201)	91	31798	2.70234	3.594	80.00- 120.00	100.00
7.562	7.562 (1.201)	92	18309			28.88- 88.88	57.58
169 m,p-Xylene					CAS #: 108-38-3		
8.901	8.905 (1.019)	106	5010	0.77735	1.034	80.00- 120.00	100.00
8.901	8.906 (1.019)	91	9438			159.20- 219.20	188.38

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p121212.d
Lab Smp Id: 1812211-01A
Analysis Type: VOA
Quant Type: ISTD
Operator: kk
Method File: /chem/msdp.i/12DEC18.b/p18q1108c.m
Misc Info: 0.1 psi->5 psi

Calibration Date: 12-DEC-2018
Calibration Time: 10:47

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	75875	45525	106225	84203	10.98
123 1,4-Difluorobenze	227347	136408	318286	250695	10.27
163 Chlorobenzene-d5	252646	151588	353704	289677	14.66

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	-0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 13-Dec-2018 06:26

US32APPTV002

RECOVERY REPORT

Client Name: Client SDG: 12DEC18
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1812211-01A
Level: LOW Operator: kk
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: Wes23155.sub
Method File: /chem/msdp.i/12DEC18.b/p18q1108c.m
Misc Info: 0.1 psi->5 psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 117 1,2-Dichloroethane-d4	25.000	24.143	96.57
$ 146 Toluene-d8	25.000	24.527	98.11
$ 177 4-Bromofluorobenzene	25.000	25.626	102.50

Data File: /chem/msdp.i/12DEC18.b/p121212.d

Date : 12-DEC-2018 19:04

Client ID:

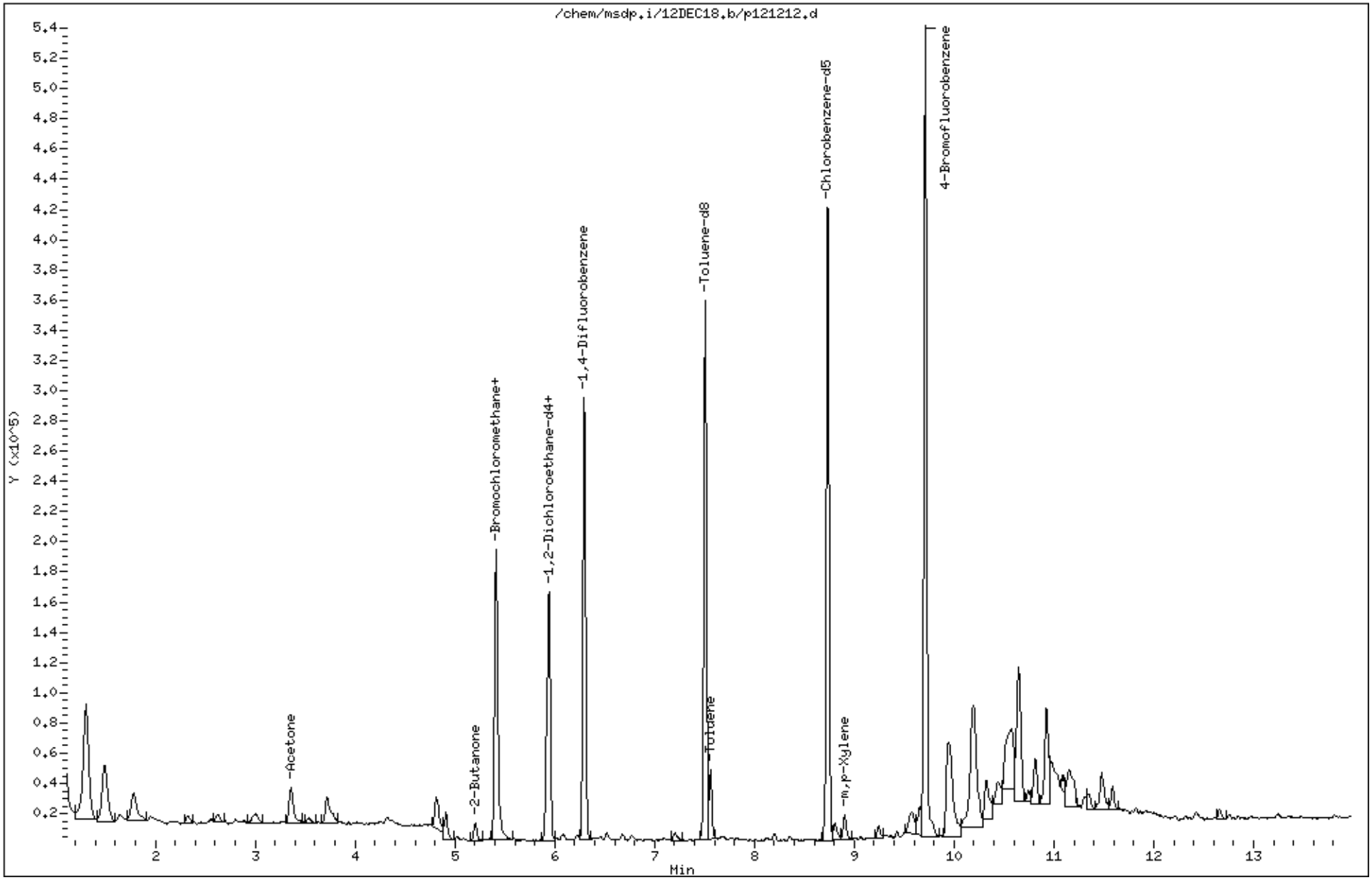
Sample Info: 200ml N1674

Column phase: RTX-624

Instrument: msdp.i

Operator: kk

Column diameter: 0.25



Data File: /chem/msdp.i/12DEC18.b/p121212.d

Date : 12-DEC-2018 19:04

Client ID:

Instrument: msdp.i

Sample Info: 200ml N1674

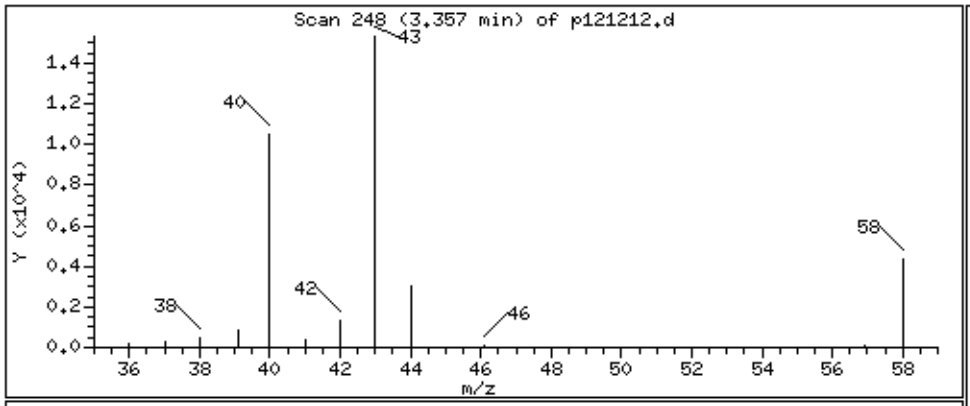
Operator: kk

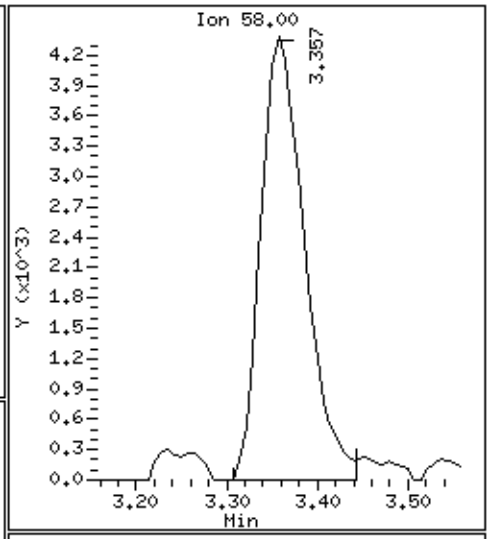
Column phase: RTX-624

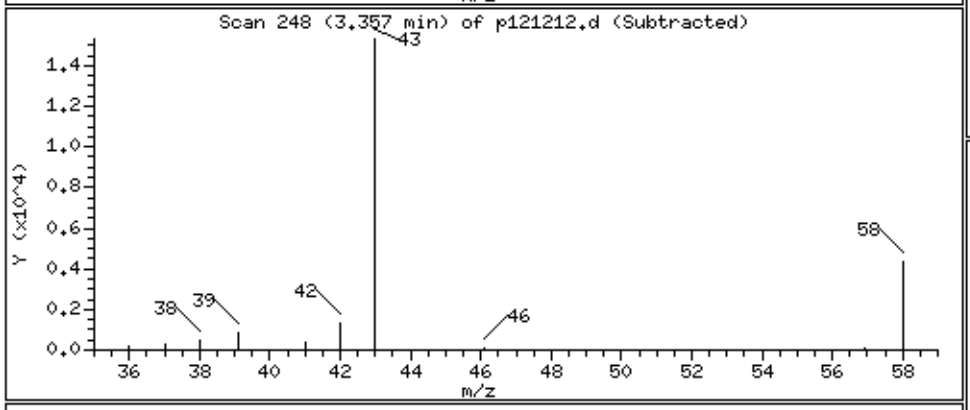
Column diameter: 0.25

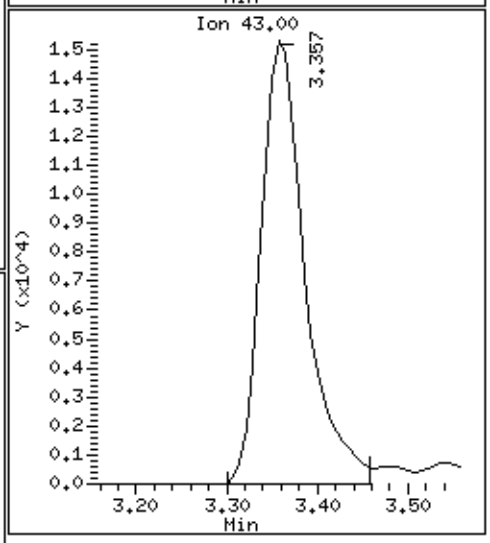
52 Acetone

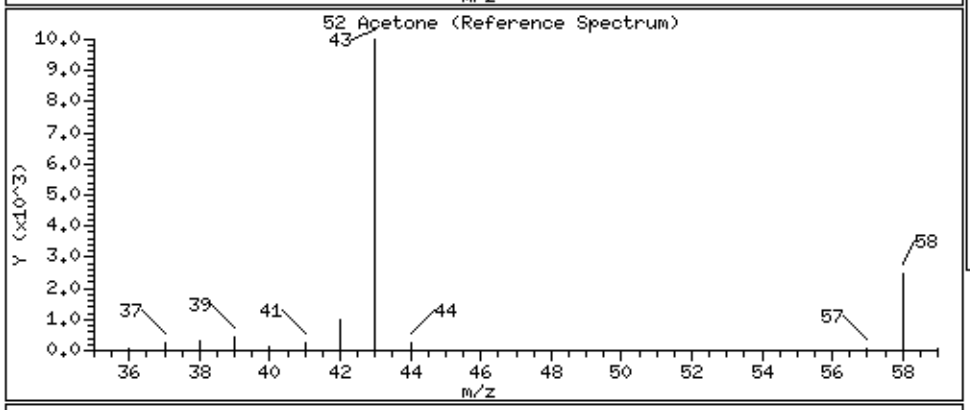
Concentration: 11.750 PPBV

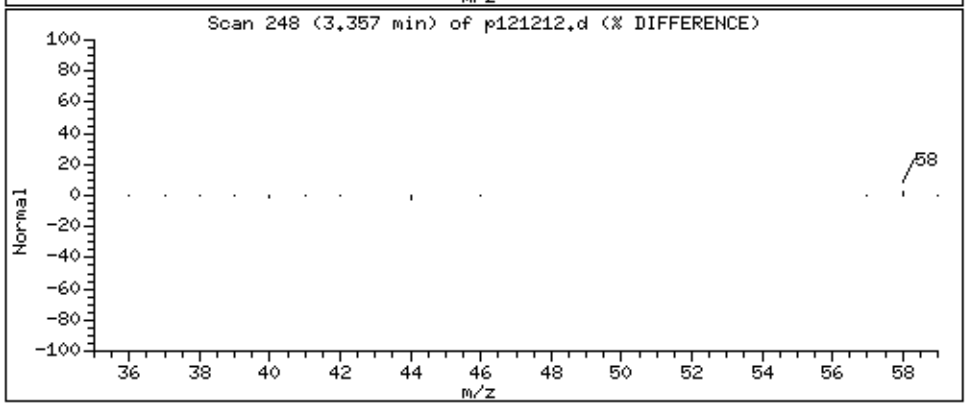












Data File: /chem/msdp.i/12DEC18.b/p121212.d

Date : 12-DEC-2018 19:04

Client ID:

Instrument: msdp.i

Sample Info: 200ml N1674

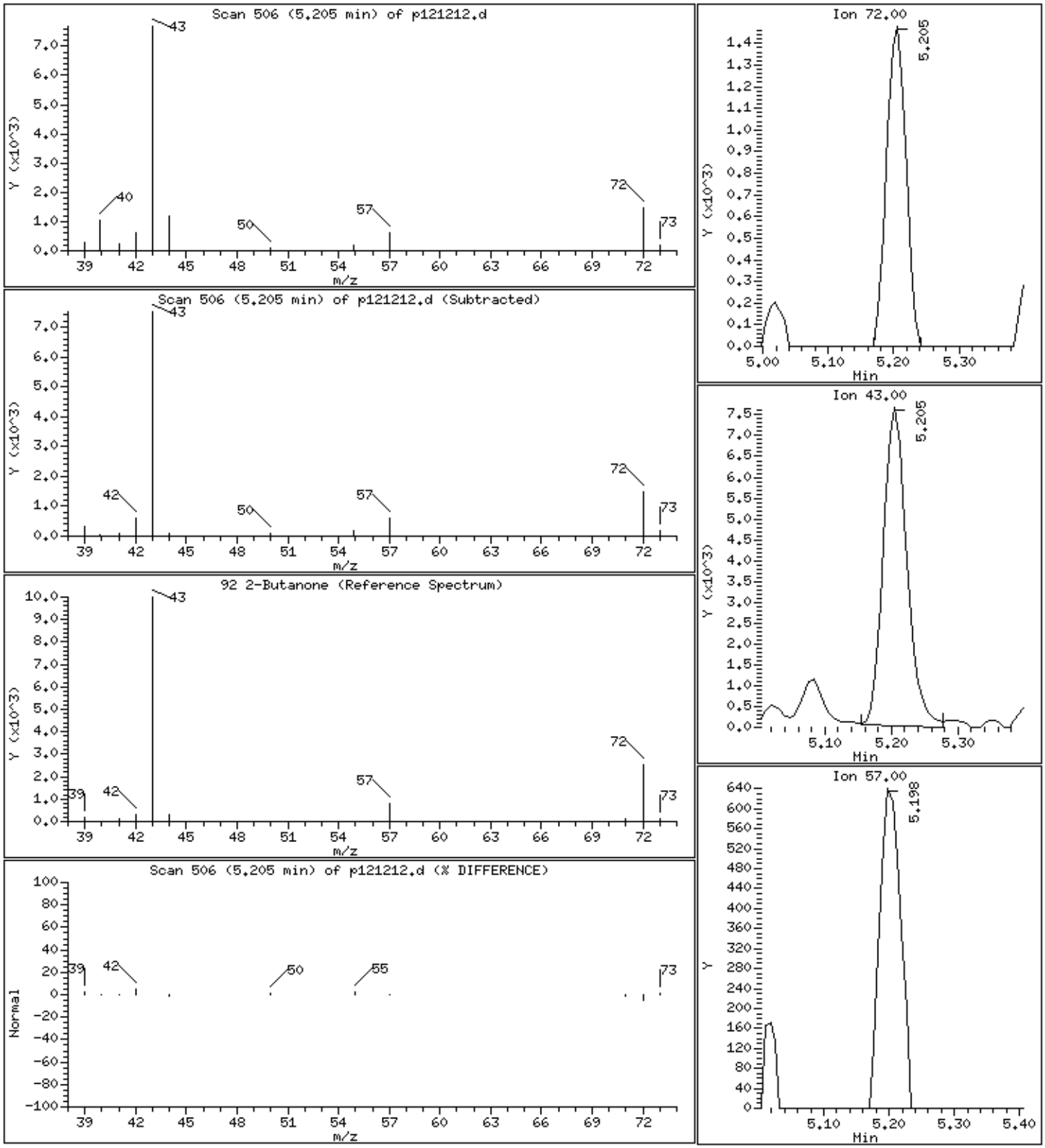
Operator: kk

Column phase: RTX-624

Column diameter: 0.25

92 2-Butanone

Concentration: 3.211 PPBV



Data File: /chem/msdp.i/12DEC18.b/p121212.d

Date : 12-DEC-2018 19:04

Client ID:

Instrument: msdp.i

Sample Info: 200ml N1674

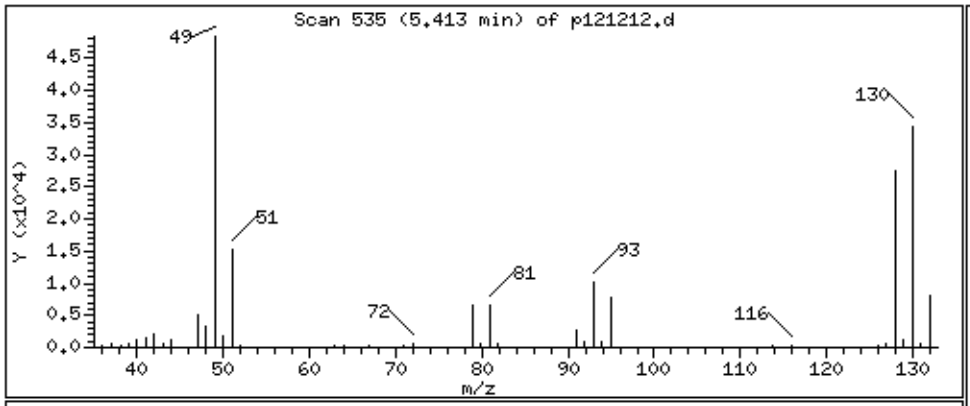
Operator: kk

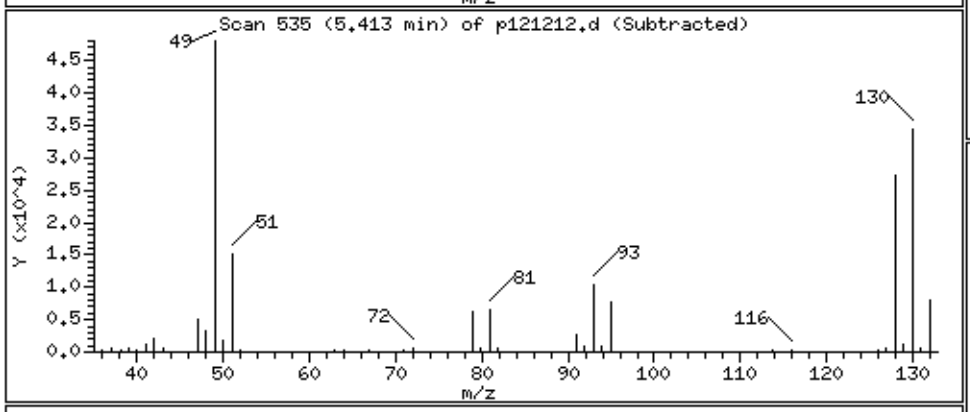
Column phase: RTX-624

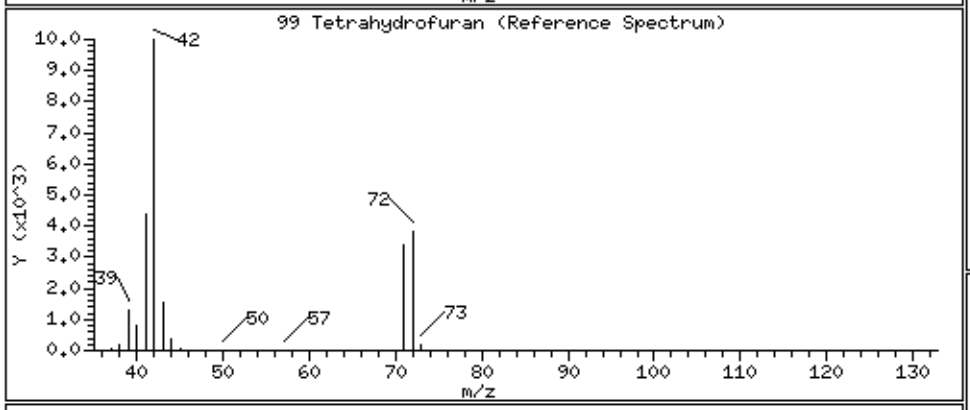
Column diameter: 0.25

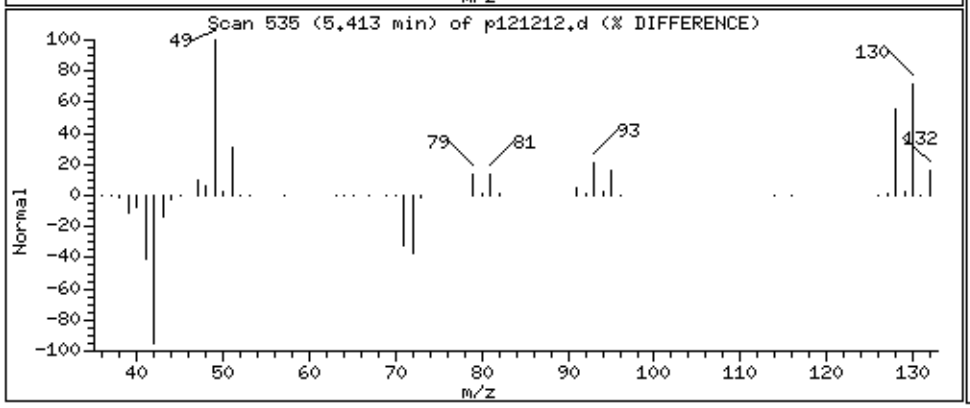
99 Tetrahydrofuran

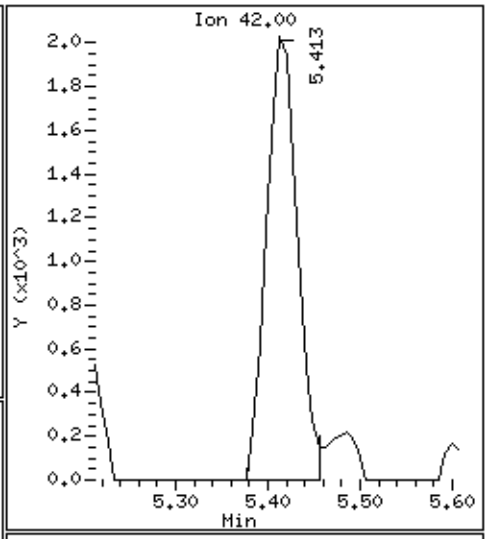
Concentration: 1.452 PPBV

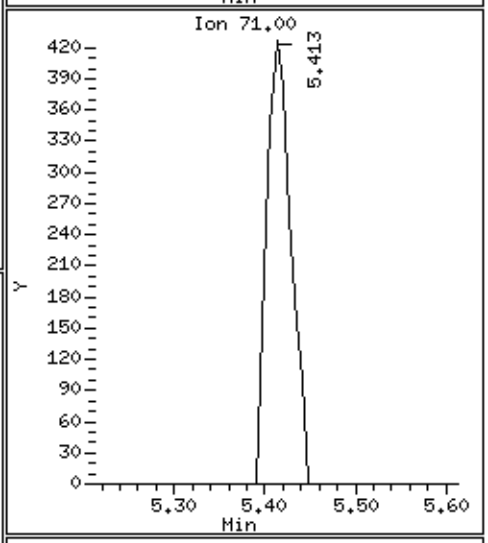


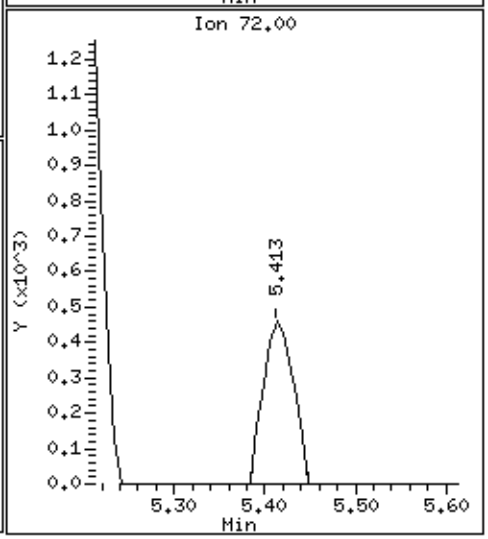












Data File: /chem/msdp.i/12DEC18.b/p121212.d

Date : 12-DEC-2018 19:04

Client ID:

Instrument: msdp.i

Sample Info: 200ml N1674

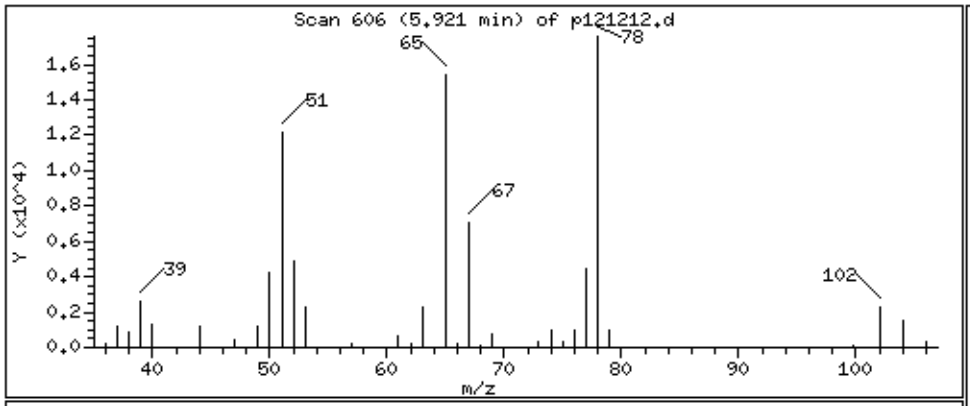
Operator: kk

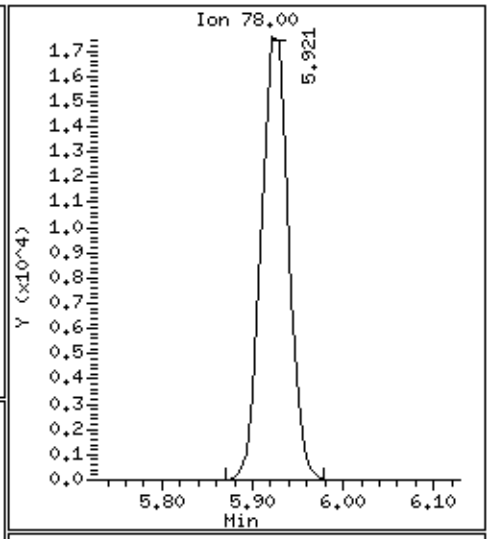
Column phase: RTX-624

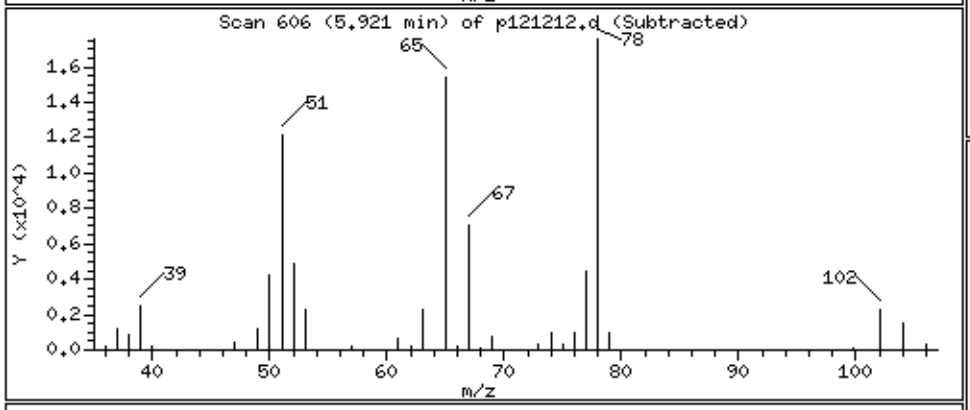
Column diameter: 0.25

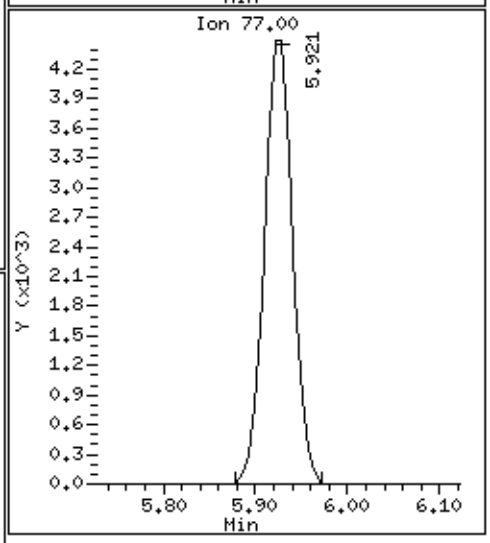
116 Benzene

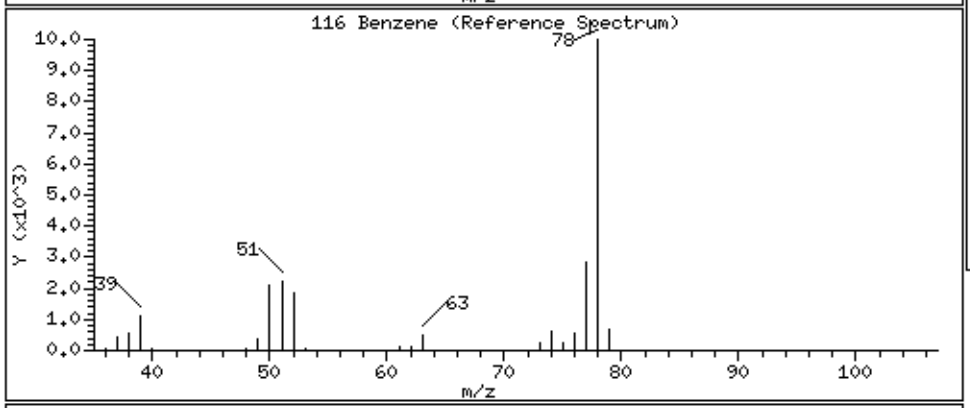
Concentration: 5.570 PPBV

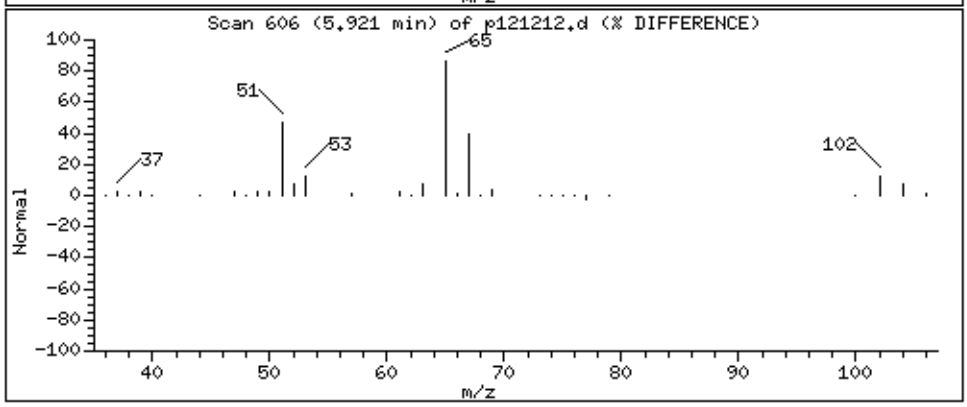












Data File: /chem/msdp.i/12DEC18.b/p121212.d

Date : 12-DEC-2018 19:04

Client ID:

Instrument: msdp.i

Sample Info: 200ml N1674

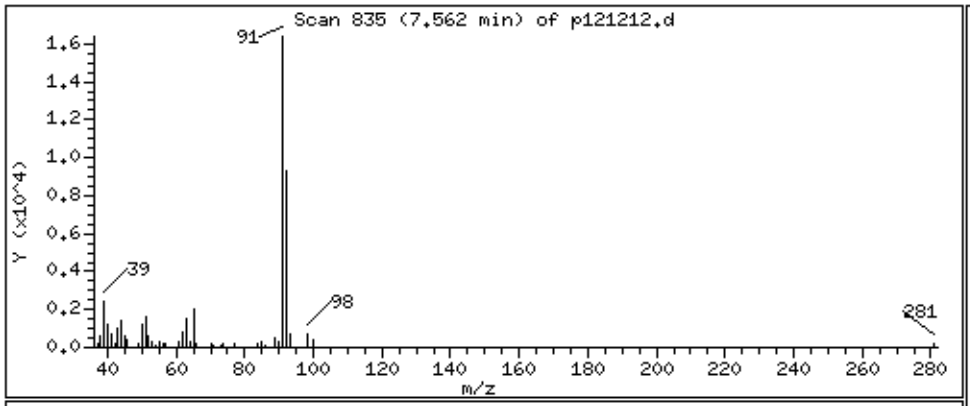
Operator: kk

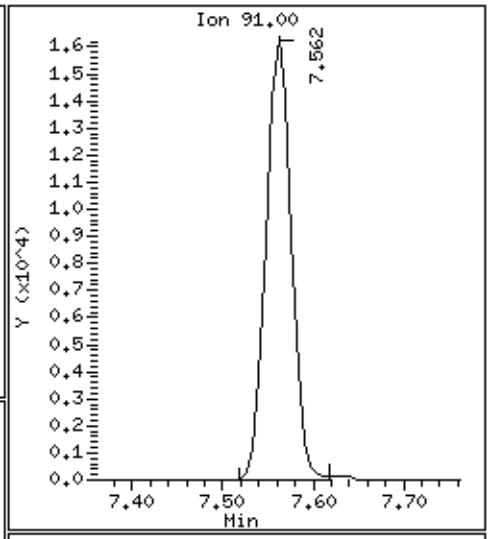
Column phase: RTX-624

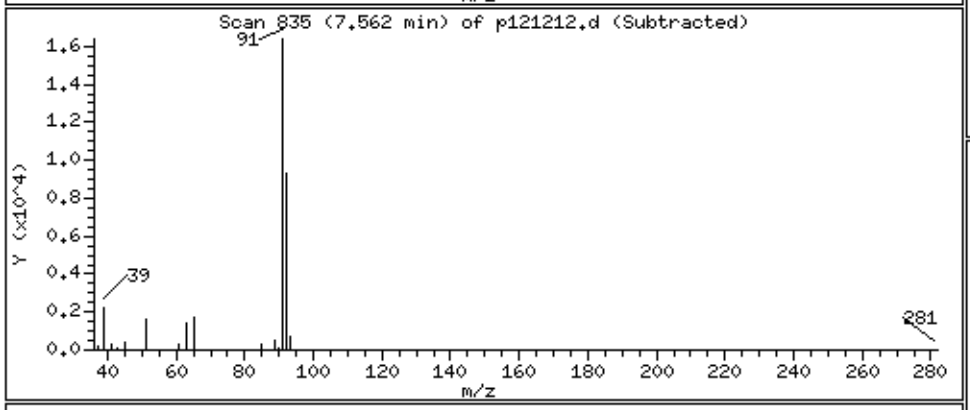
Column diameter: 0.25

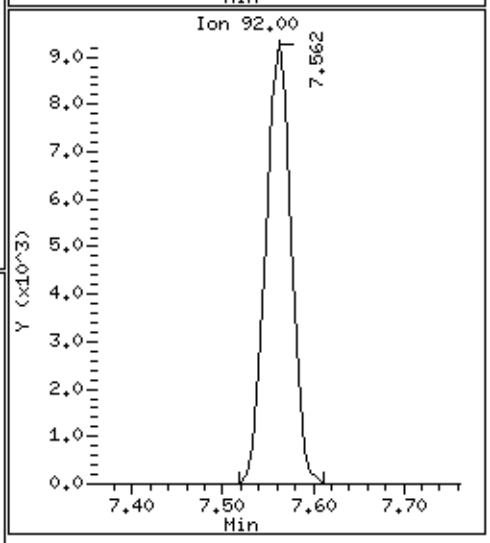
147 Toluene

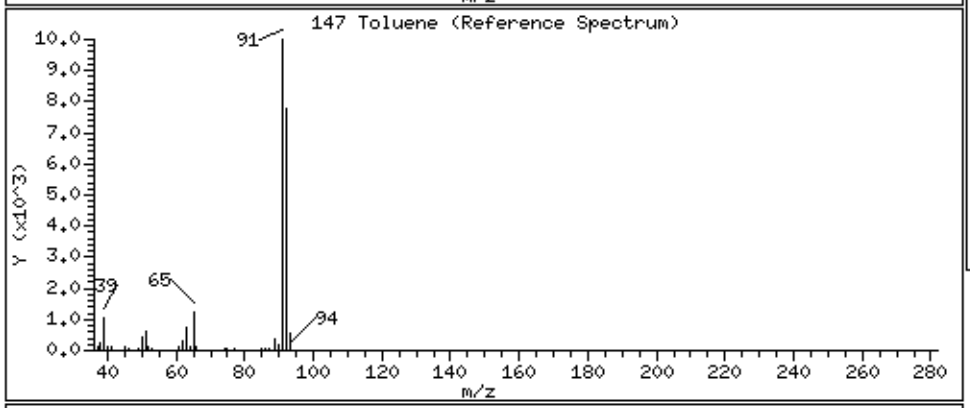
Concentration: 3.594 PPBV

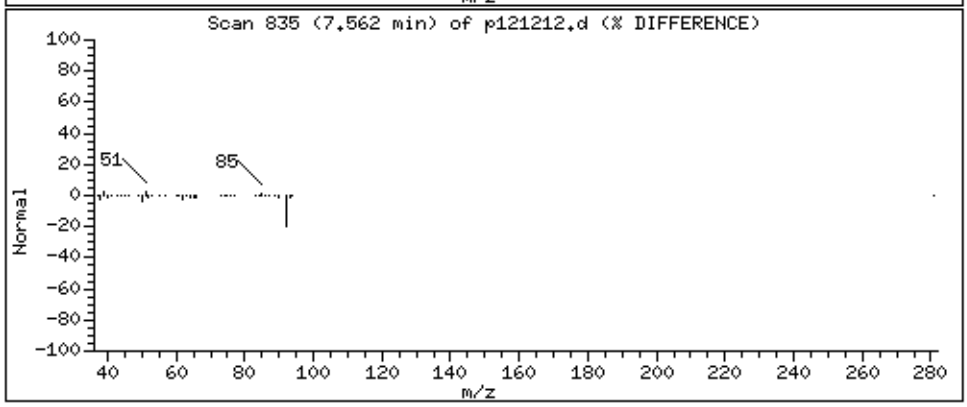












Data File: /chem/msdp.i/12DEC18.b/p121212.d

Date : 12-DEC-2018 19:04

Client ID:

Instrument: msdp.i

Sample Info: 200ml N1674

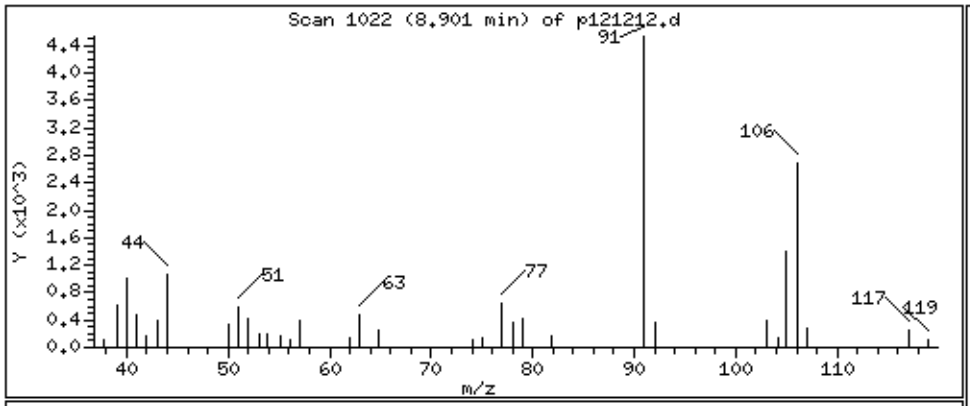
Operator: kk

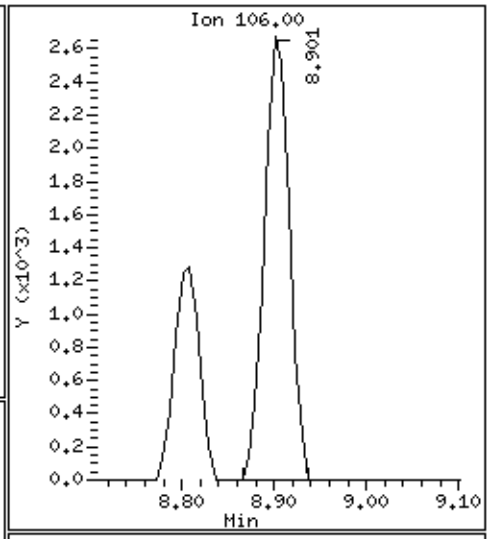
Column phase: RTX-624

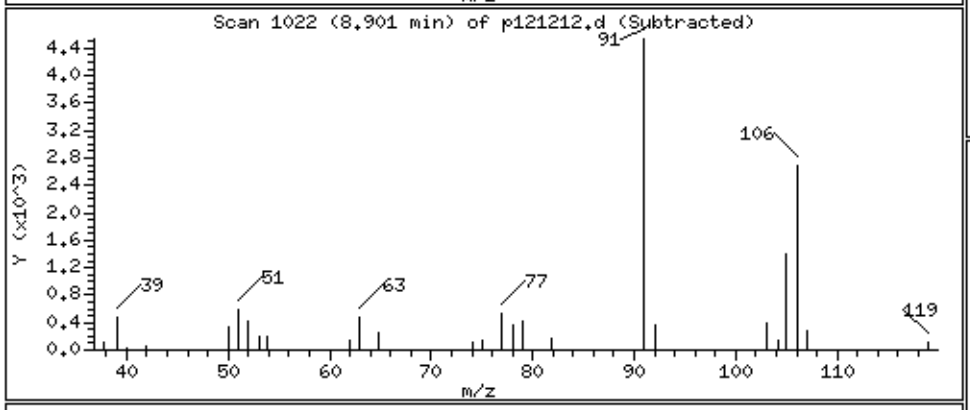
Column diameter: 0.25

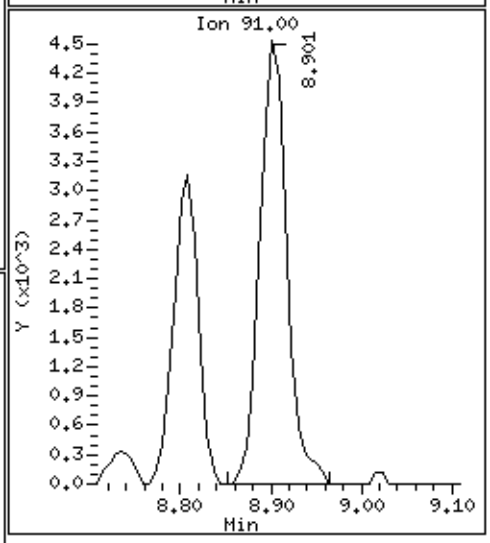
169 m,p-Xylene

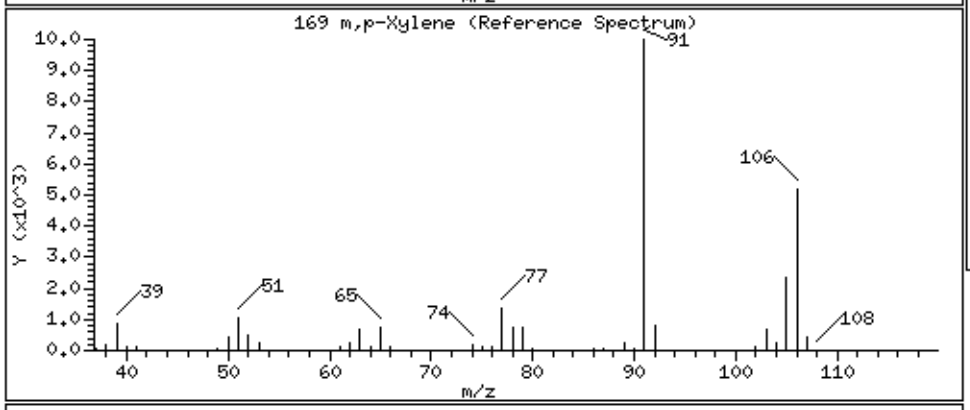
Concentration: 1.034 PPBV

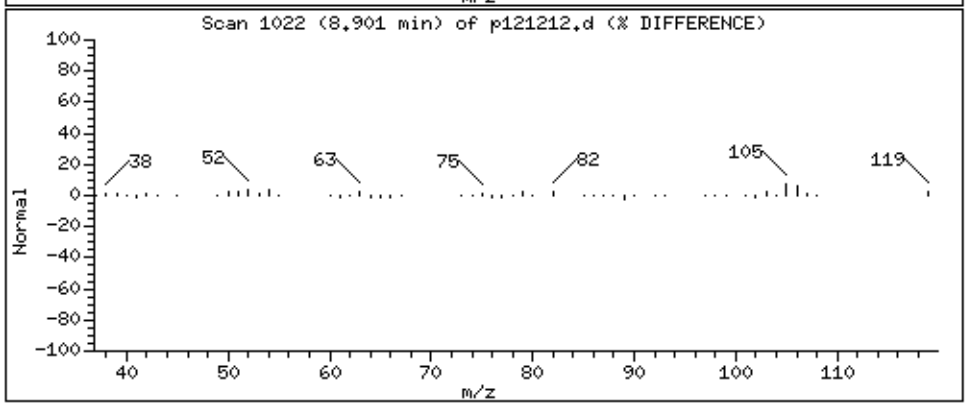












eurofins | Air Toxics

Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: BVF-SUM-012-20181210-1

Lab ID#: 1812211-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.77	3.0	2.4	9.7
Toluene	0.77	1.7	2.9	6.3

eurofins | Air Toxics

Client Sample ID: BVF-SUM-012-20181210-1

Lab ID#: 1812211-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p121213**	**Date of Collection:**	**12/11/18 10:35:00 A**
Dil. Factor:	**1.54**	**Date of Analysis:**	**12/12/18 07:30 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.77	Not Detected	3.8	Not Detected
Freon 114	0.77	Not Detected	5.4	Not Detected
Chloromethane	7.7	Not Detected	16	Not Detected
Vinyl Chloride	0.77	Not Detected	2.0	Not Detected
1,3-Butadiene	0.77	Not Detected	1.7	Not Detected
Bromomethane	7.7	Not Detected	30	Not Detected
Chloroethane	3.1	Not Detected	8.1	Not Detected
Freon 11	0.77	Not Detected	4.3	Not Detected
Ethanol	3.1	Not Detected	5.8	Not Detected
Freon 113	0.77	Not Detected	5.9	Not Detected
1,1-Dichloroethene	0.77	Not Detected	3.0	Not Detected
Acetone	7.7	Not Detected	18	Not Detected
2-Propanol	3.1	Not Detected	7.6	Not Detected
Carbon Disulfide	3.1	Not Detected	9.6	Not Detected
3-Chloropropene	3.1	Not Detected	9.6	Not Detected
Methylene Chloride	7.7	Not Detected	27	Not Detected
Methyl tert-butyl ether	3.1	Not Detected	11	Not Detected
trans-1,2-Dichloroethene	0.77	Not Detected	3.0	Not Detected
Hexane	0.77	Not Detected	2.7	Not Detected
1,1-Dichloroethane	0.77	Not Detected	3.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.1	Not Detected	9.1	Not Detected
cis-1,2-Dichloroethene	0.77	Not Detected	3.0	Not Detected
Tetrahydrofuran	0.77	Not Detected	2.3	Not Detected
Chloroform	0.77	Not Detected	3.8	Not Detected
1,1,1-Trichloroethane	0.77	Not Detected	4.2	Not Detected
Cyclohexane	0.77	Not Detected	2.6	Not Detected
Carbon Tetrachloride	0.77	Not Detected	4.8	Not Detected
2,2,4-Trimethylpentane	0.77	Not Detected	3.6	Not Detected
Benzene	0.77	3.0	2.4	9.7
1,2-Dichloroethane	0.77	Not Detected	3.1	Not Detected
Heptane	0.77	Not Detected	3.2	Not Detected
Trichloroethene	0.77	Not Detected	4.1	Not Detected
1,2-Dichloropropane	0.77	Not Detected	3.6	Not Detected
1,4-Dioxane	3.1	Not Detected	11	Not Detected
Bromodichloromethane	0.77	Not Detected	5.2	Not Detected
cis-1,3-Dichloropropene	0.77	Not Detected	3.5	Not Detected
4-Methyl-2-pentanone	0.77	Not Detected	3.2	Not Detected
Toluene	0.77	1.7	2.9	6.3
trans-1,3-Dichloropropene	0.77	Not Detected	3.5	Not Detected
1,1,2-Trichloroethane	0.77	Not Detected	4.2	Not Detected
Tetrachloroethene	0.77	Not Detected	5.2	Not Detected
2-Hexanone	3.1	Not Detected	13	Not Detected

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Client Sample ID: BVF-SUM-012-20181210-1

Lab ID#: 1812211-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p121213**	**Date of Collection:**	**12/11/18 10:35:00 A**
Dil. Factor:	**1.54**	**Date of Analysis:**	**12/12/18 07:30 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.77	Not Detected	6.6	Not Detected
1,2-Dibromoethane (EDB)	0.77	Not Detected	5.9	Not Detected
Chlorobenzene	0.77	Not Detected	3.5	Not Detected
Ethyl Benzene	0.77	Not Detected	3.3	Not Detected
m,p-Xylene	0.77	Not Detected	3.3	Not Detected
o-Xylene	0.77	Not Detected	3.3	Not Detected
Styrene	0.77	Not Detected	3.3	Not Detected
Bromoform	0.77	Not Detected	8.0	Not Detected
Cumene	0.77	Not Detected	3.8	Not Detected
1,1,2,2-Tetrachloroethane	0.77	Not Detected	5.3	Not Detected
Propylbenzene	0.77	Not Detected	3.8	Not Detected
4-Ethyltoluene	0.77	Not Detected	3.8	Not Detected
1,3,5-Trimethylbenzene	0.77	Not Detected	3.8	Not Detected
1,2,4-Trimethylbenzene	0.77	Not Detected	3.8	Not Detected
1,3-Dichlorobenzene	0.77	Not Detected	4.6	Not Detected
1,4-Dichlorobenzene	0.77	Not Detected	4.6	Not Detected
alpha-Chlorotoluene	0.77	Not Detected	4.0	Not Detected
1,2-Dichlorobenzene	0.77	Not Detected	4.6	Not Detected
1,2,4-Trichlorobenzene	3.1	Not Detected	23	Not Detected
Hexachlorobutadiene	3.1	Not Detected	33	Not Detected
Methyl Acetate	7.7	Not Detected	23	Not Detected
Methylcyclohexane	3.1	Not Detected	12	Not Detected
Naphthalene	1.5	Not Detected	8.1	Not Detected

Container Type: 6 Liter Summa Canister (100% Cert Ambient)

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	99	70-130

US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/12DEC18.b/p121213.d
Lab Smp Id: 1812211-02A
Inj Date : 12-DEC-2018 19:30
Operator : kk Inst ID: msdp.i
Smp Info : 200ml N1675
Misc Info : 3.9 Hg->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/12DEC18.b/p18q1108c.m
Meth Date : 12-Dec-2018 17:11 u7js Quant Type: ISTD
Cal Date : 04-DEC-2018 18:07 Cal File: p120415.d
Als bottle: 4
Dil Factor: 1.54000
Integrator: HP RTE Compound Sublist: Wes23155.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5		
5.413	5.413	(1.000)	130	85403	25.0000		80.00- 120.00	100.00
5.413	5.413	(1.000)	128	65616			48.70- 108.70	76.83
5.413	5.409	(1.000)	49	119056			130.32- 190.32	139.41
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.294	6.299	(1.000)	114	252840	25.0000		80.00- 120.00	100.00
6.294	6.297	(1.000)	88	35396			0.00- 44.06	14.00
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.736	8.736	(1.000)	117	287518	25.0000		80.00- 120.00	100.00
8.729	8.736	(1.000)	82	125232			14.84- 74.84	43.56
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.943	5.942	(1.098)	65	109075	23.9818	23.982	80.00- 120.00	100.00
5.943	5.943	(1.098)	67	51104			26.40- 86.40	46.85
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.504	7.505	(1.192)	98	252428	24.1645	24.164	80.00- 120.00	100.00
7.504	7.504	(1.192)	70	27135			0.00- 40.19	10.75

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)								
7.504	7.505	(1.192)	100	169679			38.92- 98.92	67.22
$ 177 4-Bromofluorobenzene						CAS #: 460-00-4		
9.710	9.720	(1.111)	174	180518	24.7286	24.729	80.00- 120.00	100.00
9.710	9.714	(1.111)	95	194861			82.53- 142.53	107.95
9.718	9.720	(1.112)	176	169596			65.10- 125.10	93.95
116 Benzene						CAS #: 71-43-2		
5.928	5.927	(0.942)	78	17629	1.97261	3.038	80.00- 120.00	100.00
5.928	5.925	(0.942)	77	4243			0.00- 54.10	24.07
147 Toluene						CAS #: 108-88-3		
7.562	7.562	(1.201)	91	12852	1.08296	1.668	80.00- 120.00	100.00
7.562	7.562	(1.201)	92	7684			28.88- 88.88	59.79

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p121213.d
Lab Smp Id: 1812211-02A
Analysis Type: VOA
Quant Type: ISTD
Operator: kk
Method File: /chem/msdp.i/12DEC18.b/p18q1108c.m
Misc Info: 3.9 Hg->5 psi

Calibration Date: 12-DEC-2018
Calibration Time: 10:47

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	75875	45525	106225	85403	12.56
123 1,4-Difluorobenze	227347	136408	318286	252840	11.21
163 Chlorobenzene-d5	252646	151588	353704	287518	13.80

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	-0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 13-Dec-2018 06:26

US32APPTV002

RECOVERY REPORT

Client Name: Client SDG: 12DEC18
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1812211-02A
Level: LOW Operator: kk
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: Wes23155.sub
Method File: /chem/msdp.i/12DEC18.b/p18q1108c.m
Misc Info: 3.9 Hg->5 psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 117 1,2-Dichloroethane-d4	25.000	23.982	95.93
$ 146 Toluene-d8	25.000	24.164	96.66
$ 177 4-Bromofluorobenzene	25.000	24.729	98.91

Data File: /chem/msdp.i/12DEC18.b/p121213.d

Date : 12-DEC-2018 19:30

Client ID:

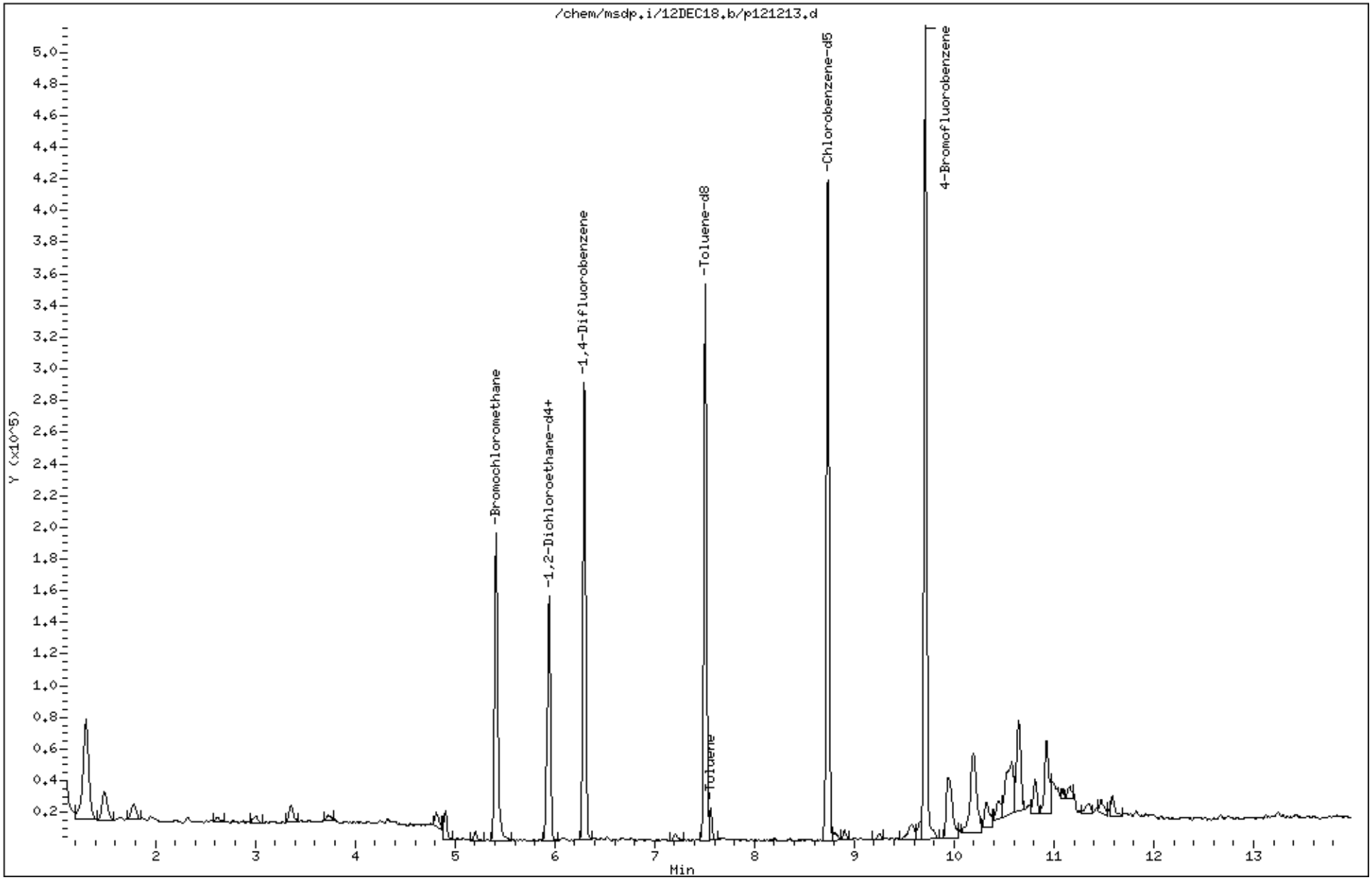
Sample Info: 200ml N1675

Column phase: RTX-624

Instrument: msdp.i

Operator: kk

Column diameter: 0.25



Data File: /chem/msdp.i/12DEC18.b/p121213.d

Date : 12-DEC-2018 19:30

Client ID:

Instrument: msdp.i

Sample Info: 200ml N1675

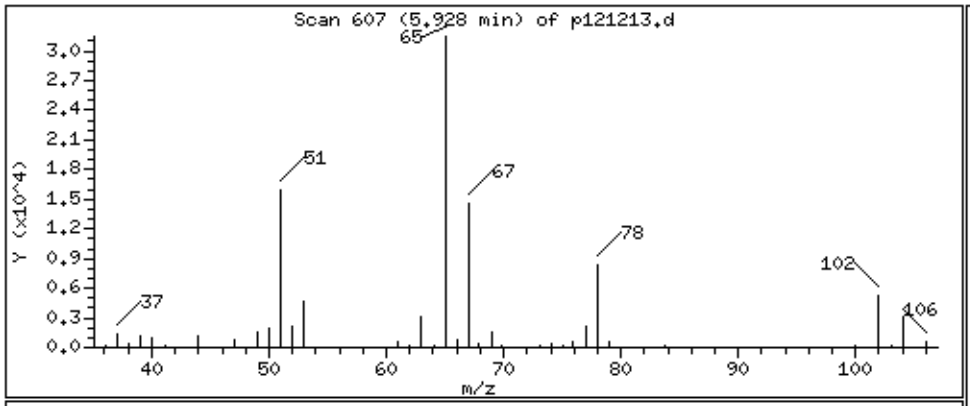
Operator: kk

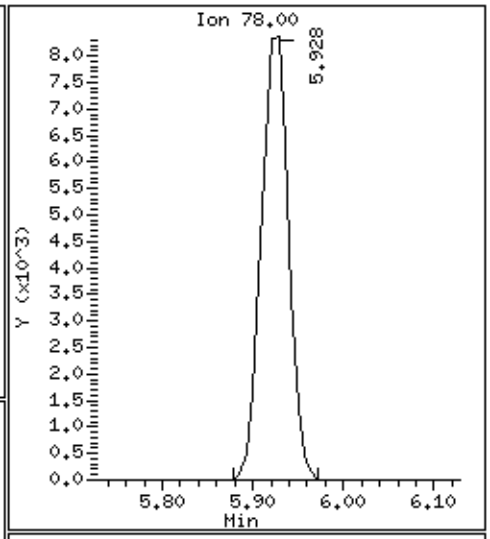
Column phase: RTX-624

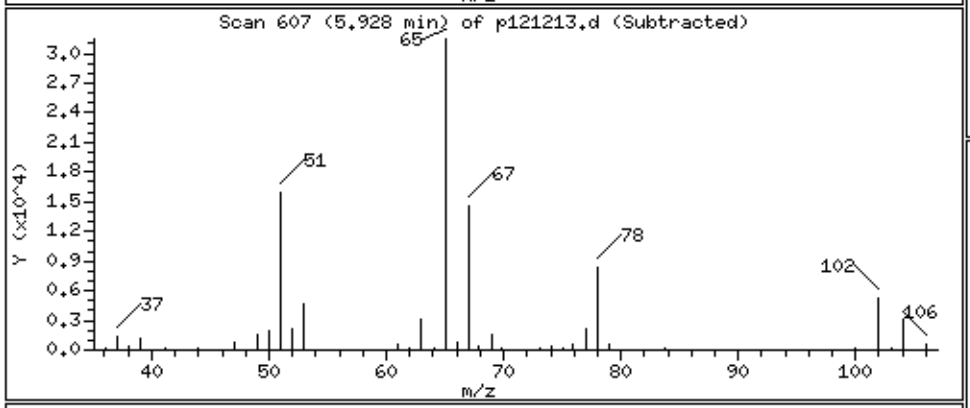
Column diameter: 0.25

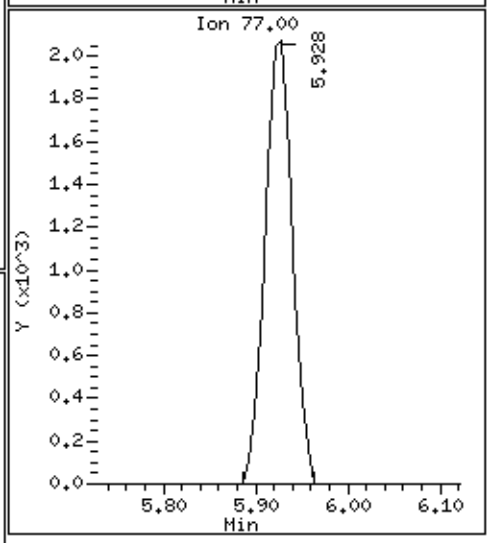
116 Benzene

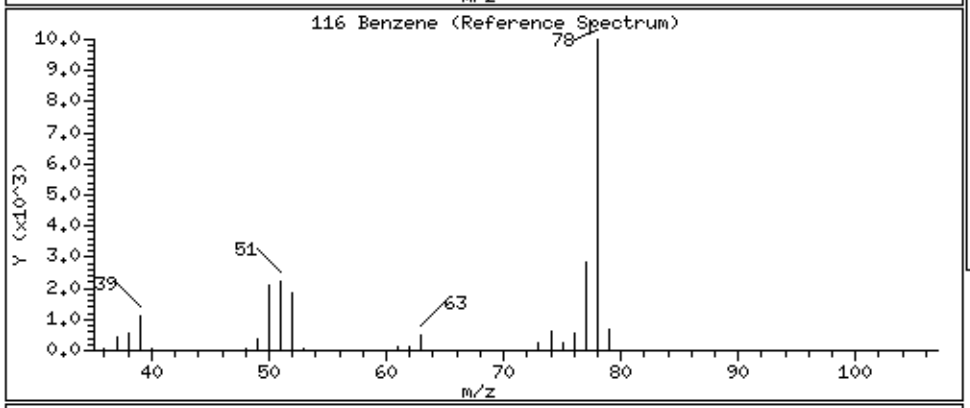
Concentration: 3.038 PPBV

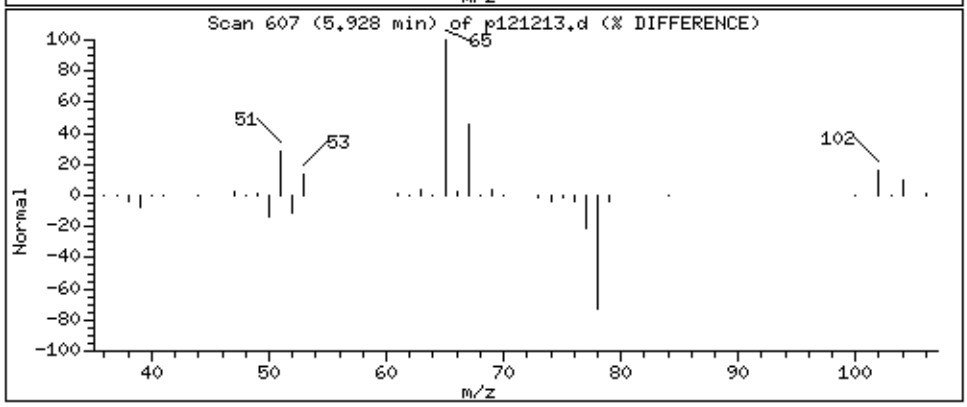












Data File: /chem/msdp.i/12DEC18.b/p121213.d

Date : 12-DEC-2018 19:30

Client ID:

Instrument: msdp.i

Sample Info: 200ml N1675

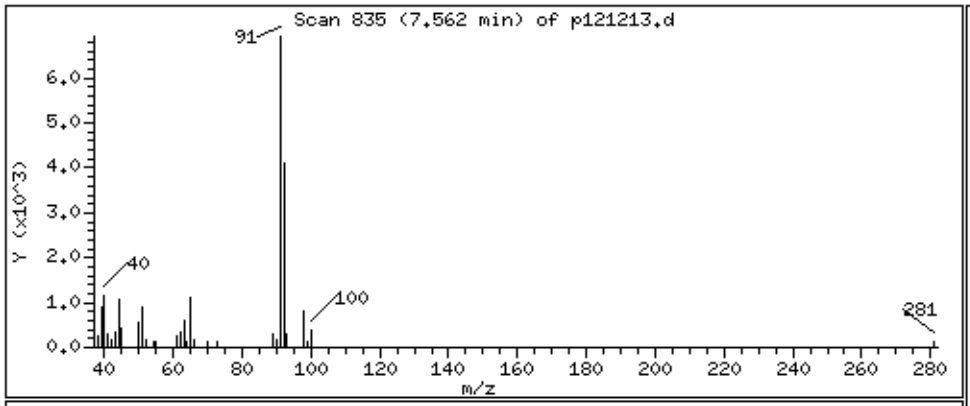
Operator: kk

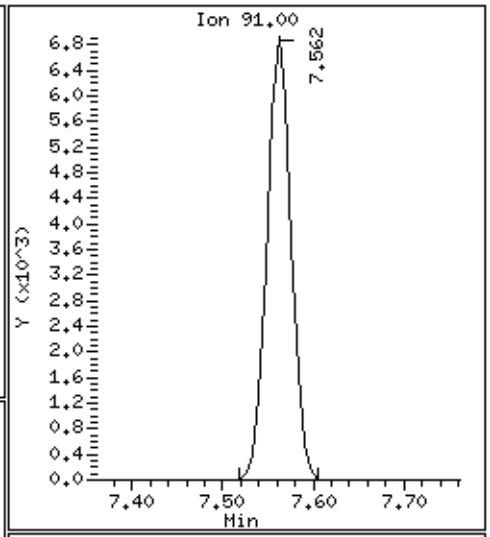
Column phase: RTX-624

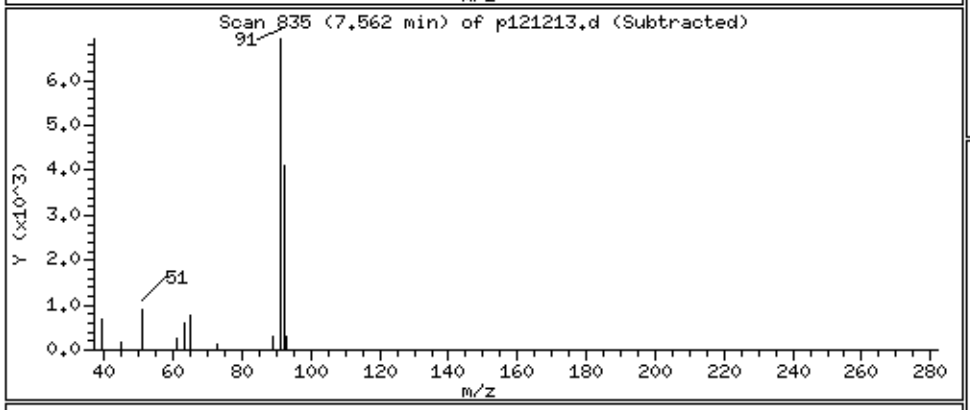
Column diameter: 0.25

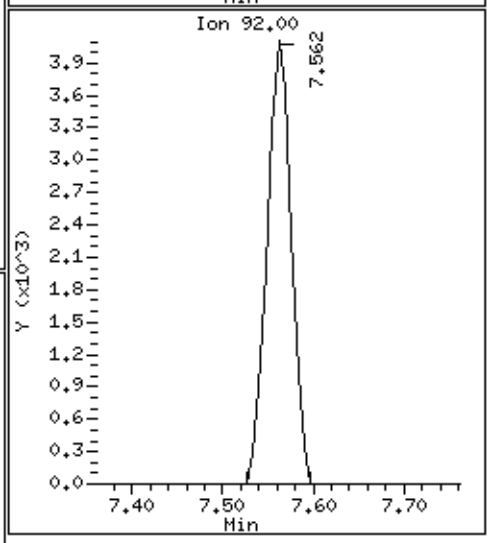
147 Toluene

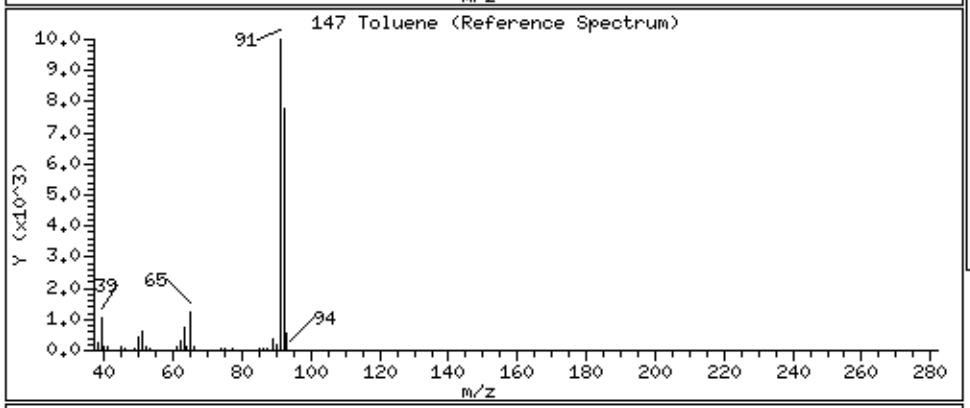
Concentration: 1.668 PPBV

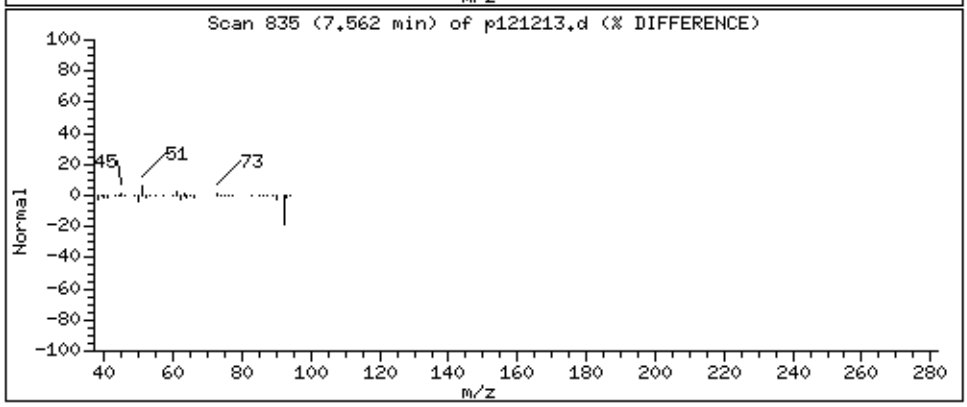












eurofins | Air Toxics

Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: BVF-SUM-013-20181210-1

Lab ID#: 1812211-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	3.1	3.3	5.8	6.2
Acetone	7.6	61	18	150
2-Propanol	3.1	6.0	7.5	15
Hexane	0.76	1.8	2.7	6.5
2-Butanone (Methyl Ethyl Ketone)	3.1	13	9.0	40
Tetrahydrofuran	0.76	7.6	2.2	22
Benzene	0.76	22	2.4	70
Heptane	0.76	1.3	3.1	5.2
Toluene	0.76	13	2.9	49
Ethyl Benzene	0.76	1.7	3.3	7.5
m,p-Xylene	0.76	3.7	3.3	16
o-Xylene	0.76	1.4	3.3	6.3
4-Ethyltoluene	0.76	1.0	3.8	5.0
1,2,4-Trimethylbenzene	0.76	0.84	3.8	4.1
Methyl Acetate	7.6	18	23	55

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Client Sample ID: BVF-SUM-013-20181210-1

Lab ID#: 1812211-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p121214**	**Date of Collection:**	**12/11/18 8:45:00 AM**
Dil. Factor:	**1.53**	**Date of Analysis:**	**12/12/18 07:56 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.76	Not Detected	3.8	Not Detected
Freon 114	0.76	Not Detected	5.3	Not Detected
Chloromethane	7.6	Not Detected	16	Not Detected
Vinyl Chloride	0.76	Not Detected	2.0	Not Detected
1,3-Butadiene	0.76	Not Detected	1.7	Not Detected
Bromomethane	7.6	Not Detected	30	Not Detected
Chloroethane	3.1	Not Detected	8.1	Not Detected
Freon 11	0.76	Not Detected	4.3	Not Detected
Ethanol	3.1	3.3	5.8	6.2
Freon 113	0.76	Not Detected	5.9	Not Detected
1,1-Dichloroethene	0.76	Not Detected	3.0	Not Detected
Acetone	7.6	61	18	150
2-Propanol	3.1	6.0	7.5	15
Carbon Disulfide	3.1	Not Detected	9.5	Not Detected
3-Chloropropene	3.1	Not Detected	9.6	Not Detected
Methylene Chloride	7.6	Not Detected	26	Not Detected
Methyl tert-butyl ether	3.1	Not Detected	11	Not Detected
trans-1,2-Dichloroethene	0.76	Not Detected	3.0	Not Detected
Hexane	0.76	1.8	2.7	6.5
1,1-Dichloroethane	0.76	Not Detected	3.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.1	13	9.0	40
cis-1,2-Dichloroethene	0.76	Not Detected	3.0	Not Detected
Tetrahydrofuran	0.76	7.6	2.2	22
Chloroform	0.76	Not Detected	3.7	Not Detected
1,1,1-Trichloroethane	0.76	Not Detected	4.2	Not Detected
Cyclohexane	0.76	Not Detected	2.6	Not Detected
Carbon Tetrachloride	0.76	Not Detected	4.8	Not Detected
2,2,4-Trimethylpentane	0.76	Not Detected	3.6	Not Detected
Benzene	0.76	22	2.4	70
1,2-Dichloroethane	0.76	Not Detected	3.1	Not Detected
Heptane	0.76	1.3	3.1	5.2
Trichloroethene	0.76	Not Detected	4.1	Not Detected
1,2-Dichloropropane	0.76	Not Detected	3.5	Not Detected
1,4-Dioxane	3.1	Not Detected	11	Not Detected
Bromodichloromethane	0.76	Not Detected	5.1	Not Detected
cis-1,3-Dichloropropene	0.76	Not Detected	3.5	Not Detected
4-Methyl-2-pentanone	0.76	Not Detected	3.1	Not Detected
Toluene	0.76	13	2.9	49
trans-1,3-Dichloropropene	0.76	Not Detected	3.5	Not Detected
1,1,2-Trichloroethane	0.76	Not Detected	4.2	Not Detected
Tetrachloroethene	0.76	Not Detected	5.2	Not Detected
2-Hexanone	3.1	Not Detected	12	Not Detected

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Client Sample ID: BVF-SUM-013-20181210-1

Lab ID#: 1812211-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p121214**	**Date of Collection:**	**12/11/18 8:45:00 AM**
Dil. Factor:	**1.53**	**Date of Analysis:**	**12/12/18 07:56 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.76	Not Detected	6.5	Not Detected
1,2-Dibromoethane (EDB)	0.76	Not Detected	5.9	Not Detected
Chlorobenzene	0.76	Not Detected	3.5	Not Detected
Ethyl Benzene	0.76	1.7	3.3	7.5
m,p-Xylene	0.76	3.7	3.3	16
o-Xylene	0.76	1.4	3.3	6.3
Styrene	0.76	Not Detected	3.2	Not Detected
Bromoform	0.76	Not Detected	7.9	Not Detected
Cumene	0.76	Not Detected	3.8	Not Detected
1,1,2,2-Tetrachloroethane	0.76	Not Detected	5.2	Not Detected
Propylbenzene	0.76	Not Detected	3.8	Not Detected
4-Ethyltoluene	0.76	1.0	3.8	5.0
1,3,5-Trimethylbenzene	0.76	Not Detected	3.8	Not Detected
1,2,4-Trimethylbenzene	0.76	0.84	3.8	4.1
1,3-Dichlorobenzene	0.76	Not Detected	4.6	Not Detected
1,4-Dichlorobenzene	0.76	Not Detected	4.6	Not Detected
alpha-Chlorotoluene	0.76	Not Detected	4.0	Not Detected
1,2-Dichlorobenzene	0.76	Not Detected	4.6	Not Detected
1,2,4-Trichlorobenzene	3.1	Not Detected	23	Not Detected
Hexachlorobutadiene	3.1	Not Detected	33	Not Detected
Methyl Acetate	7.6	18	23	55
Methylcyclohexane	3.1	Not Detected	12	Not Detected
Naphthalene	1.5	Not Detected	8.0	Not Detected

Container Type: 6 Liter Summa Canister (100% Cert Ambient)

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	99	70-130

US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/12DEC18.b/p121214.d
Lab Smp Id: 1812211-03A
Inj Date : 12-DEC-2018 19:56
Operator : kk Inst ID: msdp.i
Smp Info : 200ml N3255
Misc Info : 3.9 Hg->4.9 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/12DEC18.b/p18q1108c.m
Meth Date : 12-Dec-2018 17:11 u7js Quant Type: ISTD
Cal Date : 04-DEC-2018 18:07 Cal File: p120415.d
Als bottle: 5
Dil Factor: 1.53000
Integrator: HP RTE Compound Sublist: Wes23155.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.413 (1.000)	130	86268	25.0000		80.00- 120.00	100.00
5.413	5.413 (1.000)	128	64550			48.70- 108.70	74.83
5.413	5.409 (1.000)	49	121834			130.32- 190.32	141.23
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.294	6.299 (1.000)	114	259797	25.0000		80.00- 120.00	100.00
6.294	6.297 (1.000)	88	36049			0.00- 44.06	13.88
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	294019	25.0000		80.00- 120.00	100.00
8.729	8.736 (1.000)	82	126321			14.84- 74.84	42.96
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
5.943	5.942 (1.098)	65	109932	23.9279	23.928	80.00- 120.00	100.00
5.943	5.943 (1.098)	67	52600			26.40- 86.40	47.85
$ 146 Toluene-d8					CAS #: 2037-26-5		
7.504	7.505 (1.192)	98	259074	24.1366	24.136	80.00- 120.00	100.00
7.504	7.504 (1.192)	70	28534			0.00- 40.19	11.01

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)								
7.504	7.505	(1.192)	100	172520			38.92- 98.92	66.59
$ 177 4-Bromofluorobenzene						CAS #: 460-00-4		
9.725	9.720	(1.113)	174	185200	24.8090	24.809	80.00- 120.00	100.00
9.718	9.714	(1.112)	95	197620			82.53- 142.53	106.71
9.725	9.720	(1.113)	176	175791			65.10- 125.10	94.92
42 Ethanol						CAS #: 64-17-5		
2.877	2.866	(0.532)	45	3176	2.14727	3.285	80.00- 120.00	100.00
2.891	2.864	(0.534)	46	1381			8.87- 68.87	43.51
52 Acetone						CAS #: 67-64-1		
3.357	3.356	(0.620)	58	68956	40.1763	61.470	80.00- 120.00	100.00
3.357	3.357	(0.620)	43	258817			345.31- 405.31	375.33
57 2-Propanol						CAS #: 67-63-0		
3.536	3.532	(0.653)	45	24836	3.95493	6.051	80.00- 120.00	100.00
3.529	3.530	(0.652)	43	10899			0.00- 53.09	43.89
3.536	3.530	(0.653)	59	1051			0.00- 33.51	4.23
78 Hexane						CAS #: 110-54-3		
4.331	4.328	(0.800)	57	6427	1.20055	1.837	80.00- 120.00	100.00
4.324	4.328	(0.799)	43	6290			42.49- 102.49	97.87
4.331	4.328	(0.800)	86	668			0.00- 42.15	10.39
92 2-Butanone						CAS #: 78-93-3		
5.205	5.200	(0.962)	72	11364	8.75840	13.400	80.00- 120.00	100.00
5.205	5.201	(0.962)	43	75055			669.23- 729.23	660.44
5.205	5.204	(0.962)	57	5222			20.89- 80.89	45.95
99 Tetrahydrofuran						CAS #: 109-99-9		
5.413	5.410	(1.000)	42	22144	4.99924	7.649	80.00- 120.00	100.00
5.413	5.412	(1.000)	71	5335			0.00- 54.27	24.09
5.413	5.411	(1.000)	72	5109			0.00- 54.41	23.07
116 Benzene						CAS #: 71-43-2		
5.921	5.927	(0.941)	78	131887	14.3624	21.974	80.00- 120.00	100.00
5.921	5.925	(0.941)	77	30319			0.00- 54.10	22.99
121 Heptane						CAS #: 142-82-5		
6.086	6.085	(0.967)	71	2124	0.82368	1.260	80.00- 120.00	100.00
6.086	6.083	(0.967)	43	6358			259.43- 319.43	299.29
6.086	6.085	(0.967)	57	3411			114.50- 174.50	160.59
147 Toluene						CAS #: 108-88-3		
7.562	7.562	(1.201)	91	103472	8.48544	12.983	80.00- 120.00	100.00

```
                                        CONCENTRATIONS
                                        ON-COL    FINAL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  147 Toluene (continued)
  7.562   7.562 (1.201)    92     56503                    28.88-  88.88    54.61
-------------------------------------------------------------------------------
  167 Ethyl Benzene                                CAS #: 100-41-4
  8.808   8.808 (1.008)   106      6039 1.13433    1.736  80.00- 120.00   100.00
  8.808   8.808 (1.008)    91     19973                  268.95- 328.95   330.74
-------------------------------------------------------------------------------
  169 m,p-Xylene                                   CAS #: 108-38-3
  8.901   8.905 (1.019)   106     15837 2.42096    3.704  80.00- 120.00   100.00
  8.901   8.906 (1.019)    91     30174                  159.20- 219.20   190.53
-------------------------------------------------------------------------------
  171 o-Xylene                                     CAS #: 95-47-6
  9.245   9.245 (1.058)   106      5830 0.95008    1.454  80.00- 120.00   100.00
  9.245   9.245 (1.058)    91     13429                  173.23- 233.23   230.34
-------------------------------------------------------------------------------
  188 4-Ethyltoluene                               CAS #: 622-96-8
  9.954   9.968 (1.139)   120      4406 0.65920    1.008  80.00- 120.00   100.00
  9.954   9.967 (1.139)   105     14109                  277.08- 337.08   320.18
-------------------------------------------------------------------------------
  196 1,2,4-Trimethylbenzene                       CAS #: 95-63-6
 10.355  10.343 (1.185)   120      4317 0.54865   0.8394  80.00- 120.00   100.00
 10.348  10.342 (1.184)   105      8641                  173.89- 233.89   200.14
-------------------------------------------------------------------------------
   61 Methyl Acetate                               CAS #: 79-20-9
  3.722   3.721 (0.688)    43    109856 11.8624   18.149   0.00-   0.00   100.00
  3.722   3.721 (0.688)    74     14002                    0.00-   0.00    12.75
-------------------------------------------------------------------------------
```

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p121214.d
Lab Smp Id: 1812211-03A
Analysis Type: VOA
Quant Type: ISTD
Operator: kk
Method File: /chem/msdp.i/12DEC18.b/p18q1108c.m
Misc Info: 3.9 Hg->4.9 psi

Calibration Date: 12-DEC-2018
Calibration Time: 10:47

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	75875	45525	106225	86268	13.70
123 1,4-Difluorobenze	227347	136408	318286	259797	14.27
163 Chlorobenzene-d5	252646	151588	353704	294019	16.38

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	-0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 13-Dec-2018 06:35

US32APPTV002

RECOVERY REPORT

Client Name: Client SDG: 12DEC18
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1812211-03A
Level: LOW Operator: kk
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: Wes23155.sub
Method File: /chem/msdp.i/12DEC18.b/p18q1108c.m
Misc Info: 3.9 Hg->4.9 psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 117 1,2-Dichloroethane-d4	25.000	23.928	95.71
$ 146 Toluene-d8	25.000	24.136	96.55
$ 177 4-Bromofluorobenzene	25.000	24.809	99.24

Data File: /chem/msdp.i/12DEC18.b/p121214.d

Date : 12-DEC-2018 19:56

Client ID:

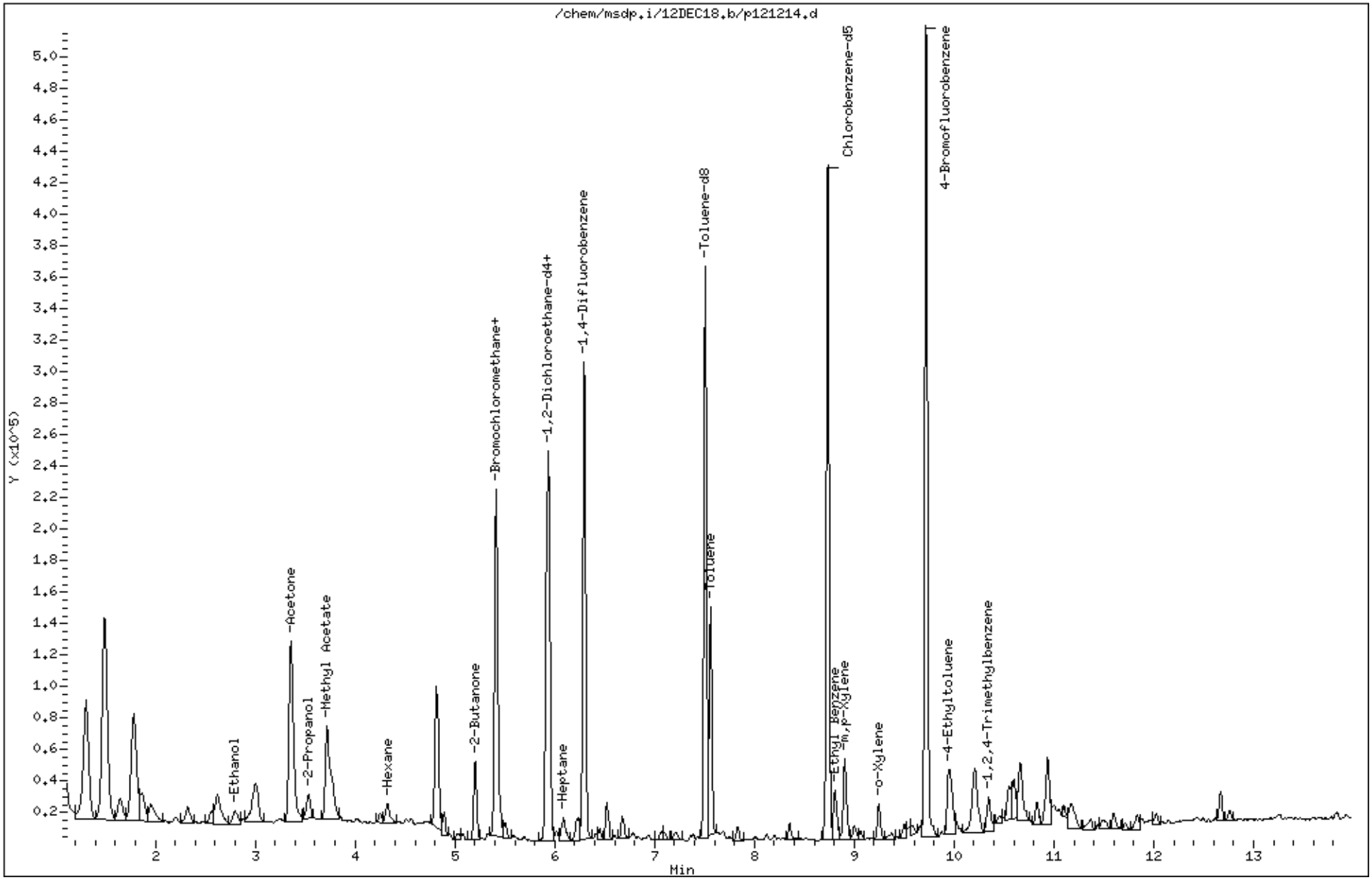
Sample Info: 200ml N3255

Column phase: RTX-624

Instrument: msdp.i

Operator: kk

Column diameter: 0.25



Data File: /chem/msdp.i/12DEC18.b/p121214.d

Date : 12-DEC-2018 19:56

Client ID:

Instrument: msdp.i

Sample Info: 200ml N3255

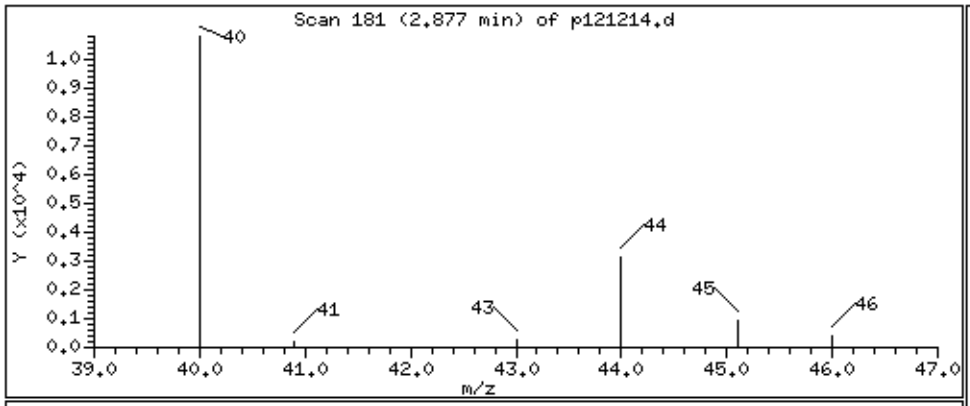
Operator: kk

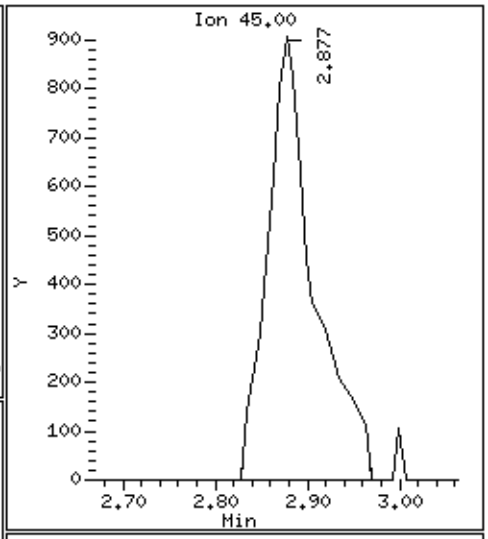
Column phase: RTX-624

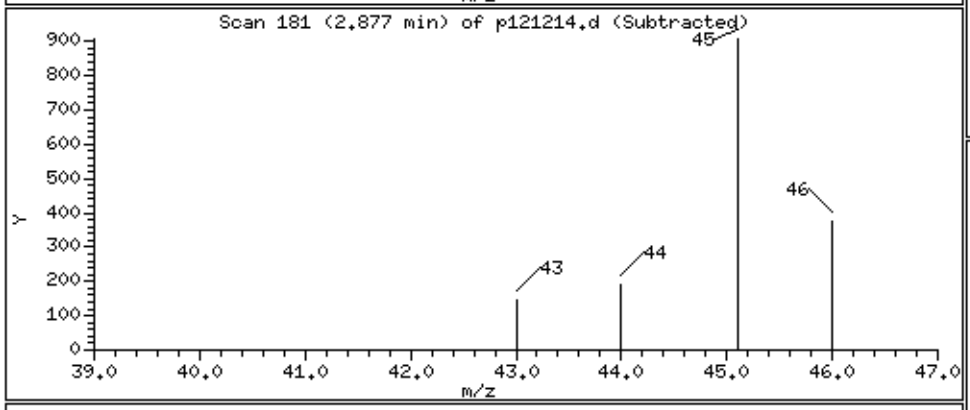
Column diameter: 0.25

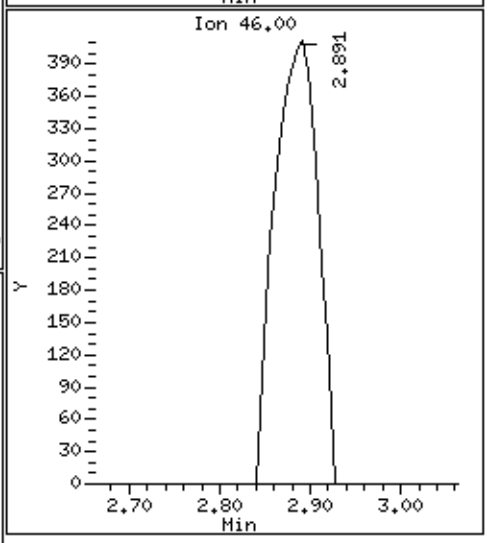
42 Ethanol

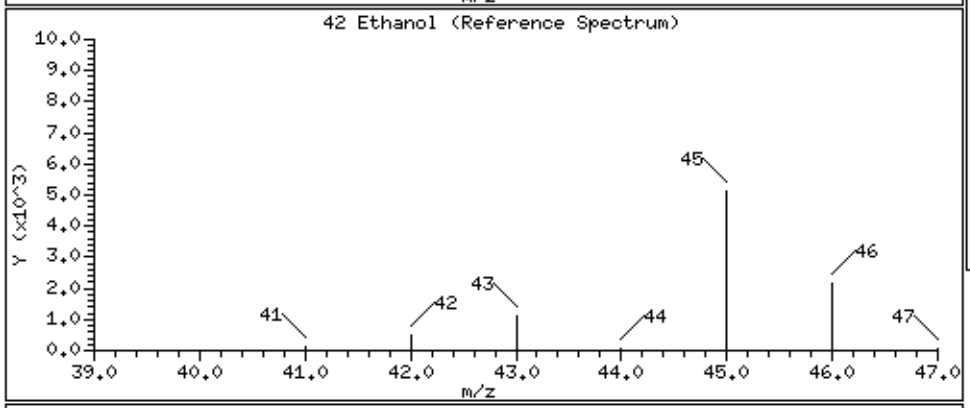
Concentration: 3.285 PPBV

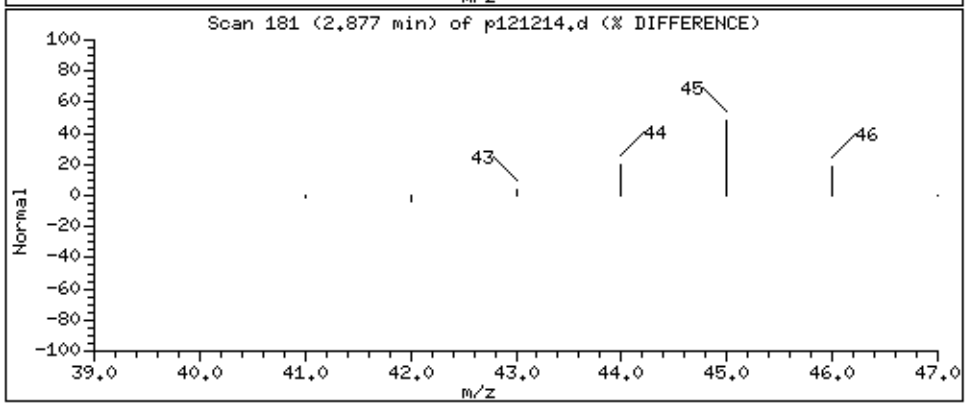












Data File: /chem/msdp.i/12DEC18.b/p121214.d

Date : 12-DEC-2018 19:56

Client ID:

Instrument: msdp.i

Sample Info: 200ml N3255

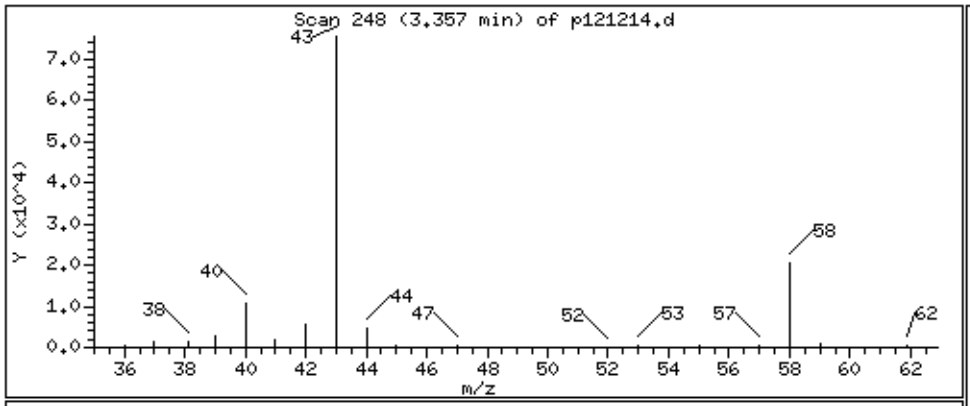
Operator: kk

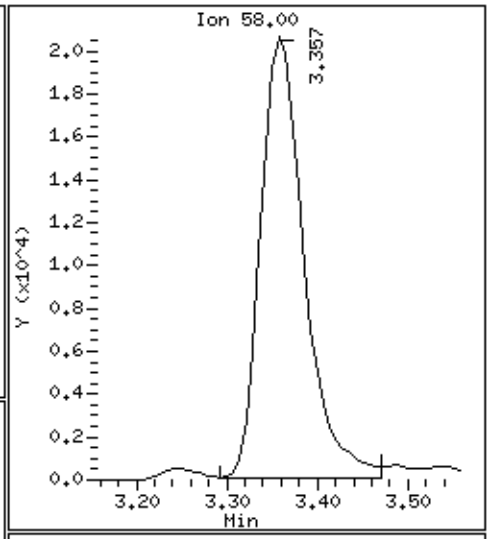
Column phase: RTX-624

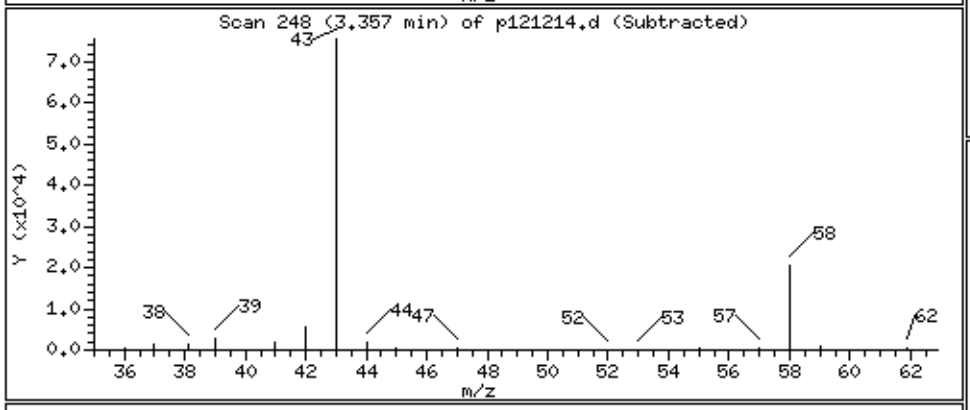
Column diameter: 0.25

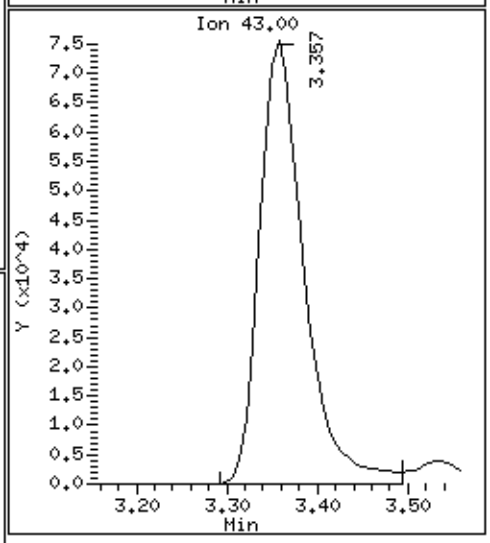
52 Acetone

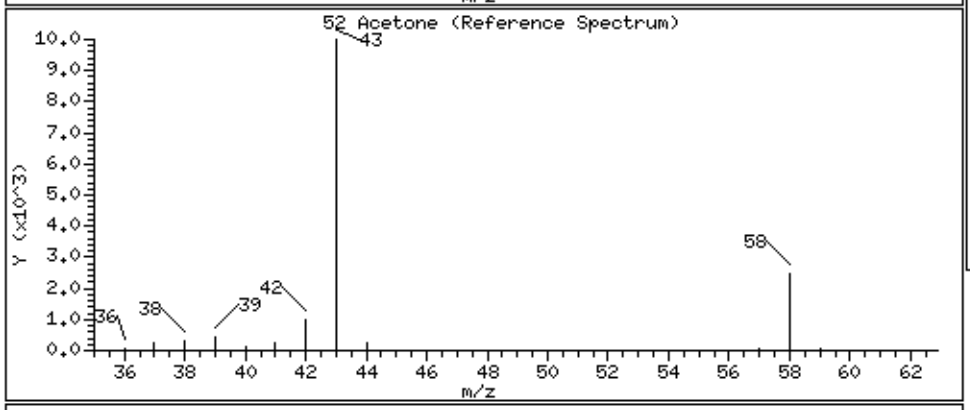
Concentration: 61.470 PPBV

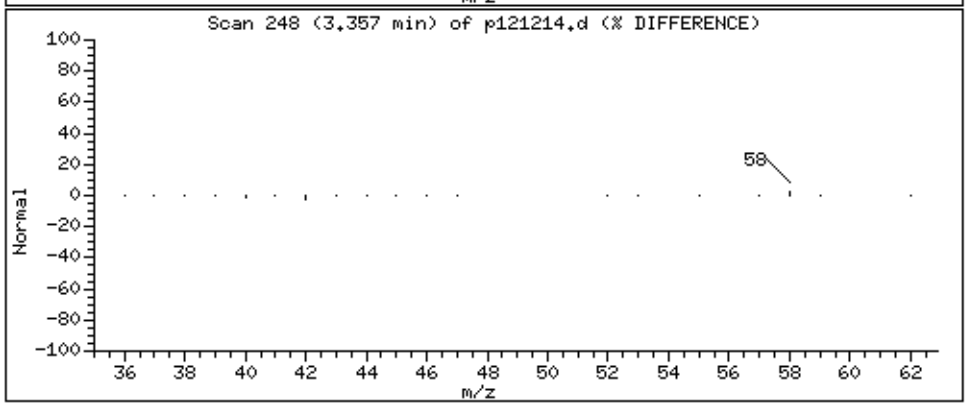












Data File: /chem/msdp.i/12DEC18.b/p121214.d

Date : 12-DEC-2018 19:56

Client ID:

Instrument: msdp.i

Sample Info: 200ml N3255

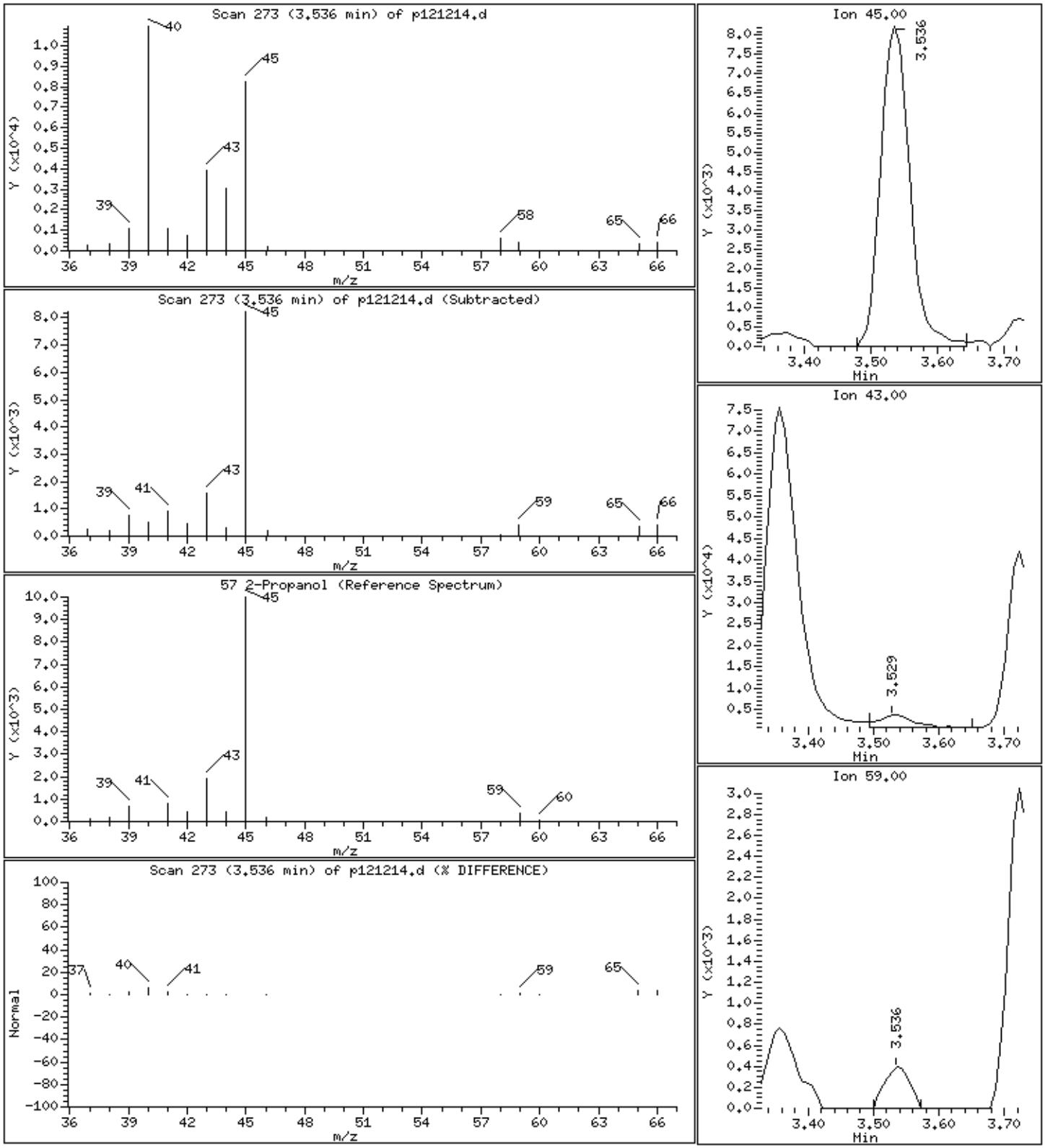
Operator: kk

Column phase: RTX-624

Column diameter: 0.25

57 2-Propanol

Concentration: 6.051 PPBV



Data File: /chem/msdp.i/12DEC18.b/p121214.d

Date : 12-DEC-2018 19:56

Client ID:

Instrument: msdp.i

Sample Info: 200ml N3255

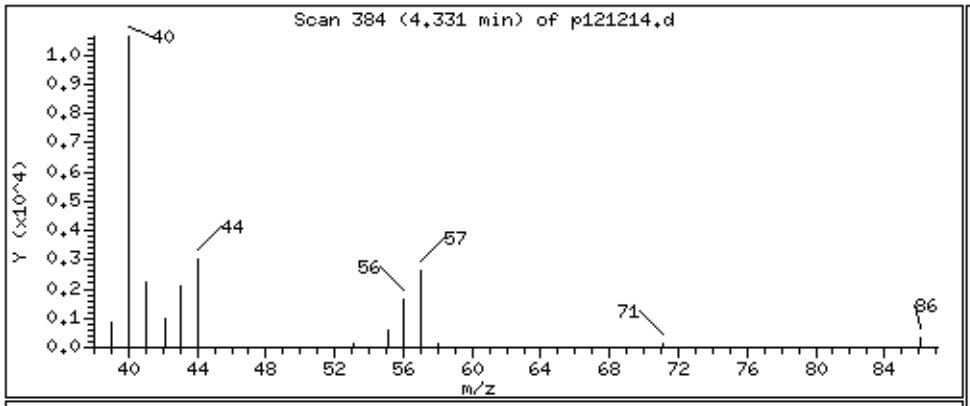
Operator: kk

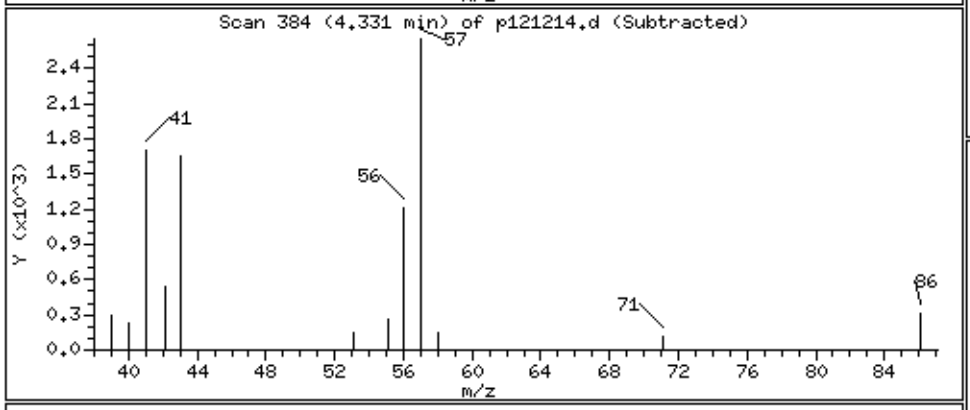
Column phase: RTX-624

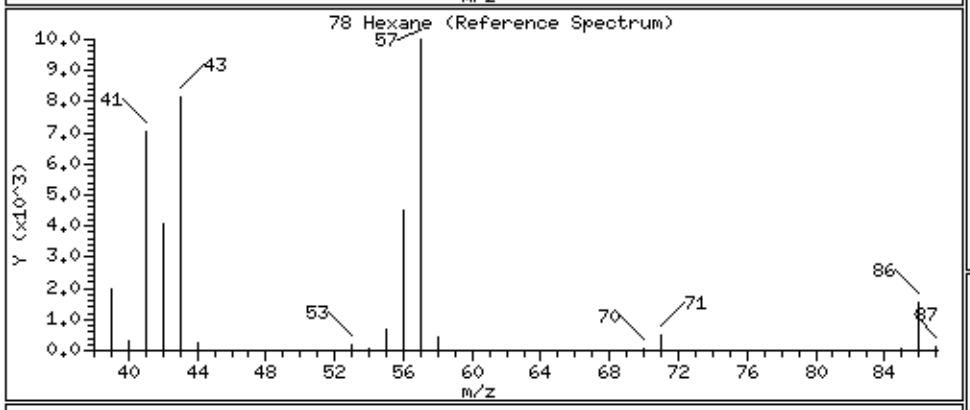
Column diameter: 0.25

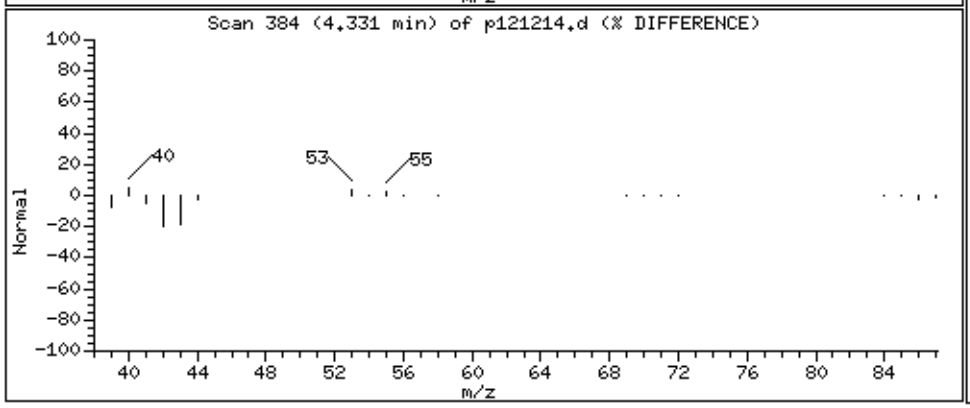
78 Hexane

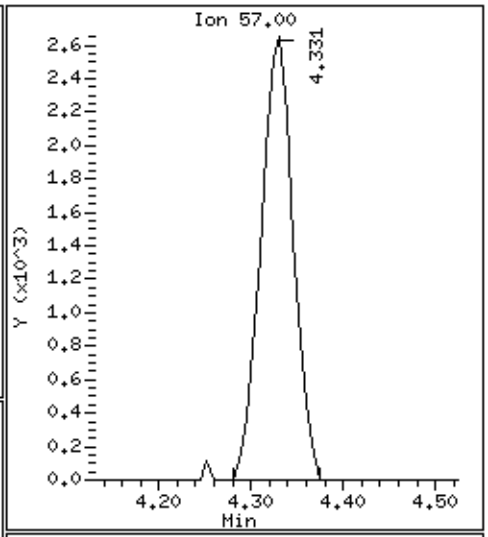
Concentration: 1.837 PPBV

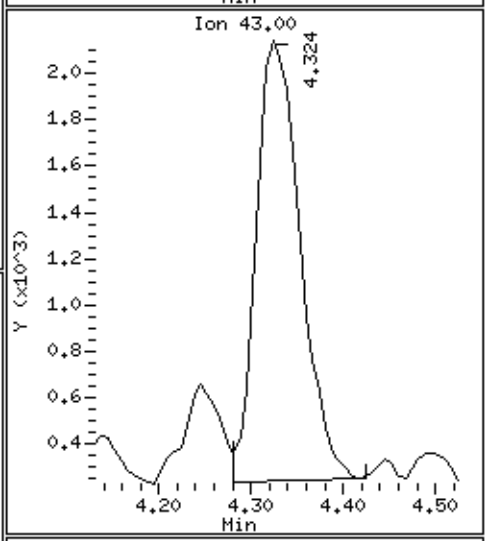


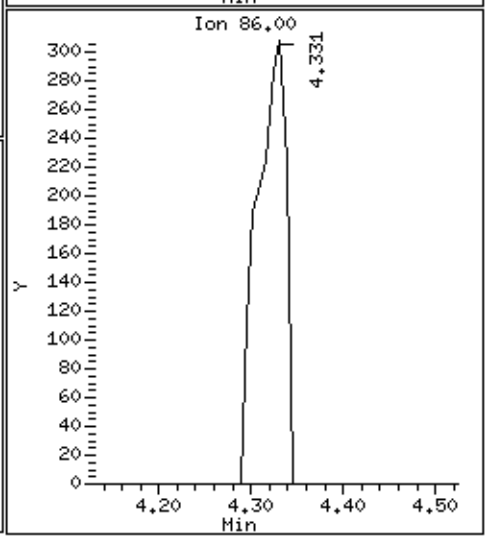












Data File: /chem/msdp.i/12DEC18.b/p121214.d

Date : 12-DEC-2018 19:56

Client ID:

Instrument: msdp.i

Sample Info: 200ml N3255

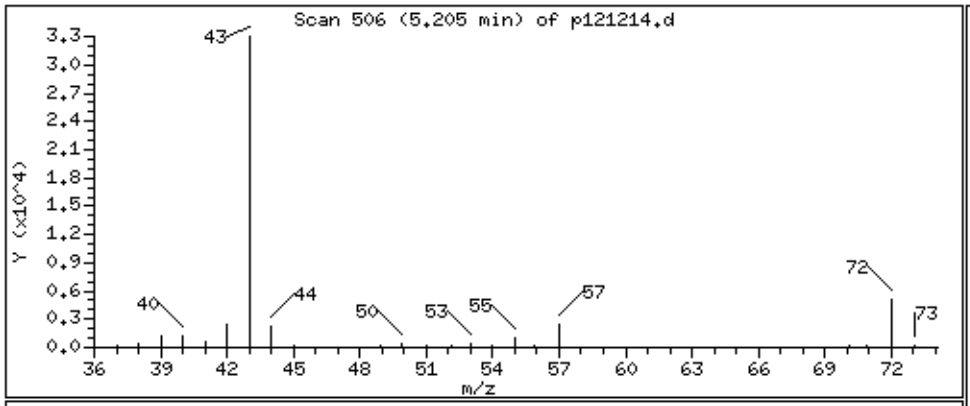
Operator: kk

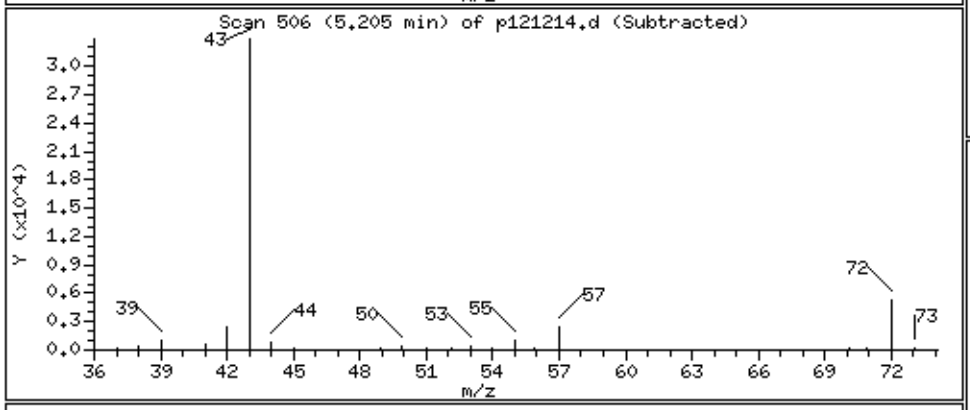
Column phase: RTX-624

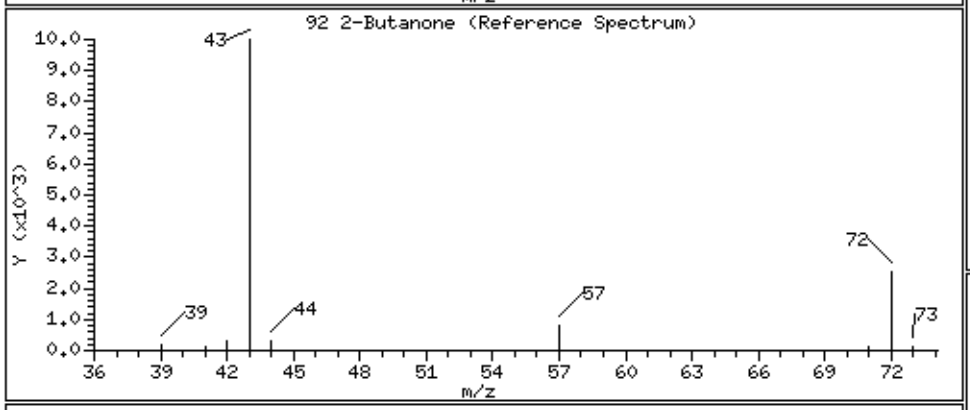
Column diameter: 0.25

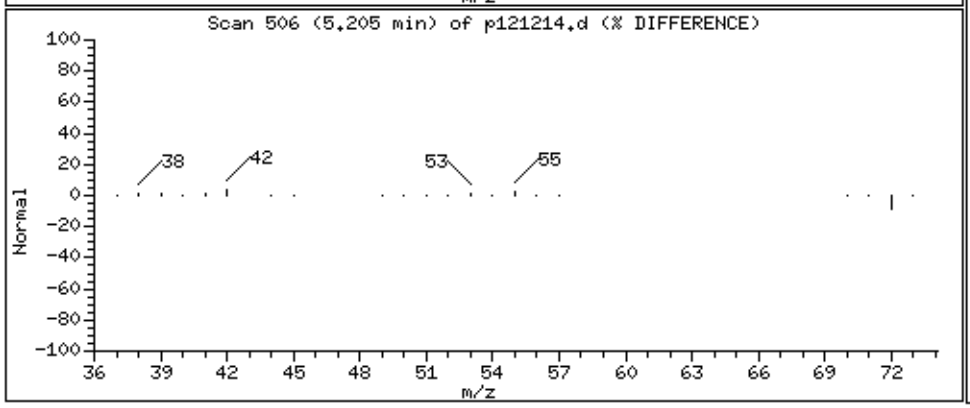
92 2-Butanone

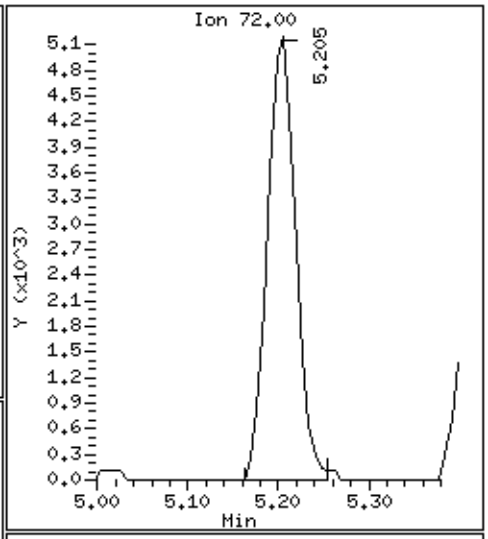
Concentration: 13.400 PPBV

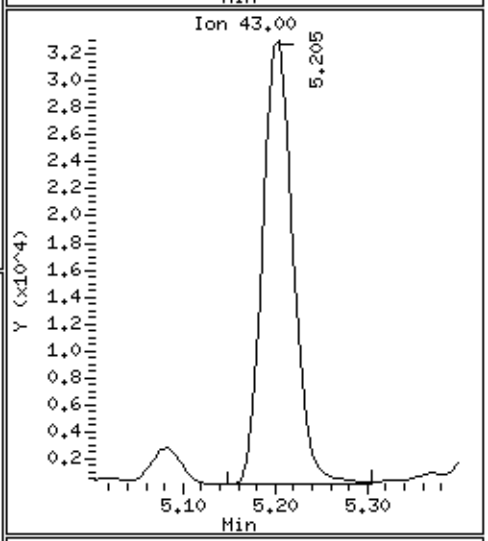


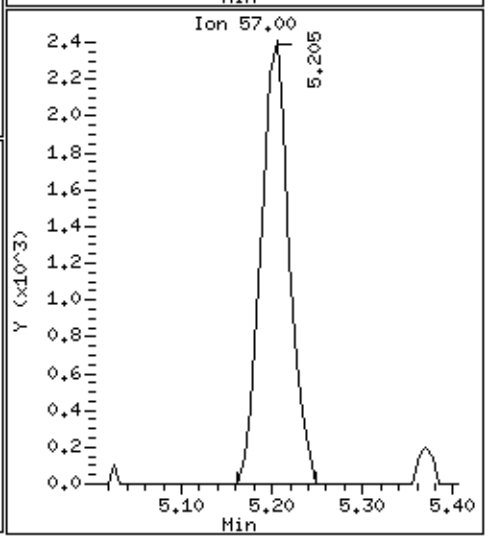












Data File: /chem/msdp.i/12DEC18.b/p121214.d

Date : 12-DEC-2018 19:56

Client ID:

Instrument: msdp.i

Sample Info: 200ml N3255

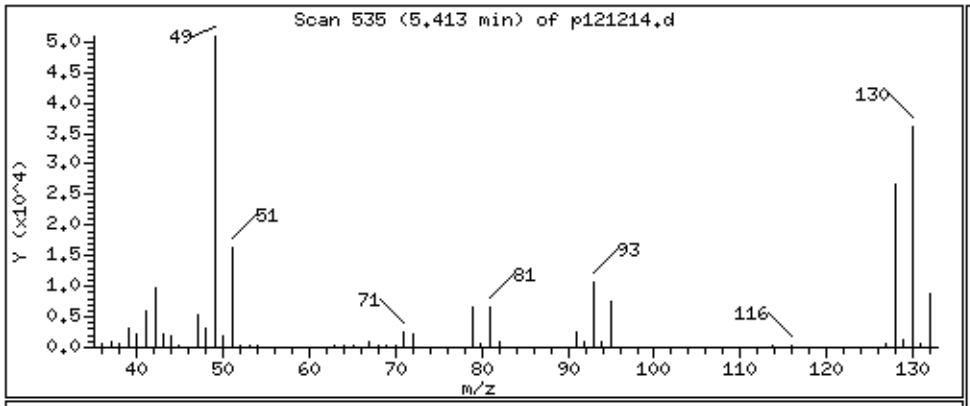
Operator: kk

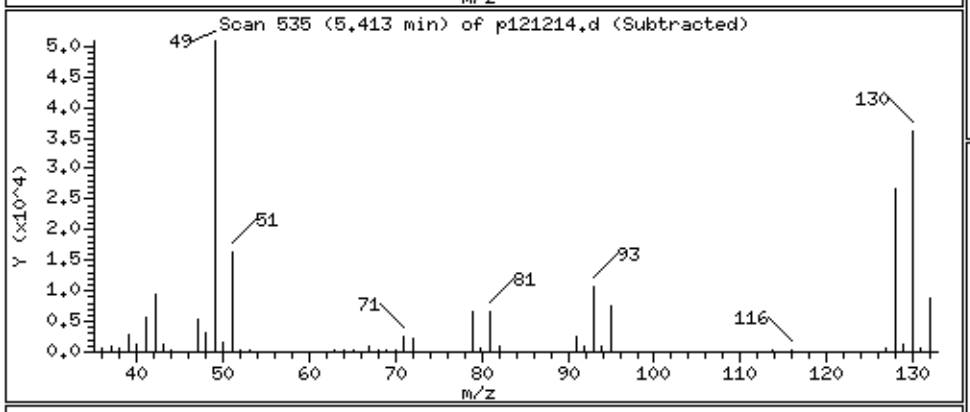
Column phase: RTX-624

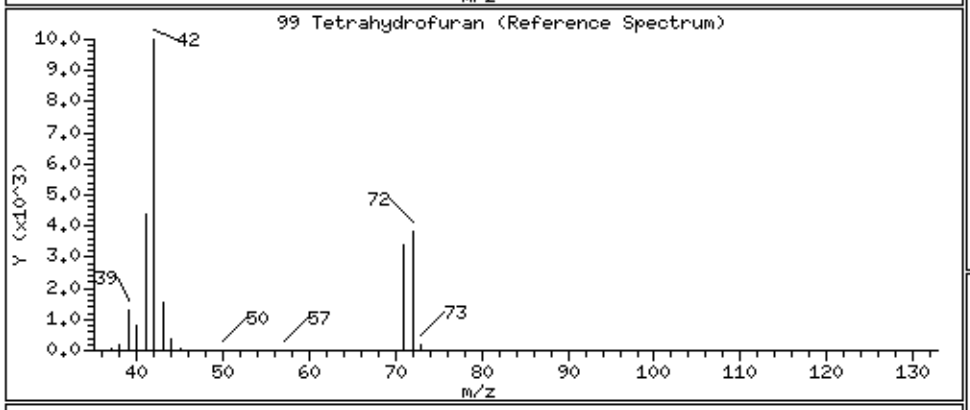
Column diameter: 0.25

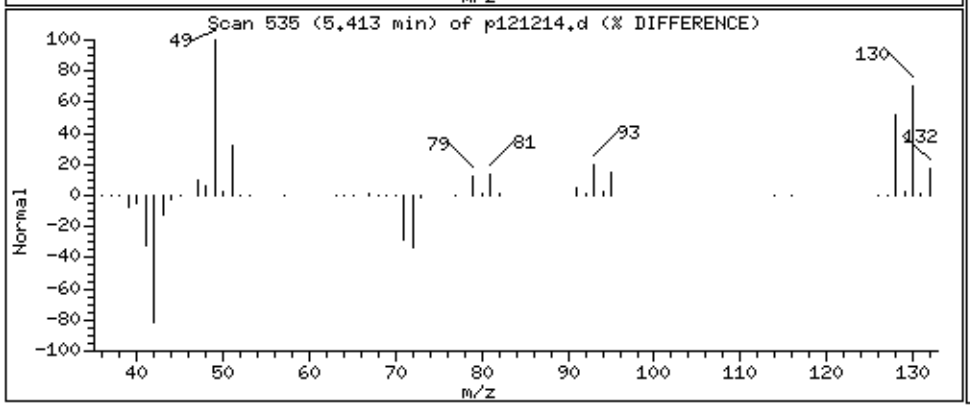
99 Tetrahydrofuran

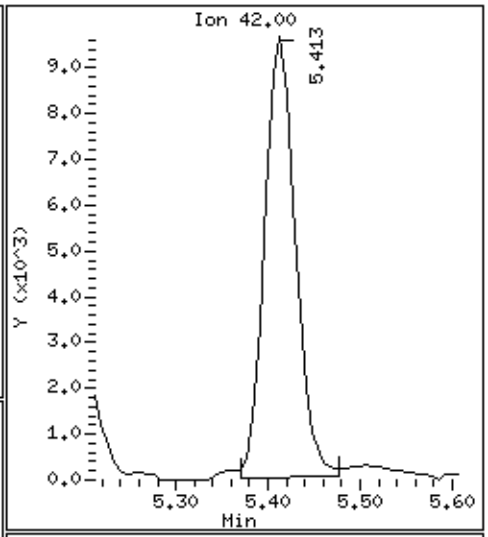
Concentration: 7.649 PPBV

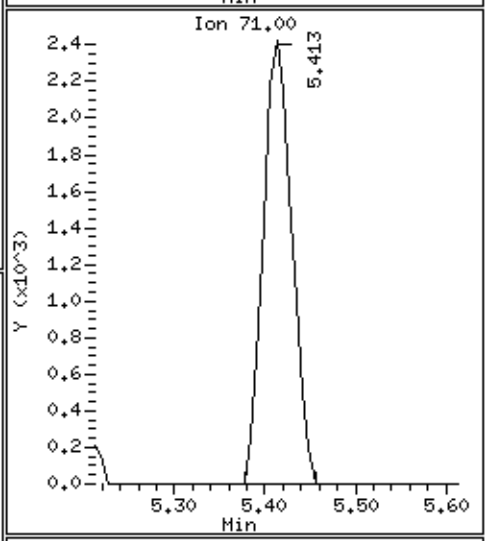


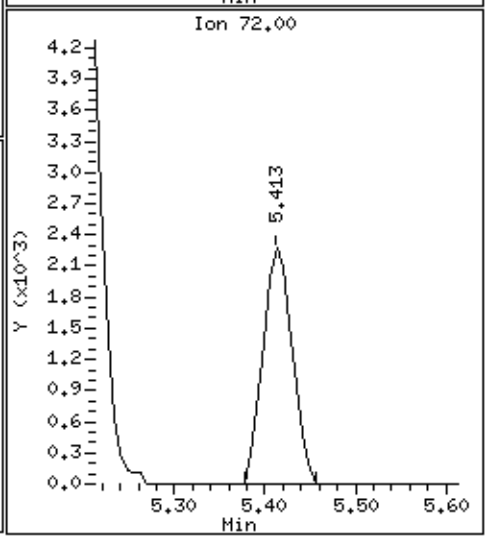












Data File: /chem/msdp.i/12DEC18.b/p121214.d

Date : 12-DEC-2018 19:56

Client ID:

Instrument: msdp.i

Sample Info: 200ml N3255

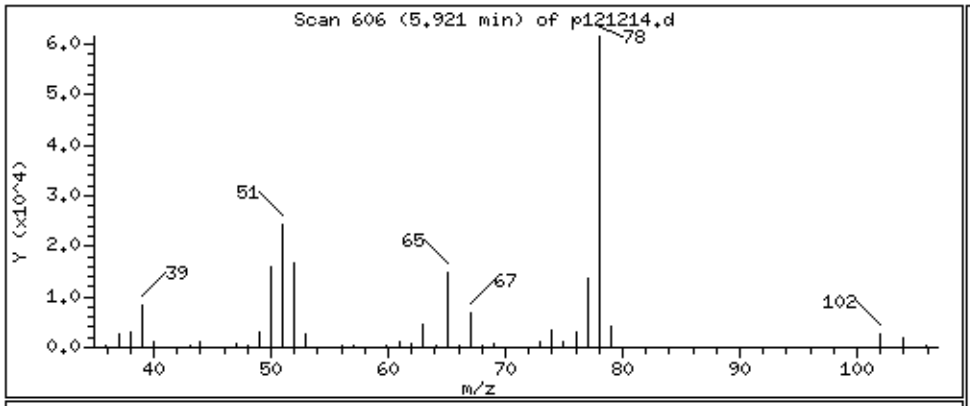
Operator: kk

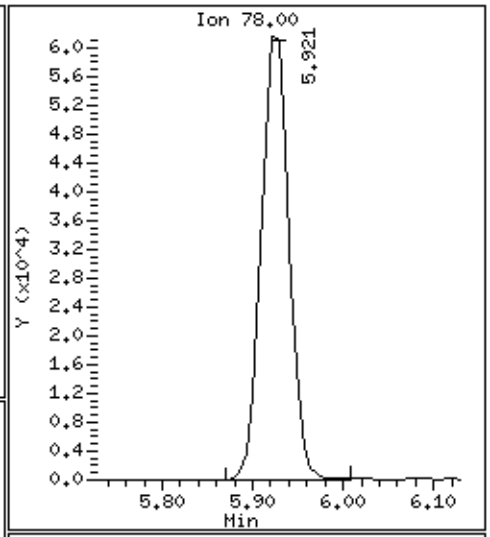
Column phase: RTX-624

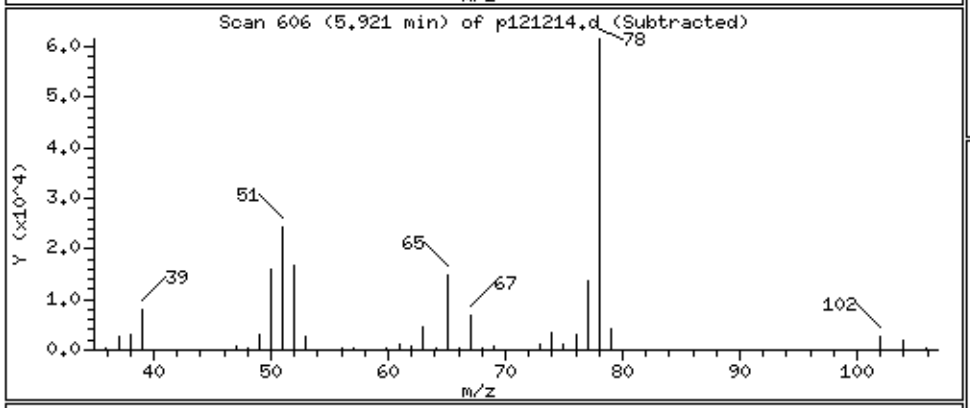
Column diameter: 0.25

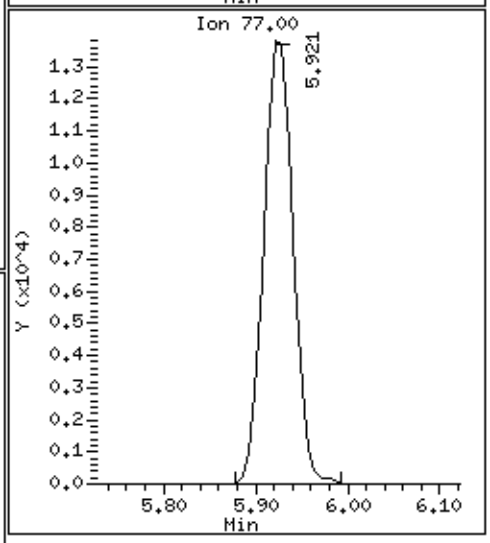
116 Benzene

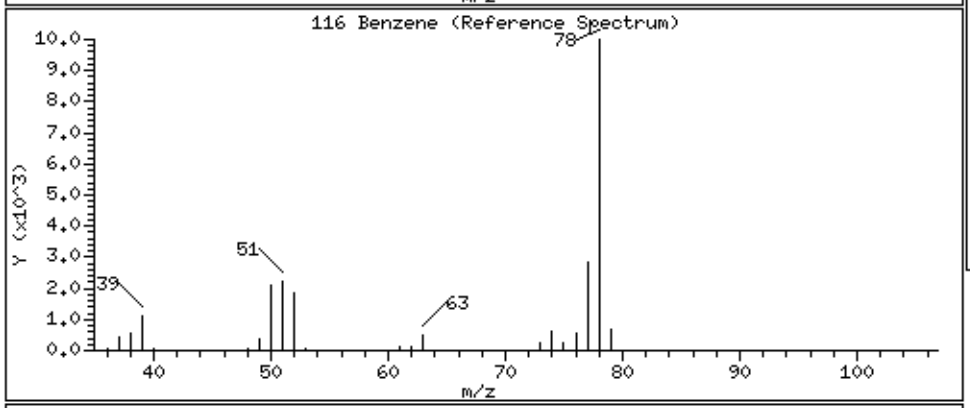
Concentration: 21.974 PPBV

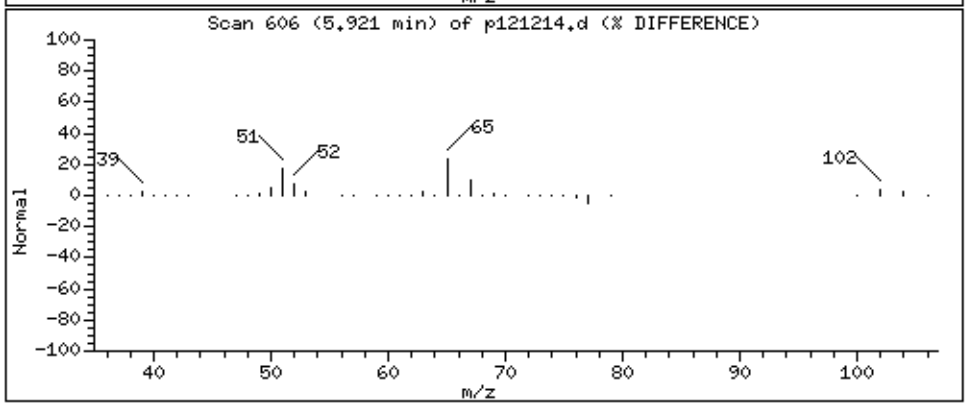












Data File: /chem/msdp.i/12DEC18.b/p121214.d

Date : 12-DEC-2018 19:56

Client ID:

Instrument: msdp.i

Sample Info: 200ml N3255

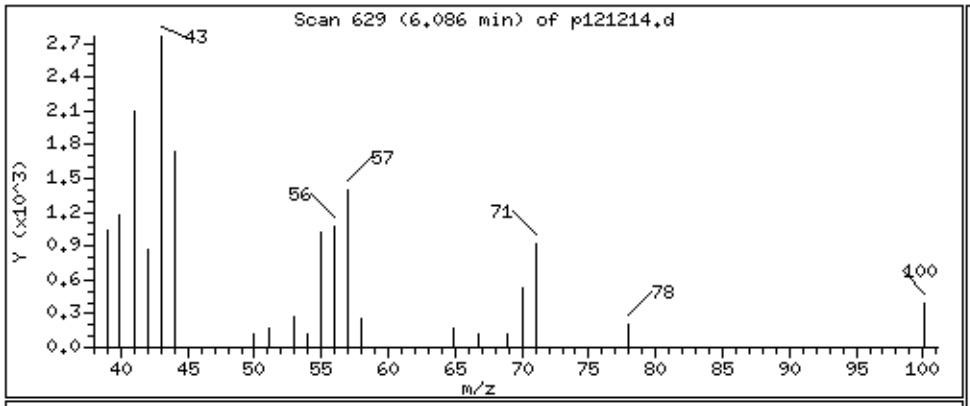
Operator: kk

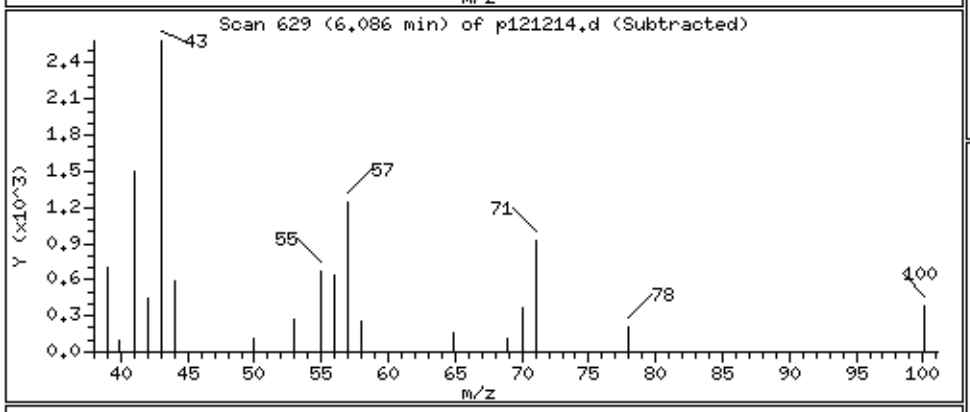
Column phase: RTX-624

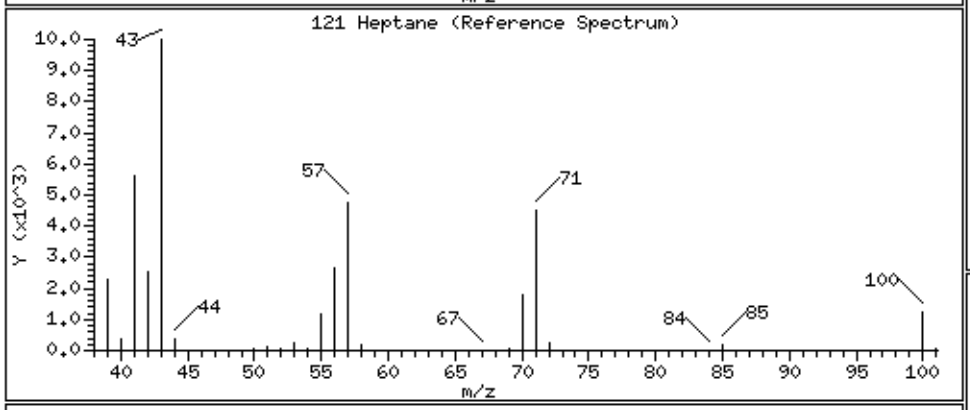
Column diameter: 0.25

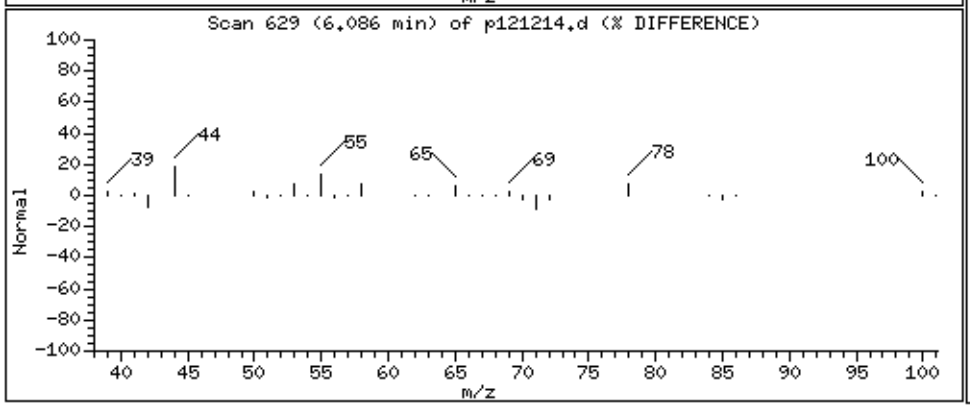
121 Heptane

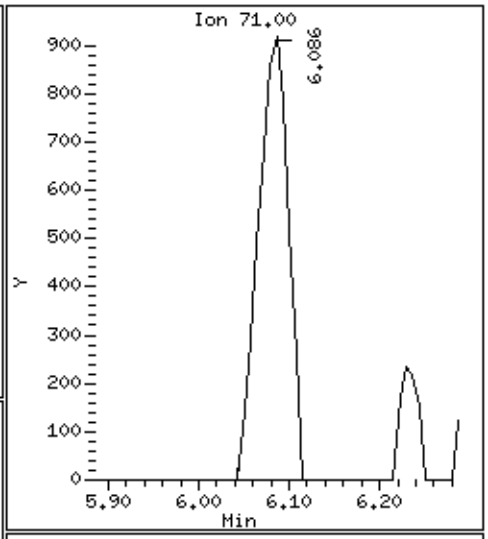
Concentration: 1.260 PPBV

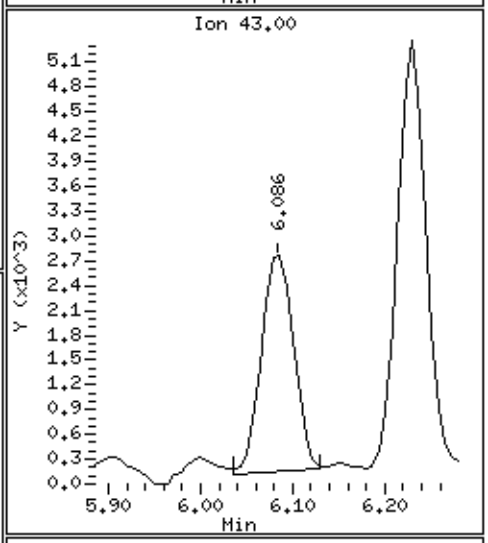


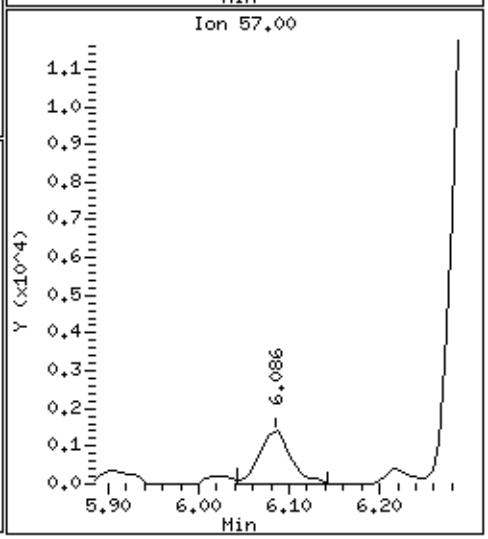












Data File: /chem/msdp.i/12DEC18.b/p121214.d

Date : 12-DEC-2018 19:56

Client ID:

Instrument: msdp.i

Sample Info: 200ml N3255

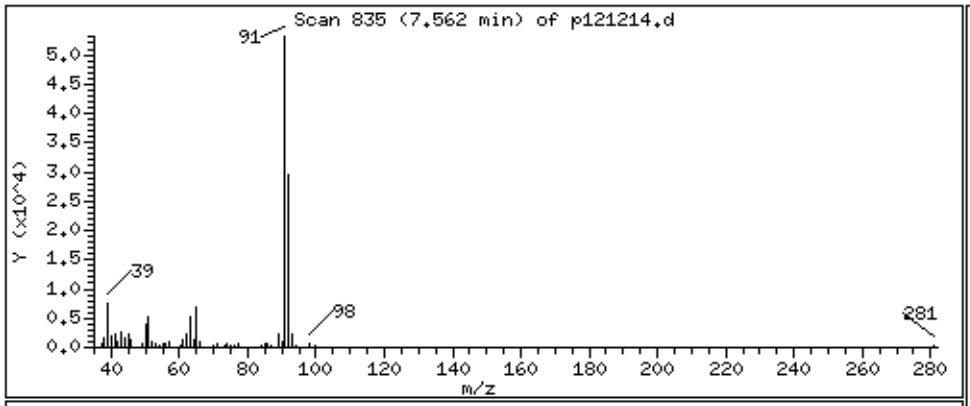
Operator: kk

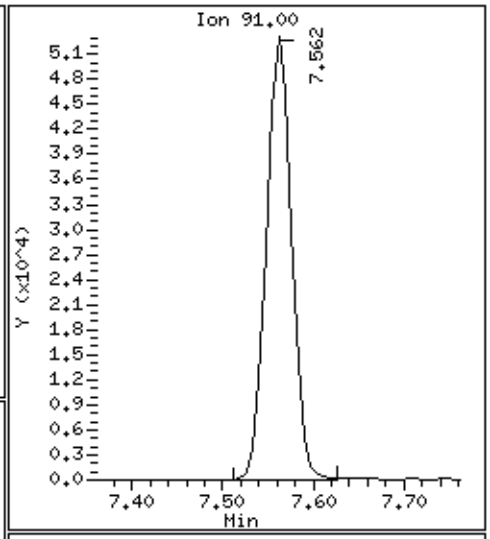
Column phase: RTX-624

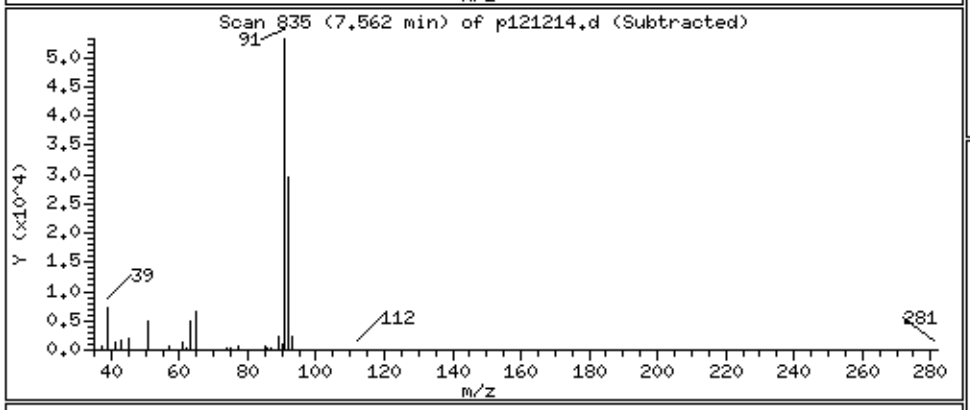
Column diameter: 0.25

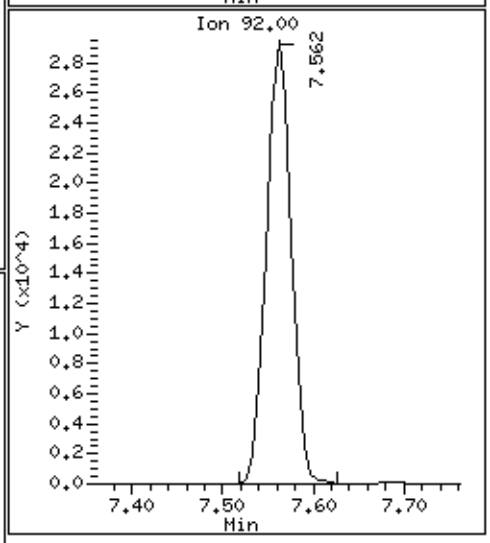
147 Toluene

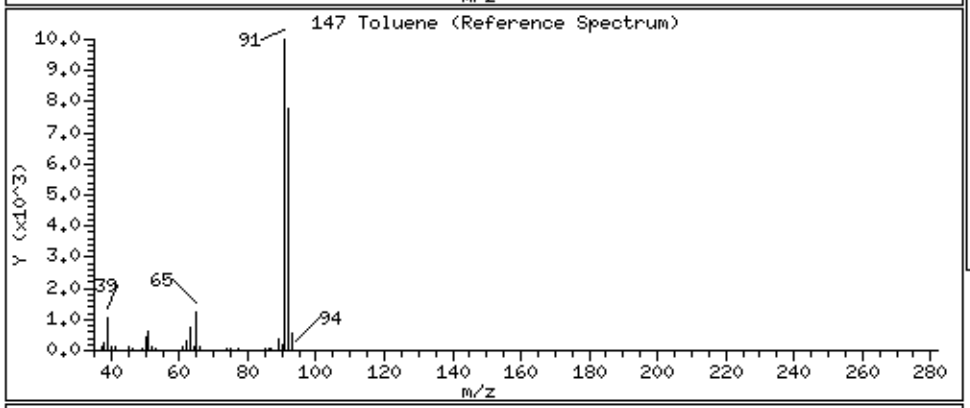
Concentration: 12.983 PPBV

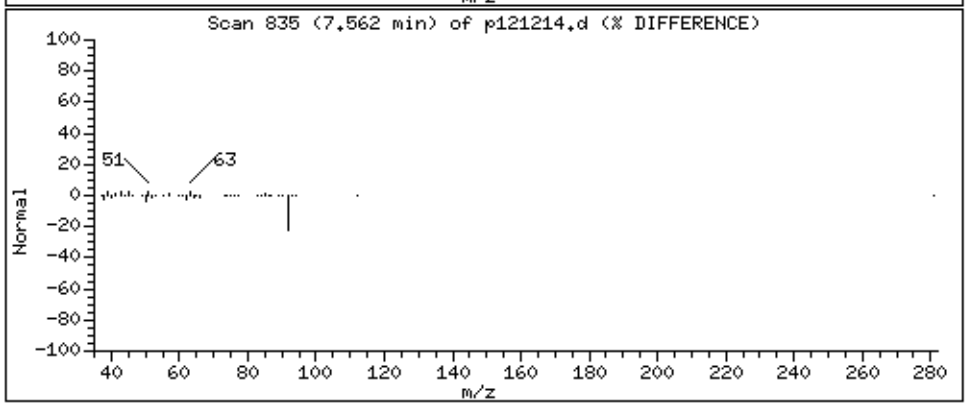












Data File: /chem/msdp.i/12DEC18.b/p121214.d

Date : 12-DEC-2018 19:56

Client ID:

Instrument: msdp.i

Sample Info: 200ml N3255

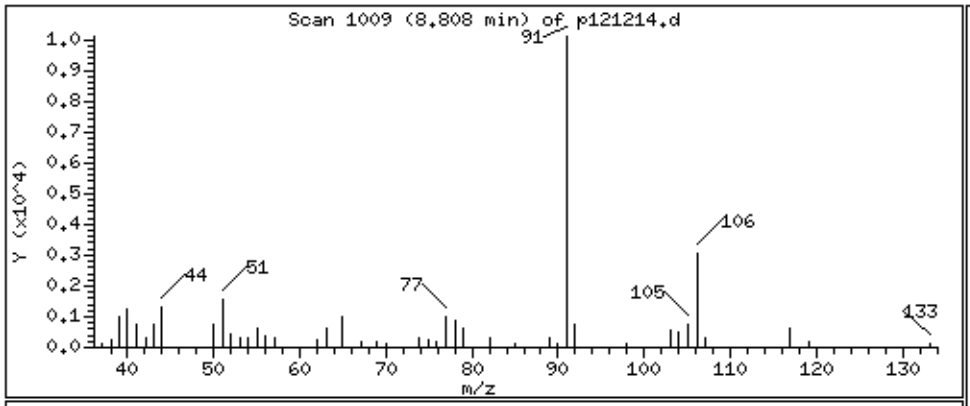
Operator: kk

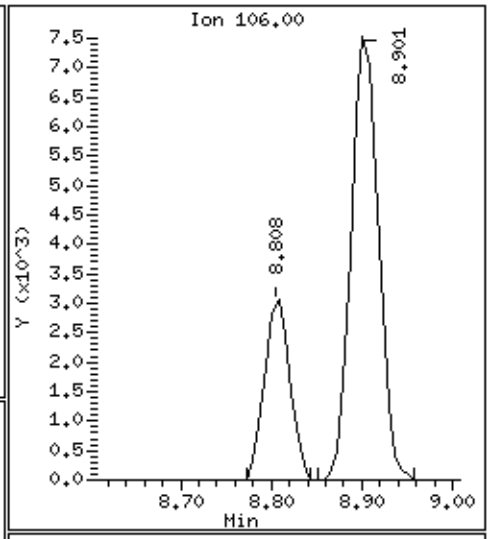
Column phase: RTX-624

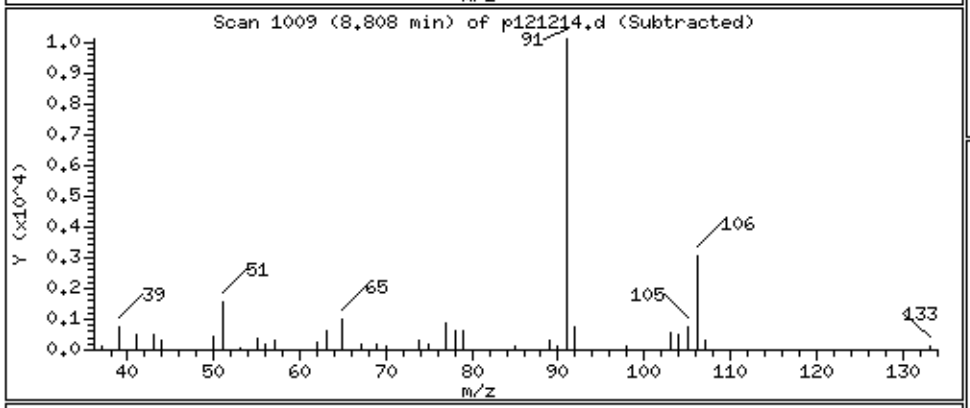
Column diameter: 0.25

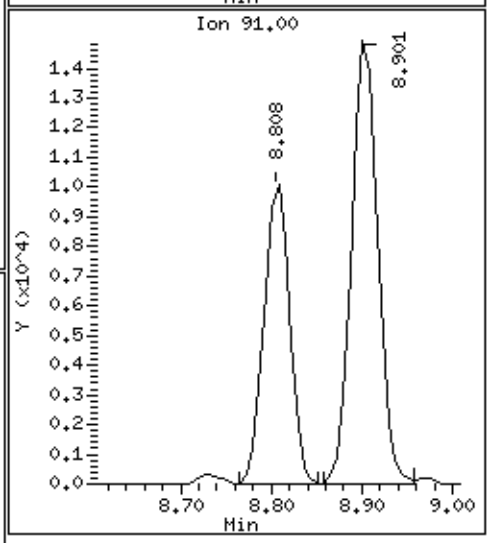
167 Ethyl Benzene

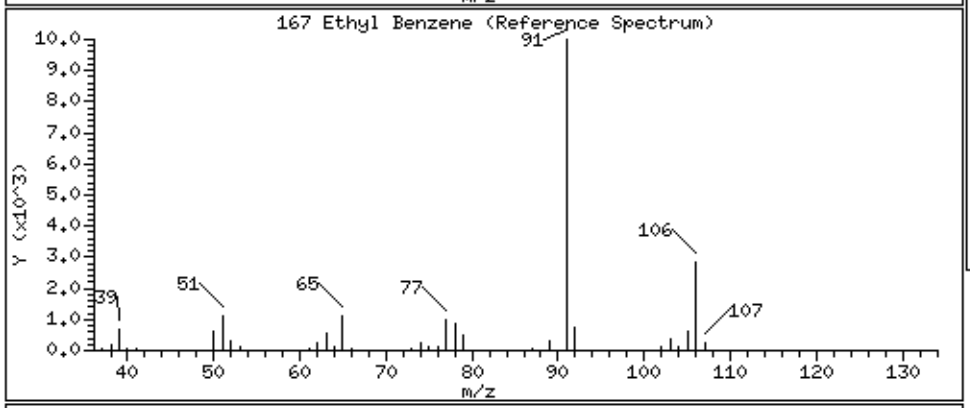
Concentration: 1.736 PPBV

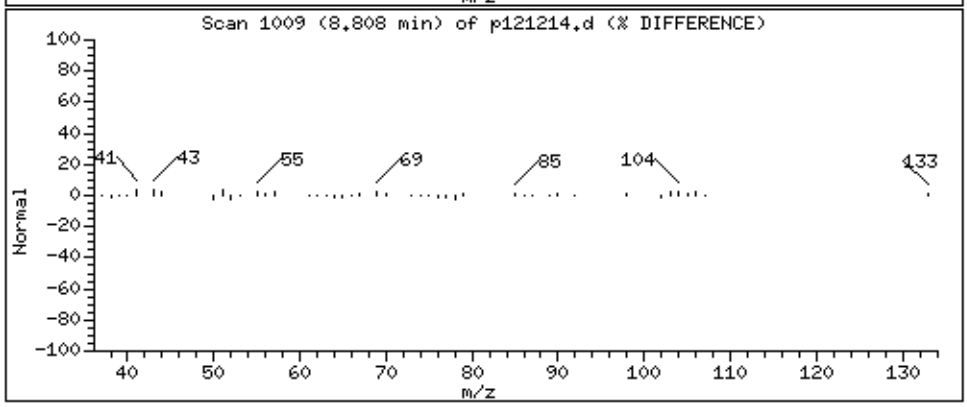












Data File: /chem/msdp.i/12DEC18.b/p121214.d

Date : 12-DEC-2018 19:56

Client ID:

Instrument: msdp.i

Sample Info: 200ml N3255

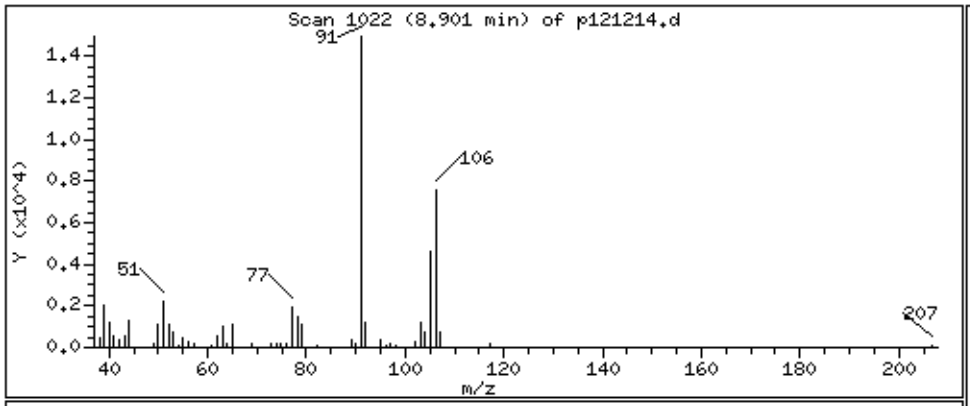
Operator: kk

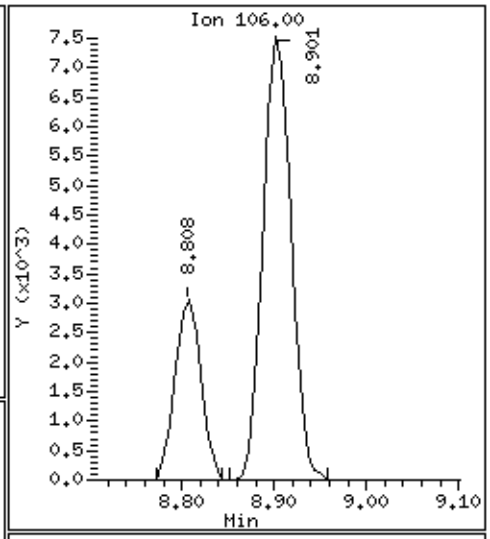
Column phase: RTX-624

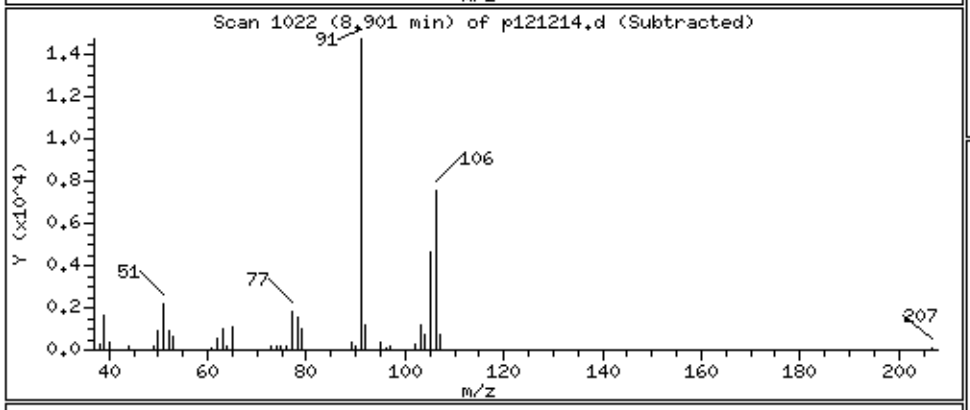
Column diameter: 0.25

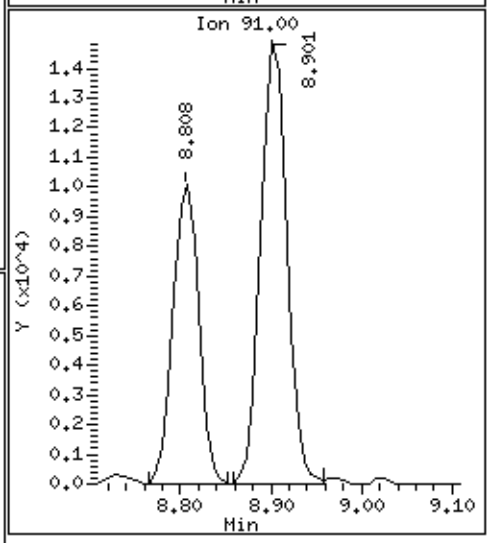
169 m,p-Xylene

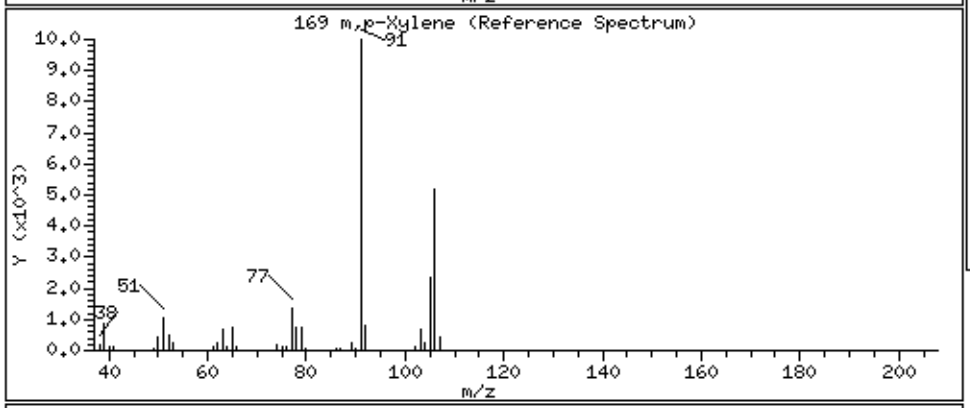
Concentration: 3.704 PPBV

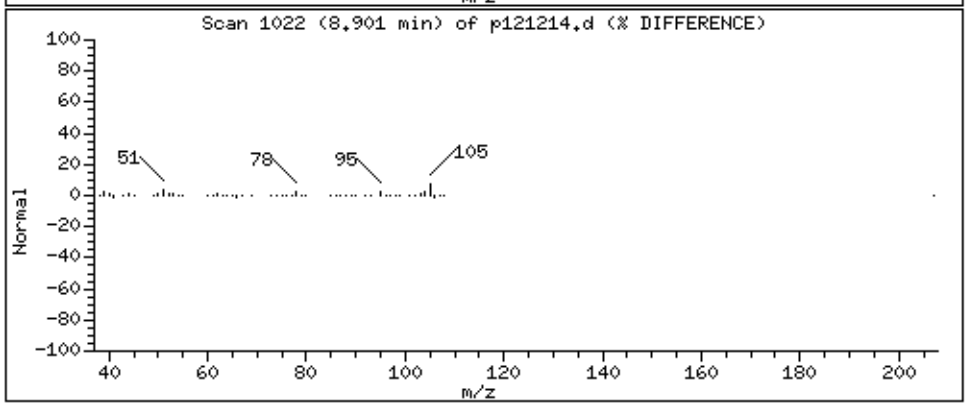












Data File: /chem/msdp.i/12DEC18.b/p121214.d

Date : 12-DEC-2018 19:56

Client ID:

Instrument: msdp.i

Sample Info: 200ml N3255

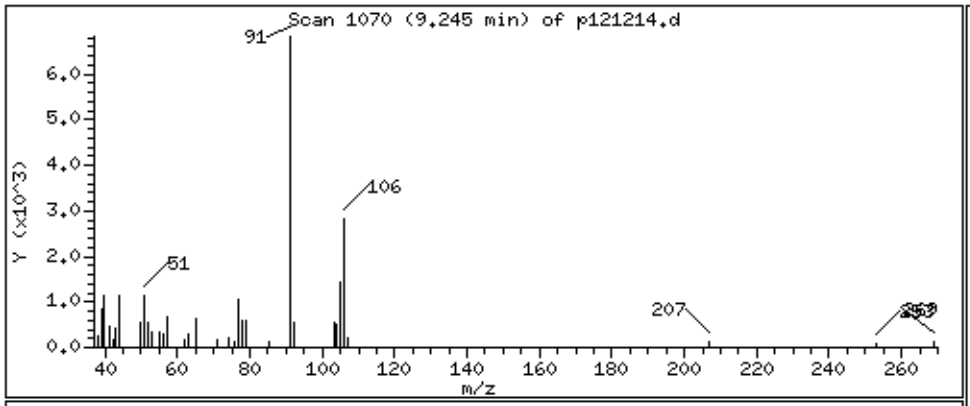
Operator: kk

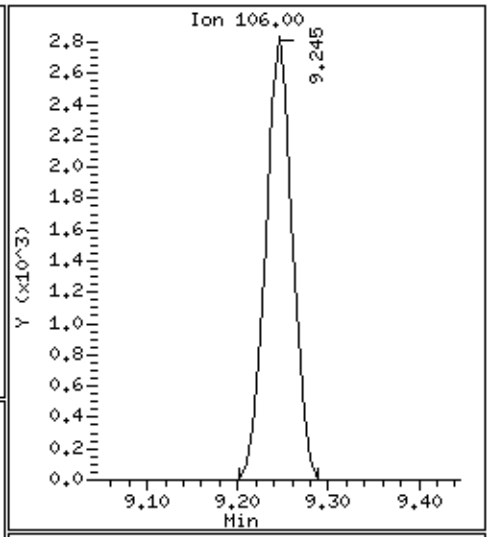
Column phase: RTX-624

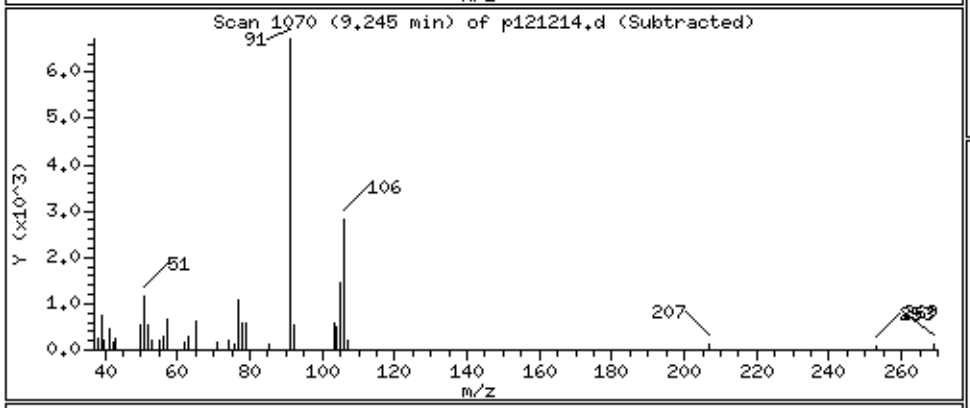
Column diameter: 0.25

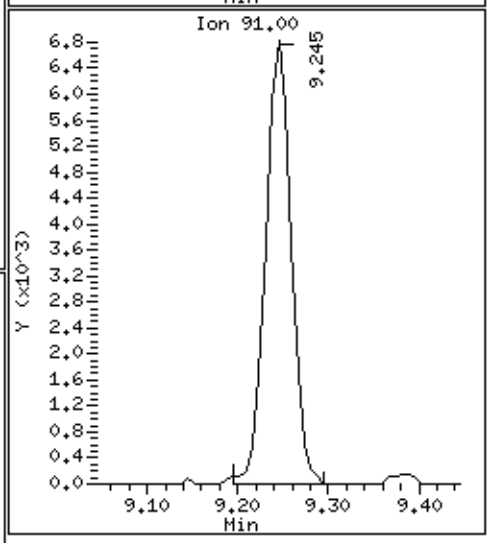
171 o-Xylene

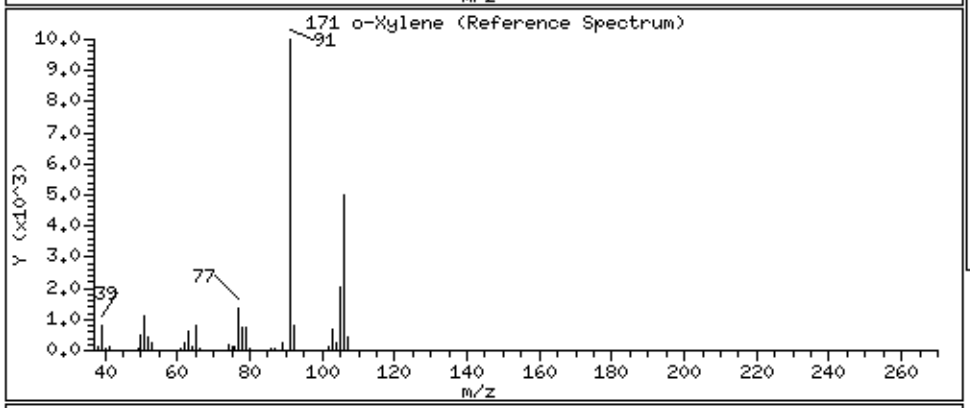
Concentration: 1.454 PPBV

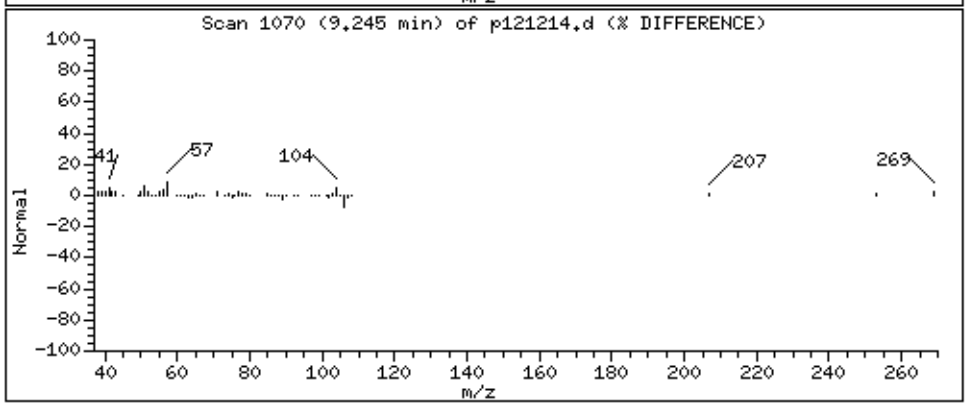












Data File: /chem/msdp.i/12DEC18.b/p121214.d

Date : 12-DEC-2018 19:56

Client ID:

Instrument: msdp.i

Sample Info: 200ml N3255

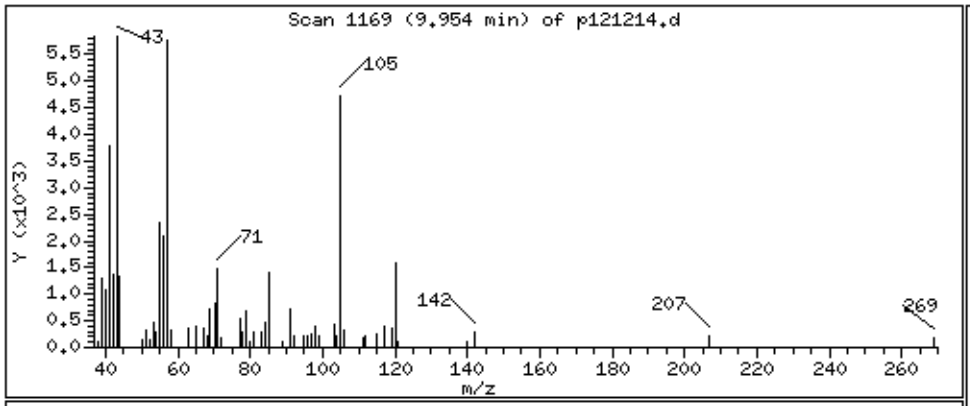
Operator: kk

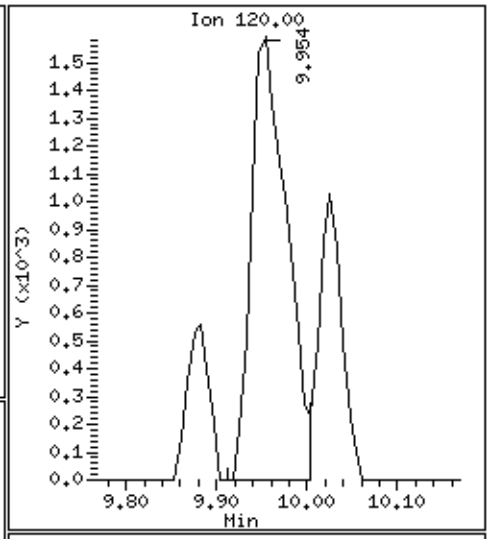
Column phase: RTX-624

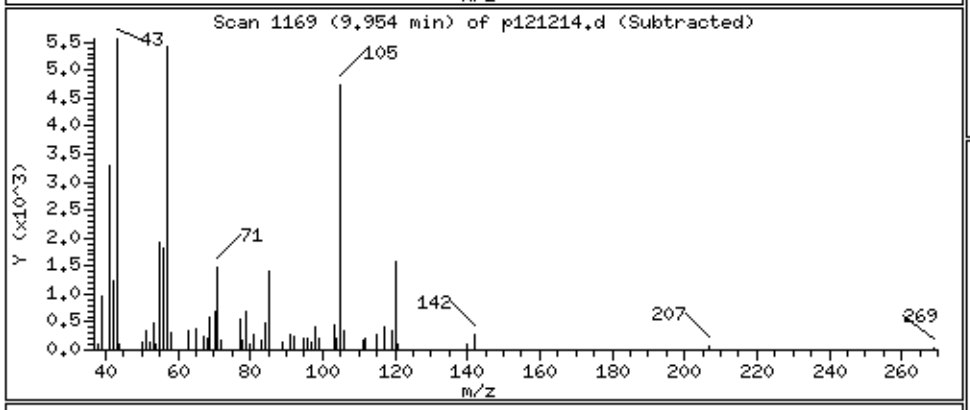
Column diameter: 0.25

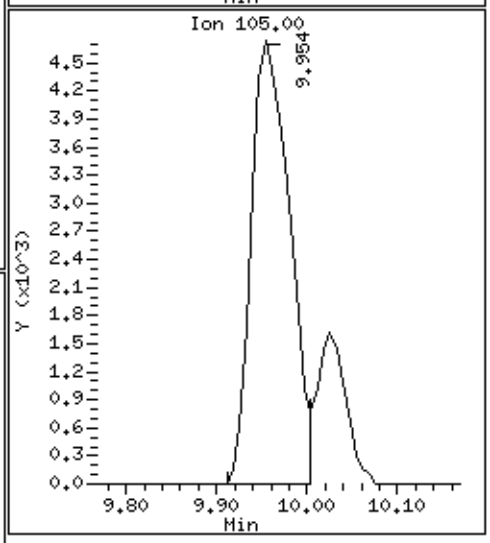
188 4-Ethyltoluene

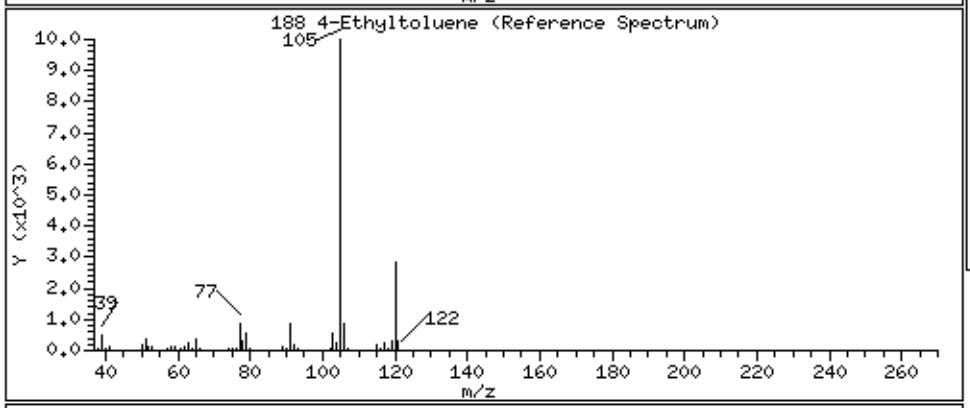
Concentration: 1.008 PPBV

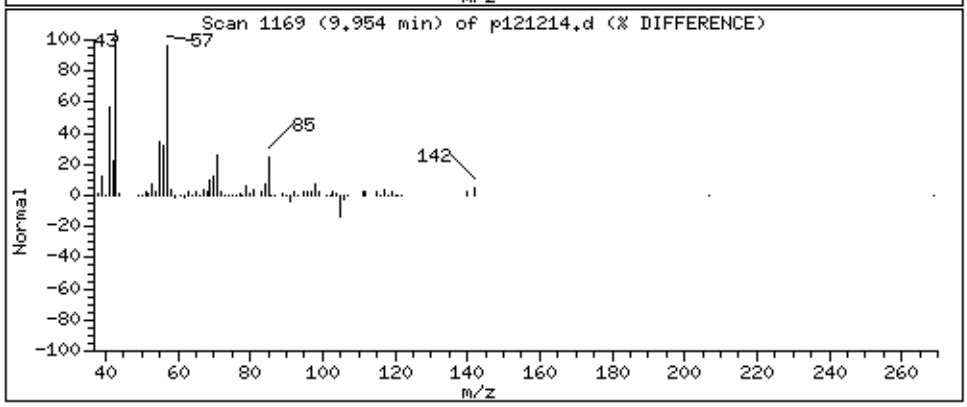












Data File: /chem/msdp.i/12DEC18.b/p121214.d

Date : 12-DEC-2018 19:56

Client ID:

Instrument: msdp.i

Sample Info: 200ml N3255

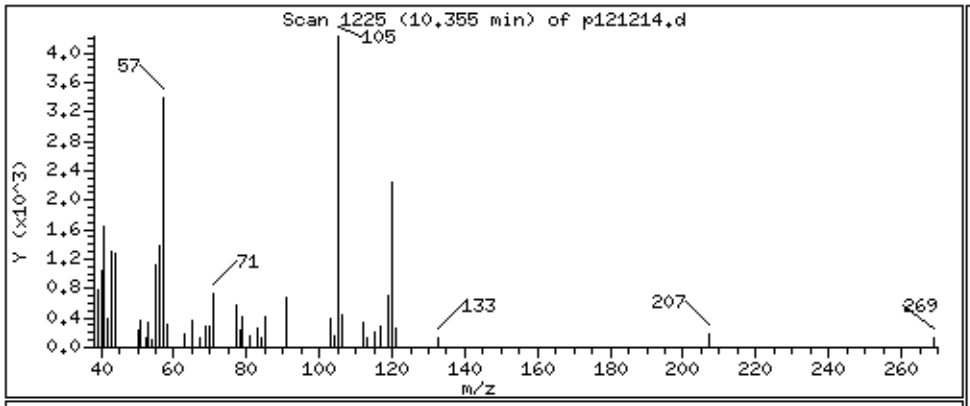
Operator: kk

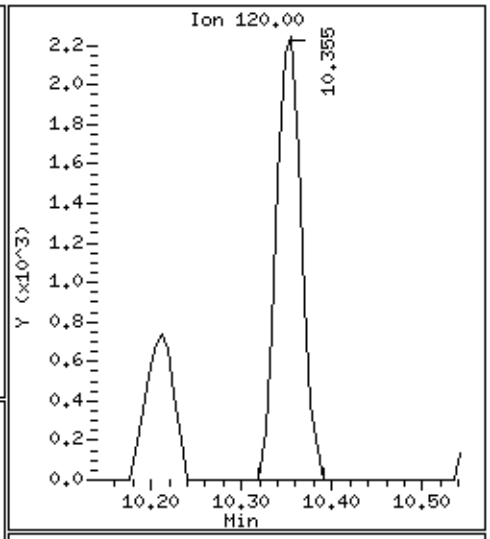
Column phase: RTX-624

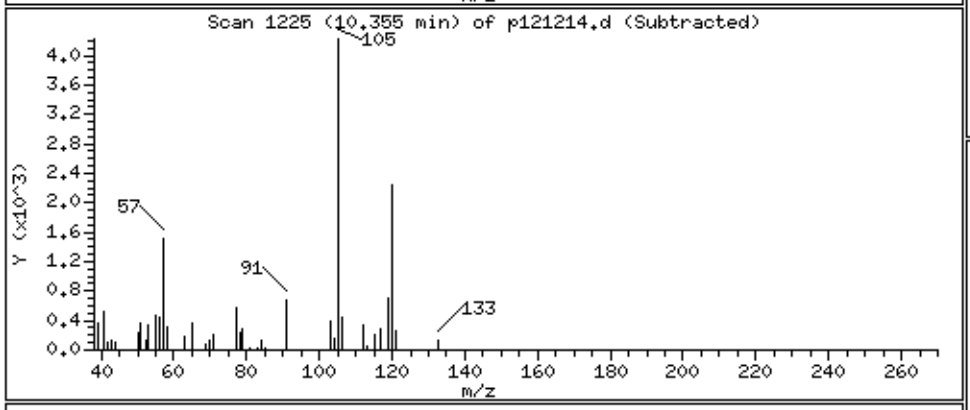
Column diameter: 0.25

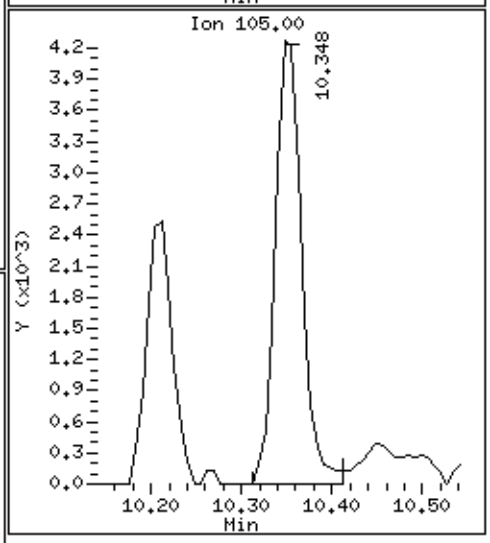
196 1,2,4-Trimethylbenzene

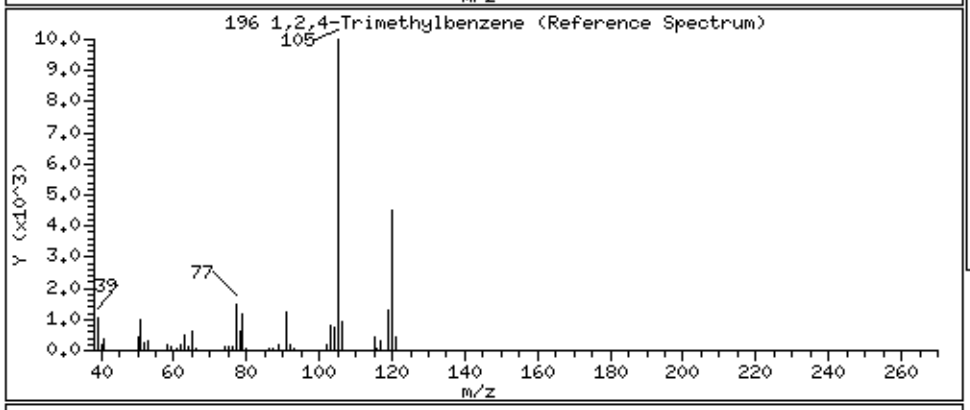
Concentration: 0.8394 PPBV

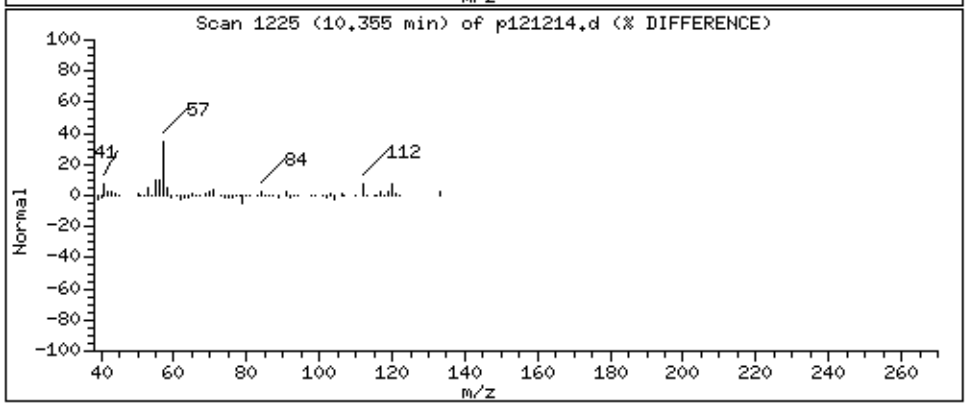












Data File: /chem/msdp.i/12DEC18.b/p121214.d

Date : 12-DEC-2018 19:56

Client ID:

Instrument: msdp.i

Sample Info: 200ml N3255

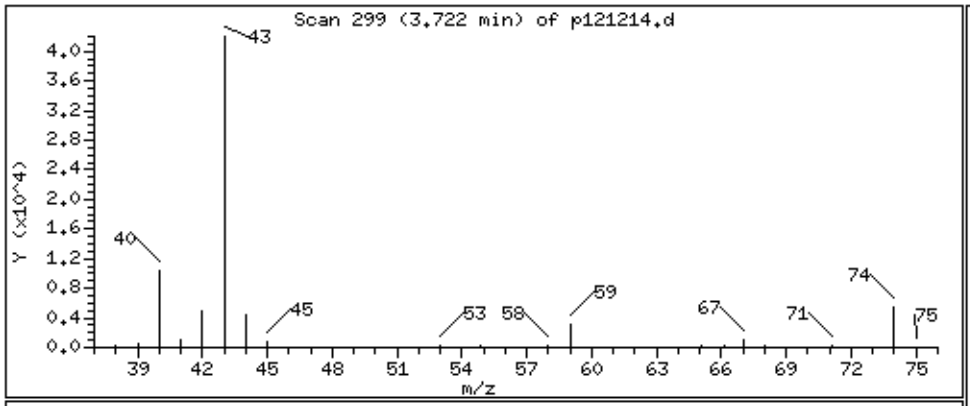
Operator: kk

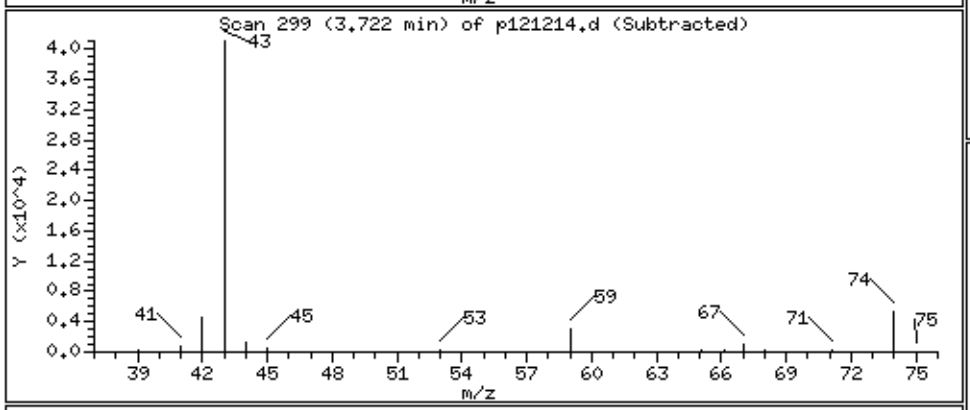
Column phase: RTX-624

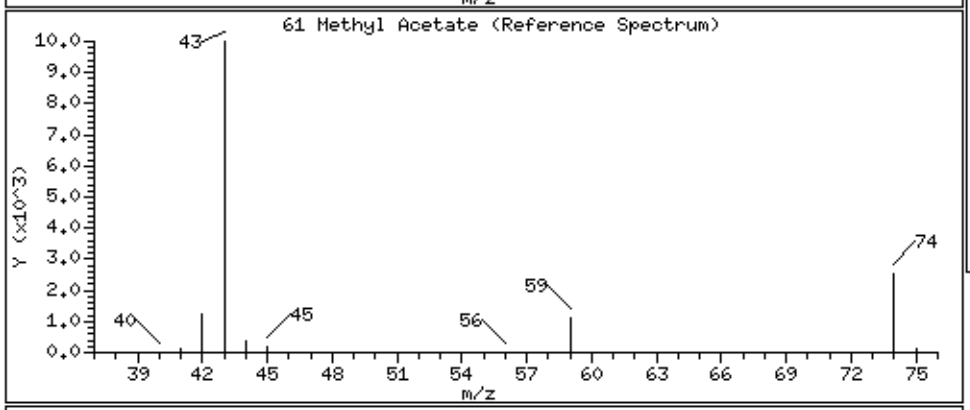
Column diameter: 0.25

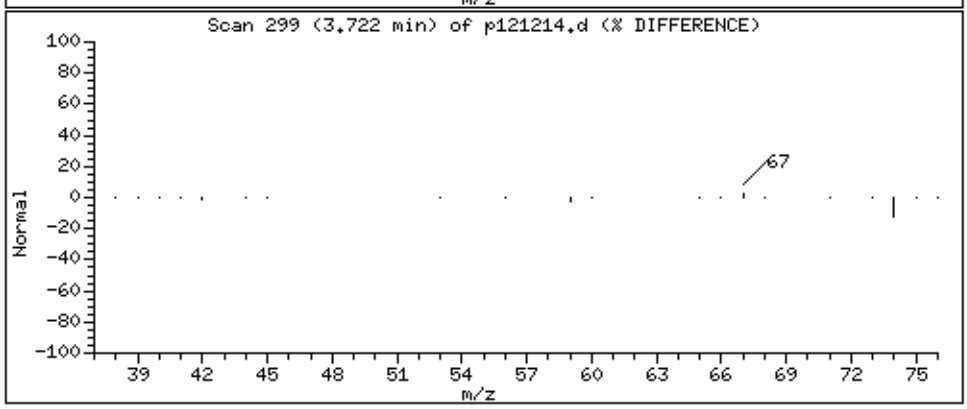
61 Methyl Acetate

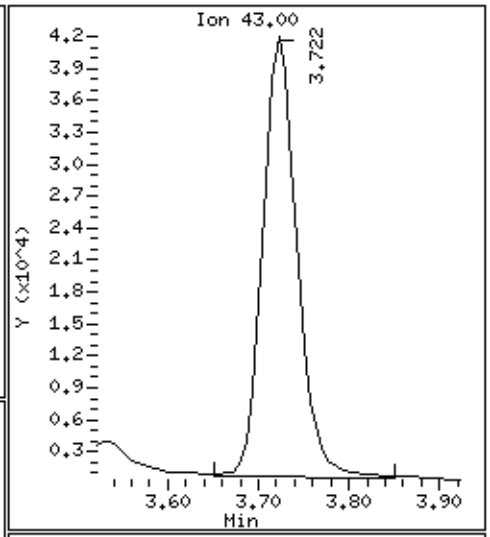
Concentration: 18.149 PPBV

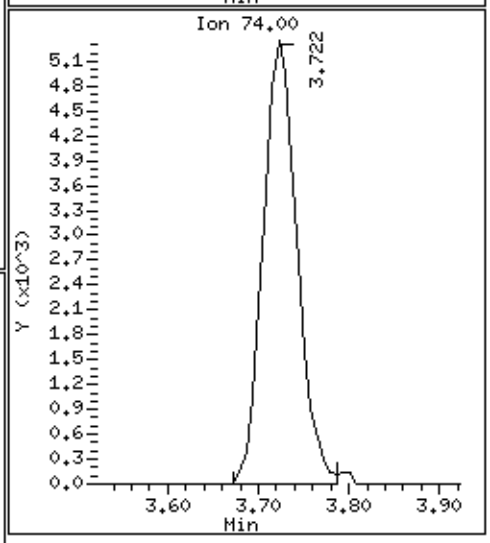












Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: BVF-SUM-014-20181210-1

Lab ID#: 1812211-04A

No Detections Were Found.

eurofins | Air Toxics

Client Sample ID: BVF-SUM-014-20181210-1

Lab ID#: 1812211-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p121215**	**Date of Collection:**	**12/11/18 10:14:00 A**
Dil. Factor:	**1.42**	**Date of Analysis:**	**12/12/18 08:23 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.71	Not Detected	3.5	Not Detected
Freon 114	0.71	Not Detected	5.0	Not Detected
Chloromethane	7.1	Not Detected	15	Not Detected
Vinyl Chloride	0.71	Not Detected	1.8	Not Detected
1,3-Butadiene	0.71	Not Detected	1.6	Not Detected
Bromomethane	7.1	Not Detected	28	Not Detected
Chloroethane	2.8	Not Detected	7.5	Not Detected
Freon 11	0.71	Not Detected	4.0	Not Detected
Ethanol	2.8	Not Detected	5.4	Not Detected
Freon 113	0.71	Not Detected	5.4	Not Detected
1,1-Dichloroethene	0.71	Not Detected	2.8	Not Detected
Acetone	7.1	Not Detected	17	Not Detected
2-Propanol	2.8	Not Detected	7.0	Not Detected
Carbon Disulfide	2.8	Not Detected	8.8	Not Detected
3-Chloropropene	2.8	Not Detected	8.9	Not Detected
Methylene Chloride	7.1	Not Detected	25	Not Detected
Methyl tert-butyl ether	2.8	Not Detected	10	Not Detected
trans-1,2-Dichloroethene	0.71	Not Detected	2.8	Not Detected
Hexane	0.71	Not Detected	2.5	Not Detected
1,1-Dichloroethane	0.71	Not Detected	2.9	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.8	Not Detected	8.4	Not Detected
cis-1,2-Dichloroethene	0.71	Not Detected	2.8	Not Detected
Tetrahydrofuran	0.71	Not Detected	2.1	Not Detected
Chloroform	0.71	Not Detected	3.5	Not Detected
1,1,1-Trichloroethane	0.71	Not Detected	3.9	Not Detected
Cyclohexane	0.71	Not Detected	2.4	Not Detected
Carbon Tetrachloride	0.71	Not Detected	4.5	Not Detected
2,2,4-Trimethylpentane	0.71	Not Detected	3.3	Not Detected
Benzene	0.71	Not Detected	2.3	Not Detected
1,2-Dichloroethane	0.71	Not Detected	2.9	Not Detected
Heptane	0.71	Not Detected	2.9	Not Detected
Trichloroethene	0.71	Not Detected	3.8	Not Detected
1,2-Dichloropropane	0.71	Not Detected	3.3	Not Detected
1,4-Dioxane	2.8	Not Detected	10	Not Detected
Bromodichloromethane	0.71	Not Detected	4.8	Not Detected
cis-1,3-Dichloropropene	0.71	Not Detected	3.2	Not Detected
4-Methyl-2-pentanone	0.71	Not Detected	2.9	Not Detected
Toluene	0.71	Not Detected	2.7	Not Detected
trans-1,3-Dichloropropene	0.71	Not Detected	3.2	Not Detected
1,1,2-Trichloroethane	0.71	Not Detected	3.9	Not Detected
Tetrachloroethene	0.71	Not Detected	4.8	Not Detected
2-Hexanone	2.8	Not Detected	12	Not Detected

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Client Sample ID: BVF-SUM-014-20181210-1

Lab ID#: 1812211-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p121215**	**Date of Collection:**	**12/11/18 10:14:00 A**
Dil. Factor:	**1.42**	**Date of Analysis:**	**12/12/18 08:23 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.71	Not Detected	6.0	Not Detected
1,2-Dibromoethane (EDB)	0.71	Not Detected	5.4	Not Detected
Chlorobenzene	0.71	Not Detected	3.3	Not Detected
Ethyl Benzene	0.71	Not Detected	3.1	Not Detected
m,p-Xylene	0.71	Not Detected	3.1	Not Detected
o-Xylene	0.71	Not Detected	3.1	Not Detected
Styrene	0.71	Not Detected	3.0	Not Detected
Bromoform	0.71	Not Detected	7.3	Not Detected
Cumene	0.71	Not Detected	3.5	Not Detected
1,1,2,2-Tetrachloroethane	0.71	Not Detected	4.9	Not Detected
Propylbenzene	0.71	Not Detected	3.5	Not Detected
4-Ethyltoluene	0.71	Not Detected	3.5	Not Detected
1,3,5-Trimethylbenzene	0.71	Not Detected	3.5	Not Detected
1,2,4-Trimethylbenzene	0.71	Not Detected	3.5	Not Detected
1,3-Dichlorobenzene	0.71	Not Detected	4.3	Not Detected
1,4-Dichlorobenzene	0.71	Not Detected	4.3	Not Detected
alpha-Chlorotoluene	0.71	Not Detected	3.7	Not Detected
1,2-Dichlorobenzene	0.71	Not Detected	4.3	Not Detected
1,2,4-Trichlorobenzene	2.8	Not Detected	21	Not Detected
Hexachlorobutadiene	2.8	Not Detected	30	Not Detected
Methyl Acetate	7.1	Not Detected	22	Not Detected
Methylcyclohexane	2.8	Not Detected	11	Not Detected
Naphthalene	1.4	Not Detected	7.4	Not Detected

Container Type: 6 Liter Summa Canister (100% Cert Ambient)

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	95	70-130

US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/12DEC18.b/p121215.d
Lab Smp Id: 1812211-04A
Inj Date : 12-DEC-2018 20:23
Operator : kk Inst ID: msdp.i
Smp Info : 200ml N0731
Misc Info : 1.8 Hg->5 psi
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/12DEC18.b/p18q1108c.m
Meth Date : 12-Dec-2018 17:11 u7js Quant Type: ISTD
Cal Date : 04-DEC-2018 18:07 Cal File: p120415.d
Als bottle: 6
Dil Factor: 1.42000
Integrator: HP RTE Compound Sublist: Wes23155.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5		
5.413	5.413	(1.000)	130	80928	25.0000		80.00- 120.00	100.00
5.413	5.413	(1.000)	128	61969			48.70- 108.70	76.57
5.413	5.409	(1.000)	49	115366			130.32- 190.32	142.55
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.294	6.299	(1.000)	114	232583	25.0000		80.00- 120.00	100.00
6.294	6.297	(1.000)	88	32849			0.00- 44.06	14.12
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.736	8.736	(1.000)	117	274630	25.0000		80.00- 120.00	100.00
8.729	8.736	(1.000)	82	116180			14.84- 74.84	42.30
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.943	5.942	(1.098)	65	104414	24.2264	24.226	80.00- 120.00	100.00
5.943	5.943	(1.098)	67	47661			26.40- 86.40	45.65
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.504	7.505	(1.192)	98	235014	24.4569	24.457	80.00- 120.00	100.00
7.504	7.504	(1.192)	70	25574			0.00- 40.19	10.88

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)								
7.504	7.505	(1.192)	100	157665			38.92- 98.92	67.09
$ 177 4-Bromofluorobenzene						CAS #: 460-00-4		
9.725	9.720	(1.113)	174	166422	23.8675	23.868	80.00- 120.00	100.00
9.718	9.714	(1.112)	95	179238			82.53- 142.53	107.70
9.725	9.720	(1.113)	176	156861			65.10- 125.10	94.26

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p121215.d
Lab Smp Id: 1812211-04A
Analysis Type: VOA
Quant Type: ISTD
Operator: kk
Method File: /chem/msdp.i/12DEC18.b/p18q1108c.m
Misc Info: 1.8 Hg->5 psi

Calibration Date: 12-DEC-2018
Calibration Time: 10:47

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	75875	45525	106225	80928	6.66
123 1,4-Difluorobenze	227347	136408	318286	232583	2.30
163 Chlorobenzene-d5	252646	151588	353704	274630	8.70

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	-0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 13-Dec-2018 06:31

US32APPTV002

RECOVERY REPORT

Client Name: Client SDG: 12DEC18
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1812211-04A
Level: LOW Operator: kk
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: Wes23155.sub
Method File: /chem/msdp.i/12DEC18.b/p18q1108c.m
Misc Info: 1.8 Hg->5 psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 117 1,2-Dichloroethane-d4	25.000	24.226	96.91
$ 146 Toluene-d8	25.000	24.457	97.83
$ 177 4-Bromofluorobenzene	25.000	23.868	95.47

Data File: /chem/msdp.i/12DEC18.b/p121215.d

Date : 12-DEC-2018 20:23

Client ID:

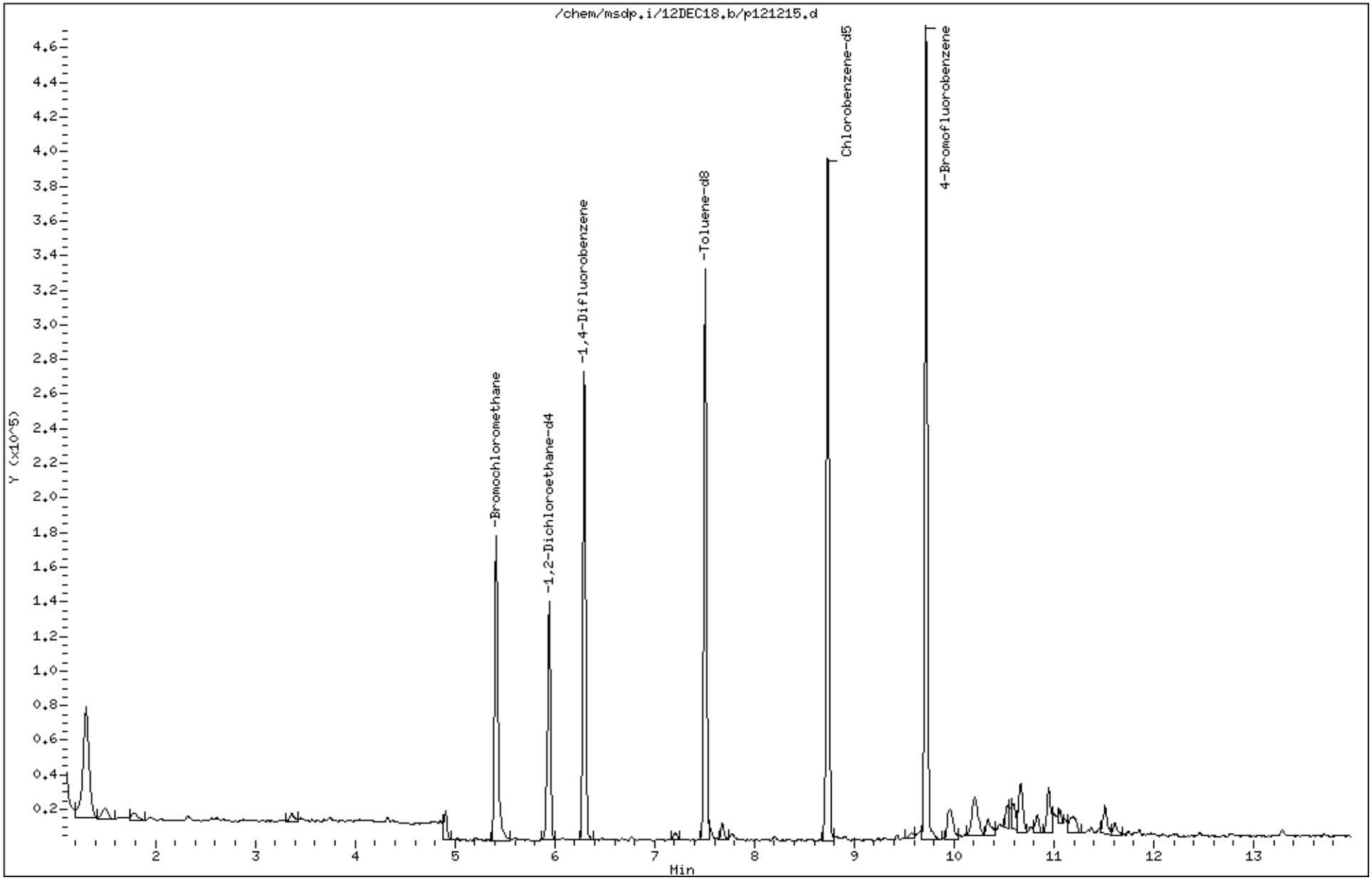
Sample Info: 200ml N0731

Column phase: RTX-624

Instrument: msdp.i

Operator: kk

Column diameter: 0.25



QC Results and Raw Data

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Client Sample ID: Lab Blank

Lab ID#: 1812211-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p121208c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/18 02:11 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	2.0	Not Detected	7.2	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1812211-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p121208c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/18 02:11 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
Methyl Acetate	5.0	Not Detected	15	Not Detected
Methylcyclohexane	2.0	Not Detected	8.0	Not Detected
Naphthalene	1.0	Not Detected	5.2	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	96	70-130

US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/12DEC18.b/p121208c.d
Lab Smp Id: Lab Blank Client Smp ID: Lab Blank
Inj Date : 12-DEC-2018 14:11
Operator : jg Inst ID: msdp.i
Smp Info : 200ml 24229
Misc Info : humid
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/12DEC18.b/p18q1108c.m
Meth Date : 12-Dec-2018 17:11 u7js Quant Type: ISTD
Cal Date : 04-DEC-2018 18:07 Cal File: p120415.d
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: Wes23155.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.413 (1.000)	130	75681	25.0000		80.00- 120.00	100.00
5.413	5.413 (1.000)	128	58067			48.70- 108.70	76.73
5.413	5.409 (1.000)	49	110688			130.32- 190.32	146.26
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.294	6.299 (1.000)	114	224069	25.0000		80.00- 120.00	100.00
6.294	6.297 (1.000)	88	30998			0.00- 44.06	13.83
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	262639	25.0000		80.00- 120.00	100.00
8.736	8.736 (1.000)	82	113294			14.84- 74.84	43.14
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
5.943	5.942 (1.098)	65	102913	25.5336	25.534	80.00- 120.00	100.00
5.943	5.943 (1.098)	67	46282			26.40- 86.40	44.97
$ 146 Toluene-d8					CAS #: 2037-26-5		
7.504	7.505 (1.192)	98	226640	24.4816	24.482	80.00- 120.00	100.00
7.504	7.504 (1.192)	70	24623			0.00- 40.19	10.86

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)								
7.504	7.505	(1.192)	100	146853			38.92- 98.92	64.80
$ 177 4-Bromofluorobenzene						CAS #: 460-00-4		
9.725	9.720	(1.113)	174	159628	23.9384	23.938	80.00- 120.00	100.00
9.725	9.714	(1.113)	95	166592			82.53- 142.53	104.36
9.725	9.720	(1.113)	176	148664			65.10- 125.10	93.13

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p121208c.d
Lab Smp Id: Lab Blank
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msdp.i/12DEC18.b/p18q1108c.m
Misc Info: humid

Calibration Date: 12-DEC-2018
Calibration Time: 10:47
Client Smp ID: Lab Blank
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	75875	45525	106225	75681	-0.26
123 1,4-Difluorobenze	227347	136408	318286	224069	-1.44
163 Chlorobenzene-d5	252646	151588	353704	262639	3.96

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	-0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 12-Dec-2018 17:11

US32APPTV002

RECOVERY REPORT

Client Name:
Client SDG: 12DEC18
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: Lab Blank
Client Smp ID: Lab Blank
Level: LOW
Operator: jg
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: AT12.spk
Quant Type: ISTD
Sublist File: Wes23155.sub
Method File: /chem/msdp.i/12DEC18.b/p18q1108c.m
Misc Info: humid

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 117 1,2-Dichloroethane-d4	25.000	25.534	102.13
$ 146 Toluene-d8	25.000	24.482	97.93
$ 177 4-Bromofluorobenzene	25.000	23.938	95.75

Data File: /chem/msdp.i/12DEC18.b/p121208c.d

Page 1

Date : 12-DEC-2018 14:11

Client ID: Lab Blank

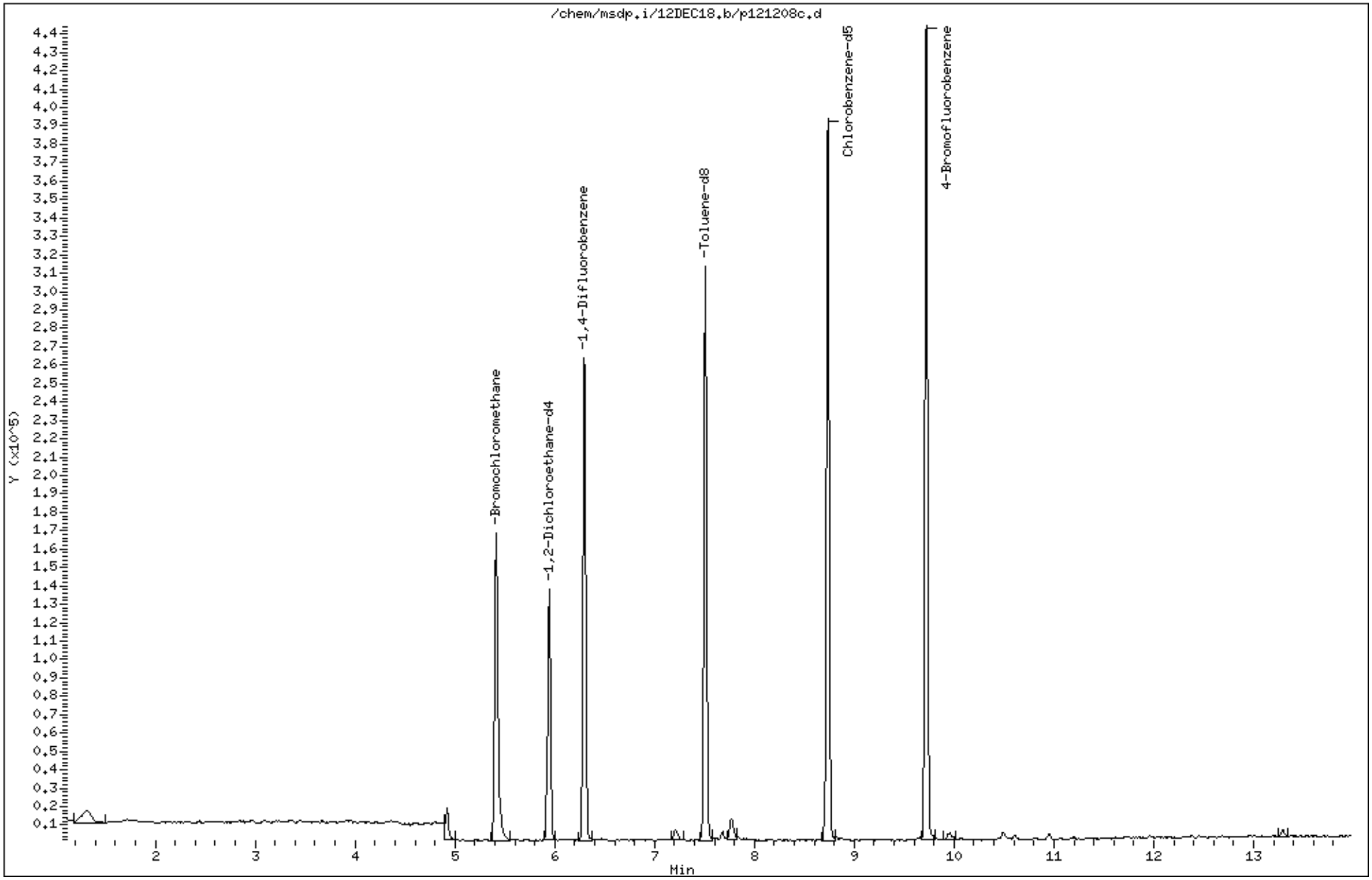
Instrument: msdp.i

Sample Info: 200ml 24229

Operator: jg

Column phase: RTX-624

Column diameter: 0.25



LEVEL-IV VALIDATABLE

EPA METHOD TO-15 GC/MS FULL SCAN

SURROGATE RECOVERY FORM

Lab Name: AIR TOXICS LIMITED. SDG No.: 1812211

	CLIENT SAMPLE NO.	SURROGATE % RECOVERY								
		1,2-Dichloroethane-d4	#	Toluene-d8	#	4-Bromofluorobenzene	#		#	TOTAL OUT
01	BVF-SUM-011-20181210-1	96		98		102				0
02	BVF-SUM-012-20181210-1	96		97		99				0
03	BVF-SUM-013-20181210-1	96		96		99				0
04	BVF-SUM-014-20181210-1	97		98		95				0
05	Lab Blank	102		98		96				0
06	CCV	100		102		106				0
07	LCS	100		98		106				0
08	LCSD	101		100		104				0
09										0
10										0
11										0
12										0
13										0
14										0
15										0
16										0
17										0
18										0
19										0
20										0
21										0
22										0
23										0
24										0

Surrogate Recovery Limits

1,2-Dichloroethane-d4 70 - 130
Toluene-d8 70 - 130
4-Bromofluorobenzene 70 - 130

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

EPA Method TO-15 GC/MS Full Scan

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name:	AIR TOXICS, LTD	SDG No:	1812211
Lab File ID:	p121202.d	Date Analyzed:	12/12/2018
Instrument ID:	msdp.i	Time Analyzed:	10:47 AM

		Chlorobenzene-d5 Area	#	RT	#	1,4-Difluorobenzene Area	#	RT	#	Bromochloromethane Area	#	RT	#
	12-HOUR STD	252646		8.74		227347		6.29		75875		5.41	
	UPPER LIMIT	353704		09.07		318286		06.62		106225		05.74	
	LOWER LIMIT	151588		08.41		136408		05.96		45525		05.08	
	CLIENT SAMPLE NO												
01	BVF-SUM-011-20181210-1	289677		8.74		250695		6.29		84203		5.41	
02	BVF-SUM-012-20181210-1	287518		8.74		252840		6.29		85403		5.41	
03	BVF-SUM-013-20181210-1	294019		8.74		259797		6.29		86268		5.41	
04	BVF-SUM-014-20181210-1	274630		8.74		232583		6.29		80928		5.41	
05	Lab Blank	262639		8.74		224069		6.29		75681		5.41	
06	CCV	252646		8.74		227347		6.29		75875		5.41	
07	LCS	287858		8.73		263813		6.29		83096		5.41	
08	LCSD	291155		8.73		261803		6.29		82770		5.41	
09													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

'Area Upper Limit=+40% of internal standard area'
'Area Lower Limit=-40% of internal standard area'

RT Upper Limit=+0.33 minutes of internal standard RT
RT Lower Limit=-0.33 minutes of internal standard RT

* Designates values outside of QC limits

SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: p121204.d & p121203.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 12/12/18 & 12/12/18

CAS Number	Compound	Original Amount	Original Flags	Duplicate Amount	Duplicate Flags	RPD	Result Less Than 5X RL
71-55-6	1,1,1-Trichloroethane	100		102		2.0	
79-34-5	1,1,2,2-Tetrachloroethane	96		95		1.0	
79-00-5	1,1,2-Trichloroethane	97		95		2.1	
75-34-3	1,1-Dichloroethane	92		92		0	
75-35-4	1,1-Dichloroethene	96		97		1.0	
120-82-1	1,2,4-Trichlorobenzene	102		108		5.7	
95-63-6	1,2,4-Trimethylbenzene	113		113		0	
106-93-4	1,2-Dibromoethane (EDB)	100		100		0	
95-50-1	1,2-Dichlorobenzene	106		105		0.95	
107-06-2	1,2-Dichloroethane	96		96		0	
78-87-5	1,2-Dichloropropane	93		95		2.1	
108-67-8	1,3,5-Trimethylbenzene	113		111		1.8	
106-99-0	1,3-Butadiene	104		103		0.97	
541-73-1	1,3-Dichlorobenzene	105		104		0.96	
106-46-7	1,4-Dichlorobenzene	108		108		0	
123-91-1	1,4-Dioxane	104		105		0.96	
540-84-1	2,2,4-Trimethylpentane	100		100		0	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	93		92		1.1	
591-78-6	2-Hexanone	115		116		0.86	
67-63-0	2-Propanol	96		98		2.1	
107-05-1	3-Chloropropene	97		102		5.0	
622-96-8	4-Ethyltoluene	113		111		1.8	
108-10-1	4-Methyl-2-pentanone	107		108		0.93	
67-64-1	Acetone	92		93		1.1	
100-44-7	alpha-Chlorotoluene	115		116		0.86	
71-43-2	Benzene	89		89		0	
75-27-4	Bromodichloromethane	99		101		2.0	
75-25-2	Bromoform	109		108		0.92	
74-83-9	Bromomethane	102		101		0.98	
75-15-0	Carbon Disulfide	93		92		1.1	
56-23-5	Carbon Tetrachloride	103		104		0.97	
108-90-7	Chlorobenzene	97		96		1.0	
75-00-3	Chloroethane	96		95		1.0	
67-66-3	Chloroform	96		96		0	
74-87-3	Chloromethane	99		94		5.2	
156-59-2	cis-1,2-Dichloroethene	88		88		0	
10061-01-5	cis-1,3-Dichloropropene	102		103		0.98	
98-82-8	Cumene	107		106		0.94	
110-82-7	Cyclohexane	100		99		1.0	
124-48-1	Dibromochloromethane	103		102		0.98	
64-17-5	Ethanol	89		91		2.2	
100-41-4	Ethyl Benzene	105		101		3.9	
75-69-4	Freon 11	100		100		0	
76-13-1	Freon 113	97		96		1.0	
76-14-2	Freon 114	102		100		2.0	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.

SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: p121204.d & p121203.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 12/12/18 & 12/12/18

CAS Number	Compound	Original Amount	Original Flags	Duplicate Amount	Duplicate Flags	RPD	Result Less Than 5X RL
75-71-8	Freon 12	102		102		0	
142-82-5	Heptane	102		100		2.0	
87-68-3	Hexachlorobutadiene	106		111		4.6	
110-54-3	Hexane	99		100		1.0	
108-38-3	m,p-Xylene	107		105		1.9	
79-20-9	Methyl Acetate	ND		ND		0	
1634-04-4	Methyl tert-butyl ether	94		95		1.0	
108-87-2	Methylcyclohexane	101		102		0.98	
75-09-2	Methylene Chloride	92		89		3.3	
91-20-3	Naphthalene	100		108		7.7	
95-47-6	o-Xylene	106		106		0	
103-65-1	Propylbenzene	105		102		2.9	
100-42-5	Styrene	113		110		2.7	
127-18-4	Tetrachloroethene	104		102		1.9	
109-99-9	Tetrahydrofuran	99		99		0	
108-88-3	Toluene	93		94		1.1	
156-60-5	trans-1,2-Dichloroethene	107		113		5.4	
10061-02-6	trans-1,3-Dichloropropene	100		99		1.0	
79-01-6	Trichloroethene	96		96		0	
75-01-4	Vinyl Chloride	112		111		0.90	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.

US32APPTV002

INITIAL CALIBRATION DATA

Start Cal Date : 27-SEP-2018 22:59
End Cal Date : 04-DEC-2018 18:07
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msdp.i/04DEC18.b/p18q1108c.m
Cal Date : 05-Dec-2018 14:04 ugdc
Curve Type : Average

Calibration File Names:
Level 1: /chem/msdp.i/08NOV18a.b/p110823.d
Level 2: /chem/msdp.i/08NOV18a.b/p110814.d
Level 3: /chem/msdp.i/04DEC18.b/p120411.d
Level 4: /chem/msdp.i/04DEC18.b/p120412.d
Level 5: /chem/msdp.i/08NOV18a.b/p110817.d
Level 6: /chem/msdp.i/04DEC18.b/p120413.d
Level 7: /chem/msdp.i/04DEC18.b/p120414.d
Level 8: /chem/msdp.i/04DEC18.b/p120415.d

Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	___ RRF	% RSD
1 Dimethyl Ether	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
2 Freon 14	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
3 Acetaldehyde	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
4 Hexafluoropropene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
5 Freon 13	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
6 Freon 143a	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++

US32APPTV002

INITIAL CALIBRATION DATA

Start Cal Date : 27-SEP-2018 22:59
End Cal Date : 04-DEC-2018 18:07
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msdp.i/04DEC18.b/p18q1108c.m
Cal Date : 05-Dec-2018 14:04 ugdc
Curve Type : Average

Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	RRF	% RSD
7 Freon 134a	+++++	+++++	0.71346	0.65812	+++++	0.69295		
	0.67586	0.50890					0.64986	12.529
8 Propane	+++++	+++++	0.36176	0.24610	+++++	0.20114		
	0.21219	0.20858					0.24596	27.242
9 Propylene	+++++	+++++	1.04360	0.95782	0.87373	0.91178		
	0.93723	0.89041					0.93576	6.517
10 1,1-Difluoroethane	+++++	+++++	0.32349	0.29370	+++++	0.32672		
	0.28616	0.17595					0.28120	21.863
11 Freon 12	+++++	2.33061	2.52626	2.61565	2.45645	2.52819		
	2.52108	2.37859					2.47955	3.955
12 Vinyl Fluoride	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
13 Chlorodifluoromethane	+++++	+++++	0.19340	0.20038	+++++	0.18957		
	0.19615	0.14945					0.18579	11.138
14 Ethylene Oxide	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
15 Freon 114	+++++	1.85534	2.08844	2.10681	2.07895	2.06530		
	2.07702	1.99931					2.03874	4.299

US32APPTV002

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Method file : /chem/msdp.i/04DEC18.b/p18q1108c.m
Cal Date : 05-Dec-2018 14:04 ugdc
Curve Type : Average

Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	___ RRF	% RSD
16 Freon 142b	+++++	+++++	1.92595	1.82700	+++++	1.76600		
	1.78002	1.88476					1.83675	3.711
17 Chloromethane	+++++	+++++	1.24217	1.13519	1.17641	1.23363		
	1.17012	0.86057					1.13635	12.412
18 Isobutane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
19 Isobutylene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
20 2-Butene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
21 trans-2-butene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
22 1-Butene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
23 Butane	+++++	+++++	0.17692	0.20453	0.19604	0.19883		
	0.24790	0.24491					0.21152	13.514
24 cis-2-Butene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++

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Cal Date : 05-Dec-2018 14:04 ugdc
Curve Type : Average

Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	RRF	% RSD
25 Vinyl Chloride	+++++ / 1.05768	0.91666 / 1.15565	0.93893	0.93637	0.93559	1.11798	1.00841	9.904
26 1,3-Butadiene	+++++ / 1.09339	0.82071 / 1.03537	0.83179	0.85466	0.87558	1.10323	0.94496	13.418
27 3-Methyl-1-butene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
28 Methanol	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
29 Bromomethane	+++++ / 0.78646	+++++ / 0.73613	0.65087	0.60839	0.77180	0.77449	0.72136	10.291
30 Chloroethane	+++++ / 0.43334	+++++ / 0.41862	0.41879	0.45352	0.41252	0.43084	0.42794	3.467
31 Isopentane	+++++ / 1.35091	+++++ / 1.28360	1.27954	1.26140	1.27828	1.31371	1.29457	2.504
32 Vinyl Bromide	+++++ / 0.84176	+++++ / 0.88934	0.83735	0.77340	+++++	0.80907	0.83018	5.165
33 2-Chloropropane	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++

US32APPTV002

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Curve Type : Average

Compound	0.10000 Level 1 100.000 Level 7	0.50000 Level 2 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	___ RRF	% RSD
34 Pentane	+++++ 1.34753	+++++ 1.43144	1.26517	1.36755	+++++	1.34853	1.35204	4.395
35 Freon 11	+++++ 2.82161	3.09600 2.68882	2.94243	2.87645	2.90580	2.81579	2.87813	4.379
36 1-Pentene	+++++ 1.13171	+++++ 1.18866	1.14069	1.08289	+++++	1.07270	1.12333	4.185
37 Dichlorofluoromethane	+++++ 1.80295	+++++ 1.90944	1.80940	1.78392	+++++	1.76517	1.81417	3.086
38 2,3-Dimethylbutane	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
39 Isoprene	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
40 2-Methyl-2-butene	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
41 trans-2-Pentene	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
42 Ethanol	+++++ 0.43696	+++++ 0.42070	0.45478	0.39665	0.42851	0.43418	0.42863	4.511

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Curve Type : Average

Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	RRF	% RSD
43 1,2-Dichloro-1-fluoroethane	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
44 Ethyl Ether	+++++ / 0.37627	+++++ / 0.41034	0.38752	0.36190	+++++	0.35414	0.37804	5.868
45 cis-2-Pentene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
46 Acrolein	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
47 Freon 123a	+++++ / 1.57711	+++++ / 1.61237	1.48850	1.58184	+++++	1.52527	1.55701	3.177
48 Freon 123	+++++ / 1.86494	+++++ / 1.96180	1.87559	1.76431	+++++	1.77182	1.84769	4.431
49 Freon 113	+++++ / 1.88024	2.02919 / 1.78033	1.95233	1.93925	1.93809	1.88312	1.91465	4.041
50 1,1-Dichloroethene	+++++ / 0.53074	0.41035 / 0.51425	0.47643	0.45009	0.49186	0.50724	0.48299	8.589
51 2,2-Dimethylbutane	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++

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Curve Type : Average

Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	RRF	% RSD
52 Acetone	+++++	+++++	0.55089	0.46283	0.50795	0.49338		
	0.49909	0.47016					0.49738	6.312
53 Iodomethane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
54 Bromoethane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
55 4-Methyl-1-pentene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
56 Carbon Disulfide	+++++	+++++	2.35609	2.23125	2.06724	2.13094		
	2.11332	2.07489					2.16229	5.165
57 2-Propanol	+++++	+++++	1.80837	1.72928	1.69623	1.84258		
	1.94954	1.89303					1.81984	5.288
58 3-Chloropropene	+++++	+++++	0.27414	0.28801	0.29974	0.31251		
	0.32376	0.32169					0.30331	6.492
59 Cyclopentene	+++++	+++++	1.17422	1.13988	+++++	1.17762		
	1.25170	1.35637					1.21996	7.088
60 2-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++

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Curve Type : Average

Compound	0.10000 Level 1 100.000 Level 7	0.50000 Level 2 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	___ RRF	% RSD
61 Methyl Acetate	+++++ 2.69285	+++++ 2.78515	2.70431	2.60122	+++++	2.63522	2.68375	2.632
62 3-Methylpentane	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
63 Acetonitrile	+++++ 0.18618	+++++ 0.19987	0.30302	0.20471	+++++	0.18757	0.21627	22.721
64 Cyclopentane	+++++ 0.43608	+++++ 0.47525	0.41069	0.36002	+++++	0.41487	0.41938	9.989
65 1-Chloropropane	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
66 Methylene Chloride	+++++ 1.53974	+++++ 1.46133	1.63076	1.54975	1.49502	1.52837	1.53416	3.742
67 2-Methyl-1-pentene	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
68 2,4-Dimethylpentane	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
69 2,3-Dimethylpentane	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++

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Curve Type : Average

Compound	0.10000 Level 1 100.000 Level 7	0.50000 Level 2 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	___ RRF	% RSD
70 tert-Butyl chloride	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
71 tert-Butyl alcohol	+++++ 2.06538	+++++ 2.04585	1.60676	1.77656	1.84803	1.93582	1.87974	9.256
72 Methyl tert-butyl ether	+++++ 2.31352	+++++ 2.27728	1.85622	1.80472	2.09680	2.21881	2.09456	10.407
73 trans-1,2-Dichloroethene	+++++ 0.54704	0.40471 0.51745	0.48071	0.49266	0.51094	0.52868	0.49745	9.328
74 Acrylonitrile	0.90204 0.78041	0.57216 0.76238	0.66993	0.72296	0.70434	0.72626	0.73006	12.936
75 trans-2-Hexene	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
76 1-Hexene	+++++ 0.94210	+++++ 0.99330	0.76310	0.78925	+++++	0.88190	0.87393	11.214
77 cis-2-Hexene	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
78 Hexane	+++++ 1.82273	1.22316 1.78129	1.36531	1.36772	1.60096	1.69852	1.55138	15.041

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Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	RRF	% RSD
79 Methylcyclopentane	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
80 sec-Butyl chloride	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
81 2,3,4-Trimethylpentane	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
82 1,1-Dichloroethane	+++++ / 1.88175	1.84744 / 1.79174	1.84560	1.83133	1.83508	1.86581	1.84268	1.547
83 Isopropyl ether	+++++ / 4.69381	+++++ / 4.50179	3.45747	3.65905	4.20457	4.50878	4.17091	12.079
84 1-Propanol	+++++ / 0.22363	+++++ / 0.23552	0.17138	0.17972	+++++	0.20493	0.20304	13.552
85 Chloroprene	+++++ / 1.85955	+++++ / 1.99339	1.51814	1.54410	+++++	1.74683	1.73240	11.754
86 Vinyl Acetate	+++++ / 0.23745	+++++ / 0.22863	0.12369	0.20553	0.19160	0.23067	0.20293	20.948
87 Butanal	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++

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Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	RRF	% RSD
88 Ethyl-tert-butyl ether	+++++	+++++	2.95690	2.91641	3.40048	3.66036		
	3.86733	3.81252					3.43567	12.203
89 Isobutyl chloride	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
90 2,2-Dichloropropane	+++++	+++++	1.59945	1.58101	+++++	1.61265		
	1.68120	1.73450					1.64176	3.910
91 cis-1,2-Dichloroethene	+++++	0.54244	0.64494	0.60889	0.61521	0.66920		
	0.67417	0.65249					0.62962	7.263
92 2-Butanone	+++++	+++++	0.36832	0.37503	0.35146	0.38402		
	0.39013	0.38709					0.37601	3.852
93 Methyl Acrylate	+++++	+++++	2.25592	2.21519	+++++	2.49647		
	2.67463	2.83064					2.49457	10.613
94 Ethyl Acetate	+++++	+++++	0.16232	0.15190	+++++	0.15052		
	0.16950	0.18587					0.16402	8.833
95 Methacrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
96 2-Chloropentane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++

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Compound	0.10000 Level 1 100.000 Level 7	0.50000 Level 2 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	___ RRF	% RSD
97 2-Butanol	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
99 Tetrahydrofuran	+++++ 1.46030	1.10406 1.41662	1.09710	1.17821	1.31092	1.41826	1.28364	12.149
100 Chloroform	+++++ 2.06214	2.07774 1.95994	2.08719	2.05853	2.05526	2.05325	2.05058	2.042
101 1-Bromopropane	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
102 Cyclohexane	+++++ 1.15232	0.85062 1.12856	0.89315	0.93642	1.01340	1.12155	1.01372	12.158
103 1,1,1-Trichloroethane	+++++ 2.40095	2.43729 2.30589	2.52074	2.35890	2.38133	2.40688	2.40171	2.787
104 Chloroacetonitrile	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
105 n-Butylchloride	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
106 Carbon Tetrachloride	+++++ 2.68236	2.55639 2.54583	2.41952	2.49820	2.80897	2.68192	2.59903	5.088

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Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	RRF	% RSD
107 1,1-Dichloropropene	+++++	+++++	0.14719	0.16543	+++++	0.15756		
	0.16720	0.16782					0.16104	5.442
108 Thiophene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
109 2-Methylhexane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
110 3-Methylhexane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
111 Cyclohexene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
113 2,2,4-Trimethylpentane	+++++	4.39480	4.73507	5.10094	5.71487	6.11992		
	6.40064	6.21041					5.52524	14.227
114 1-Methoxy-2-propanol	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
115 Isobutanol	+++++	+++++	0.10975	0.11029	+++++	0.08137		
	0.08111	0.07651					0.09180	18.234
116 Benzene	1.26440	0.88179	0.86747	0.77402	0.82326	0.82326		
	0.83536	0.79964					0.88365	17.839

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Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	RRF	% RSD
118 1-Heptene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
119 tert-Amyl methyl ether	+++++	+++++	0.17688	0.17071	0.20988	0.21719		
	0.22880	0.21789					0.20356	11.747
120 1,2-Dichloroethane	+++++	0.61686	0.56177	0.55042	0.54489	0.53814		
	0.53086	0.49507					0.54829	6.717
121 Heptane	+++++	0.20308	0.22475	0.22877	0.26427	0.27175		
	0.27452	0.26985					0.24814	11.560
122 2,3-Dichloro-1-propene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
124 n-Butanol	+++++	+++++	0.34423	0.33343	+++++	0.31086		
	0.32161	0.31077					0.32418	4.500
125 Trichloroethene	+++++	0.47386	0.47412	0.42133	0.43333	0.43433		
	0.43971	0.42327					0.44285	5.015
126 Bromodichloroethene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
127 Methylcyclohexane	+++++	0.45475	0.39499	0.39364	0.47514	0.49552		
	0.50937	0.49939					0.46040	10.543

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INITIAL CALIBRATION DATA

Start Cal Date : 27-SEP-2018 22:59
End Cal Date : 04-DEC-2018 18:07
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Integrator : HP RTE
Method file : /chem/msdp.i/04DEC18.b/p18q1108c.m
Cal Date : 05-Dec-2018 14:04 ugdc
Curve Type : Average

Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	RRF	% RSD
128 Ethyl acrylate	+++++	+++++	0.04989	0.04062	+++++	0.05110		
	0.05453	0.05422					0.05007	11.277
129 2-Methylheptane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
130 3-Methylheptane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
131 2-Pentanone	+++++	+++++	1.07890	1.00740	+++++	1.20539		
	1.22258	1.17975					1.13880	8.094
132 1,2-Dichloropropane	+++++	0.41163	0.39532	0.35111	0.38910	0.38570		
	0.39034	0.37059					0.38483	4.996
133 1-Bromo-2-Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
134 Methyl Methacrylate	+++++	+++++	0.52994	0.50172	+++++	0.57161		
	0.59404	0.58741					0.55694	7.125
135 Diethyl Ketone	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
136 1,4-Dioxane	+++++	+++++	0.17871	0.18555	0.19724	0.20376		
	0.20819	0.20199					0.19591	5.840

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Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	RRF	% RSD
137 Dibromomethane	+++++	+++++	0.48876	0.45971	+++++	0.49318		
	0.48829	0.47837					0.48166	2.785
138 Bromodichloromethane	+++++	0.75108	0.78432	0.70531	0.71361	0.71053		
	0.71626	0.68666					0.72397	4.534
139 2-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
140 bis(chloromethyl) Ether	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
141 1-Octene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
142 Epichlorohydrin	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
143 2-Chloroethyl Vinyl Ether	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
144 cis-1,3-Dichloropropene	+++++	0.49396	0.46046	0.41184	0.45870	0.48120		
	0.50071	0.49890					0.47225	6.721
145 4-Methyl-2-pentanone	+++++	0.33126	0.29696	0.29158	0.33622	0.35123		
	0.36666	0.35817					0.33315	8.774

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147 Toluene	1.42875	1.10750	1.16818	1.06349	1.15654	1.14620		
	1.17672	1.13999					1.17342	9.325
148 Octane	+++++	+++++	0.28275	0.27545	+++++	0.32362		
	0.33660	0.33582					0.31085	9.506
149 Vinyl Cyclohexene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
150 trans-1,3-Dichloropropene	+++++	0.44252	0.42153	0.41014	0.43718	0.45866		
	0.46533	0.46307					0.44263	4.811
151 Ethyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
152 1-Chloro-2-Bromopropane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
153 1-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
154 Bromodichloroethane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
155 1,1,2-Trichloroethane	+++++	0.47142	0.38127	0.38137	0.40291	0.39788		
	0.38863	0.37224					0.39939	8.373

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Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	RRF	% RSD
156 Tetrachloroethene	+++++	0.63041	0.64569	0.64945	0.67164	0.65201		
	0.65082	0.63791					0.64827	1.992
157 1,3-Dichloropropane	0.51792	0.64051	0.53724	0.52292	0.57019	0.57695		
	0.57667	0.58873					0.56639	7.098
158 2-Hexanone	+++++	0.38605	0.34513	0.32494	0.38878	0.42596		
	0.44510	0.44318					0.39416	11.945
159 Butyl Acetate	+++++	+++++	0.32419	0.31333	+++++	0.37279		
	0.40407	0.41255					0.36539	12.379
160 Dibromochloromethane	+++++	1.00990	0.86753	0.90707	0.93899	0.90529		
	0.91166	0.89160					0.91886	4.957
161 1,2-Dibromoethane (EDB)	+++++	0.62839	0.65823	0.63707	0.66593	0.66574		
	0.67151	0.65009					0.65385	2.467
162 1-Nonene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
164 1-Chlorohexane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
165 Chlorobenzene	+++++	1.11360	0.99796	0.97591	1.02051	1.01378		
	1.02625	1.00033					1.02119	4.314

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Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	___ RRF	% RSD
166 Butyl Ether	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
167 Ethyl Benzene	0.44770 / 0.49938	0.42050 / 0.49158	0.39868	0.40504	0.47225	0.48632	0.45268	8.936
168 1,1,1,2-Tetrachloroethane	0.70262 / 0.69858	0.76932 / 0.70447	0.65611	0.64633	0.71149	0.69675	0.69821	5.347
169 m,p-Xylene	0.54434 / 0.62498	0.50050 / 0.61876	0.47648	0.48402	0.58233	0.61838	0.55622	11.371
170 Nonane	+++++ / 0.89483	+++++ / 0.88661	0.60392	0.64970	+++++	0.83011	0.77303	17.690
171 o-Xylene	0.58435 / 0.58833	0.38537 / 0.58492	0.44273	0.46388	0.54893	0.57561	0.52176	15.225
172 Styrene	0.95807 / 1.01926	0.61764 / 0.99791	0.68219	0.75771	0.97148	1.00892	0.87665	18.655
173 2-Heptanone	+++++ / 2.41463	+++++ / 2.69096	1.43842	1.64423	+++++	2.14427	2.06650	25.261
174 Bromoform	+++++ / 0.85274	0.87478 / 0.84980	0.81278	0.81764	0.86585	0.84862	0.84603	2.729

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Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	RRF	% RSD
175 Cumene	+++++	1.27914	1.39069	1.49279	1.87927	1.93493		
	1.96611	1.91484					1.69397	17.375
176 Cyclohexanone	+++++	+++++	0.43711	0.48590	+++++	0.52835		
	0.54596	0.53915					0.50729	8.999
178 1-Decene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
179 alpha-Pinene	+++++	+++++	0.70499	0.73986	+++++	0.97653		
	1.04386	1.06640					0.90633	18.928
180 Bromobenzene	+++++	+++++	0.60220	0.60313	+++++	0.61931		
	0.64444	0.63674					0.62116	3.089
181 1,1,2,2-Tetrachloroethane	+++++	0.95663	0.84653	0.83267	0.87878	0.84207		
	0.82514	0.80807					0.85570	5.789
182 Propylbenzene	+++++	1.79527	1.68742	1.71773	2.02789	2.07460		
	2.09835	2.06312					1.92348	9.452
183 1,4-Dichloro-2-Butene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
184 trans-1,4-Dichloro-2-butene	+++++	+++++	0.23086	0.21342	+++++	0.25387		
	0.26382	0.27966					0.24833	10.609

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Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	RRF	% RSD
185 1,2,3-Trichloropropane	+++++	+++++	0.30424	0.26522	+++++	0.28323		
	0.28443	0.27694					0.28281	5.019
186 3-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
187 Decane	+++++	+++++	0.67743	0.70963	+++++	0.96261		
	0.99492	0.98478					0.86587	18.267
188 4-Ethyltoluene	+++++	0.51764	0.48814	0.48214	0.61874	0.62354		
	0.63297	0.61507					0.56832	12.102
189 2-Chlorotoluene	+++++	+++++	0.41269	0.44190	+++++	0.49096		
	0.50395	0.50066					0.47003	8.646
190 1,3,5-Trimethylbenzene	+++++	0.64201	0.64521	0.72459	0.88235	0.89305		
	0.90004	0.88921					0.79664	15.197
191 4-Chlorotoluene	+++++	+++++	0.46153	0.45417	+++++	0.51996		
	0.54069	0.53357					0.50198	8.178
192 beta-Pinene	+++++	+++++	0.63529	0.67827	+++++	0.83264		
	0.90834	0.88958					0.78882	15.802
193 Diisobutyl Ketone	+++++	+++++	0.88147	0.99484	+++++	1.24175		
	1.29835	1.29600					1.14248	16.816

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Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	RRF	% RSD
194 alpha Methyl Styrene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
195 tert-Butylbenzene	+++++ / 1.56866	+++++ / 1.57098	1.21545	1.18699	+++++	1.46669	1.40175	13.420
196 1,2,4-Trimethylbenzene	+++++ / 0.79325	0.50268 / 0.78620	0.53343	0.57365	0.72975	0.76431	0.66904	19.013
197 Pentachloroethane	+++++ / 0.50134	+++++ / 0.49974	0.44017	0.46869	+++++	0.48182	0.47835	5.278
198 Limonene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
199 D-Limonene	+++++ / 0.79270	+++++ / 0.82027	0.50858	0.56010	+++++	0.72897	0.68212	20.539
200 Benzaldehyde	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
201 Indan	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
202 Indene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++

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203 sec-Butylbenzene	0.16417	0.43659	0.37525	0.38118	0.44393	0.50296		
	0.54378	0.56339					0.42641	29.697
204 Isobutylbenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
205 2-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
206 bis(2-Chloroethyl) Ether	+++++	+++++	0.96405	0.70462	+++++	0.77159		
	0.79416	0.83017					0.81292	11.819
207 p-Cymene	1.81165	1.55943	1.52833	1.65754	2.15207	2.34148		
	2.45776	2.47088					1.99739	20.207
208 1,3-Dichlorobenzene	+++++	1.19612	1.21777	1.19158	1.28498	1.27514		
	1.27649	1.24793					1.24143	3.189
209 1,4-Dichlorobenzene	+++++	1.15561	1.12264	1.19023	1.28127	1.29953		
	1.29577	1.28435					1.23277	6.046
210 1,2,3-Trimethylbenzene	+++++	+++++	0.51754	0.59905	+++++	0.68295		
	0.72950	0.74395					0.65460	14.546
211 1-Undecene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++

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212 alpha-Chlorotoluene	+++++	1.14267	1.17109	1.19573	1.35524	1.39463		
	1.42691	1.41548					1.30025	9.610
213 Butylbenzene	0.58887	0.51615	0.39969	0.43815	0.55822	0.61581		
	0.65874	0.66599					0.55520	17.650
214 1,2-Dichlorobenzene	+++++	1.18654	1.10028	1.14963	1.22619	1.23003		
	1.23352	1.19491					1.18873	4.137
215 Undecane	+++++	+++++	0.76841	0.80192	+++++	1.02072		
	1.08655	1.09031					0.95358	16.429
216 4-Ethyl-1,2-dimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
217 Hexachloroethane	+++++	+++++	0.40628	0.38369	+++++	0.47628		
	0.50957	0.51392					0.45795	13.064
218 1,3-Diethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
219 1,4-Diethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
220 1,2,4,5-tetramethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++

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221 1,2-Dibromo-3-chloropropane	+++++	+++++	0.52068	0.50918	+++++	0.48457		
	0.53399	0.54810					0.51930	4.673
222 1-Dodecene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
223 Nitrobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
224 1,3,5-Trichlorobenzene	+++++	+++++	0.91054	0.96698	+++++	0.92090		
	1.04342	1.08909					0.98618	7.890
225 Dodecane	+++++	+++++	0.59072	0.63443	+++++	0.74746		
	0.98928	1.07555					0.80749	26.665
226 1,2,4-Trichlorobenzene	+++++	+++++	0.85371	0.92362	0.91472	1.00290		
	1.07060	1.05920					0.97079	8.967
227 Hexachlorobutadiene	+++++	+++++	0.74022	0.81215	0.74755	0.78509		
	0.80121	0.77754					0.77729	3.687
228 Naphthalene	+++++	+++++	1.95288	1.87894	1.74371	2.10761		
	2.26550	2.33615					2.04747	11.225
229 1,2,3-Trichlorobenzene	+++++	+++++	0.64652	0.65587	+++++	0.50887		
	0.68459	0.77203					0.65358	14.513

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230 Tridecane	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
231 Quinoline	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
232 2-Methylnaphthalene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
233 1,3,5-Triethylbenzene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
234 Acenaphthylene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
235 Phenanthrene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
236 Anthracene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
M 237 1,2-Dichloroethene (Total)	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
M 238 Chlorobutane (Total)	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++

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Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msdp.i/04DEC18.b/p18q1108c.m
Cal Date : 05-Dec-2018 14:04 ugdc
Curve Type : Average

Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	___ RRF	% RSD
M 239 Total Xylene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
M 240 3 and 4-Ethyltoluene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
241 Total Volatile Hydrocarbons	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
242 TPH reference to Hexane	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
243 TPH reference to Heptane	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
244 TPH reference to Gasoline	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
245 TPH reference MineralSpirits	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
246 TPH reference to Stoddard	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
247 TVOC reference to Hexane	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++

US32APPTV002

INITIAL CALIBRATION DATA

Start Cal Date : 27-SEP-2018 22:59
End Cal Date : 04-DEC-2018 18:07
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msdp.i/04DEC18.b/p18q1108c.m
Cal Date : 05-Dec-2018 14:04 ugdc
Curve Type : Average

Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	___ RRF	% RSD
248 TVOC reference to Heptane	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
249 TVOC reference to Toluene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
250 TVOC reference to Toluene-d8	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
251 NMOC reference to Hexane	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
252 NMOC reference to Heptane	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
253 NMOC reference to Toluene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
254 C3 - C4 Hydrocarbons	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
255 C4 - C5 Hydrocarbons	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
256 C5 - C6 Hydrocarbons	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++

US32APPTV002

INITIAL CALIBRATION DATA

Start Cal Date : 27-SEP-2018 22:59
End Cal Date : 04-DEC-2018 18:07
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msdp.i/04DEC18.b/p18q1108c.m
Cal Date : 05-Dec-2018 14:04 ugdc
Curve Type : Average

Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	___ RRF	% RSD
257 C6 - C7 Hydrocarbons	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
258 C7 - C8 Hydrocarbons	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
259 C8 - C9 Hydrocarbons	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
260 C9 - C10 Hydrocarbons	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
261 C10+ Hydrocarbons	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
262 C5 - C6 Aliphatic ref C5 + C6	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
263 C6-C8 Aliphatic ref Heptane	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
264 C8-C10 Aliphatic ref Decane	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
265 C10-C12 Aliphatic ref Dodecan	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++

US32APPTV002

INITIAL CALIBRATION DATA

Start Cal Date : 27-SEP-2018 22:59
End Cal Date : 04-DEC-2018 18:07
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msdp.i/04DEC18.b/p18q1108c.m
Cal Date : 05-Dec-2018 14:04 ugdc
Curve Type : Average

Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	___ RRF	% RSD
266 C8-C10 Aromatic	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
267 C8-C10 Aromatic ref 1,2,3-TMB	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
268 C10-C12 Aromatic	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
269 C10-C12 Aromatic 1,2,4,5-TMB	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
270 C10-C12 Aromatic Naphthalene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 112 Benzene-d6	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 117 1,2-Dichloroethane-d4	+++++ / 1.35251	1.32495 / 1.39776	1.28557	1.29227	1.33048	1.33630	1.33141	2.835
$ 146 Toluene-d8	+++++ / 1.03989	1.04007 / 1.04666	1.03820	0.99358	1.04162	1.03022	1.03289	1.744
$ 177 4-Bromofluorobenzene	+++++ / 0.65379	0.58746 / 0.65173	0.60249	0.62939	0.66218	0.65614	0.63474	4.623

Calibration History

Method : /chem/msdp.i/04DEC18.b/p18q1108c.m
Start Cal Date: 27-SEP-2018 22:59
End Cal Date : 04-DEC-2018 18:07

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 0.10000		
09-NOV-2018 09:32	BTEXScrv	/chem/msdp.i/08NOV18a.b/p110823.d
27-SEP-2018 22:59	AT5CRV	/chem/msdp.i/26NOV18.b/p092725.d

Injection Date	Sublist	Calibration File
Cal Level: 2 , Cal Amount: 0.50000		
08-NOV-2018 19:58	AT12low	/chem/msdp.i/08NOV18a.b/p110814.d
27-SEP-2018 23:23	AT5CRV	/chem/msdp.i/26NOV18.b/p092726.d

Injection Date	Sublist	Calibration File
Cal Level: 3 , Cal Amount: 2.00000		
04-DEC-2018 16:24	AT4mAcrCRV	/chem/msdp.i/04DEC18.b/p120411.d
04-DEC-2018 13:28	MasterCRVM4M5	/chem/msdp.i/04DEC18.b/p120405.d
08-NOV-2018 20:23	AT12curve	/chem/msdp.i/08NOV18a.b/p110815.d
27-SEP-2018 23:49	AT5CRV	/chem/msdp.i/26NOV18.b/p092727.d

Injection Date	Sublist	Calibration File
Cal Level: 4 , Cal Amount: 5.00000		
04-DEC-2018 16:51	AT4mAcrCRV	/chem/msdp.i/04DEC18.b/p120412.d
04-DEC-2018 13:54	MasterCRVM4M5	/chem/msdp.i/04DEC18.b/p120406.d
08-NOV-2018 20:50	AT12curve	/chem/msdp.i/08NOV18a.b/p110816.d
28-SEP-2018 00:15	AT5CRV	/chem/msdp.i/26NOV18.b/p092728.d

Injection Date	Sublist	Calibration File
Cal Level: 5 , Cal Amount: 20.00000		
08-NOV-2018 21:15	AT12curve	/chem/msdp.i/08NOV18a.b/p110817.d
28-SEP-2018 00:39	AT5CRV	/chem/msdp.i/26NOV18.b/p092729.d

Injection Date	Sublist	Calibration File
Cal Level: 6 , Cal Amount: 50.00000		
04-DEC-2018 17:16	AT4mAcrCRV	/chem/msdp.i/04DEC18.b/p120413.d
04-DEC-2018 14:19	MasterCRVM4M5	/chem/msdp.i/04DEC18.b/p120407.d
08-NOV-2018 21:40	AT12curve	/chem/msdp.i/08NOV18a.b/p110818.d

```
|28-SEP-2018 01:04 |AT5CRV           |/chem/msdp.i/26NOV18.b/p092730.d        |
+------------------+-----------------+----------------------------------------+

+------------------+-----------------+----------------------------------------+
| Cal Level: 7 , Cal Amount: 100.00000                                        |
+============================================================================+
|04-DEC-2018 17:40 |AT4mAcrCRV       |/chem/msdp.i/04DEC18.b/p120414.d        |
|04-DEC-2018 14:45 |MasterCRVM4M5    |/chem/msdp.i/04DEC18.b/p120408.d        |
|08-NOV-2018 22:06 |AT12curve        |/chem/msdp.i/08NOV18a.b/p110819.d       |
|28-SEP-2018 01:28 |AT5CRV           |/chem/msdp.i/26NOV18.b/p092731.d        |
+------------------+-----------------+----------------------------------------+

+------------------+-----------------+----------------------------------------+
| Cal Level: 8 , Cal Amount: 200.00000                                        |
+============================================================================+
|04-DEC-2018 18:07 |AT4mAcrCRV       |/chem/msdp.i/04DEC18.b/p120415.d        |
|04-DEC-2018 15:11 |MasterCRVM4M5    |/chem/msdp.i/04DEC18.b/p120409.d        |
|08-NOV-2018 22:32 |AT12curve        |/chem/msdp.i/08NOV18a.b/p110820.d       |
|28-SEP-2018 01:54 |AT5CRV           |/chem/msdp.i/26NOV18.b/p092732.d        |
+------------------+-----------------+----------------------------------------+


Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 6
+------------------+-----------------+----------------------------------------+
| Ccal Level: 6 , Ccal Amount: 50.000                                         |
+============================================================================+
|04-DEC-2018 10:52 |AT12             |/chem/msdp.i/04DEC18.b/p120402.d        |
+------------------+-----------------+----------------------------------------+
| Ccal Level: 6 , Ccal Amount: 50.000                                         |
+============================================================================+
|04-DEC-2018 17:16 |AT4mAcrCCV       |/chem/msdp.i/04DEC18.b/p120413a.d       |
+------------------+-----------------+----------------------------------------+
| Ccal Level: 6 , Ccal Amount: 50.000                                         |
+============================================================================+
|04-DEC-2018 17:16 |AT4mAcrCRV       |/chem/msdp.i/04DEC18.b/p120413.d        |
+------------------+-----------------+----------------------------------------+
| Ccal Level: 6 , Ccal Amount: 50.000                                         |
+============================================================================+
|04-DEC-2018 14:19 |MasterCCVM4M5    |/chem/msdp.i/04DEC18.b/p120407a.d       |
+------------------+-----------------+----------------------------------------+
| Ccal Level: 6 , Ccal Amount: 50.000                                         |
+============================================================================+
|04-DEC-2018 14:19 |MasterCRVM4M5    |/chem/msdp.i/04DEC18.b/p120407.d        |
+------------------+-----------------+----------------------------------------+
```

US32APPTV002

INITIAL CALIBRATION DATA

Start Cal Date : 27-SEP-2018 22:59
End Cal Date : 04-DEC-2018 18:07
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msdp.i/04DEC18.b/p18q1108c.m
Cal Date : 05-Dec-2018 11:12 ugdc
Curve Type : Average

gd 12/5/18

Calibration File Names:
Level 1: /chem/msdp.i/08NOV18a.b/p110823.d
Level 2: /chem/msdp.i/08NOV18a.b/p110814.d
Level 3: /chem/msdp.i/04DEC18.b/p120411.d
Level 4: /chem/msdp.i/04DEC18.b/p120412.d
Level 5: /chem/msdp.i/08NOV18a.b/p110817.d
Level 6: /chem/msdp.i/04DEC18.b/p120413.d
Level 7: /chem/msdp.i/04DEC18.b/p120414.d
Level 8: /chem/msdp.i/04DEC18.b/p120415.d

Please see Calibration History page(s) for all the calibration files.

Compound	0.10000 Level 1 / 100.000 Level 7	0.50000 Level 2 / 200.000 Level 8	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	___ RRF	% RSD
1 Dimethyl Ether	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
2 Freon 14	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
3 Acetaldehyde	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
4 Hexafluoropropene	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
5 Freon 13	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++
6 Freon 143a	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	+++++

US32APPTV002

INITIAL CALIBRATION DATA

Start Cal Date : 27-SEP-2018 22:59
End Cal Date : 09-NOV-2018 09:32
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msdp.i/26NOV18.b/p18q1108b.m
Cal Date : 26-Nov-2018 13:44 u7js
Curve Type : Average

Please see Calibration History page(s) for all the calibration files.

Calibration File Names:
Level 1: /chem/msdp.i/08NOV18a.b/p110823.d
Level 2: /chem/msdp.i/08NOV18a.b/p110814.d
Level 3: /chem/msdp.i/08NOV18a.b/p110815.d
Level 4: /chem/msdp.i/08NOV18a.b/p110816.d
Level 5: /chem/msdp.i/08NOV18a.b/p110817.d
Level 6: /chem/msdp.i/08NOV18a.b/p110818.d
Level 7: /chem/msdp.i/08NOV18a.b/p110819.d
Level 8: /chem/msdp.i/08NOV18a.b/p110820.d

11/27/18
gd 11/27/18

Compound	0.10000 Level 1	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	RRF	% RSD
	100.000 Level 7	200.000 Level 8						
1 Dimethyl Ether	*****	*****	*****	*****	*****	*****		
	*****	*****					*****	*****
2 Freon 14	*****	*****	*****	*****	*****	*****		
	*****	*****					*****	*****
3 Acetaldehyde	*****	*****	*****	*****	*****	*****		
	*****	*****					*****	*****
4 Hexafluoropropene	*****	*****	*****	*****	*****	*****		
	*****	*****					*****	*****
5 Freon 13	*****	*****	*****	*****	*****	*****		
	*****	*****					*****	*****
6 Freon 143a	*****	*****	*****	*****	*****	*****		
	*****	*****					*****	*****

US32APPTV002

INITIAL CALIBRATION DATA

Start Cal Date : 08-NOV-2018 19:33
End Cal Date : 09-NOV-2018 09:32
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msdp.i/08NOV18a.b/p18q1108a.m
Cal Date : 09-Nov-2018 17:34 ugdc
Curve Type : Average

Calibration File Names:
Level 1: /chem/msdp.i/08NOV18a.b/p110823.d
Level 2: /chem/msdp.i/08NOV18a.b/p110814.d
Level 3: /chem/msdp.i/08NOV18a.b/p110815.d
Level 4: /chem/msdp.i/08NOV18a.b/p110816.d
Level 5: /chem/msdp.i/08NOV18a.b/p110817.d
Level 6: /chem/msdp.i/08NOV18a.b/p110818.d
Level 7: /chem/msdp.i/08NOV18a.b/p110819.d
Level 8: /chem/msdp.i/08NOV18a.b/p110820.d

Please see Calibration History page(s) for all the calibration files.

gd 11/9/18
ms 11/12/18

Compound	0.10000 Level 1	0.50000 Level 2	2.000 Level 3	5.000 Level 4	20.000 Level 5	50.000 Level 6	100.000 Level 7	200.000 Level 8	___ RRF	% RSD
1 Dimethyl Ether	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
2 Freon 14	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
3 Acetaldehyde	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
4 Hexafluoropropene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
5 Freon 13	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
6 Freon 143a	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++

MSDP

BFB Verification of 176/174 ratio: (74432/78128) * 100 = 95.27%			
	3045-156	Exp. Date:	1/2/19
BCM	86,668		
1,4-DFB	277,096		
CB-dS	303,080		

Verified CCV vs ICAL mid-point(-40%): gd

Method: P18q1108c.m

Method TO-15/TO-14	
SOP# 6	
Vacuum:	NA
Please check all standards	

Surr.# 3045-156	Exp. Date:	1/2/19	Surrogate# NA	Exp. Date:	NA
CCV #3018-509A	Exp. Date:	2/8/19	LCS #3018-477B	Exp. Date:	1/22/19
3045-193	Exp. Date:	12/12/18	LCS sp1 #=	Exp. Date:	
CCV sp2# 3045-197	Exp. Date:	2/20/19	LCS sp2 #	Exp. Date:	
CCV sp3#	Exp. Date:		LCS sp3 #	Exp. Date:	

Use	File #	Enter/Scan Sample ID	Canister#	Cart Pos	Pressure	mL	DF	Verify Load	Loaded Init	Date Analyzed	Time	Review Init	Comments
√	p120401	BFB	3045-156	8	36ng	200	1.00	mjb	mjb	12/04/18	1003	mjb	exp. 1/2/19;
√	p120402	CCV	3018-509A	13	50ppbv(100ppbv)	100ml	1.00	mjb	mjb	12/04/18	1052	mjb	exp. 2/8/19; 0 out
√	p120403	LCS	3018-477B	14	50ppbv(50ppbv)	200ml	1.00	mjb	mjb	12/04/18	1139	mjb	exp. 1/22/19; 0 out
√	p120404	LCSD	3018-477B	14	50ppbv(50ppbv)	200ml	1.00	mjb	mjb	12/04/18	1205	mjb	exp. 1/22/19; 0 out RPD OK
√	p120405	ICAL Level#3	3045-196	10	2.0ppbv (5.0ppbv)	80ml	1.00	mjb	mjb	12/04/18	1328	gd	exp. 12/12/18; Master Mix
√	p120406	ICAL Level#4	3045-196	10	5.0ppbv (5.0 ppbv)	200ml	1.00	mjb	mjb	12/04/18	1354	gd	exp. 12/12/18; Master Mix
√	p120407	ICAL Level#6	3045-193	11	50ppbv (200ppbv)	50ml	1.00	mjb	mjb	12/04/18	1419	gd	exp. 12/12/18; Master Mix; CCV
√	p120408	ICAL Level#7	3045-193	11	100ppbv (200 ppbv)	100ml	1.00	mjb	mjb	12/04/18	1445	gd	exp. 12/12/18; Master Mix
√	p120409	ICAL Level#8	3045-193	11	200ppbv (200 ppbb)	200ml	1.00	mjb	mjb	12/04/18	1511	gd	exp. 12/12/18; Master Mix
√	p120410	system Blank	24234	12	humid	200ml	1.00	mjb	mjb	12/04/18	1537	gd	
√	p120411	ICAL Level#3	3045-198	8	2.0ppbv (5.0ppbv)	80ml	1.00	kk	mjb	12/04/18	1624	gd	exp. 02/20/19; AT-4
√	p120412	ICAL Level#4	3045-198	8	5.0ppbv (5.0 ppbv)	200ml	1.00	kk	mjb	12/04/18	1651	gd	exp. 02/20/19; AT-4
√	p120413	ICAL Level#6	3045-197	9	50ppbv (200ppbv)	50ml	1.00	kk	mjb	12/04/18	1716	gd	exp. 02/20/19; AT-4; CCV
√	p120414	ICAL Level#7	3045-197	9	100ppbv (200 ppbv)	100ml	1.00	kk	mjb	12/04/18	1740	gd	exp. 02/20/19; AT-4
√	p120415	ICAL Level#8	3045-197	9	200ppbv (200 ppbb)	200ml	1.00	kk	mjb	12/04/18	1807	gd	exp. 02/20/19; AT-4
√	p120416	Lab Blank	24234	12	humid	200ml	1.00	kk	mjb	12/04/18	1833	kk	
√	p120417	1811465-04A	N2015	1	9.0 Hg->15 psi	200ml	2.89	kk	kk	12/04/18	2009	kk	
√	p120418	1811574-04A	N1936	2	0.4 Hg->15 psi	15ml	27.3	kk	kk	12/04/18	2033	kk	dil TC; Ethyl Ether (NTC) > 400ppbv
√	p120419	System Blank	24234	12	humid	200ml	1.00	kk	kk	12/04/18	2059	kk	
√	p120420	System Blank	24234	12	humid	200ml	1.00	kk	kk	12/04/18	2125	kk	
√	p120421	1811604-05A	N3466	3	5.1 Hg->15.2 psi	200ml	2.45	kk	kk	12/04/18	2204	kk	
√	p120422	1811488-01A	N0619	4	1 Hg->5.1 psi	200ml	1.39	kk	kk	12/04/18	2230	gd	
√	p120423	1811488-02A	N2796	5	0.8 Hg->5.3 psi	200ml	1.40	gd	kk	12/04/18	2256	gd	

gd 12/5/18

MSDP

BFB Verification of 176/174 ratio: (166144/171392)*100%=96.94			
	3045-94	Exp. Date:	11/14/18
BCM	161,670		
1,4-DFB	541,909		
CB-d5	589,347		

Method TO-15/TO-14	
SOP# 6	
Vacuum:	NA

Please check all standards

Surr.# 3045-94	Exp. Date:	11/14/18	Surrogate# NA	Exp. Date:	NA
CCV #	Exp. Date:		LCS #	Exp. Date:	
CCV sp1#	Exp. Date:		LCS sp1 #	Exp. Date:	
CCV sp2#	Exp. Date:		LCS sp2 #	Exp. Date:	
CCV sp3#	Exp. Date:		LCS sp3 #	Exp. Date:	

Verified CCV vs ICAL mid-point(-40%): NA

Method: P18q0927a.m

Use	File #	Enter/Scan Sample IDs	Canister#	Cart Pos.	Pressure	mL	DF	Verify Load	Loaded Init	Date Analyzed	Time	Review Init	Comments
√	p092710	BFB	3045-94	12	36ng	200ml	1.00	mb	jg	9/27/18	1523	mb	exp. 11/14/18.
√	p092711	ICAL Level #1	3045-91	9	0.1ppbv (1.0ppbv)	20ml	1.00	mb	jg	9/27/18	1548	mb	exp. 10/3/18 - oxygenates 11/3/18 - TO15N
X	p092712	ICAL Level #2	3018-430	10	0.5ppbv (5.0ppbv)	20ml	1.00	mb	jg	9/27/18	1612	mb	exp. 10/3/18 - oxygenates 11/21/18 - TO15N; bad standard
X	p092713	ICAL Level #3	3018-430	10	2.0ppbv (5.0ppbv)	80ml	1.00	mb	jg	9/27/18	1638	mb	exp. 10/3/18 - oxygenates 11/21/18 - TO15N; bad standard
X	p092714	ICAL Level #4	3018-430	10	5.0ppbv (5.0ppbv)	200ml	1.00	mb	jg	9/27/18	1704	mb	exp. 10/3/18 - oxygenates 11/21/18 - TO15N; bad standard
√	p092715	ICAL Level #5	3018-385	11	20ppbv (200ppbv)	20ml	1.00	mb	jg	9/27/18	1729	mb	exp. 10/3/18 - oxygenates 11/21/18 - TO15N
√	p092716	ICAL Level #6	3018-385	11	50ppbv (200ppbv)	50ml	1.02	mb	jg	9/27/18	1753	mb	exp. 10/3/18 - oxygenates 11/21/18 - TO15N; CCV
√	p092717	ICAL Level #7	3018-385	11	100ppbv (200ppbv)	100ml	1.00	mb	jg	9/27/18	1817	mb	exp. 10/3/18 - oxygenates 11/21/18 - TO15N
√	p092718	ICAL Level #8	3018-385	11	200ppbv (200ppbv)	200ml	1.00	mb	jg	9/27/18	1844	mb	exp. 10/3/18 - oxygenates 11/21/18 - TO15N
X	p092719	System Blank	35133	12	Humid	200ml	1.03	mb	jg	9/27/18	1910	mb	>RL
√	p092720	System Blank	35133	12	Humid	200ml	1.00	mb	jg	9/27/18	1936	mb	
√	p092721	ICAL Level #2	3018-429	8	0.5ppbv (5.0ppbv)	20ml	1.00	mb	mb	9/27/18	2116	mb	exp. 10/3/18
√	p092722	ICAL Level #3	3018-429	8	2.0ppbv (5.0ppbv)	80ml	1.00	mb	mb	9/27/18	2142	mb	exp. 10/3/18
√	p092723	ICAL Level #4	3018-429	8	5.0ppbv (5.0ppbv)	200ml	1.00	mb	mb	9/27/18	2208	mb	exp. 10/3/18
√	p092724	System Blank	35133	12	Humid	200ml	1.00	mb	mb	9/27/18	2235	jg	
√	p092725	ICAL Level #1	3045-135	4	0.1ppbv (1.0ppbv)	20ml	1.00	jg	mb	9/27/18	2259	jg	AT-5 exp. 12/4/18
√	p092726	ICAL Level #2	3018-445	5	0.5ppbv (5.0ppbv)	20ml	1.00	jg	mb	9/27/18	2323	jg	AT-5 exp. 12/4/18
√	p092727	ICAL Level #3	3018-445	5	2.0ppbv (5.0ppbv)	80ml	1.00	jg	mb	9/27/18	2349	jg	AT-5 exp. 12/4/18
√	p092728	ICAL Level #4	3018-445	5	5.0ppbv (5.0ppbv)	200ml	1.00	jg	mb	9/28/18	0015	jg	AT-5 exp. 12/4/18
√	p092729	ICAL Level #5	3045-111	6	20ppbv (200ppbv)	20ml	1.00	jg	mb	9/28/18	0039	jg	AT-5 exp. 12/4/18
√	p092730	ICAL Level #6	3045-111	6	50ppbv (200ppbv)	50ml	1.00	jg	mb	9/28/18	0104	jg	AT-5 exp. 12/4/18;CCV
√	p092731	ICAL Level #7	3045-111	6	100ppbv (200ppbv)	100ml	1.00	jg	mb	9/28/18	0128	jg	AT-5 exp. 12/4/18
√	p092732	ICAL Level #8	3045-111	6	200ppbv (200ppbv)	200ml	1.00	jg	mb	9/28/18	0154	jg	AT-5 exp. 12/4/18
X	p092733	System Blank	35133	12	Humid	200ml	1.00	jg	mb	9/28/18	0220	jg	
√	p092734	System Blank	35133	12	Humid	200ml	1.00	jg	mb	9/28/18	0246	jg	> RL. Ok for ICV
√	p092735	ICV	3045-112	7	50ppbv (200ppbv)	50ml	1.00	jg	mjs	9/28/18	0620	jg	exp. 12/14/18. AT-5
√	p092736	ICV	3018-367A	14	50ppbv (100ppbv)	100ml	1.00	jg	mjs	9/28/18	0645	jg	exp. 11/9/18 ; AT12
	p092737	EPA Lab blank #1	35133	12	Humid	200ml	1.00	jg	jg	9/28/18			
	p092738	EPA Lab blank #2	35133	12	Humid	200ml	1.00	jg	jg	9/28/18			
	p092739	EPA Lab blank #3	35133	12	Humid	200ml	1.00	jg	jg	9/28/18		gjo	9/28/18

gjo 9/28/18

9/28/18

MSDP

BFB Verification of 176/174 ratio: (81632/86160) * 100 = 94.74%			
	3045-156	Exp. Date:	1/2/19
BCM	92,663		
1,4-DFB	304,426		
CB-d5	330,915		

Method TO-15/TO-14	
SOP# 6	
Vacuum:	NA

Please check all standards

Surr.# 3045-156	Exp. Date:	1/2/19	Surrogate# NA	Exp. Date:	NA
CCV #	Exp. Date:	11/15/18	LCS #3018-477	Exp. Date:	1/22/19
CCV sp1#	Exp. Date:		LCS sp1 #	Exp. Date:	
CCV sp2#	Exp. Date:		LCS sp2 #	Exp. Date:	
CCV sp3#	Exp. Date:		LCS sp3 #	Exp. Date:	

Verified CCV vs ICAL mid-point(-40%): GD

Method: P18q1108a.m

Use	File	Enter/Scan Sample IDs	Canister	Can Pos.	Pressure	Vol	DF	Verify Load	Loaded Int	Date Analyzed	Time	Review Int	Comments
√	p110812	BFB	3045-156	12	36ng	50ml	1.00	gh	gh	11/8/18	1859	gh	exp. 1/2/19
X	p110813	I CAL Level #1	3045-173	1	0.1ppbv(1.0ppbv)	20ml	1.00	gh	gh	11/8/18	1933	gd	exp. 2/1/19
√	p110814	I CAL Level #2	3018-510	4	0.5ppbv(5.0ppbv)	20ml	1.00	gh	gh	11/8/18	1958	gd	exp. 2/8/19
√	p110815	I CAL Level #3	3018-510	4	2.0ppbv(5.0ppbv)	80ml	1.00	gd	gh	11/8/18	2023	gd	
√	p110816	I CAL Level #4	3018-510	4	5.0ppbv(5.0ppbv)	200ml	1.00	gd	gh	11/8/18	2050	gd	
√	p110817	I CAL Level #5	3018-509	13	20ppbv(200ppbv)	20ml	1.00	gd	gh	11/8/18	2115	gd	exp. 2/8/19
√	p110818	I CAL Level #6	3018-509	13	50ppbv(200ppbv)	50ml	1.00	gd	gh	11/8/18	2140	gd	
√	p110819	I CAL Level #7	3018-509	13	100ppbv(200ppbv)	100ml	1.00	gd	gh	11/8/18	2206	gd	
√	p110820	I CAL Level #8	3018-509	13	200ppbv(200ppbv	200ml	1.00	gd	gh	11/8/18	2232	gd	
√	p110821	System Blank	24229	12	humid	200ml	1.00	gd	gh	11/8/18	2258	gd	
√	p110822	System Blank	24229	12	humid	200ml	1.00	gd	gh	11/8/18	2324	gd	
√	p110823	I CAL Level #1	3045-173	1	0.1ppbv(1.0ppbv)	20ml	1.00	gd	gh	11/9/18	0932	gd	exp. 2/1/19
√	p110824	ICV	3018-477	14	50ppbv(200ppbv)	50ml	1.00	gd	gh	11/9/18	1152	gd	exp. 1/22/19

GH 11/9/18

Initial Calibration Narrative

P18Q1108c.m

A multi-point initial calibration was analyzed on MSD-P on 11/08/18. **(0.1ppbv→200ppbv).**
- BTEXS analyzed @ 0.1ppbv

ICAL: Zero (0) out

- ICAL level 1 was re-analyzed due to poor peak quality of Benzene.

Naphthalene @ 11.2 %RSD

ICV : 50mL: #3018-477 50ppbv(200ppbv)

P110824: Zero (0) out; **Naphthalene w/in 70-130.**

1,3-Butadiene outside 80-120%

DoD 5.0 : P110824a (5.0) – Zero (0) out
DoD 4.2: P110824c (4.2) – Zero (0) out

A **8-point** initial calibration for **AT-5** compounds was analyzed on MSD-P on 9/27/18. (0.1ppbv→200ppbv)

Special ICV (**AT-5**): 50ml: #3045-112 50ppbv (200ppbv); **0 out**; File P092735

A **5-point** initial calibration for Master Combo for specials and AT-4 minus Acrylonitrile were analyzed on MSD-P on 12/4/18.

- NO Iodomethane in the ICAL

**The quantitation ion peak (45amu) is sufficiently resolved for accurate quantification of 2-Propanol at 2.0ppbv. However, the tertiary mass ion peak (59amu) for 2-Propanol is not present and will not be used for identification. Identification of 2-Propanol at 2.0ppbv is based on presence of the primary (45amu) and secondary (43mu).

BFB Tune File:
1. P092710
2. P110812
3. P120401

MDL:
The current MDL expires **11/15/19.**
The current MDL for **BTEX plus Styrene** at 0.1ppbv expires on **11/15/19.**

IS and Associated Target Compounds and Surr.
Instruction #: I1.20

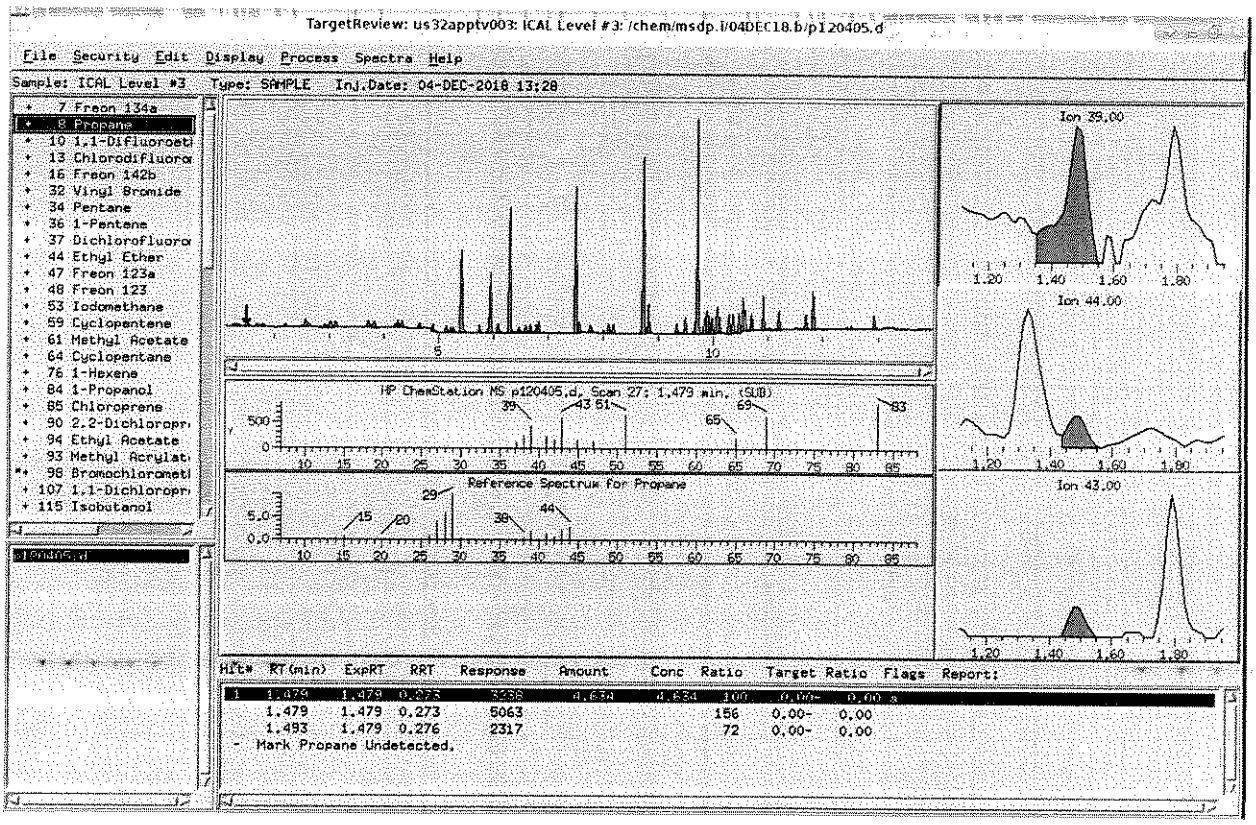
Modified EPA Methods TO-14A/TO-15
Internal Standard and Associated Target Compounds and Surrogates

Bromochloromethane*
Target Compounds:
Freon 12
Freon 114
Chloromethane
Vinyl Chloride
1,3-Butadiene
Bromomethane
Chloroethane
Freon 11
Ethanol
Freon 113
1,1-Dichloroethene
Acetone
2-Propanol
Carbon Disulfide
3-Chloropropene
Methylene Chloride
Methyl tert-butyl ether
trans-1,2-Dichloroethene
Hexane
1,1-Dichloroethane
2-Butanone (Methyl Ethyl Ketone)
cis-1,2-Dichloroethene
Tetrahydrofuran
Chloroform
1,1,1-Trichloroethane
Cyclohexane
Carbon Tetrachloride
2,2,4-Trimethylpentane
Surrogates:
1,2-Dichloroethane-d4

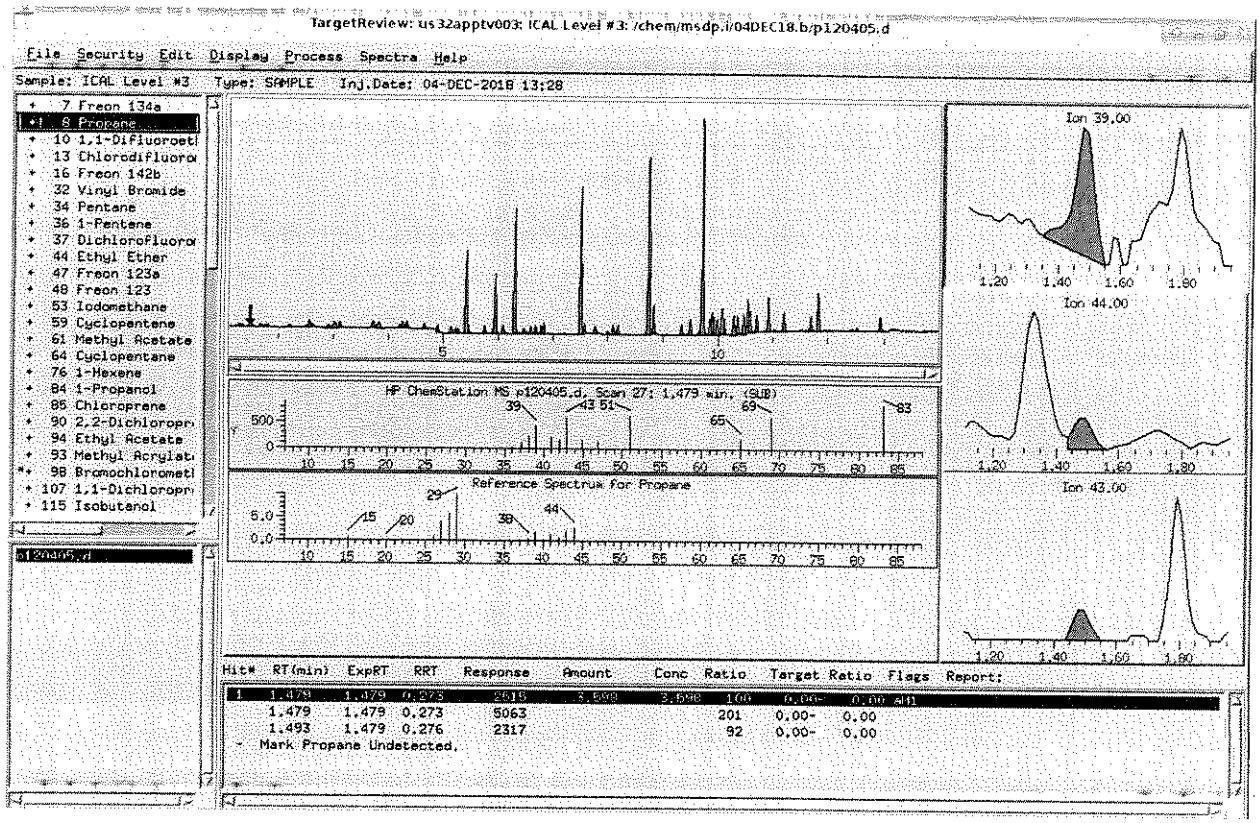
1,4-Difluorobenzene
Target Compounds:
Benzene
1,2-Dichloroethane
Heptane
Trichloroethene
1,2-Dichloropropane
1,4-Dioxane
Bromodichloromethane
cis-1,3-Dichloropropene
4-Methyl-2-pentanone
Toluene
Surrogates:
Toluene-d8

Chlorobenzene-d5
Target Compounds:
trans-1,3-Dichloropropene
1,1,2-Trichloroethane
Tetrachloroethene
2-Hexanone
Dibromochloromethane
1,2-Dibromoethane (EDB)
Chlorobenzene
Ethyl Benzene
m,p-Xylene
o-Xylene
Styrene
Bromoform
Cumene
1,1,2,2-Tetrachloroethane
Propylbenzene
4-Ethyltoluene
1,3,5-Trimethylbenzene
1,2,4-Trimethylbenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
alpha-Chlorotoluene
1,2-Dichlorobenzene
1,2,4-Trichlorobenzene
Hexachlorobutadiene
Surrogates:
Bromofluorobenzene

*Note: If Bromochloromethane (BCM) is required as a target compound, the internal standard mix is blended without BCM. Compounds and surrogates assigned to BCM are re-assigned to 1,4-Difluorobenzene for calibration and subsequent quantitation.


TargetReview: us32apptv003: ICAL Level #3: /chem/msdp.i/04DEC18.b/p120405.d
File Security Edit Display Process Spectra Help
Sample: ICAL Level #3 Type: SAMPLE Inj.Date: 04-DEC-2018 13:28
7 Freon 134a
8 Propane
10 1,1-Difluoroet
13 Chlorodifluora
16 Freon 142b
32 Vinyl Bromide
34 Pentane
36 1-Pentene
37 Dichlorofluora
44 Ethyl Ether
47 Freon 123a
48 Freon 123
53 Iodomethane
59 Cyclopentene
61 Methyl Acetate
64 Cyclopentane
76 1-Hexene
84 1-Propanol
85 Chloroprene
90 2,2-Dichloropr
94 Ethyl Acetate
93 Methyl Acrylat
98 Bromochlorometh
107 1,1-Dichloropr
115 Isobutanol
Ion 39.00
Ion 44.00
Ion 43.00
HP ChemStation MS p120405.d, Scan 27; 1.479 min. (SUB)
Reference Spectrum for Propane
Hit# RT(min) ExpRT RRT Response Amount Conc Ratio Target Ratio Flags Report:
1 1.479 1.479 0.273 5338 4.634 4.634 100 0.00- 0.00 s
1.479 1.479 0.273 5063 156 0.00- 0.00
1.493 1.479 0.276 2317 72 0.00- 0.00
- Mark Propane Undetected.

Before



gd 12/5/18

B Gd 12/5/18

Aet 12/5/18

After

Correct Baseline	
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	✓

US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/08NOV18a.b/p110824.d
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 09-NOV-2018 11:52
Operator : gd Inst ID: msdp.i
Smp Info : 50ml 3018-477
Misc Info : 50ppbv(200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/08NOV18a.b/p18q1108a.m
Meth Date : 09-Nov-2018 17:33 ugdc Quant Type: ISTD
Cal Date : 09-NOV-2018 09:32 Cal File: p110823.d
Als bottle: 14 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.411 (1.000)	130	95198	25.0000		80.00- 120.00	100.00
5.413	5.411 (1.000)	128	72003			48.70- 108.70	75.63
5.405	5.409 (1.000)	49	148116			130.32- 190.32	155.59
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.294	6.296 (1.000)	114	317915	25.0000		80.00- 120.00	100.00
6.294	6.295 (1.000)	88	44327			0.00- 44.06	13.94
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	349934	25.0000		80.00- 120.00	100.00
8.736	8.734 (1.000)	82	155027			14.84- 74.84	44.30
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
5.943	5.942 (1.098)	65	126004	24.8534	24.853	80.00- 120.00	100.00
5.943	5.943 (1.098)	67	67438			26.40- 86.40	53.52
$ 146 Toluene-d8					CAS #: 2037-26-5		
7.504	7.505 (1.192)	98	327782	24.9551	24.955	80.00- 120.00	100.00
7.504	7.504 (1.192)	70	32688			0.00- 40.19	9.97

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.504	7.505 (1.192)	100	227676			38.92- 98.92	69.46
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.725	9.719 (1.113)	174	230047	25.8926	25.892	80.00- 120.00	100.00
9.725	9.713 (1.113)	95	256758			82.53- 142.53	111.61
9.725	9.719 (1.113)	176	224215			65.10- 125.10	97.46
9 Propylene					CAS #: 115-07-1		
1.479	1.479 (0.273)	41	180892	50.7652	50.765	80.00- 120.00	100.00
1.479	1.481 (0.273)	42	118384			37.41- 97.41	65.44
1.479	1.479 (0.273)	39	127129			42.27- 102.27	70.28
11 Freon 12					CAS #: 75-71-8		
1.506	1.511 (0.278)	85	497294	52.6688	52.669	80.00- 120.00	100.00
1.506	1.511 (0.278)	87	163209			2.07- 62.07	32.82
15 Freon 114					CAS #: 76-14-2		
1.632	1.629 (0.302)	135	413488	53.2615	53.262	80.00- 120.00	100.00
1.632	1.629 (0.302)	137	132059			2.07- 62.07	31.94
17 Chloromethane					CAS #: 74-87-3		
1.716	1.723 (0.317)	50	243957	56.3786	56.378	80.00- 120.00	100.00
1.716	1.723 (0.317)	52	74134			0.00- 58.76	30.39
23 Butane					CAS #: 106-97-8		
1.786	1.791 (0.330)	58	41179	51.1249	51.125	80.00- 120.00	100.00
1.786	1.786 (0.330)	43	354263			1048.24-1108.24	860.30
25 Vinyl Chloride					CAS #: 75-01-4		
1.814	1.818 (0.335)	62	222939	58.0580	58.058	80.00- 120.00	100.00
1.814	1.818 (0.335)	64	57322			0.00- 54.53	25.71
26 1,3-Butadiene					CAS #: 106-99-0		
1.842	1.842 (0.340)	54	217499	60.4443	60.444	80.00- 120.00	100.00
1.842	1.840 (0.340)	39	268716			85.58- 145.58	123.55
29 Bromomethane					CAS #: 74-83-9		
2.196	2.195 (0.406)	94	159553	58.0853	58.085	80.00- 120.00	100.00
2.196	2.195 (0.406)	96	147400			65.12- 125.12	92.38
30 Chloroethane					CAS #: 75-00-3		
2.304	2.304 (0.426)	64	91567	56.1916	56.192	80.00- 120.00	100.00
2.304	2.304 (0.426)	66	25861			0.00- 59.74	28.24
2.304	2.302 (0.426)	49	34536			9.89- 69.89	37.72

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.325	2.327 (0.430)	43	255158	51.7601	51.760	80.00- 120.00	100.00
2.325	2.327 (0.430)	57	159294			31.46- 91.46	62.43
35 Freon 11					CAS #: 75-69-4		
2.547	2.551 (0.471)	101	554976	50.6380	50.638	80.00- 120.00	100.00
2.547	2.551 (0.471)	103	353998			34.29- 94.29	63.79
42 Ethanol					CAS #: 64-17-5		
2.863	2.865 (0.529)	45	84010	51.4707	51.471	80.00- 120.00	100.00
2.863	2.863 (0.529)	46	33331			8.87- 68.87	39.68
49 Freon 113					CAS #: 76-13-1		
3.185	3.182 (0.588)	151	360460	49.4402	49.440	80.00- 120.00	100.00
3.185	3.184 (0.588)	153	231478			34.67- 94.67	64.22
3.178	3.181 (0.587)	101	407217			79.70- 139.70	112.97
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.214	3.214 (0.594)	98	100274	54.5205	54.520	80.00- 120.00	100.00
3.214	3.213 (0.594)	96	159123			126.11- 186.11	158.69
3.214	3.213 (0.594)	61	315752			286.72- 346.72	314.89
52 Acetone					CAS #: 67-64-1		
3.350	3.356 (0.619)	58	102616	54.1795	54.179	80.00- 120.00	100.00
3.350	3.357 (0.619)	43	360774			345.31- 405.31	351.58
56 Carbon Disulfide					CAS #: 75-15-0		
3.450	3.452 (0.637)	76	425511	51.6784	51.678	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.529	3.532 (0.652)	45	383001	55.2687	55.269	80.00- 120.00	100.00
3.529	3.530 (0.652)	43	85392			0.00- 53.09	22.30
3.529	3.530 (0.652)	59	12014			0.00- 33.51	3.14
58 3-Chloropropene					CAS #: 107-05-1		
3.686	3.685 (0.681)	76	64218	55.6013	55.601	80.00- 120.00	100.00
3.686	3.684 (0.681)	41	291477			428.12- 488.12	453.89
66 Methylene Chloride					CAS #: 75-09-2		
3.865	3.872 (0.714)	49	299423	51.2539	51.254	80.00- 120.00	100.00
3.873	3.872 (0.715)	84	141509			16.41- 76.41	47.26
3.865	3.872 (0.714)	51	90035			0.00- 59.94	30.07
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.087	4.088 (0.755)	73	427195	53.5607	53.561	80.00- 120.00	100.00
4.087	4.088 (0.755)	57	138085			1.33- 61.33	32.32

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
72 Methyl tert-butyl ether (continued)								
4.087	4.089	(0.755)	41	159504			8.05- 68.05	37.34
73 trans-1,2-Dichloroethene						CAS #: 156-60-5		
4.109	4.112	(0.759)	98	117359	61.9548	61.955	80.00- 120.00	100.00
4.109	4.110	(0.759)	61	313514			247.19- 307.19	267.14
4.109	4.113	(0.759)	96	178467			131.40- 191.40	152.07
78 Hexane						CAS #: 110-54-3		
4.324	4.329	(0.799)	57	350369	59.3088	59.309	80.00- 120.00	100.00
4.324	4.329	(0.799)	43	248783			42.49- 102.49	71.01
4.331	4.329	(0.800)	86	39590			0.00- 42.15	11.30
82 1,1-Dichloroethane						CAS #: 75-34-3		
4.596	4.598	(0.849)	63	360676	51.4020	51.402	80.00- 120.00	100.00
4.596	4.599	(0.849)	65	105877			0.00- 58.69	29.36
86 Vinyl Acetate						CAS #: 108-05-4		
4.639	4.640	(0.857)	86	40757	52.7433	52.743	80.00- 120.00	100.00
4.639	4.639	(0.857)	43	672788			1735.43-1795.43	1650.73
91 cis-1,2-Dichloroethene						CAS #: 156-59-2		
5.176	5.180	(0.956)	98	117110	48.8459	48.846	80.00- 120.00	100.00
5.176	5.180	(0.956)	96	183028			123.83- 183.83	156.29
5.176	5.177	(0.956)	61	287959			214.95- 274.95	245.89
92 2-Butanone						CAS #: 78-93-3		
5.198	5.200	(0.960)	72	76937	53.7342	53.734	80.00- 120.00	100.00
5.198	5.201	(0.960)	43	519289			669.23- 729.23	674.95
5.198	5.204	(0.960)	57	38946			20.89- 80.89	50.62
99 Tetrahydrofuran						CAS #: 109-99-9		
5.405	5.410	(0.999)	42	286463	58.6054	58.605	80.00- 120.00	100.00
5.405	5.412	(0.999)	71	68362			0.00- 54.27	23.86
5.405	5.412	(0.999)	72	70345			0.00- 54.41	24.56
100 Chloroform						CAS #: 67-66-3		
5.470	5.474	(1.011)	83	400280	51.2624	51.262	80.00- 120.00	100.00
5.470	5.474	(1.011)	85	271449			38.55- 98.55	67.81
102 Cyclohexane						CAS #: 110-82-7		
5.585	5.583	(1.032)	84	220256	57.0588	57.059	80.00- 120.00	100.00
5.585	5.584	(1.032)	56	402332			149.13- 209.13	182.67
5.585	5.583	(1.032)	41	232213			74.83- 134.83	105.43
103 1,1,1-Trichloroethane						CAS #: 71-55-6		
5.599	5.598	(1.034)	97	463408	50.6704	50.670	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
103 1,1,1-Trichloroethane (continued)							
5.599	5.599 (1.034)	99	298737			35.00- 95.00	64.47
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.713	5.714 (1.056)	119	519939	52.5356	52.536	80.00- 120.00	100.00
5.713	5.713 (1.056)	117	534779			73.60- 133.60	102.85
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.913 (1.093)	57	1232964	58.6019	58.602	80.00- 120.00	100.00
5.907	5.914 (1.091)	56	412066			3.59- 63.59	33.42
5.907	5.912 (1.091)	41	355485			0.20- 60.20	28.83
116 Benzene					CAS #: 71-43-2		
5.921	5.928 (0.941)	78	536183	47.7157	47.716	80.00- 120.00	100.00
5.921	5.925 (0.941)	77	124307			0.00- 54.10	23.18
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.007	6.010 (0.954)	62	331794	47.5870	47.587	80.00- 120.00	100.00
6.007	6.009 (0.954)	64	101372			0.44- 60.44	30.55
121 Heptane					CAS #: 142-82-5		
6.086	6.085 (0.967)	71	174631	55.3411	55.341	80.00- 120.00	100.00
6.086	6.084 (0.967)	43	509275			259.43- 319.43	291.63
6.086	6.085 (0.967)	57	251977			114.50- 174.50	144.29
125 Trichloroethene					CAS #: 79-01-6		
6.494	6.494 (1.032)	95	281125	49.9195	49.919	80.00- 120.00	100.00
6.494	6.494 (1.032)	130	335075			88.76- 148.76	119.19
6.494	6.494 (1.032)	97	182153			35.32- 95.32	64.79
127 Methylcyclohexane					CAS #: 108-87-2		
6.595	6.595 (1.048)	83	324780	55.4732	55.473	80.00- 120.00	100.00
6.595	6.595 (1.048)	98	168028			20.32- 80.32	51.74
6.595	6.595 (1.048)	55	410882			98.90- 158.90	126.51
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.723	6.724 (1.068)	63	251497	51.3921	51.392	80.00- 120.00	100.00
6.723	6.724 (1.068)	62	180735			41.74- 101.74	71.86
6.723	6.724 (1.068)	41	166987			41.01- 101.01	66.40
136 1,4-Dioxane					CAS #: 123-91-1		
6.817	6.817 (1.083)	88	133995	53.7861	53.786	80.00- 120.00	100.00
6.817	6.817 (1.083)	58	131826			66.86- 126.86	98.38
6.817	6.816 (1.083)	57	45365			1.32- 61.32	33.86
138 Bromodichloromethane					CAS #: 75-27-4		
6.953	6.953 (1.105)	83	462905	50.2807	50.281	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
138 Bromodichloromethane (continued)							
6.953	6.952 (1.105)	85	309789			35.98- 95.98	66.92
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.325	7.325 (1.164)	75	336047	55.9571	55.957	80.00- 120.00	100.00
7.325	7.325 (1.164)	77	110736			2.71- 62.71	32.95
7.325	7.325 (1.164)	39	239378			43.85- 103.85	71.23
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.433	7.433 (1.181)	58	240527	56.7739	56.774	80.00- 120.00	100.00
7.433	7.433 (1.181)	43	707676			267.85- 327.85	294.22
7.433	7.434 (1.181)	85	80124			4.54- 64.54	33.31
147 Toluene					CAS #: 108-88-3		
7.562	7.562 (1.201)	91	739035	49.5268	49.527	80.00- 120.00	100.00
7.562	7.562 (1.201)	92	425870			28.88- 88.88	57.63
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.798	7.798 (0.893)	75	319570	51.5795	51.579	80.00- 120.00	100.00
7.798	7.798 (0.893)	77	104390			2.67- 62.67	32.67
7.798	7.798 (0.893)	39	209714			37.60- 97.60	65.62
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.956	7.956 (0.911)	97	279870	50.0627	50.063	80.00- 120.00	100.00
7.956	7.956 (0.911)	99	175200			30.86- 90.86	62.60
7.956	7.956 (0.911)	83	220980			47.74- 107.74	78.96
156 Tetrachloroethene					CAS #: 127-18-4		
7.998	8.001 (0.916)	166	453593	49.9875	49.987	80.00- 120.00	100.00
7.998	7.999 (0.916)	129	350442			48.46- 108.46	77.26
7.998	7.999 (0.916)	131	339316			45.42- 105.42	74.81
158 2-Hexanone					CAS #: 591-78-6		
8.120	8.120 (0.929)	58	330483	59.9000	59.900	80.00- 120.00	100.00
8.120	8.120 (0.929)	43	685984			185.57- 245.57	207.57
8.120	8.120 (0.929)	100	54161			0.00- 46.27	16.39
160 Dibromochloromethane					CAS #: 124-48-1		
8.271	8.268 (0.947)	129	635736	49.4287	49.429	80.00- 120.00	100.00
8.271	8.269 (0.947)	127	497687			47.61- 107.61	78.29
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
8.378	8.378 (0.959)	107	469164	51.2625	51.262	80.00- 120.00	100.00
8.378	8.378 (0.959)	109	464095			68.89- 128.89	98.92
165 Chlorobenzene					CAS #: 108-90-7		
8.758	8.758 (1.002)	112	709414	49.6302	49.630	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
165 Chlorobenzene (continued)							
8.758	8.758 (1.002)	114	223923			1.88- 61.88	31.56
8.758	8.757 (1.002)	77	359159			20.89- 80.89	50.63
167 Ethyl Benzene					CAS #: 100-41-4		
8.808	8.808 (1.008)	106	348846	55.0549	55.055	80.00- 120.00	100.00
8.808	8.808 (1.008)	91	1026441			268.95- 328.95	294.24
169 m,p-Xylene					CAS #: 108-38-3		
8.908	8.906 (1.020)	106	428668	55.0587	55.059	80.00- 120.00	100.00
8.908	8.907 (1.020)	91	830116			159.20- 219.20	193.65
171 o-Xylene					CAS #: 95-47-6		
9.245	9.245 (1.058)	106	409931	56.1293	56.129	80.00- 120.00	100.00
9.245	9.245 (1.058)	91	823471			173.23- 233.23	200.88
172 Styrene					CAS #: 100-42-5		
9.266	9.266 (1.061)	104	683890	55.7334	55.733	80.00- 120.00	100.00
9.266	9.266 (1.061)	78	319167			15.83- 75.83	46.67
174 Bromoform					CAS #: 75-25-2		
9.467	9.460 (1.084)	173	610469	51.5504	51.550	80.00- 120.00	100.00
9.467	9.460 (1.084)	171	314935			21.75- 81.75	51.59
175 Cumene					CAS #: 98-82-8		
9.539	9.531 (1.092)	105	1305416	55.0551	55.055	80.00- 120.00	100.00
9.539	9.531 (1.092)	120	375307			0.00- 58.53	28.75
9.539	9.531 (1.092)	51	170622			0.00- 43.43	13.07
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.847	9.839 (1.127)	83	593039	49.5127	49.513	80.00- 120.00	100.00
9.847	9.839 (1.127)	85	402929			38.99- 98.99	67.94
182 Propylbenzene					CAS #: 103-65-1		
9.882	9.874 (1.131)	91	1455065	54.0440	54.044	80.00- 120.00	100.00
9.882	9.875 (1.131)	120	393393			0.00- 56.98	27.04
9.882	9.874 (1.131)	105	58726			0.00- 34.22	4.04
188 4-Ethyltoluene					CAS #: 622-96-8		
9.976	9.967 (1.142)	120	450158	56.5884	56.588	80.00- 120.00	100.00
9.976	9.966 (1.142)	105	1371462			277.08- 337.08	304.66
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.033	10.019 (1.148)	120	614069	55.0694	55.069	80.00- 120.00	100.00
10.033	10.019 (1.148)	105	1185469			165.36- 225.36	193.05

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.355	10.341 (1.185)	120	533382	56.9564	56.956	80.00- 120.00	100.00
10.355	10.340 (1.185)	105	1074984			173.89- 233.89	201.54
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.642	10.622 (1.218)	146	879024	50.5863	50.586	80.00- 120.00	100.00
10.642	10.623 (1.218)	148	562285			34.36- 94.36	63.97
10.642	10.621 (1.218)	111	325037			7.68- 67.68	36.98
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.720	10.706 (1.227)	146	911566	52.8274	52.827	80.00- 120.00	100.00
10.720	10.705 (1.227)	148	577863			33.64- 93.64	63.39
10.720	10.702 (1.227)	111	325004			5.53- 65.53	35.65
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.835	10.814 (1.240)	91	982929	54.0069	54.007	80.00- 120.00	100.00
10.842	10.817 (1.241)	126	251898			0.00- 55.76	25.63
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.050	11.029 (1.265)	146	842238	50.6181	50.618	80.00- 120.00	100.00
11.050	11.029 (1.265)	148	536835			33.63- 93.63	63.74
11.050	11.029 (1.265)	111	325460			8.70- 68.70	38.64
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.447	12.411 (1.425)	180	692839	50.9870	50.987	80.00- 120.00	100.00
12.447	12.411 (1.425)	182	662517			66.82- 126.82	95.62
227 Hexachlorobutadiene					CAS #: 87-68-3		
12.540	12.504 (1.435)	225	523449	48.1110	48.111	80.00- 120.00	100.00
12.540	12.504 (1.435)	223	332873			33.20- 93.20	63.59
228 Naphthalene					CAS #: 91-20-3		
12.705	12.669 (1.454)	128	152254	5.31259	5.312	80.00- 120.00	100.00
12.705	12.670 (1.454)	127	21448			0.00- 43.12	14.09

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p110824.d
Lab Smp Id: ICV
Analysis Type: VOA
Quant Type: ISTD
Operator: gd
Method File: /chem/msdp.i/08NOV18a.b/p18q1108a.m
Misc Info: 50ppbv(200ppbv)

Calibration Date: 08-NOV-2018
Calibration Time: 21:40
Client Smp ID: ICV
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	92663	55598	129728	95198	2.74
123 1,4-Difluorobenze	304426	182656	426196	317915	4.43
163 Chlorobenzene-d5	330915	198549	463281	349934	5.75

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	-0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 09-Nov-2018 17:33

US32APPTV002

RECOVERY REPORT

Client Name:
Client SDG: 08NOV18
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: ICV
Client Smp ID: ICV
Level: LOW
Operator: gd
Data Type: MS DATA
SampleType: LCS
SpikeList File: AT12.spk
Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msdp.i/08NOV18a.b/p18q1108a.m
Misc Info: 50ppbv(200ppbv)

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
9 Propylene	50.000	50.765	101.53
11 Freon 12	50.000	52.669	105.34
15 Freon 114	50.000	53.262	106.52
17 Chloromethane	50.000	56.378	112.76
23 Butane	50.000	51.125	102.25
25 Vinyl Chloride	50.000	58.058	116.12
26 1,3-Butadiene	50.000	60.444	120.89
29 Bromomethane	50.000	58.085	116.17
30 Chloroethane	50.000	56.192	112.38
31 Isopentane	50.000	51.760	103.52
35 Freon 11	50.000	50.638	101.28
42 Ethanol	50.000	51.471	102.94
49 Freon 113	50.000	49.440	98.88
50 1,1-Dichloroethene	50.000	54.520	109.04
52 Acetone	50.000	54.179	108.36
56 Carbon Disulfide	50.000	51.678	103.36
57 2-Propanol	50.000	55.269	110.54
58 3-Chloropropene	50.000	55.601	111.20
66 Methylene Chloride	50.000	51.254	102.51
72 Methyl tert-butyl ether	50.000	53.561	107.12
73 trans-1,2-Dichloroethene	50.000	61.955	123.91
78 Hexane	50.000	59.309	118.62
82 1,1-Dichloroethane	50.000	51.402	102.80
86 Vinyl Acetate	50.000	52.743	105.49
91 cis-1,2-Dichloroethene	50.000	48.846	97.69
92 2-Butanone	50.000	53.734	107.47
99 Tetrahydrofuran	50.000	58.605	117.21
100 Chloroform	50.000	51.262	102.52
103 1,1,1-Trichloroethane	50.000	50.670	101.34
106 Carbon Tetrachloride	50.000	52.536	105.07
102 Cyclohexane	50.000	57.059	114.12
113 2,2,4-Trimethylpentane	50.000	58.602	117.20
116 Benzene	50.000	47.716	95.43

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
120 1,2-Dichloroethane	50.000	47.587	95.17
121 Heptane	50.000	55.341	110.68
125 Trichloroethene	50.000	49.919	99.84
127 Methylcyclohexane	50.000	55.473	110.95
132 1,2-Dichloropropane	50.000	51.392	102.78
136 1,4-Dioxane	50.000	53.786	107.57
138 Bromodichloromethane	50.000	50.281	100.56
144 cis-1,3-Dichloropropene	50.000	55.957	111.91
145 4-Methyl-2-pentanone	50.000	56.774	113.55
147 Toluene	50.000	49.527	99.05
150 trans-1,3-Dichloropropene	50.000	51.579	103.16
155 1,1,2-Trichloroethane	50.000	50.063	100.13
156 Tetrachloroethene	50.000	49.987	99.97
158 2-Hexanone	50.000	59.900	119.80
160 Dibromochloromethane	50.000	49.429	98.86
161 1,2-Dibromoethane (EDB)	50.000	51.262	102.53
165 Chlorobenzene	50.000	49.630	99.26
167 Ethyl Benzene	50.000	55.055	110.11
169 m,p-Xylene	50.000	55.059	110.12
171 o-Xylene	50.000	56.129	112.26
172 Styrene	50.000	55.733	111.47
174 Bromoform	50.000	51.550	103.10
175 Cumene	50.000	55.055	110.11
181 1,1,2,2-Tetrachloroethane	50.000	49.513	99.03
182 Propylbenzene	50.000	54.044	108.09
188 4-Ethyltoluene	50.000	56.588	113.18
190 1,3,5-Trimethylbenzene	50.000	55.069	110.14
196 1,2,4-Trimethylbenzene	50.000	56.956	113.91
208 1,3-Dichlorobenzene	50.000	50.586	101.17
209 1,4-Dichlorobenzene	50.000	52.827	105.65
212 alpha-Chlorotoluene	50.000	54.007	108.01
214 1,2-Dichlorobenzene	50.000	50.618	101.24
226 1,2,4-Trichlorobenzene	50.000	50.987	101.97
227 Hexachlorobutadiene	50.000	48.111	96.22
228 Naphthalene	5.000	5.312	106.25

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 117 1,2-Dichloroethane-d4	25.000	24.853	99.41
$ 146 Toluene-d8	25.000	24.955	99.82
$ 177 4-Bromofluorobenzene	25.000	25.892	103.57

Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

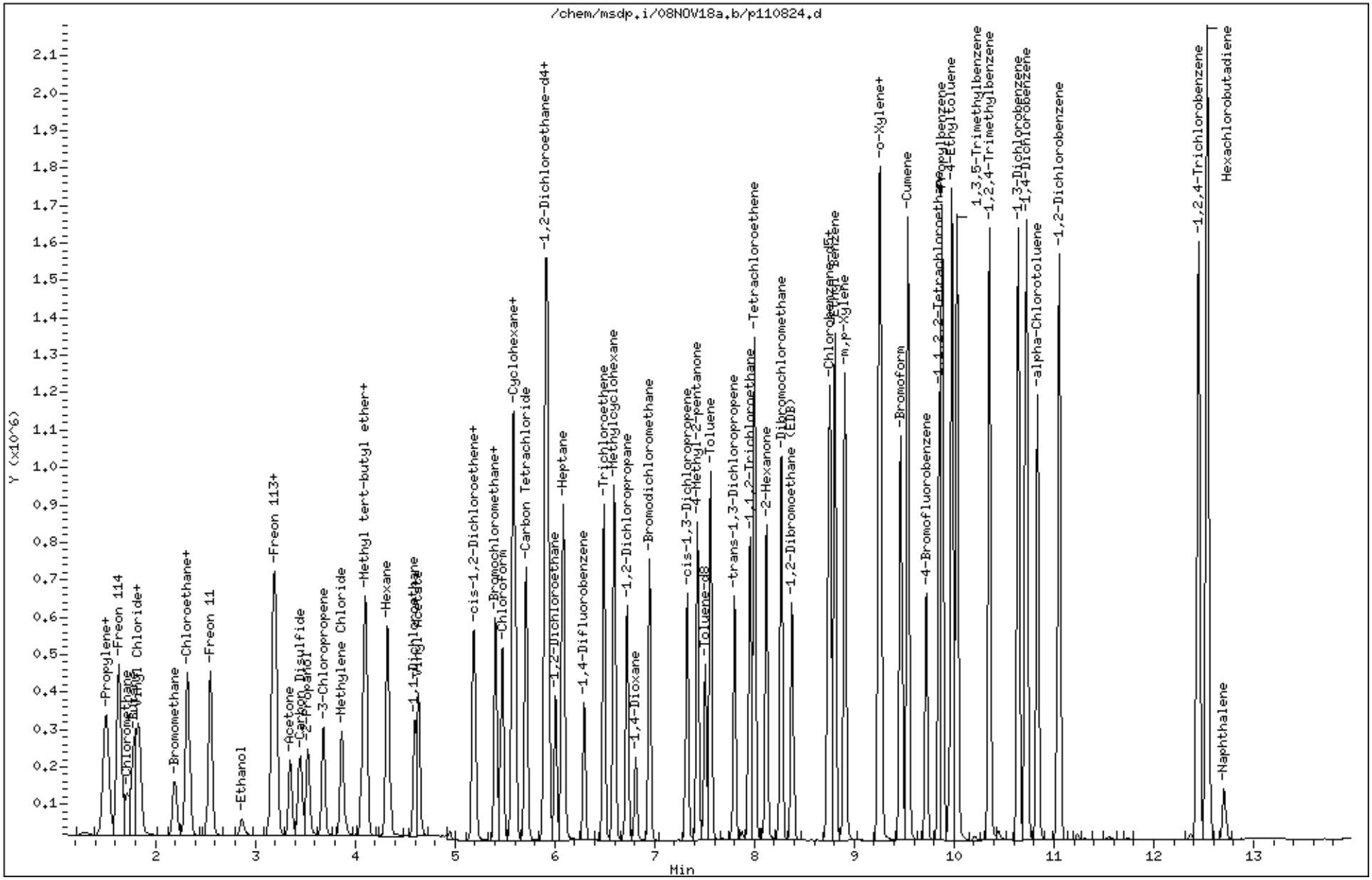
Sample Info: 50ml 3018-477

Column phase: RTX-624

Instrument: msdp.i

Operator: gd

Column diameter: 0.25



Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

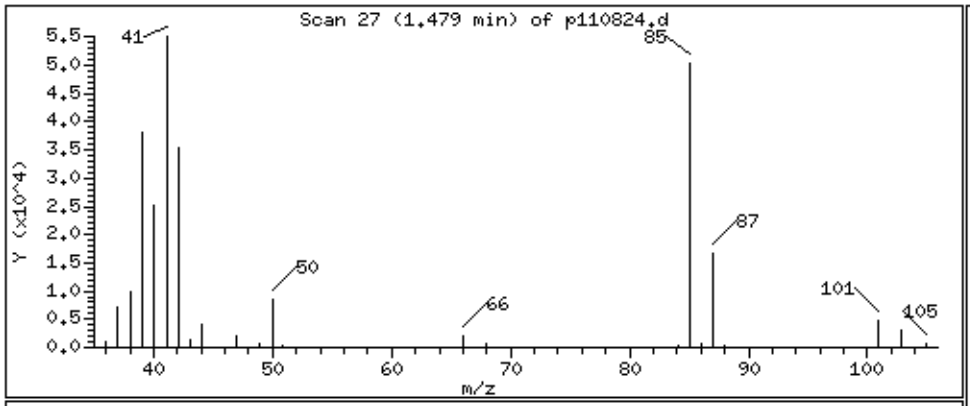
Operator: gd

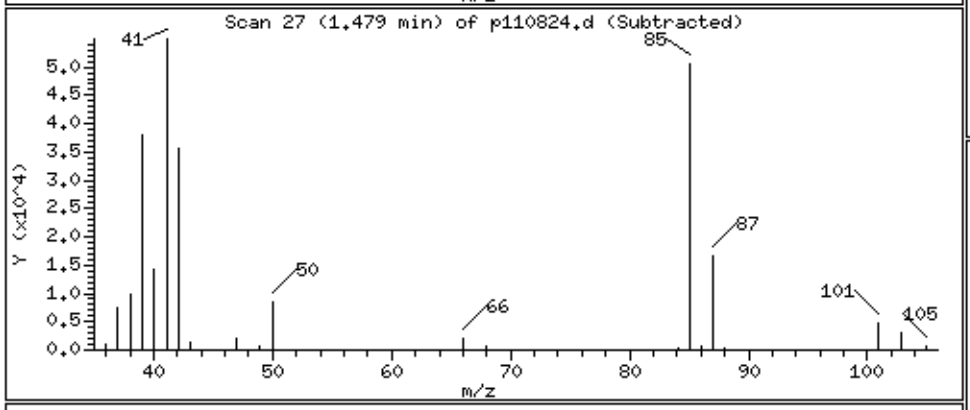
Column phase: RTX-624

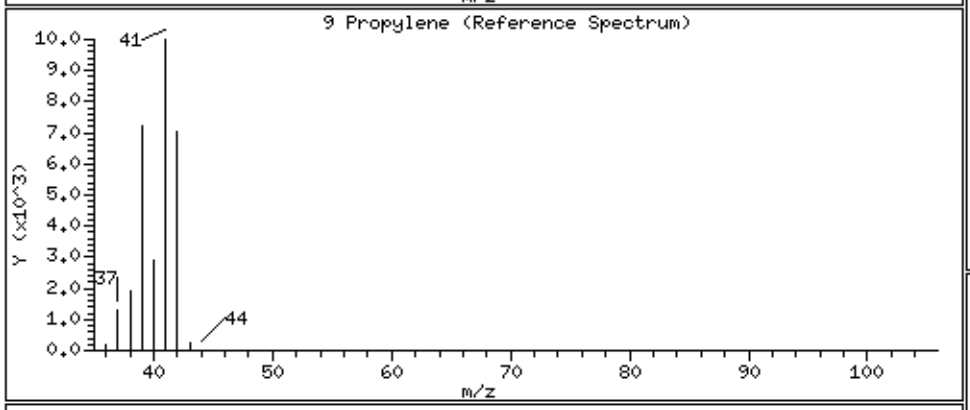
Column diameter: 0.25

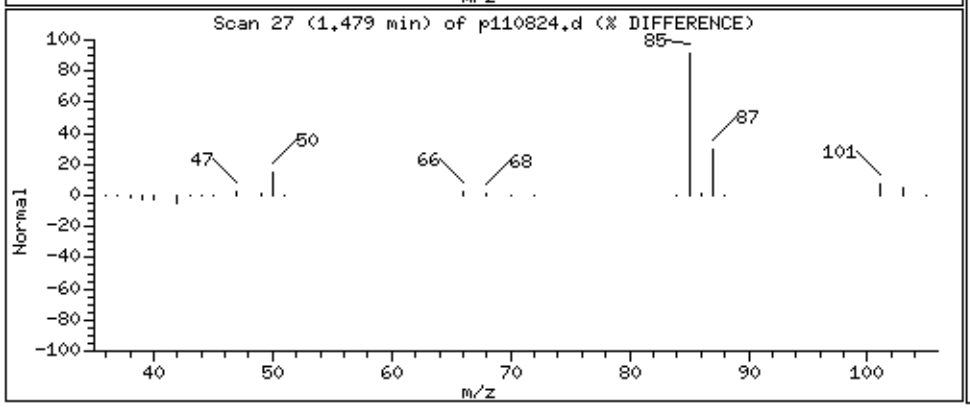
9 Propylene

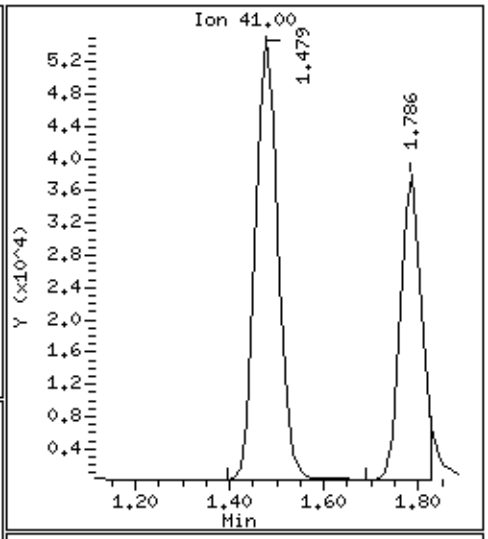
Concentration: 50.765 PPBV

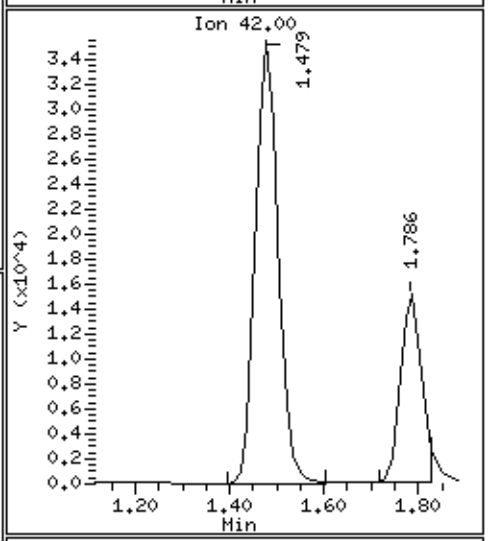


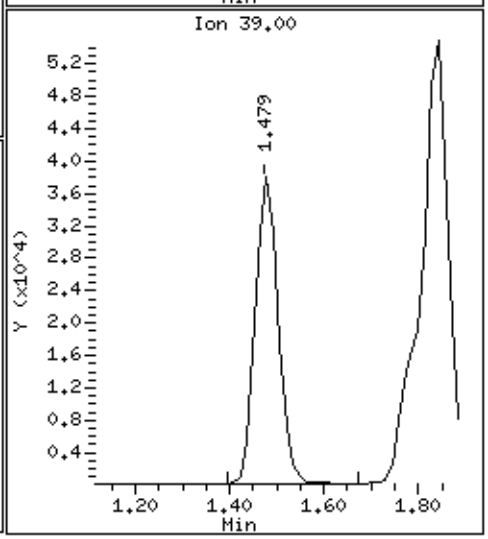












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

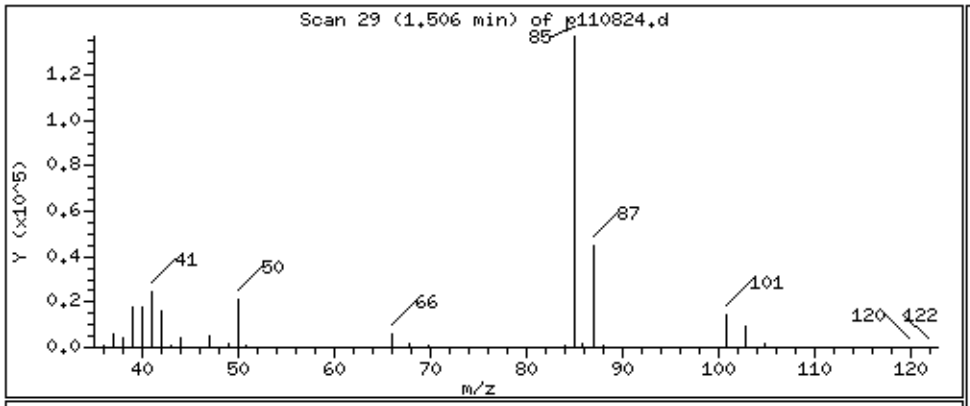
Operator: gd

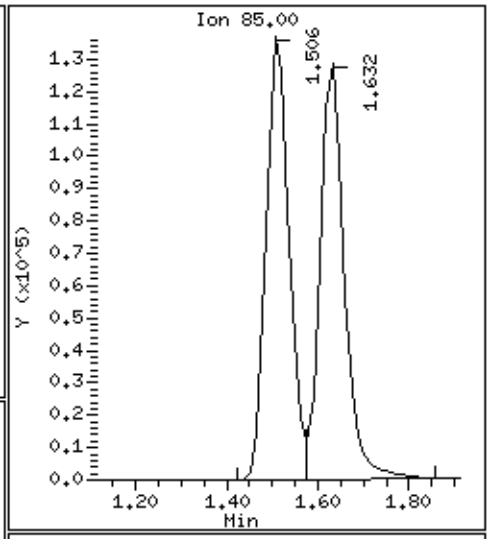
Column phase: RTX-624

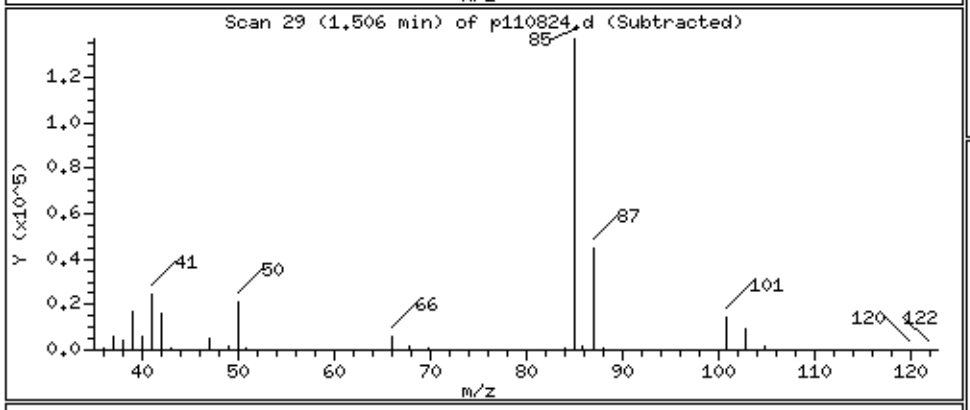
Column diameter: 0.25

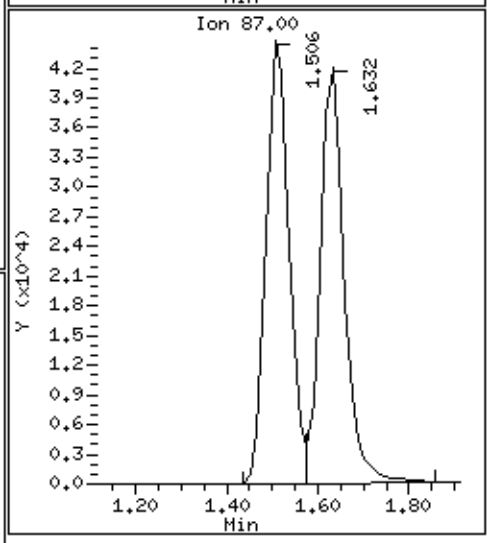
11 Freon 12

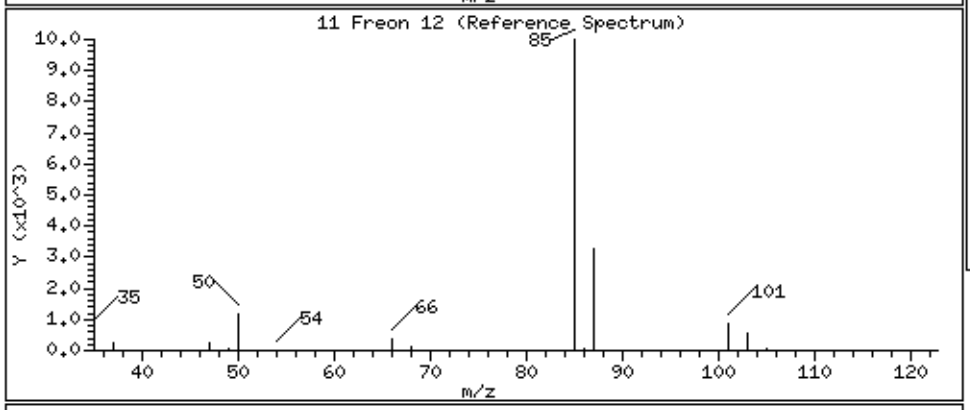
Concentration: 52.669 PPBV

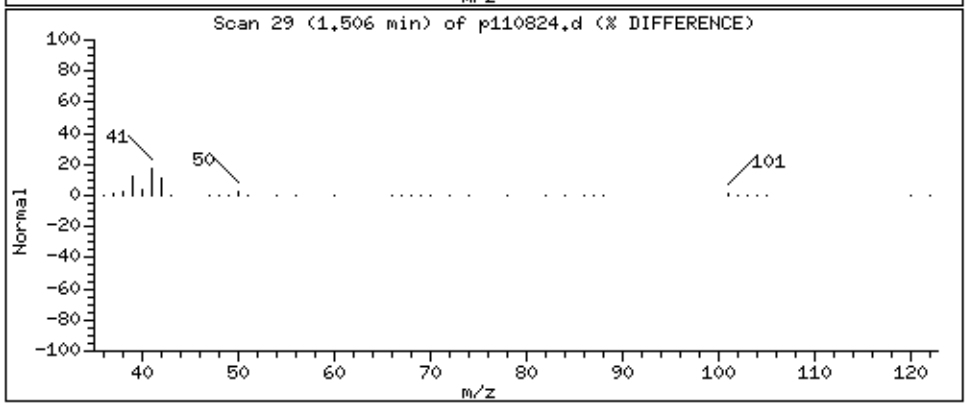












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

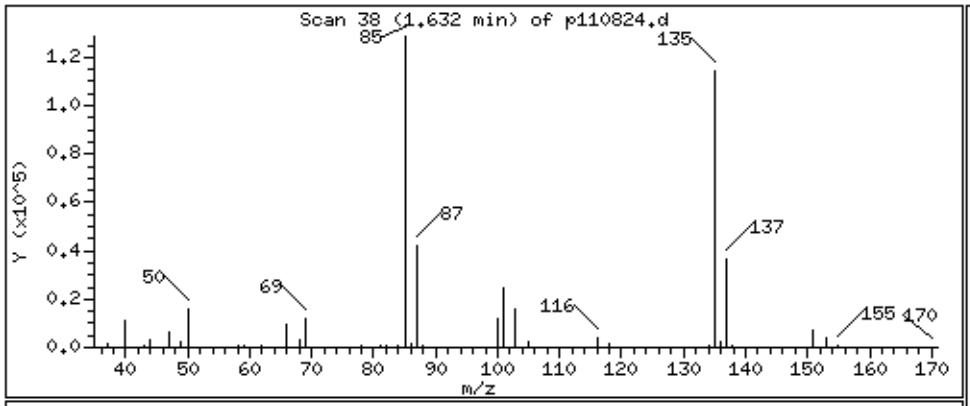
Operator: gd

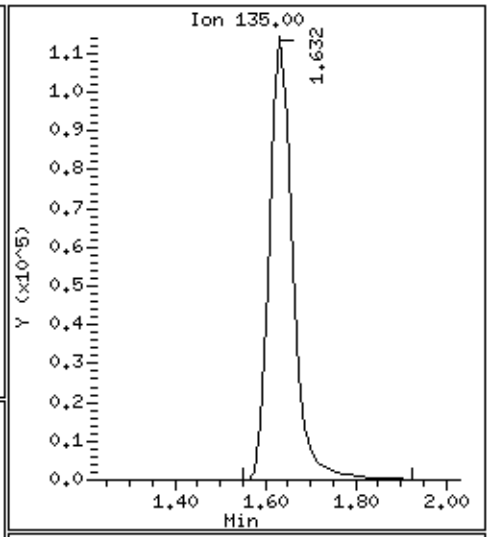
Column phase: RTX-624

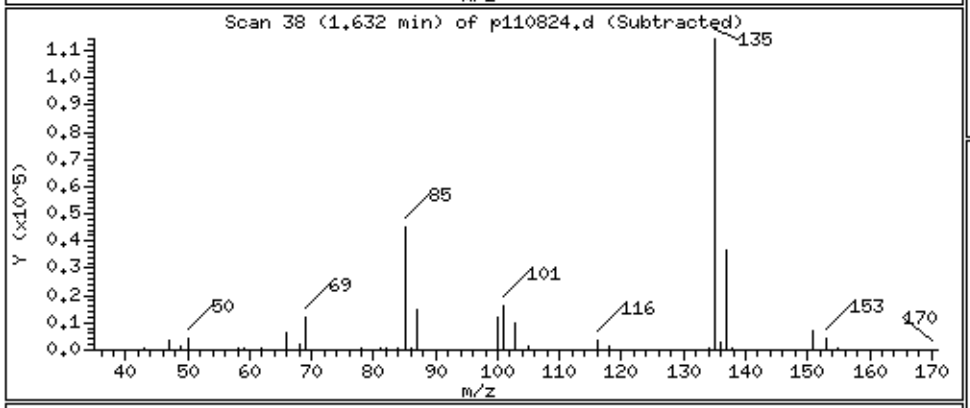
Column diameter: 0.25

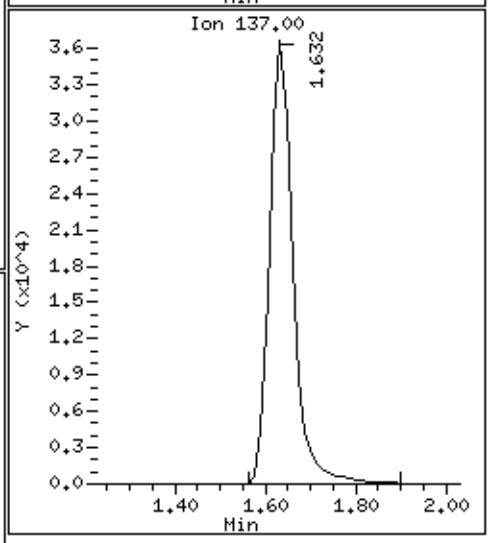
15 Freon 114

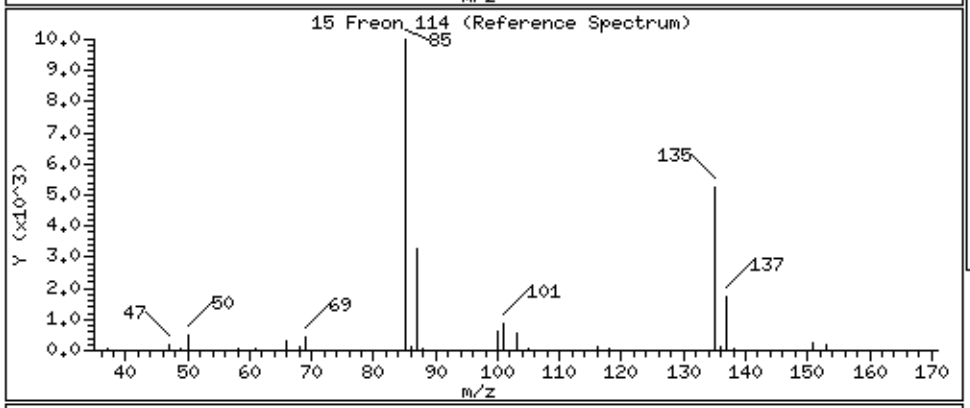
Concentration: 53.262 PPBV

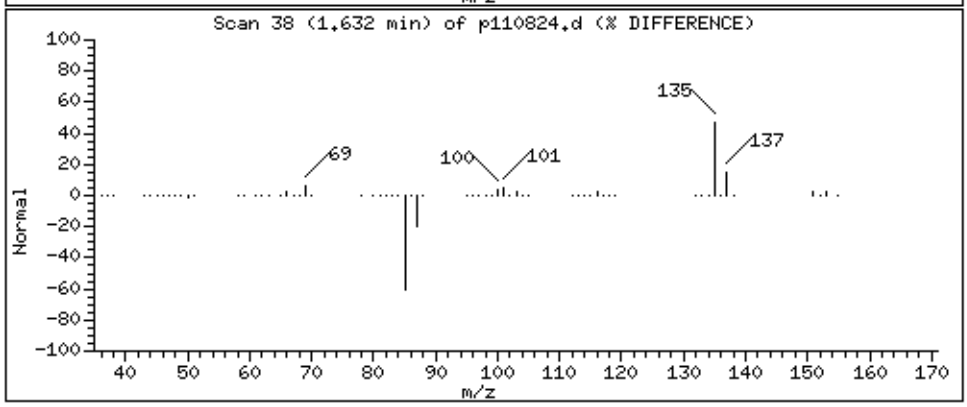












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

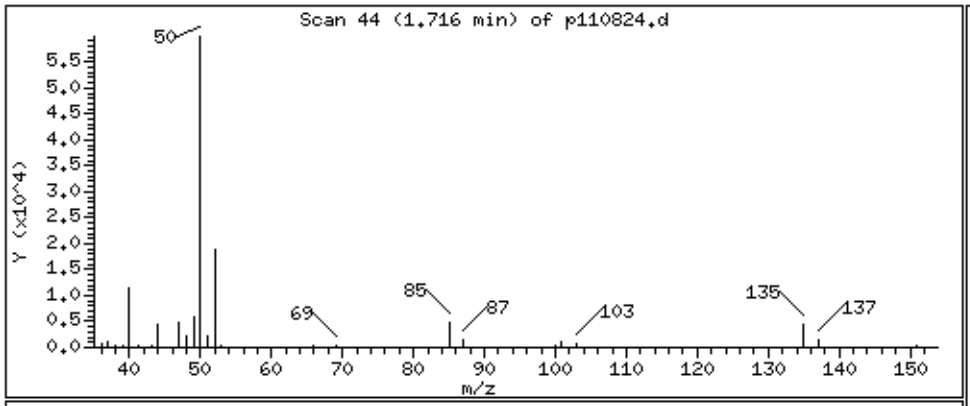
Operator: gd

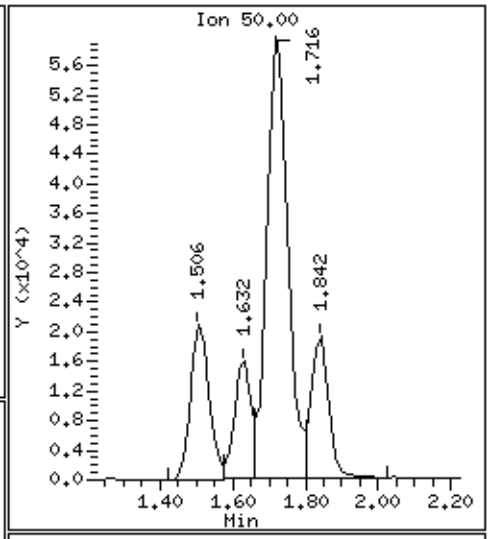
Column phase: RTX-624

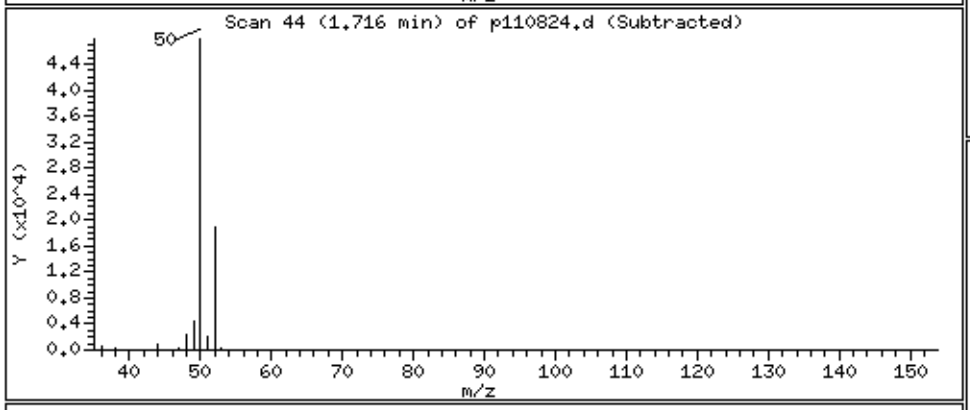
Column diameter: 0.25

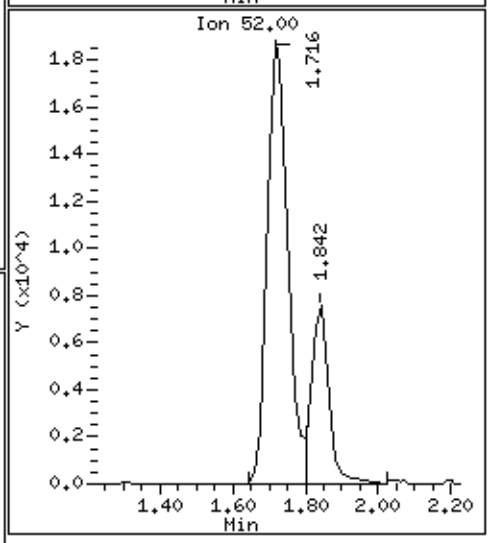
17 Chloromethane

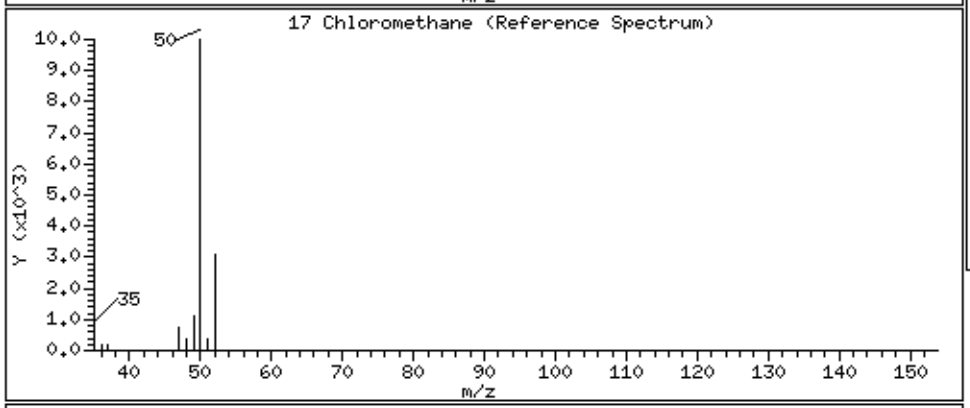
Concentration: 56.378 PPBV

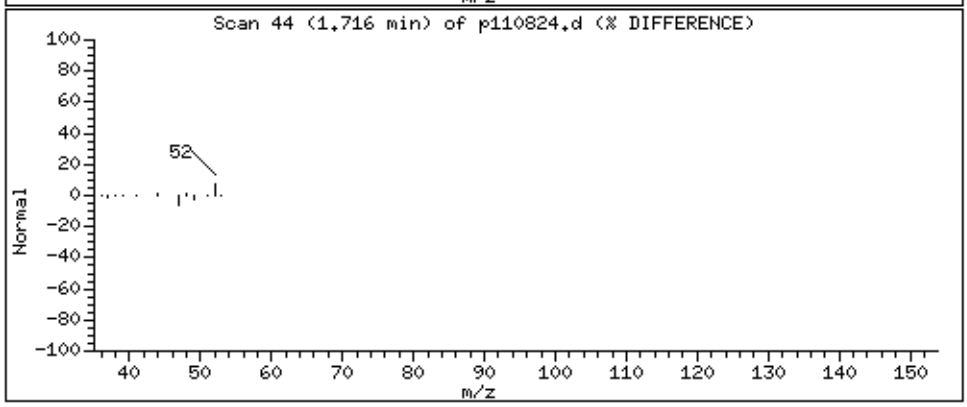












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

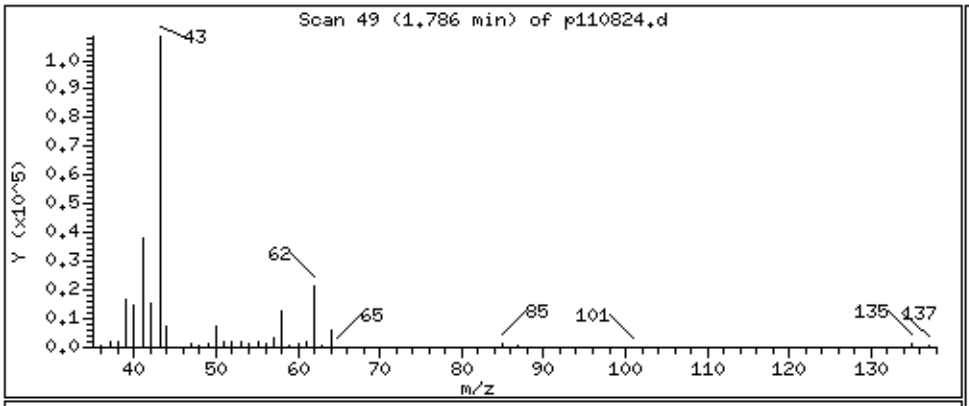
Operator: gd

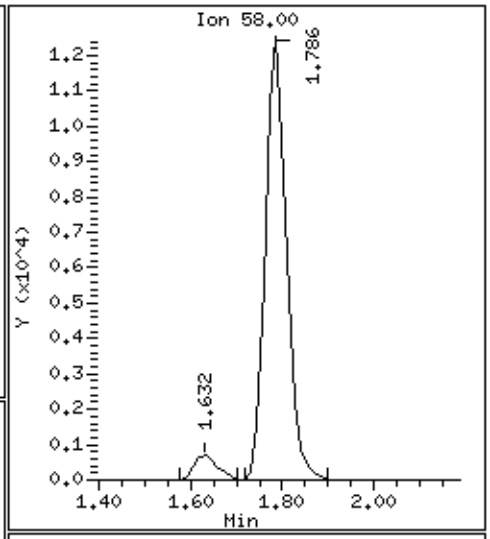
Column phase: RTX-624

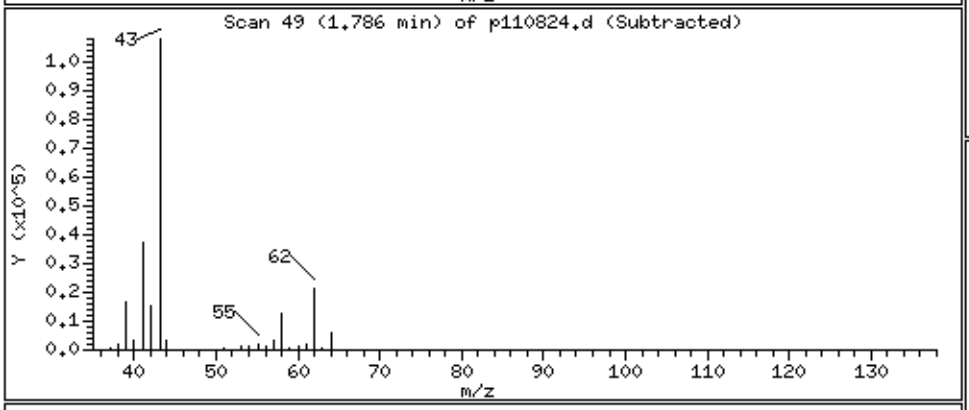
Column diameter: 0.25

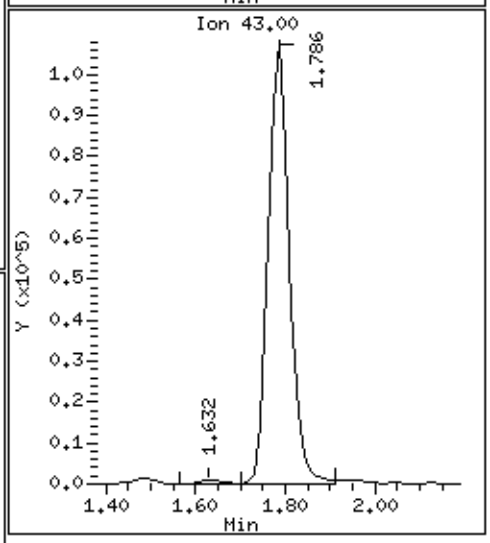
23 Butane

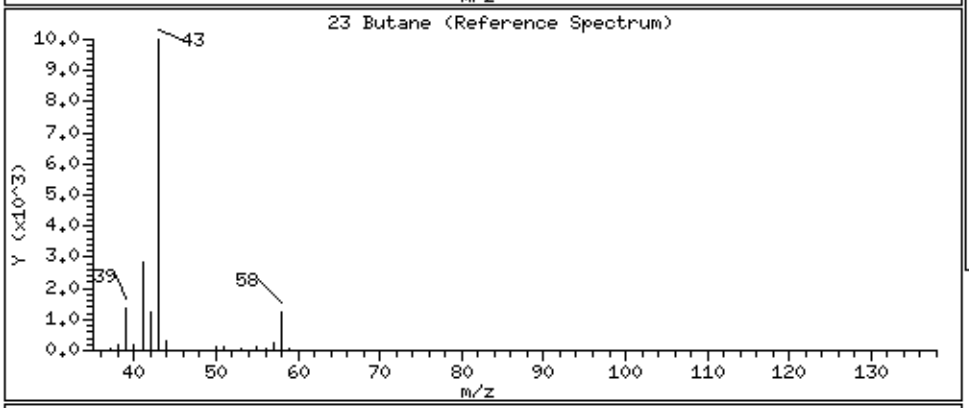
Concentration: 51.125 PPBV

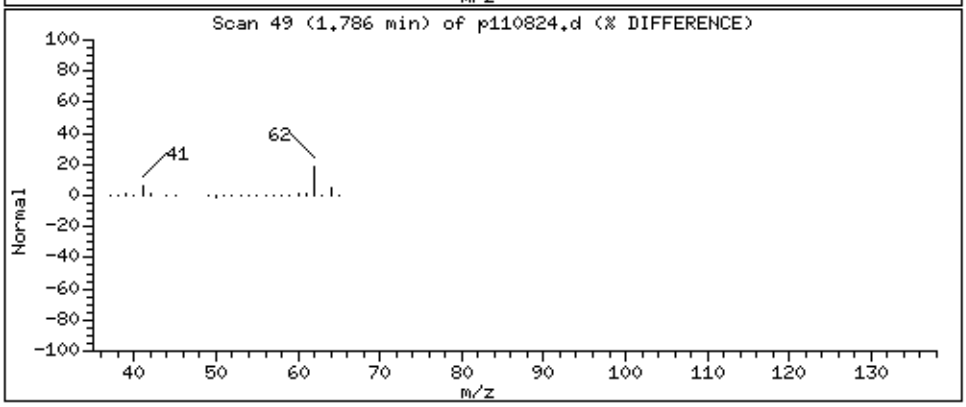












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

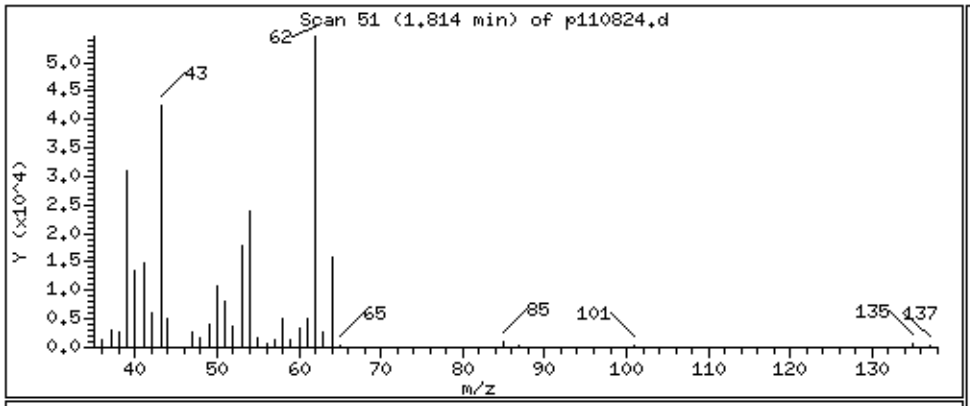
Operator: gd

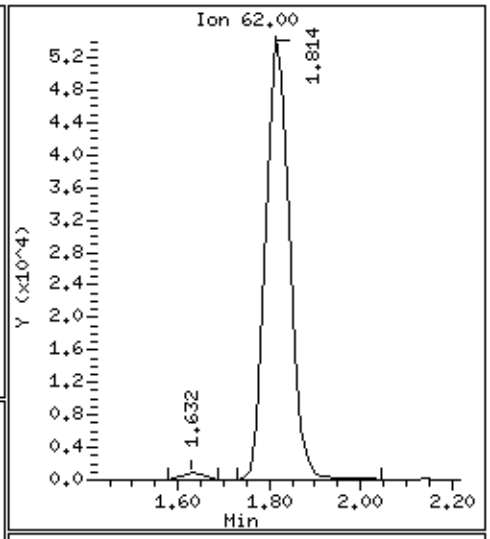
Column phase: RTX-624

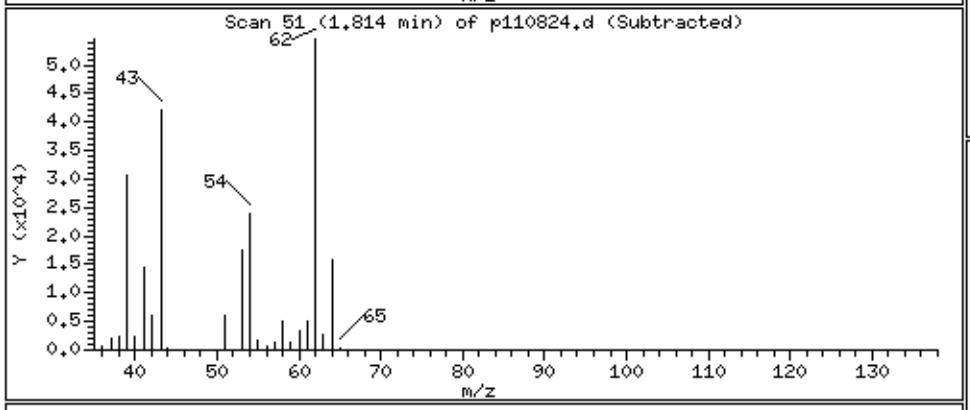
Column diameter: 0.25

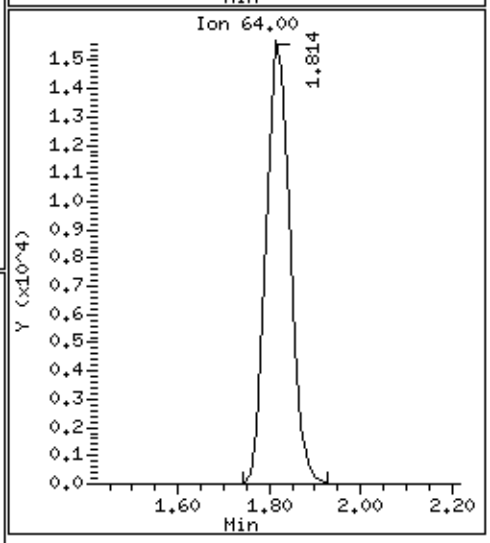
25 Vinyl Chloride

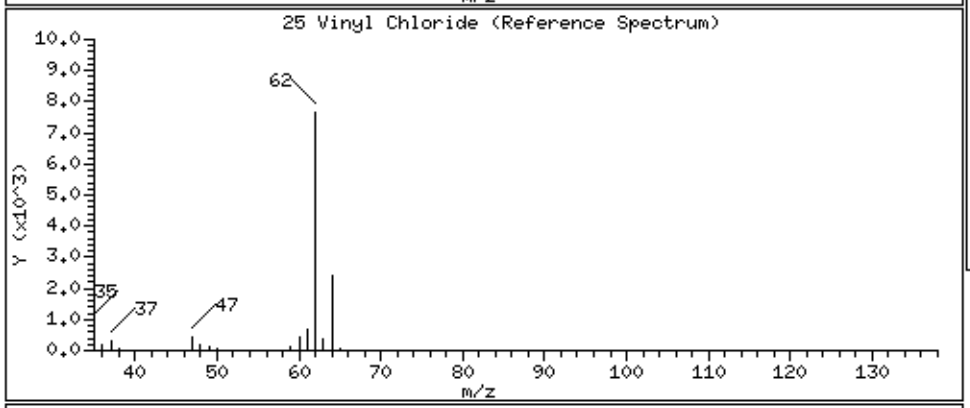
Concentration: 58.058 PPBV

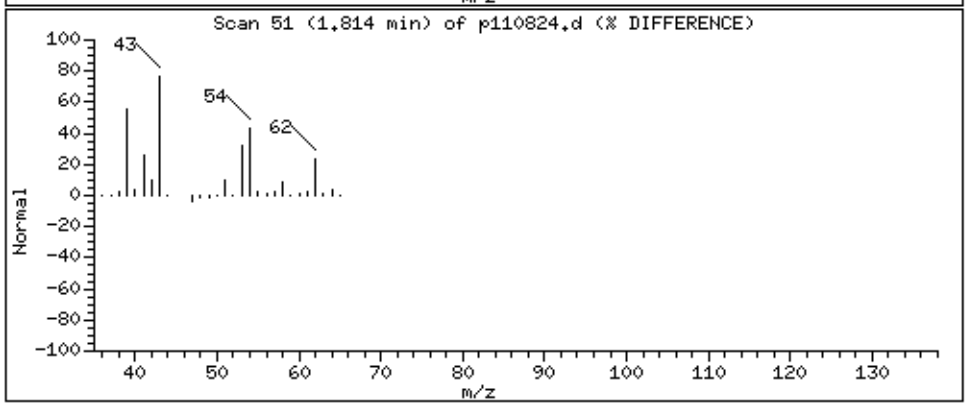












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

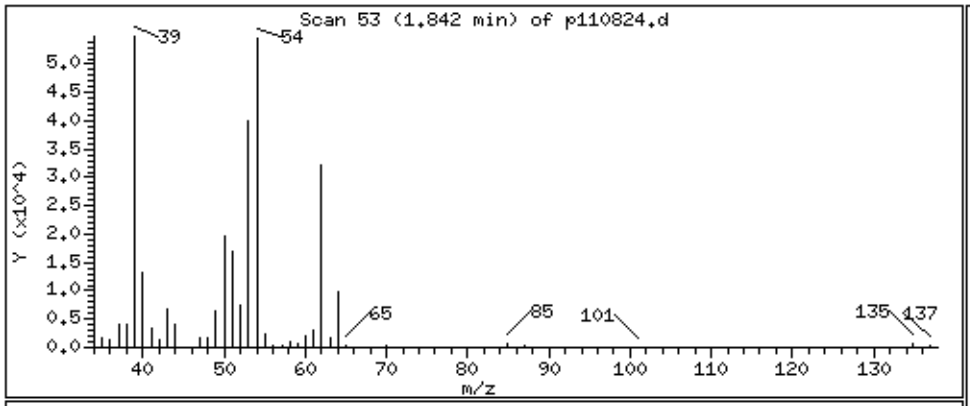
Operator: gd

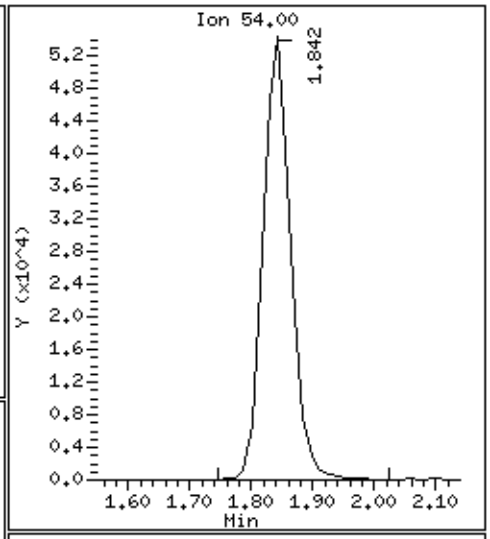
Column phase: RTX-624

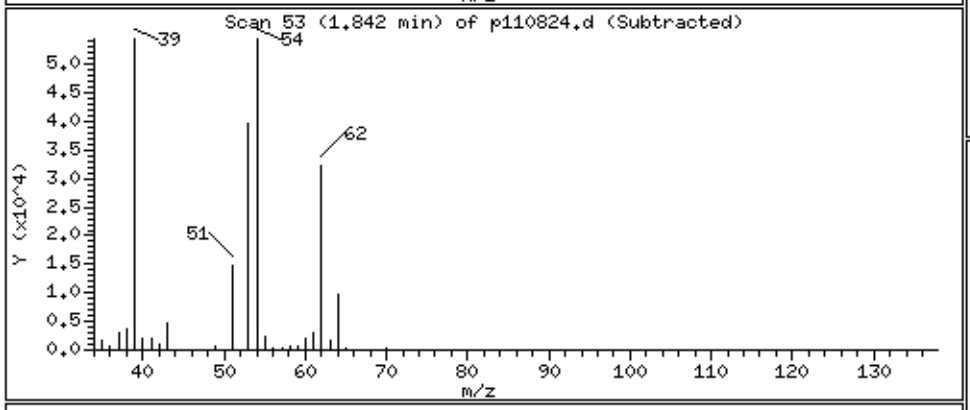
Column diameter: 0.25

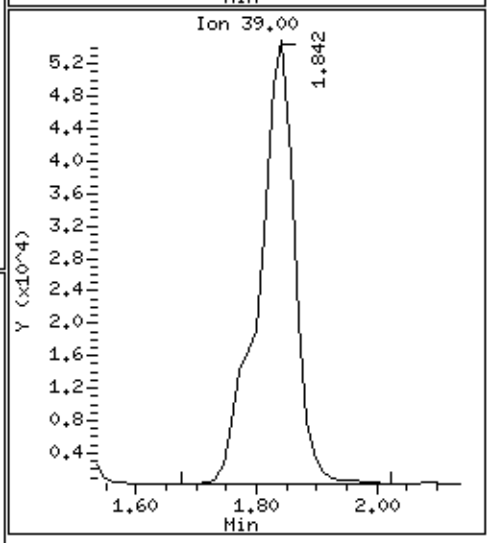
26 1,3-Butadiene

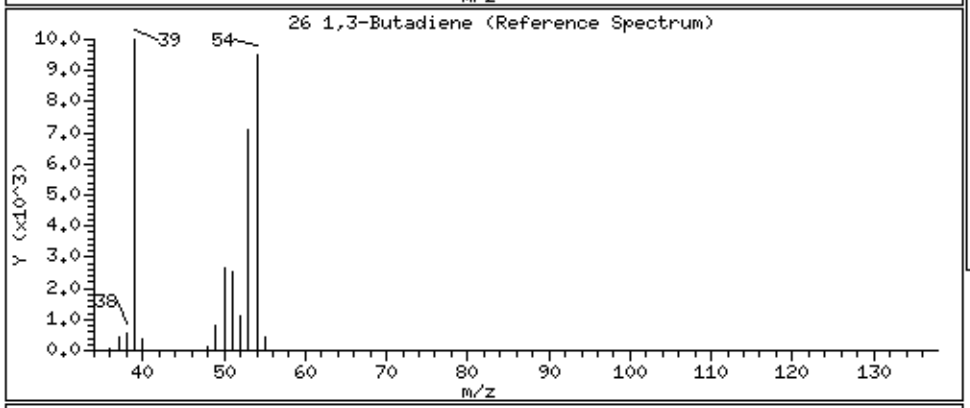
Concentration: 60.444 PPBV

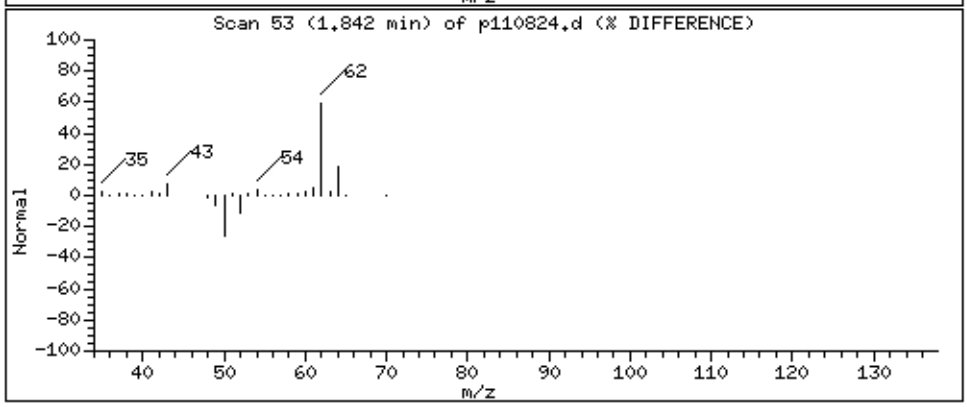












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

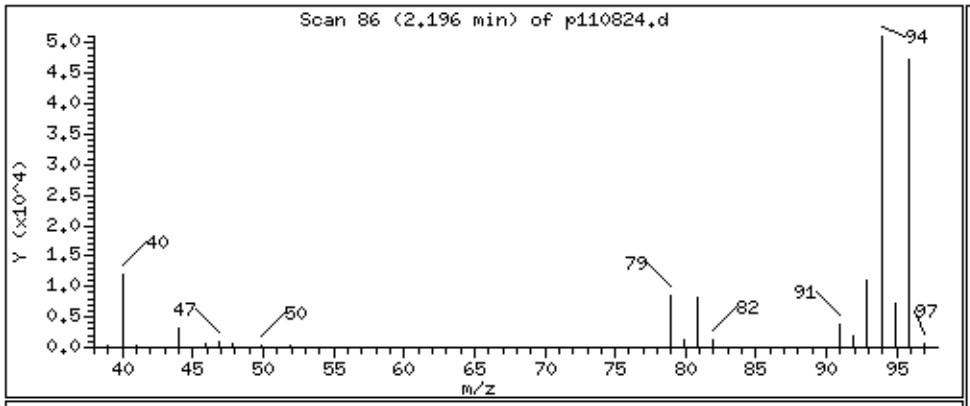
Operator: gd

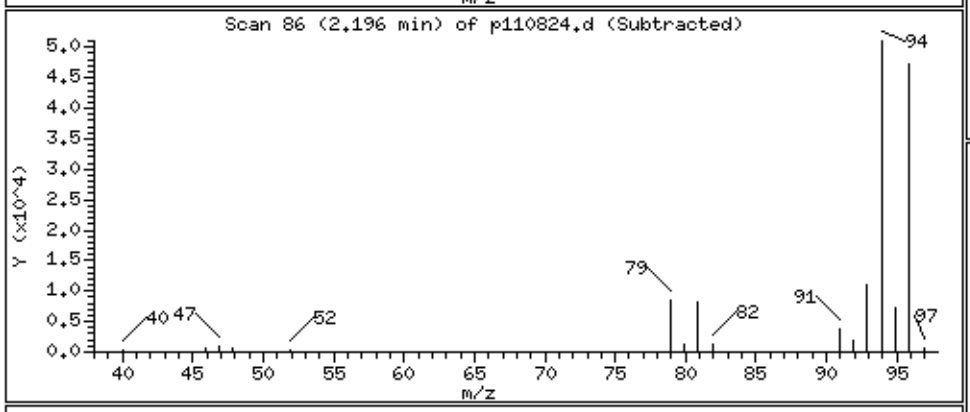
Column phase: RTX-624

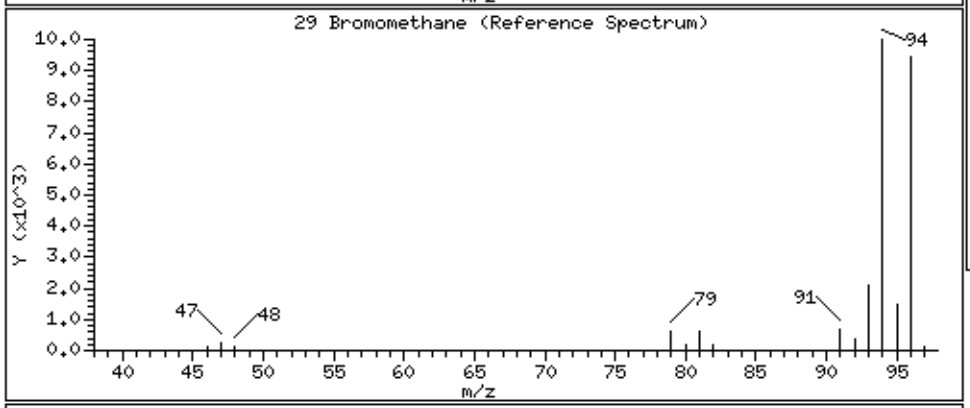
Column diameter: 0.25

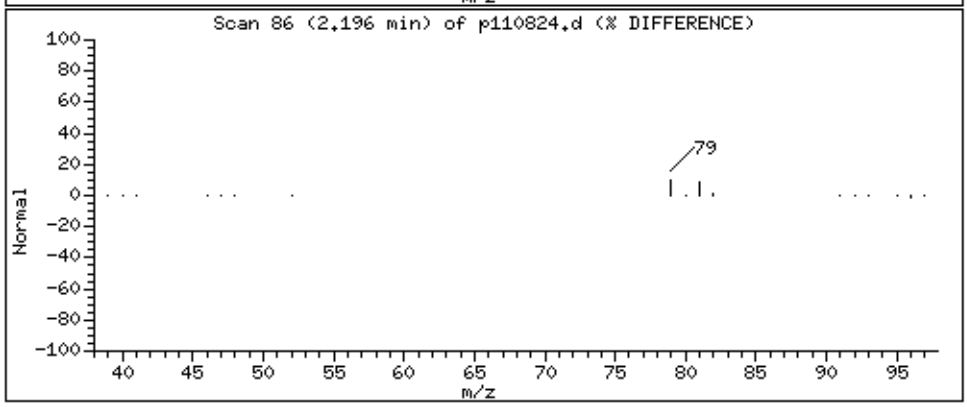
29 Bromomethane

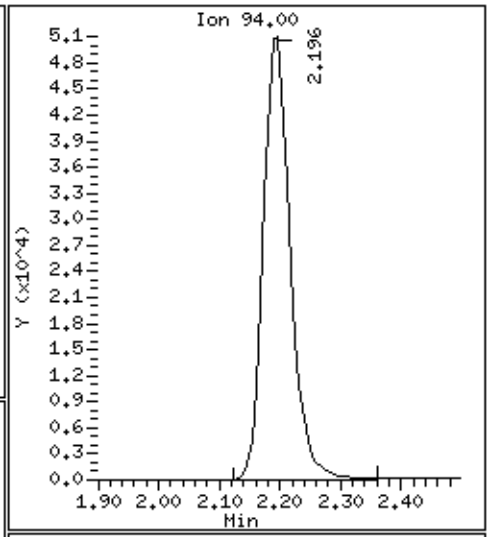
Concentration: 58.085 PPBV

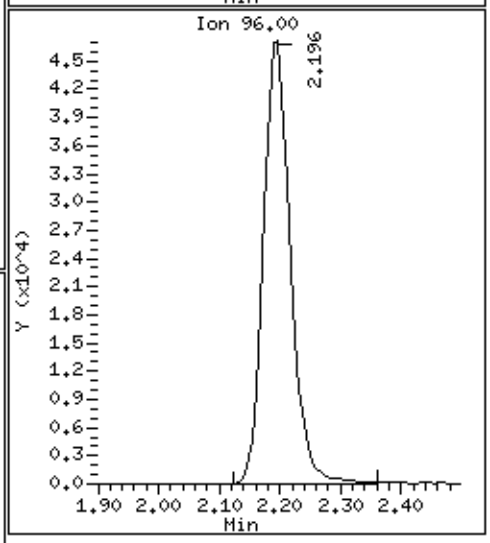












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

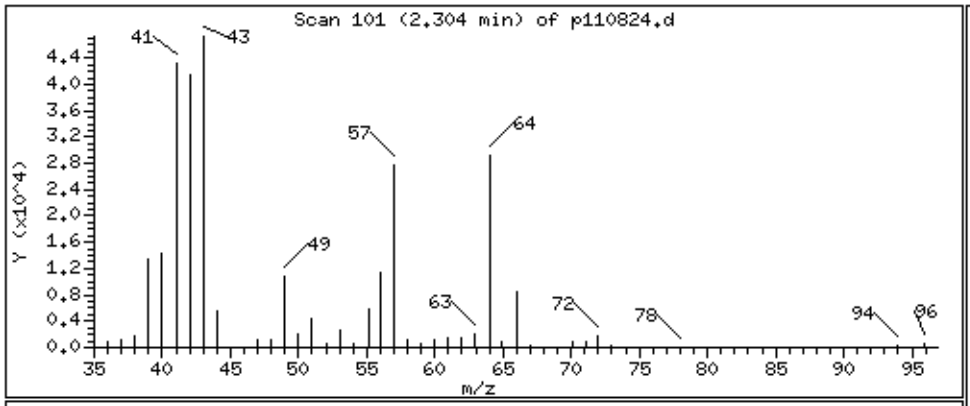
Operator: gd

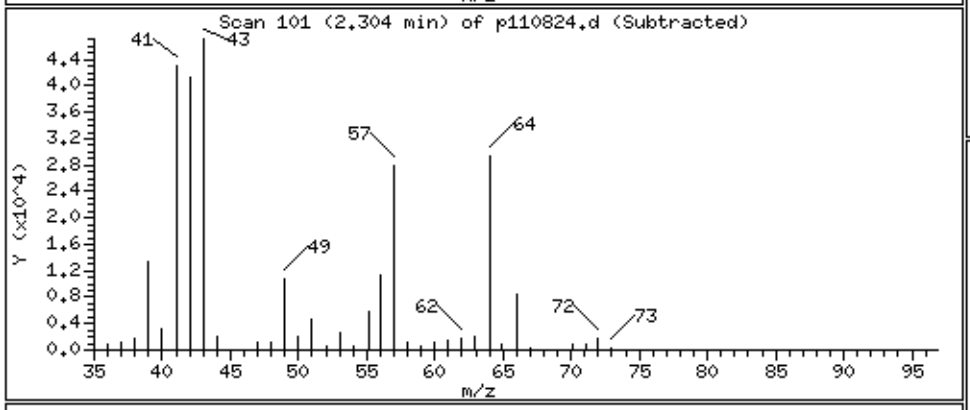
Column phase: RTX-624

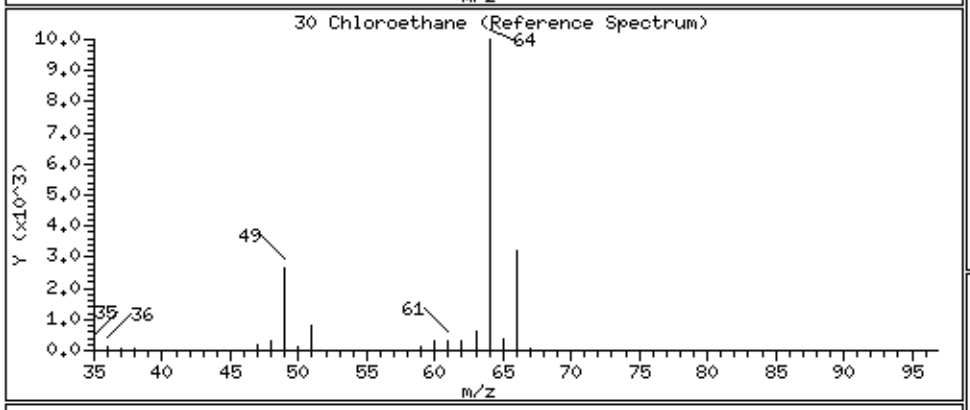
Column diameter: 0.25

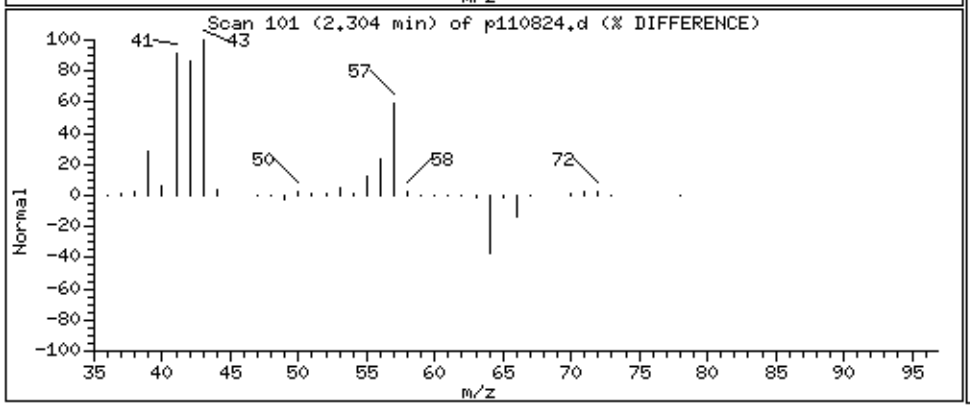
30 Chloroethane

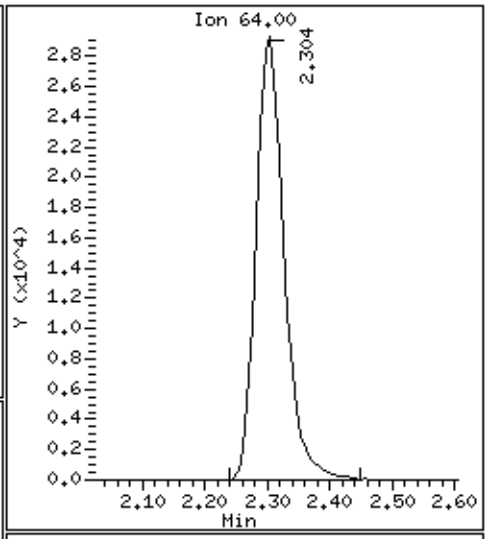
Concentration: 56.192 PPBV

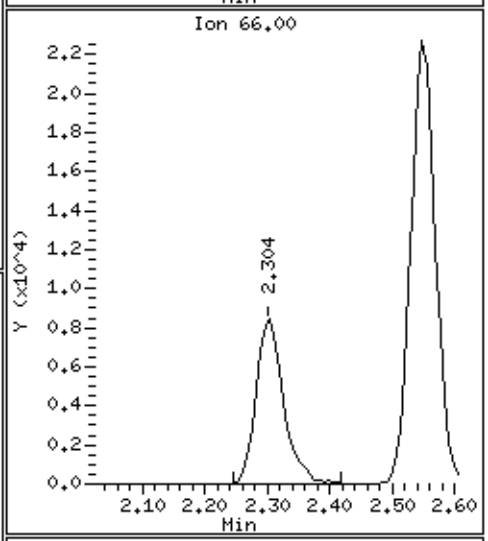


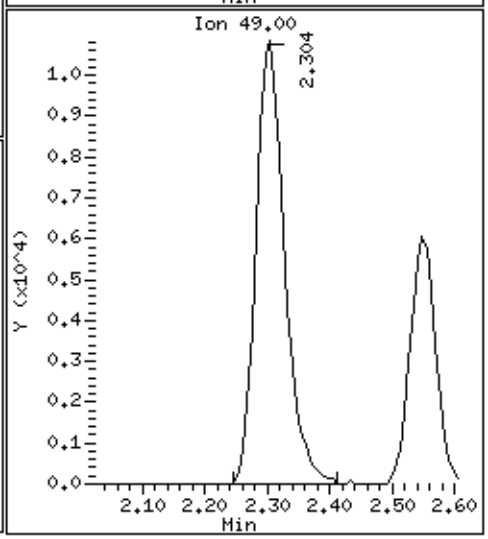












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

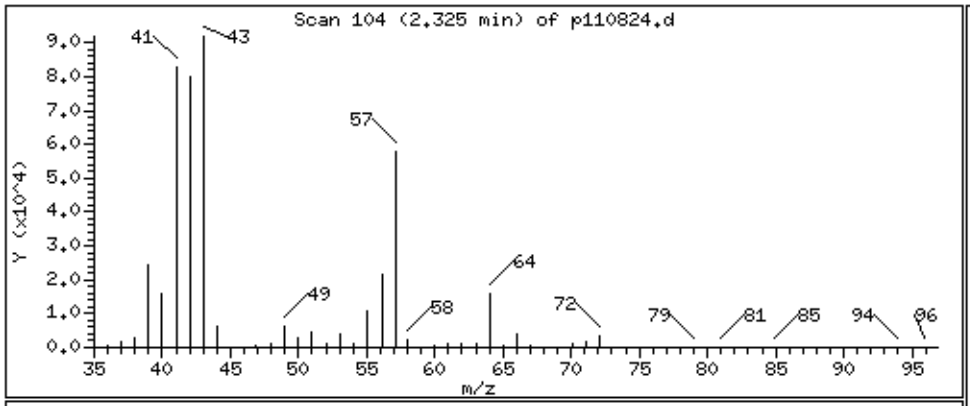
Operator: gd

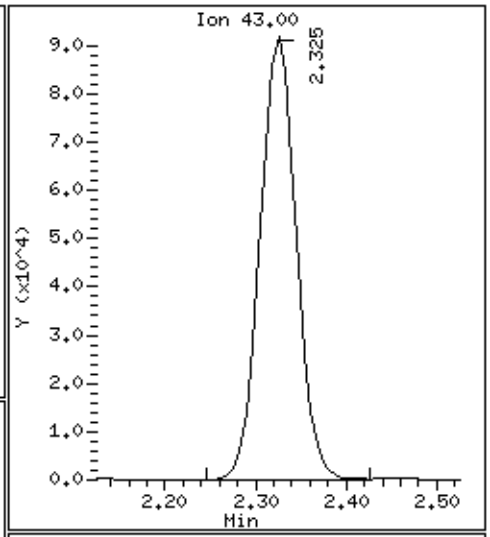
Column phase: RTX-624

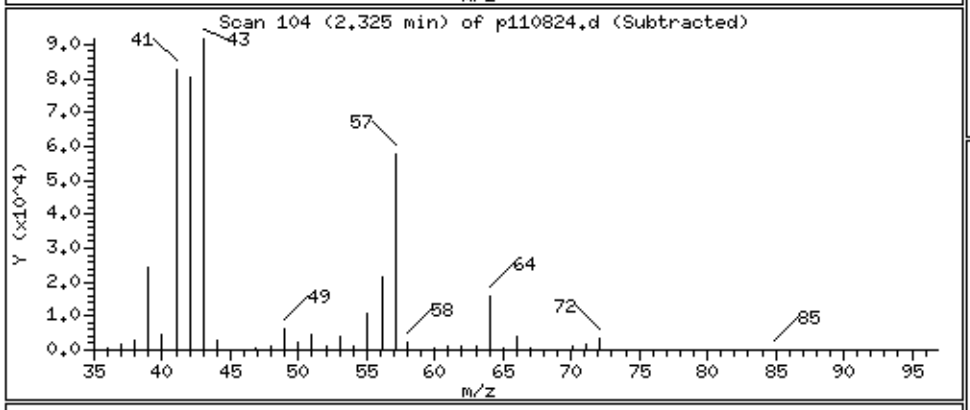
Column diameter: 0.25

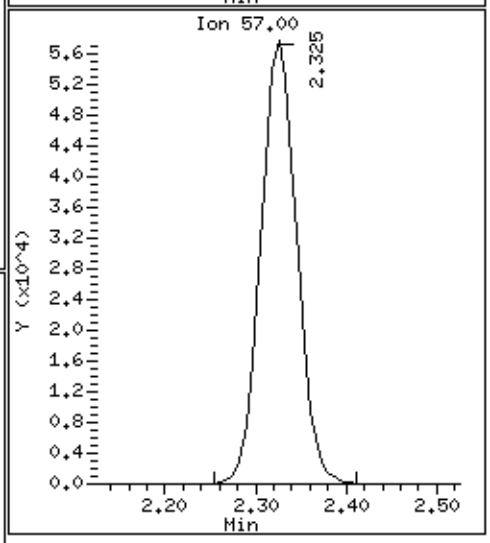
31 Isopentane

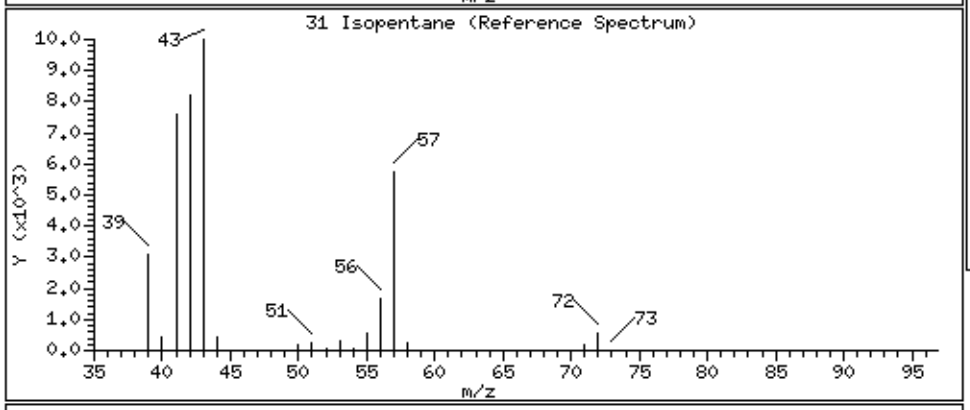
Concentration: 51.760 PPBV

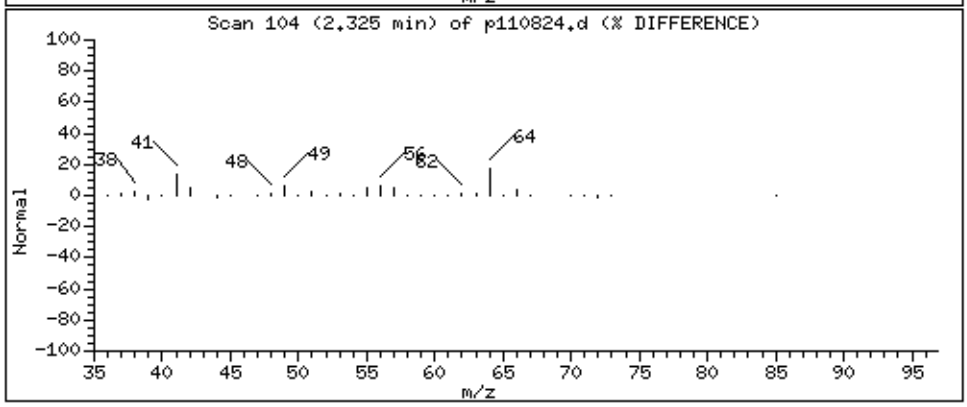












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

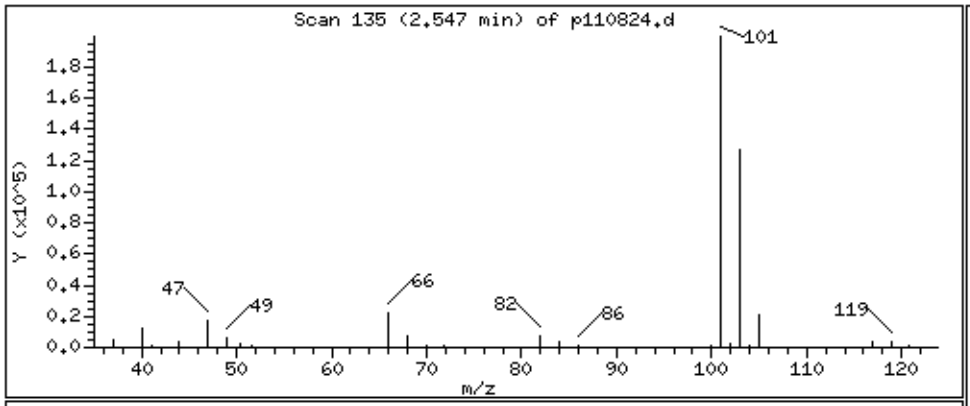
Operator: gd

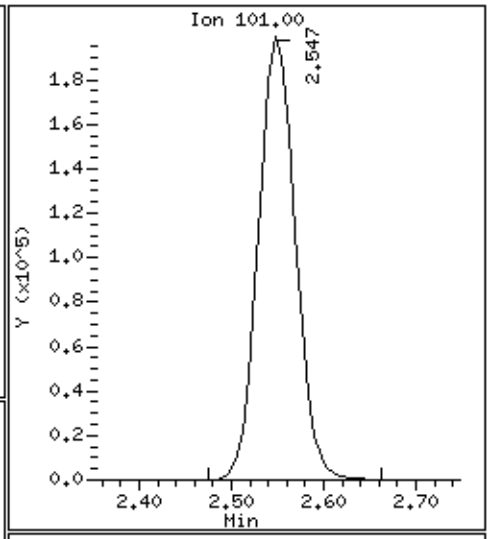
Column phase: RTX-624

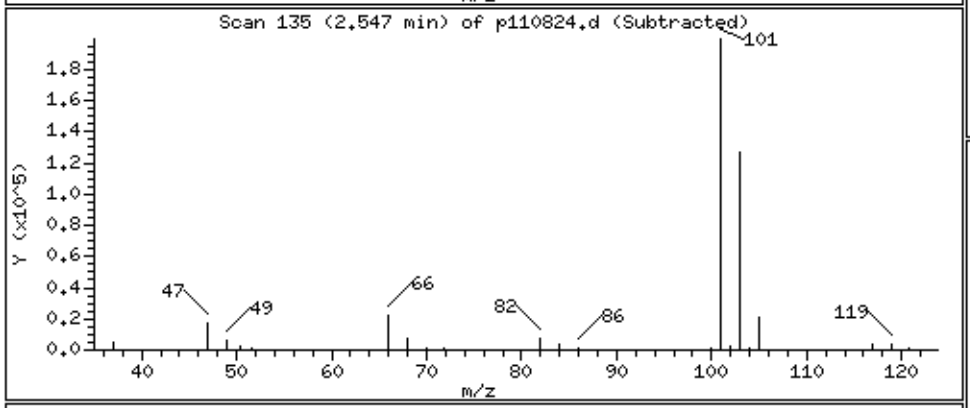
Column diameter: 0.25

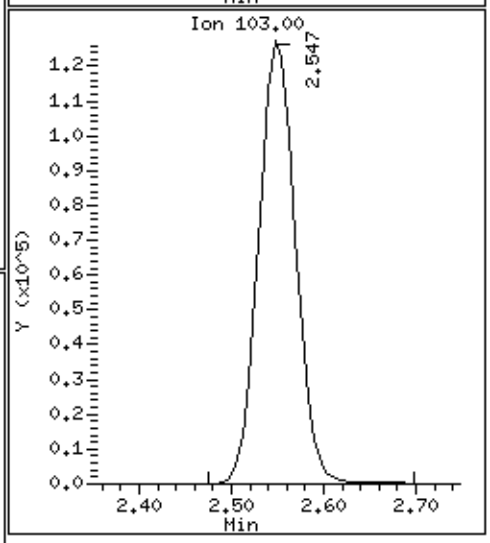
35 Freon 11

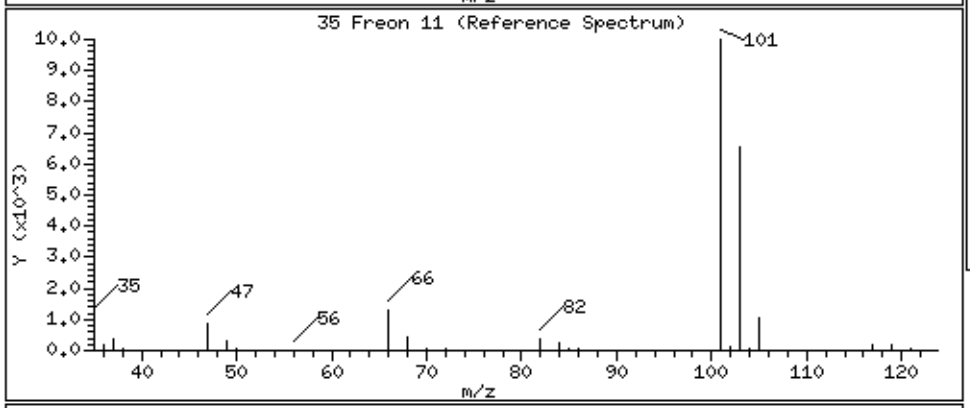
Concentration: 50.638 PPBV

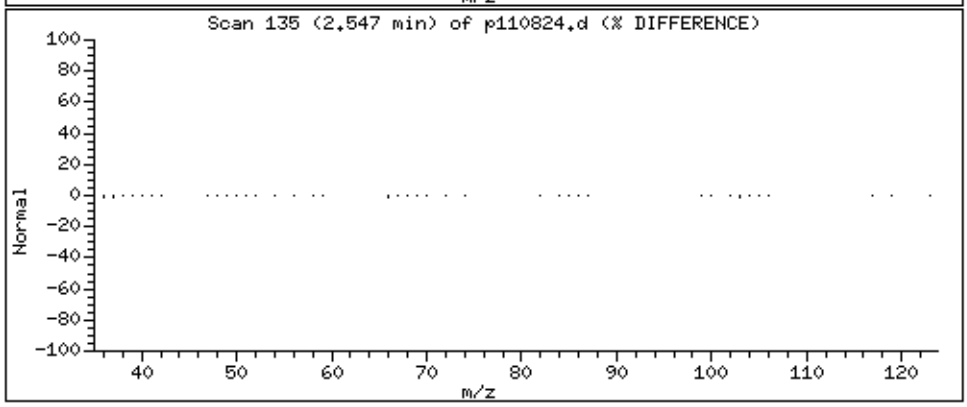












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

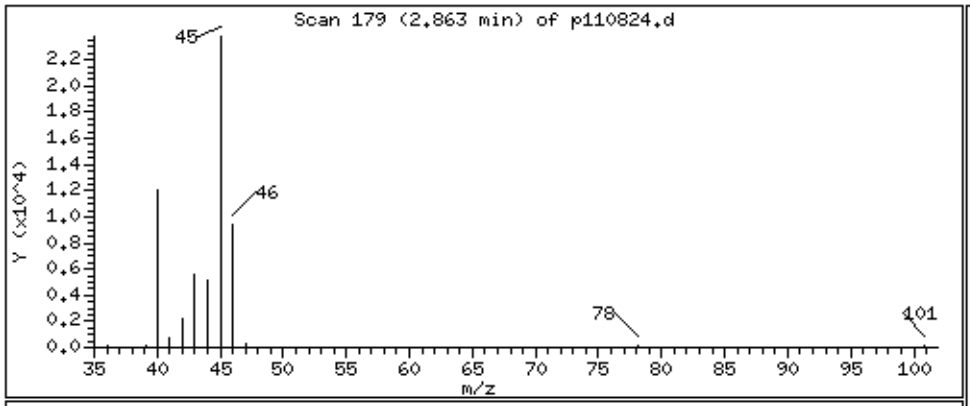
Operator: gd

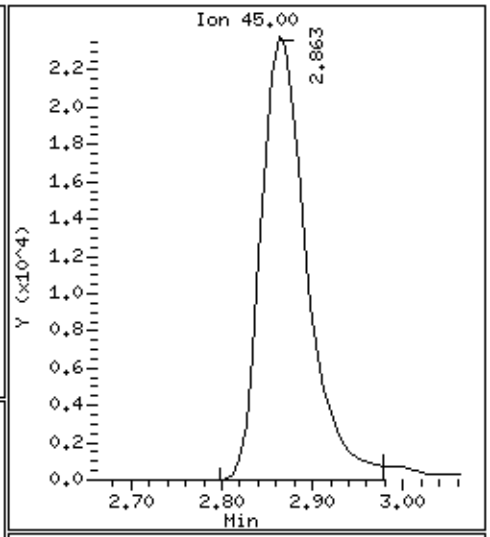
Column phase: RTX-624

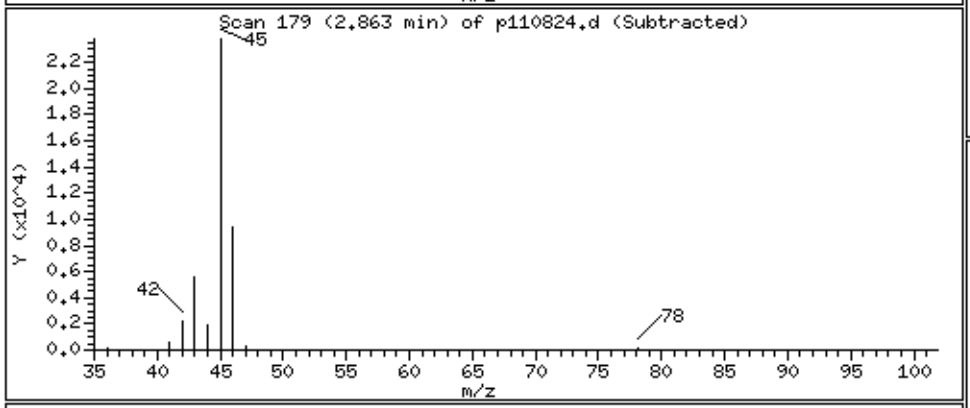
Column diameter: 0.25

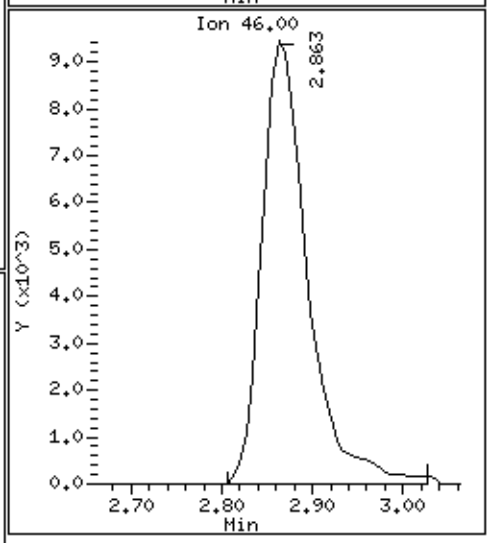
42 Ethanol

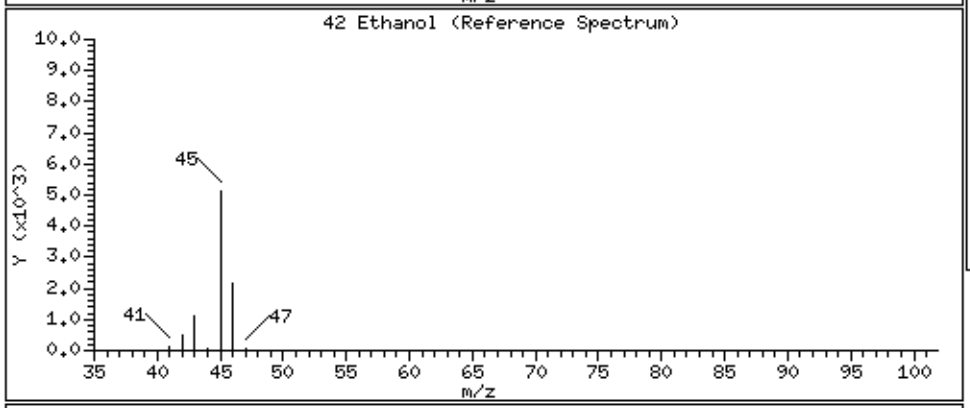
Concentration: 51.471 PPBV

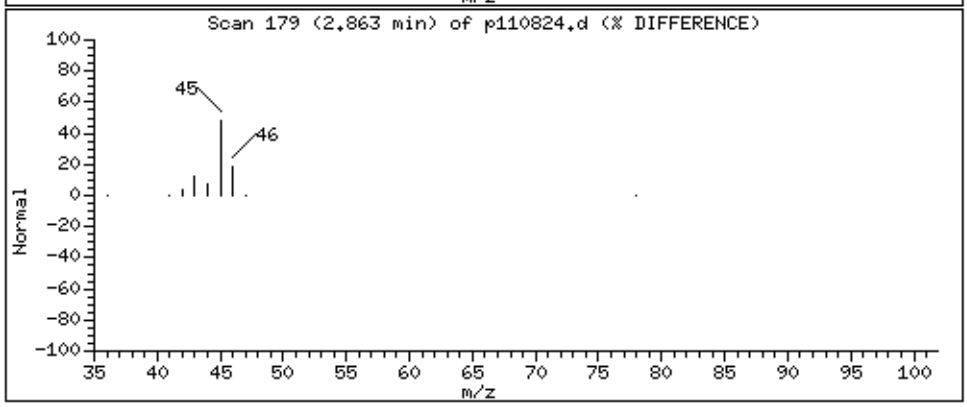












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

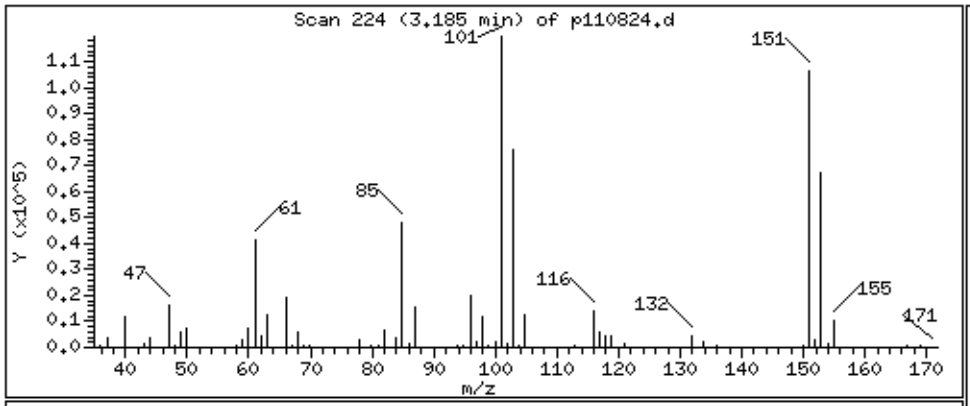
Operator: gd

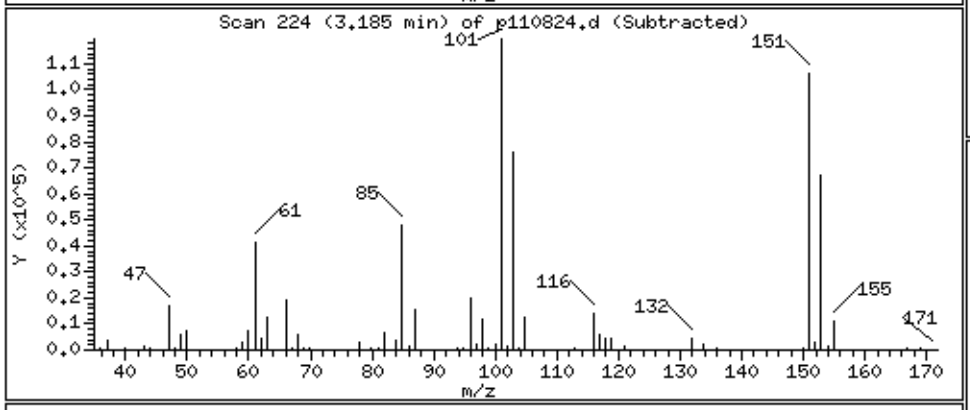
Column phase: RTX-624

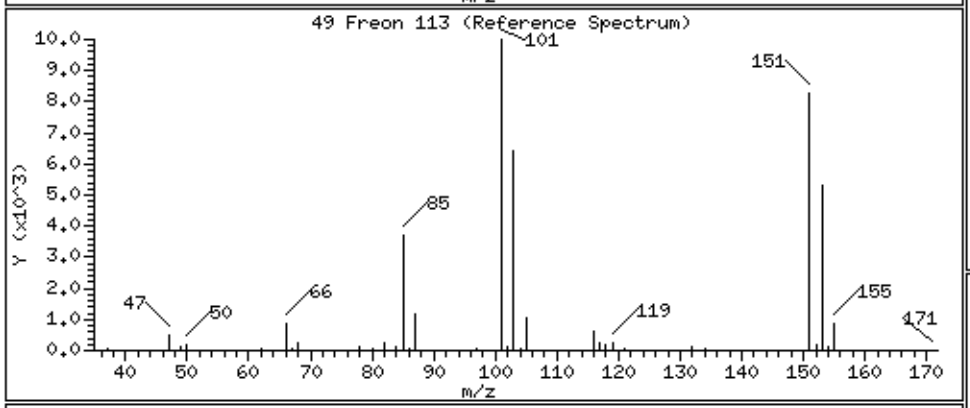
Column diameter: 0.25

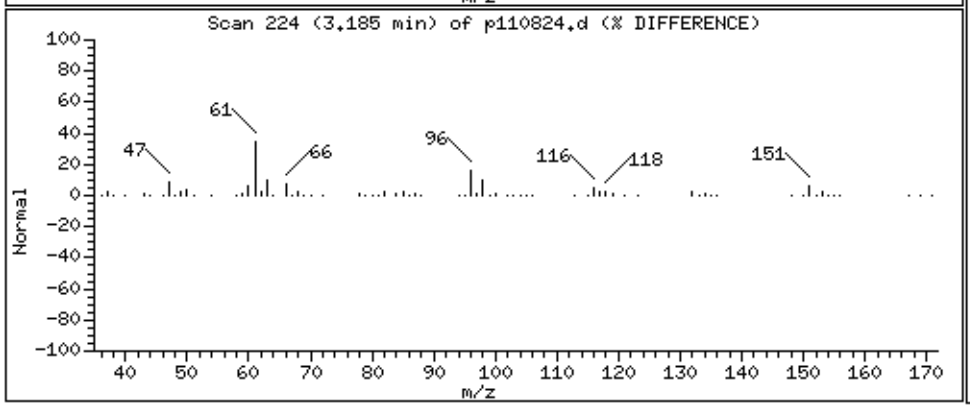
49 Freon 113

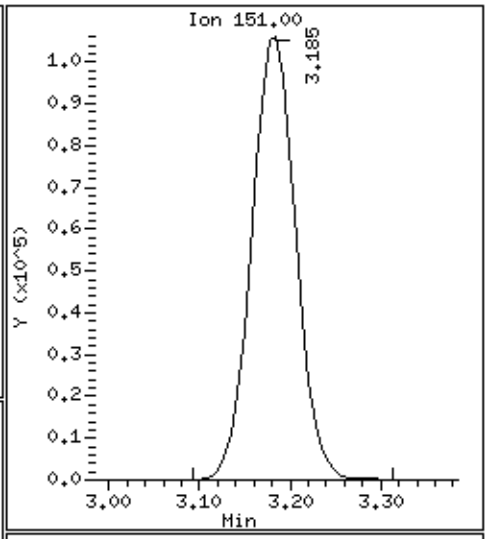
Concentration: 49.440 PPBV

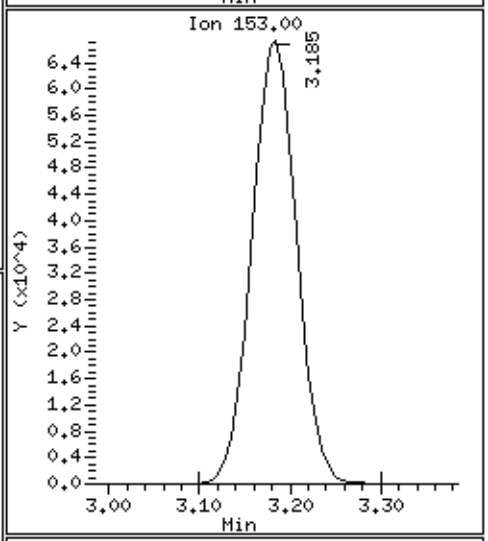


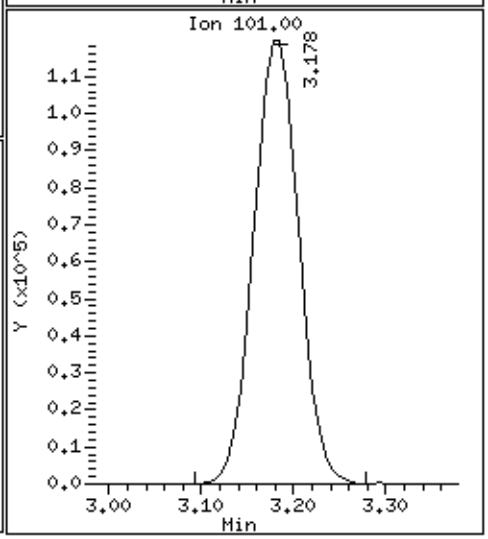












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

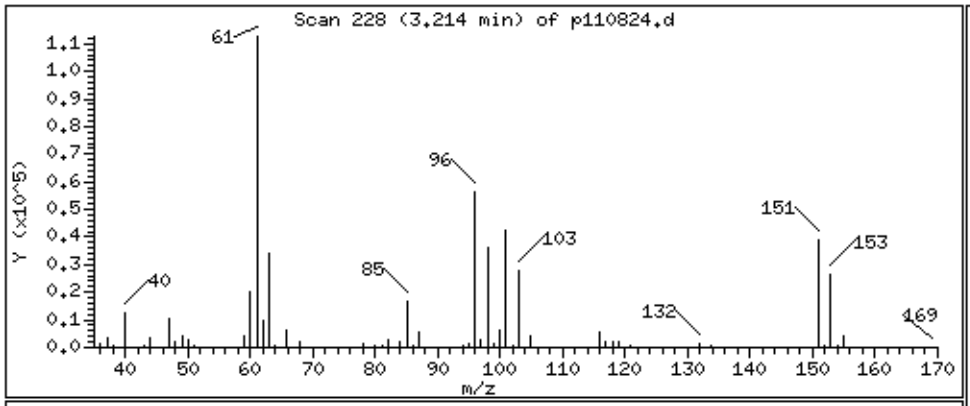
Operator: gd

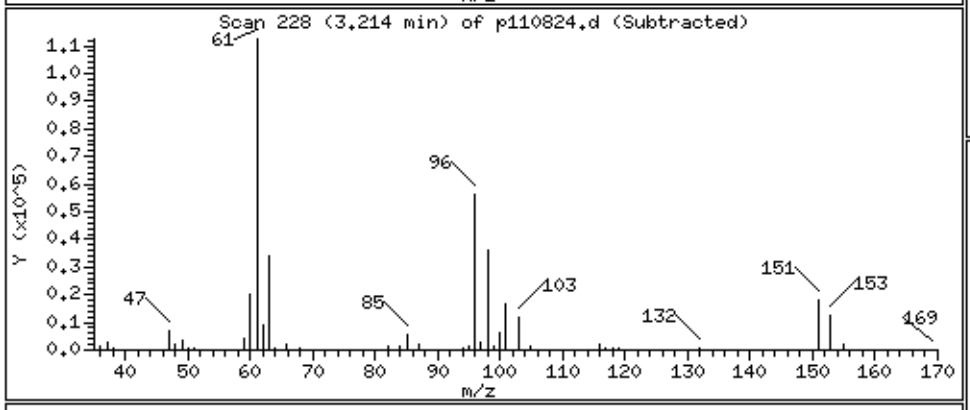
Column phase: RTX-624

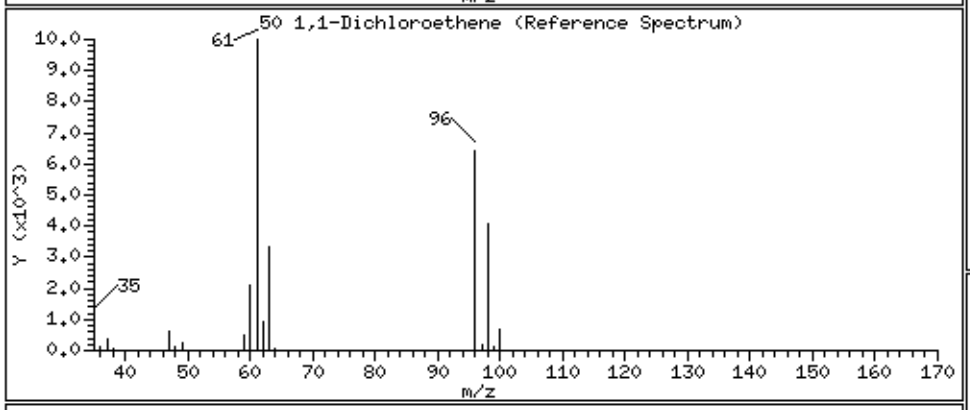
Column diameter: 0.25

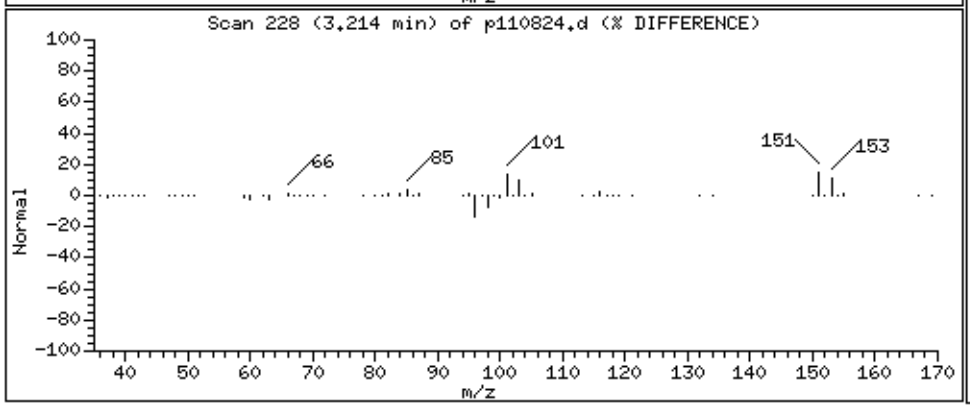
50 1,1-Dichloroethene

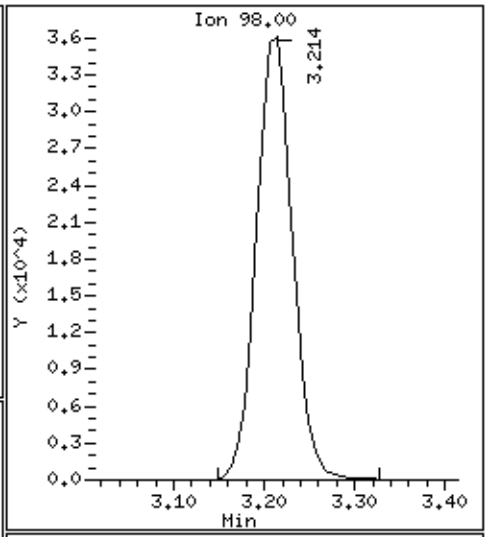
Concentration: 54.520 PPBV

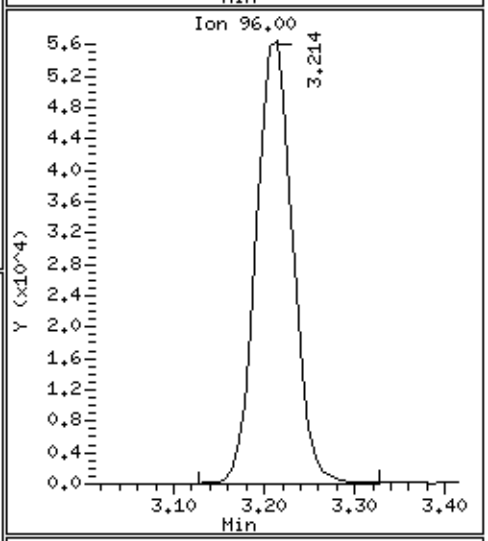


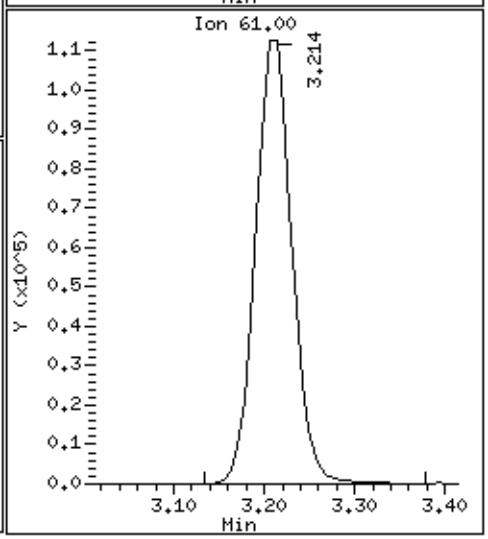












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

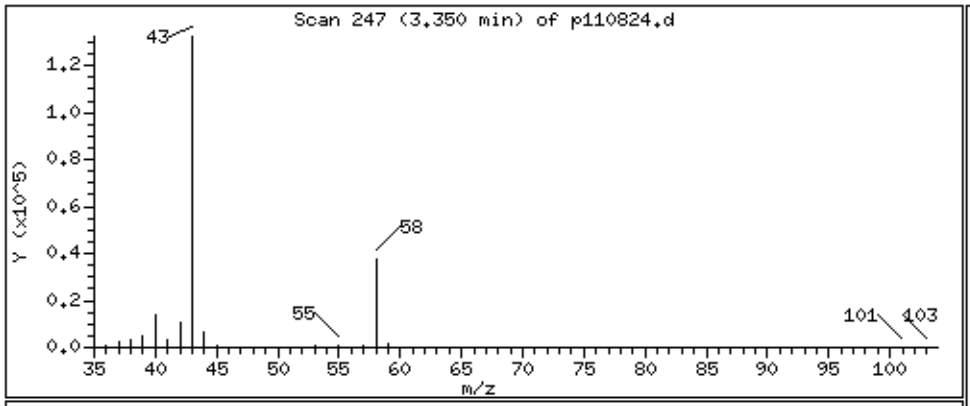
Operator: gd

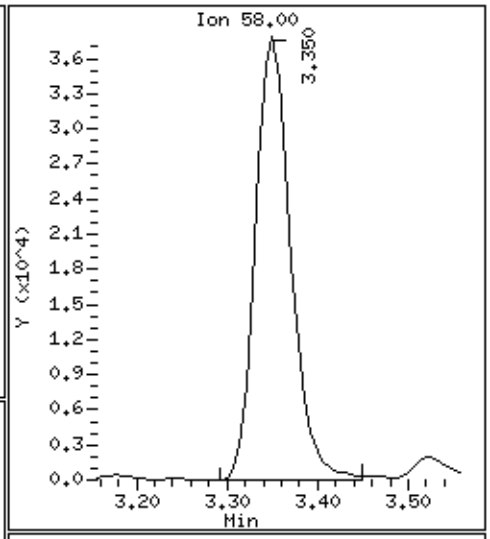
Column phase: RTX-624

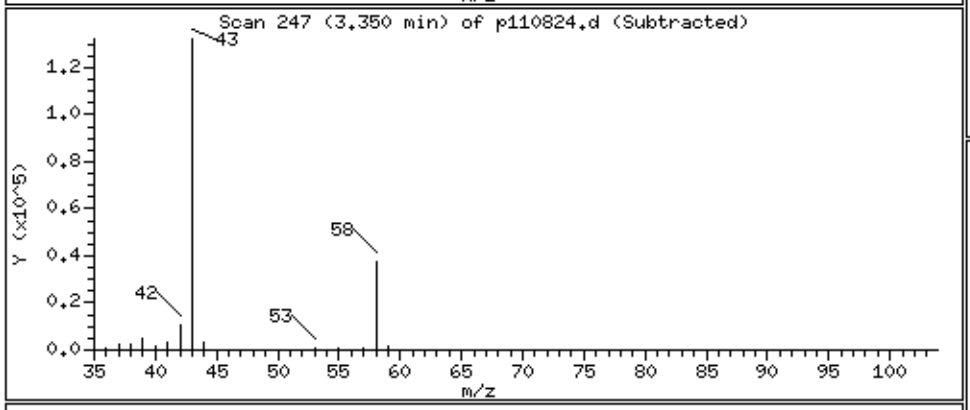
Column diameter: 0.25

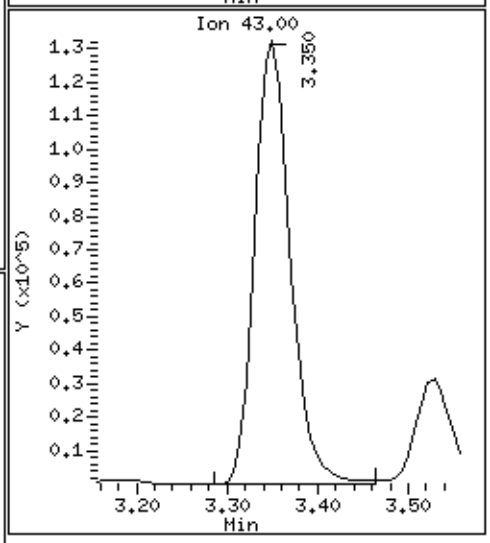
52 Acetone

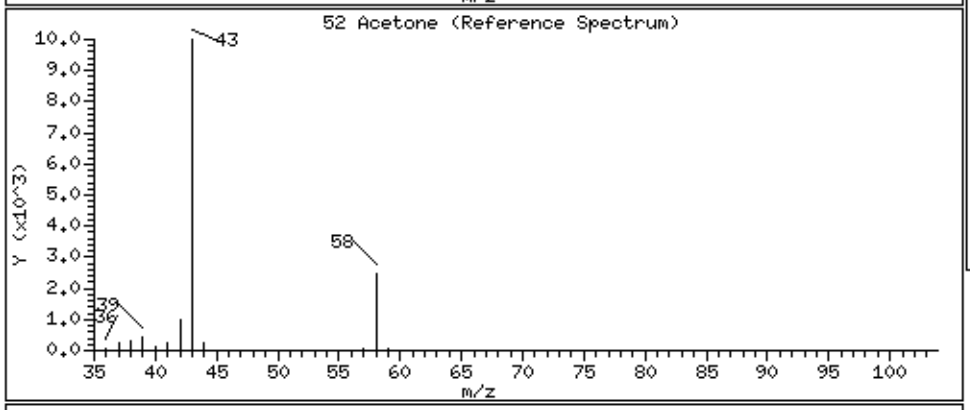
Concentration: 54.179 PPBV

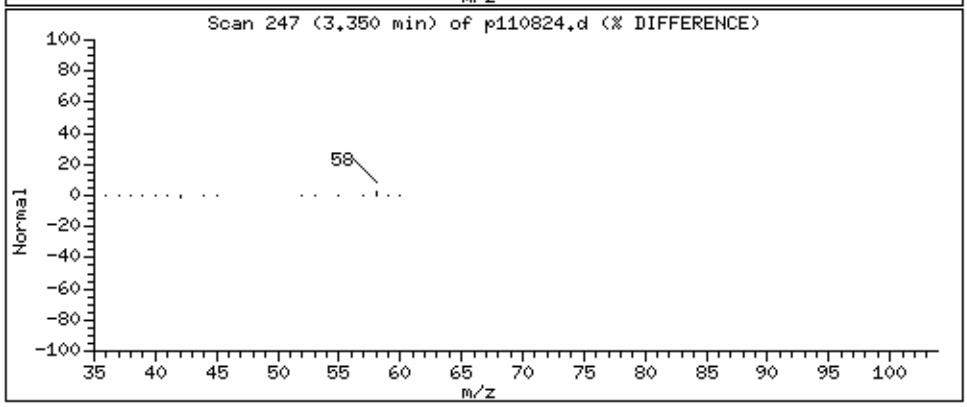












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

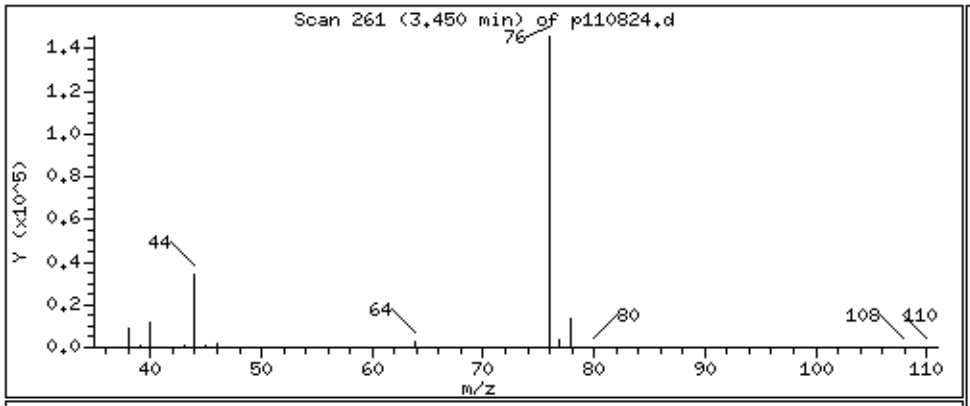
Operator: gd

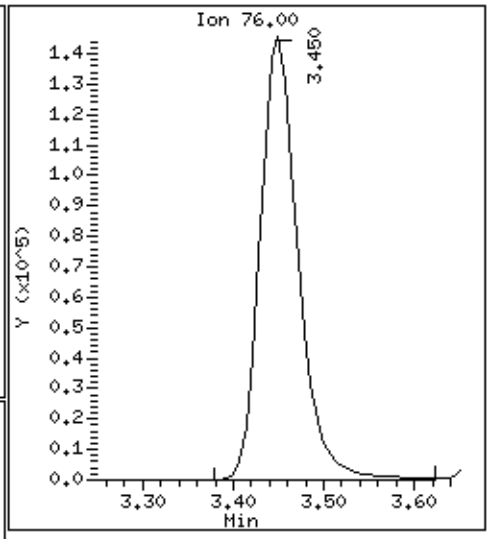
Column phase: RTX-624

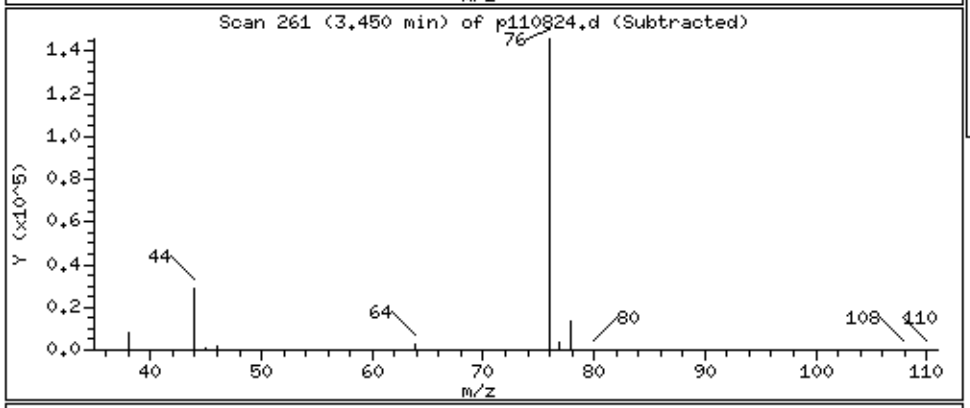
Column diameter: 0.25

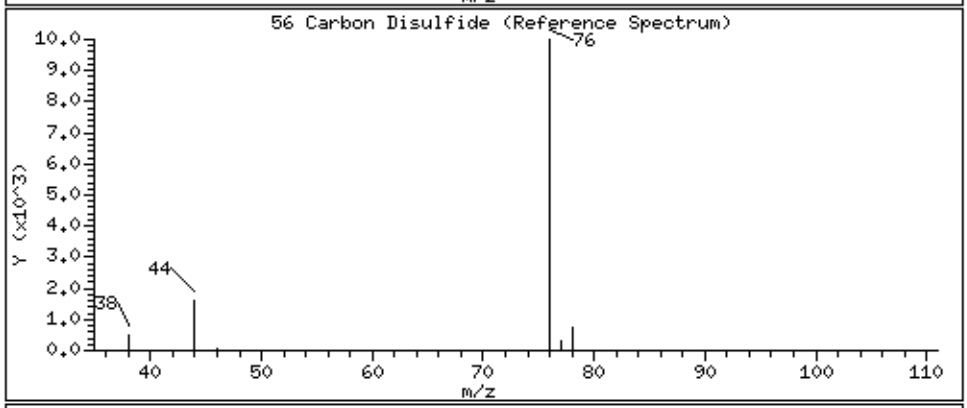
56 Carbon Disulfide

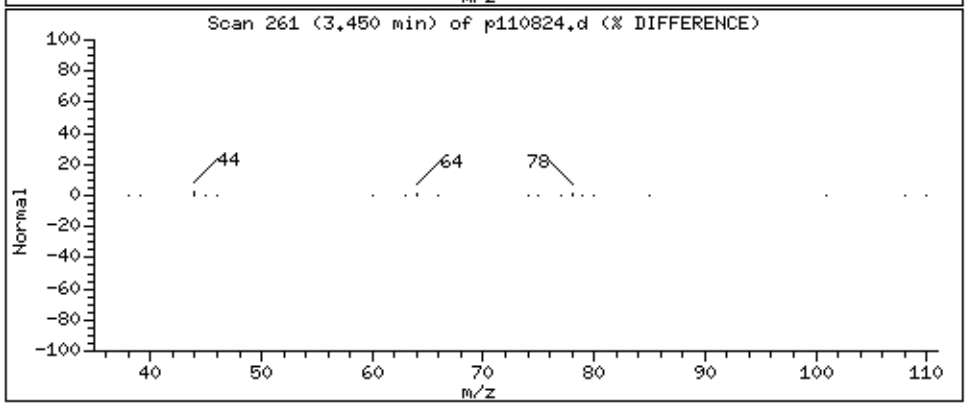
Concentration: 51.678 PPBV











Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

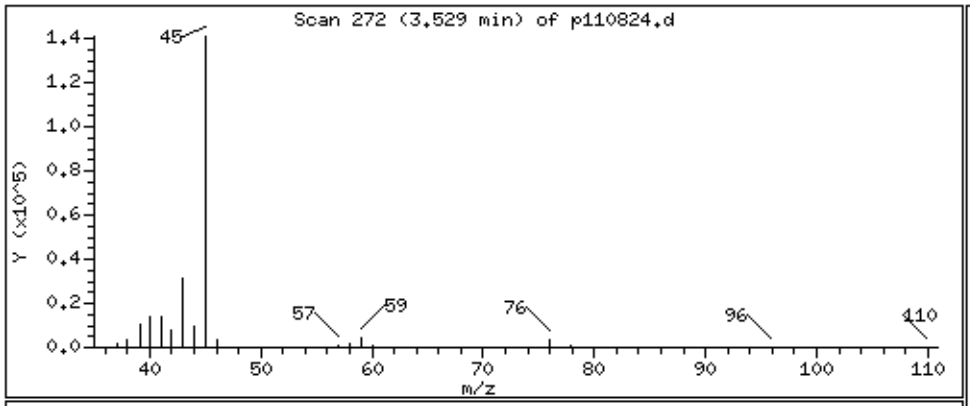
Operator: gd

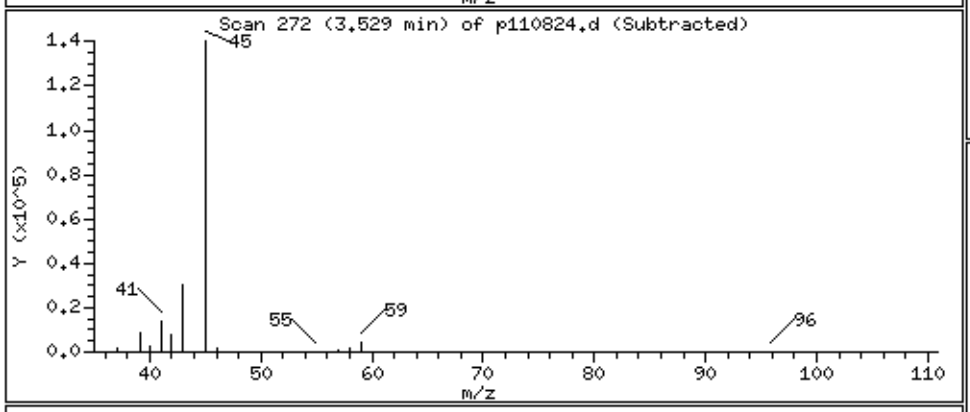
Column phase: RTX-624

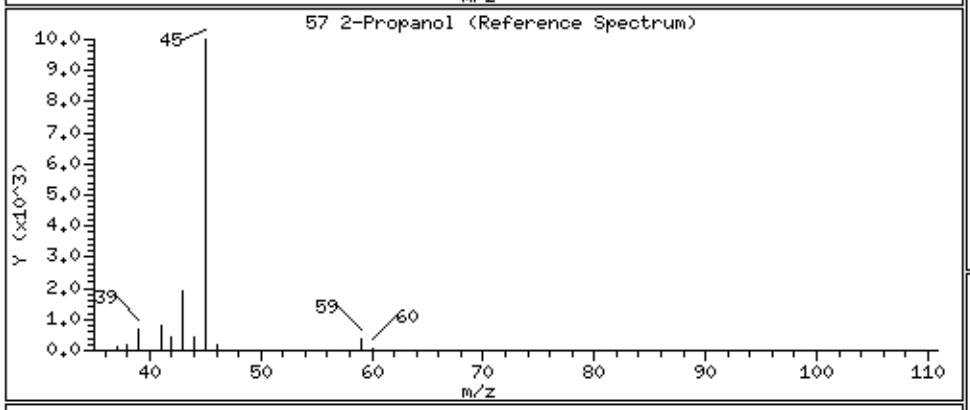
Column diameter: 0.25

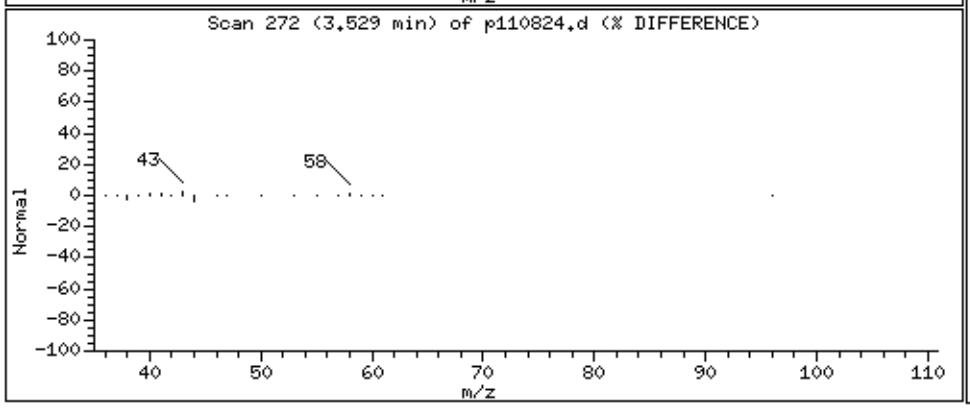
57 2-Propanol

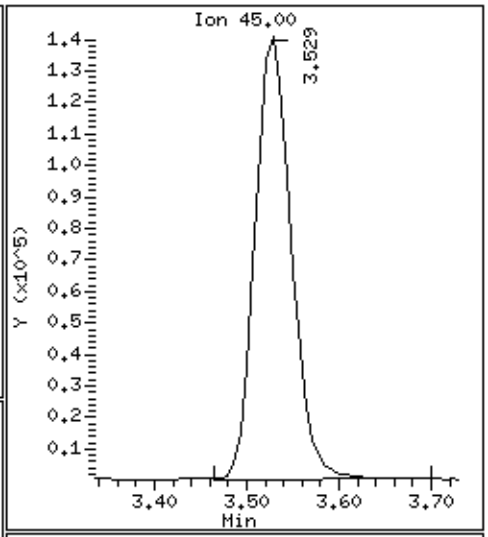
Concentration: 55.269 PPBV

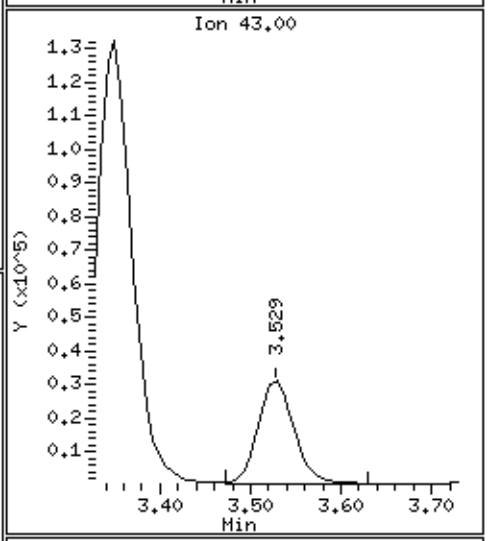


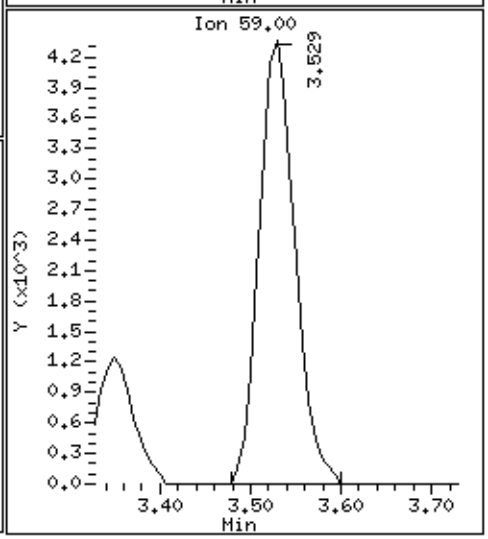












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

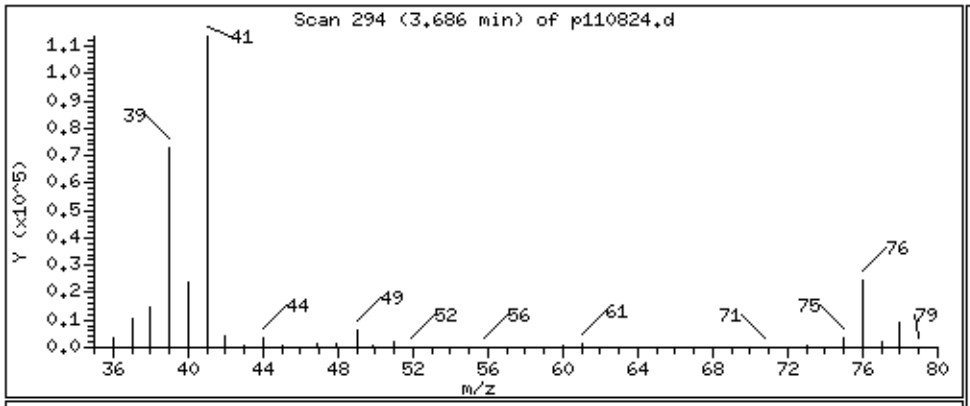
Operator: gd

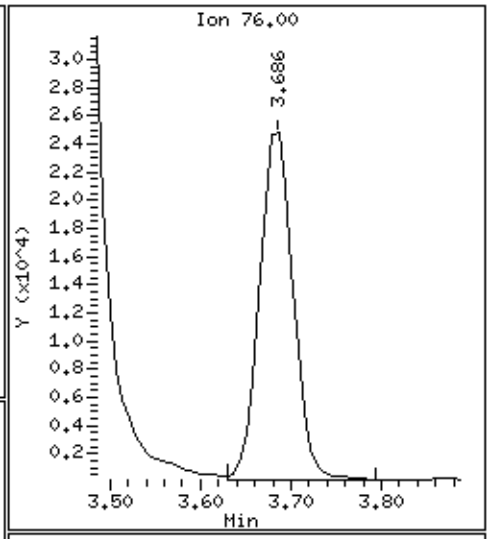
Column phase: RTX-624

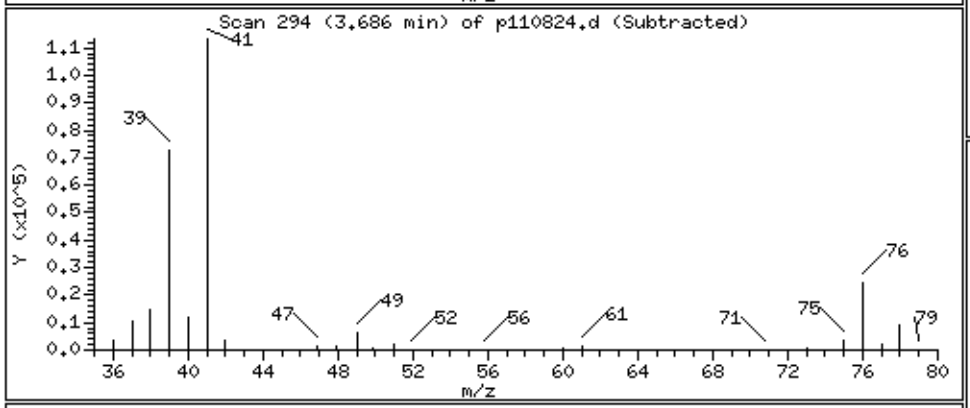
Column diameter: 0.25

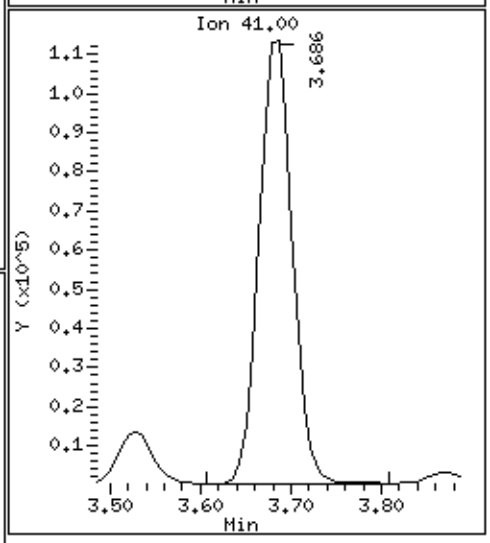
58 3-Chloropropene

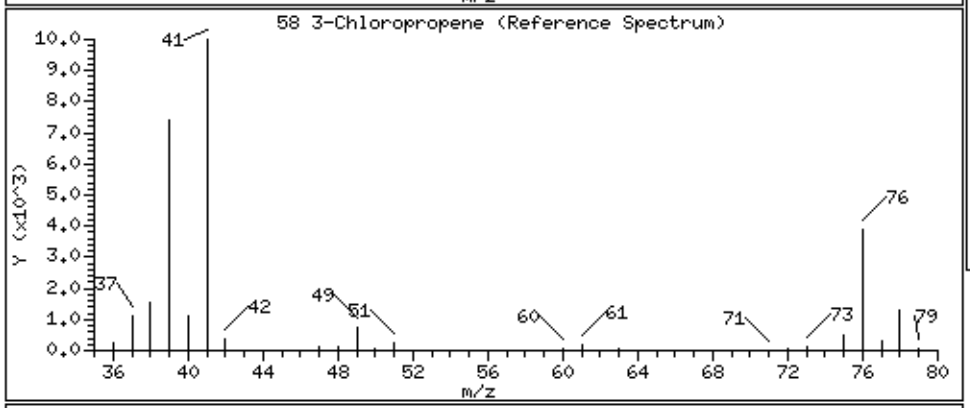
Concentration: 55.601 PPBV

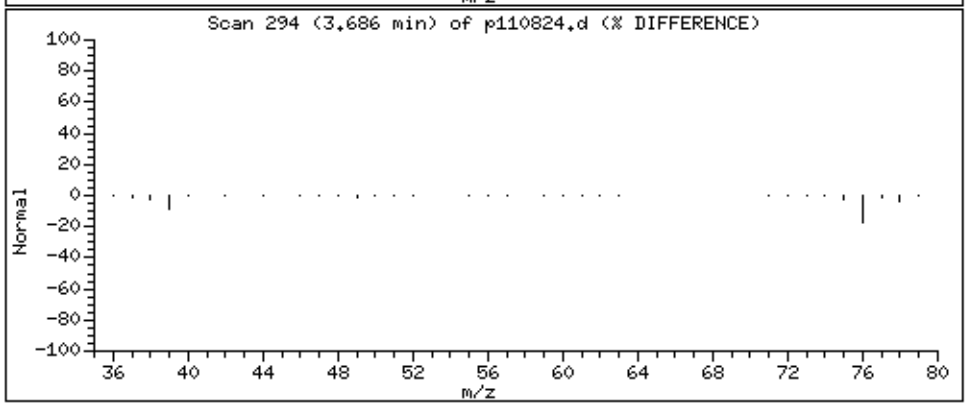












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

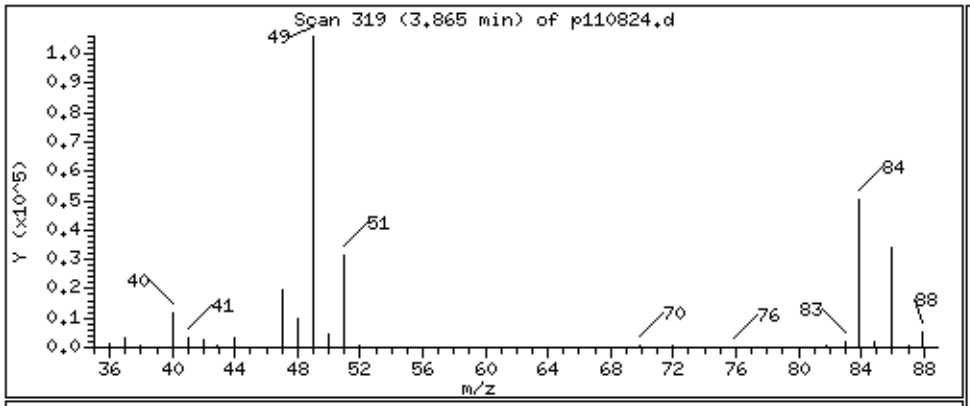
Operator: gd

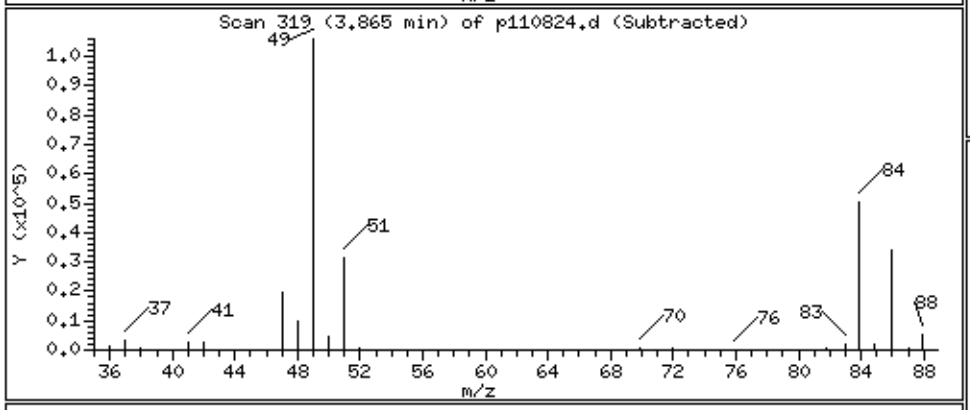
Column phase: RTX-624

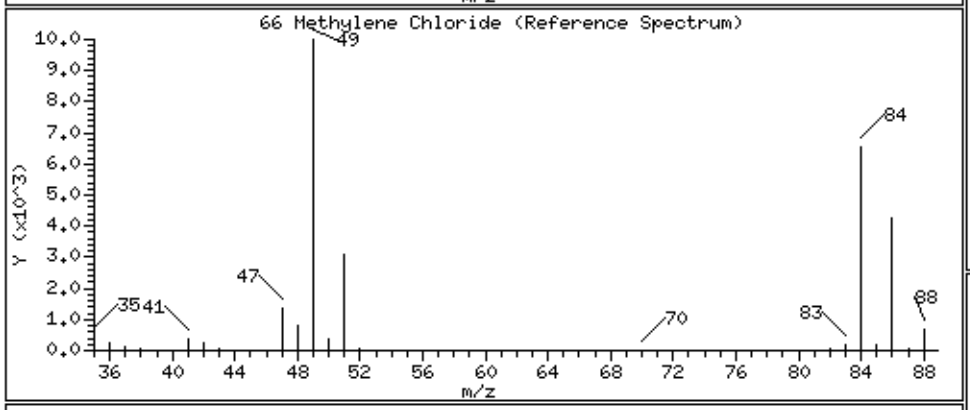
Column diameter: 0.25

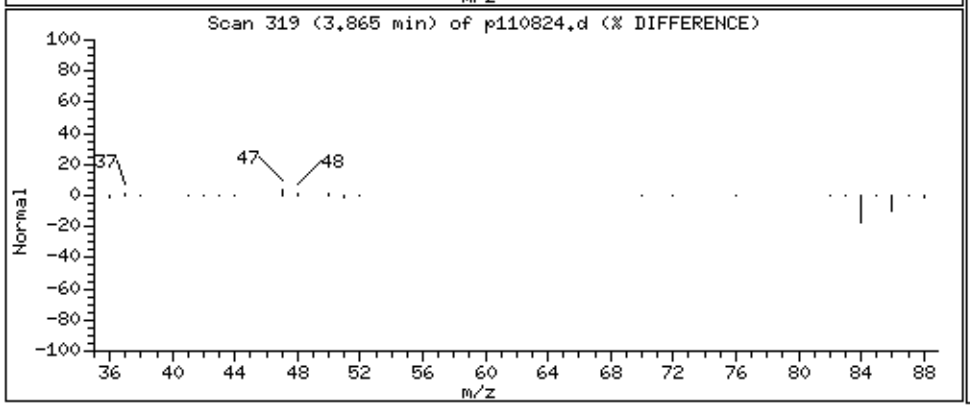
66 Methylene Chloride

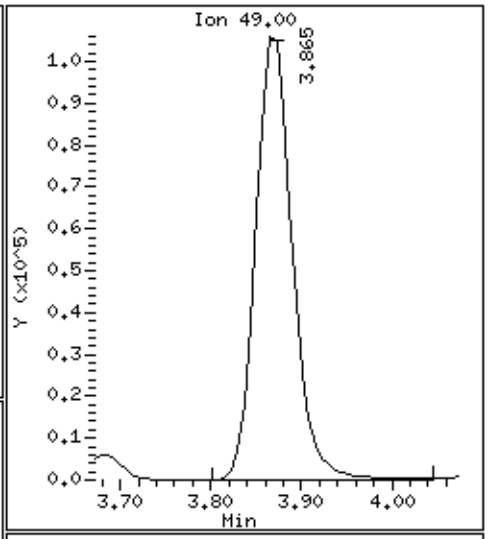
Concentration: 51.254 PPBV

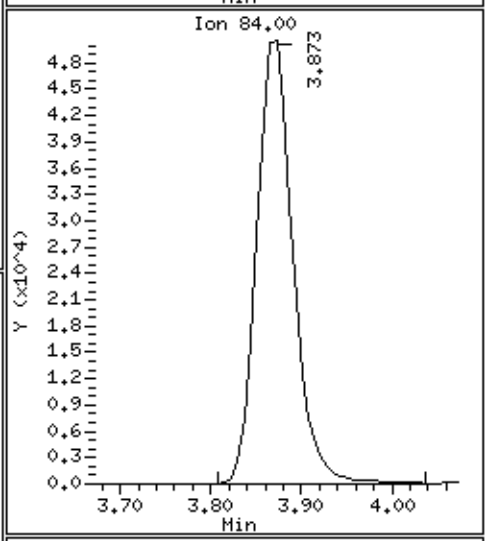


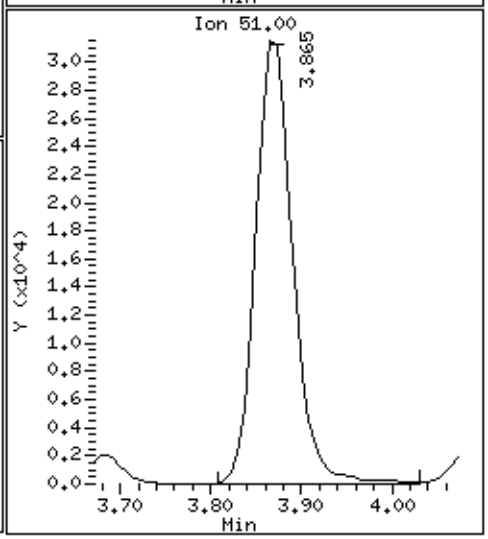












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

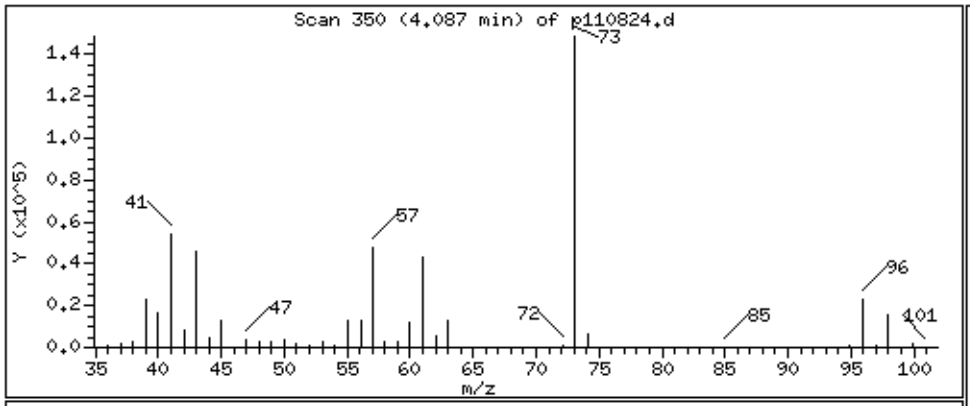
Operator: gd

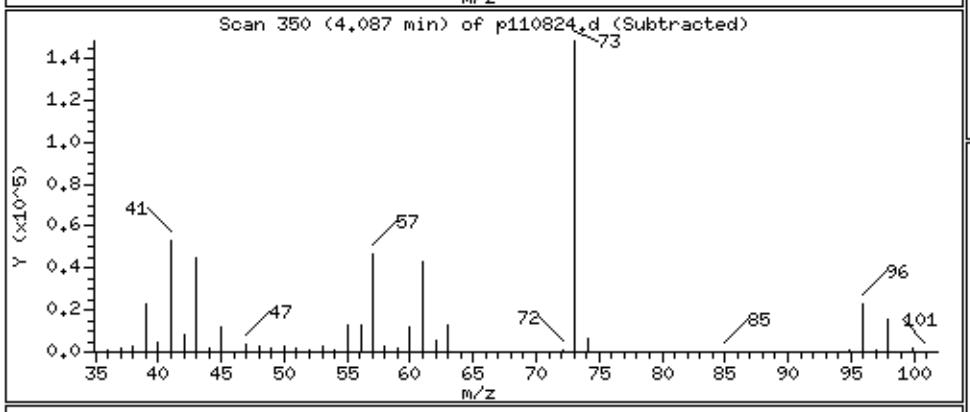
Column phase: RTX-624

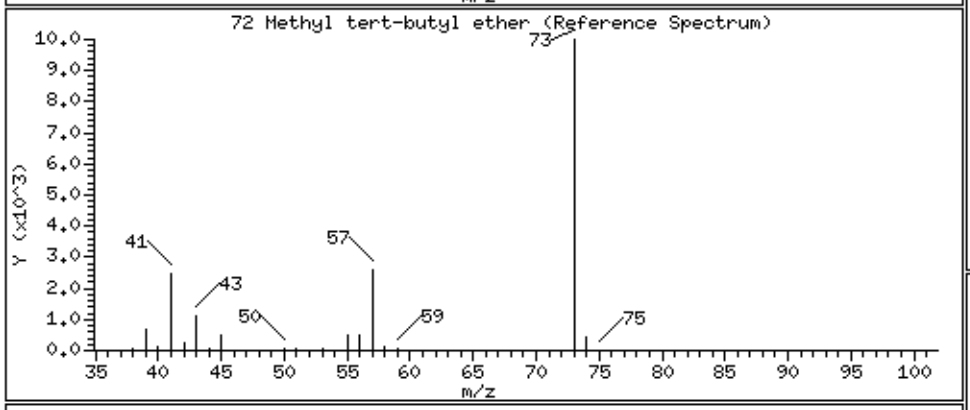
Column diameter: 0.25

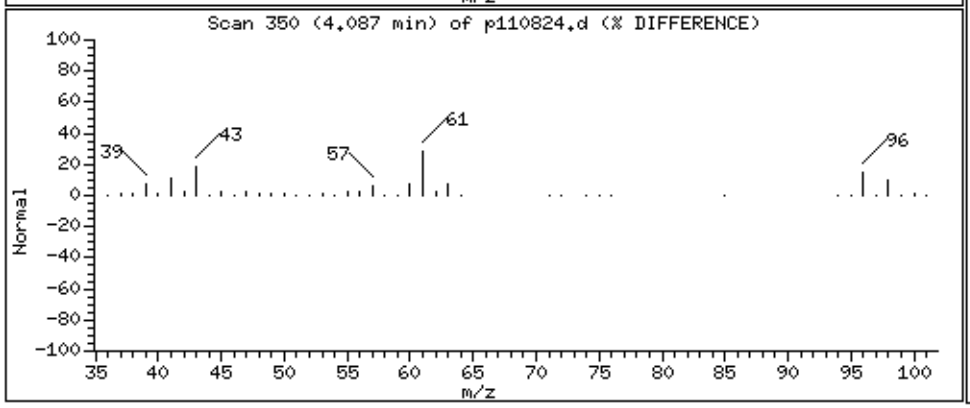
72 Methyl tert-butyl ether

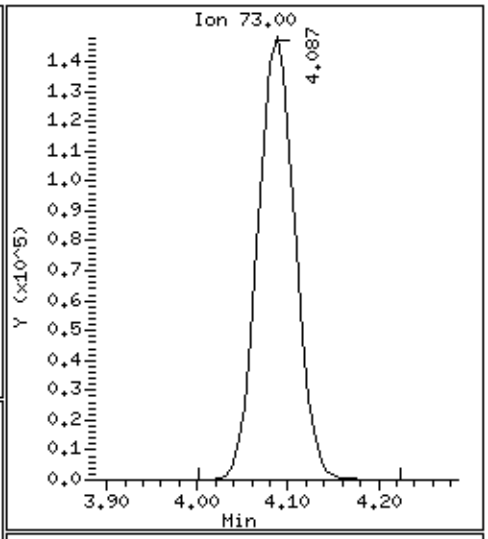
Concentration: 53.561 PPBV

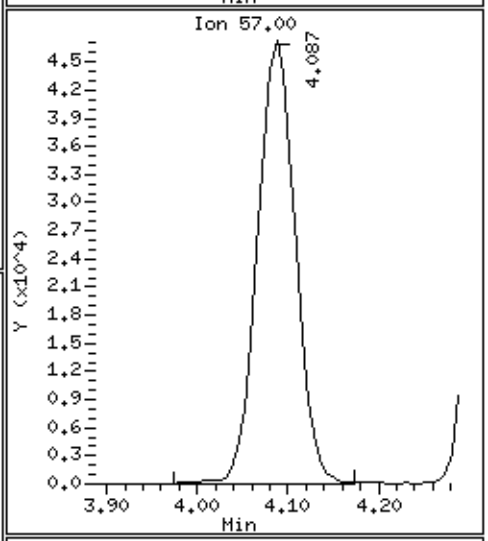


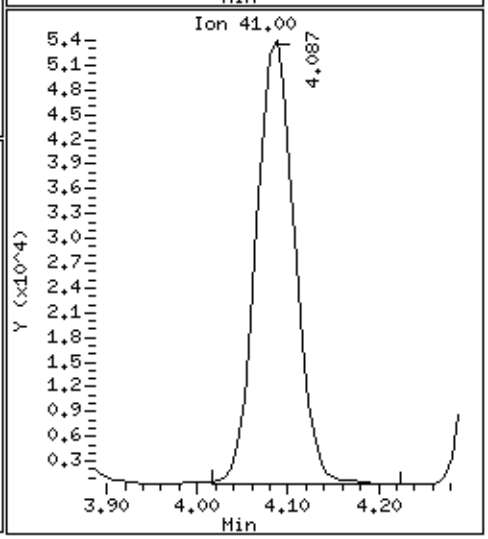












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

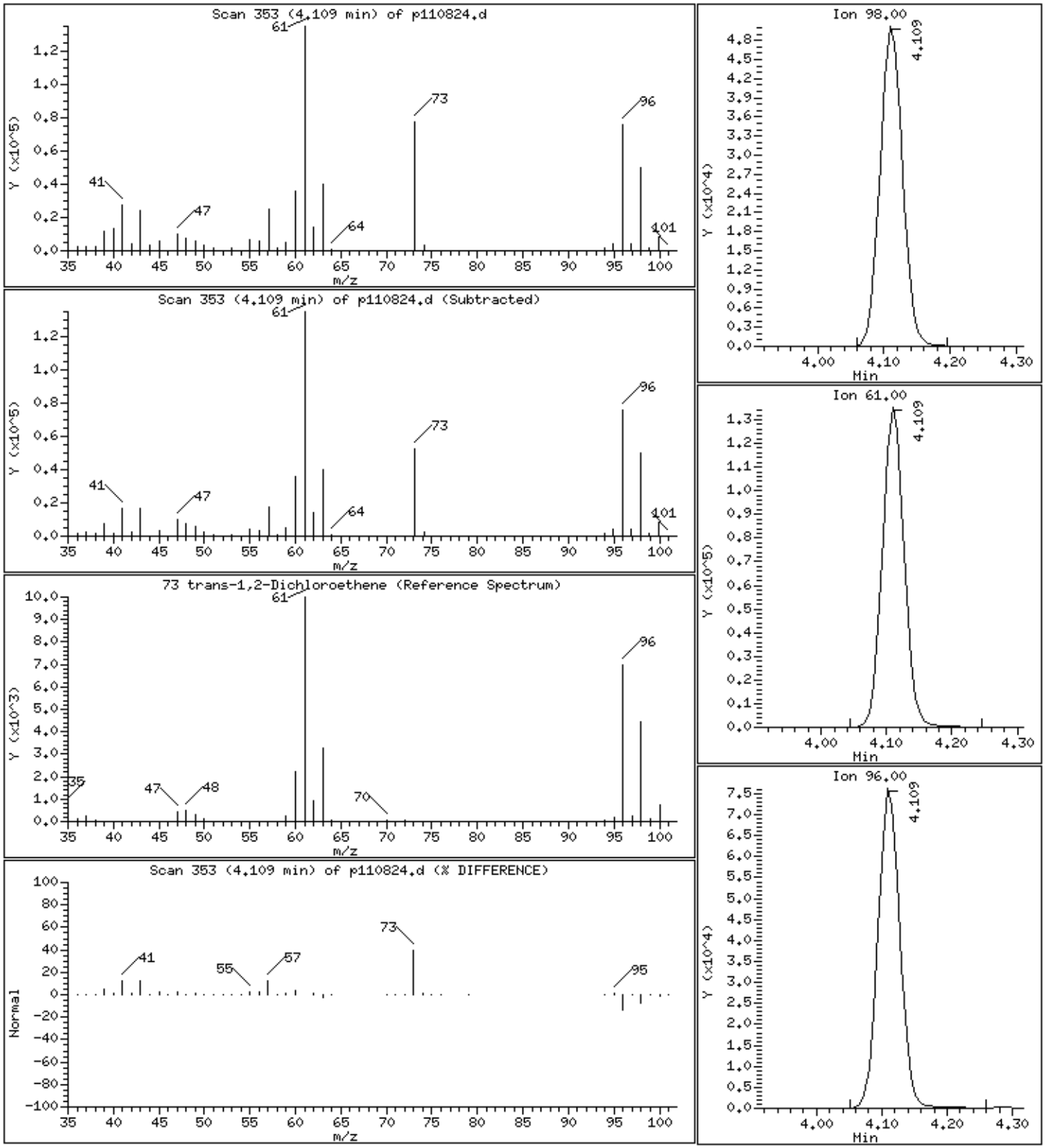
Operator: gd

Column phase: RTX-624

Column diameter: 0.25

73 trans-1,2-Dichloroethene

Concentration: 61.955 PPBV



Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

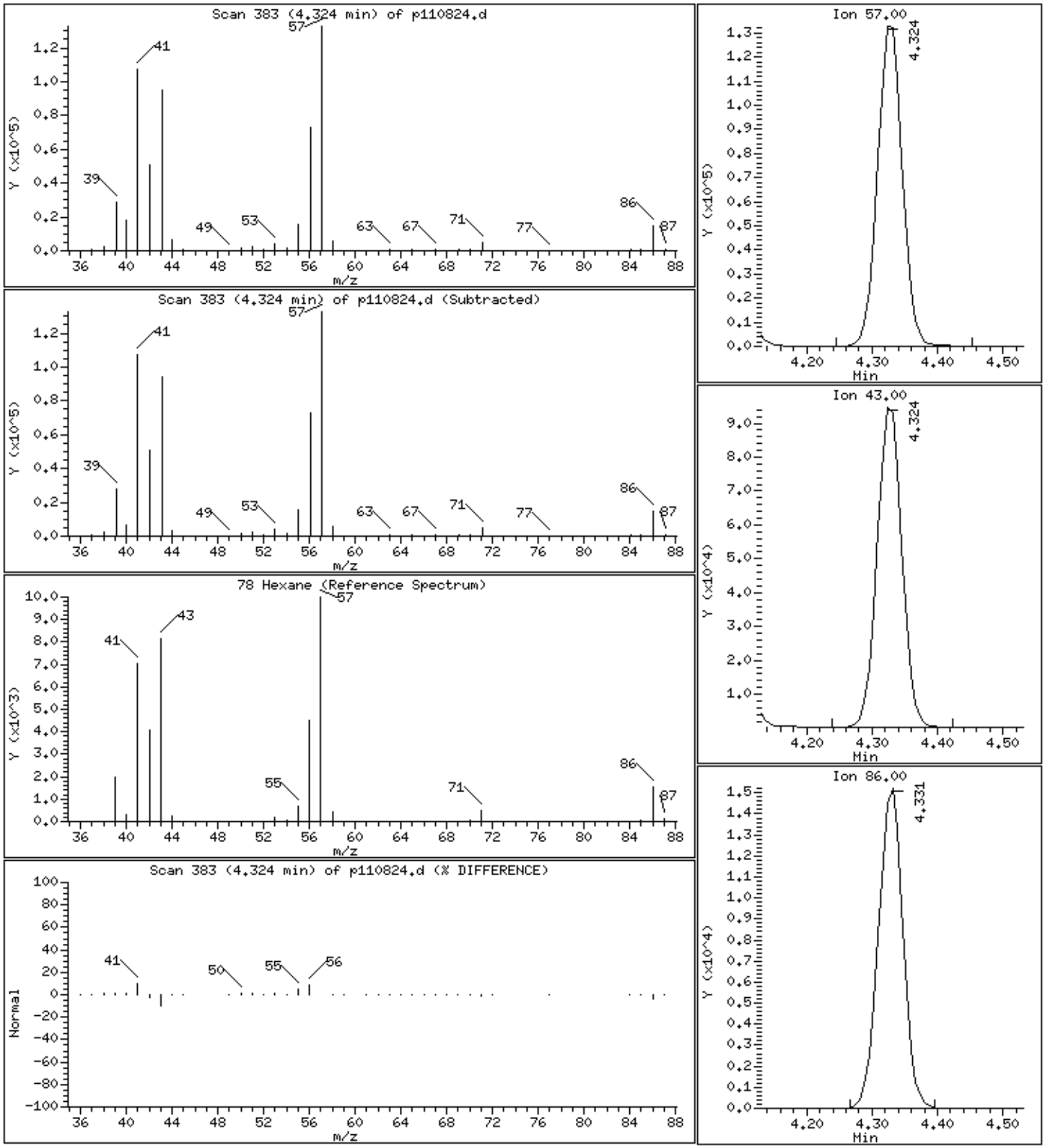
Operator: gd

Column phase: RTX-624

Column diameter: 0.25

78 Hexane

Concentration: 59.309 PPBV



Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

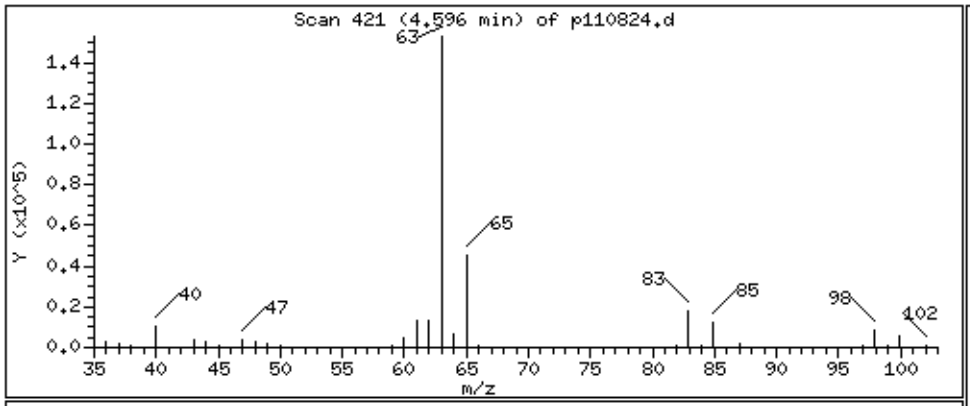
Operator: gd

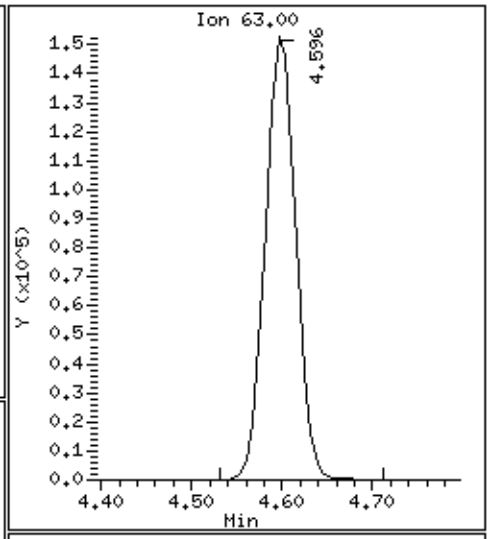
Column phase: RTX-624

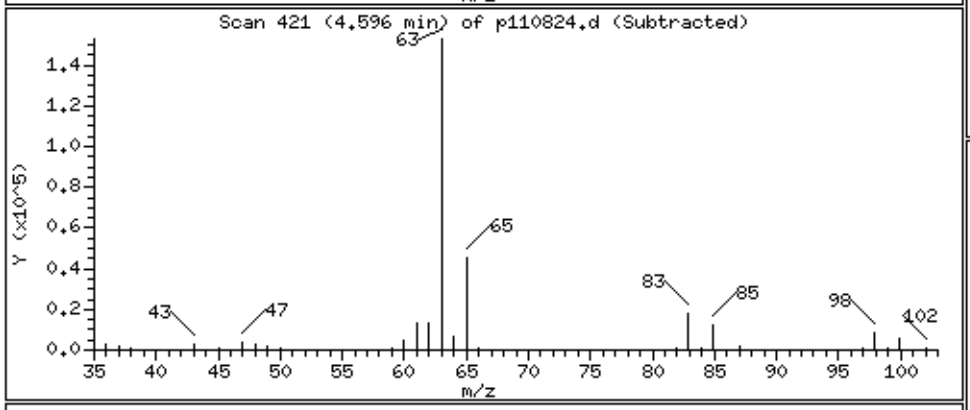
Column diameter: 0.25

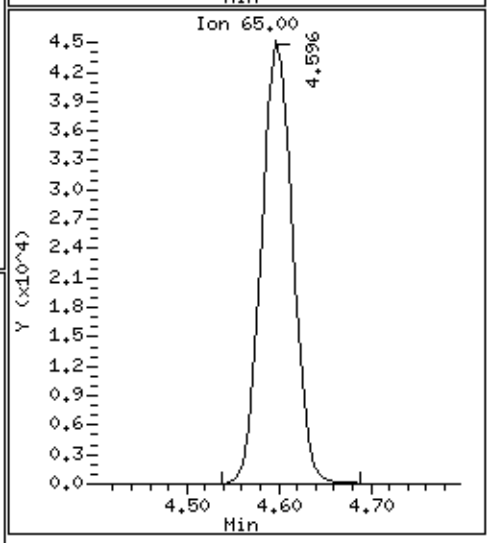
82 1,1-Dichloroethane

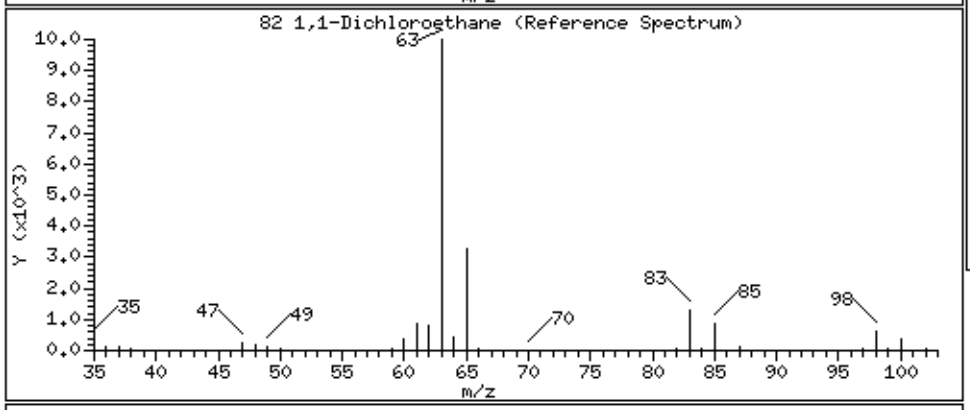
Concentration: 51.402 PPBV

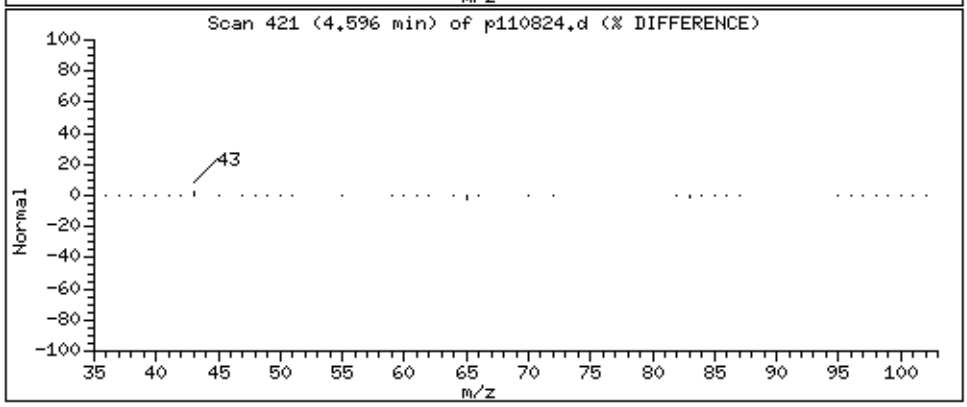












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

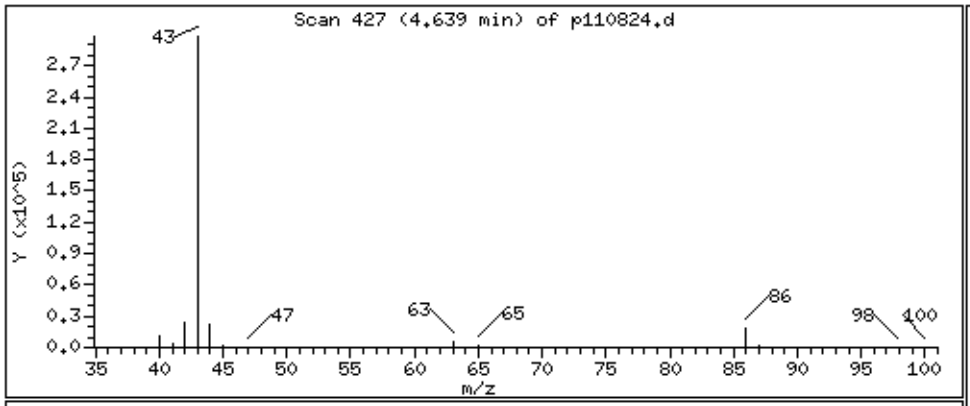
Operator: gd

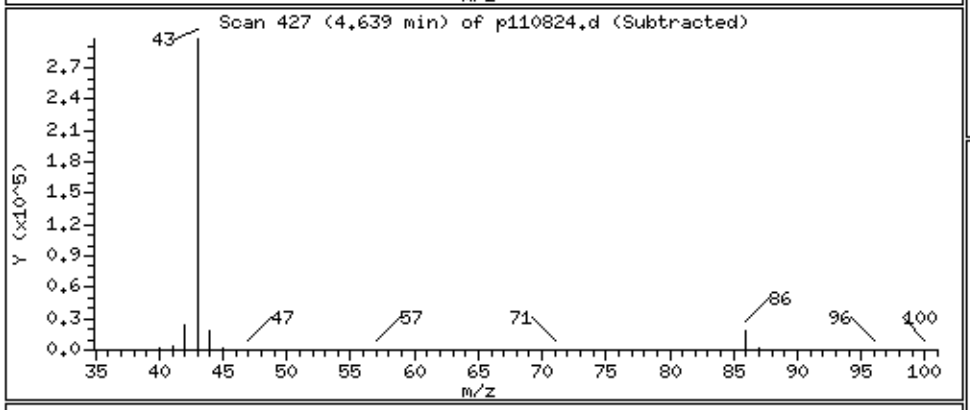
Column phase: RTX-624

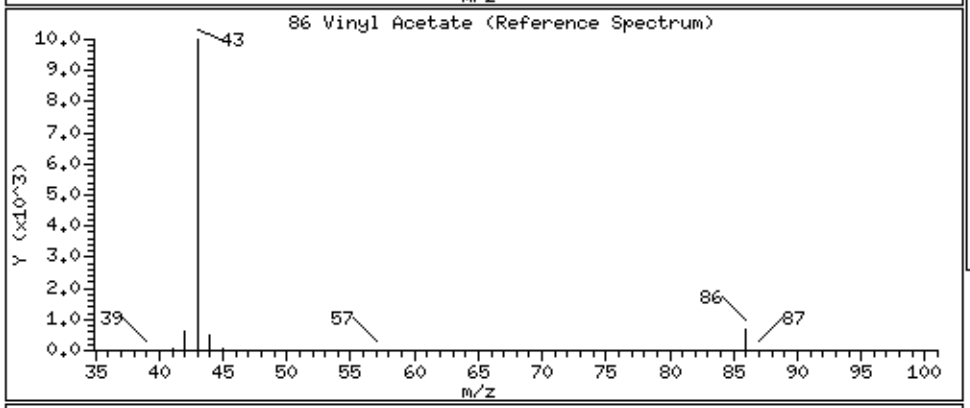
Column diameter: 0.25

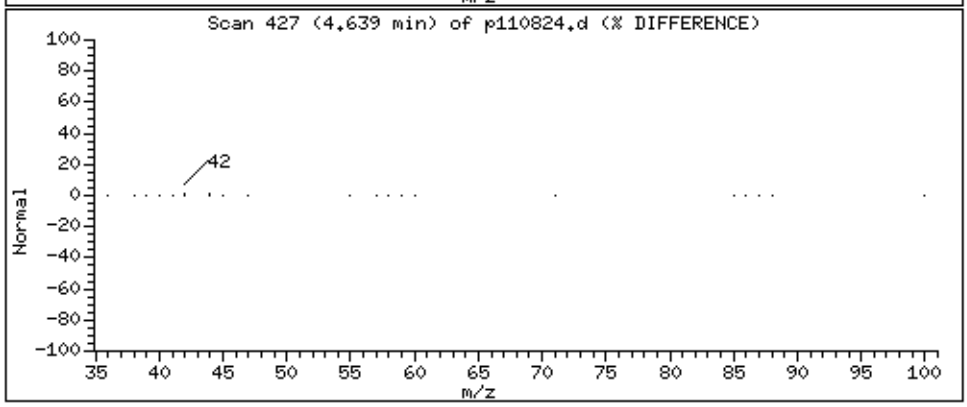
86 Vinyl Acetate

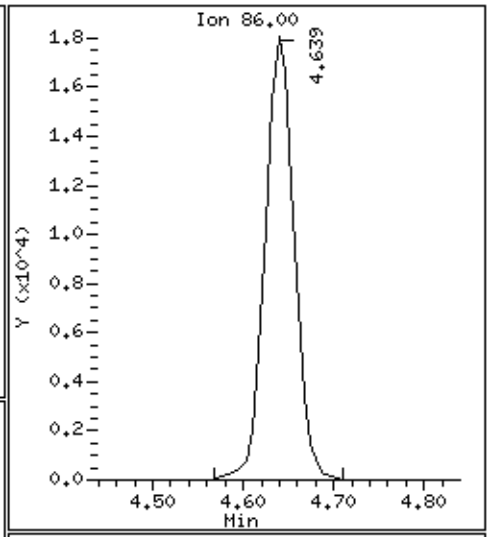
Concentration: 52.743 PPBV

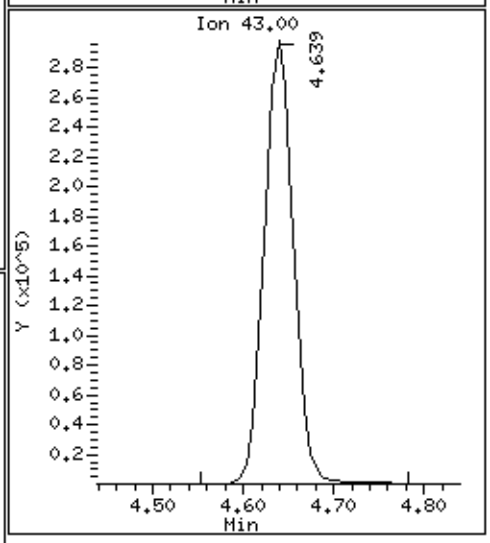












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

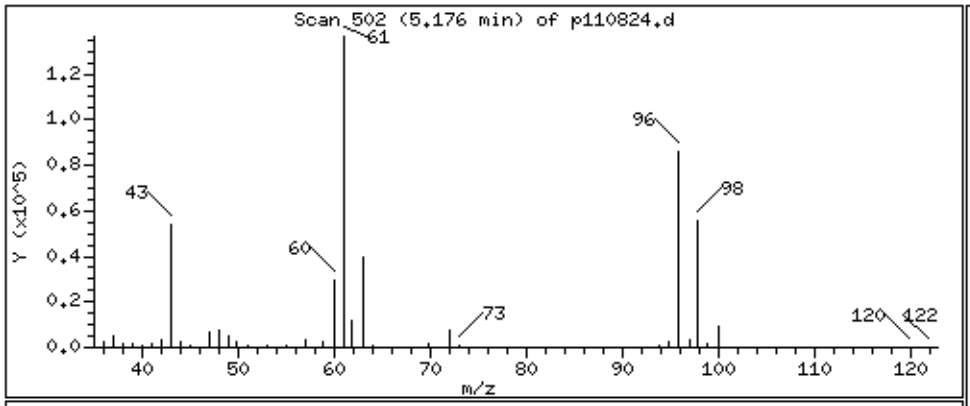
Operator: gd

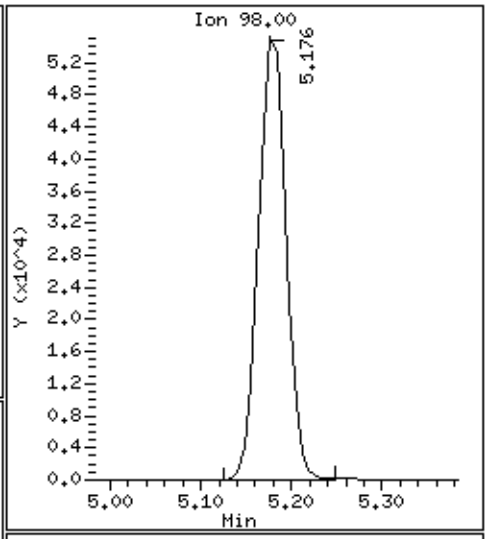
Column phase: RTX-624

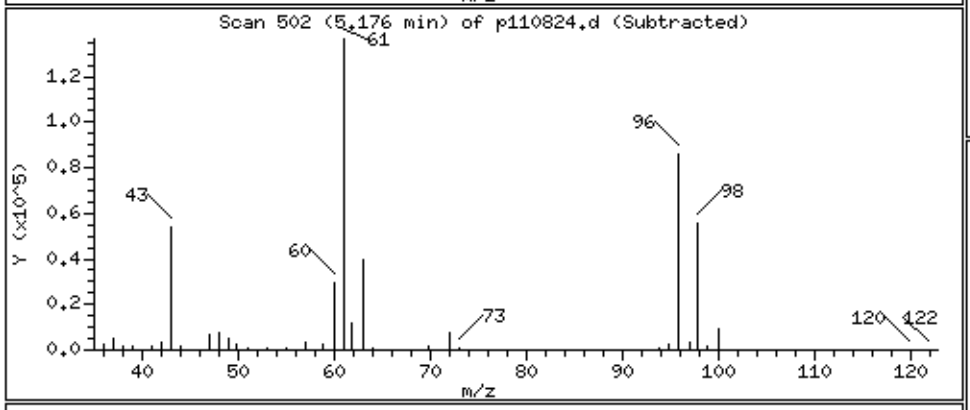
Column diameter: 0.25

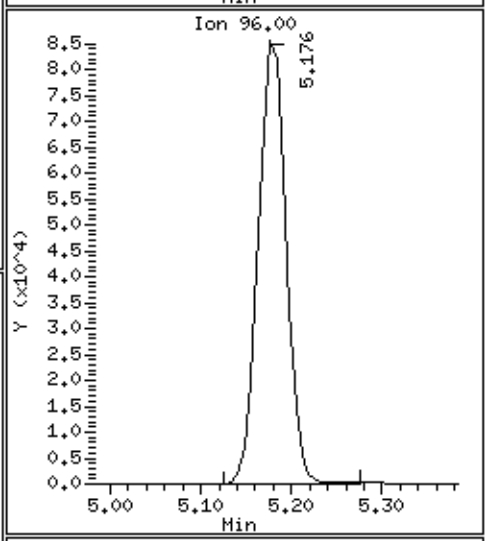
91 cis-1,2-Dichloroethene

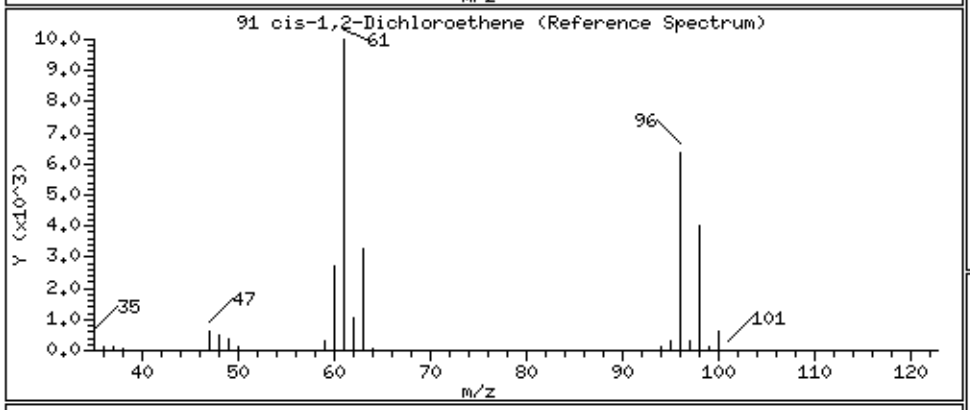
Concentration: 48.846 PPBV

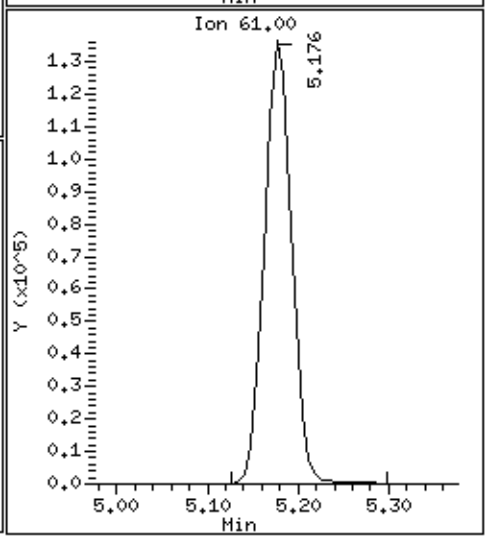


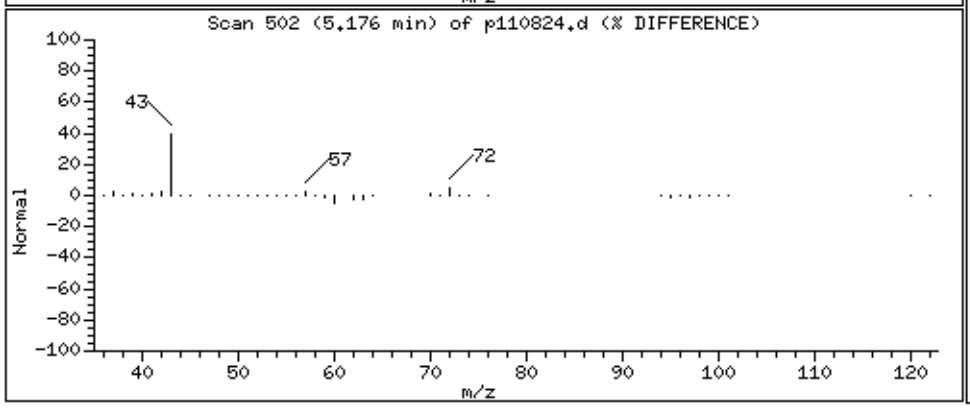












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

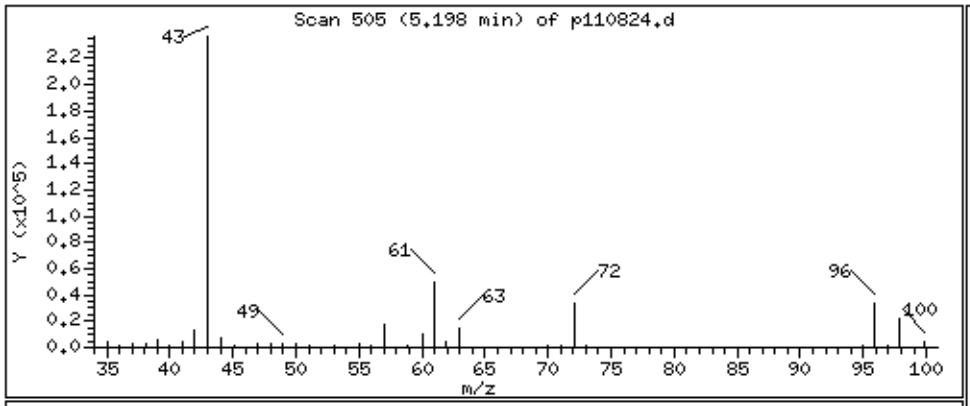
Operator: gd

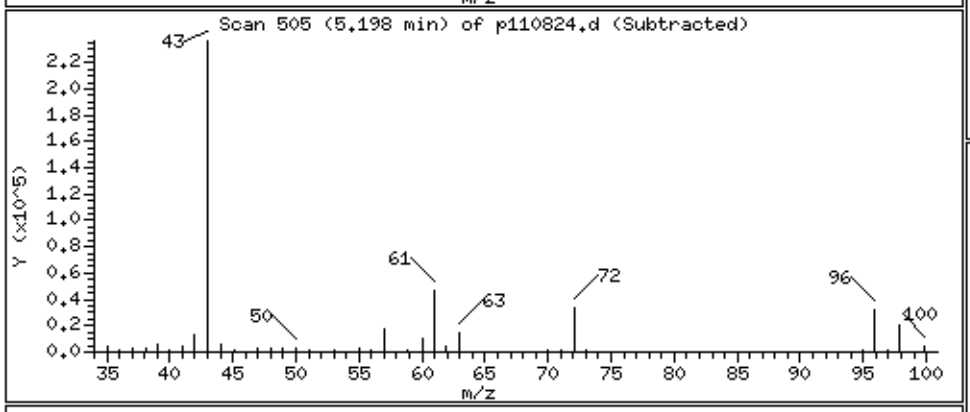
Column phase: RTX-624

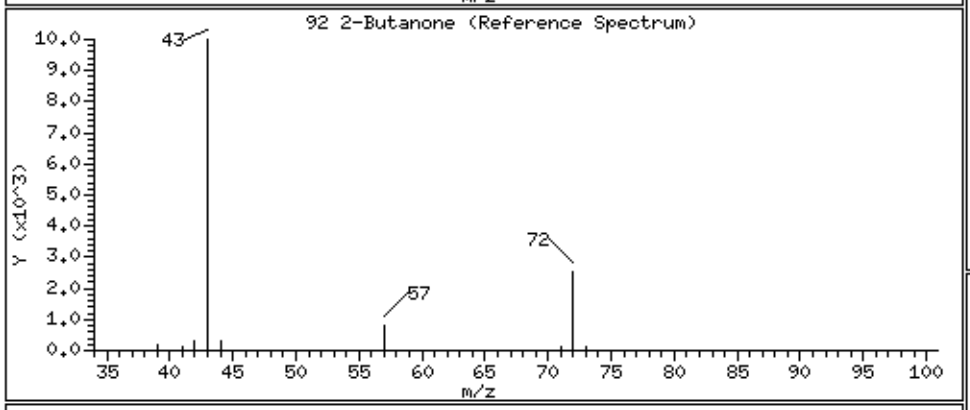
Column diameter: 0.25

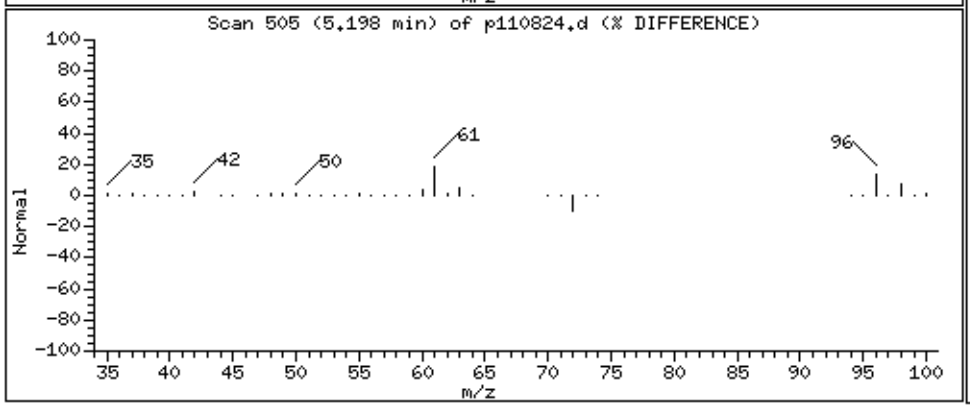
92 2-Butanone

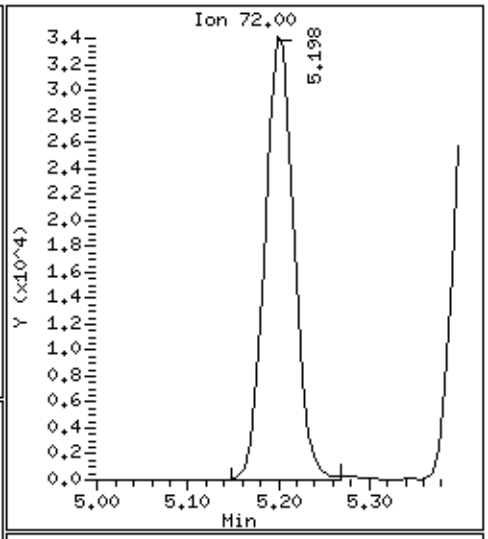
Concentration: 53.734 PPBV

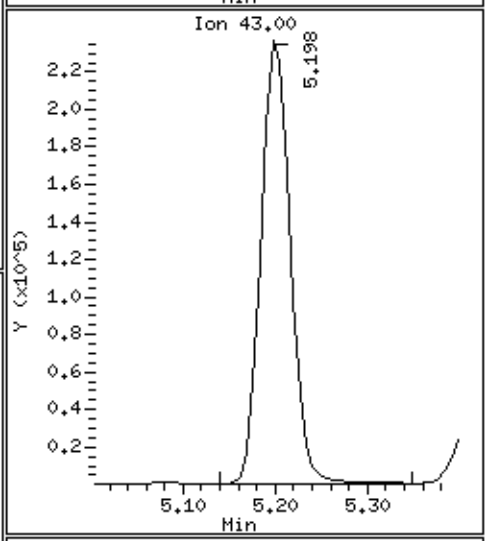


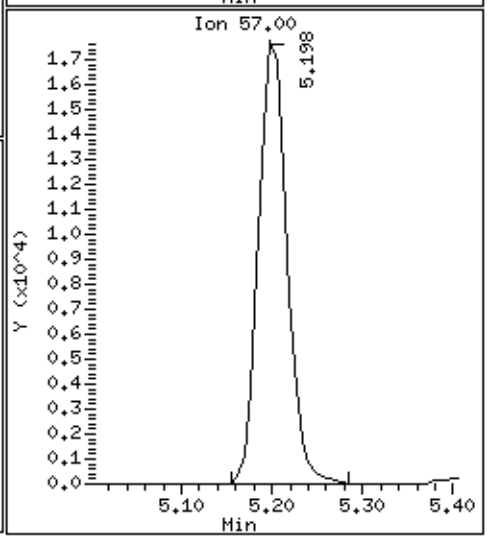












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

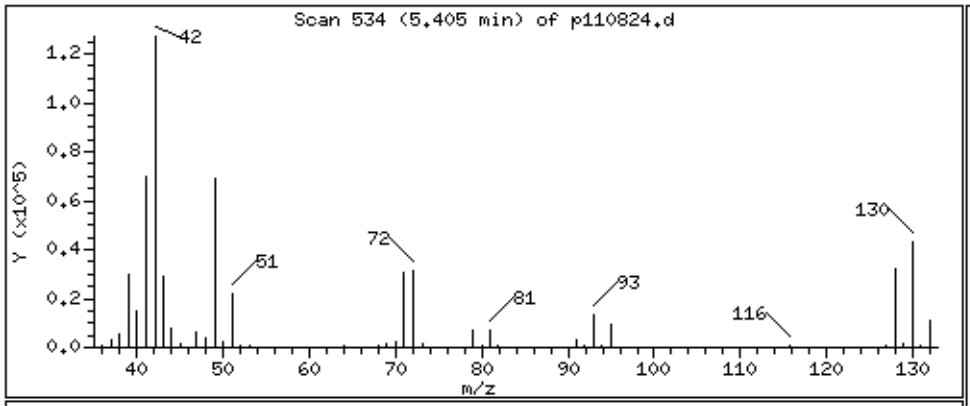
Operator: gd

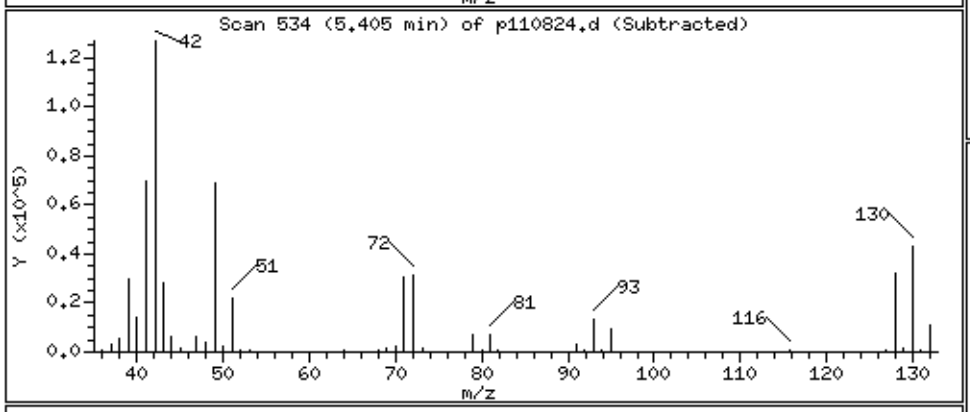
Column phase: RTX-624

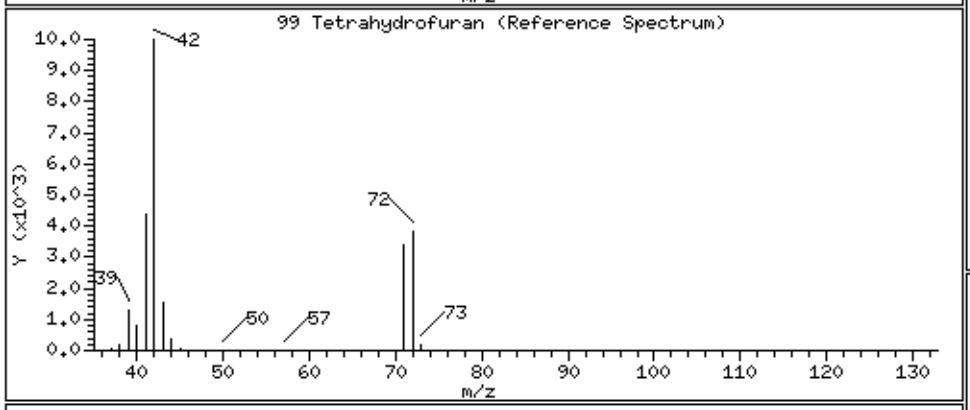
Column diameter: 0.25

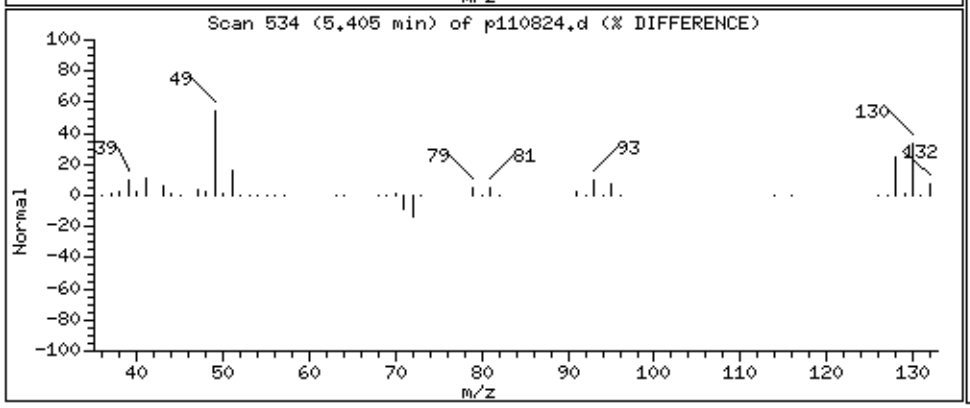
99 Tetrahydrofuran

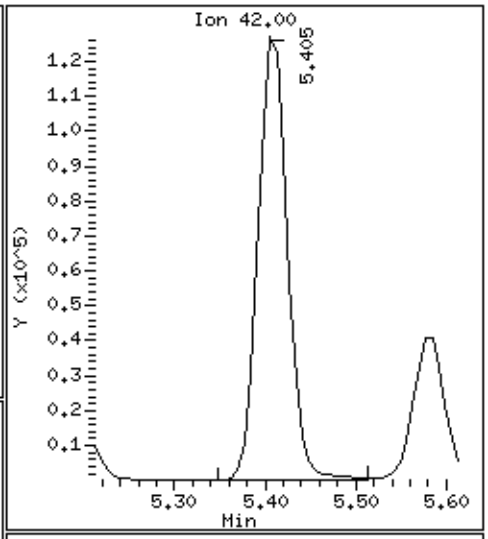
Concentration: 58.605 PPBV

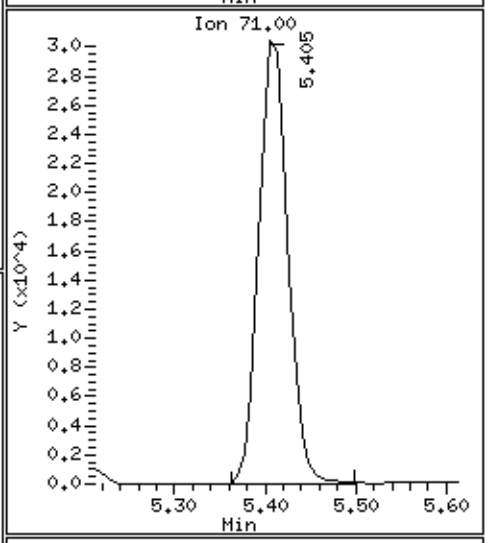


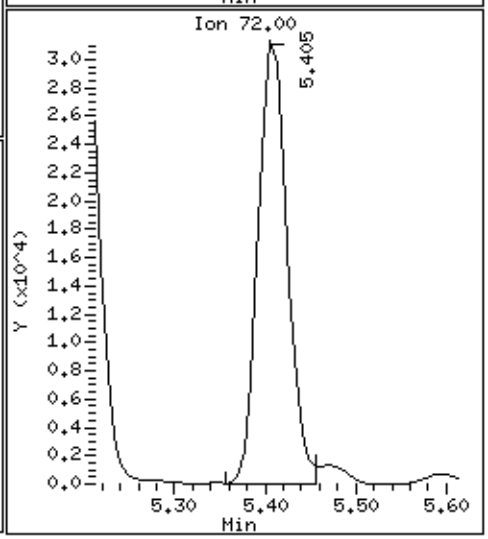












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

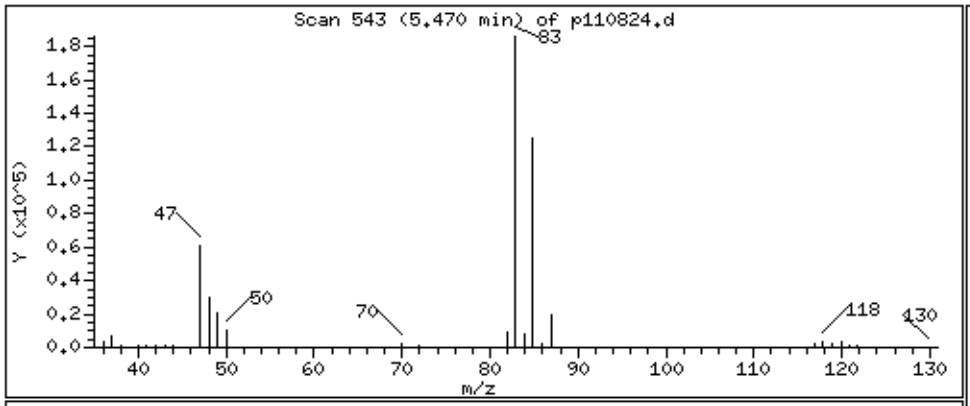
Operator: gd

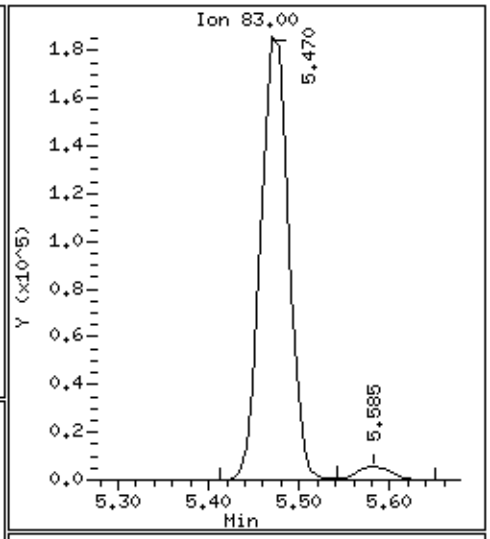
Column phase: RTX-624

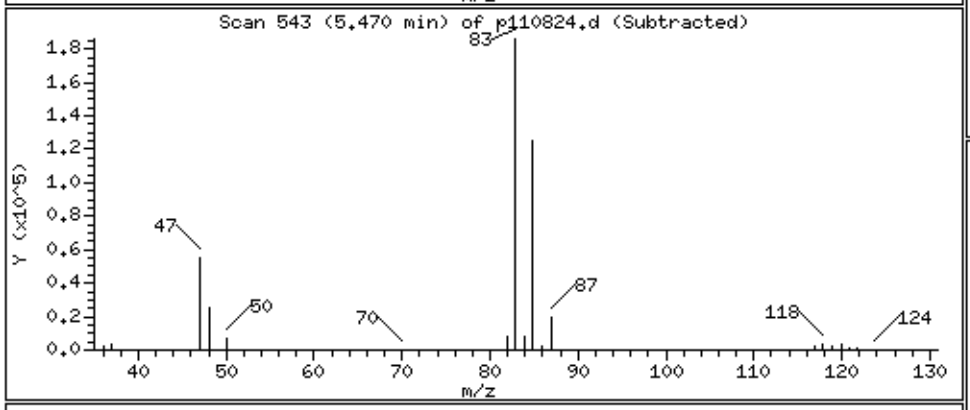
Column diameter: 0.25

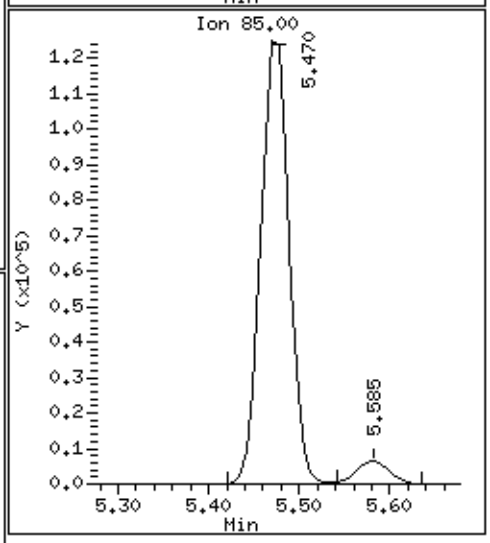
100 Chloroform

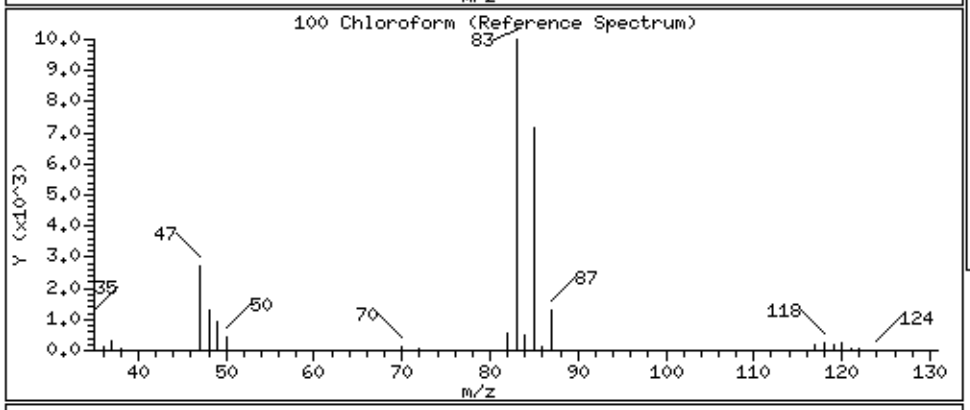
Concentration: 51.262 PPBV

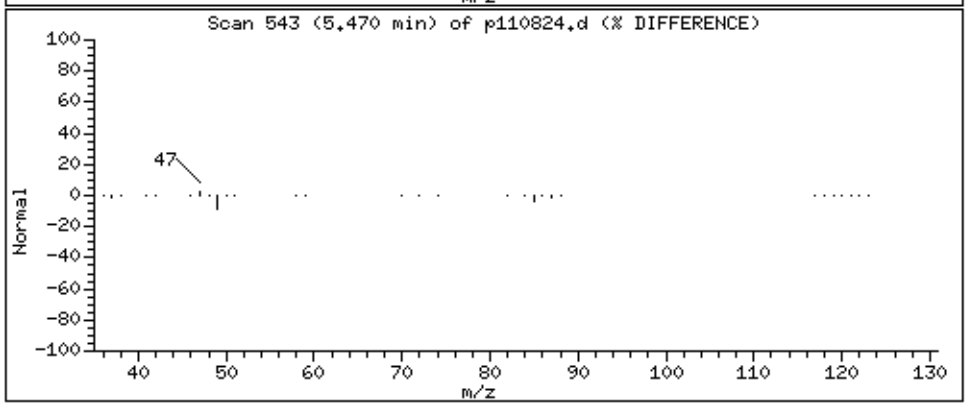












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

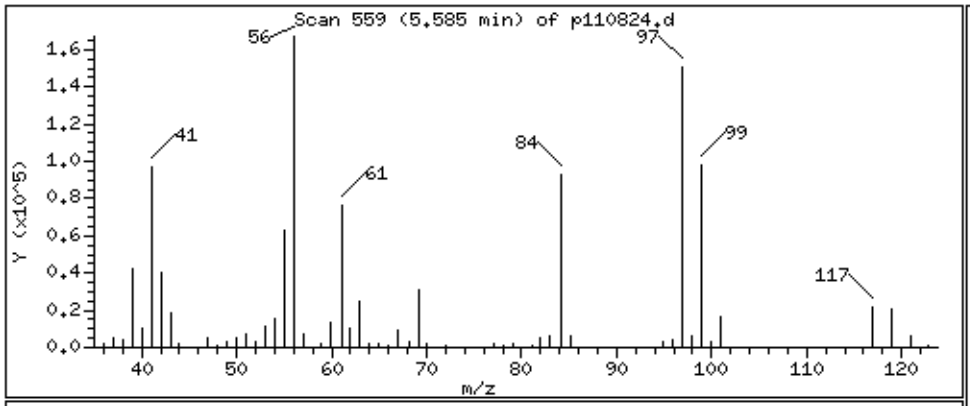
Operator: gd

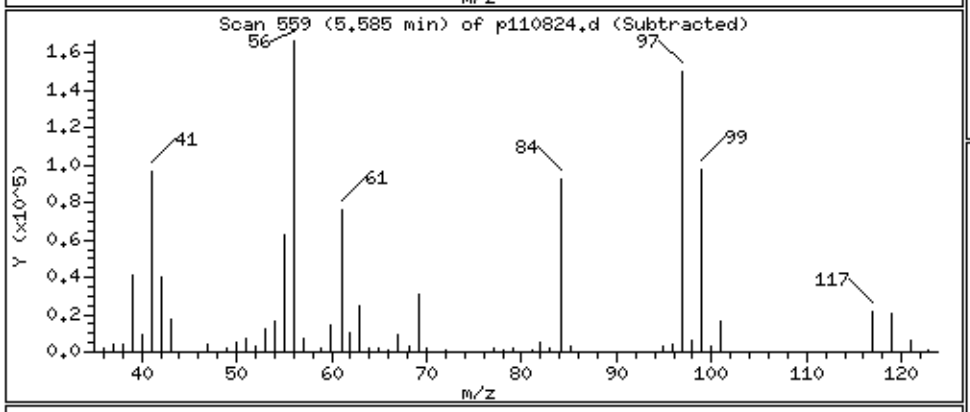
Column phase: RTX-624

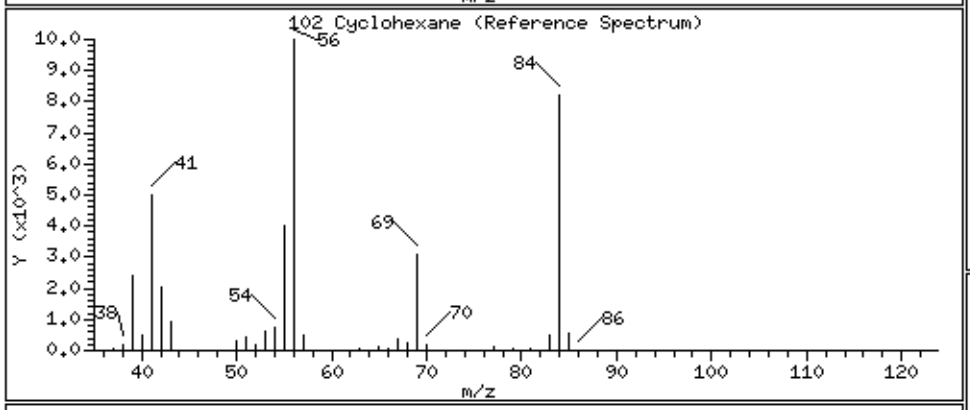
Column diameter: 0.25

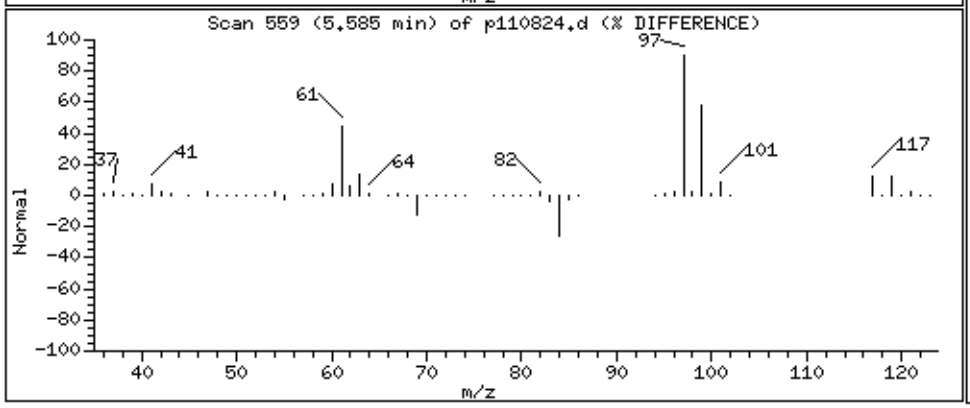
102 Cyclohexane

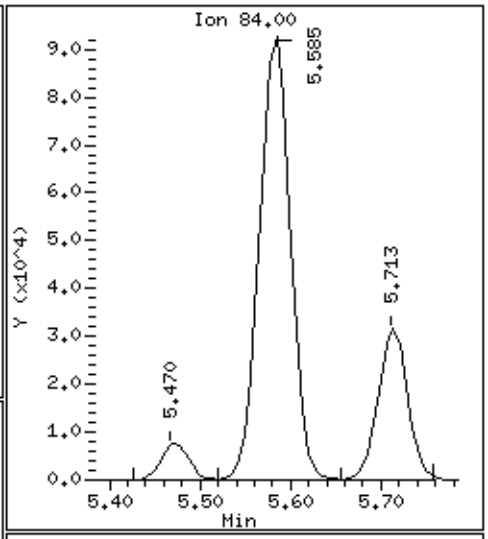
Concentration: 57.059 PPBV

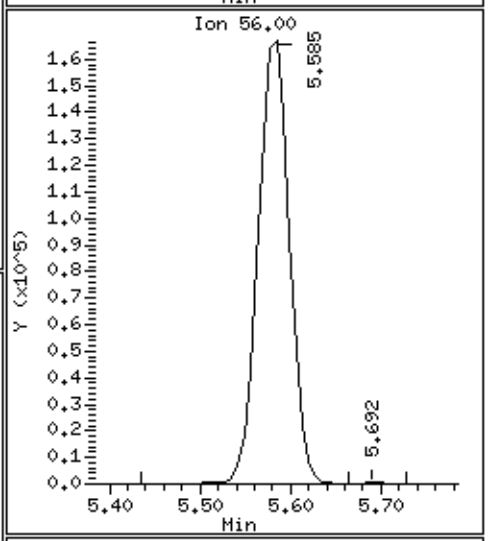


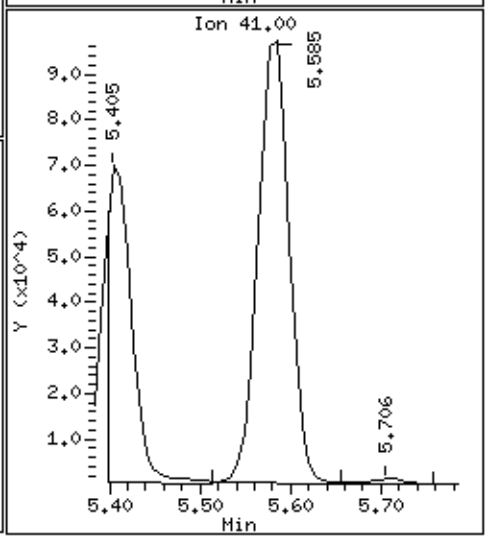












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

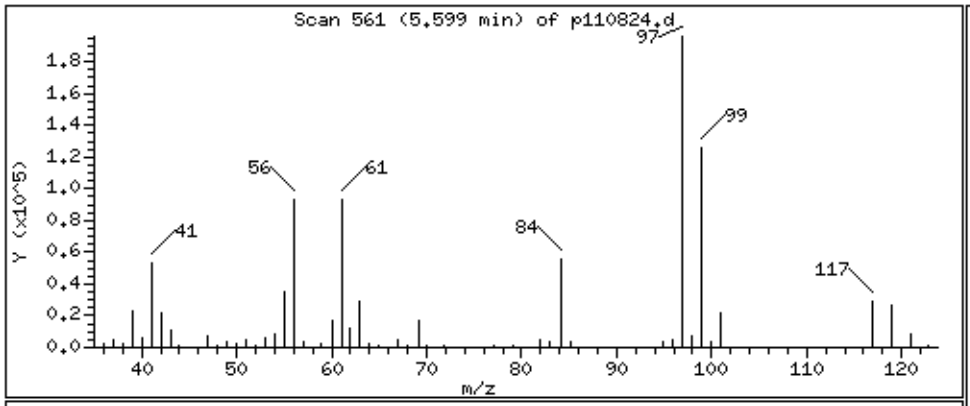
Operator: gd

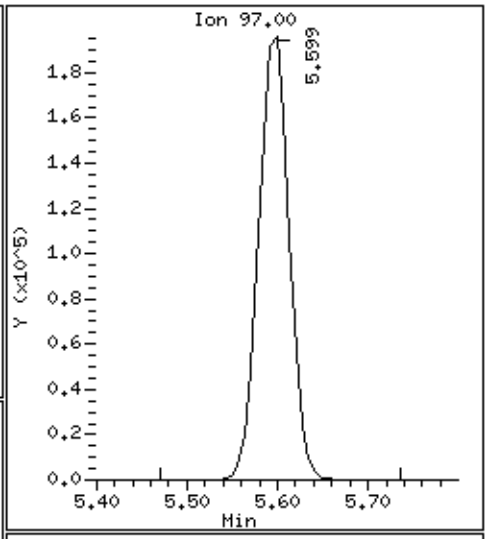
Column phase: RTX-624

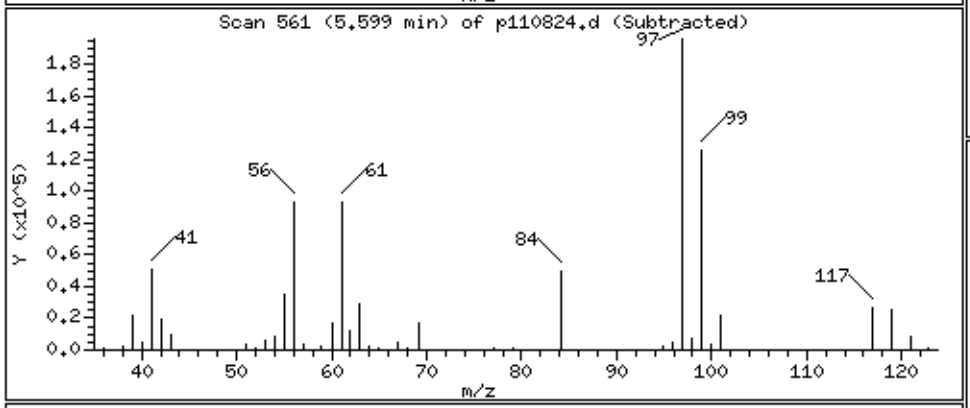
Column diameter: 0.25

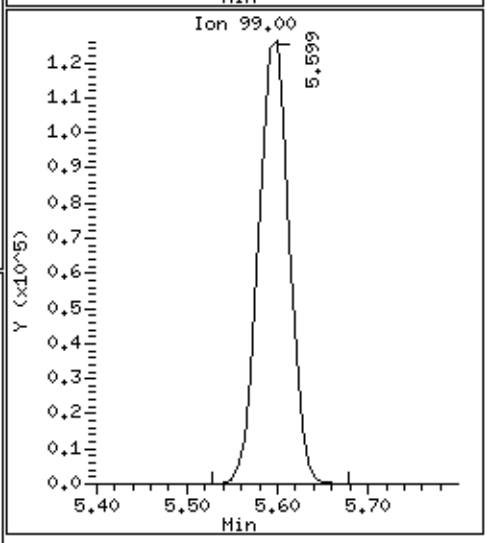
103 1,1,1-Trichloroethane

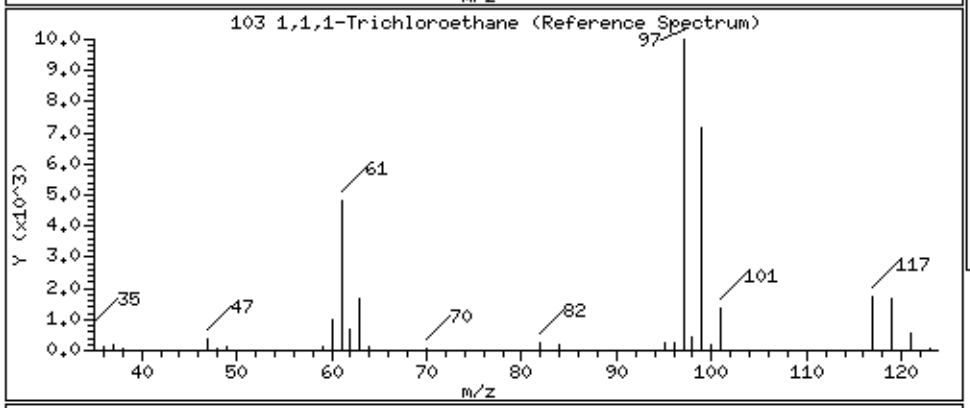
Concentration: 50.670 PPBV

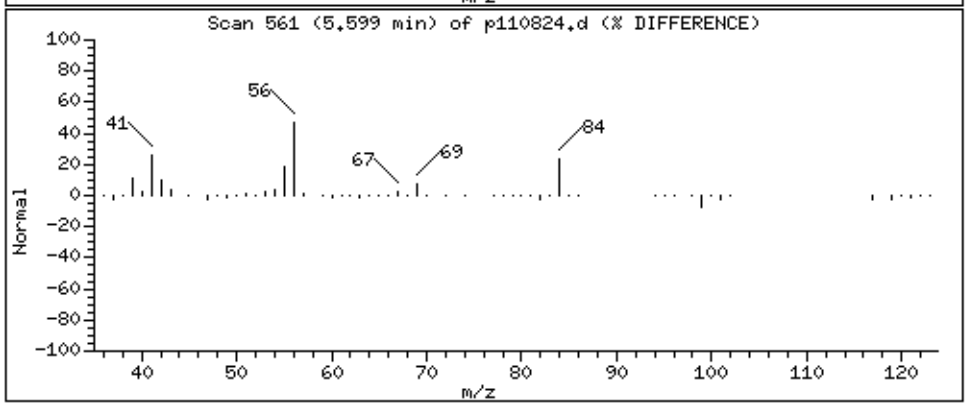












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

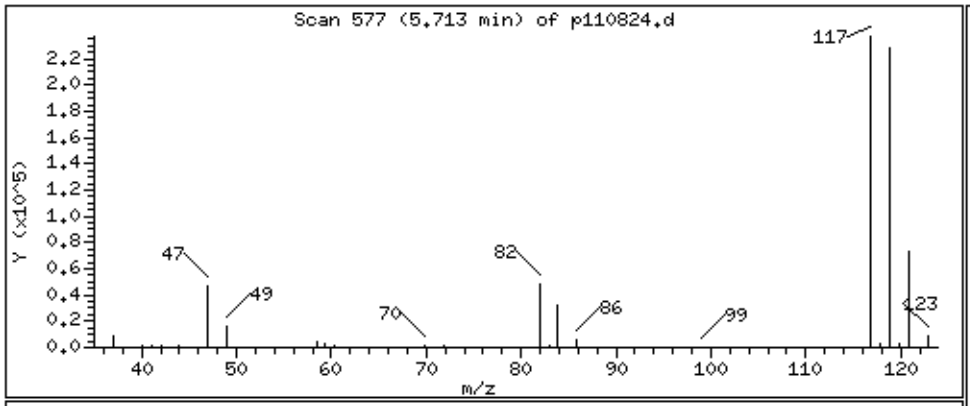
Operator: gd

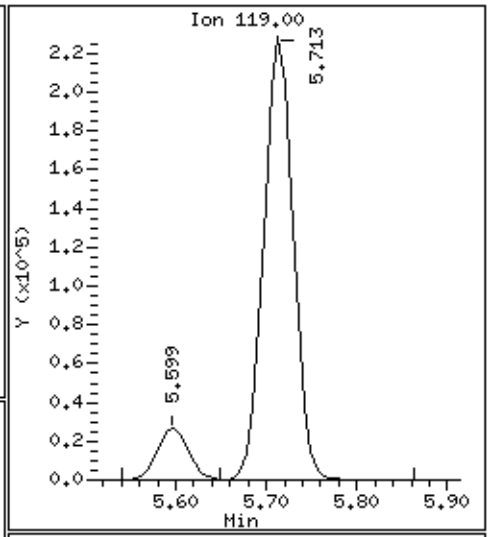
Column phase: RTX-624

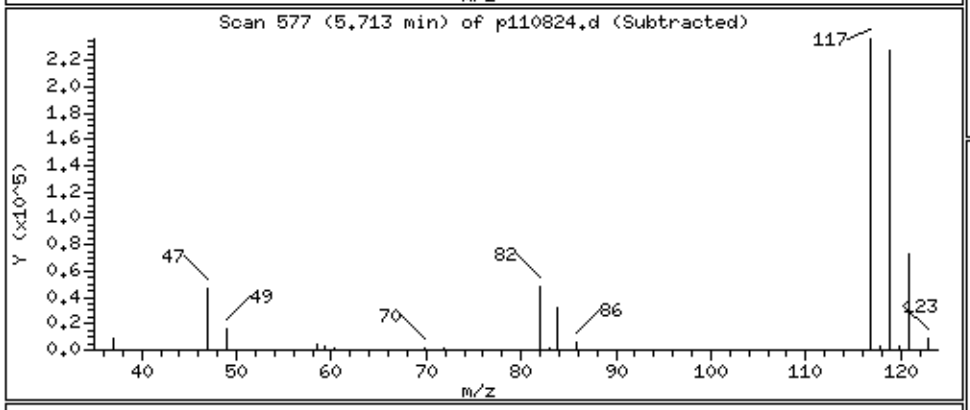
Column diameter: 0.25

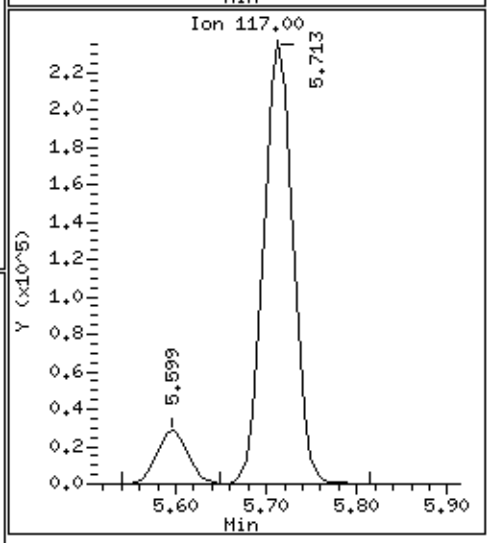
106 Carbon Tetrachloride

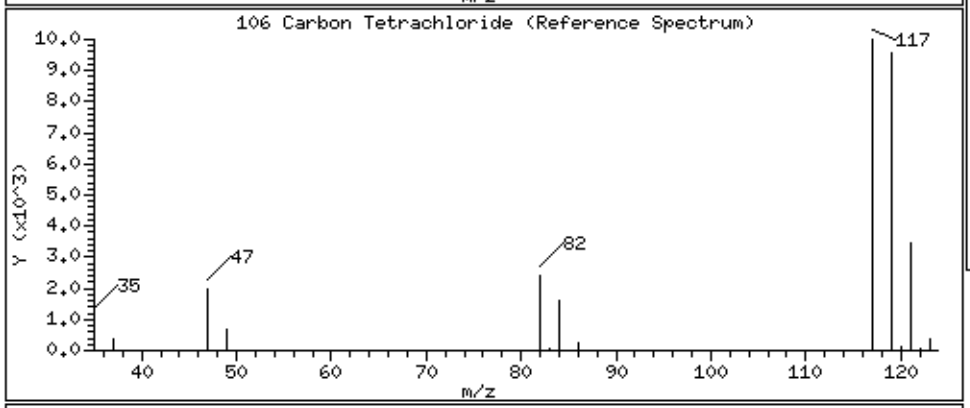
Concentration: 52.536 PPBV

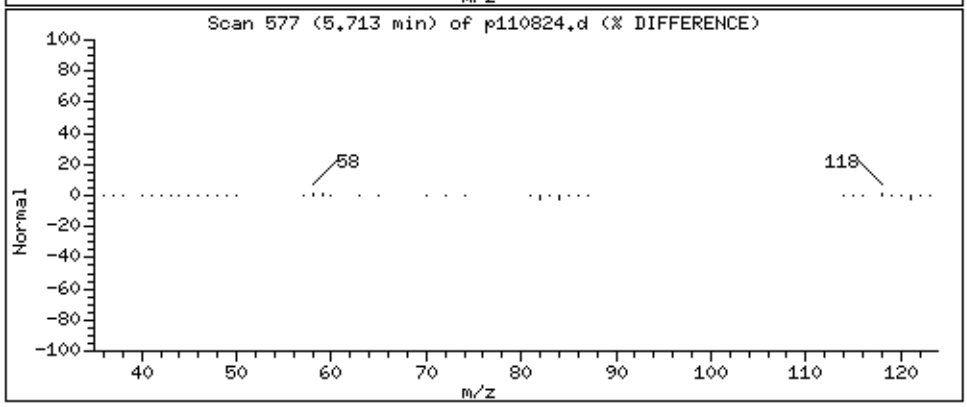












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

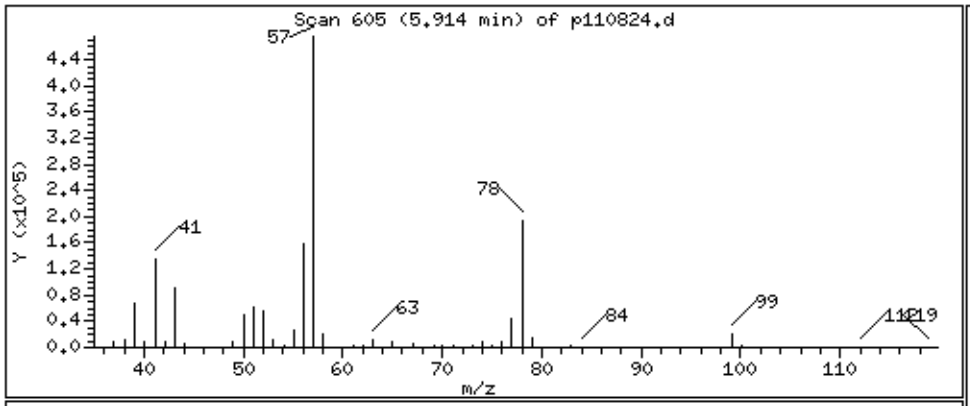
Operator: gd

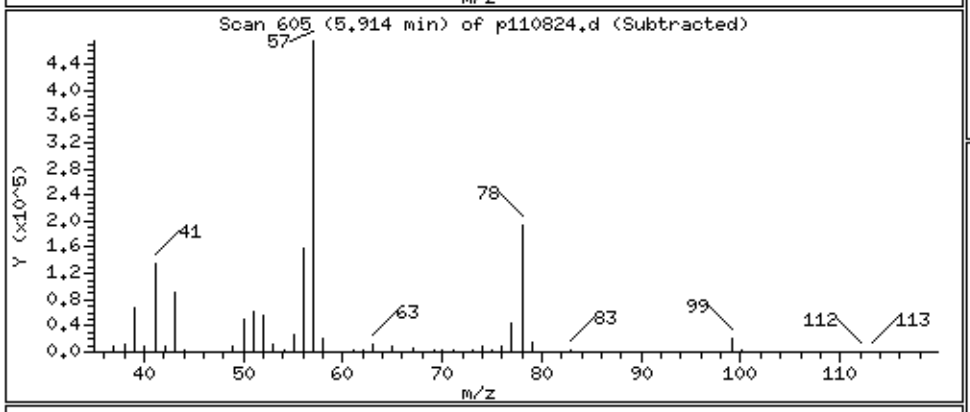
Column phase: RTX-624

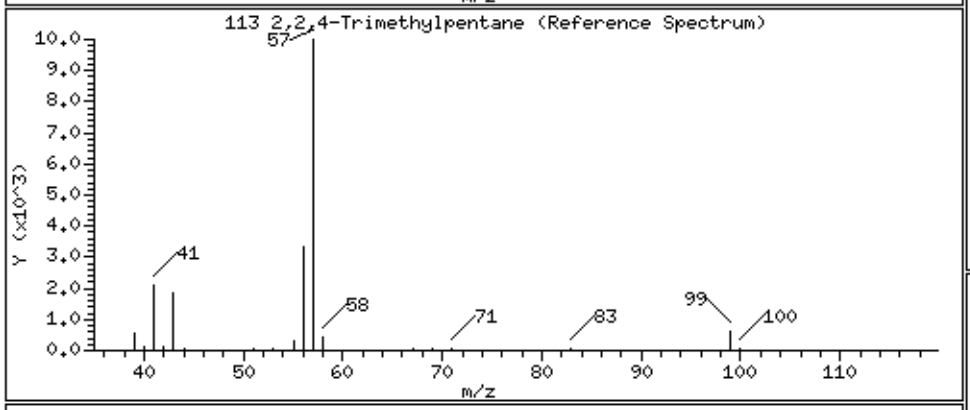
Column diameter: 0.25

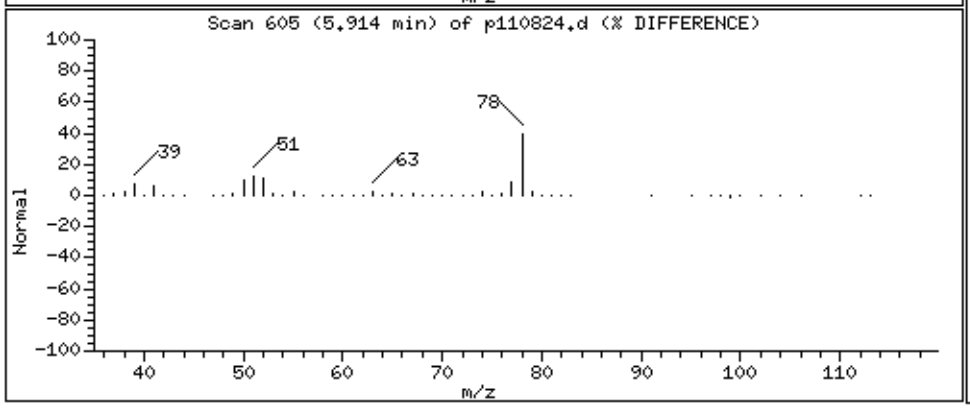
113 2,2,4-Trimethylpentane

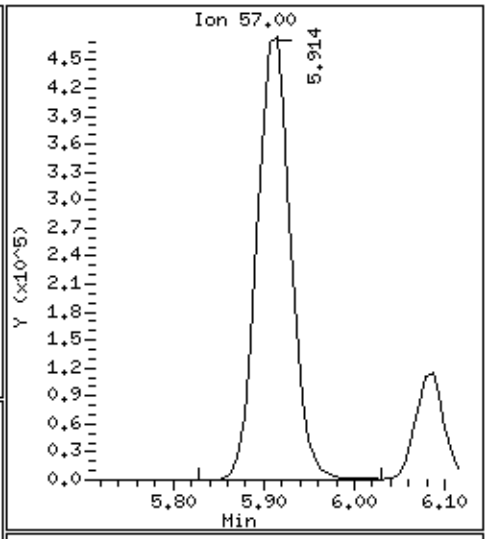
Concentration: 58.602 PPBV

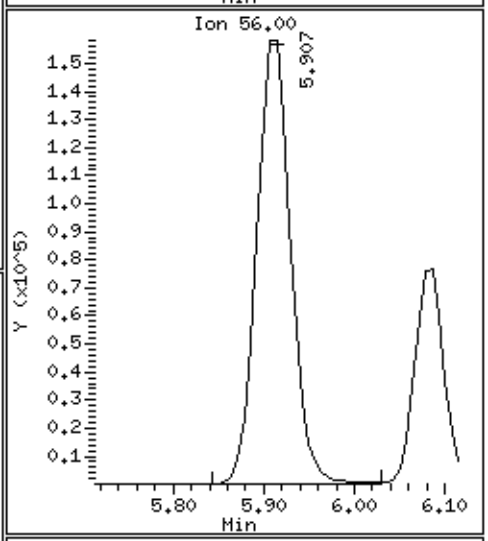


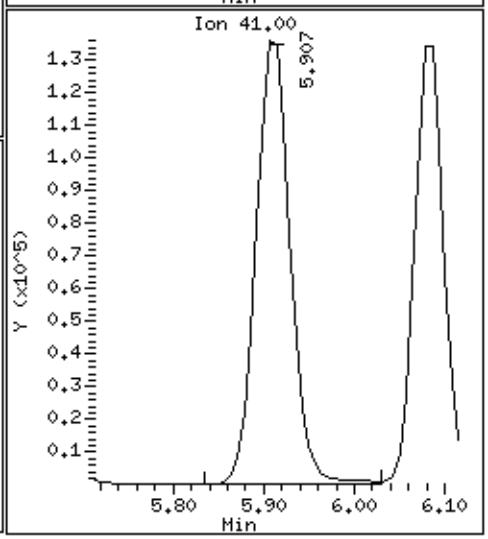












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

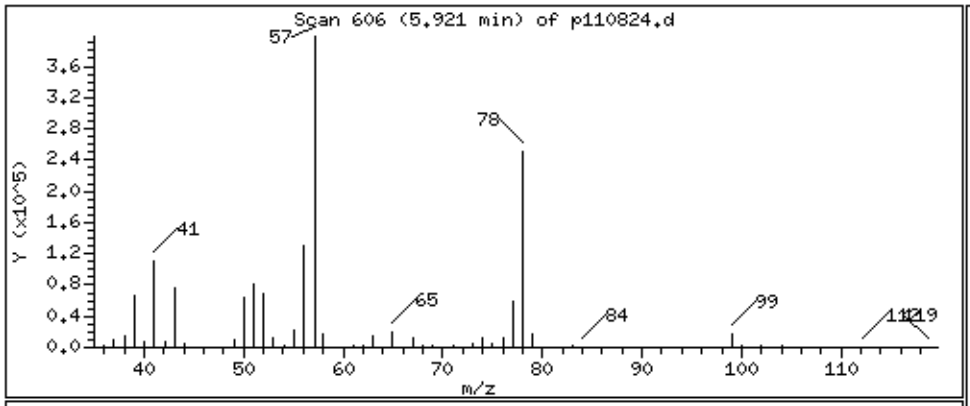
Operator: gd

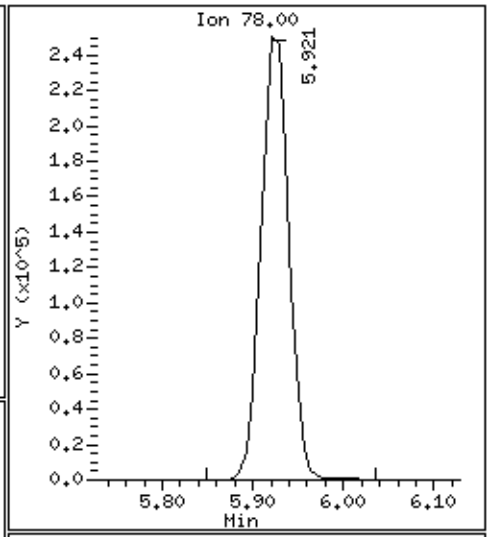
Column phase: RTX-624

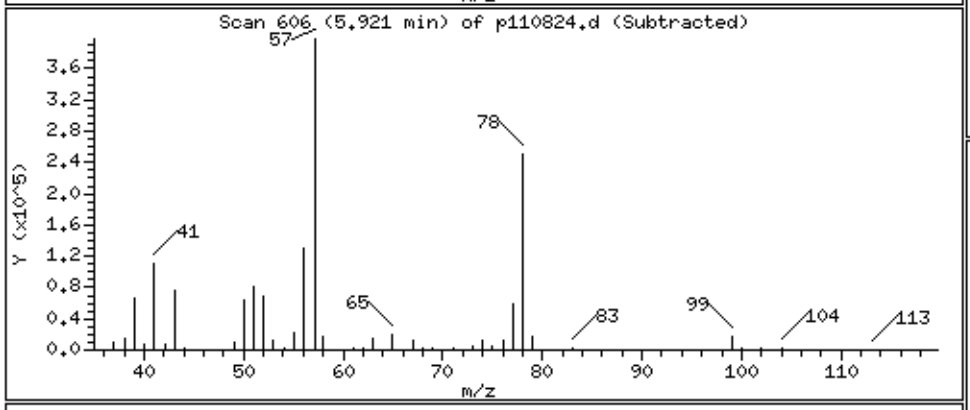
Column diameter: 0.25

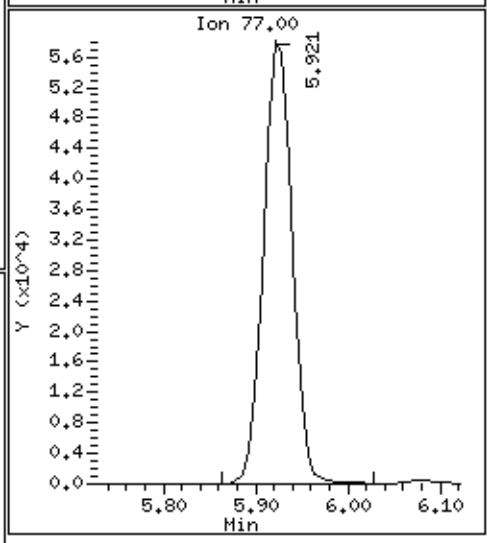
116 Benzene

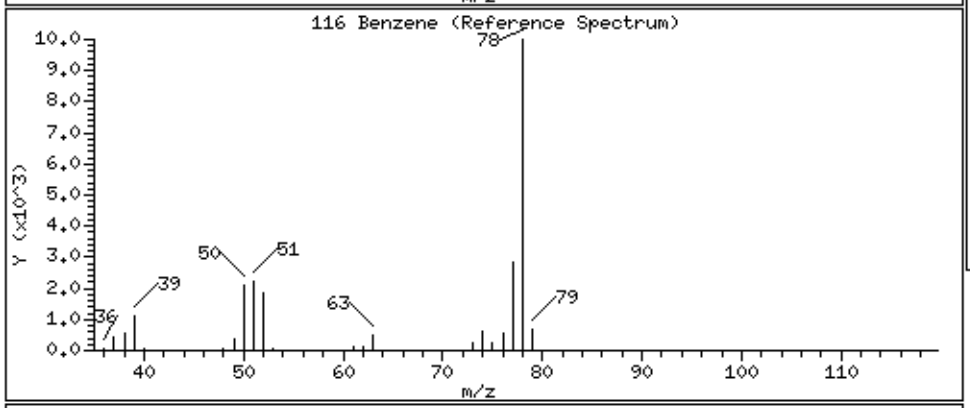
Concentration: 47.716 PPBV

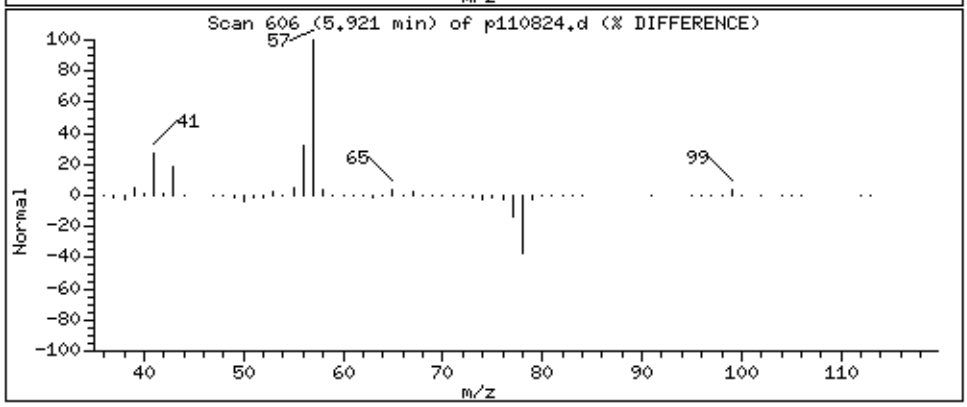












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

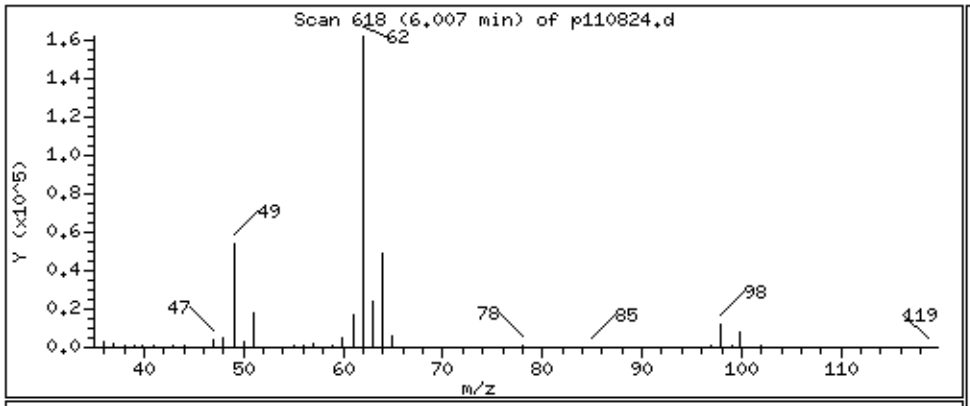
Operator: gd

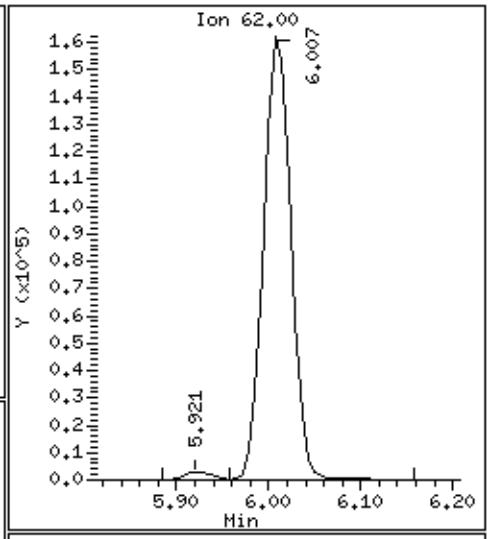
Column phase: RTX-624

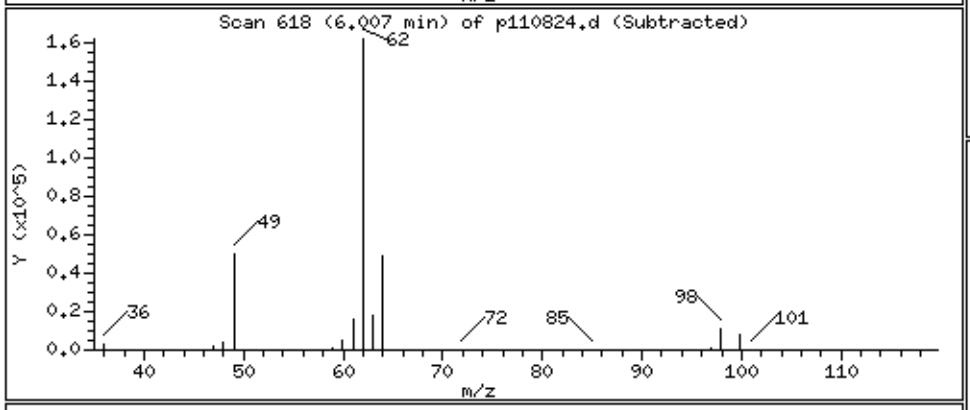
Column diameter: 0.25

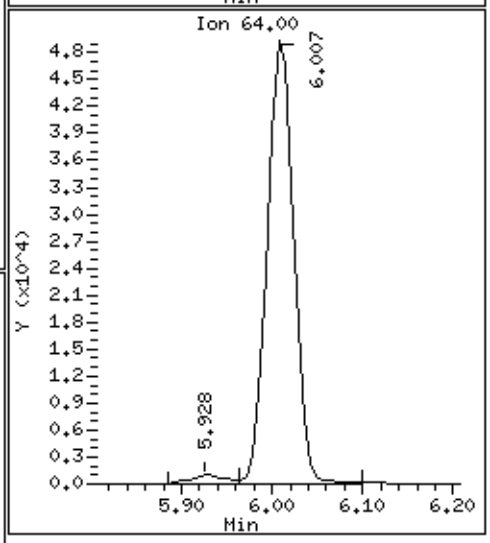
120 1,2-Dichloroethane

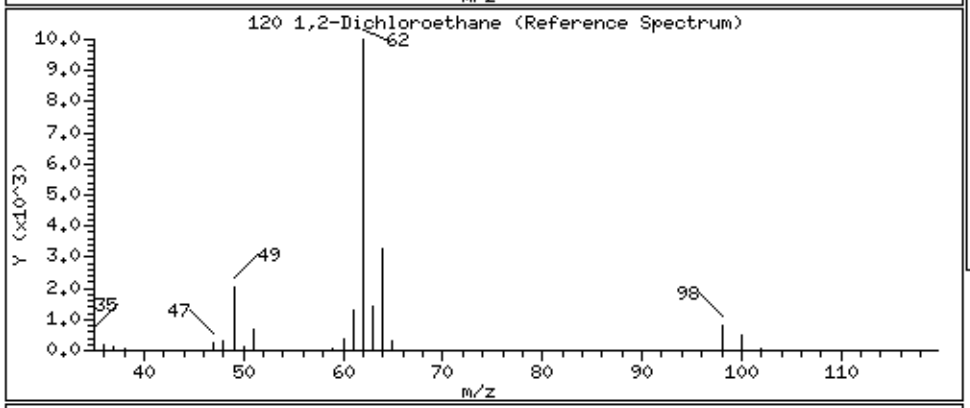
Concentration: 47.587 PPBV

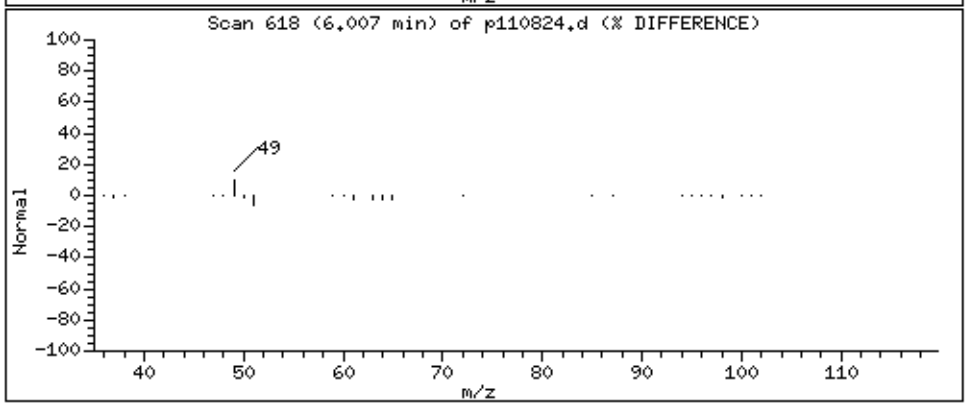












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

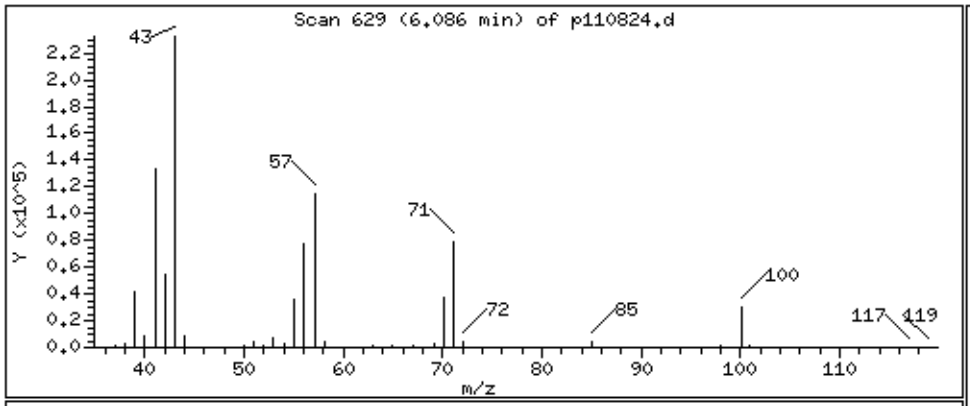
Operator: gd

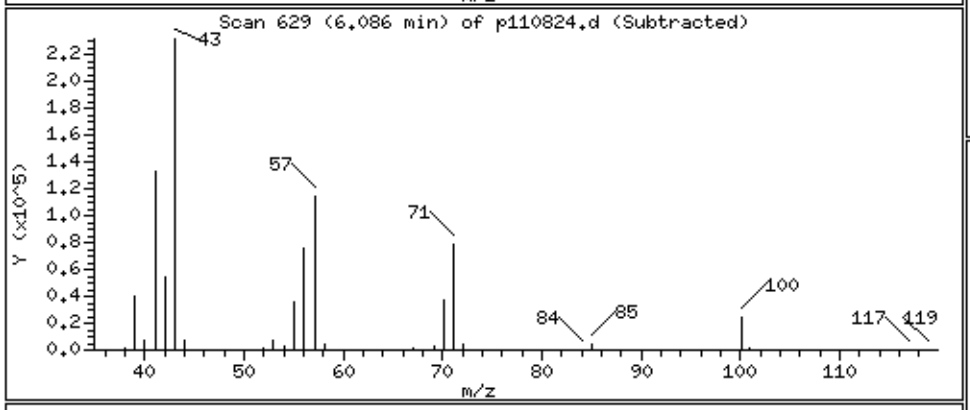
Column phase: RTX-624

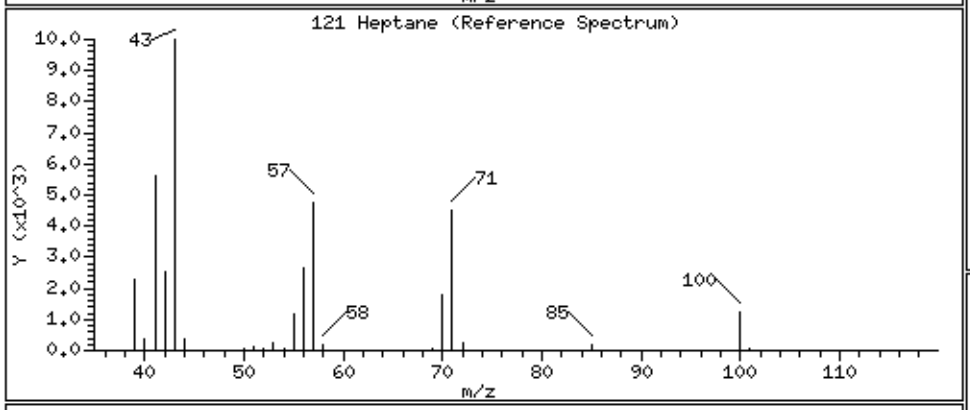
Column diameter: 0.25

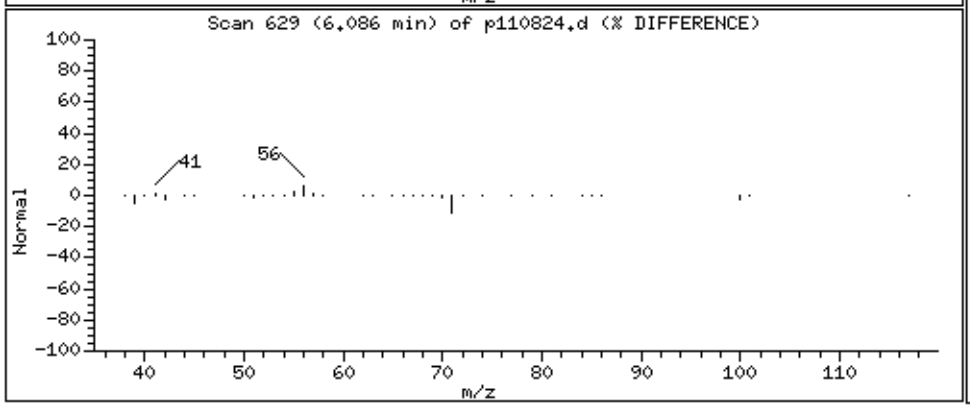
121 Heptane

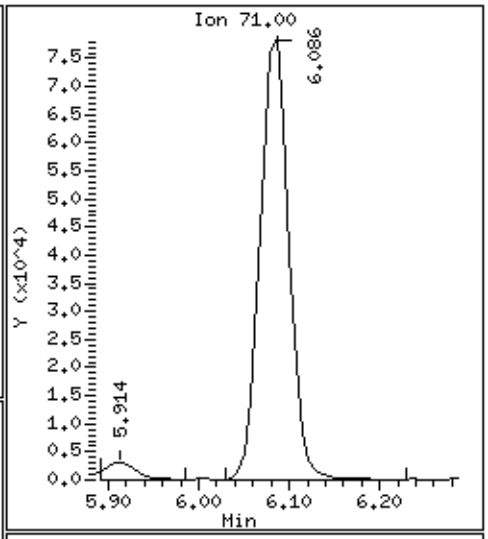
Concentration: 55.341 PPBV

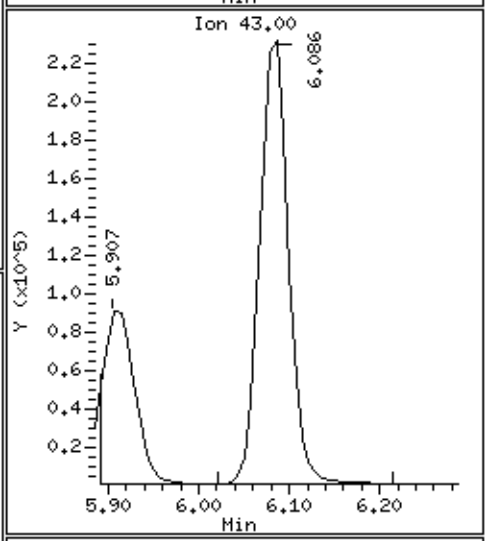


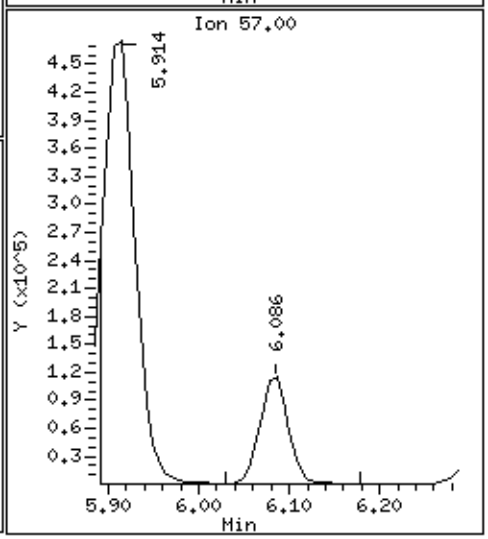












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

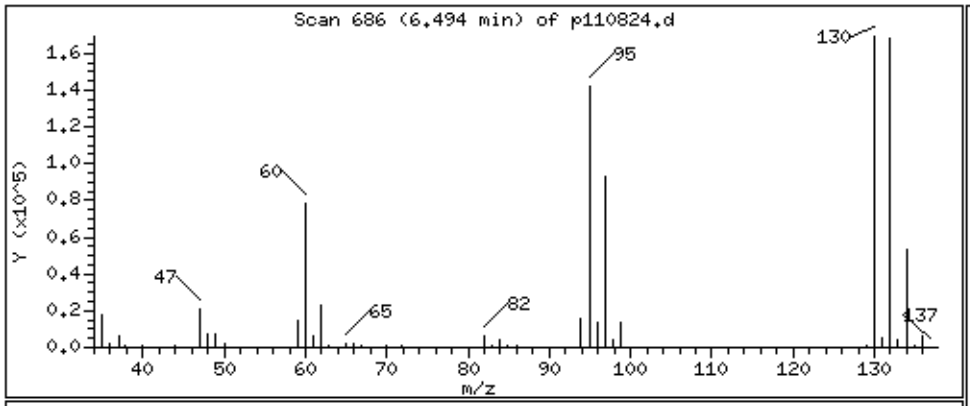
Operator: gd

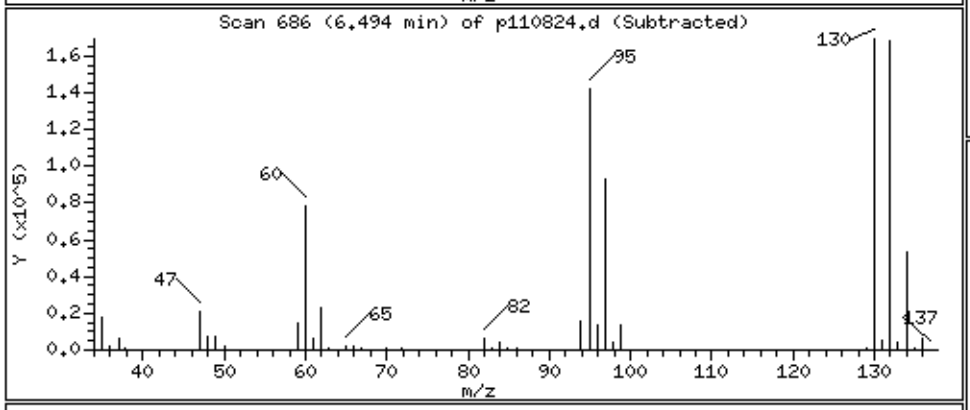
Column phase: RTX-624

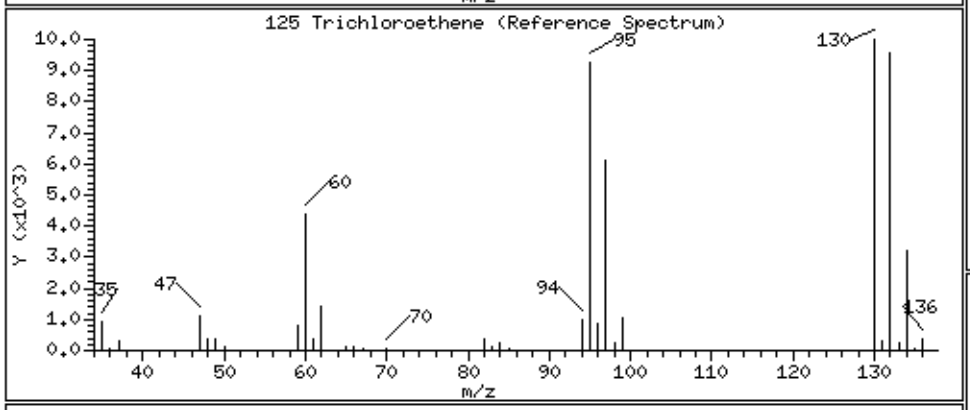
Column diameter: 0.25

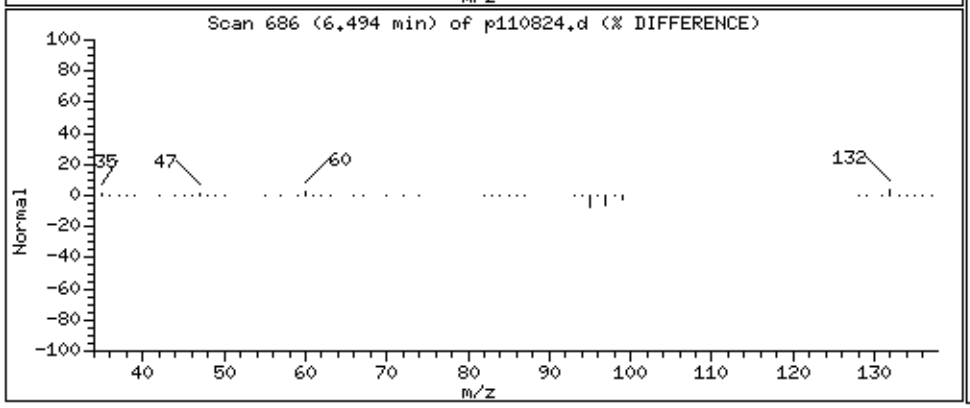
125 Trichloroethene

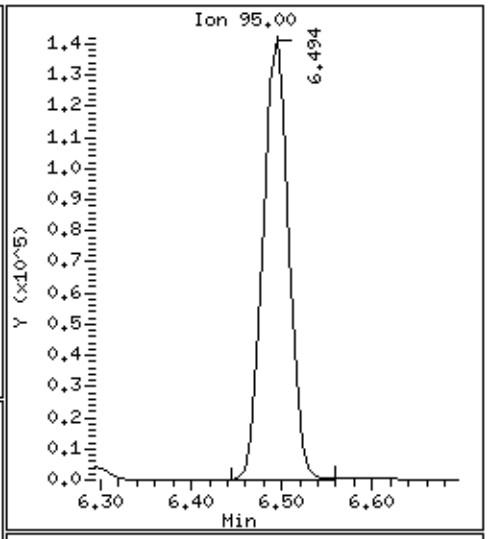
Concentration: 49.919 PPBV

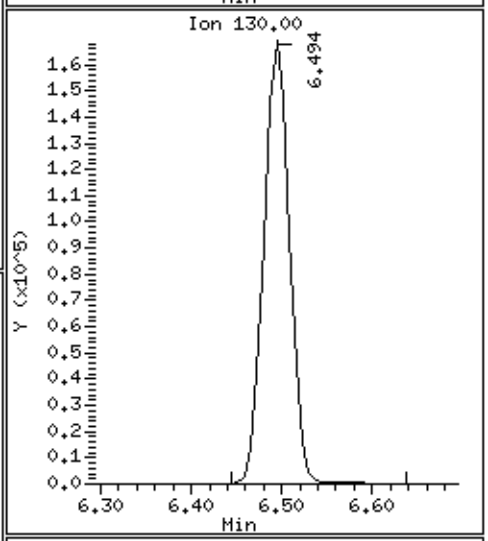


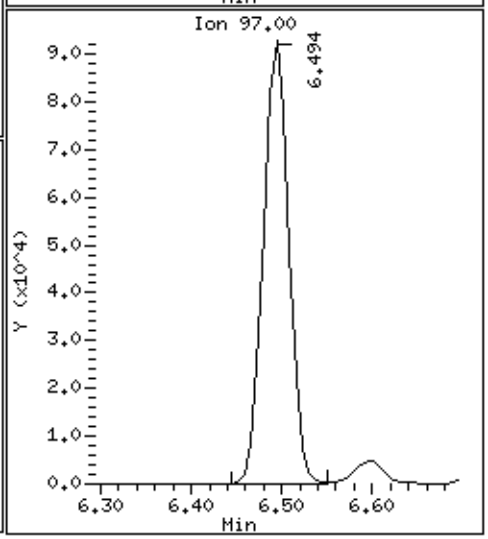












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

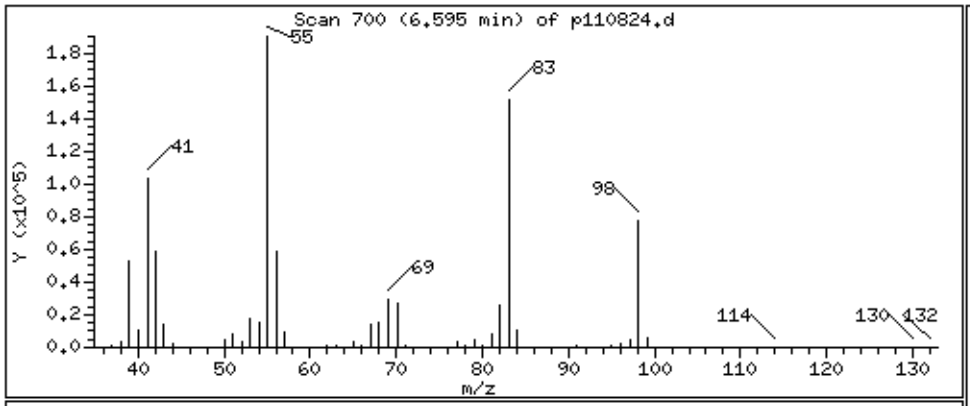
Operator: gd

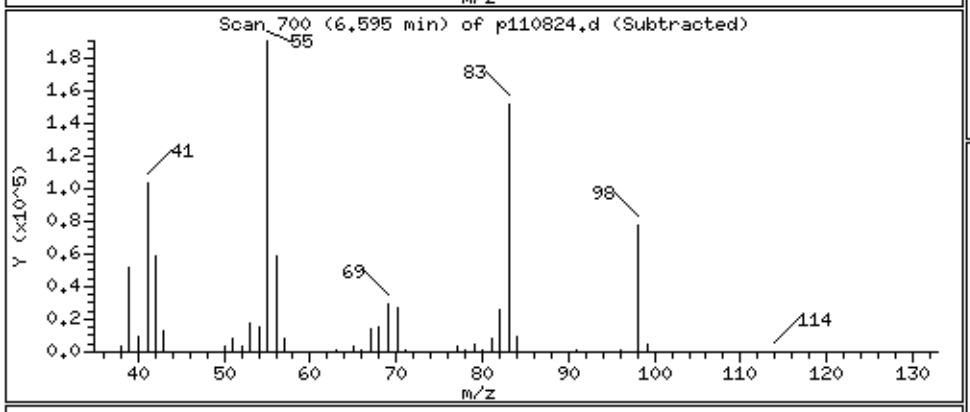
Column phase: RTX-624

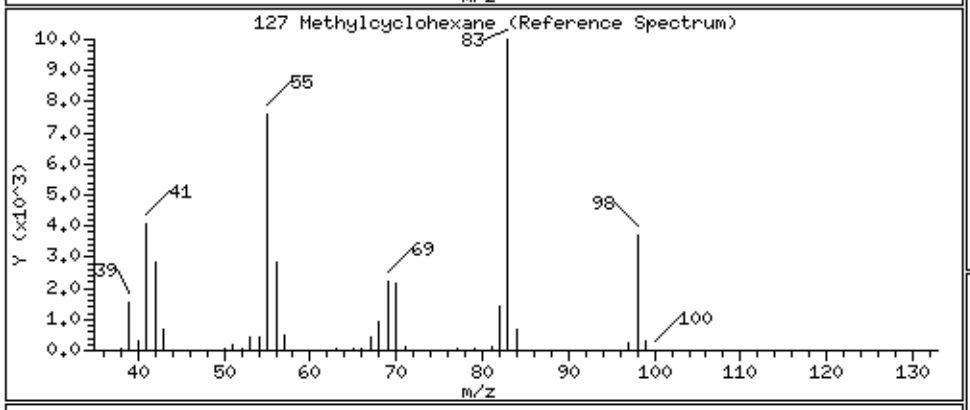
Column diameter: 0.25

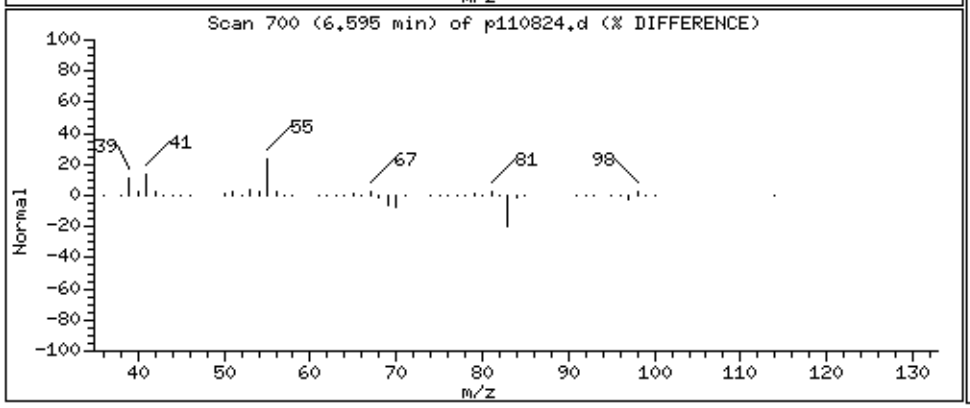
127 Methylcyclohexane

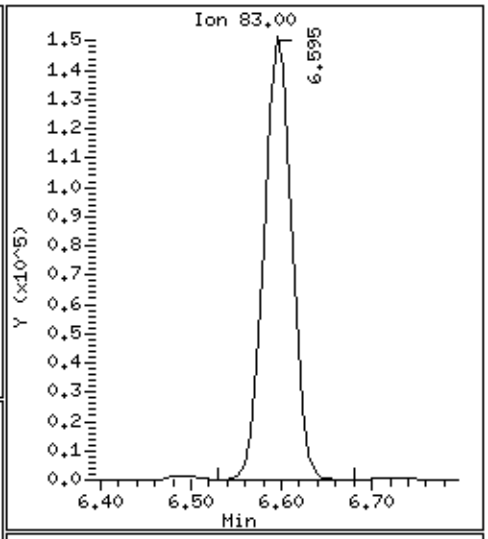
Concentration: 55.473 PPBV

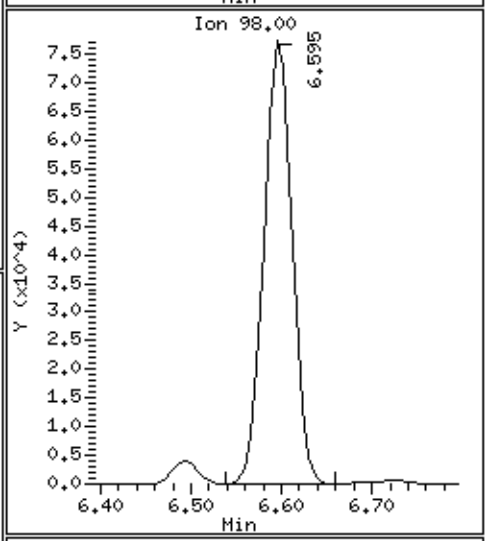


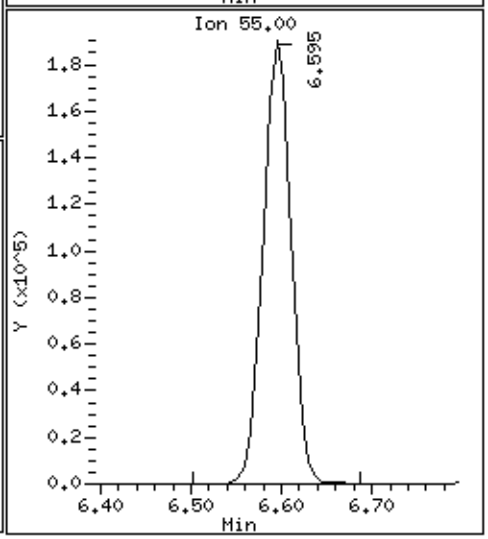












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

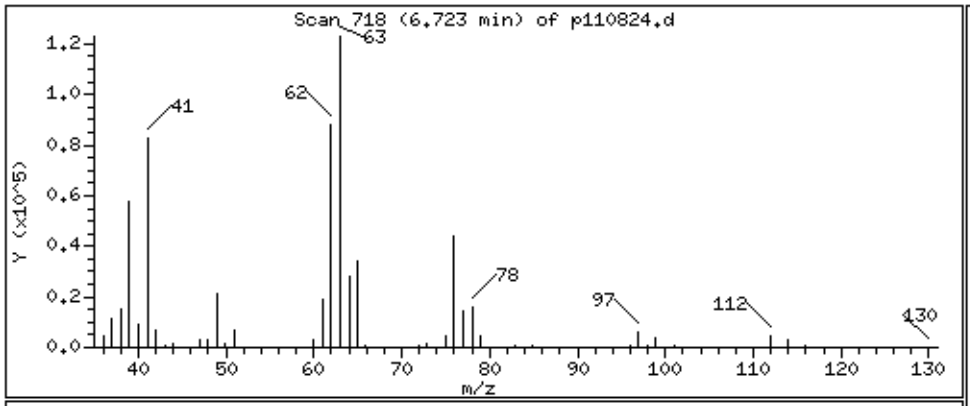
Operator: gd

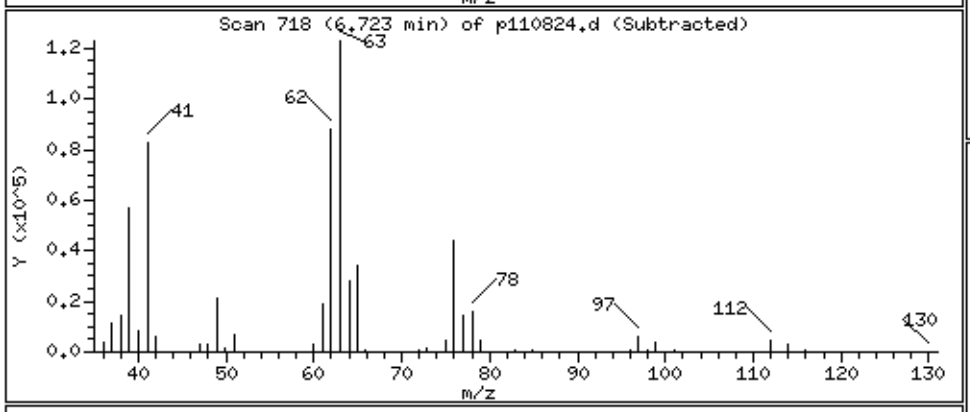
Column phase: RTX-624

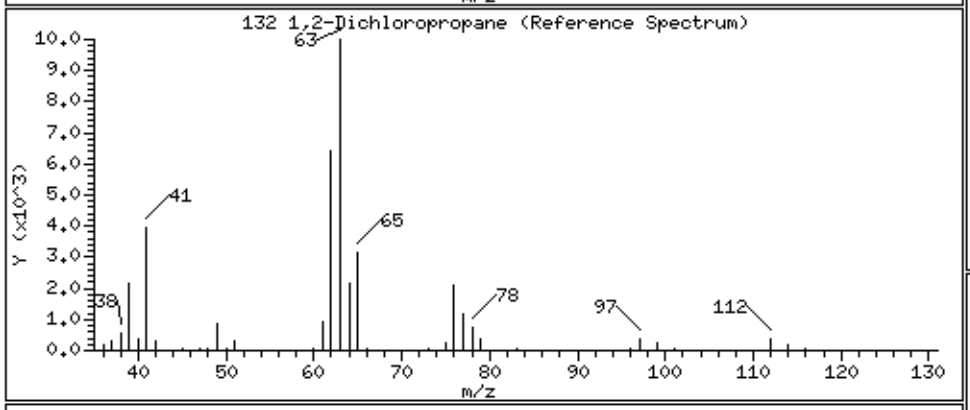
Column diameter: 0.25

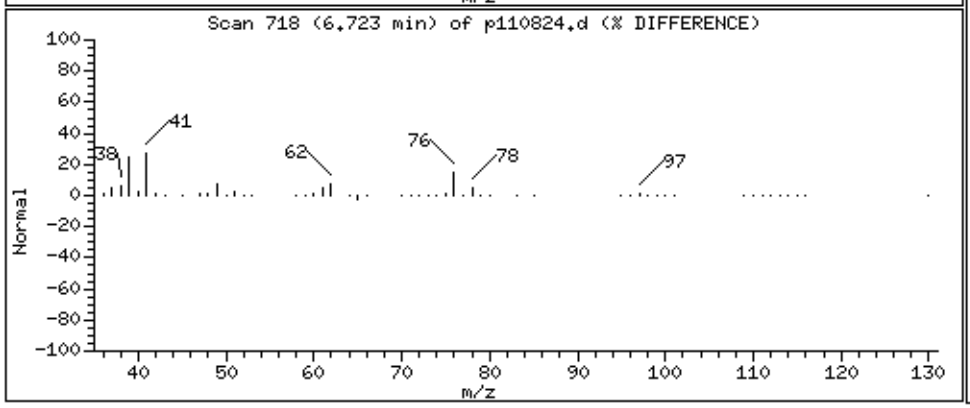
132 1,2-Dichloropropane

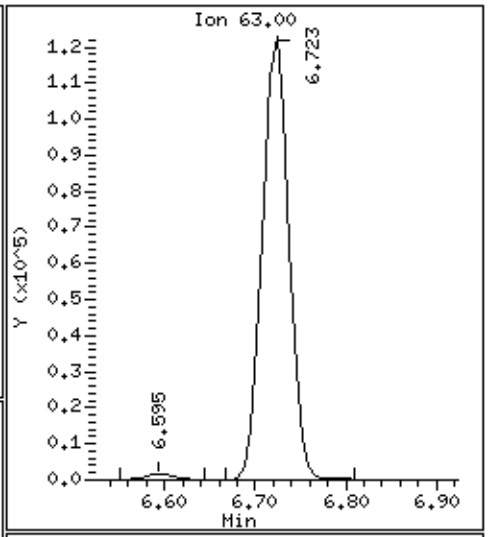
Concentration: 51.392 PPBV

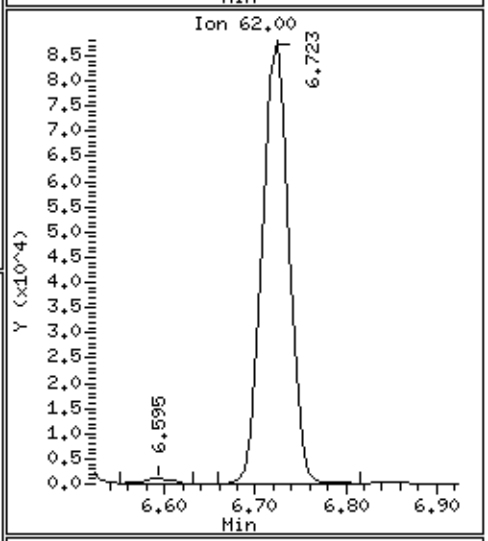


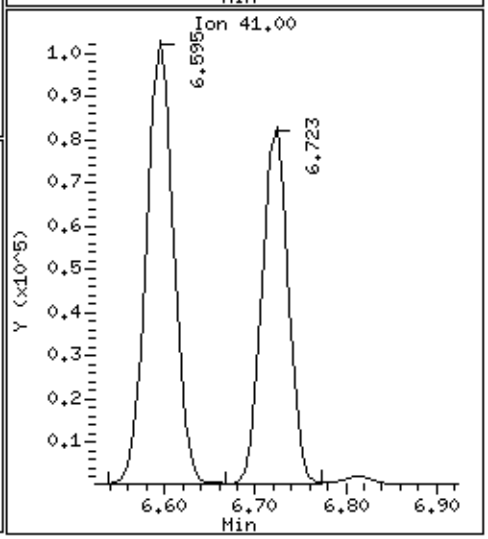












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

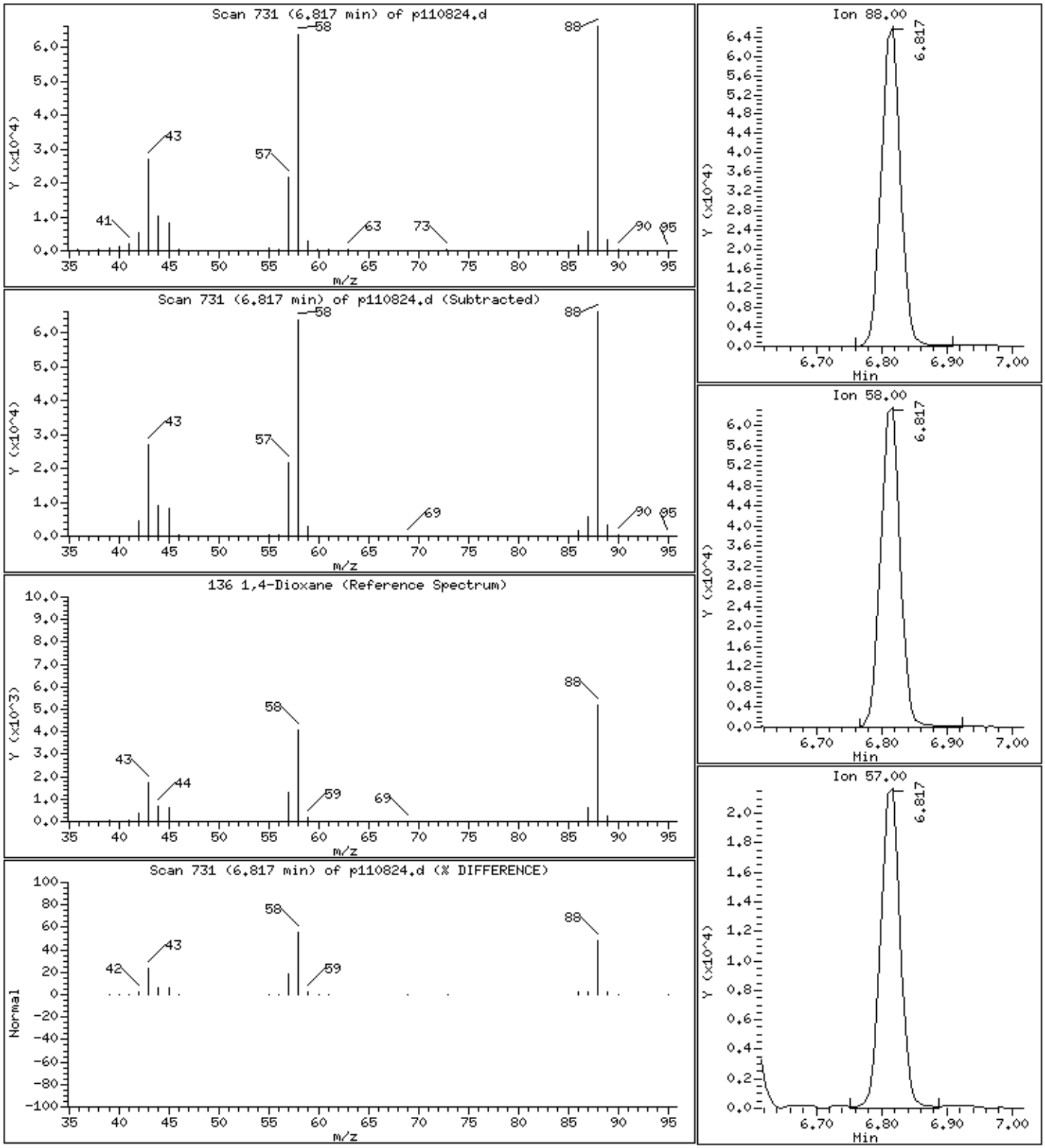
Operator: gd

Column phase: RTX-624

Column diameter: 0.25

136 1,4-Dioxane

Concentration: 53.786 PPBV



Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

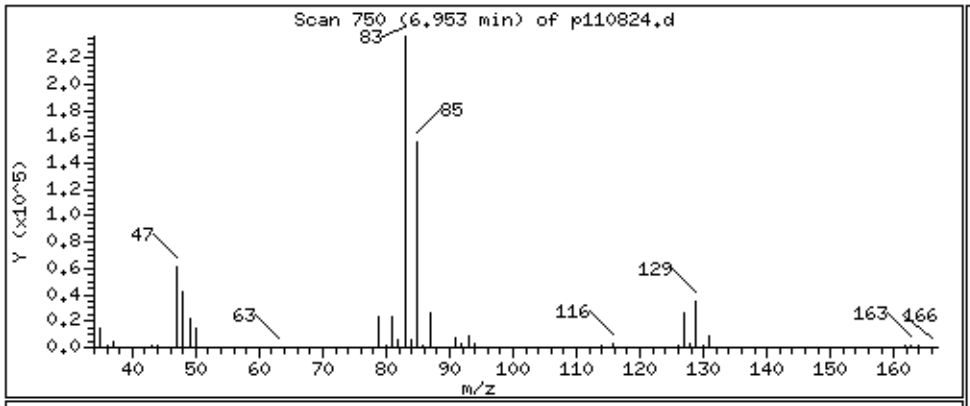
Operator: gd

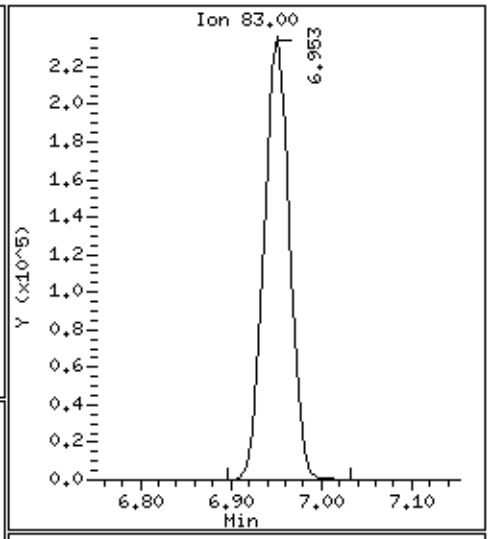
Column phase: RTX-624

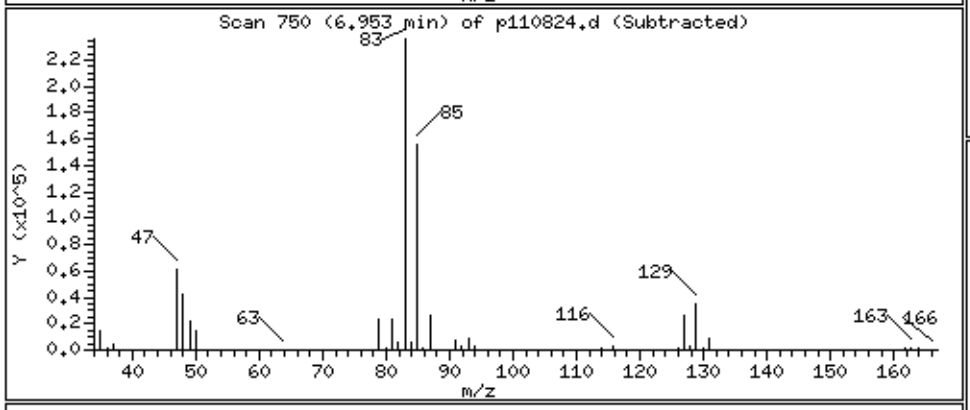
Column diameter: 0.25

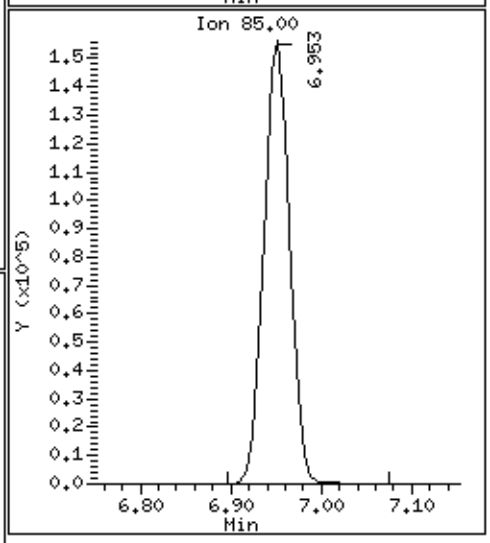
138 Bromodichloromethane

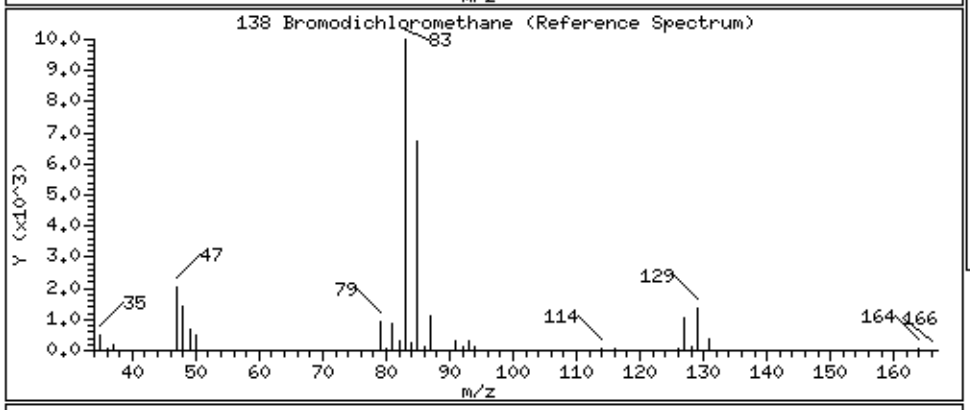
Concentration: 50.281 PPBV

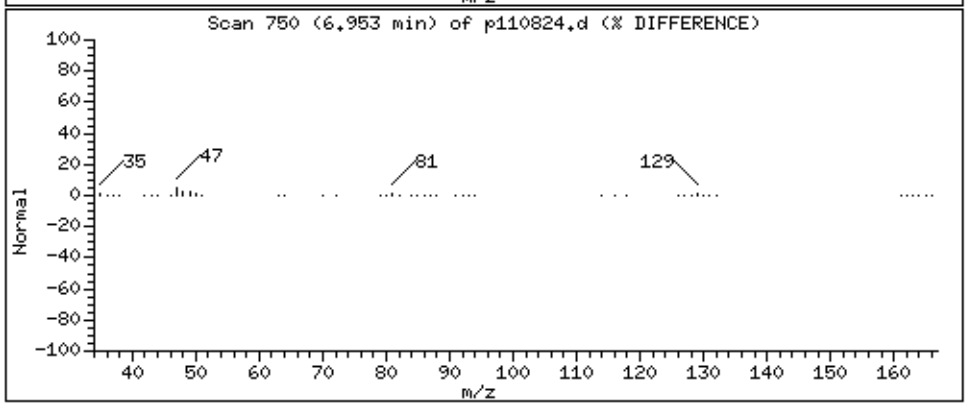












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

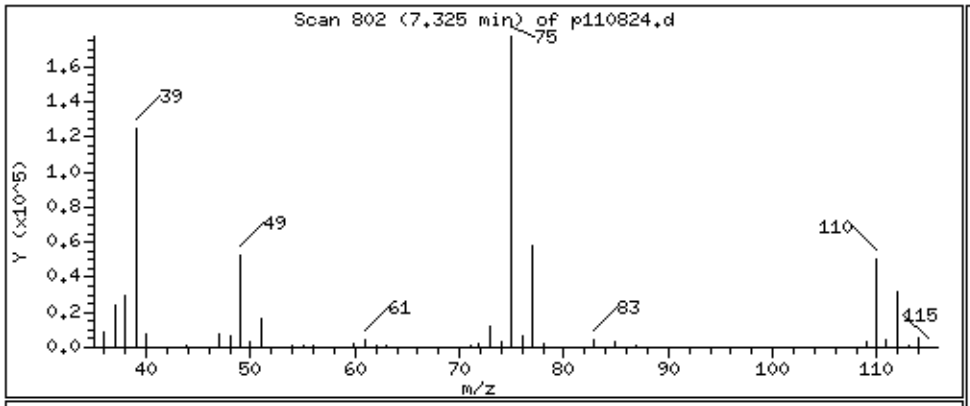
Operator: gd

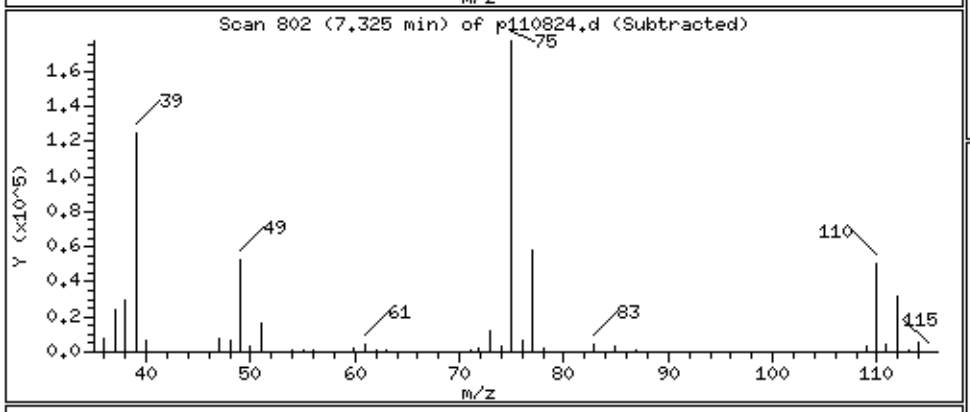
Column phase: RTX-624

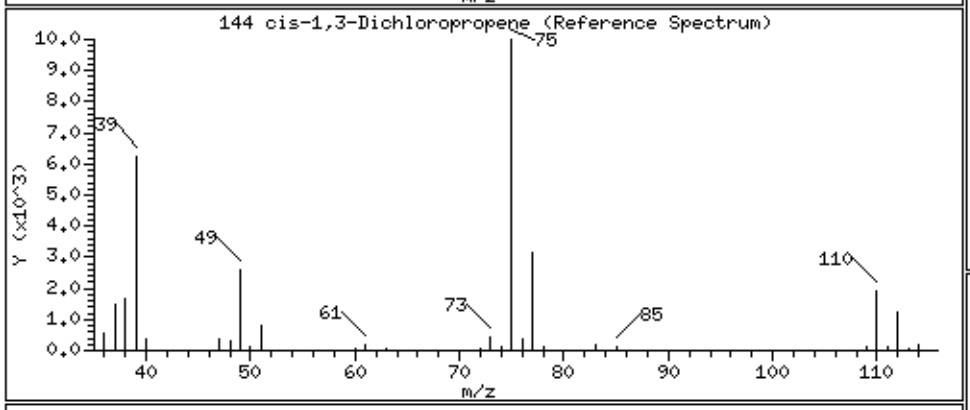
Column diameter: 0.25

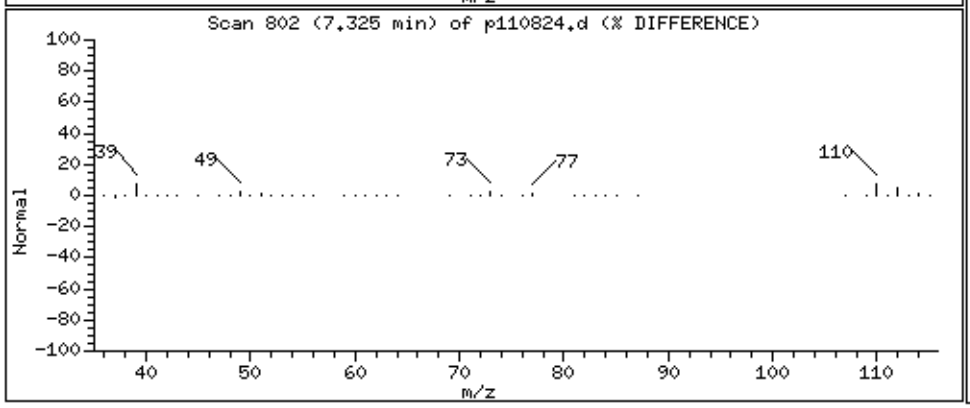
144 cis-1,3-Dichloropropene

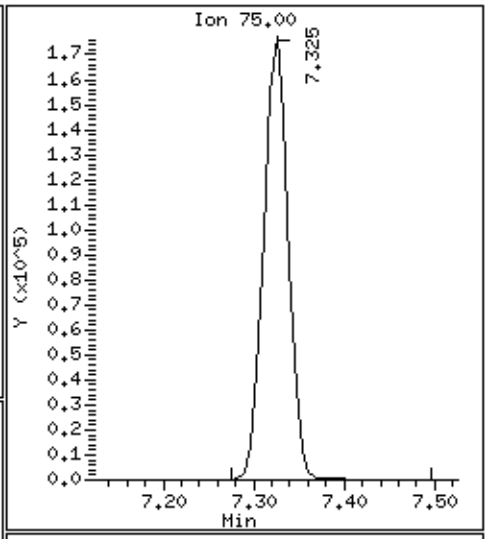
Concentration: 55.957 PPBV

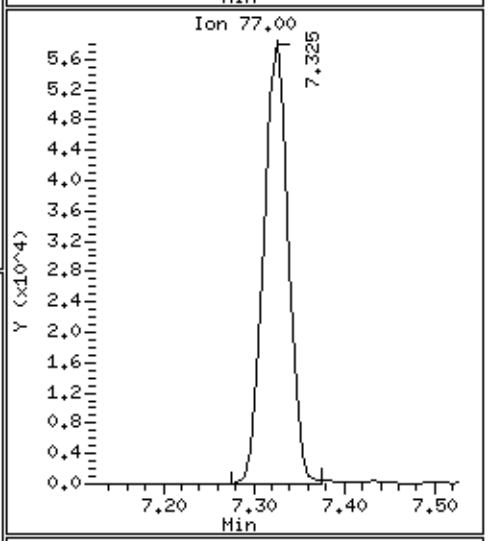


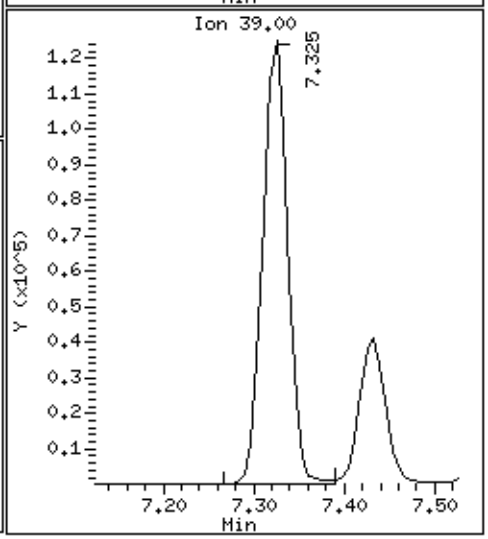












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

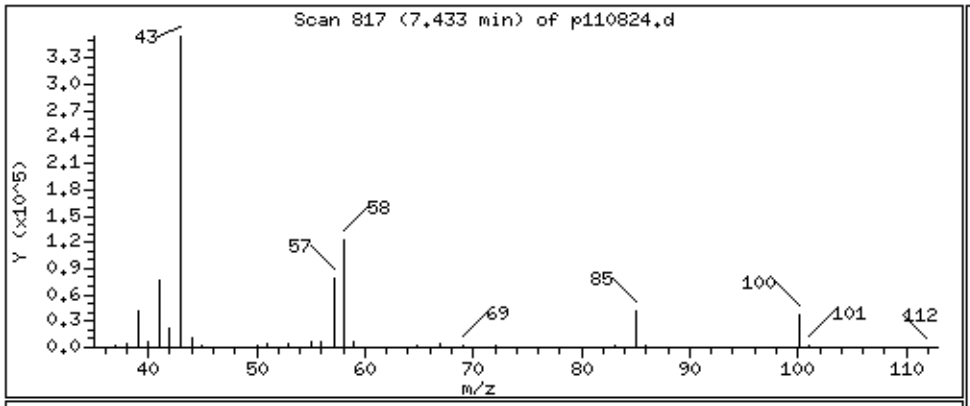
Operator: gd

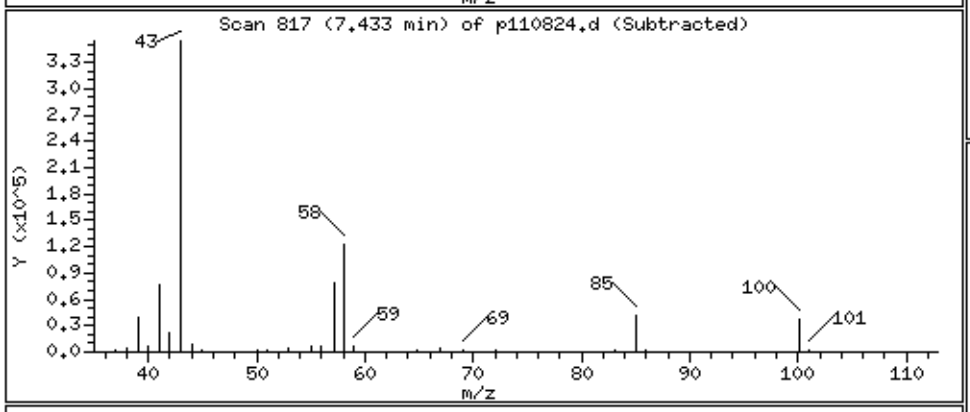
Column phase: RTX-624

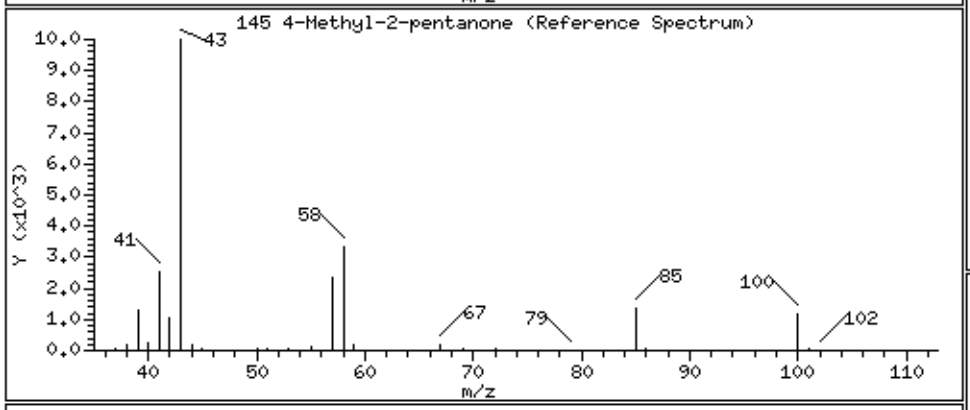
Column diameter: 0.25

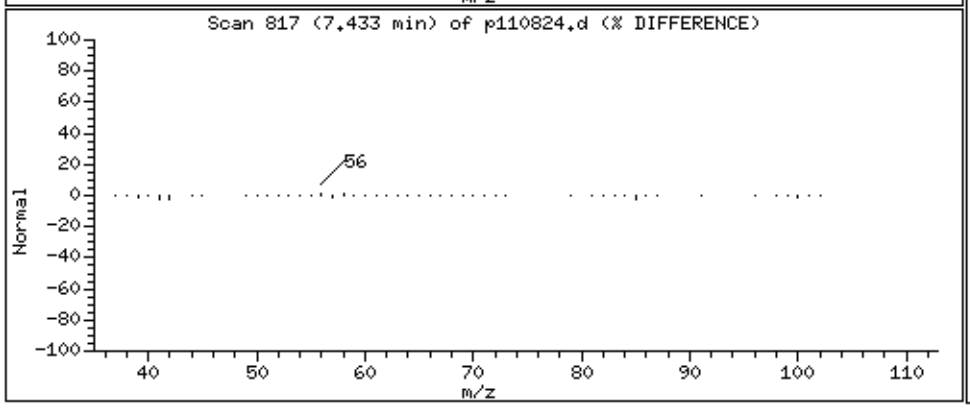
145 4-Methyl-2-pentanone

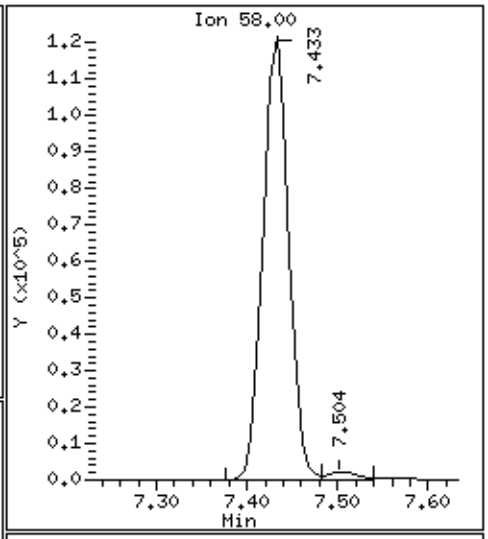
Concentration: 56.774 PPBV

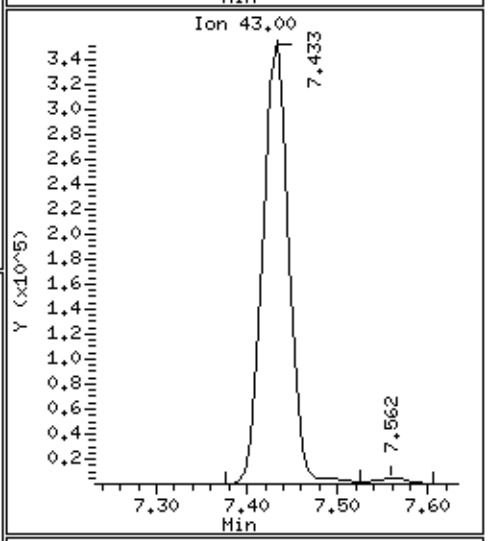


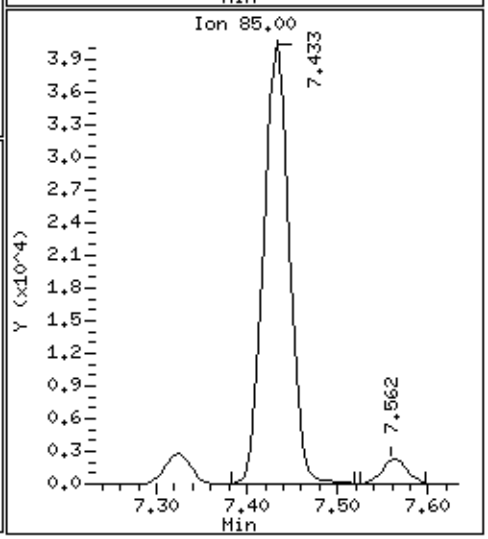












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

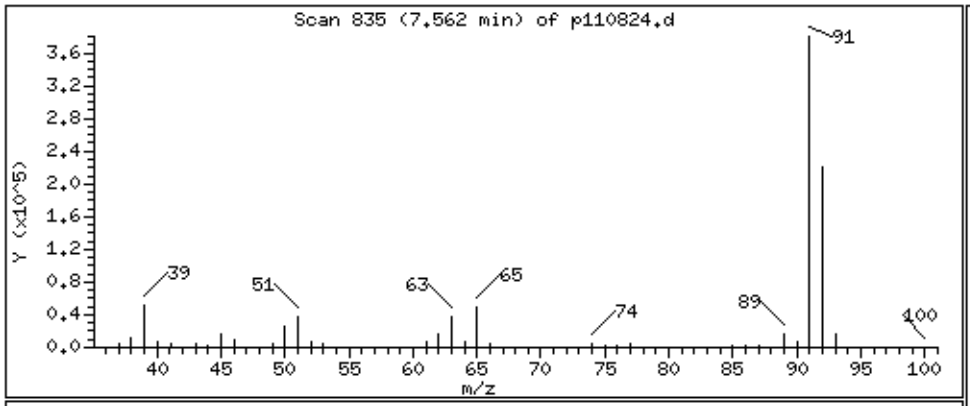
Operator: gd

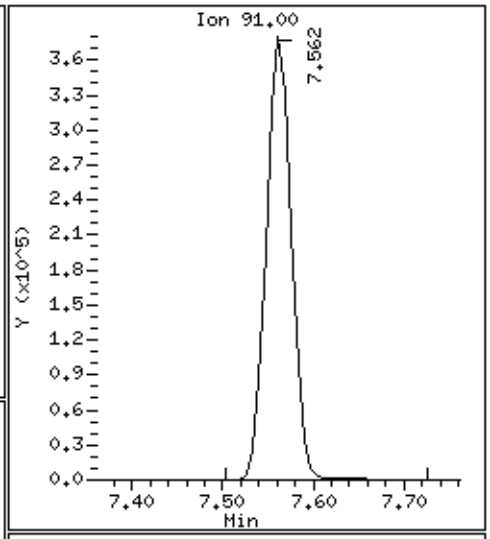
Column phase: RTX-624

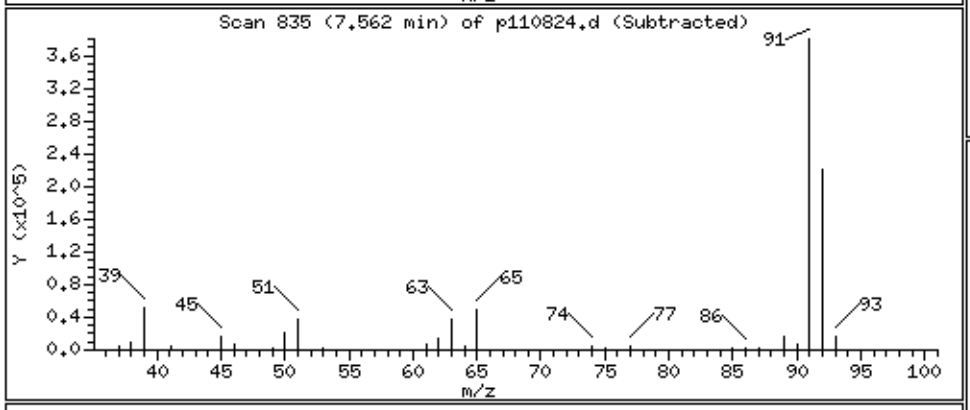
Column diameter: 0.25

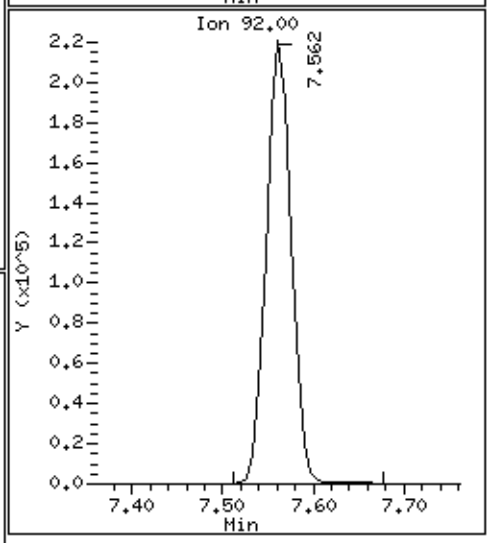
147 Toluene

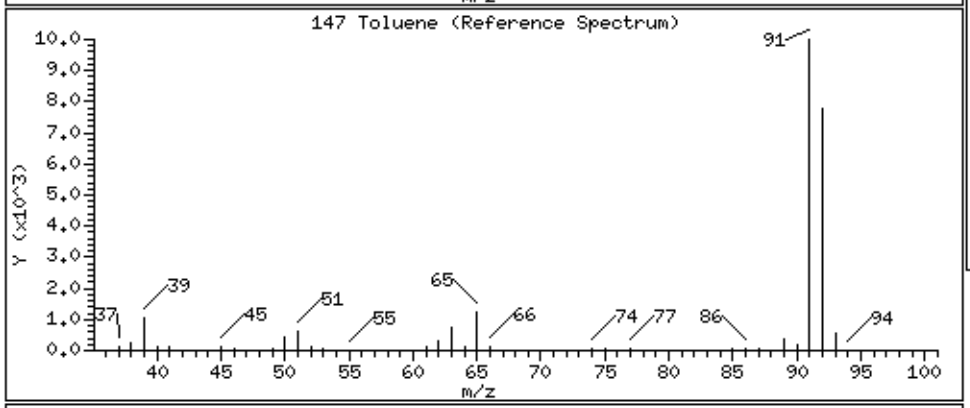
Concentration: 49.527 PPBV

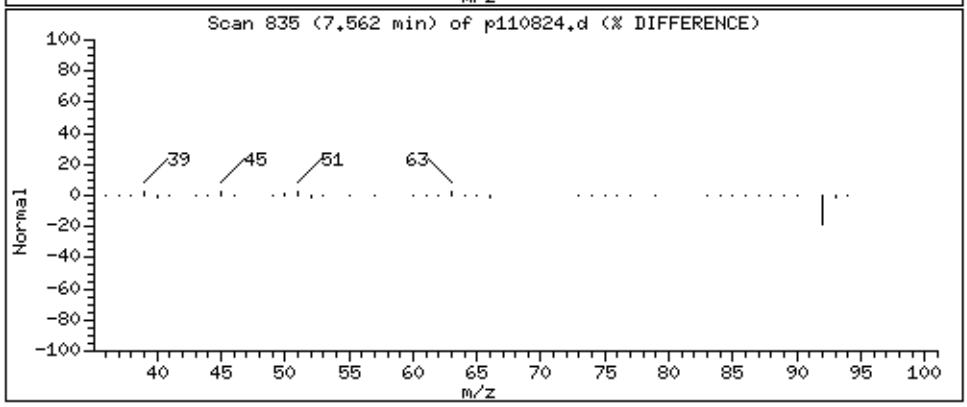












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

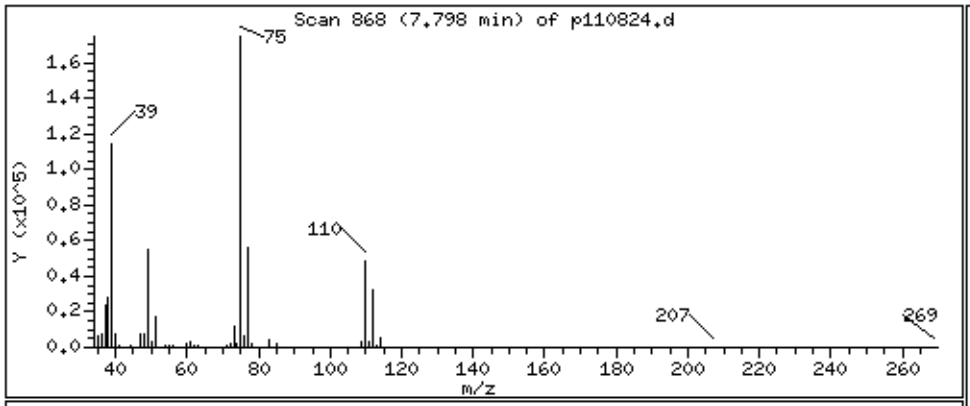
Operator: gd

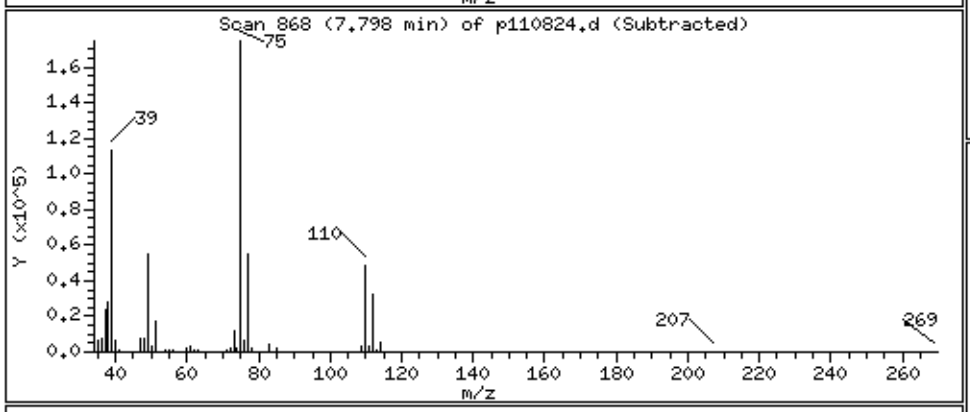
Column phase: RTX-624

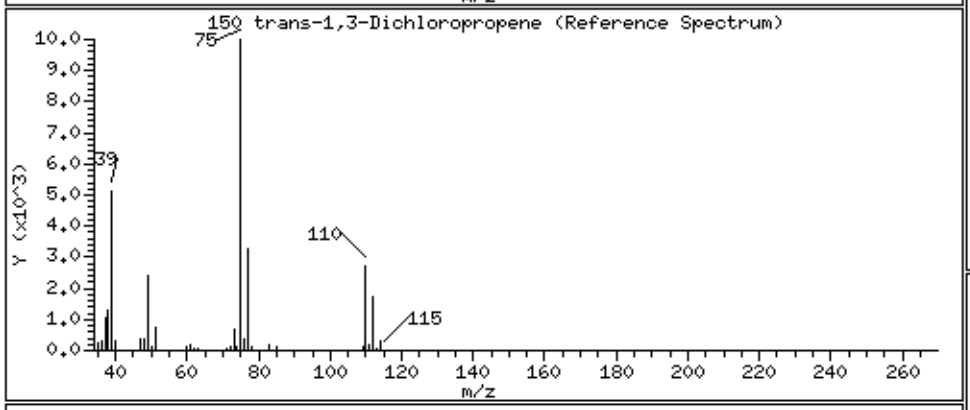
Column diameter: 0.25

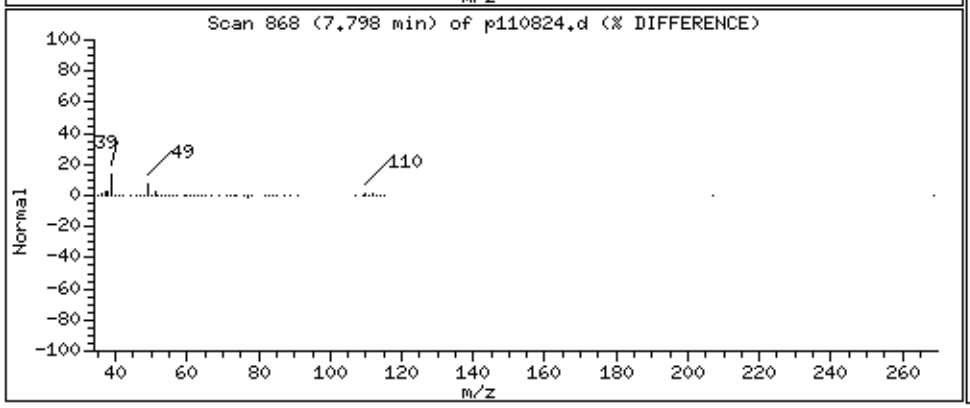
150 trans-1,3-Dichloropropene

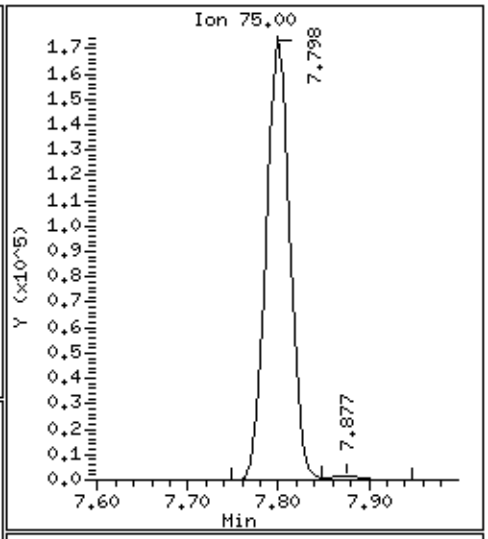
Concentration: 51.579 PPBV

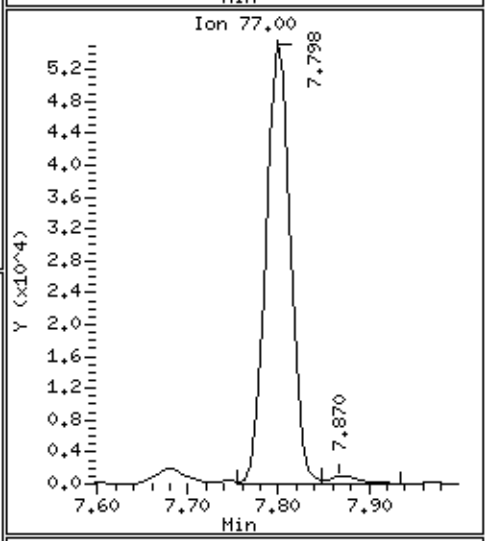


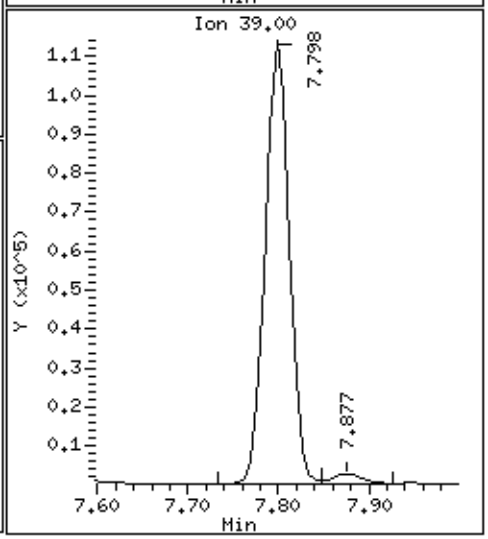












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

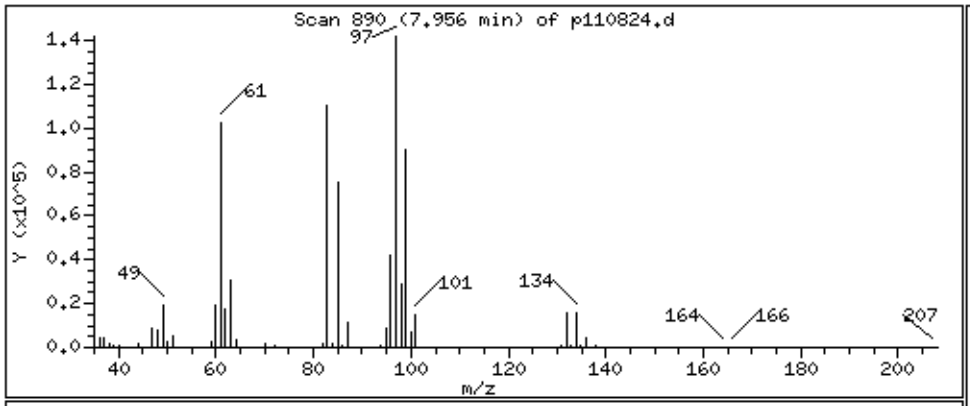
Operator: gd

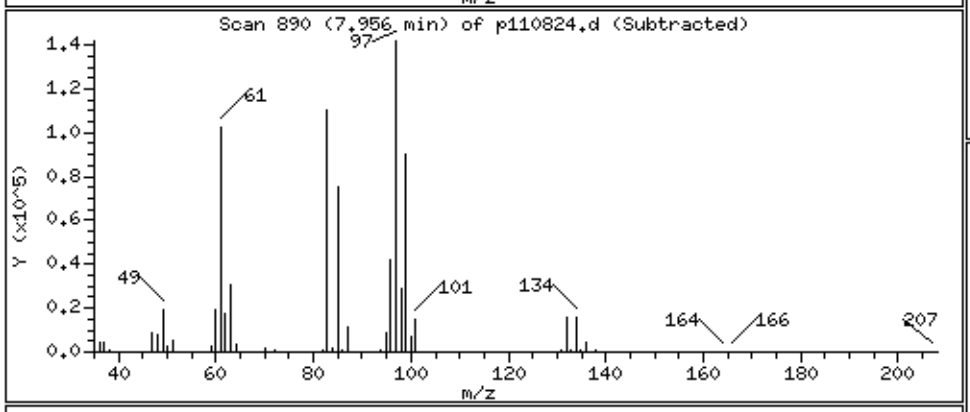
Column phase: RTX-624

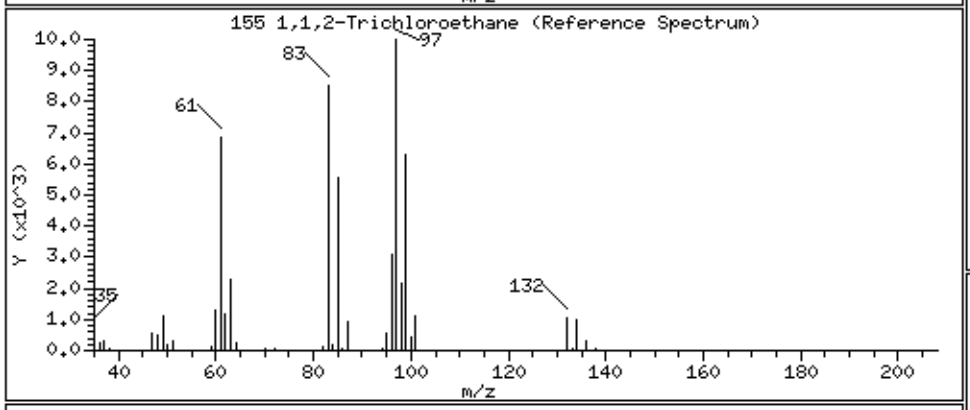
Column diameter: 0.25

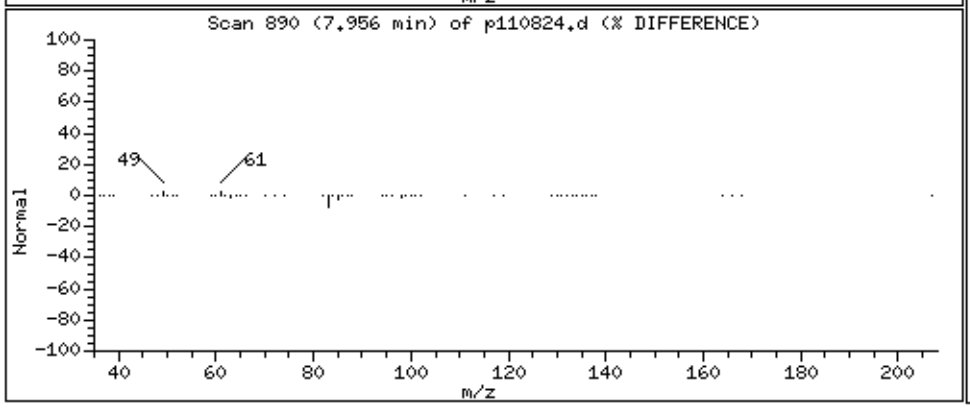
155 1,1,2-Trichloroethane

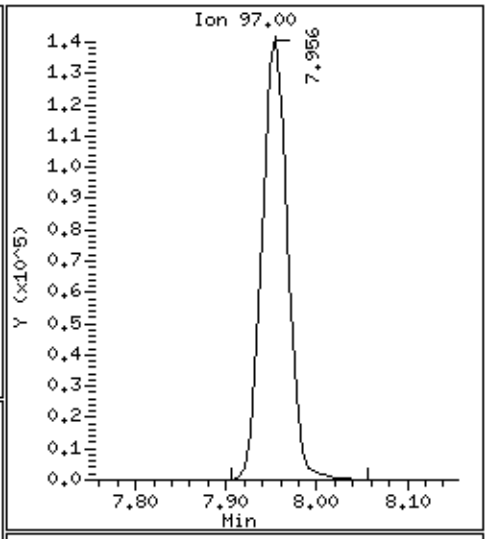
Concentration: 50.063 PPBV

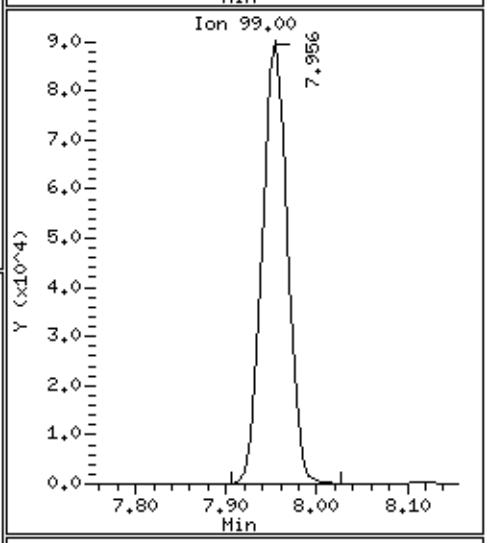


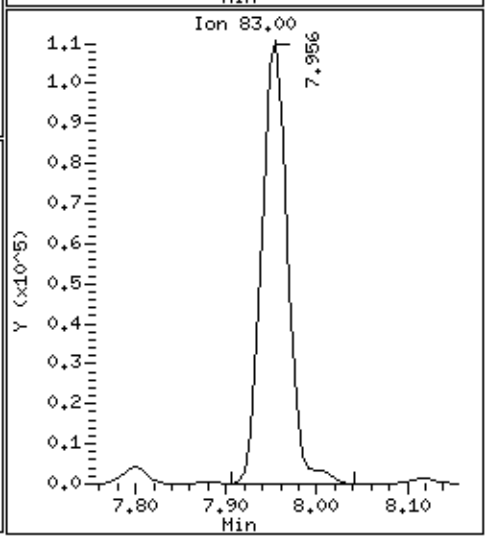












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

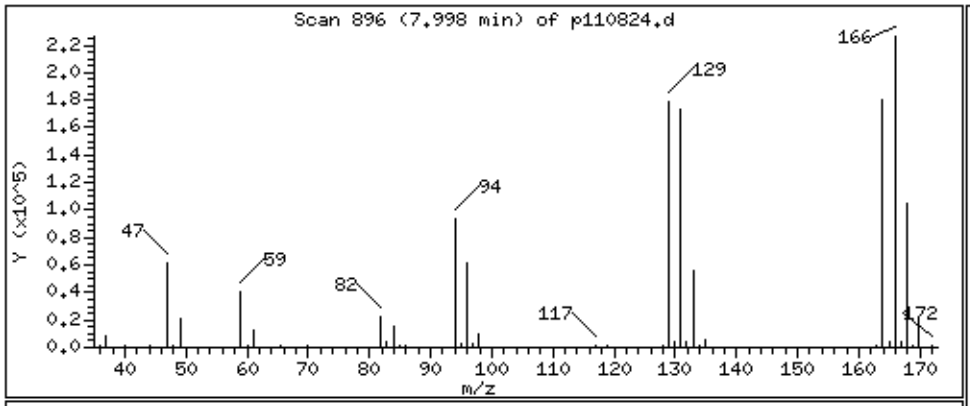
Operator: gd

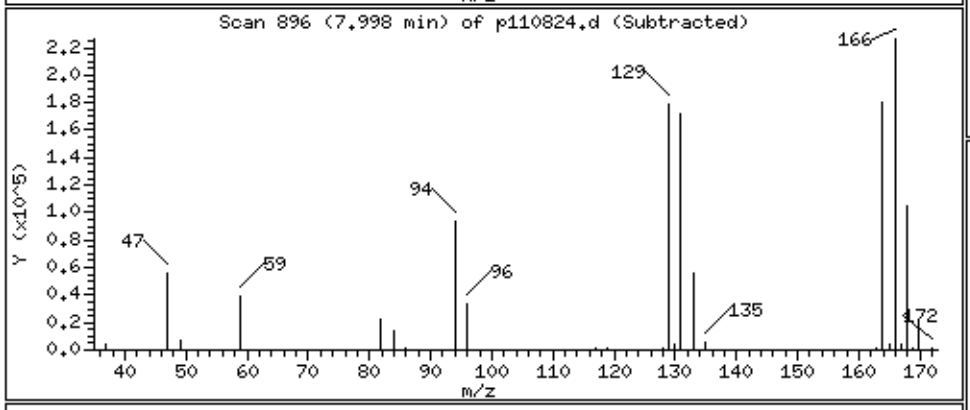
Column phase: RTX-624

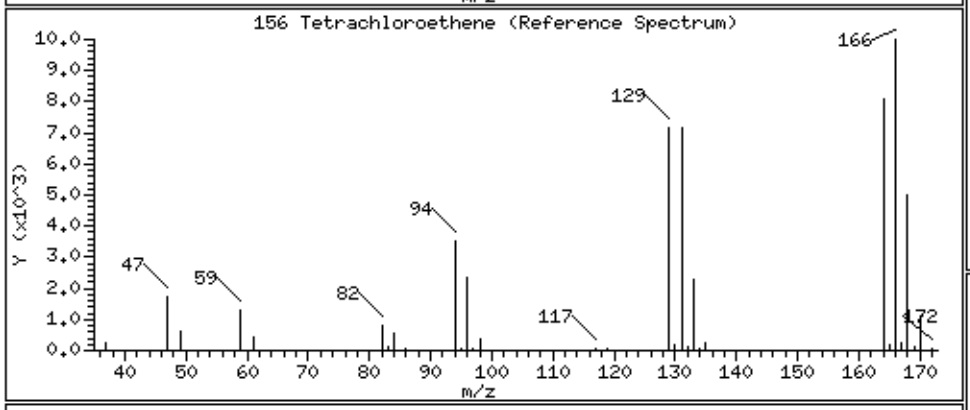
Column diameter: 0.25

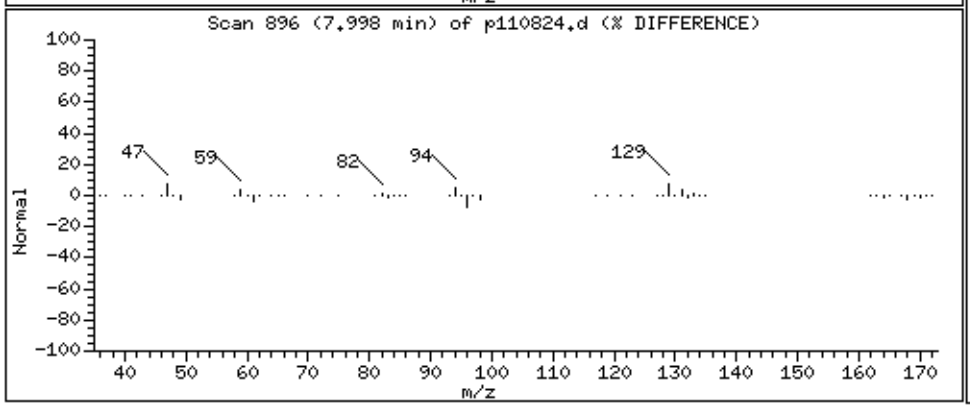
156 Tetrachloroethene

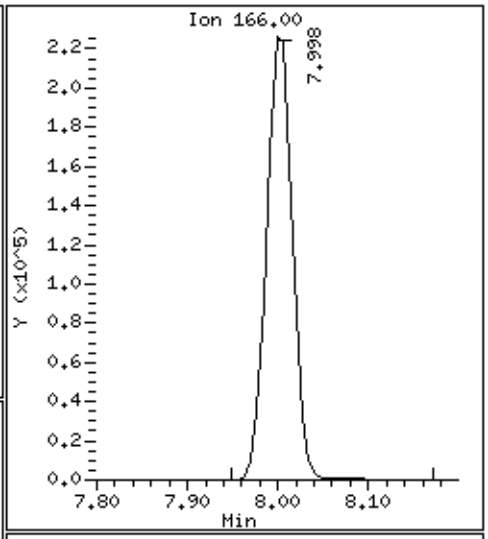
Concentration: 49.987 PPBV

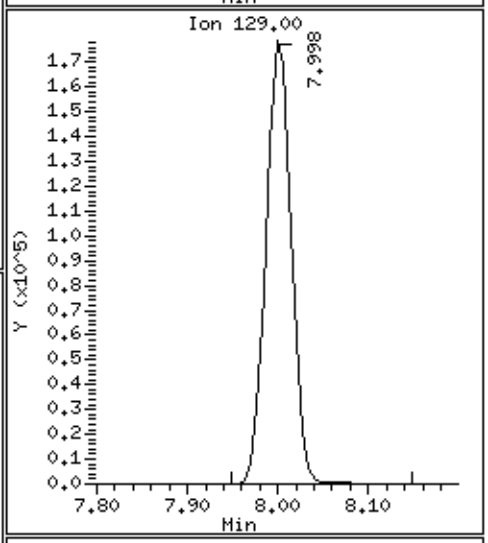


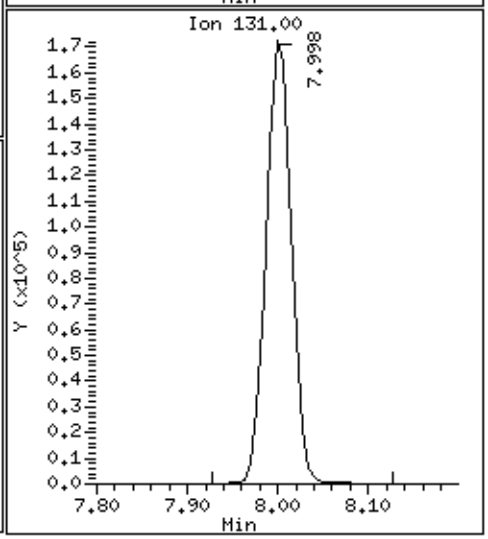












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

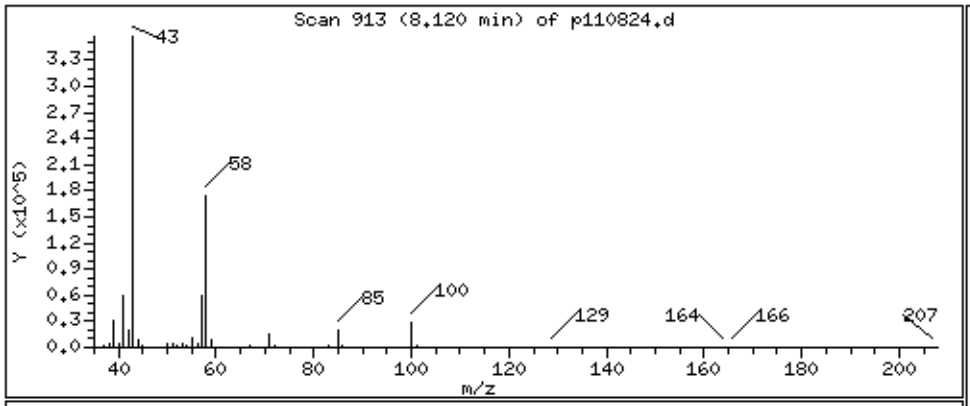
Operator: gd

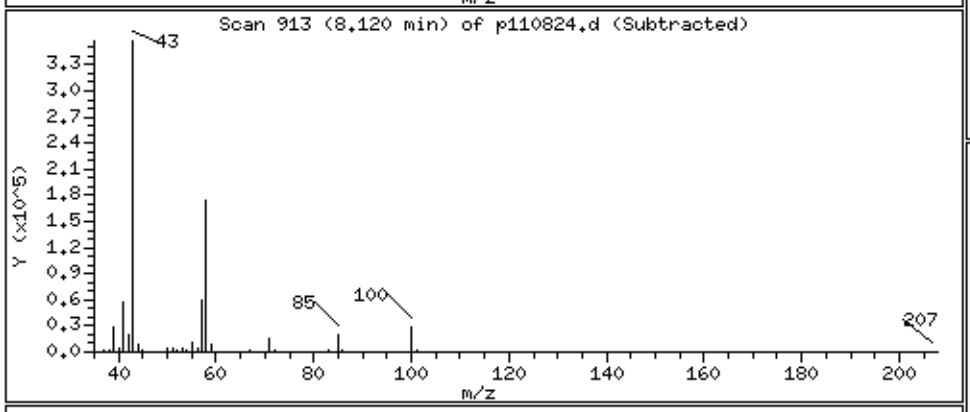
Column phase: RTX-624

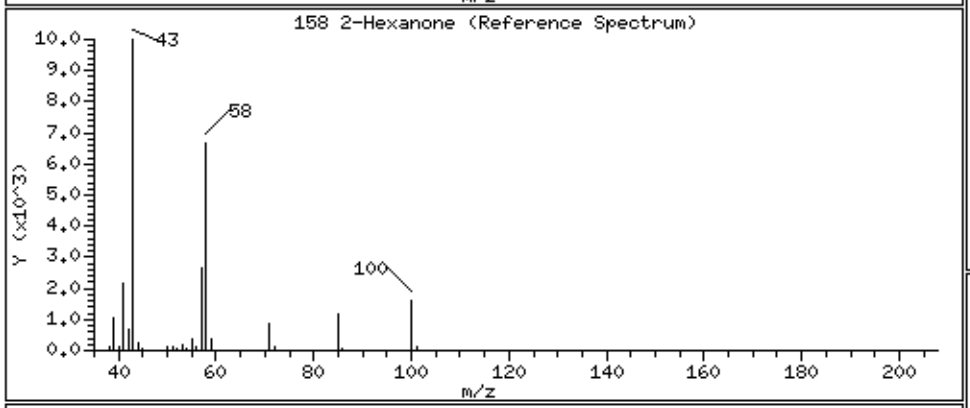
Column diameter: 0.25

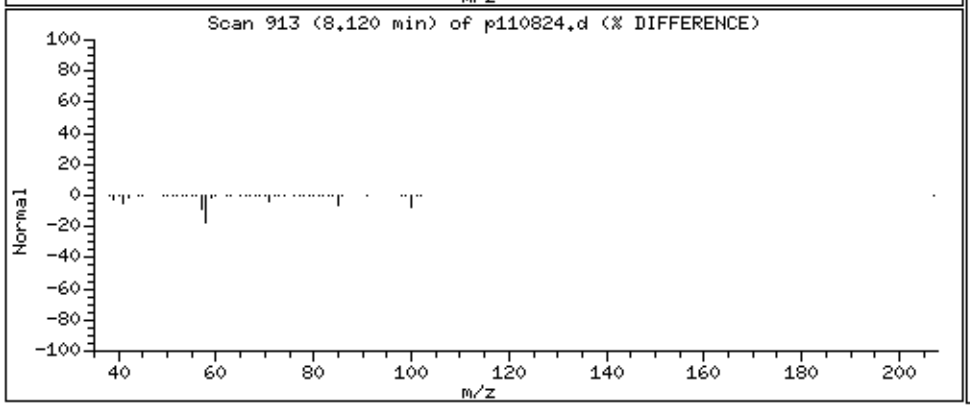
158 2-Hexanone

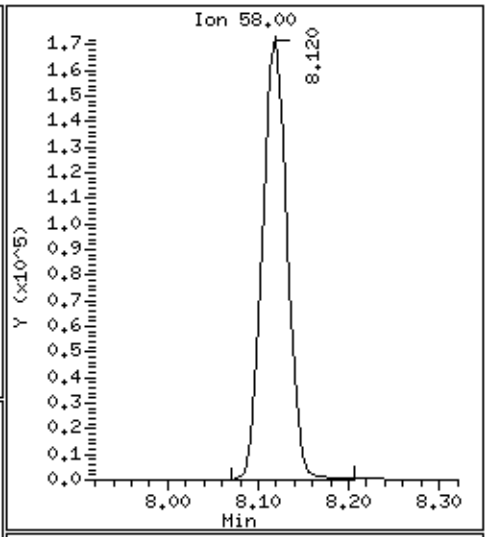
Concentration: 59.900 PPBV

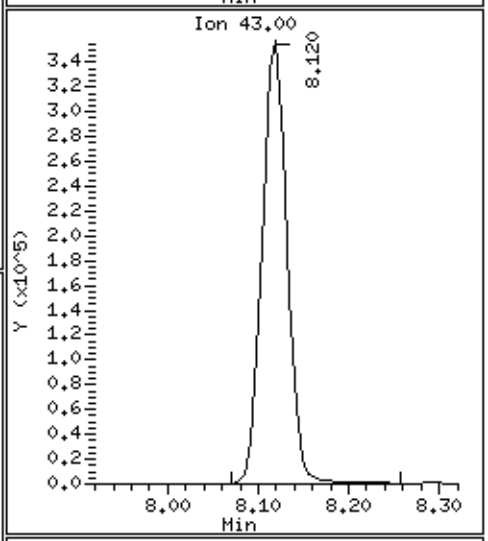


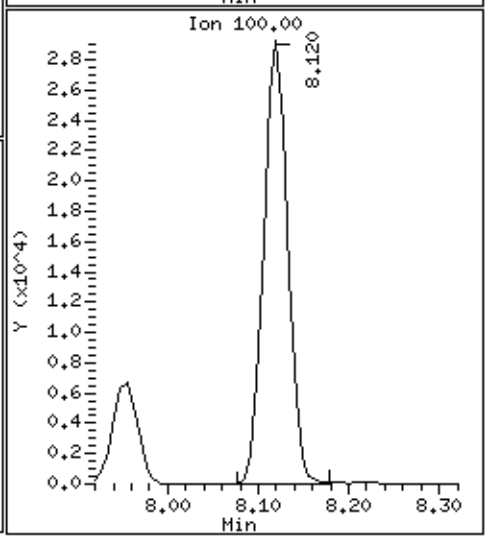












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

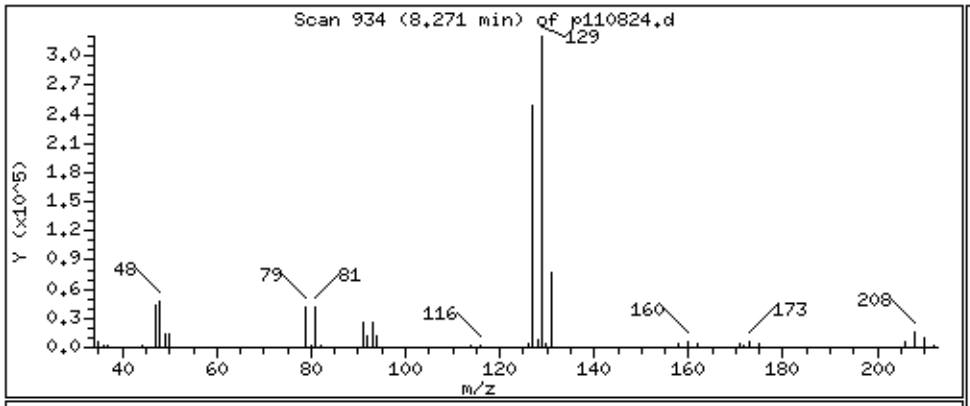
Operator: gd

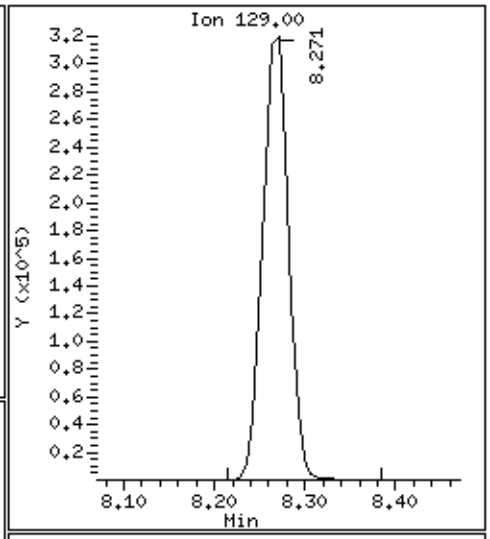
Column phase: RTX-624

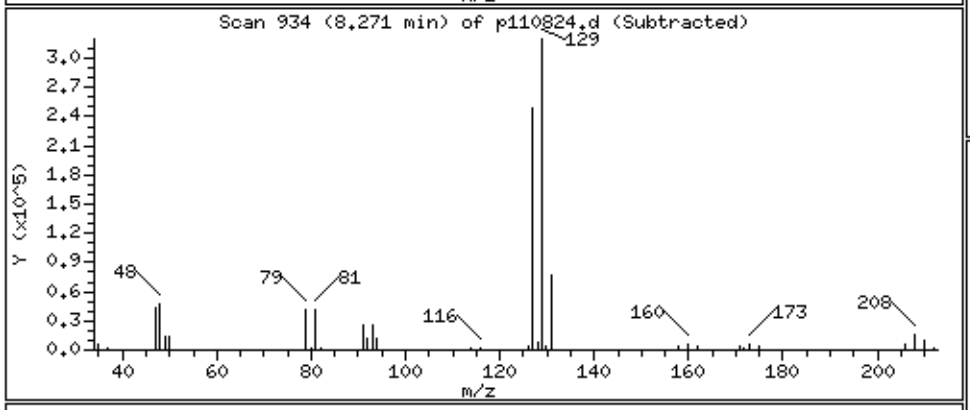
Column diameter: 0.25

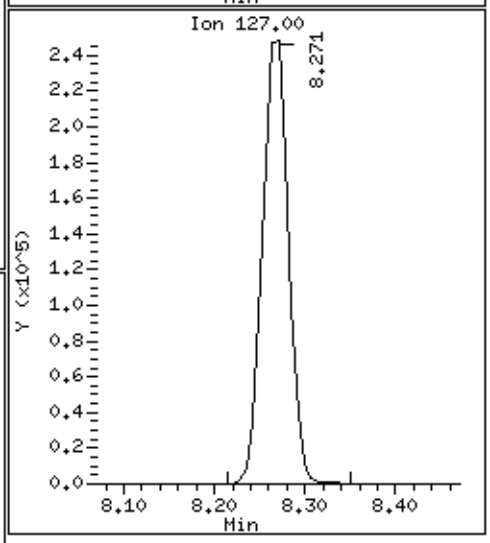
160 Dibromochloromethane

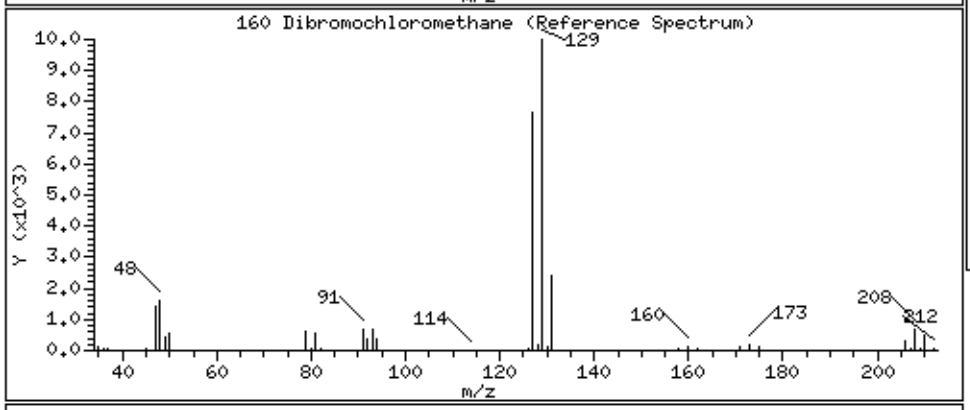
Concentration: 49.429 PPBV

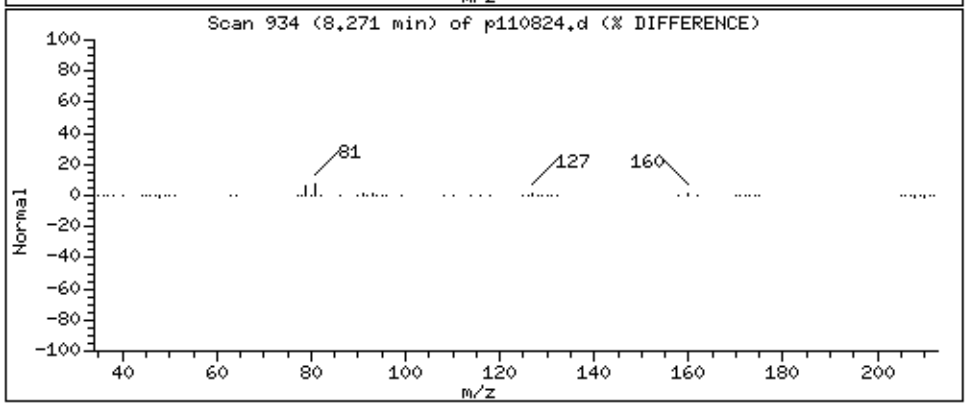












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

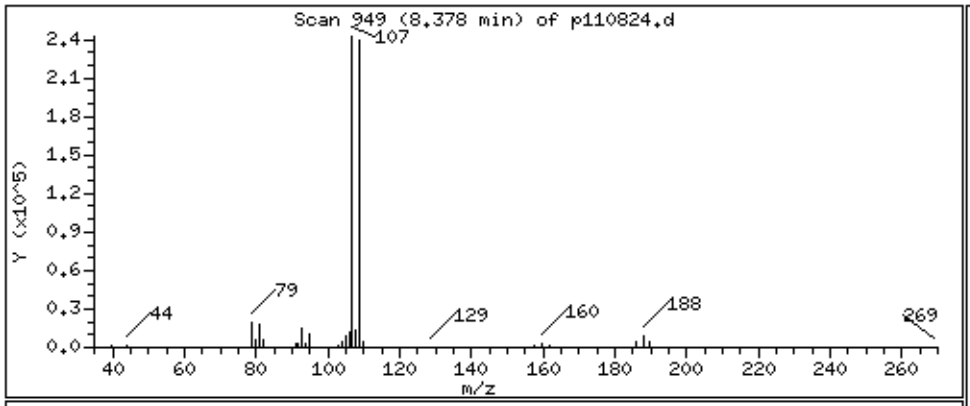
Operator: gd

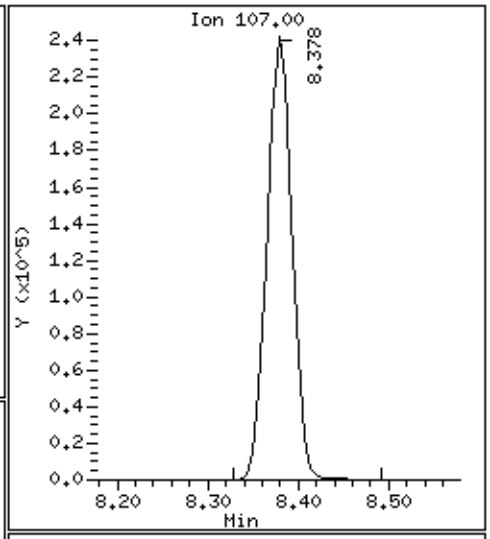
Column phase: RTX-624

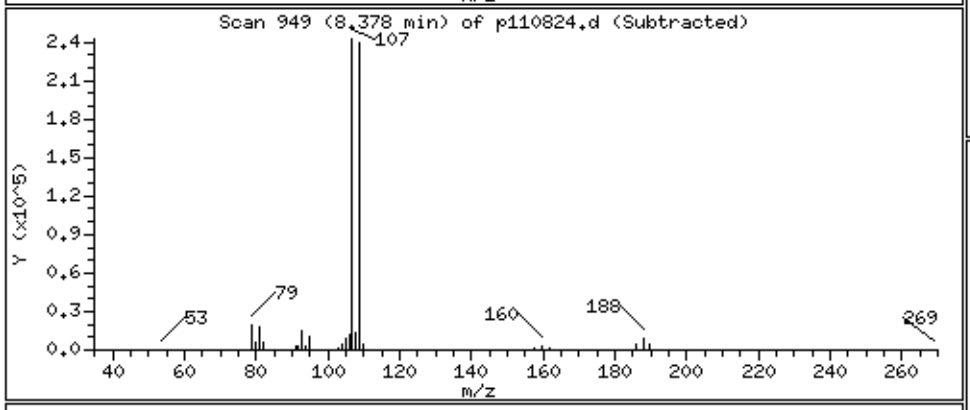
Column diameter: 0.25

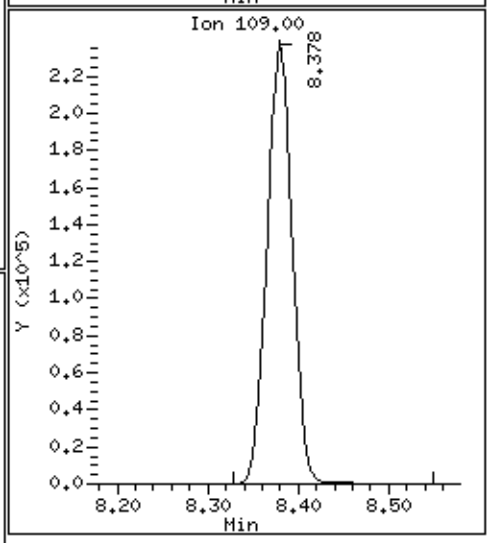
161 1,2-Dibromoethane (EDB)

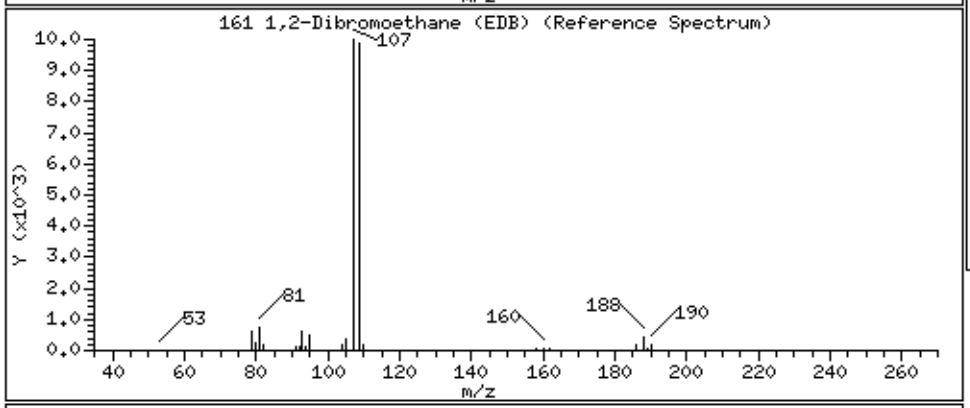
Concentration: 51.262 PPBV

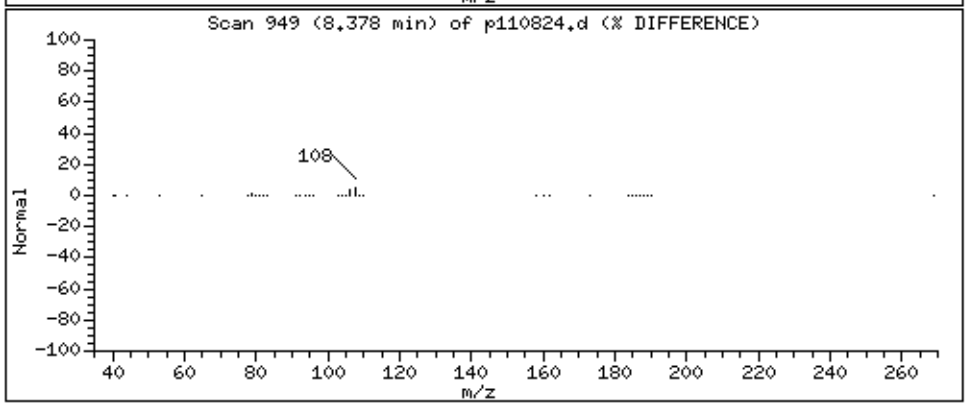












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

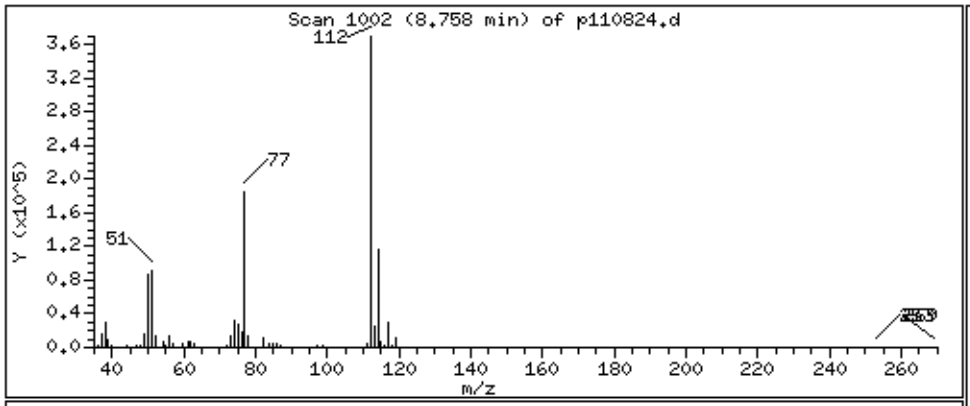
Operator: gd

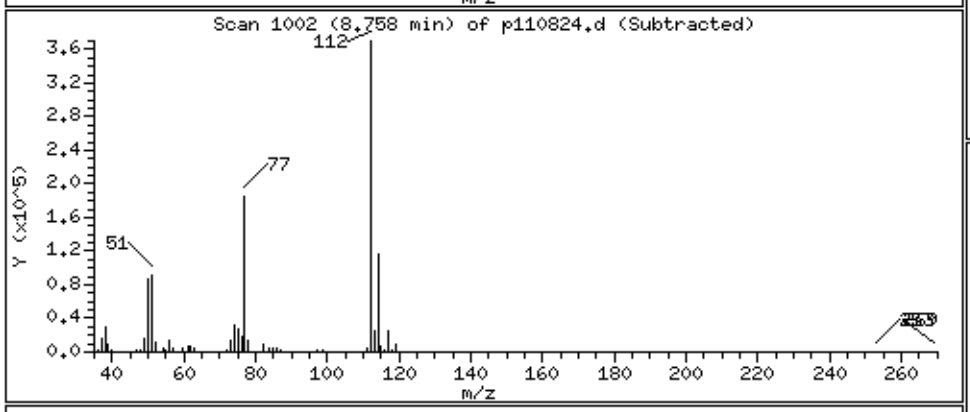
Column phase: RTX-624

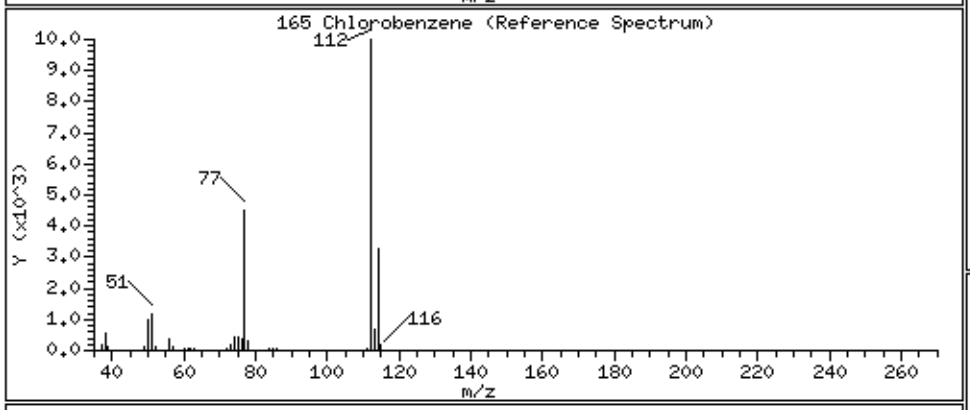
Column diameter: 0.25

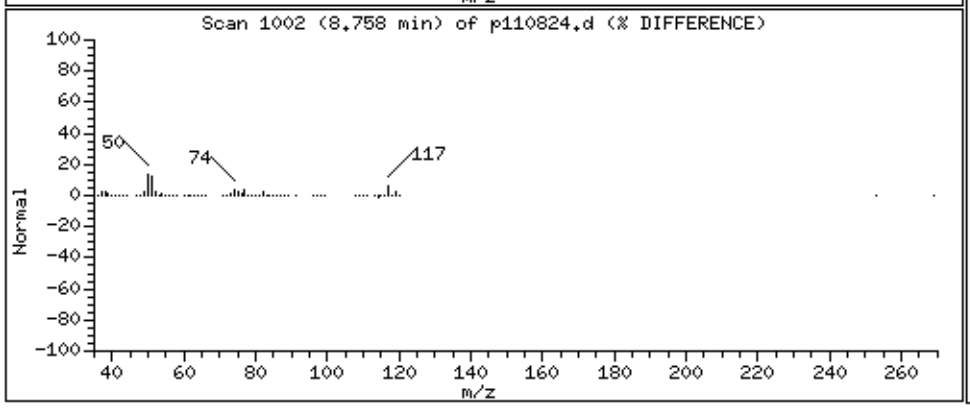
165 Chlorobenzene

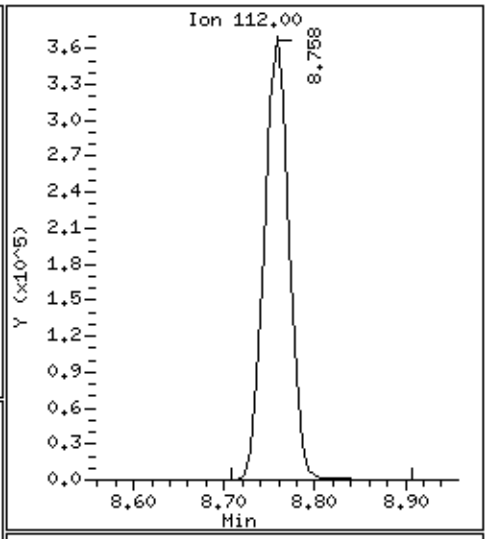
Concentration: 49.630 PPBV

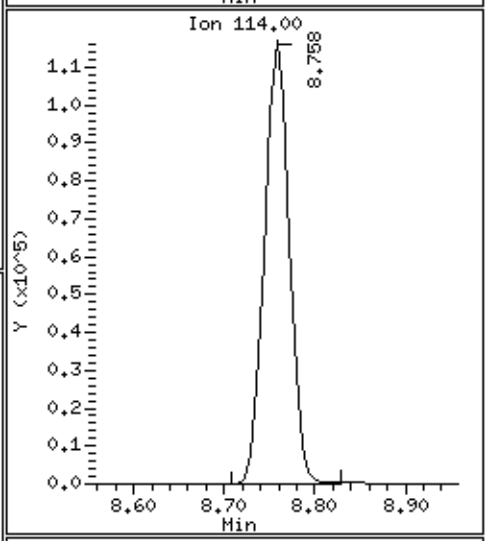


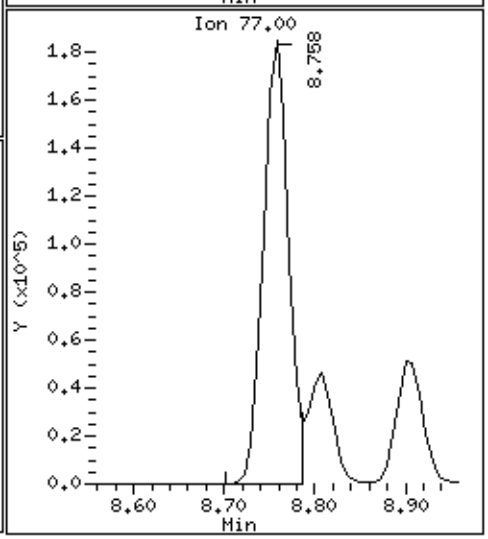












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

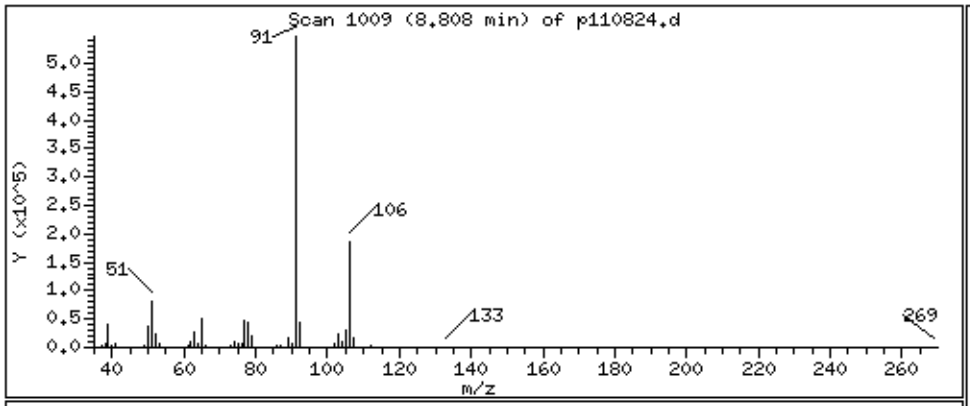
Operator: gd

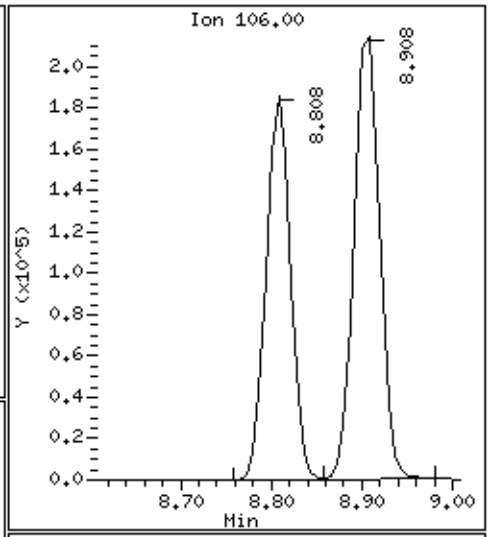
Column phase: RTX-624

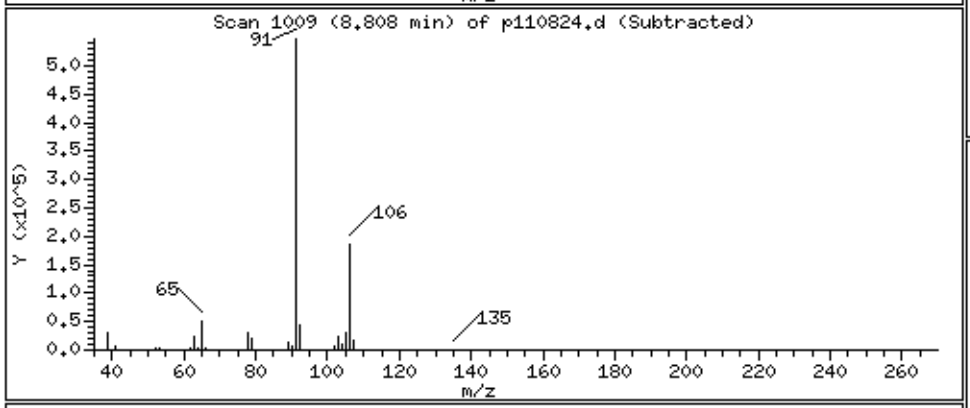
Column diameter: 0.25

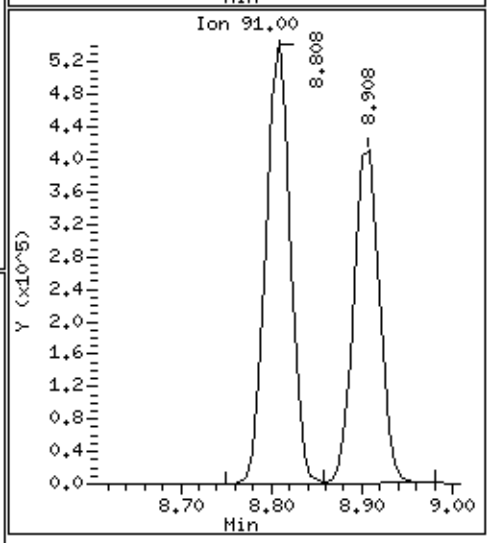
167 Ethyl Benzene

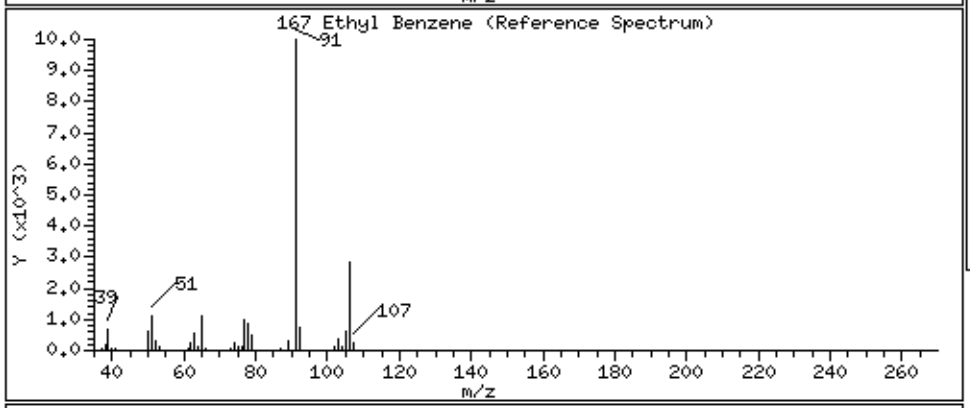
Concentration: 55.055 PPBV

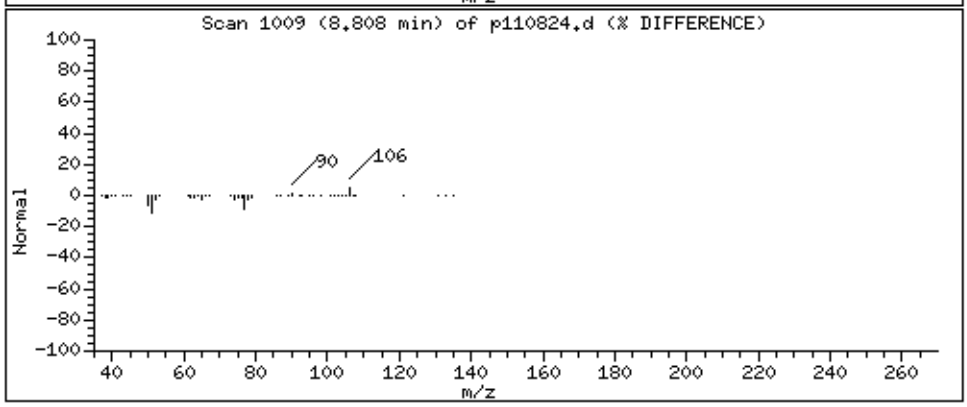












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

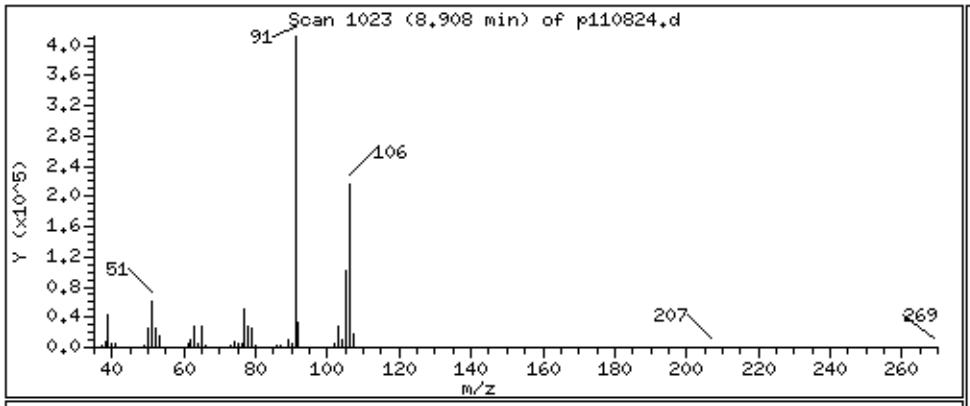
Operator: gd

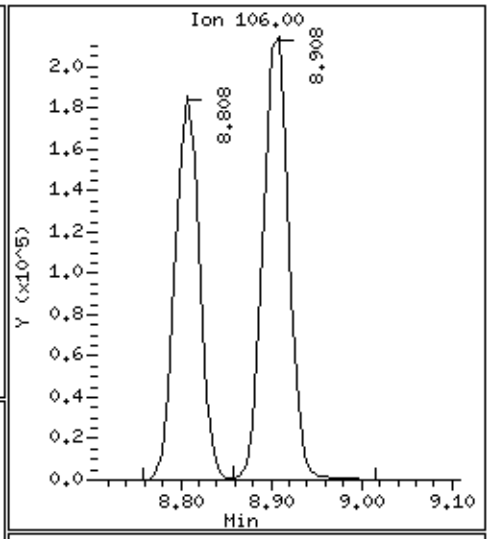
Column phase: RTX-624

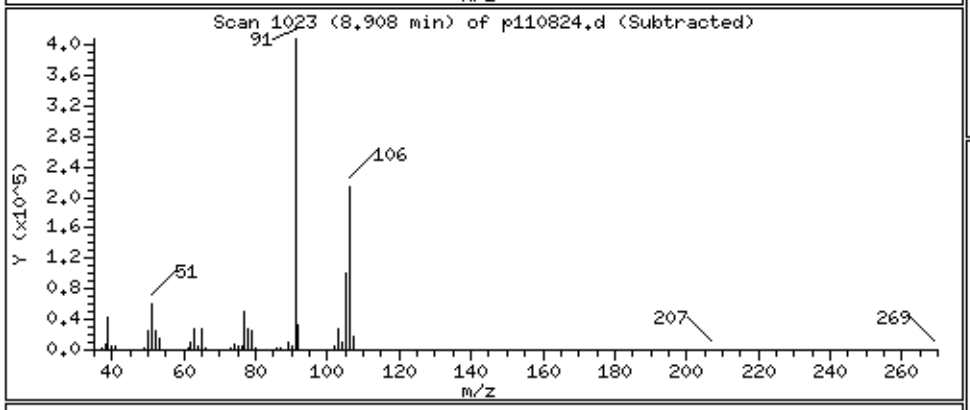
Column diameter: 0.25

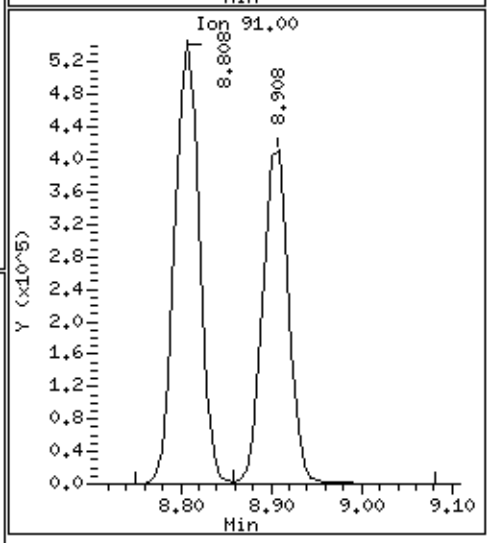
169 m,p-Xylene

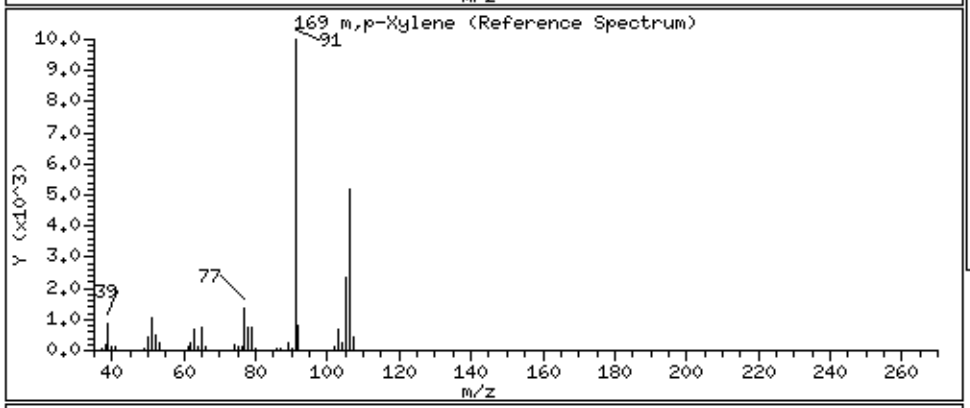
Concentration: 55.059 PPBV

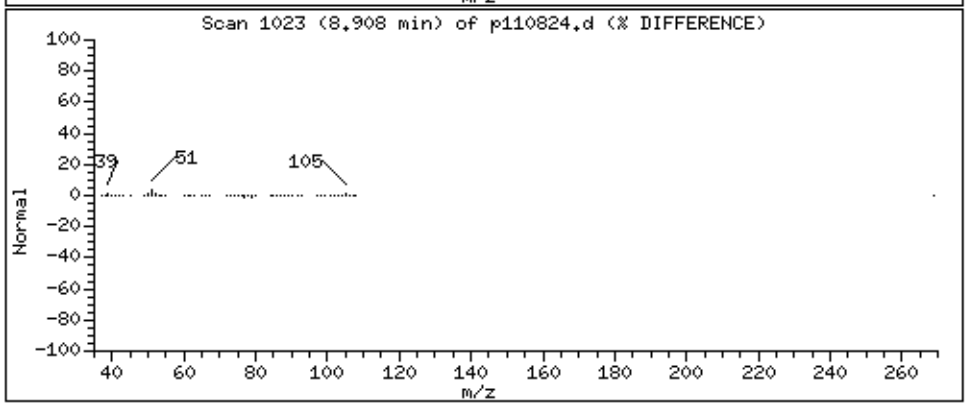












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

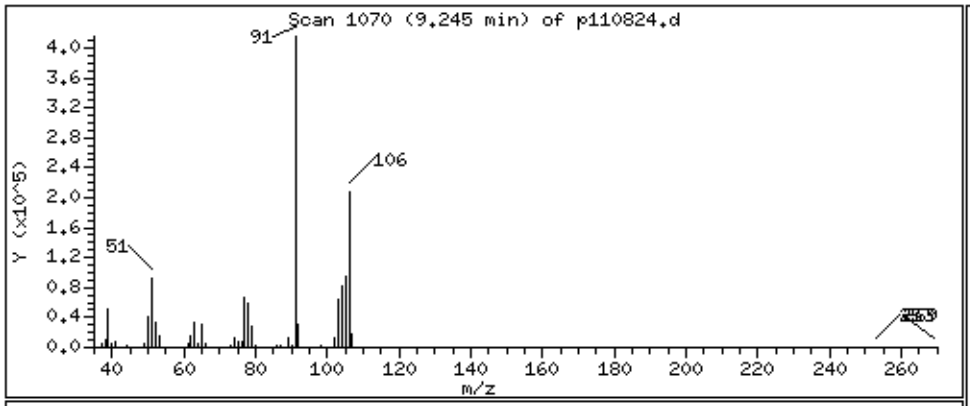
Operator: gd

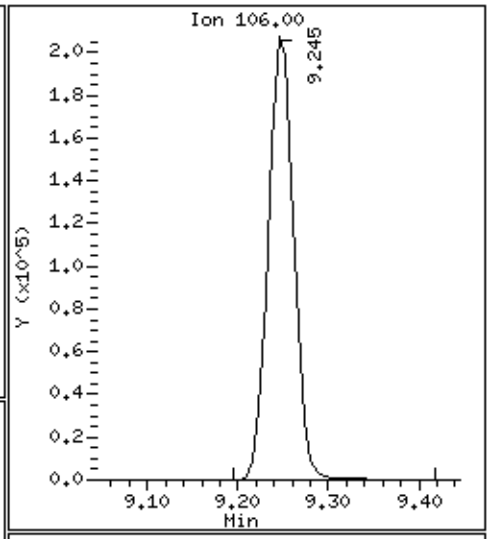
Column phase: RTX-624

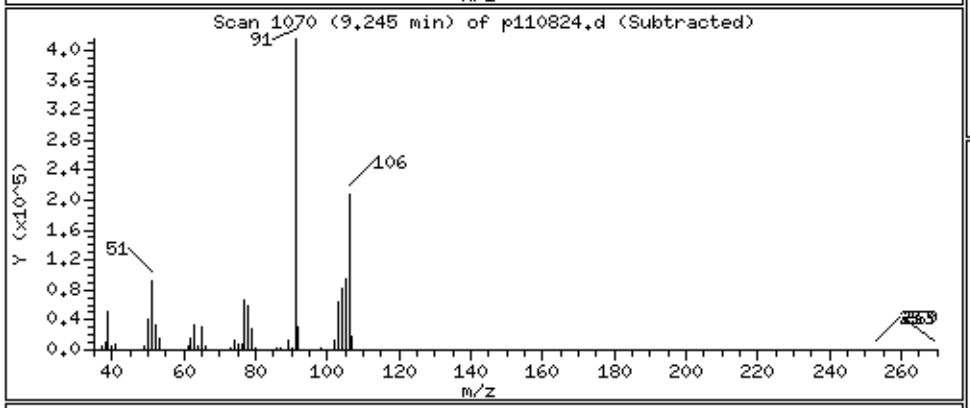
Column diameter: 0.25

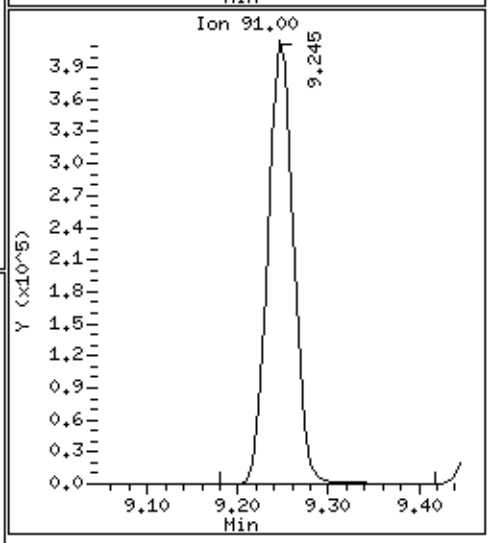
171 o-Xylene

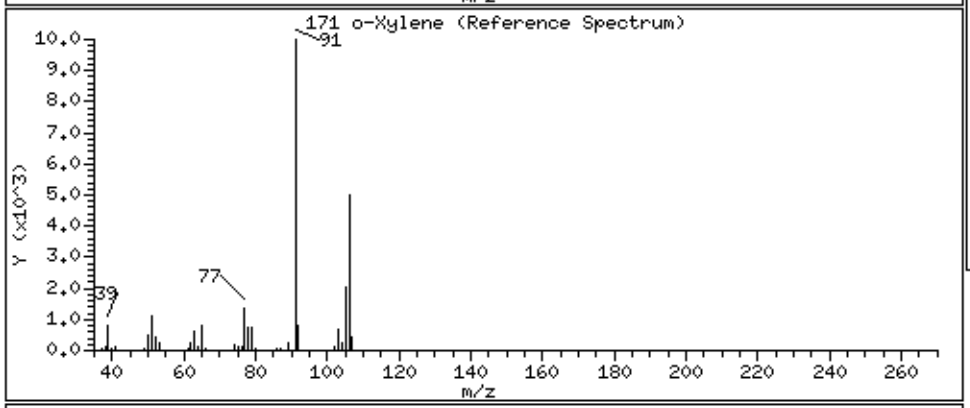
Concentration: 56.129 PPBV

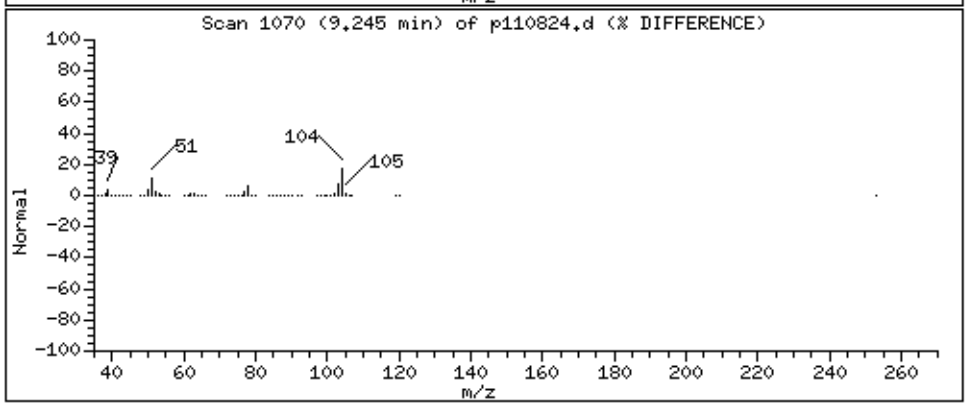












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

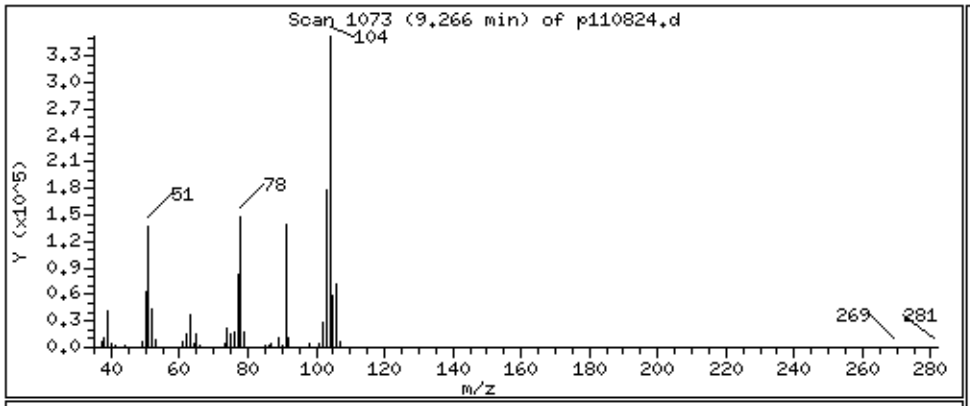
Operator: gd

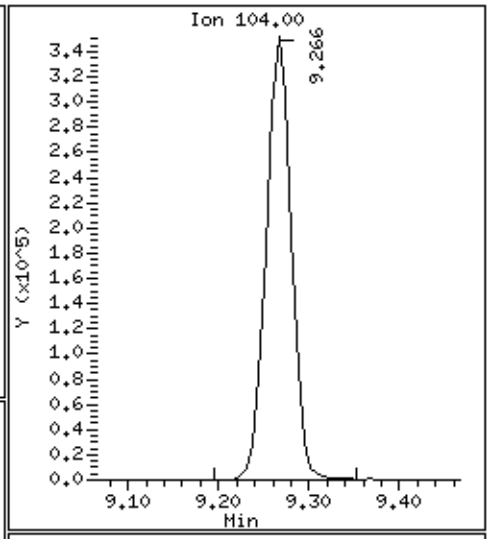
Column phase: RTX-624

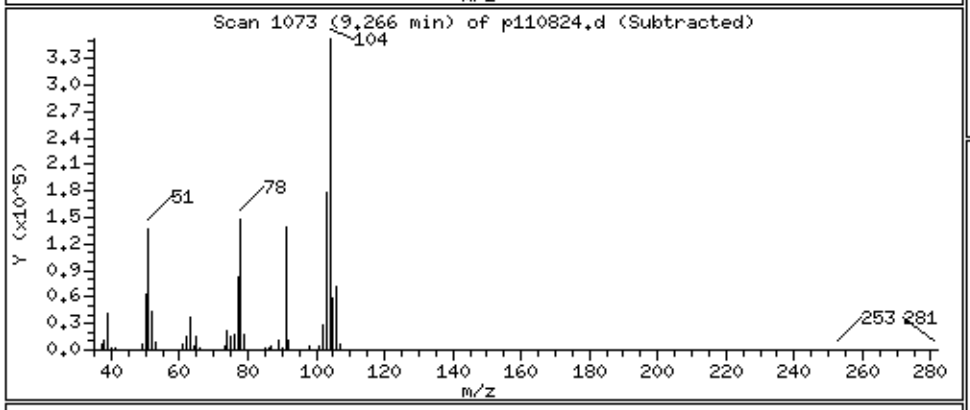
Column diameter: 0.25

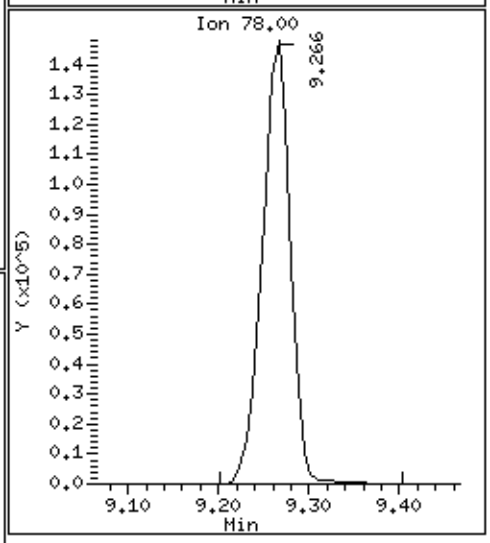
172 Styrene

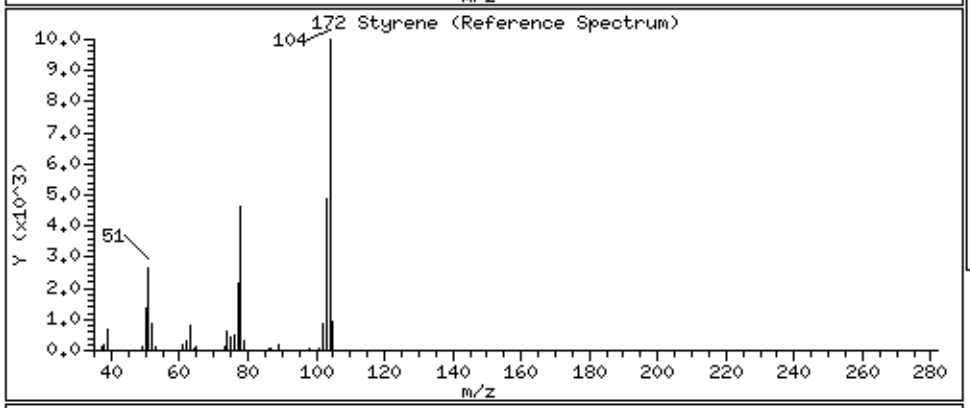
Concentration: 55.733 PPBV

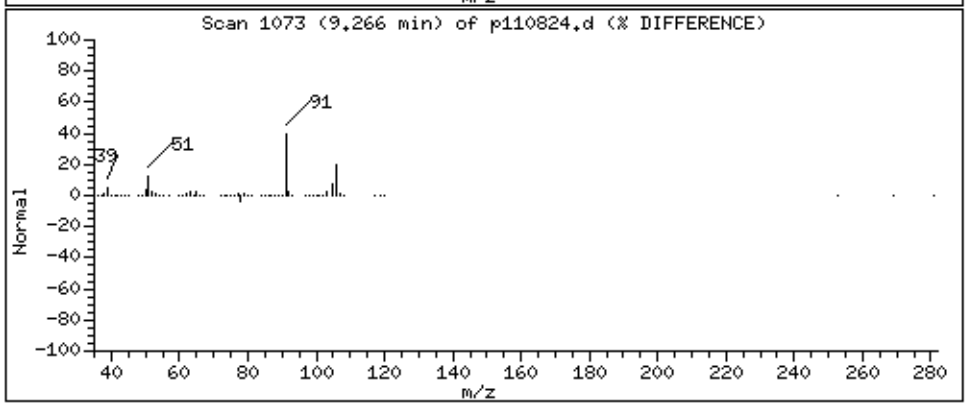












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

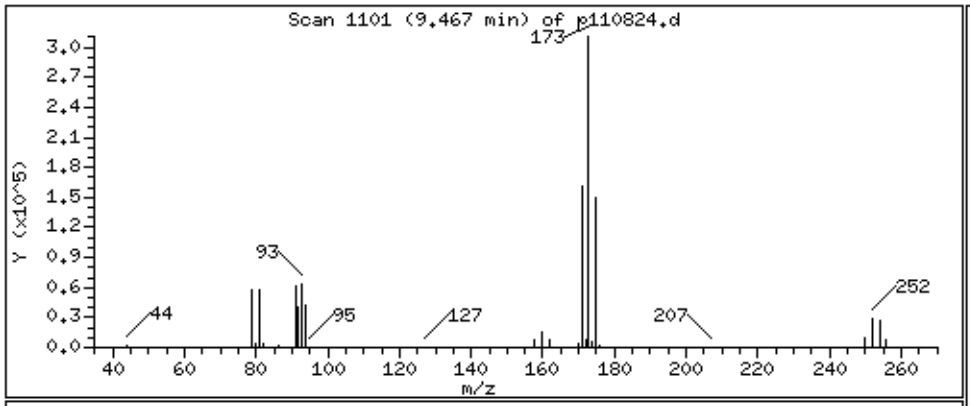
Operator: gd

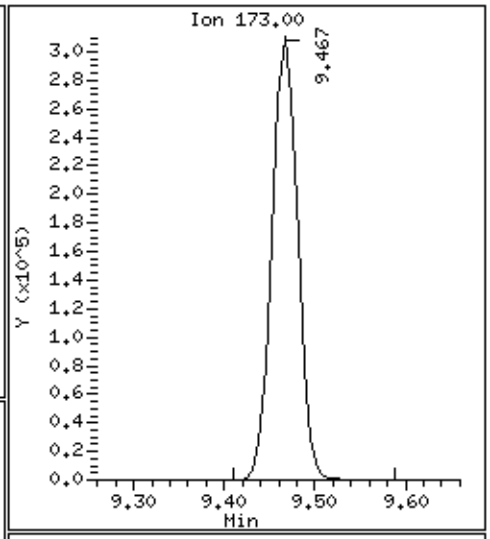
Column phase: RTX-624

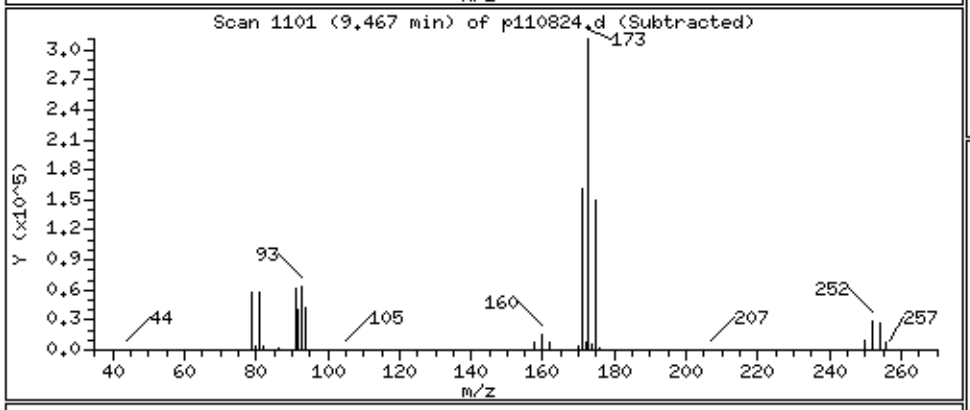
Column diameter: 0.25

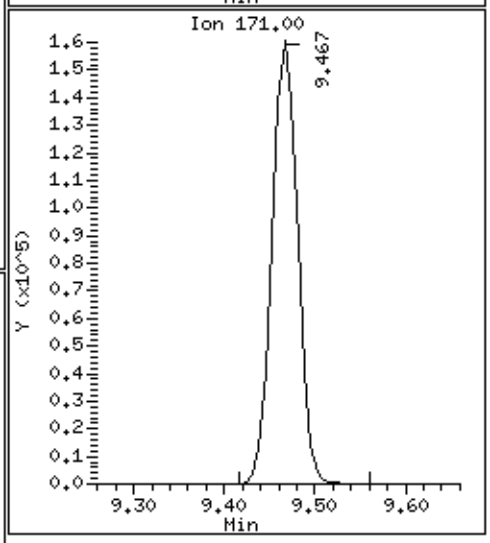
174 Bromoform

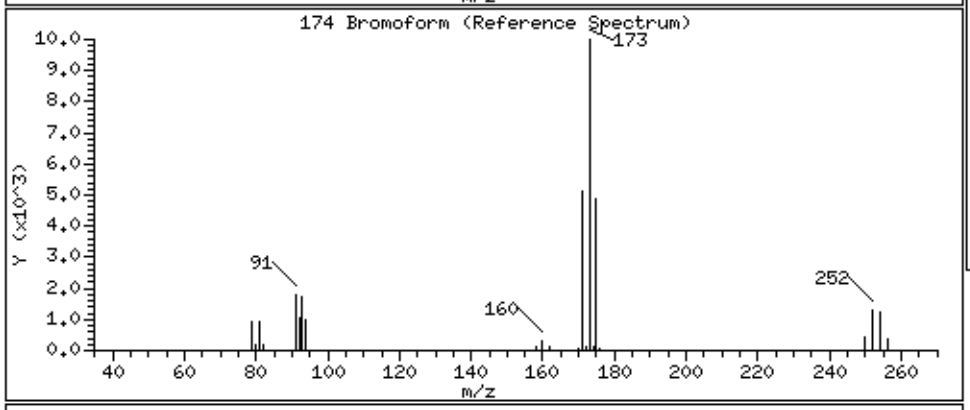
Concentration: 51.550 PPBV

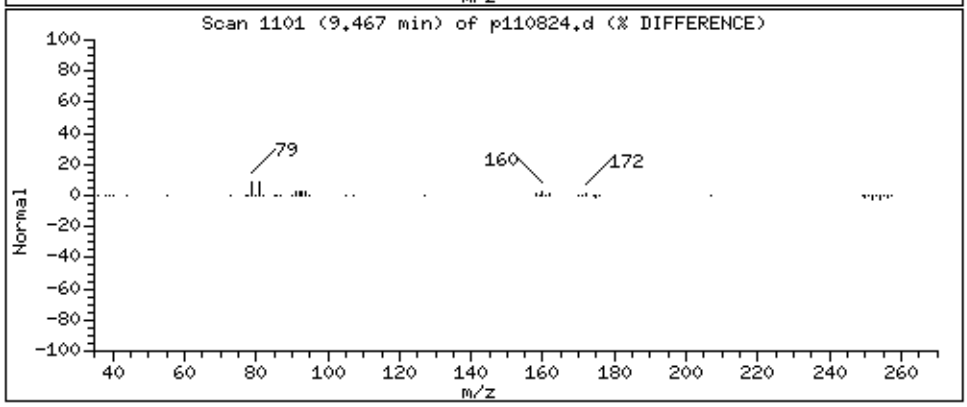












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

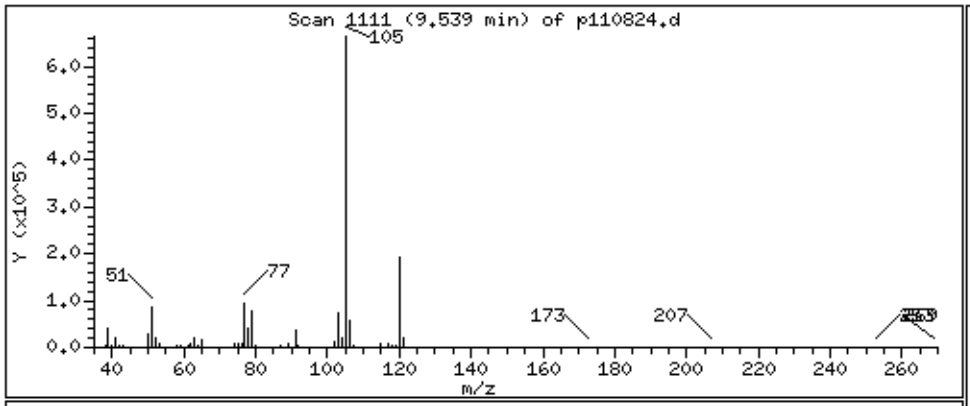
Operator: gd

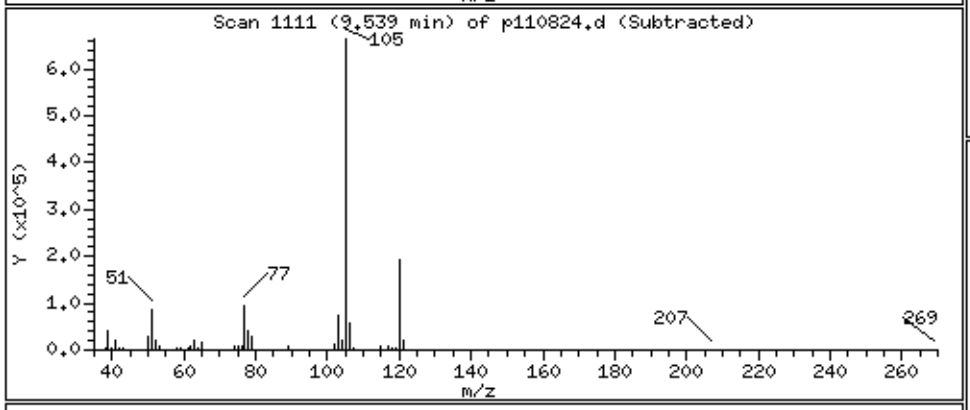
Column phase: RTX-624

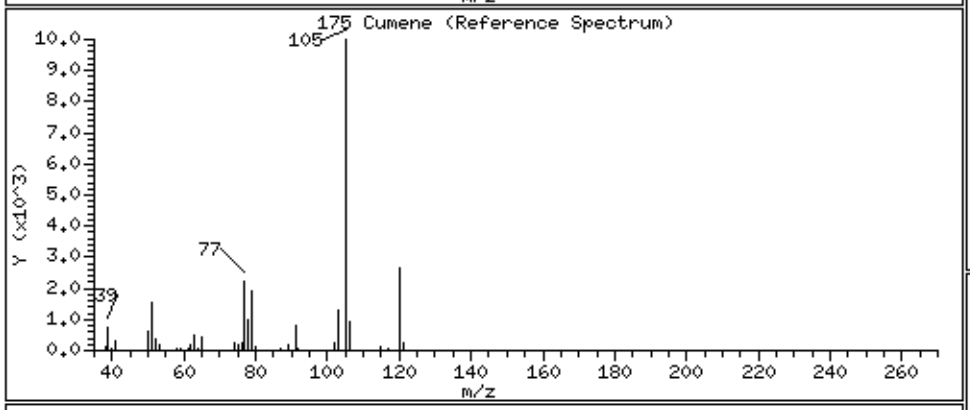
Column diameter: 0.25

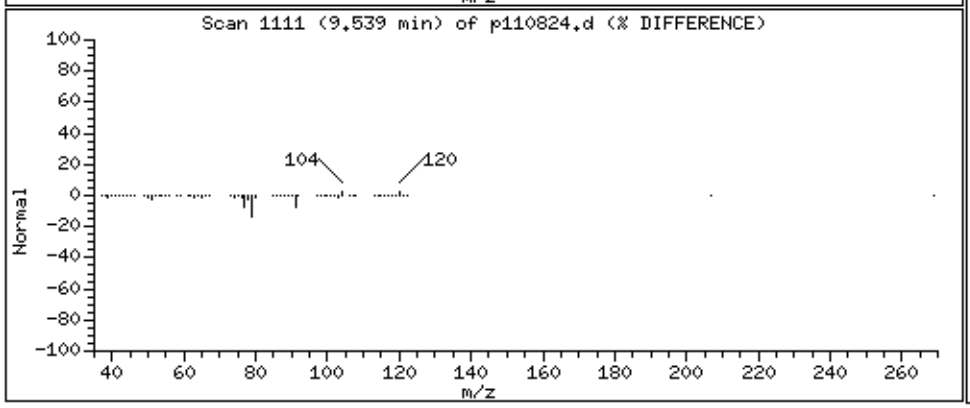
175 Cumene

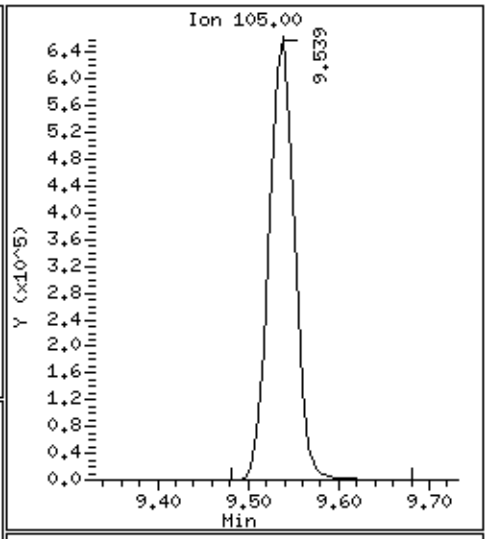
Concentration: 55.055 PPBV

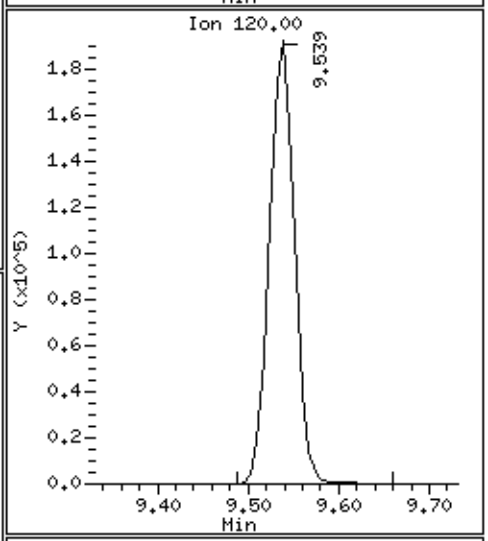


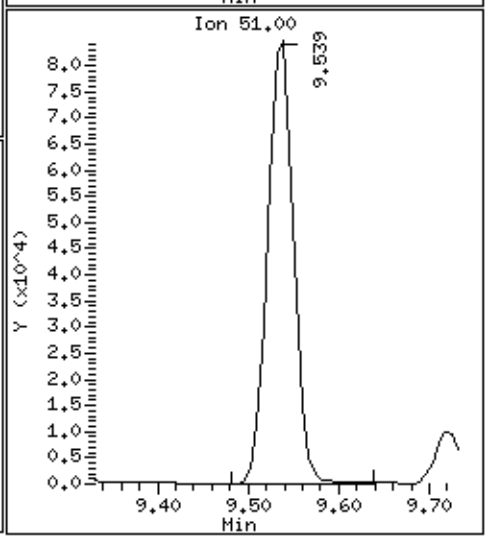












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

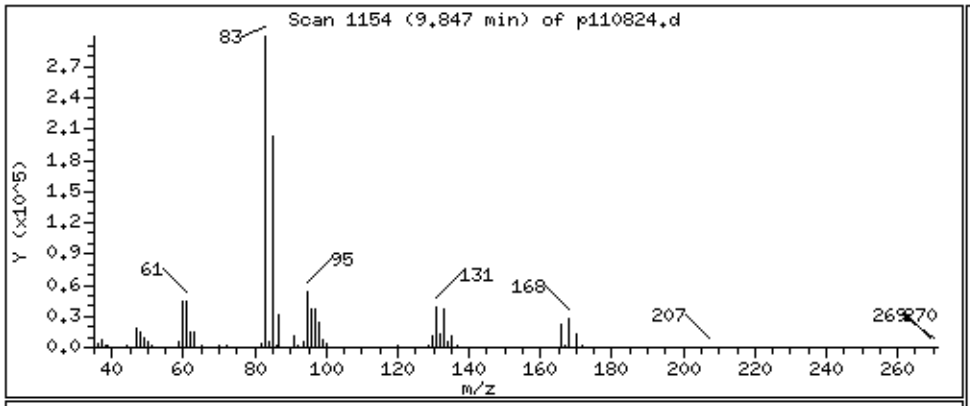
Operator: gd

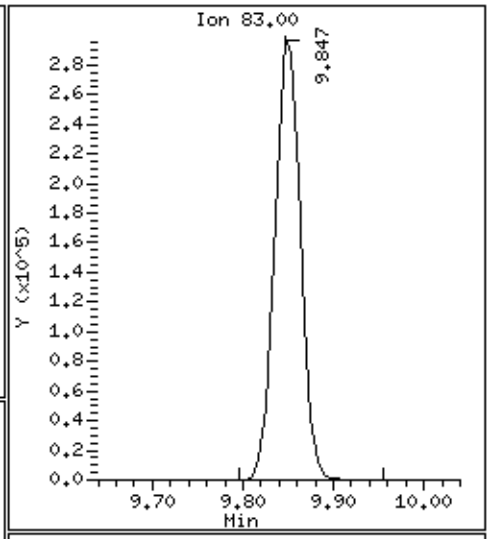
Column phase: RTX-624

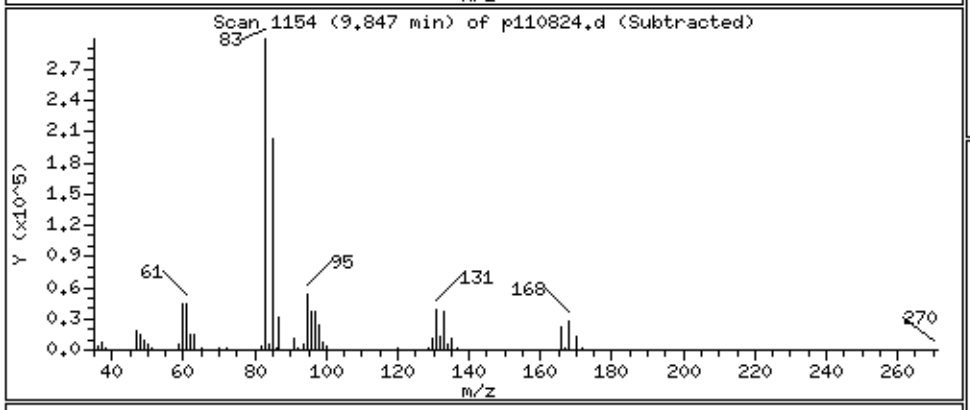
Column diameter: 0.25

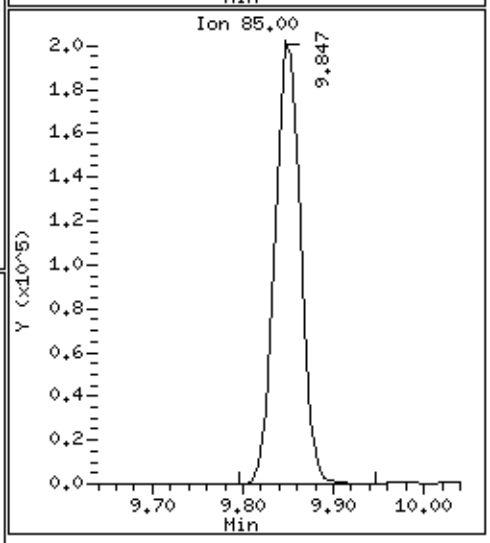
181 1,1,2,2-Tetrachloroethane

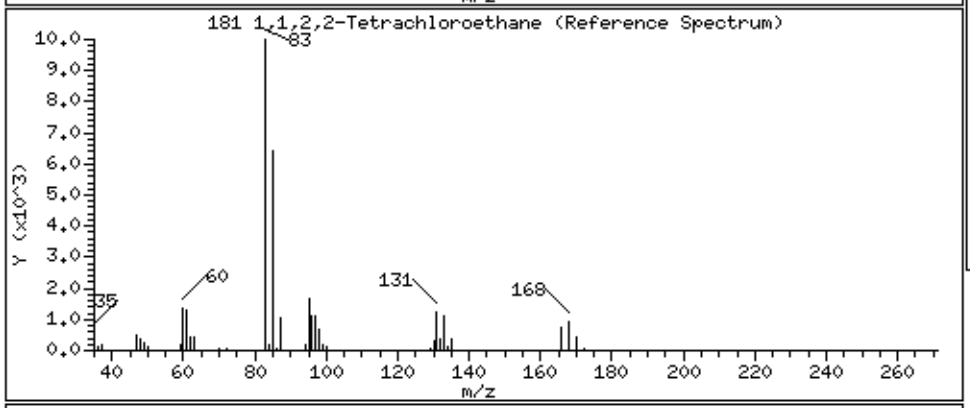
Concentration: 49.513 PPBV

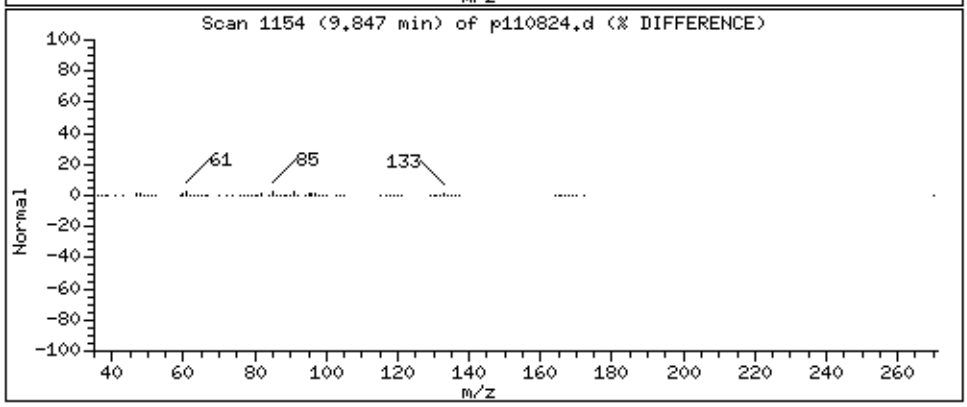












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

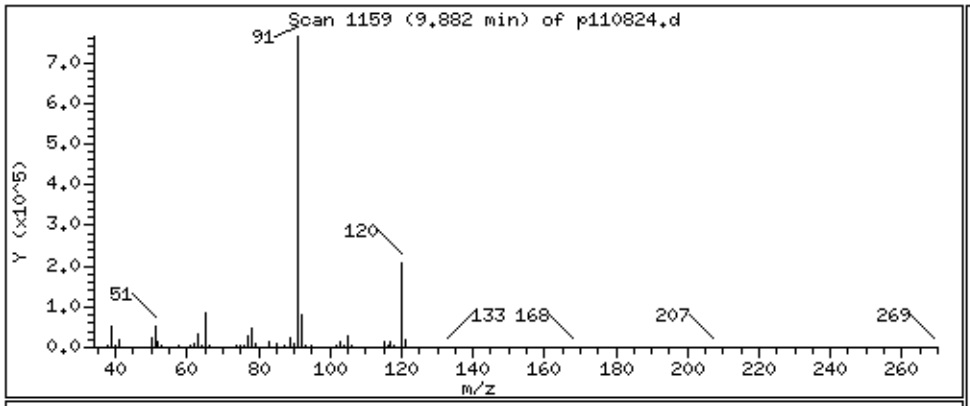
Operator: gd

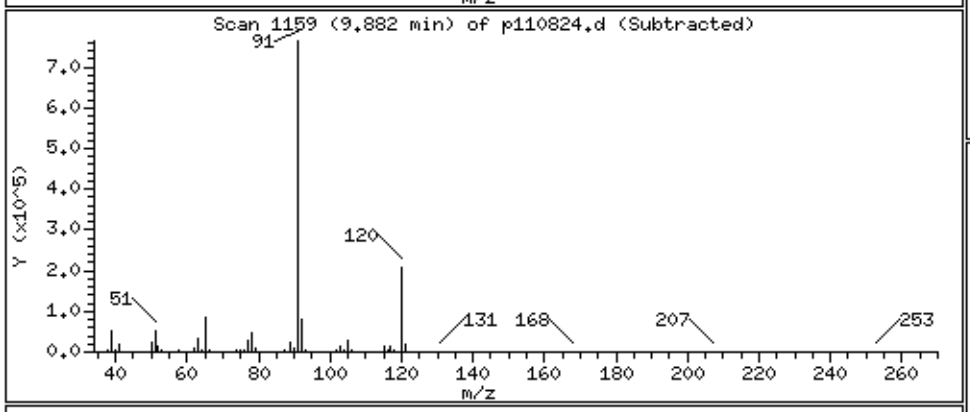
Column phase: RTX-624

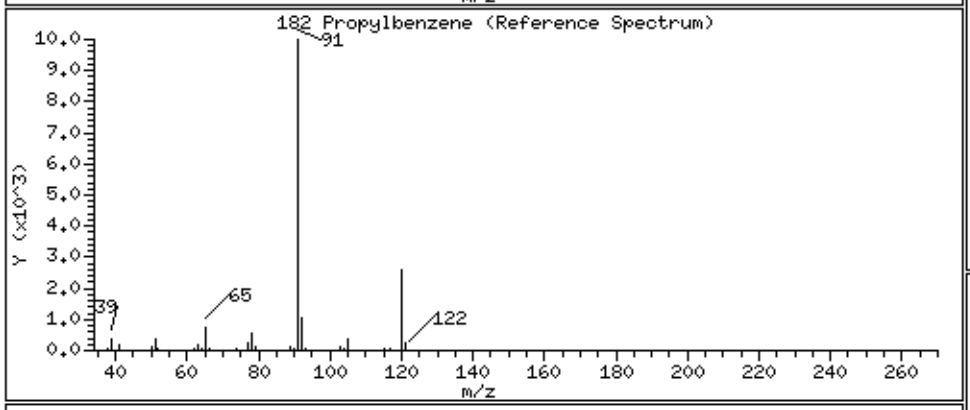
Column diameter: 0.25

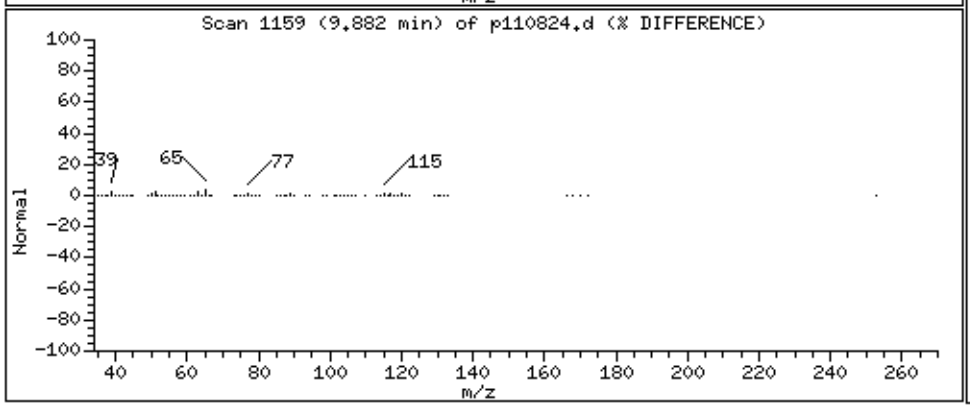
182 Propylbenzene

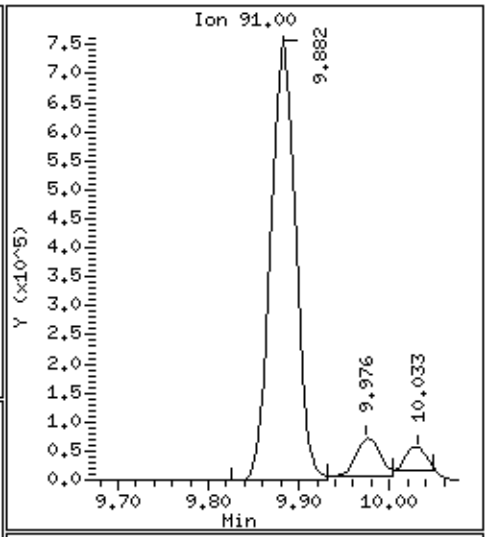
Concentration: 54.044 PPBV

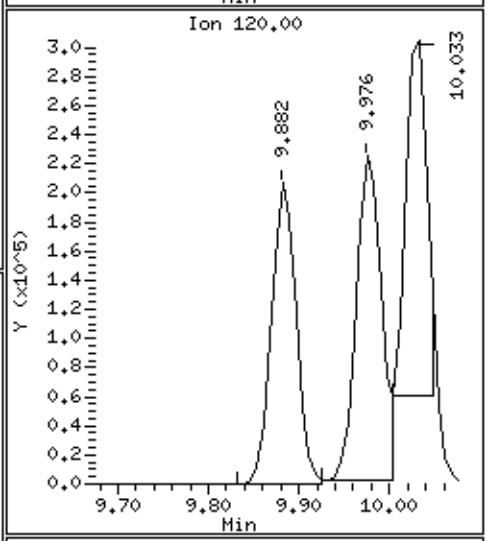


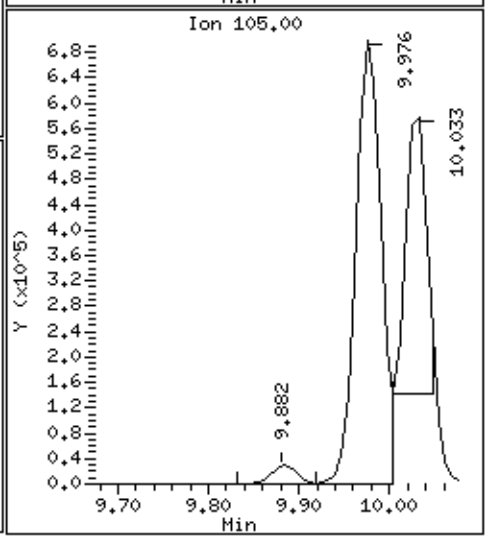












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

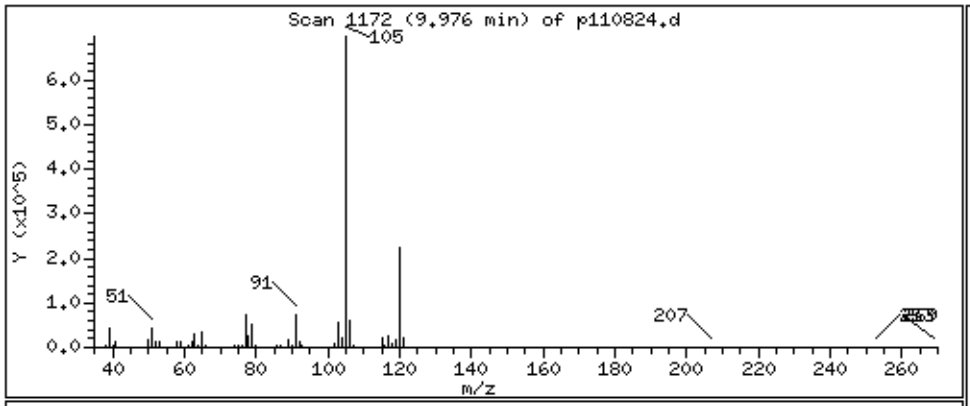
Operator: gd

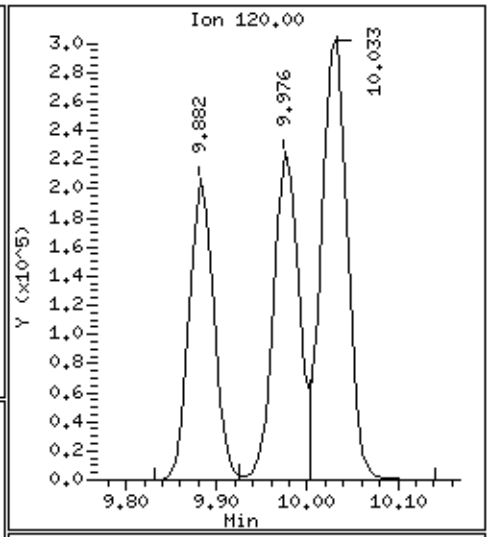
Column phase: RTX-624

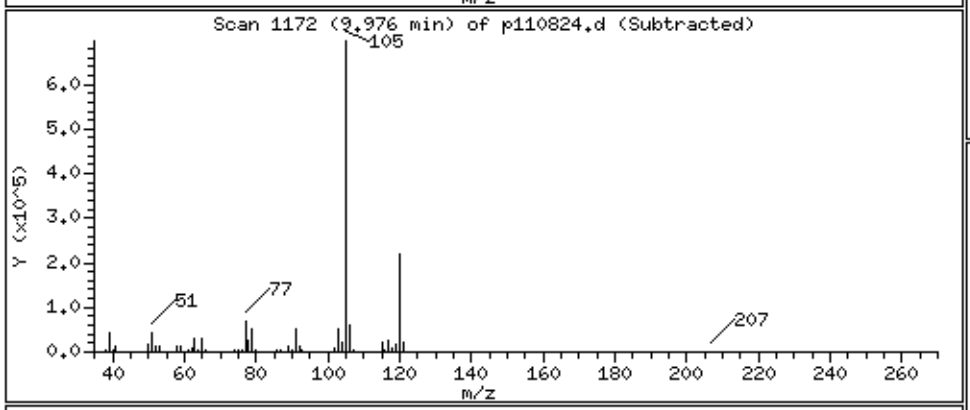
Column diameter: 0.25

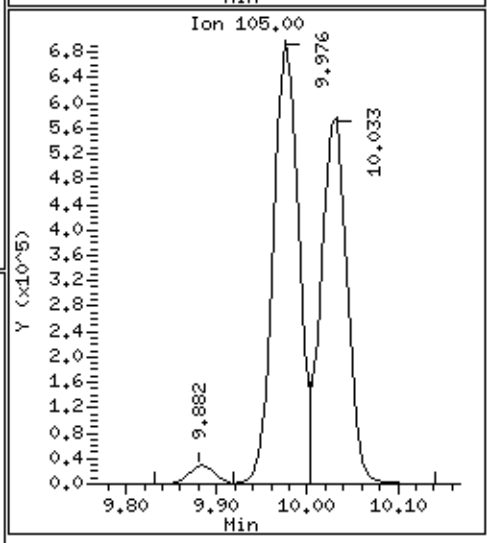
188 4-Ethyltoluene

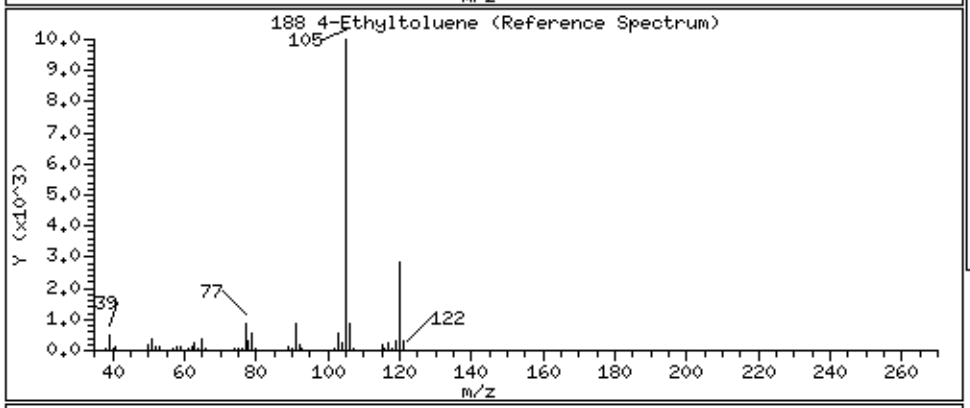
Concentration: 56.588 PPBV

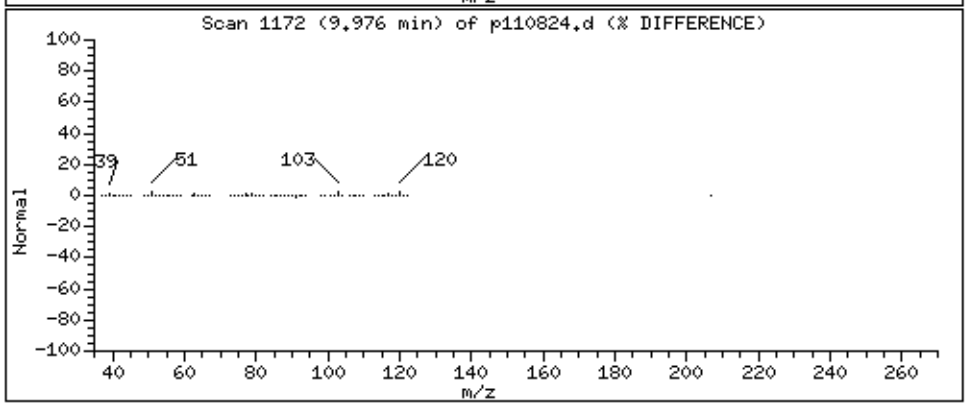












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

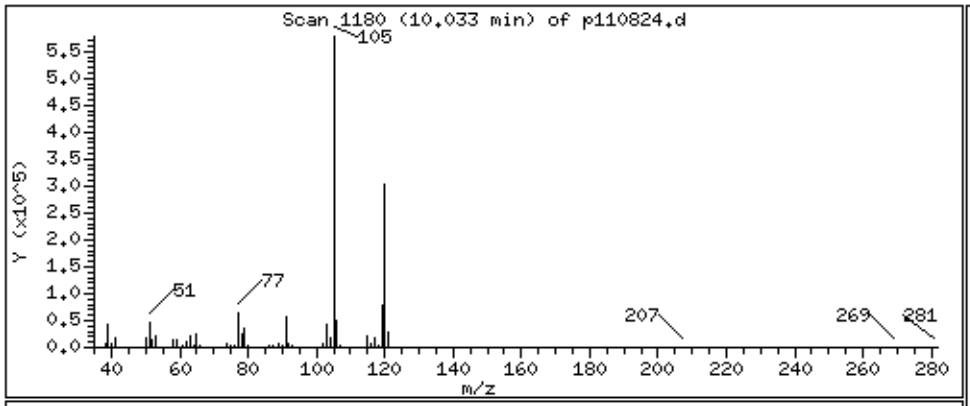
Operator: gd

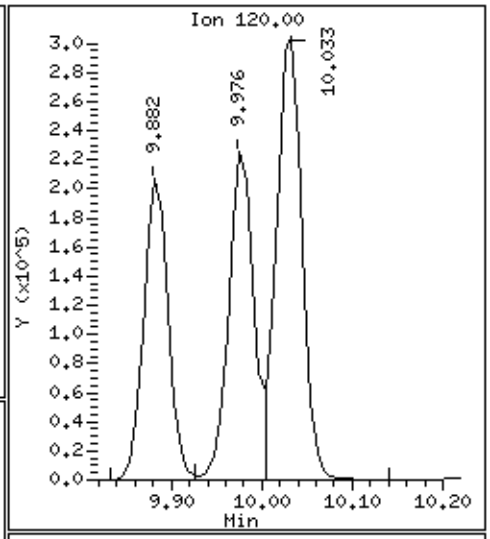
Column phase: RTX-624

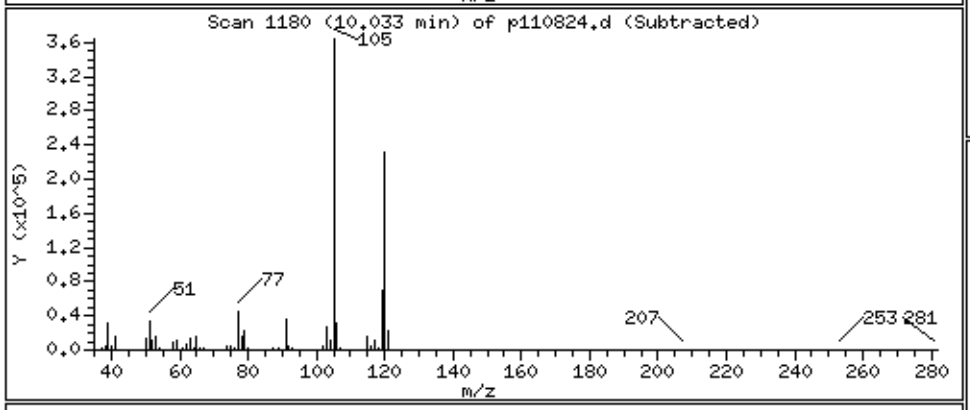
Column diameter: 0.25

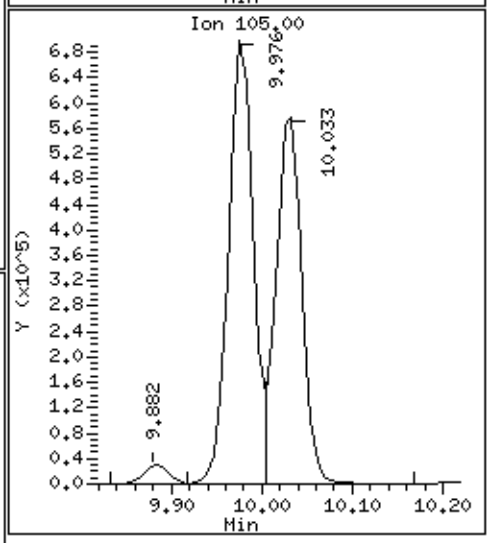
190 1,3,5-Trimethylbenzene

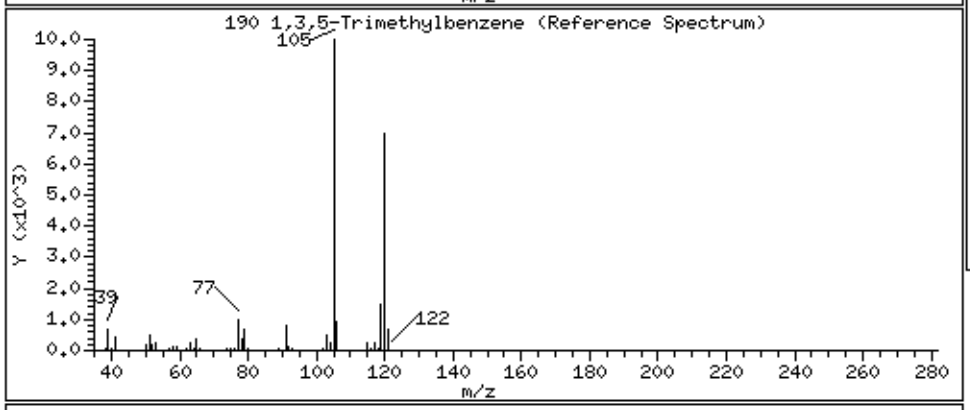
Concentration: 55.069 PPBV

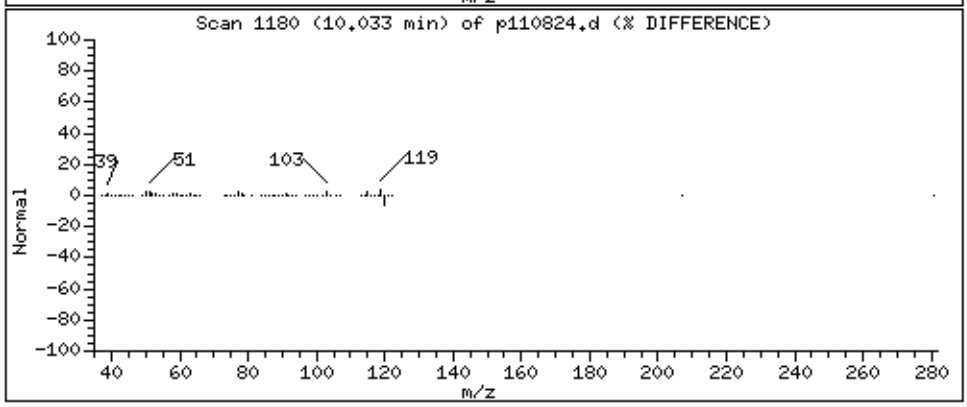












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

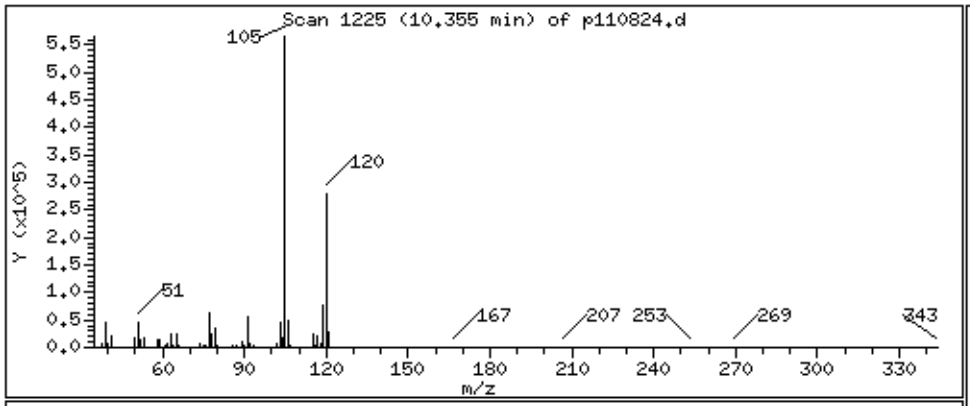
Operator: gd

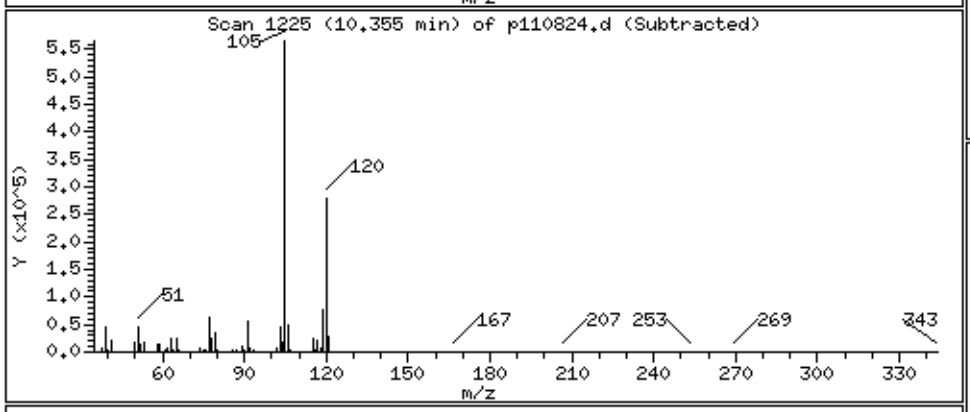
Column phase: RTX-624

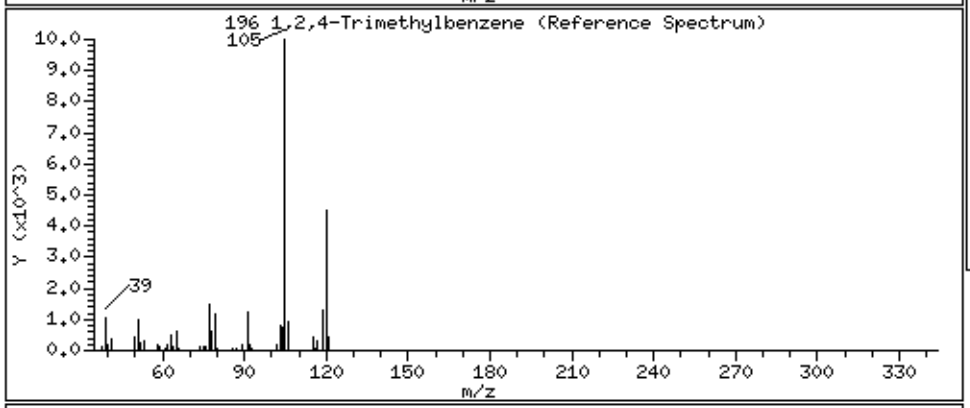
Column diameter: 0.25

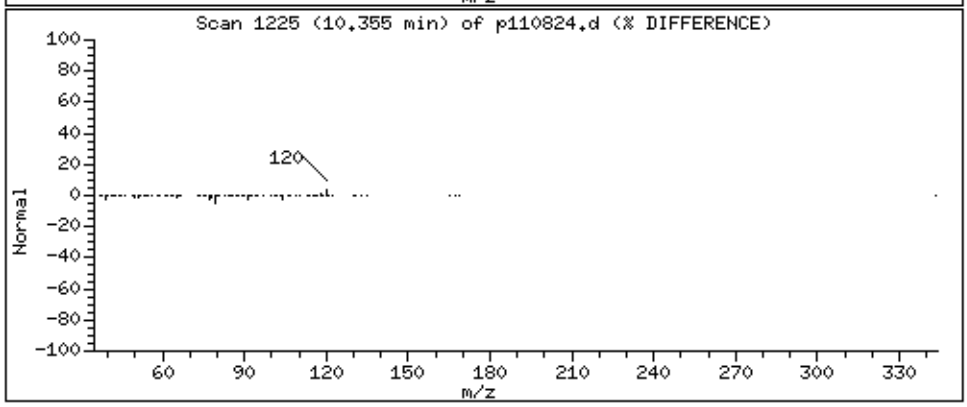
196 1,2,4-Trimethylbenzene

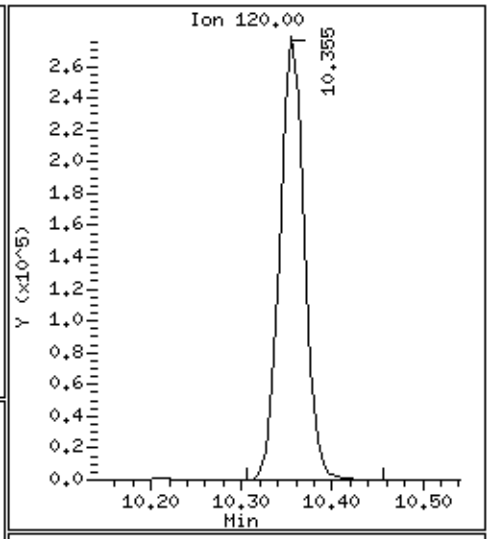
Concentration: 56.956 PPBV

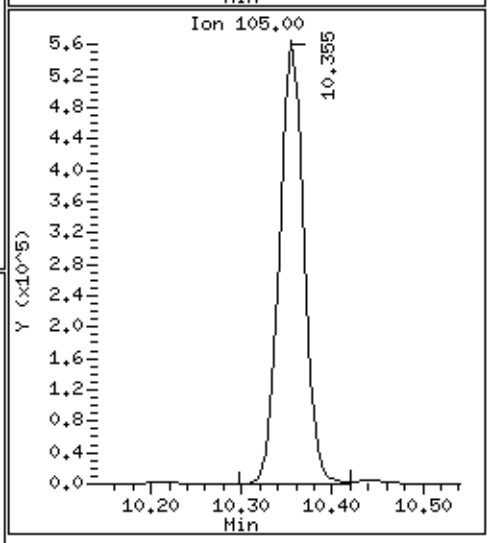












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

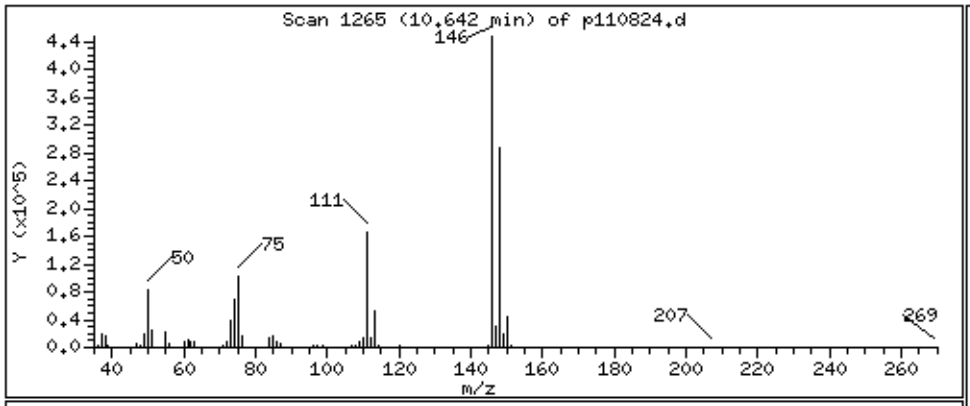
Operator: gd

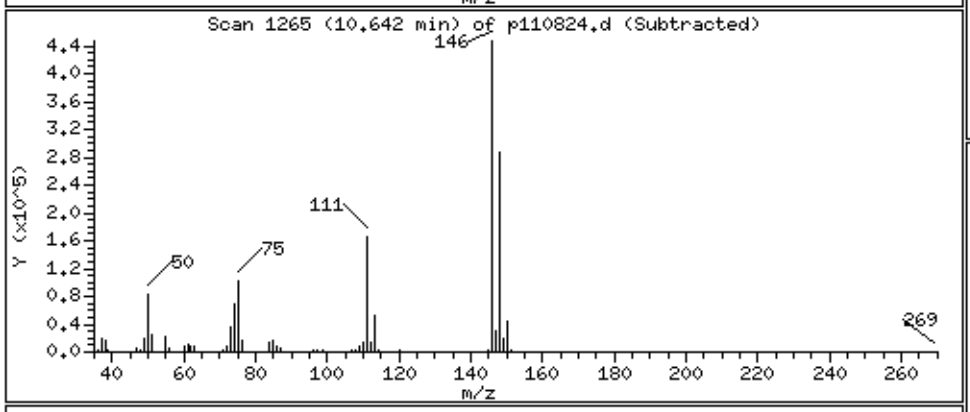
Column phase: RTX-624

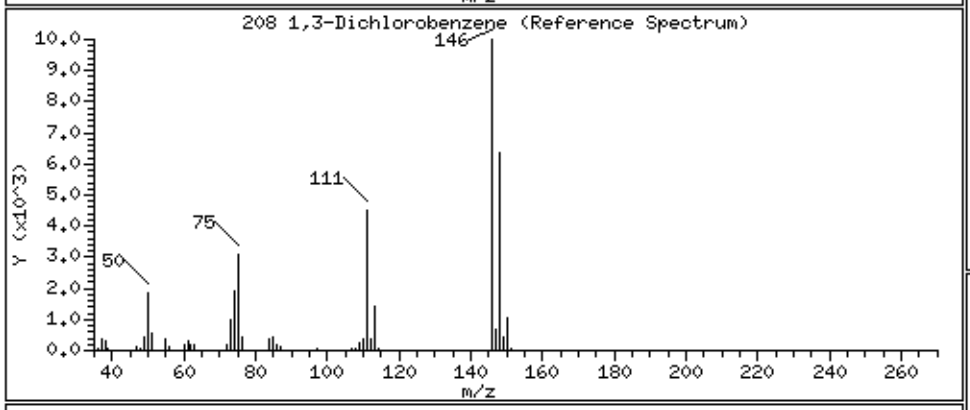
Column diameter: 0.25

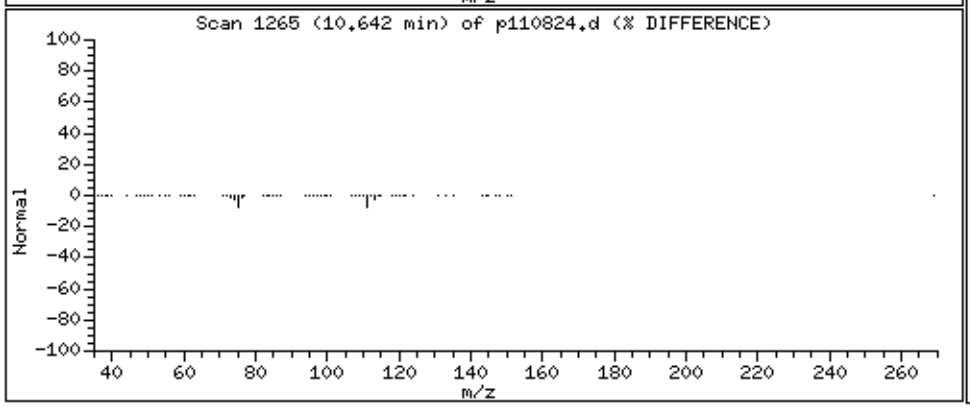
208 1,3-Dichlorobenzene

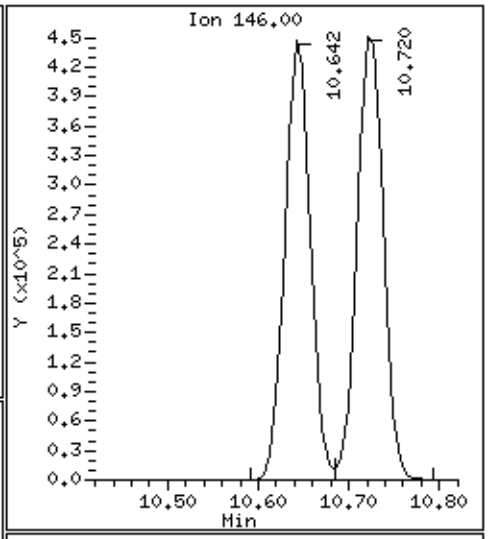
Concentration: 50.586 PPBV

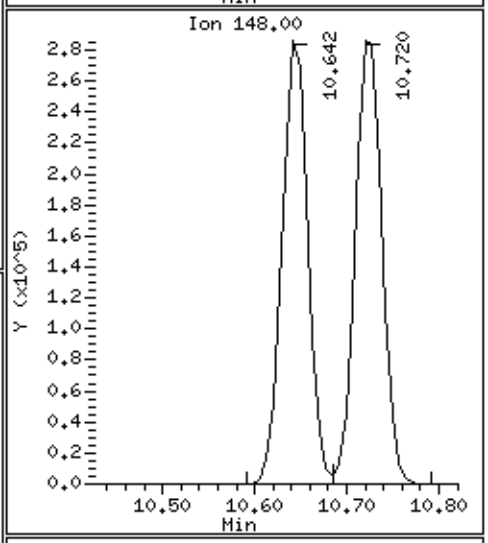


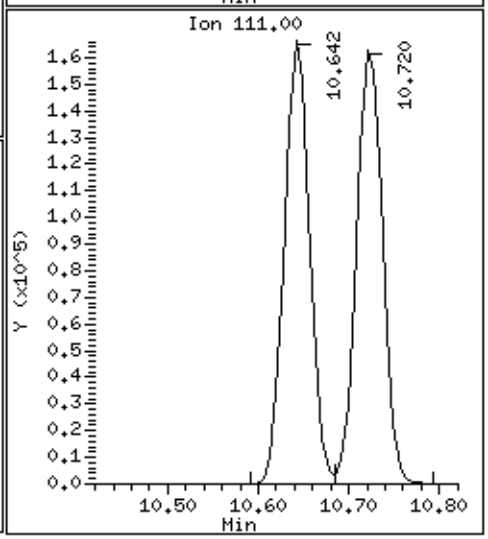












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

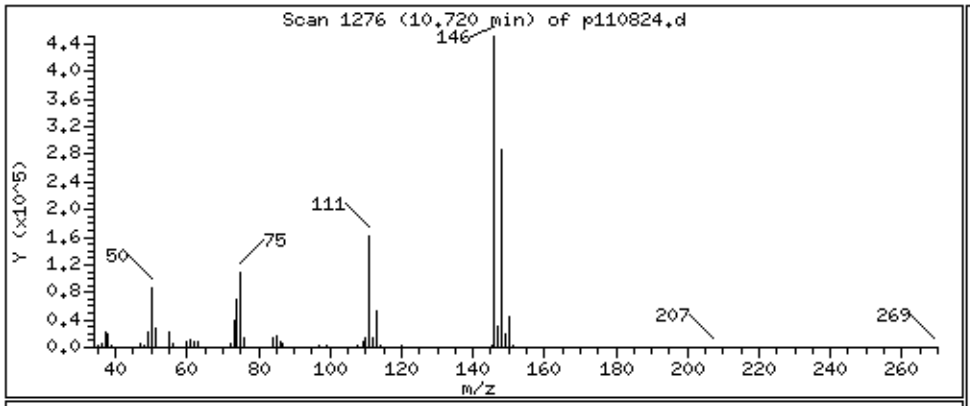
Operator: gd

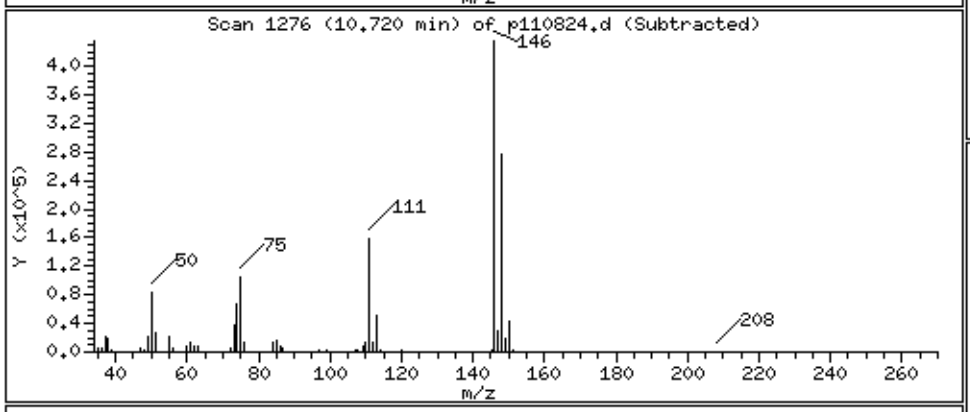
Column phase: RTX-624

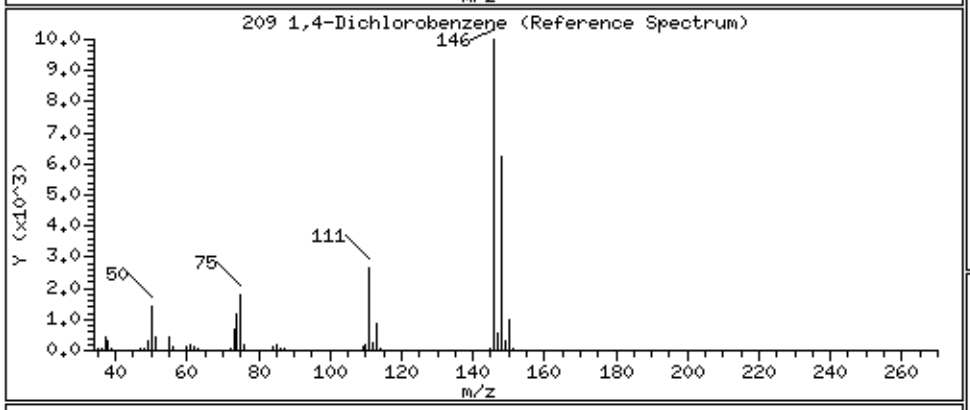
Column diameter: 0.25

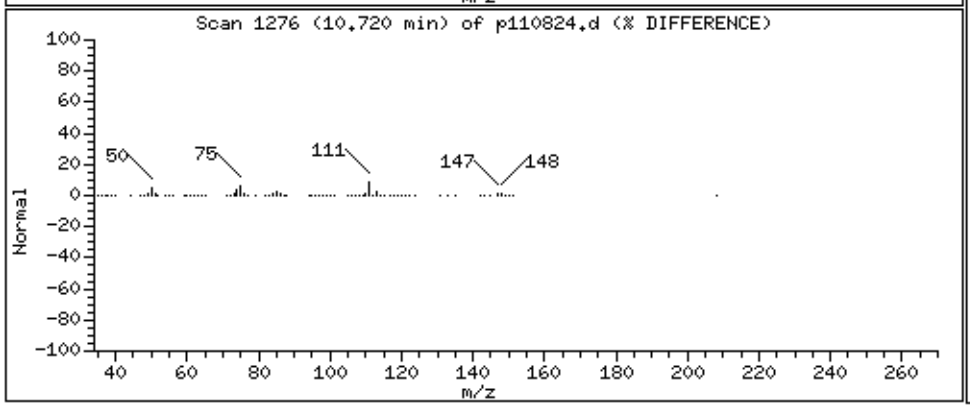
209 1,4-Dichlorobenzene

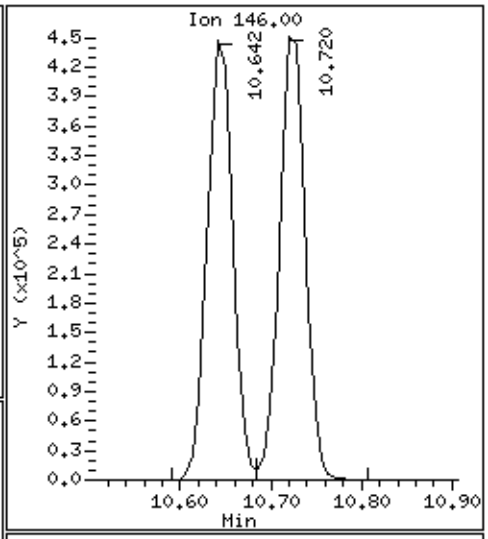
Concentration: 52.827 PPBV

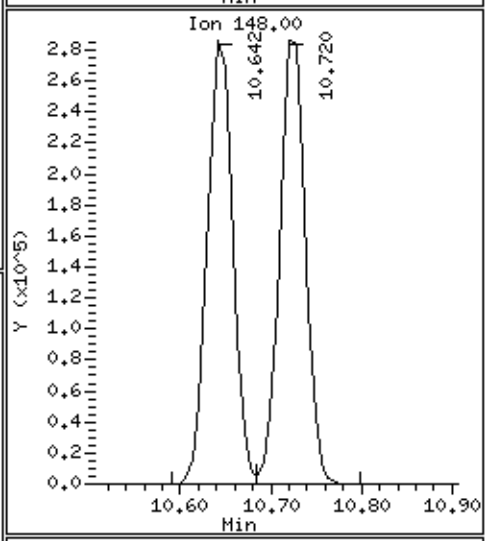


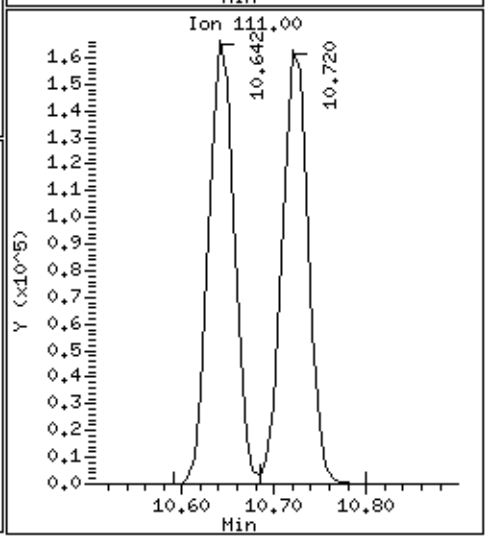












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

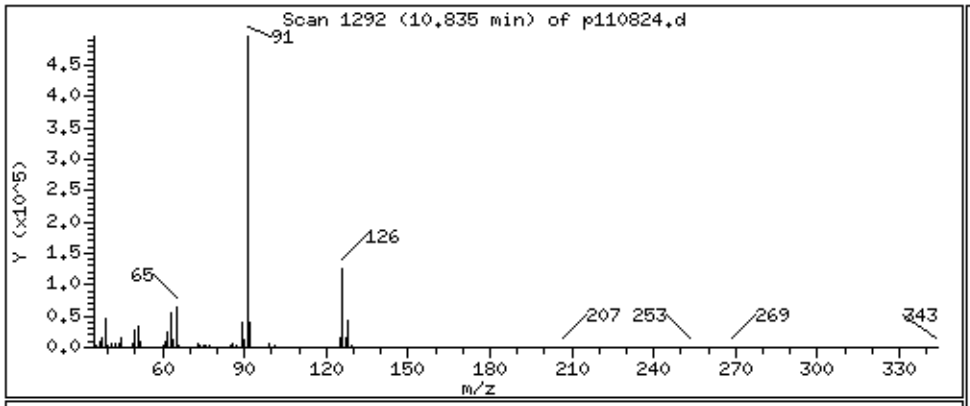
Operator: gd

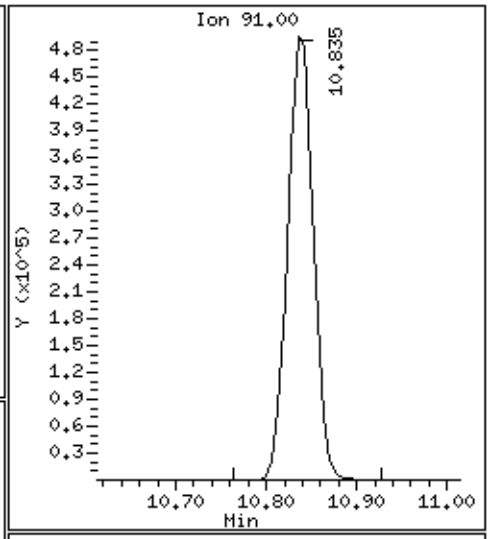
Column phase: RTX-624

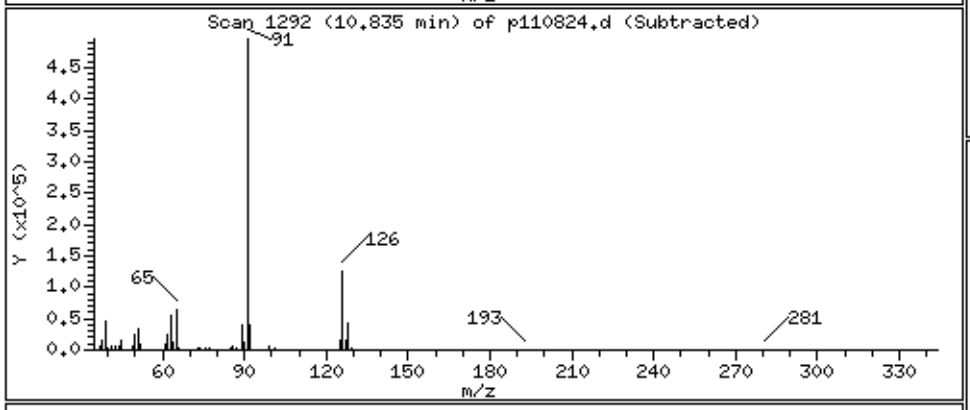
Column diameter: 0.25

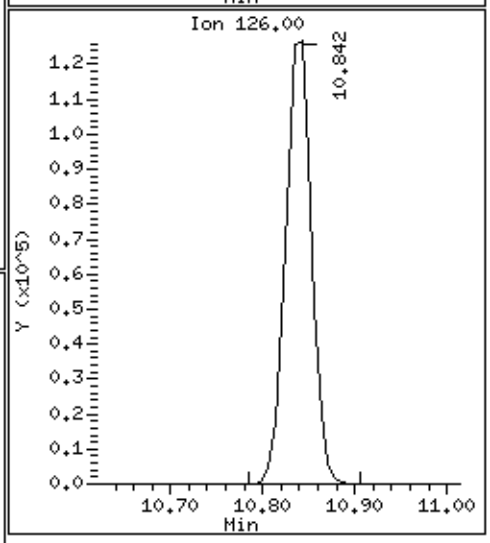
212 alpha-Chlorotoluene

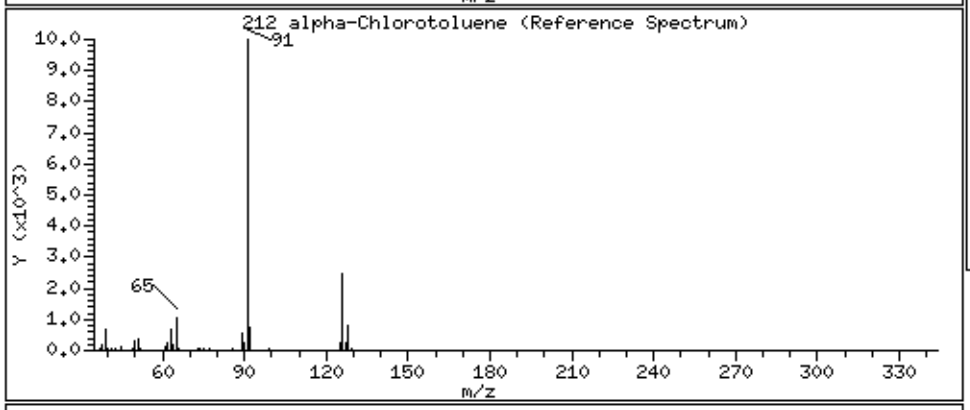
Concentration: 54.007 PPBV

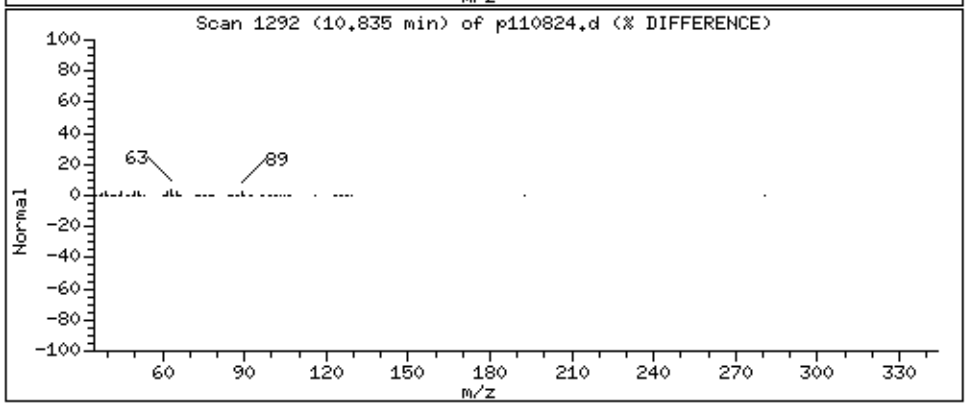












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

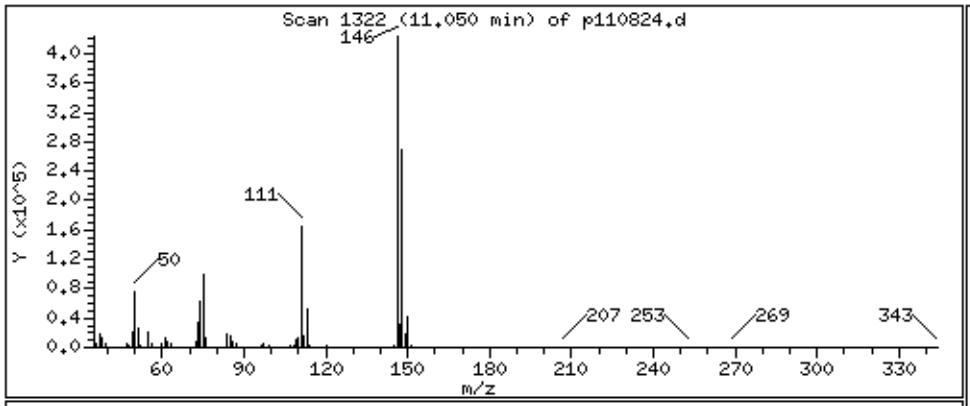
Operator: gd

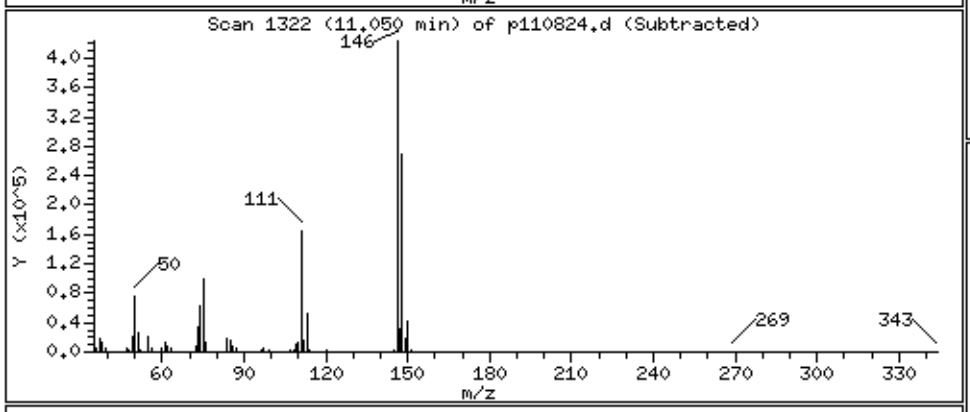
Column phase: RTX-624

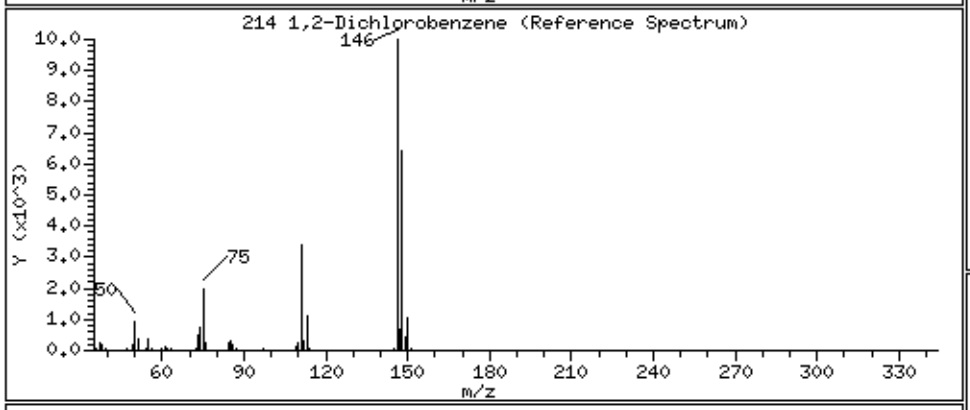
Column diameter: 0.25

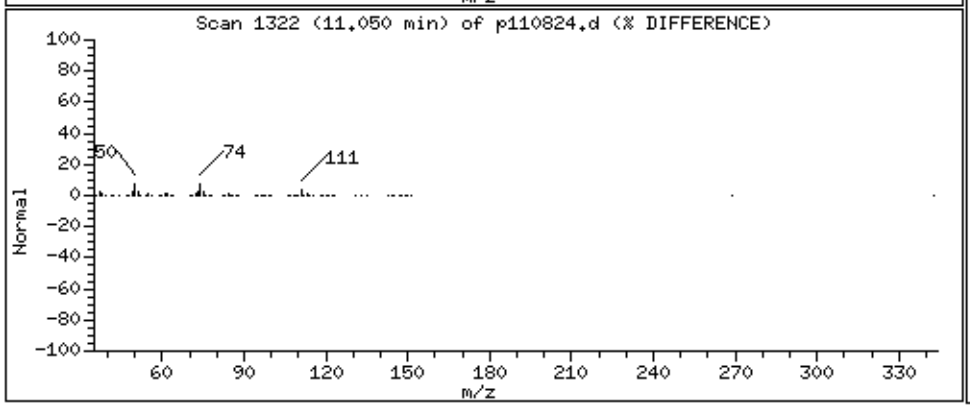
214 1,2-Dichlorobenzene

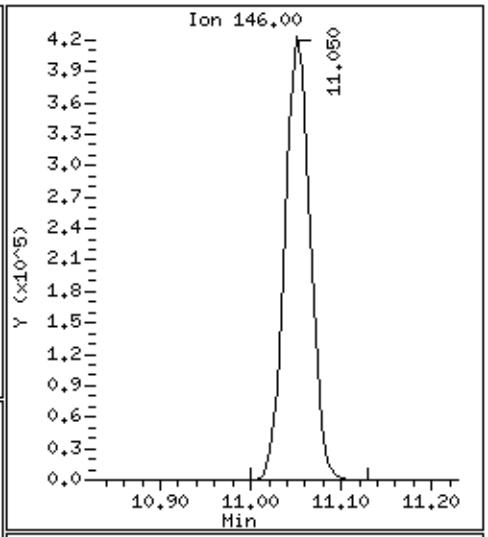
Concentration: 50.618 PPBV

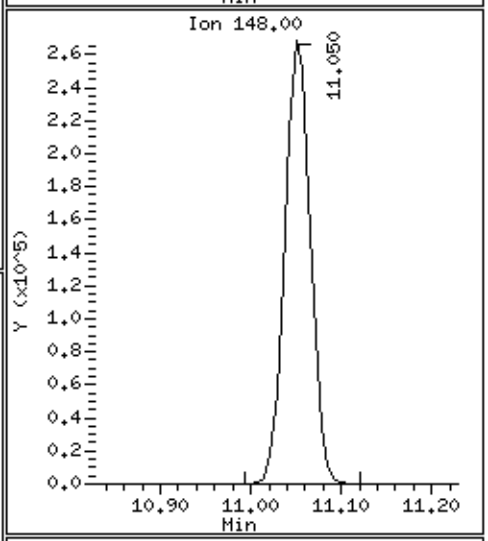


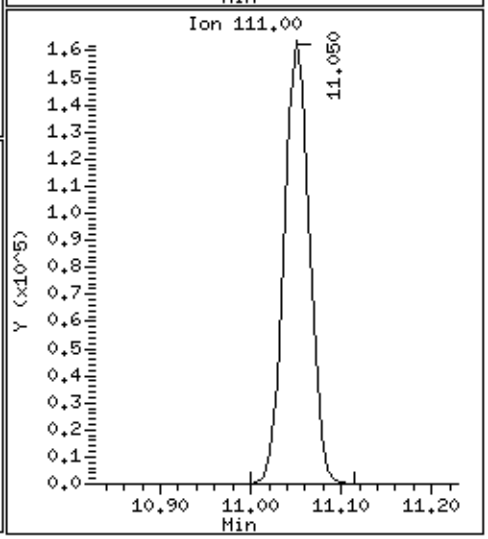












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

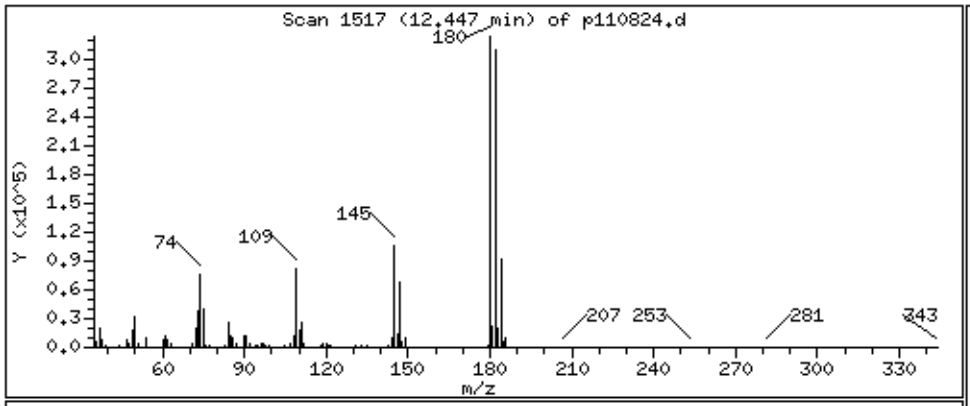
Operator: gd

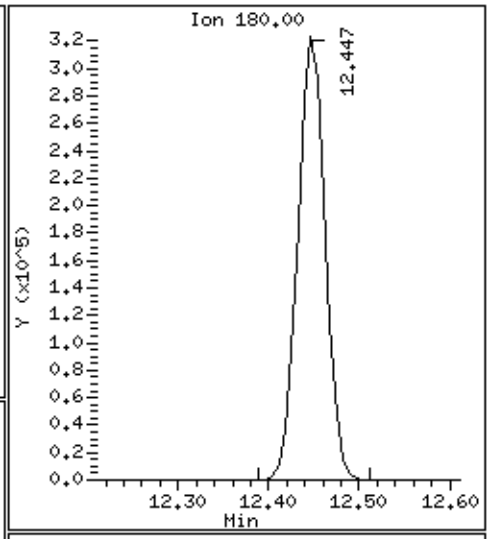
Column phase: RTX-624

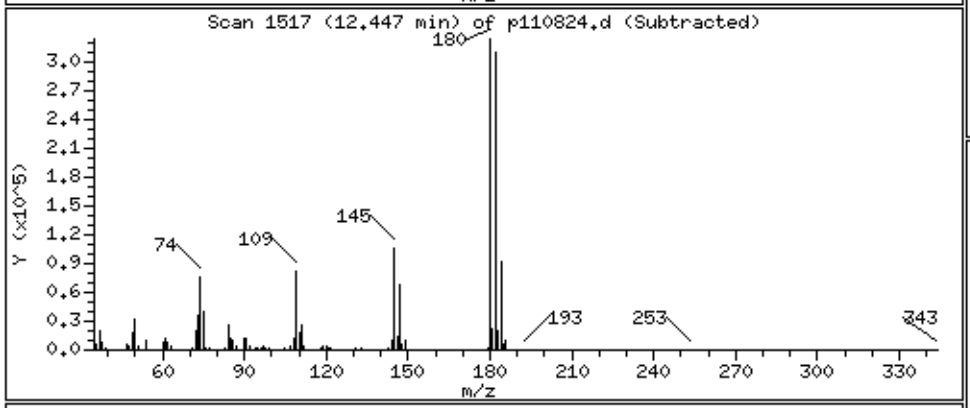
Column diameter: 0.25

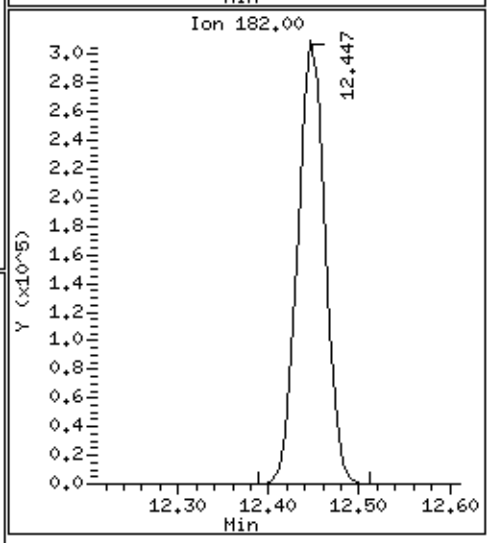
226 1,2,4-Trichlorobenzene

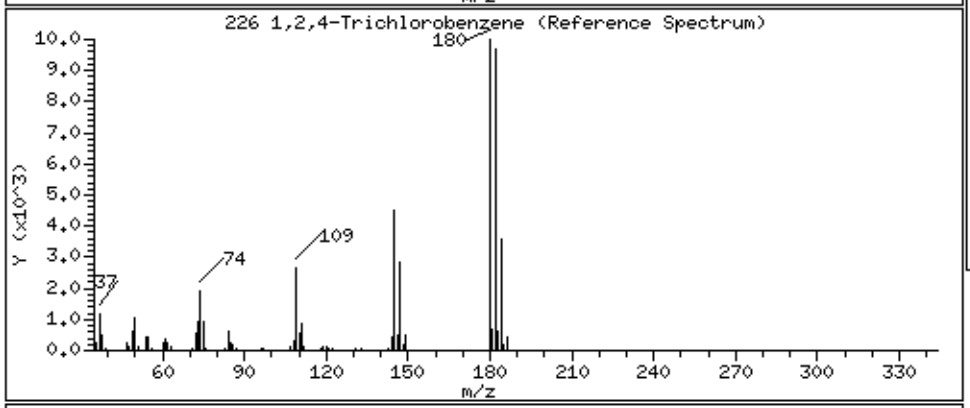
Concentration: 50.987 PPBV

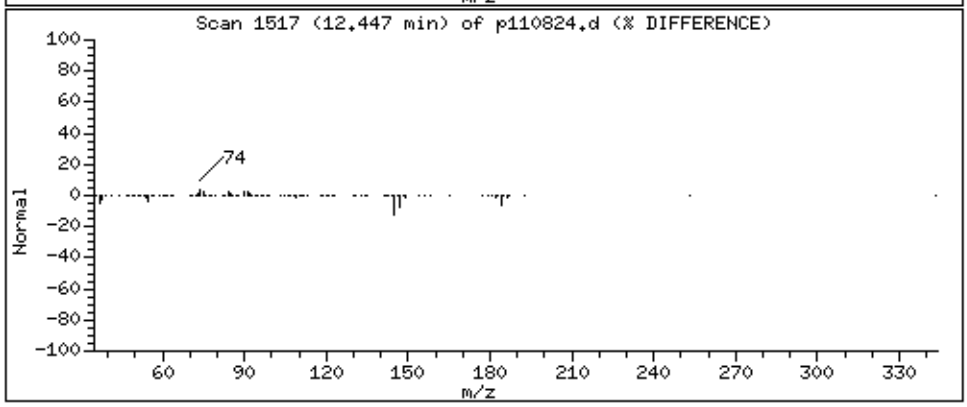












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

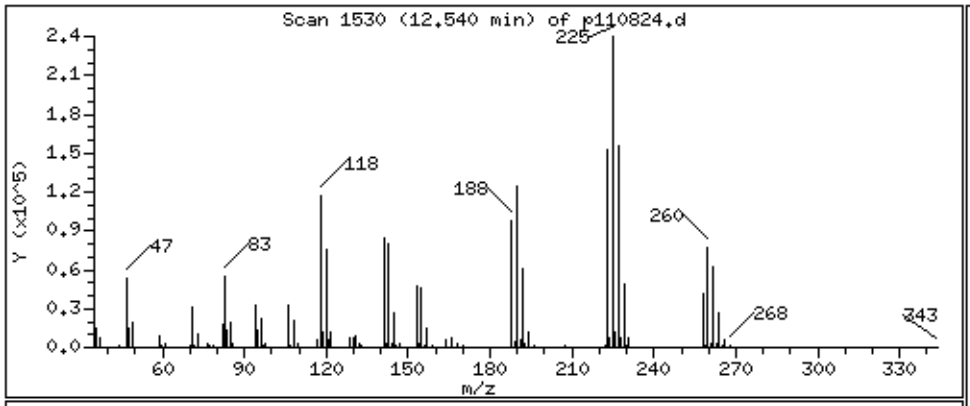
Operator: gd

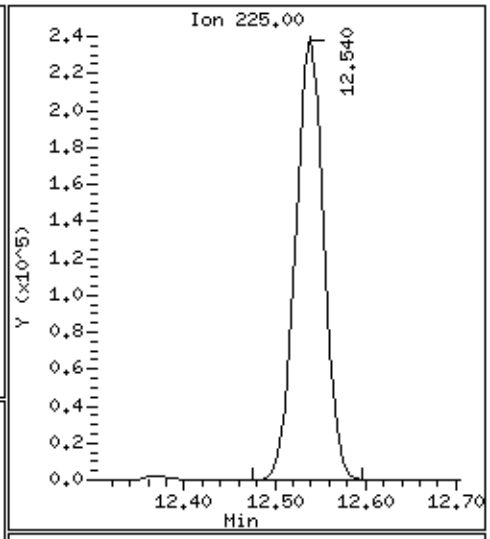
Column phase: RTX-624

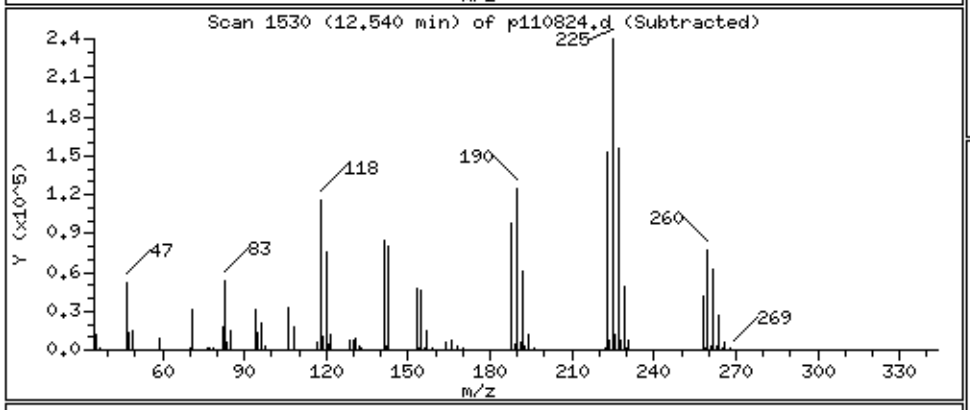
Column diameter: 0.25

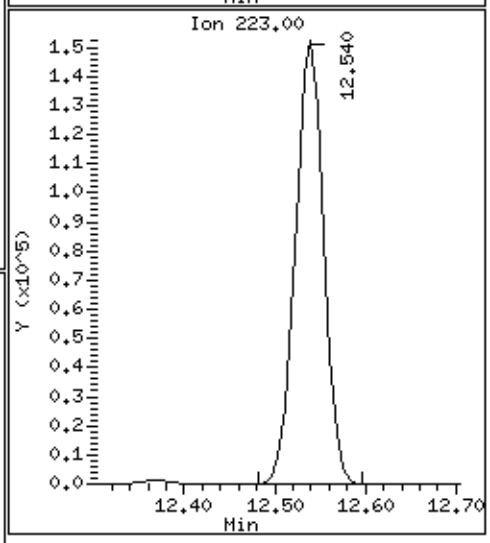
227 Hexachlorobutadiene

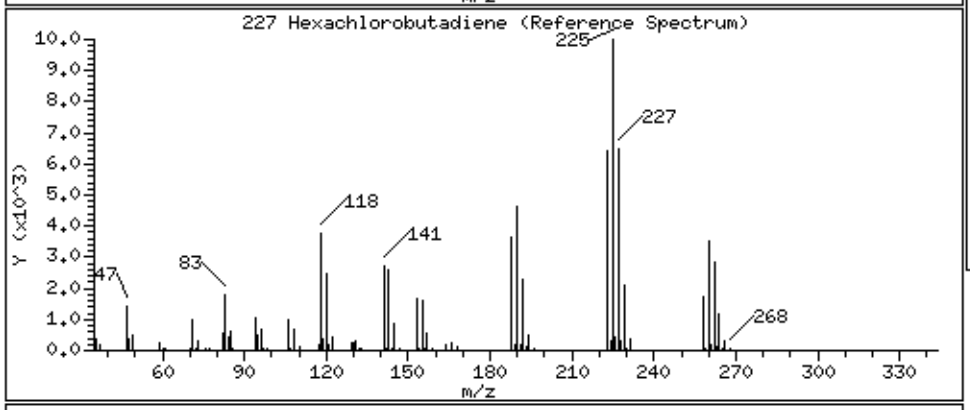
Concentration: 48.111 PPBV

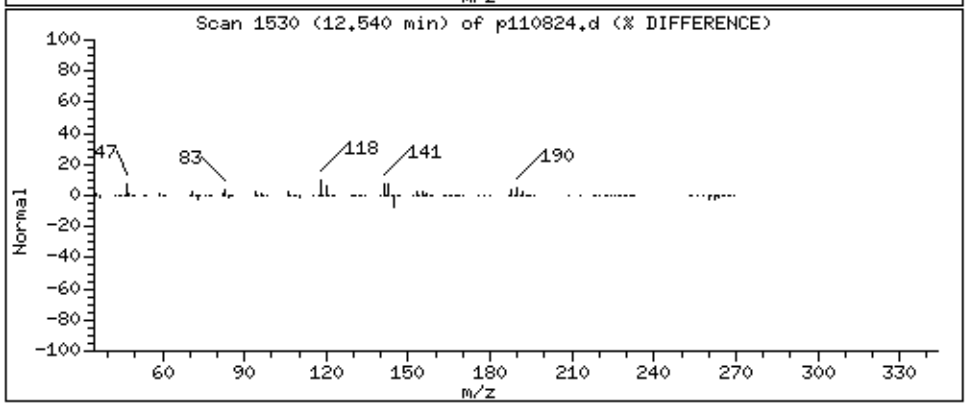












Data File: /chem/msdp.i/08NOV18a.b/p110824.d

Date : 09-NOV-2018 11:52

Client ID: ICV

Instrument: msdp.i

Sample Info: 50ml 3018-477

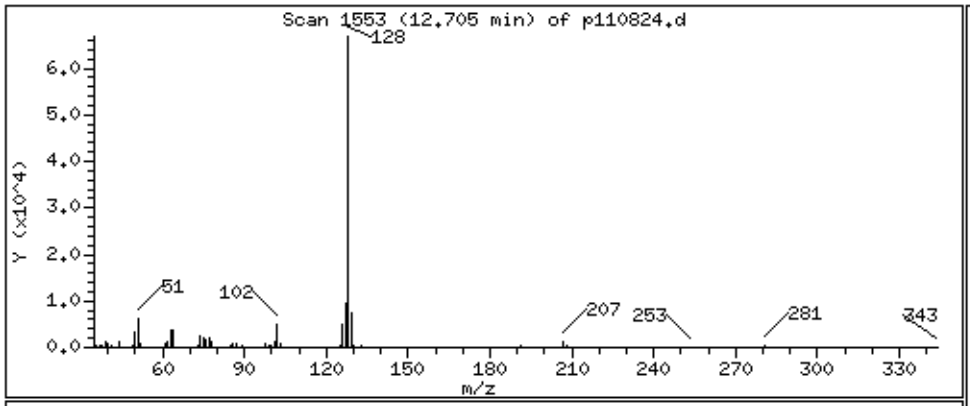
Operator: gd

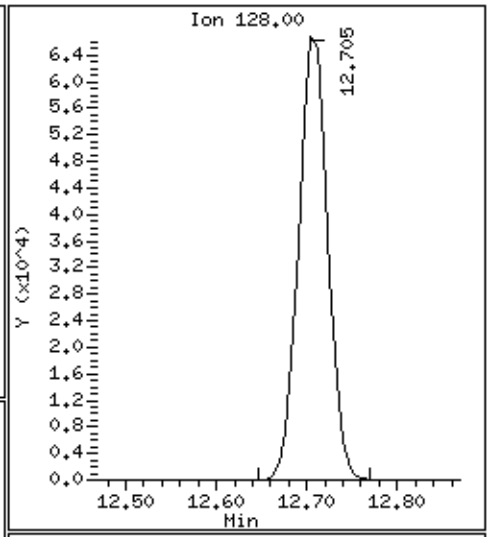
Column phase: RTX-624

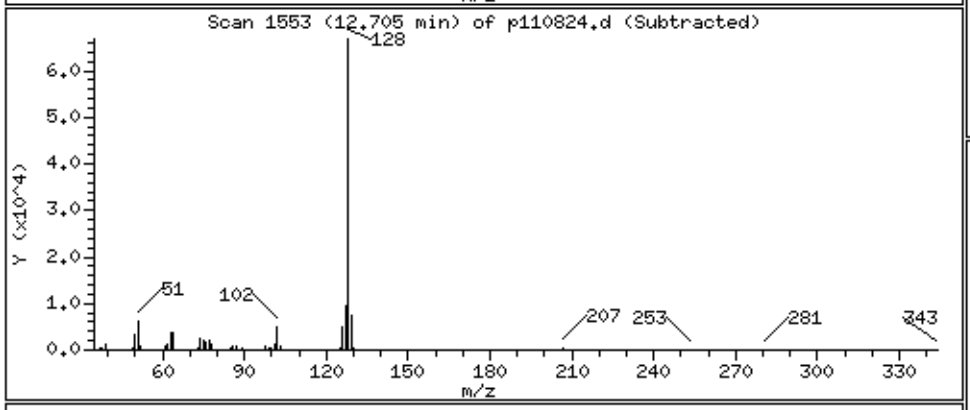
Column diameter: 0.25

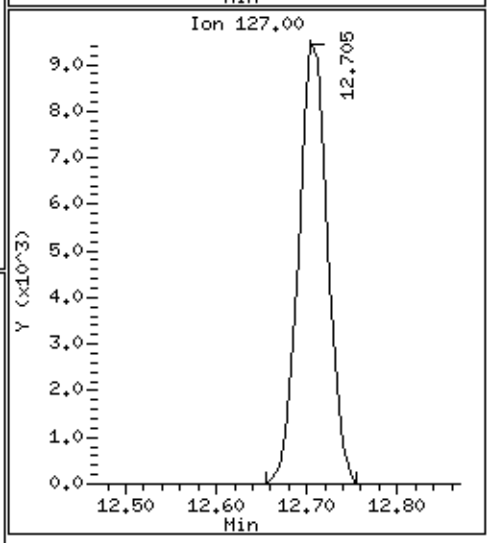
228 Naphthalene

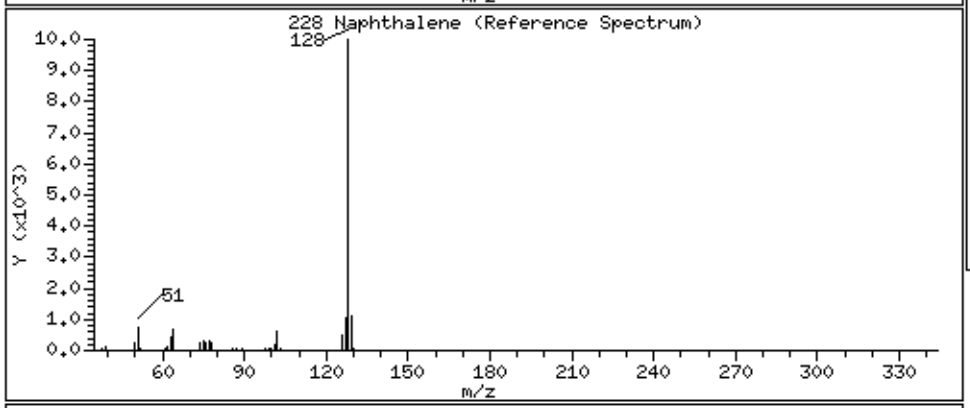
Concentration: 5.312 PPBV

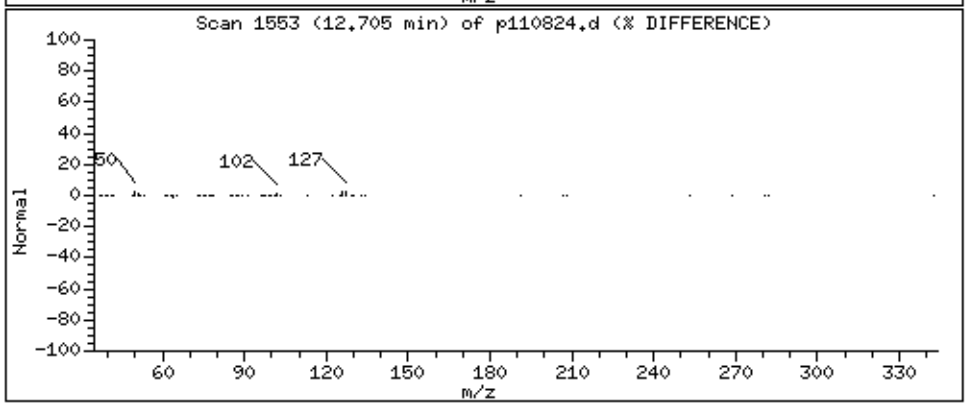












US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/27Sep18.b/p092735.d
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 28-SEP-2018 06:20
Operator : mjs Inst ID: msdp.i
Smp Info : 50ml 3045-112
Misc Info : 50ppbv (200ppbv) AT-5
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/27Sep18.b/p18q0927a.m
Meth Date : 02-Oct-2018 15:19 u7js Quant Type: ISTD
Cal Date : 28-SEP-2018 01:54 Cal File: p092732.d
Als bottle: 7 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT5CCV.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.405	5.414 (1.000)	130	171549	25.0000		80.00- 120.00	100.00
5.405	5.414 (1.000)	128	129298			48.15- 108.15	75.37
5.405	5.411 (1.000)	49	228779			109.73- 169.73	133.36
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.301 (1.000)	114	492735	25.0000		80.00- 120.00	100.00
6.294	6.301 (1.000)	88	69668			0.00- 43.74	14.14
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	579574	25.0000		80.00- 120.00	100.00
8.736	8.736 (1.000)	82	253951			14.39- 74.39	43.82
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
5.943	5.944 (1.099)	65	205409	24.1357	24.136	80.00- 120.00	100.00
5.943	5.943 (1.099)	67	97619			26.33- 86.33	47.52
$ 146 Toluene-d8					CAS #: 2037-26-5		
7.504	7.511 (1.191)	98	496820	24.8003	24.800	80.00- 120.00	100.00
7.504	7.509 (1.191)	70	52603			0.00- 39.72	10.59

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.511	7.511 (1.192)	100	341853			39.28- 99.28	68.81
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.718	9.718 (1.112)	174	353439	23.4781	23.478	80.00- 120.00	100.00
9.718	9.718 (1.112)	95	368268			79.73- 139.73	104.20
9.718	9.718 (1.112)	176	328699			65.58- 125.58	93.00
74 Acrylonitrile					CAS #: 107-13-1		
4.195	4.201 (0.776)	52	231196	46.1502	46.150	80.00- 120.00	100.00
4.195	4.200 (0.776)	53	270043			91.34- 151.34	116.80
157 1,3-Dichloropropane					CAS #: 142-28-9		
8.099	8.100 (1.285)	76	550747	49.3357	49.336	80.00- 120.00	100.00
8.099	8.099 (1.285)	41	484181			57.77- 117.77	87.91
8.099	8.101 (1.285)	78	186933			3.94- 63.94	33.94
168 1,1,1,2-Tetrachloroethane					CAS #: 630-20-6		
8.829	8.829 (1.011)	131	778201	48.0770	48.077	80.00- 120.00	100.00
8.829	8.829 (1.011)	117	503316			33.48- 93.48	64.68
8.829	8.829 (1.011)	95	258517			2.94- 62.94	33.22
203 sec-Butylbenzene					CAS #: 135-98-8		
10.477	10.474 (1.199)	134	551029	55.7420	55.742	80.00- 120.00	100.00
10.477	10.472 (1.199)	105	2370992			401.04- 461.04	430.28
10.470	10.471 (1.198)	91	360032			36.99- 96.99	65.34
213 Butylbenzene					CAS #: 104-51-8		
10.935	10.935 (1.252)	134	650913	50.5712	50.571	80.00- 120.00	100.00
10.935	10.934 (1.252)	91	1978296			280.23- 340.23	303.93
10.935	10.931 (1.252)	92	1031141			131.01- 191.01	158.41
207 p-Cymene					CAS #: 99-87-6		
10.584	10.584 (1.212)	119	2547036	55.0051	55.005	80.00- 120.00	100.00
10.584	10.584 (1.212)	134	705076			0.00- 57.61	27.68
10.584	10.584 (1.212)	91	528498			0.00- 50.96	20.75

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p092735.d
Lab Smp Id: ICV
Analysis Type: VOA
Quant Type: ISTD
Operator: mjs
Method File: /chem/msdp.i/27Sep18.b/p18q0927a.m
Misc Info: 50ppbv (200ppbv) AT-5

Calibration Date: 27-SEP-2018
Calibration Time: 17:53
Client Smp ID: ICV
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	161670	97002	226338	171549	6.11
123 1,4-Difluorobenze	541909	325145	758673	492735	-9.07
163 Chlorobenzene-d5	589347	353608	825086	579574	-1.66

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.13
123 1,4-Difluorobenze	6.30	5.97	6.63	6.30	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 02-Oct-2018 15:19

US32APPTV002

RECOVERY REPORT

Client Name:
Client SDG: 27Sep18
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: ICV
Client Smp ID: ICV
Level: LOW
Operator: mjs
Data Type: MS DATA
SampleType: LCS
SpikeList File: AT5.spk
Quant Type: ISTD
Sublist File: AT5CCV.sub
Method File: /chem/msdp.i/27Sep18.b/p18q0927a.m
Misc Info: 50ppbv (200ppbv) AT-5

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
74 Acrylonitrile	50.000	46.150	92.30
157 1,3-Dichloropropane	50.000	49.336	98.67
168 1,1,1,2-Tetrachloroethane	50.000	48.077	96.15
203 sec-Butylbenzene	50.000	55.742	111.48
213 Butylbenzene	50.000	50.571	101.14
207 p-Cymene	50.000	55.005	110.01

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 117 1,2-Dichloroethane-d4	25.000	24.136	96.54
$ 146 Toluene-d8	25.000	24.800	99.20
$ 177 4-Bromofluorobenzene	25.000	23.478	93.91

Data File: /chem/msdp.i/27Sep18.b/p092735.d

Date : 28-SEP-2018 06:20

Client ID: ICV

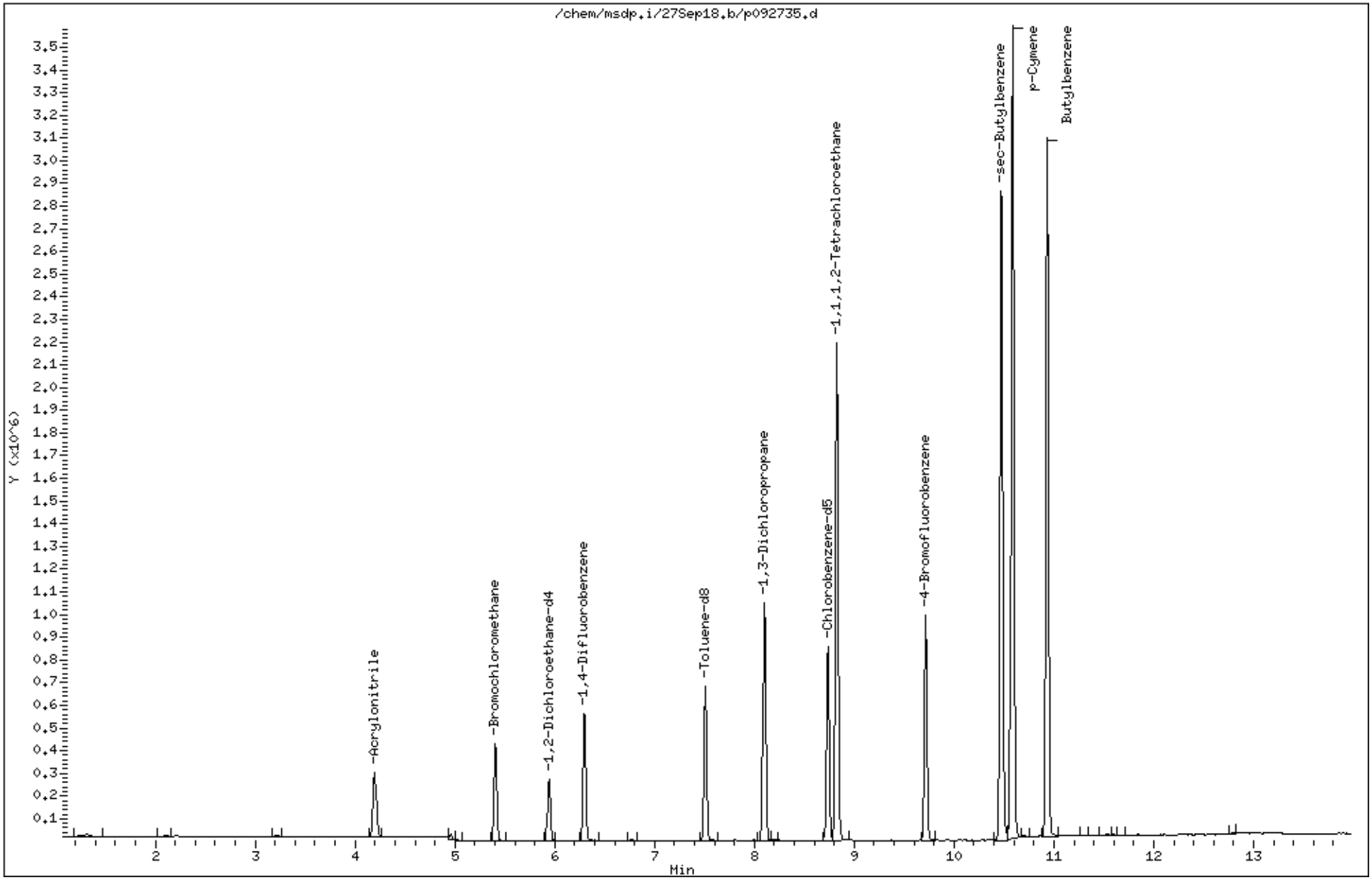
Sample Info: 50ml 3045-112

Column phase: RTX-624

Instrument: msdp.i

Operator: mjs

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/08NOV18a.b/p110823.d
Lab Smp Id: ICAL Level #1
Inj Date : 09-NOV-2018 09:32
Operator : gd Inst ID: msdp.i
Smp Info : 20ml 3045-173
Misc Info : 0.1ppbv(1.0ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/08NOV18a.b/p18q1108a.m
Meth Date : 09-Nov-2018 17:32 ugdc Quant Type: ISTD
Cal Date : 09-NOV-2018 09:32 Cal File: p110823.d
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: BTEXScrv.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.406	5.411 (1.000)	130	97536	25.0000		80.00- 120.00	100.00
5.406	5.411 (1.000)	128	74476			48.70- 108.70	76.36
5.406	5.409 (1.000)	49	150195			130.32- 190.32	153.99
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.294	6.296 (1.000)	114	287489	25.0000		80.00- 120.00	100.00
6.294	6.295 (1.000)	88	40194			0.00- 44.06	13.98
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.729	8.736 (1.000)	117	331136	25.0000		80.00- 120.00	100.00
8.729	8.734 (1.000)	82	149012			14.84- 74.84	45.00
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
5.936	5.942 (1.098)	65	123948	25.0000	23.862	80.00- 120.00	100.00
5.943	5.943 (1.099)	67	58292			26.40- 86.40	47.03
$ 146 Toluene-d8					CAS #: 2037-26-5		
7.504	7.505 (1.192)	98	298990	25.0000	25.172	80.00- 120.00	100.00
7.504	7.504 (1.192)	70	30891			0.00- 40.19	10.33

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.504	7.505 (1.192)	100	197215			38.92- 98.92	65.96
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.725	9.719 (1.114)	174	202255	25.0000	24.057	80.00- 120.00	100.00
9.718	9.713 (1.113)	95	224472			82.53- 142.53	110.98
9.725	9.719 (1.114)	176	192626			65.10- 125.10	95.24
116 Benzene					CAS #: 71-43-2		
5.921	5.928 (0.941)	78	1454	0.10000	0.1431	80.00- 120.00	100.00(a)
5.921	5.925 (0.941)	77	275			0.00- 54.10	18.91
147 Toluene					CAS #: 108-88-3		
7.562	7.562 (1.201)	91	1643	0.10000	0.1218	80.00- 120.00	100.00(a)
7.562	7.562 (1.201)	92	636			28.88- 88.88	38.71
167 Ethyl Benzene					CAS #: 100-41-4		
8.808	8.808 (1.009)	106	593	0.10000	0.09890	80.00- 120.00	100.00(a)
8.808	8.808 (1.009)	91	1774			268.95- 328.95	299.16
169 m,p-Xylene					CAS #: 108-38-3		
8.901	8.906 (1.020)	106	721	0.10000	0.09786	80.00- 120.00	100.00(a)
8.908	8.907 (1.020)	91	1775			159.20- 219.20	246.19
171 o-Xylene					CAS #: 95-47-6		
9.245	9.245 (1.059)	106	774	0.10000	0.1120	80.00- 120.00	100.00(a)
9.245	9.245 (1.059)	91	1325			173.23- 233.23	171.19
172 Styrene					CAS #: 100-42-5		
9.267	9.266 (1.062)	104	1269	0.10000	0.1093	80.00- 120.00	100.00(a)
9.274	9.266 (1.062)	78	580			15.83- 75.83	45.71

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p110823.d
Lab Smp Id: ICAL Level #1
Analysis Type: VOA
Quant Type: ISTD
Operator: gd
Method File: /chem/msdp.i/08NOV18a.b/p18q1108a.m
Misc Info: 0.1ppbv(1.0ppbv)

Calibration Date: 08-NOV-2018
Calibration Time: 21:40

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	92663	55598	129728	97536	5.26
123 1,4-Difluorobenze	304426	182656	426196	287489	-5.56
163 Chlorobenzene-d5	330915	198549	463281	331136	0.07

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.13
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.73	-0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/08NOV18a.b/p110823.d

Date : 09-NOV-2018 09:32

Client ID:

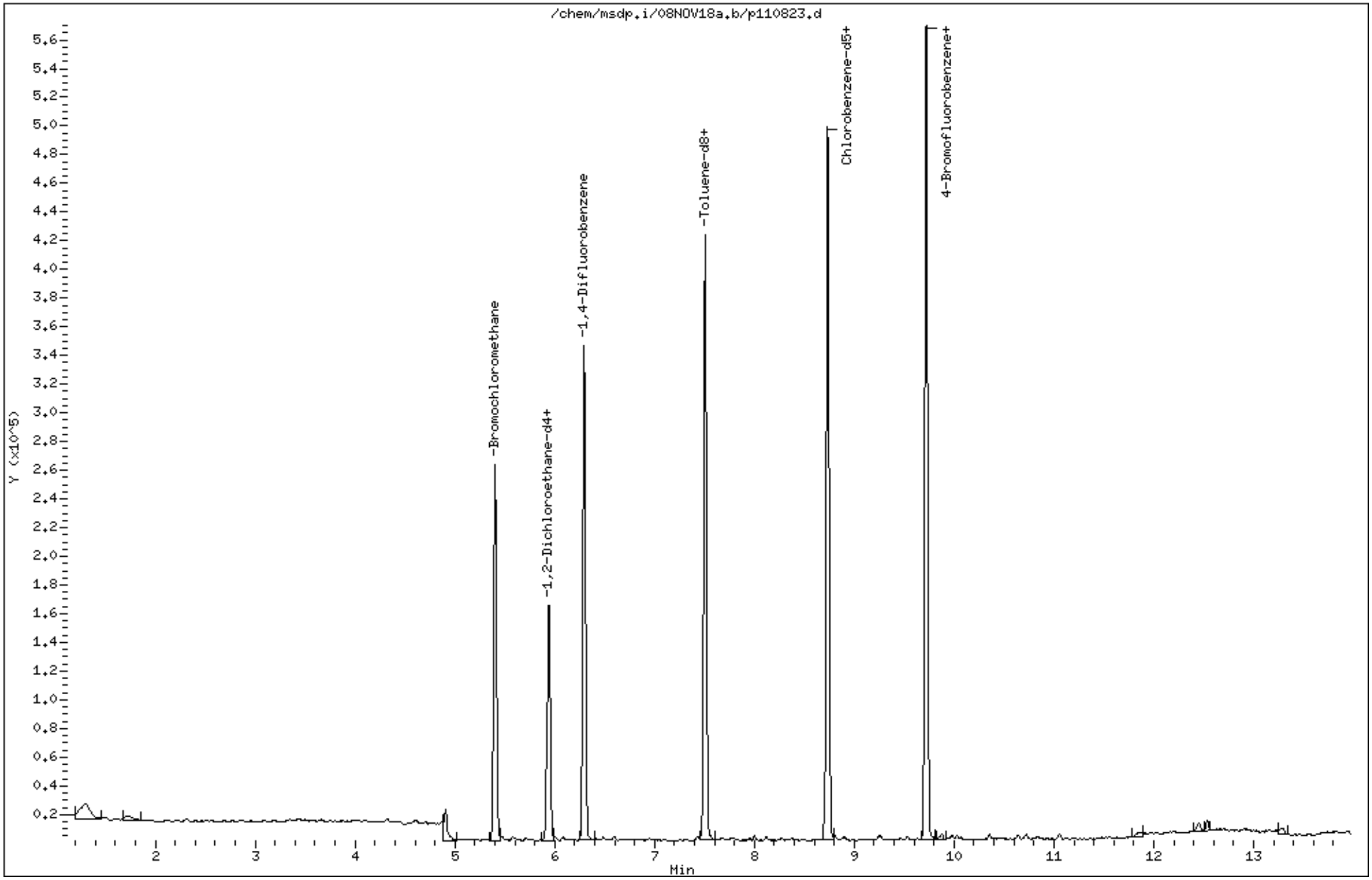
Sample Info: 20ml 3045-173

Column phase: RTX-624

Instrument: msdp.i

Operator: gd

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/26NOV18.b/p092725.d
Lab Smp Id: ICAL Level #1 Client Smp ID: ICAL Level #1
Inj Date : 27-SEP-2018 22:59
Operator : mb Inst ID: msdp.i
Smp Info : 20ml 3045-135
Misc Info : 0.1ppbv (1.0ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/26NOV18.b/p18q1108b.m
Meth Date : 27-Nov-2018 08:30 ugdc Quant Type: ISTD
Cal Date : 09-NOV-2018 09:32 Cal File: p110823.d
Als bottle: 4 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT5CRV.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.414 (1.000)	130	156312	25.0000		80.00- 120.00	100.00
5.413	5.414 (1.000)	128	124327			48.70- 108.70	79.54
5.406	5.411 (1.000)	49	214556			130.32- 190.32	137.26
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.301 (1.000)	114	483666	25.0000		80.00- 120.00	100.00
6.301	6.301 (1.000)	88	66993			0.00- 44.06	13.85
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	560400	25.0000		80.00- 120.00	100.00
8.736	8.736 (1.000)	82	238512			14.84- 74.84	42.56
74 Acrylonitrile					CAS #: 107-13-1		
4.195	4.201 (0.775)	52	564	0.10000	0.1236	0.00- 0.00	100.00(a)
4.195	4.200 (0.775)	53	612			0.00- 0.00	108.51
157 1,3-Dichloropropane					CAS #: 142-28-9		
8.099	8.100 (1.285)	76	1002	0.10000	0.09144	0.00- 0.00	100.00(a)
8.099	8.099 (1.285)	41	1597			0.00- 0.00	159.38

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
157 1,3-Dichloropropane (continued)							
8.106	8.101 (1.286)	78	459			0.00- 0.00	45.81
168 1,1,1,2-Tetrachloroethane					CAS #: 630-20-6		
8.830	8.829 (1.011)	131	1575	0.10000	0.1006	0.00- 0.00	100.00(a)
8.830	8.829 (1.011)	117	4050			0.00- 0.00	257.14
8.830	8.829 (1.011)	95	676			0.00- 0.00	42.92
203 sec-Butylbenzene					CAS #: 135-98-8		
10.470	10.474 (1.198)	134	368	0.10000	0.03850	0.00- 0.00	100.00(a)
10.470	10.472 (1.198)	105	5715			0.00- 0.00	1552.99
10.470	10.471 (1.198)	91	707			0.00- 0.00	192.12
213 Butylbenzene					CAS #: 104-51-8		
10.928	10.935 (1.251)	134	1320	0.10000	0.1061	0.00- 0.00	100.00(a)
10.935	10.934 (1.252)	91	2972			0.00- 0.00	225.15
10.928	10.931 (1.251)	92	1092			0.00- 0.00	82.73
207 p-Cymene					CAS #: 99-87-6		
10.585	10.584 (1.212)	119	4061	0.10000	0.09070	0.00- 0.00	100.00(a)
10.585	10.584 (1.212)	134	730			0.00- 0.00	17.98
10.577	10.584 (1.211)	91	641			0.00- 0.00	15.78

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p092725.d
Lab Smp Id: ICAL Level #1
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msdp.i/26NOV18.b/p18q1108b.m
Misc Info: 0.1ppbv (1.0ppbv)

Calibration Date: 28-SEP-2018
Calibration Time: 01:04
Client Smp ID: ICAL Level #1
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	162118	97271	226965	156312	-3.58
123 1,4-Difluorobenze	484572	290743	678401	483666	-0.19
163 Chlorobenzene-d5	566566	339940	793192	560400	-1.09

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.30	5.97	6.63	6.30	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/26NOV18.b/p092725.d

Date : 27-SEP-2018 22:59

Client ID: ICAL Level #1

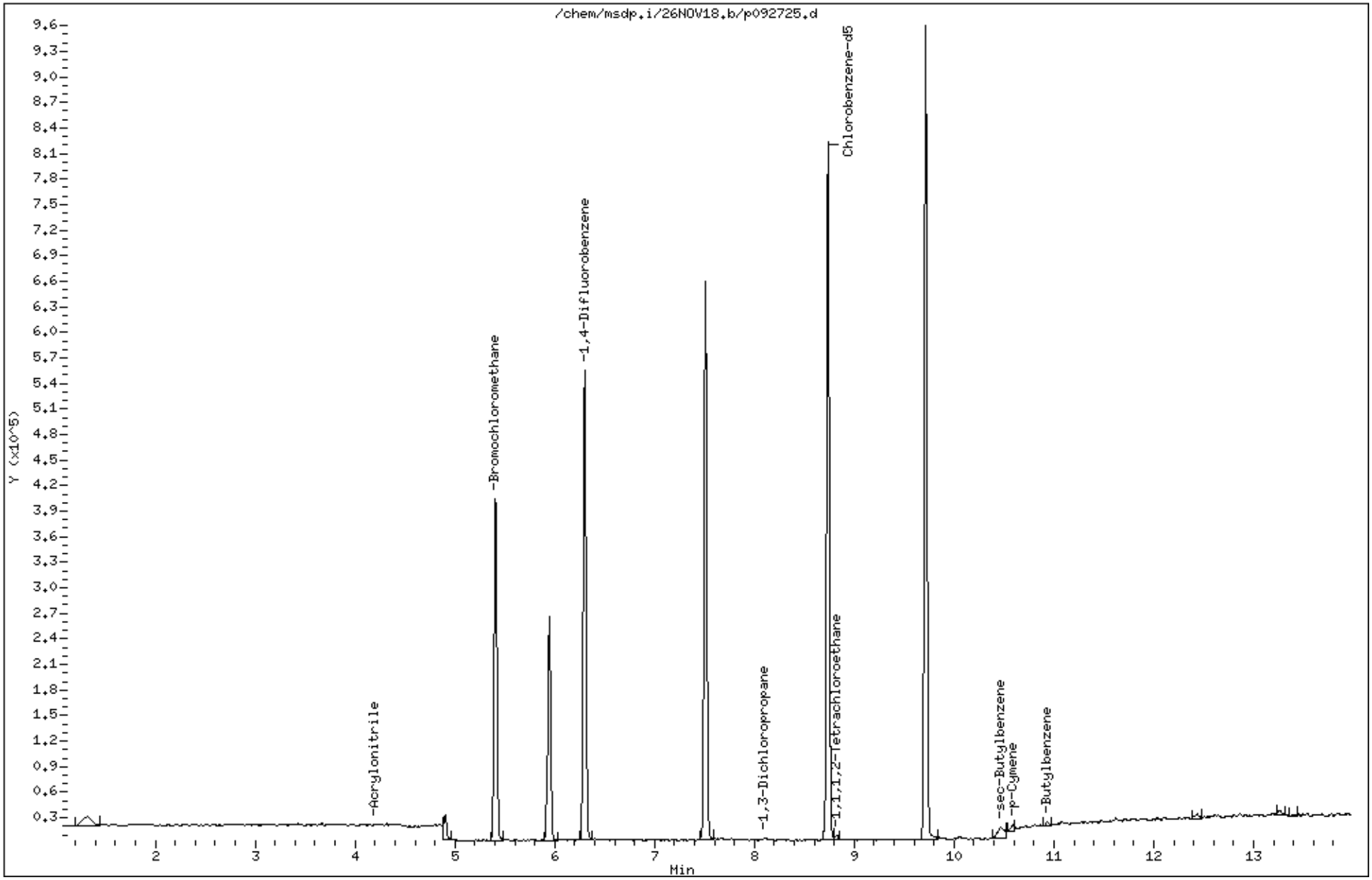
Sample Info: 20ml 3045-135

Column phase: RTX-624

Instrument: msdp.i

Operator: mb

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/08NOV18a.b/p110814.d
Lab Smp Id: ICAL Level #2
Inj Date : 08-NOV-2018 19:58
Operator : gh Inst ID: msdp.i
Smp Info : 20ml 3018-510
Misc Info : 0.5ppbv(5.0ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/08NOV18a.b/p18q1108a.m
Meth Date : 09-Nov-2018 17:32 ugdc Quant Type: ISTD
Cal Date : 08-NOV-2018 19:58 Cal File: p110814.d
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12low.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
11 Freon 12						CAS #: 75-71-8		
1.507	1.511	(0.279)	85	4129	0.50000	0.4700	80.00- 120.00	100.00(a)
1.507	1.511	(0.279)	87	1576			2.07- 62.07	38.17
15 Freon 114						CAS #: 76-14-2		
1.619	1.629	(0.299)	135	3287	0.50000	0.4550	80.00- 120.00	100.00(a)
1.619	1.629	(0.299)	137	1012			2.07- 62.07	30.79
25 Vinyl Chloride						CAS #: 75-01-4		
1.814	1.818	(0.336)	62	1624	0.50000	0.4545	80.00- 120.00	100.00(a)
1.814	1.818	(0.336)	64	322			0.00- 54.53	19.83
26 1,3-Butadiene						CAS #: 106-99-0		
1.828	1.842	(0.338)	54	1454	0.50000	0.4342	80.00- 120.00	100.00(a)
1.828	1.840	(0.338)	39	2578			85.58- 145.58	177.30
35 Freon 11						CAS #: 75-69-4		
2.540	2.551	(0.470)	101	5485	0.50000	0.5378	80.00- 120.00	100.00
2.540	2.551	(0.470)	103	3546			34.29- 94.29	64.65

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
49 Freon 113					CAS #: 76-13-1		
3.178	3.182 (0.588)	151	3595	0.50000	0.5299	80.00- 120.00	100.00
3.185	3.184 (0.589)	153	2010			34.67- 94.67	55.91
3.164	3.181 (0.585)	101	3802			79.70- 139.70	105.76
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.214	3.214 (0.595)	98	727	0.50000	0.4248	80.00- 120.00	100.00(a)
3.207	3.213 (0.593)	96	1228			126.11- 186.11	168.91
3.207	3.213 (0.593)	61	2644			286.72- 346.72	363.69
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.109	4.112 (0.760)	98	717	0.50000	0.4068	80.00- 120.00	100.00(a)
4.109	4.110 (0.760)	61	2237			247.19- 307.19	311.99
4.109	4.113 (0.760)	96	1297			131.40- 191.40	180.89
78 Hexane					CAS #: 110-54-3		
4.324	4.329 (0.800)	57	2167	0.50000	0.3942	80.00- 120.00	100.00(a)
4.324	4.329 (0.800)	43	1958			42.49- 102.49	90.36
4.324	4.329 (0.800)	86	255			0.00- 42.15	11.77
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.596	4.598 (0.850)	63	3273	0.50000	0.5013	80.00- 120.00	100.00
4.596	4.599 (0.850)	65	884			0.00- 58.69	27.01
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.176	5.180 (0.958)	98	961	0.50000	0.4308	80.00- 120.00	100.00(a)
5.176	5.180 (0.958)	96	1562			123.83- 183.83	162.54
5.176	5.177 (0.958)	61	2077			214.95- 274.95	216.13
99 Tetrahydrofuran					CAS #: 109-99-9		
5.413	5.410 (1.001)	42	1956	0.50000	0.4300	80.00- 120.00	100.00(a)
5.413	5.412 (1.001)	71	364			0.00- 54.27	18.61
5.406	5.412 (1.000)	72	427			0.00- 54.41	21.83
* 98 Bromochloromethane					CAS #: 74-97-5		
5.406	5.411 (1.000)	130	88582	25.0000		80.00- 120.00	100.00
5.406	5.411 (1.000)	128	69341			48.70- 108.70	78.28
5.406	5.409 (1.000)	49	141940			130.32- 190.32	160.24
100 Chloroform					CAS #: 67-66-3		
5.470	5.474 (1.012)	83	3681	0.50000	0.5066	80.00- 120.00	100.00
5.470	5.474 (1.012)	85	2511			38.55- 98.55	68.22
102 Cyclohexane					CAS #: 110-82-7		
5.570	5.583 (1.030)	84	1507	0.50000	0.4196	80.00- 120.00	100.00(a)
5.578	5.584 (1.032)	56	3070			149.13- 209.13	203.72

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  102 Cyclohexane (continued)
  5.578   5.583 (1.032)    41      2172                    74.83- 134.83   144.13
-------------------------------------------------------------------------------
  103 1,1,1-Trichloroethane                        CAS #: 71-55-6
  5.592   5.598 (1.034)    97      4318 0.50000   0.5074  80.00- 120.00   100.00
  5.599   5.599 (1.036)    99      2802                    35.00-  95.00    64.89
-------------------------------------------------------------------------------
  106 Carbon Tetrachloride                         CAS #: 56-23-5
  5.714   5.714 (1.057)   119      4529 0.50000   0.4918  80.00- 120.00   100.00(a)
  5.706   5.713 (1.056)   117      4175                    73.60- 133.60    92.18
-------------------------------------------------------------------------------
  113 2,2,4-Trimethylpentane                       CAS #: 540-84-1
  5.914   5.913 (1.094)    57      7786 0.50000   0.3977  80.00- 120.00   100.00(a)
  5.914   5.914 (1.094)    56      3158                     3.59-  63.59    40.56
  5.907   5.912 (1.093)    41      3396                     0.20-  60.20    43.62
-------------------------------------------------------------------------------
  116 Benzene                                      CAS #: 71-43-2
  5.929   5.928 (0.942)    78      4520 0.50000   0.4989  80.00- 120.00   100.00(a)
  5.921   5.925 (0.941)    77      1175                     0.00-  54.10    26.00
-------------------------------------------------------------------------------
$ 117 1,2-Dichloroethane-d4                        CAS #: 17060-07-0
  5.943   5.942 (1.099)    65    117367 25.0000   24.879  80.00- 120.00   100.00
  5.943   5.943 (1.099)    67     55438                    26.40-  86.40    47.23
-------------------------------------------------------------------------------
  120 1,2-Dichloroethane                           CAS #: 107-06-2
  6.007   6.010 (0.954)    62      3162 0.50000   0.5625  80.00- 120.00   100.00
  6.007   6.009 (0.954)    64      1001                     0.44-  60.44    31.66
-------------------------------------------------------------------------------
  121 Heptane                                      CAS #: 142-82-5
  6.079   6.085 (0.966)    71      1041 0.50000   0.4092  80.00- 120.00   100.00(a)
  6.079   6.084 (0.966)    43      3257                   259.43- 319.43   312.87
  6.079   6.085 (0.966)    57      1703                   114.50- 174.50   163.59
-------------------------------------------------------------------------------
* 123 1,4-Difluorobenzene                          CAS #: 540-36-3
  6.294   6.296 (1.000)   114    256297 25.0000           80.00- 120.00   100.00
  6.294   6.295 (1.000)    88     37017                     0.00-  44.06    14.44
-------------------------------------------------------------------------------
  125 Trichloroethene                              CAS #: 79-01-6
  6.494   6.494 (1.032)    95      2429 0.50000   0.5350  80.00- 120.00   100.00
  6.494   6.494 (1.032)   130      2780                    88.76- 148.76   114.45
  6.494   6.494 (1.032)    97      1407                    35.32-  95.32    57.93
-------------------------------------------------------------------------------
  127 Methylcyclohexane                            CAS #: 108-87-2
  6.595   6.595 (1.048)    83      2331 0.50000   0.4938  80.00- 120.00   100.00(a)
  6.595   6.595 (1.048)    98      1150                    20.32-  80.32    49.34
  6.595   6.595 (1.048)    55      3111                    98.90- 158.90   133.46
-------------------------------------------------------------------------------
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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  132 1,2-Dichloropropane                          CAS #: 78-87-5
  6.724   6.724 (1.068)    63      2110 0.50000   0.5348  80.00- 120.00   100.00
  6.724   6.724 (1.068)    62      1414                   41.74- 101.74    67.01
  6.724   6.724 (1.068)    41      2117                   41.01- 101.01   100.33
-------------------------------------------------------------------------------
  138 Bromodichloromethane                         CAS #: 75-27-4
  6.953   6.953 (1.105)    83      3850 0.50000   0.5187  80.00- 120.00   100.00
  6.946   6.952 (1.104)    85      2570                   35.98-  95.98    66.75
-------------------------------------------------------------------------------
  144 cis-1,3-Dichloropropene                      CAS #: 10061-01-5
  7.325   7.325 (1.164)    75      2532 0.50000   0.5230  80.00- 120.00   100.00
  7.325   7.325 (1.164)    77      1000                    2.71-  62.71    39.49
  7.325   7.325 (1.164)    39      2012                   43.85- 103.85    79.46
-------------------------------------------------------------------------------
  145 4-Methyl-2-pentanone                         CAS #: 108-10-1
  7.433   7.433 (1.181)    58      1698 0.50000   0.4972  80.00- 120.00   100.00(a)
  7.433   7.433 (1.181)    43      5262                  267.85- 327.85   309.89
  7.440   7.434 (1.182)    85       551                    4.54-  64.54    32.45
-------------------------------------------------------------------------------
$ 146 Toluene-d8                                   CAS #: 2037-26-5
  7.504   7.505 (1.192)    98    266566 25.0000   25.174  80.00- 120.00   100.00
  7.504   7.504 (1.192)    70     27445                    0.00-  40.19    10.30
  7.504   7.505 (1.192)   100    178022                   38.92-  98.92    66.78
-------------------------------------------------------------------------------
  147 Toluene                                      CAS #: 108-88-3
  7.562   7.562 (1.201)    91      5677 0.50000   0.4719  80.00- 120.00   100.00(a)
  7.562   7.562 (1.201)    92      3022                   28.88-  88.88    53.23
-------------------------------------------------------------------------------
  150 trans-1,3-Dichloropropene                    CAS #: 10061-02-6
  7.798   7.798 (0.893)    75      2633 0.50000   0.4999  80.00- 120.00   100.00(a)
  7.798   7.798 (0.893)    77      1144                    2.67-  62.67    43.45
  7.798   7.798 (0.893)    39      2046                   37.60-  97.60    77.71
-------------------------------------------------------------------------------
  155 1,1,2-Trichloroethane                        CAS #: 79-00-5
  7.956   7.956 (0.911)    97      2805 0.50000   0.5902  80.00- 120.00   100.00
  7.956   7.956 (0.911)    99      1495                   30.86-  90.86    53.30
  7.956   7.956 (0.911)    83      1880                   47.74- 107.74    67.02
-------------------------------------------------------------------------------
  156 Tetrachloroethene                            CAS #: 127-18-4
  7.999   8.001 (0.916)   166      3751 0.50000   0.4862  80.00- 120.00   100.00(a)
  7.999   7.999 (0.916)   129      3205                   48.46- 108.46    85.44
  7.999   7.999 (0.916)   131      2923                   45.42- 105.42    77.93
-------------------------------------------------------------------------------
  158 2-Hexanone                                   CAS #: 591-78-6
  8.120   8.120 (0.929)    58      2297 0.50000   0.4897  80.00- 120.00   100.00(Ta)
  8.120   8.120 (0.929)    43      4919                  185.57- 245.57   214.15
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  158 2-Hexanone (continued)
  0.000   8.120 (0.000)   100         0                      0.00-  46.27     0.00
-------------------------------------------------------------------------------
  160 Dibromochloromethane                          CAS #: 124-48-1
  8.264   8.268 (0.946)   129      6009 0.50000   0.5495  80.00- 120.00   100.00
  8.264   8.269 (0.946)   127      4134                   47.61- 107.61    68.80
-------------------------------------------------------------------------------
  161 1,2-Dibromoethane (EDB)                       CAS #: 106-93-4
  8.378   8.378 (0.959)   107      3739 0.50000   0.4805  80.00- 120.00   100.00(a)
  8.378   8.378 (0.959)   109      4101                   68.89- 128.89   109.68
-------------------------------------------------------------------------------
* 163 Chlorobenzene-d5                              CAS #: 3114-55-4
  8.736   8.736 (1.000)   117    297504 25.0000           80.00- 120.00   100.00
  8.729   8.734 (1.000)    82    132406                   14.84-  74.84    44.51
-------------------------------------------------------------------------------
  165 Chlorobenzene                                 CAS #: 108-90-7
  8.758   8.758 (1.002)   112      6626 0.50000   0.5452  80.00- 120.00   100.00
  8.758   8.758 (1.002)   114      2278                    1.88-  61.88    34.38
  8.751   8.757 (1.002)    77      6086                   20.89-  80.89    91.85
-------------------------------------------------------------------------------
  167 Ethyl Benzene                                 CAS #: 100-41-4
  8.808   8.808 (1.008)   106      2502 0.50000   0.4644  80.00- 120.00   100.00(a)
  8.808   8.808 (1.008)    91      6499                  268.95- 328.95   259.75
-------------------------------------------------------------------------------
  169 m,p-Xylene                                    CAS #: 108-38-3
  8.901   8.906 (1.019)   106      2978 0.50000   0.4499  80.00- 120.00   100.00(a)
  8.901   8.907 (1.019)    91      5526                  159.20- 219.20   185.56
-------------------------------------------------------------------------------
  171 o-Xylene                                      CAS #: 95-47-6
  9.245   9.245 (1.058)   106      2293 0.50000   0.3693  80.00- 120.00   100.00(a)
  9.245   9.245 (1.058)    91      5532                  173.23- 233.23   241.26
-------------------------------------------------------------------------------
  172 Styrene                                       CAS #: 100-42-5
  9.267   9.266 (1.061)   104      3675 0.50000   0.3523  80.00- 120.00   100.00(a)
  9.259   9.266 (1.060)    78      1797                   15.83-  75.83    48.90
-------------------------------------------------------------------------------
  174 Bromoform                                     CAS #: 75-25-2
  9.460   9.460 (1.083)   173      5205 0.50000   0.5170  80.00- 120.00   100.00
  9.460   9.460 (1.083)   171      2722                   21.75-  81.75    52.30
-------------------------------------------------------------------------------
  175 Cumene                                        CAS #: 98-82-8
  9.532   9.531 (1.091)   105      7611 0.50000   0.3776  80.00- 120.00   100.00(a)
  9.532   9.531 (1.091)   120      2367                    0.00-  58.53    31.10
  9.532   9.531 (1.091)    51      1523                    0.00-  43.43    20.01
-------------------------------------------------------------------------------
$ 177 4-Bromofluorobenzene                          CAS #: 460-00-4
  9.718   9.719 (1.112)   174    174773 25.0000   23.138  80.00- 120.00   100.00
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

$ 177 4-Bromofluorobenzene (continued)
  9.718   9.713 (1.112)    95    195362                    82.53- 142.53   111.78
  9.718   9.719 (1.112)   176    168027                    65.10- 125.10    96.14
-------------------------------------------------------------------------------
  181 1,1,2,2-Tetrachloroethane                     CAS #: 79-34-5
  9.840   9.839 (1.126)    83      5692 0.50000   0.5590  80.00- 120.00   100.00
  9.840   9.839 (1.126)    85      3598                    38.99-  98.99    63.21
-------------------------------------------------------------------------------
  182 Propylbenzene                                 CAS #: 103-65-1
  9.875   9.874 (1.130)    91     10682 0.50000   0.4667  80.00- 120.00   100.00(a)
  9.875   9.875 (1.130)   120      2619                     0.00-  56.98    24.52
  9.875   9.874 (1.130)   105       367                     0.00-  34.22     3.44
-------------------------------------------------------------------------------
  188 4-Ethyltoluene                                CAS #: 622-96-8
  9.968   9.967 (1.141)   120      3080 0.50000   0.4554  80.00- 120.00   100.00(a)
  9.968   9.966 (1.141)   105      8569                   277.08- 337.08   278.21
-------------------------------------------------------------------------------
  190 1,3,5-Trimethylbenzene                        CAS #: 108-67-8
 10.019  10.019 (1.147)   120      3820 0.50000   0.4029  80.00- 120.00   100.00(a)
 10.019  10.019 (1.147)   105      7606                   165.36- 225.36   199.11
-------------------------------------------------------------------------------
  196 1,2,4-Trimethylbenzene                        CAS #: 95-63-6
 10.341  10.341 (1.184)   120      2991 0.50000   0.3757  80.00- 120.00   100.00(a)
 10.341  10.340 (1.184)   105      6523                   173.89- 233.89   218.09
-------------------------------------------------------------------------------
  208 1,3-Dichlorobenzene                           CAS #: 541-73-1
 10.627  10.622 (1.216)   146      7117 0.50000   0.4818  80.00- 120.00   100.00(a)
 10.627  10.623 (1.216)   148      4752                    34.36-  94.36    66.77
 10.627  10.621 (1.216)   111      2819                     7.68-  67.68    39.61
-------------------------------------------------------------------------------
  209 1,4-Dichlorobenzene                           CAS #: 106-46-7
 10.706  10.706 (1.225)   146      6876 0.50000   0.4687  80.00- 120.00   100.00(a)
 10.706  10.705 (1.225)   148      4507                    33.64-  93.64    65.55
 10.706  10.702 (1.225)   111      2519                     5.53-  65.53    36.63
-------------------------------------------------------------------------------
  212 alpha-Chlorotoluene                           CAS #: 100-44-7
 10.814  10.814 (1.238)    91      6799 0.50000   0.4394  80.00- 120.00   100.00(a)
 10.814  10.817 (1.238)   126      1669                     0.00-  55.76    24.55
-------------------------------------------------------------------------------
  214 1,2-Dichlorobenzene                           CAS #: 95-50-1
 11.029  11.029 (1.262)   146      7060 0.50000   0.4991  80.00- 120.00   100.00(a)
 11.029  11.029 (1.262)   148      4163                    33.63-  93.63    58.97
 11.029  11.029 (1.262)   111      2278                     8.70-  68.70    32.27
-------------------------------------------------------------------------------
```

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Report Date: 09-Nov-2018 17:32

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p110814.d
Lab Smp Id: ICAL Level #2
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msdp.i/08NOV18a.b/p18q1108a.m
Misc Info: 0.5ppbv(5.0ppbv)

Calibration Date: 08-NOV-2018
Calibration Time: 21:40

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	92663	55598	129728	88582	-4.40
123 1,4-Difluorobenze	304426	182656	426196	256297	-15.81
163 Chlorobenzene-d5	330915	198549	463281	297504	-10.10

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.13
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/08NOV18a.b/p110814.d

Date : 08-NOV-2018 19:58

Client ID:

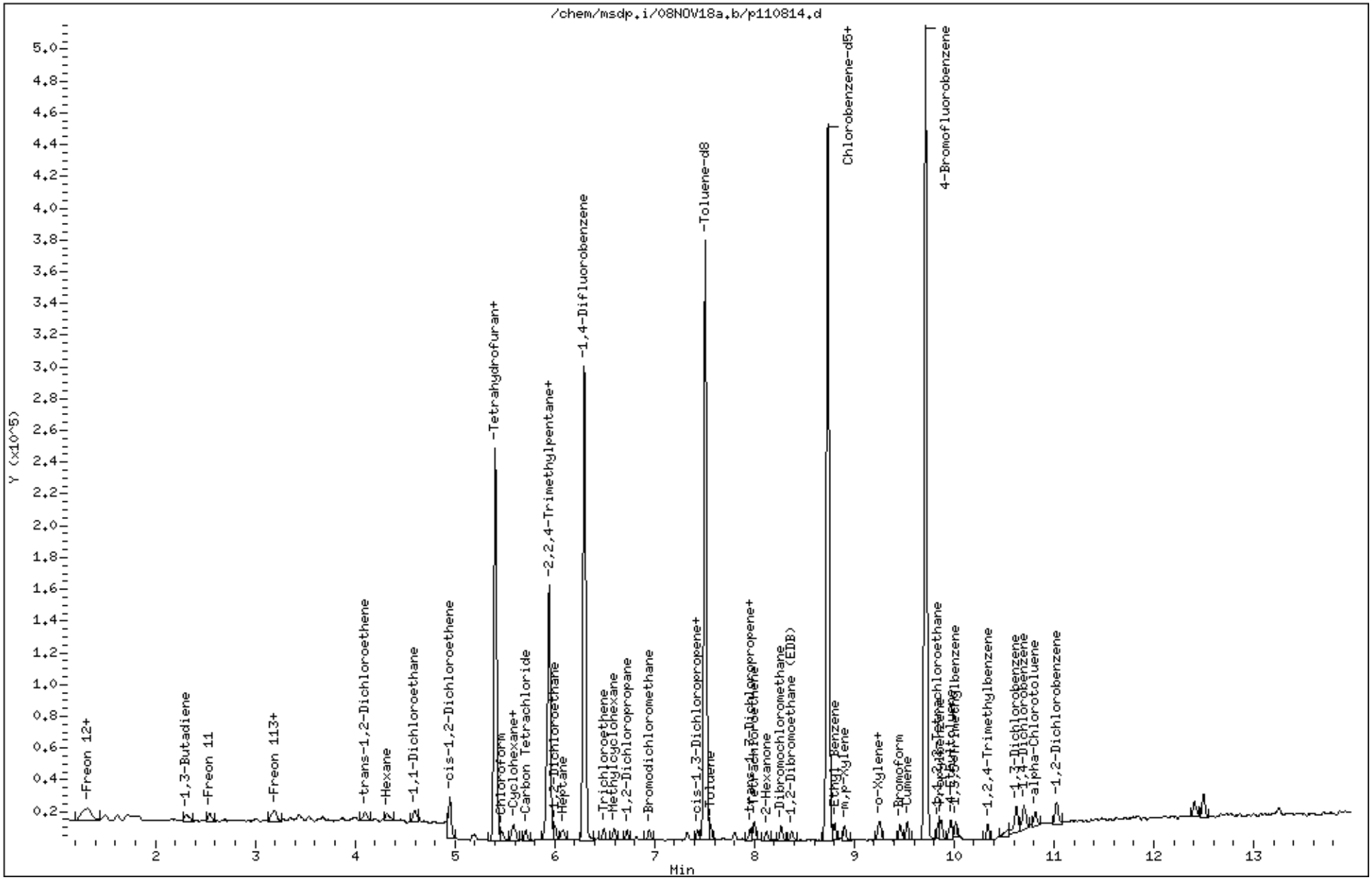
Sample Info: 20ml 3018-510

Column phase: RTX-624

Instrument: msdp.i

Operator: gh

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/26NOV18.b/p092726.d
Lab Smp Id: ICAL Level #2 Client Smp ID: ICAL Level #2
Inj Date : 27-SEP-2018 23:23
Operator : mb Inst ID: msdp.i
Smp Info : 20ml 3018-445
Misc Info : 0.5ppbv (5.0ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/26NOV18.b/p18q1108b.m
Meth Date : 27-Nov-2018 08:30 ugdc Quant Type: ISTD
Cal Date : 08-NOV-2018 19:58 Cal File: p110814.d
Als bottle: 5 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT5CRV.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.406	5.414 (1.000)	130	157210	25.0000		80.00- 120.00	100.00
5.406	5.414 (1.000)	128	122682			48.70- 108.70	78.04
5.406	5.411 (1.000)	49	206042			130.32- 190.32	131.06
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.301 (1.000)	114	459164	25.0000		80.00- 120.00	100.00
6.301	6.301 (1.000)	88	63822			0.00- 44.06	13.90
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	541126	25.0000		80.00- 120.00	100.00
8.736	8.736 (1.000)	82	232254			14.84- 74.84	42.92
74 Acrylonitrile					CAS #: 107-13-1		
4.195	4.201 (0.776)	52	1799	0.50000	0.3919	0.00- 0.00	100.00(a)
4.195	4.200 (0.776)	53	2415			0.00- 0.00	134.24
157 1,3-Dichloropropane					CAS #: 142-28-9		
8.106	8.100 (1.286)	76	5882	0.50000	0.5654	0.00- 0.00	100.00(a)
8.099	8.099 (1.285)	41	5957			0.00- 0.00	101.28

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
157 1,3-Dichloropropane (continued)							
8.106	8.101 (1.286)	78	2099			0.00- 0.00	35.69
168 1,1,1,2-Tetrachloroethane					CAS #: 630-20-6		
8.830	8.829 (1.011)	131	8326	0.50000	0.5509	0.00- 0.00	100.00(a)
8.830	8.829 (1.011)	117	7643			0.00- 0.00	91.80
8.830	8.829 (1.011)	95	2275			0.00- 0.00	27.32
203 sec-Butylbenzene					CAS #: 135-98-8		
10.470	10.474 (1.198)	134	4725	0.50000	0.5119	0.00- 0.00	100.00(a)
10.470	10.472 (1.198)	105	20909			0.00- 0.00	442.52
10.470	10.471 (1.198)	91	3290			0.00- 0.00	69.63
213 Butylbenzene					CAS #: 104-51-8		
10.936	10.935 (1.252)	134	5586	0.50000	0.4648	0.00- 0.00	100.00(a)
10.928	10.934 (1.251)	91	16211			0.00- 0.00	290.21
10.928	10.931 (1.251)	92	7321			0.00- 0.00	131.06
207 p-Cymene					CAS #: 99-87-6		
10.585	10.584 (1.212)	119	16877	0.50000	0.3904	0.00- 0.00	100.00(a)
10.585	10.584 (1.212)	134	5312			0.00- 0.00	31.47
10.585	10.584 (1.212)	91	4504			0.00- 0.00	26.69

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p092726.d
Lab Smp Id: ICAL Level #2
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msdp.i/26NOV18.b/p18q1108b.m
Misc Info: 0.5ppbv (5.0ppbv)

Calibration Date: 28-SEP-2018
Calibration Time: 01:04
Client Smp ID: ICAL Level #2
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	162118	97271	226965	157210	-3.03
123 1,4-Difluorobenze	484572	290743	678401	459164	-5.24
163 Chlorobenzene-d5	566566	339940	793192	541126	-4.49

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.13
123 1,4-Difluorobenze	6.30	5.97	6.63	6.30	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/26NOV18.b/p092726.d

Date : 27-SEP-2018 23:23

Client ID: ICAL Level #2

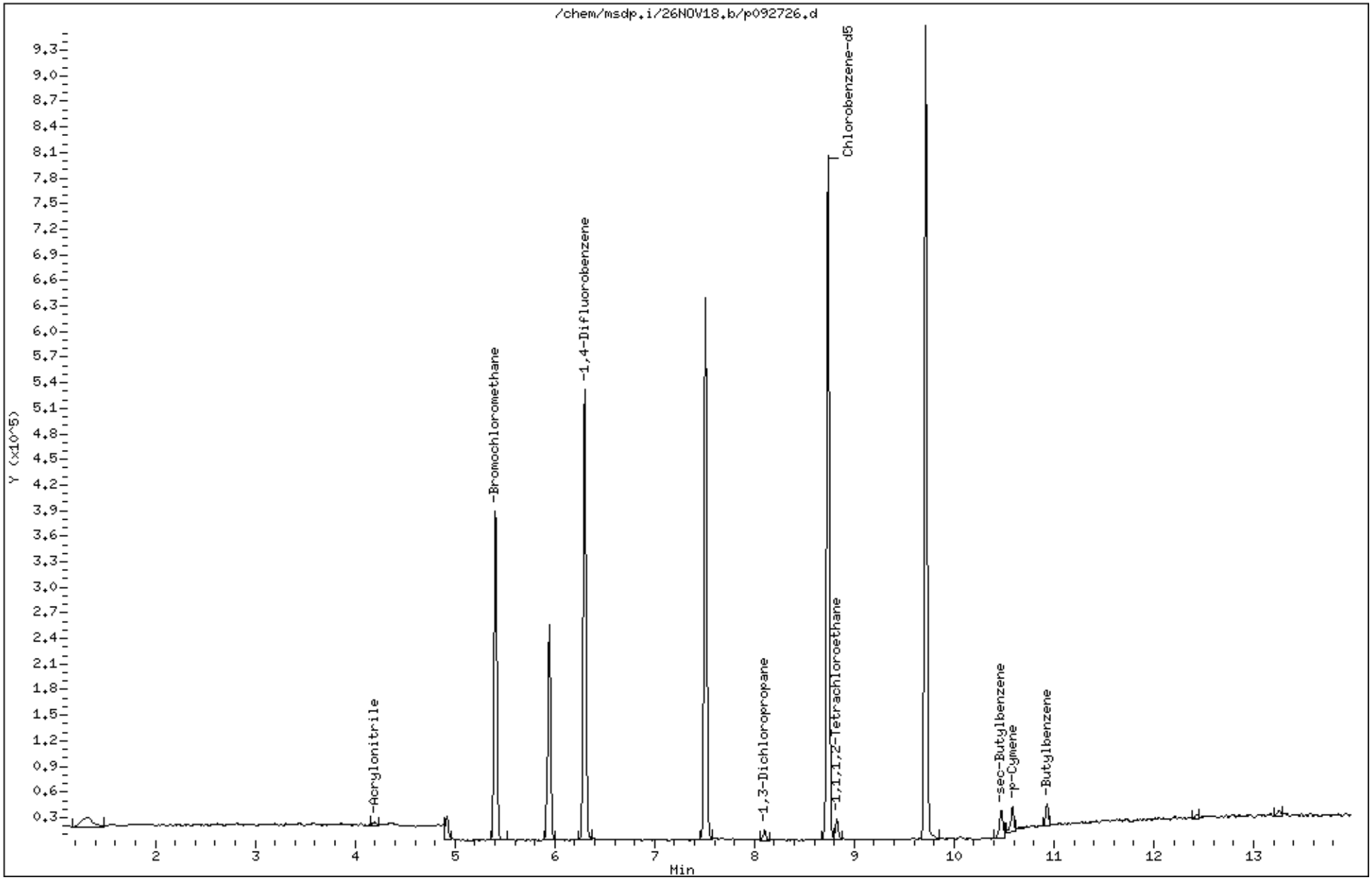
Sample Info: 20ml 3018-445

Column phase: RTX-624

Instrument: msdp.i

Operator: mb

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/04DEC18.b/p120411.d
Lab Smp Id: ICAL Level#3
Inj Date : 04-DEC-2018 16:24
Operator : mjb Inst ID: msdp.i
Smp Info : 80ml 3045-198
Misc Info : 2.0ppbv (5.0ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/04DEC18.b/p18q1108c.m
Meth Date : 05-Dec-2018 14:02 ugdc Quant Type: ISTD
Cal Date : 04-DEC-2018 16:24 Cal File: p120411.d
Als bottle: 8 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT4mAcrCRV.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
63 Acetonitrile					CAS #: 75-05-8		
3.772	3.771 (0.697)	39	2035	2.00000	2.802	0.00- 0.00	100.00
3.765	3.770 (0.696)	41	7820			0.00- 0.00	384.28
3.765	3.770 (0.696)	40	4454			0.00- 0.00	218.87
184 trans-1,4-Dichloro-2-butene					CAS #: 110-57-6		
9.890	9.890 (1.132)	75	5575	2.00000	1.859	0.00- 0.00	100.00(a)
9.890	9.890 (1.132)	89	3511			0.00- 0.00	62.98
9.890	9.890 (1.132)	53	7363			0.00- 0.00	132.07
206 bis(2-Chloroethyl) Ether					CAS #: 111-44-4		
10.549	10.549 (1.207)	93	23281	2.00000	2.372	0.00- 0.00	100.00
10.541	10.546 (1.207)	95	6017			0.00- 0.00	25.85
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.412 (1.000)	130	83946	25.0000		80.00- 120.00	100.00
5.413	5.412 (1.000)	128	65600			48.70- 108.70	78.15
5.413	5.409 (1.000)	49	121320			130.32- 190.32	144.52
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.294	6.298 (1.000)	114	260564	25.0000		80.00- 120.00	100.00

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 123 1,4-Difluorobenzene (continued)								
6.294	6.296	(1.000)	88	37605			0.00- 44.06	14.43
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.736	8.736	(1.000)	117	301863	25.0000		80.00- 120.00	100.00
8.736	8.736	(1.000)	82	131168			14.84- 74.84	43.45

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p120411.d
Lab Smp Id: ICAL Level#3
Analysis Type: VOA
Quant Type: ISTD
Operator: mjb
Method File: /chem/msdp.i/04DEC18.b/p18q1108c.m
Misc Info: 2.0ppbv (5.0ppbv)

Calibration Date: 04-DEC-2018
Calibration Time: 10:52

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	86668	52001	121335	83946	-3.14
123 1,4-Difluorobenze	277096	166258	387934	260564	-5.97
163 Chlorobenzene-d5	303080	181848	424312	301863	-0.40

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	-0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/04DEC18.b/p120411.d

Date : 04-DEC-2018 16:24

Client ID:

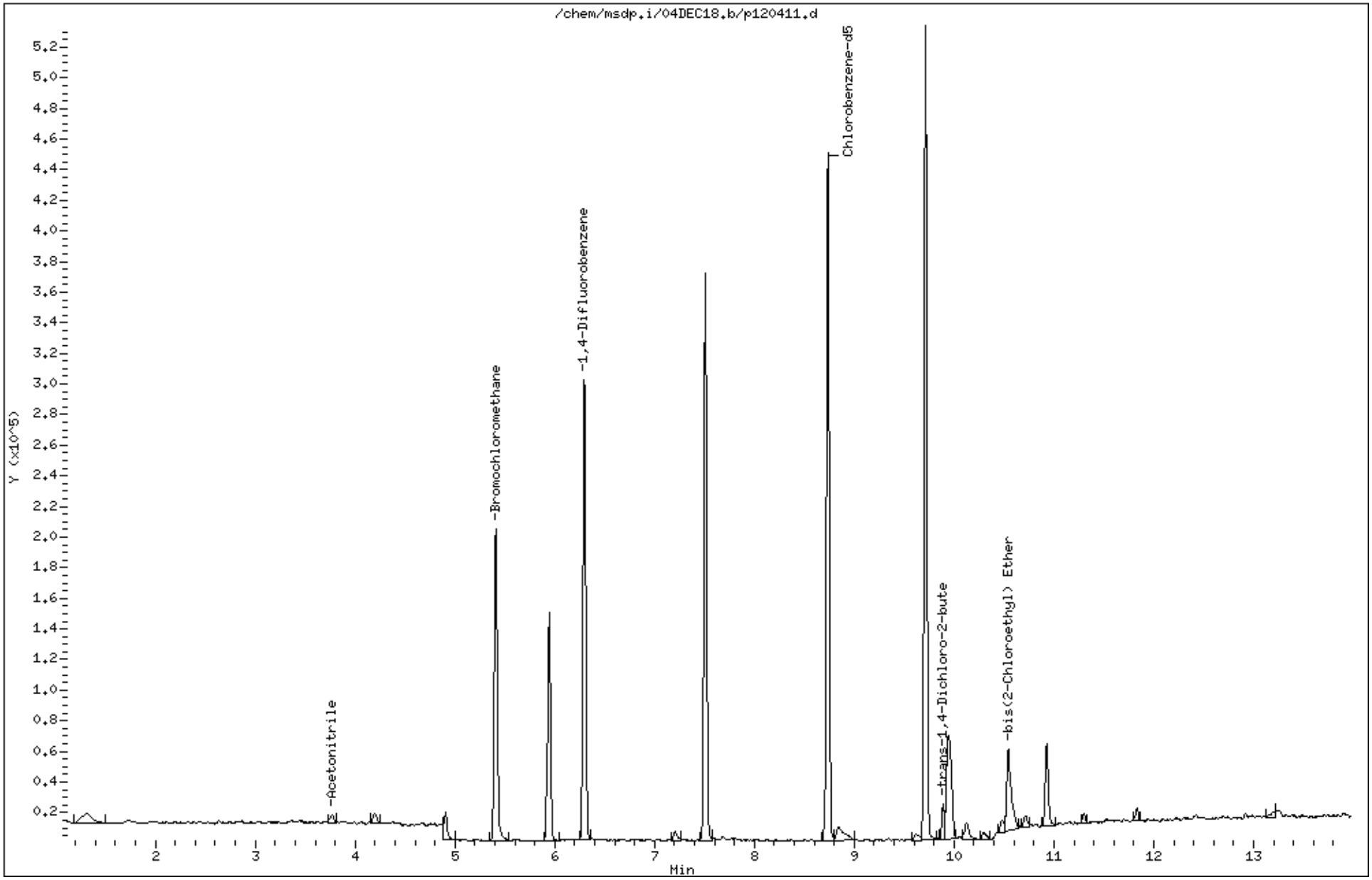
Sample Info: 80ml 3045-198

Column phase: RTX-624

Instrument: msdp.i

Operator: mjb

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/04DEC18.b/p120405.d
Lab Smp Id: ICAL Level #3
Inj Date : 04-DEC-2018 13:28
Operator : mjb Inst ID: msdp.i
Smp Info : 80ml 3045-196
Misc Info : 2.0ppbv (5.0ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/04DEC18.b/p18q1108c.m
Meth Date : 05-Dec-2018 12:49 ugdc Quant Type: ISTD
Cal Date : 04-DEC-2018 16:24 Cal File: p120411.d
Als bottle: 10 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: MasterCRVM4M5.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE		RATIO
7 Freon 134a					CAS #: 811-97-2			
1.451	1.456 (0.268)	83	4958	2.00000	2.196	0.00-	0.00	100.00
1.451	1.448 (0.268)	69	4261			0.00-	0.00	85.94
8 Propane					CAS #: 74-98-6			
1.479	1.484 (0.273)	39	2514	2.00000	2.942	0.00-	0.00	100.00(aM1)
1.479	1.481 (0.273)	44	5063			0.00-	0.00	201.39
1.493	1.484 (0.276)	43	2317			0.00-	0.00	92.16
10 1,1-Difluoroethane					CAS #: 75-37-6			
1.507	1.509 (0.278)	65	2248	2.00000	2.301	0.00-	0.00	100.00
1.549	1.546 (0.286)	51	17578			0.00-	0.00	781.94
1.521	1.512 (0.281)	47	1557			0.00-	0.00	69.26
13 Chlorodifluoromethane					CAS #: 75-45-6			
1.563	1.557 (0.289)	67	1344	2.00000	2.082	0.00-	0.00	100.00
1.549	1.546 (0.286)	51	17578			0.00-	0.00	1307.89
1.675	1.672 (0.309)	85	1361			0.00-	0.00	101.26
16 Freon 142b					CAS #: 75-68-3			
1.661	1.669 (0.307)	65	13384	2.00000	2.097	0.00-	0.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
16 Freon 142b (continued)							
1.661	1.669 (0.307)	45	4048			0.00- 0.00	30.25
32 Vinyl Bromide					CAS #: 593-60-2		
2.512	2.510 (0.464)	106	5819	2.00000	2.017	0.00- 0.00	100.00
2.512	2.510 (0.464)	108	5388			0.00- 0.00	92.59
34 Pentane					CAS #: 109-66-0		
2.612	2.618 (0.483)	43	8792	2.00000	1.871	0.00- 0.00	100.00
2.619	2.619 (0.484)	57	1222			0.00- 0.00	13.90
2.626	2.619 (0.485)	72	370			0.00- 0.00	4.21
36 1-Pentene					CAS #: 109-67-1		
2.562	2.562 (0.473)	55	7927	2.00000	2.031	0.00- 0.00	100.00(a)
2.562	2.562 (0.473)	42	9952			0.00- 0.00	125.55
37 Dichlorofluoromethane					CAS #: 75-43-4		
2.562	2.562 (0.473)	67	12574	2.00000	1.995	0.00- 0.00	100.00(a)
2.562	2.560 (0.473)	69	3945			0.00- 0.00	31.37
44 Ethyl Ether					CAS #: 60-29-7		
2.920	2.920 (0.539)	74	2693	2.00000	2.050	0.00- 0.00	100.00
2.920	2.920 (0.539)	59	4846			0.00- 0.00	179.95
47 Freon 123a					CAS #: 354-23-4		
3.013	3.016 (0.557)	117	10344	2.00000	1.912	0.00- 0.00	100.00(a)
3.013	3.013 (0.557)	67	11679			0.00- 0.00	112.91
48 Freon 123					CAS #: 306-83-2		
3.113	3.113 (0.575)	83	13034	2.00000	2.030	0.00- 0.00	100.00
3.106	3.112 (0.574)	133	3626			0.00- 0.00	27.82
3.113	3.113 (0.575)	85	7895			0.00- 0.00	60.57
59 Cyclopentene					CAS #: 142-29-0		
3.708	3.702 (0.685)	67	8160	2.00000	1.925	0.00- 0.00	100.00
3.701	3.701 (0.684)	68	2753			0.00- 0.00	33.74
3.701	3.701 (0.684)	53	2672			0.00- 0.00	32.75
61 Methyl Acetate					CAS #: 79-20-9		
3.722	3.722 (0.688)	43	18793	2.00000	2.015	0.00- 0.00	100.00(a)
3.715	3.722 (0.686)	74	2332			0.00- 0.00	12.41
64 Cyclopentane					CAS #: 287-92-3		
3.815	3.817 (0.705)	70	2854	2.00000	1.958	0.00- 0.00	100.00
3.815	3.815 (0.705)	55	6045			0.00- 0.00	211.81

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
76 1-Hexene					CAS #: 592-41-6		
4.252	4.254 (0.786)	55	5303	2.00000	1.746	0.00- 0.00	100.00
4.252	4.252 (0.786)	41	8449			0.00- 0.00	159.32
4.252	4.257 (0.786)	84	1144			0.00- 0.00	21.57
84 1-Propanol					CAS #: 71-23-8		
4.739	4.739 (0.876)	59	1191	2.00000	1.688	0.00- 0.00	100.00
4.739	4.739 (0.876)	42	1527			0.00- 0.00	128.21
4.732	4.738 (0.874)	41	1157			0.00- 0.00	97.15
85 Chloroprene					CAS #: 126-99-8		
4.646	4.651 (0.858)	53	10550	2.00000	1.753	0.00- 0.00	100.00(a)
4.646	4.651 (0.858)	88	4028			0.00- 0.00	38.18
4.646	4.649 (0.858)	50	3060			0.00- 0.00	29.00
90 2,2-Dichloropropane					CAS #: 594-20-7		
5.141	5.141 (0.950)	77	11115	2.00000	1.948	0.00- 0.00	100.00
5.133	5.139 (0.948)	79	3432			0.00- 0.00	30.88
5.141	5.141 (0.950)	97	2331			0.00- 0.00	20.97
94 Ethyl Acetate					CAS #: 141-78-6		
5.219	5.225 (0.964)	70	1128	2.00000	1.979	0.00- 0.00	100.00
5.227	5.225 (0.966)	61	1940			0.00- 0.00	171.99
5.227	5.225 (0.966)	45	2423			0.00- 0.00	214.80
93 Methyl Acrylate					CAS #: 96-33-3		
5.270	5.270 (0.974)	55	15677	2.00000	1.809	0.00- 0.00	100.00
5.270	5.270 (0.974)	85	1866			0.00- 0.00	11.90
5.270	5.270 (0.974)	58	1507			0.00- 0.00	9.61
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.412 (1.000)	130	86866	25.0000		80.00- 120.00	100.00
5.413	5.412 (1.000)	128	66015			48.70- 108.70	76.00
5.406	5.408 (1.000)	49	125890			130.32- 190.32	144.92
107 1,1-Dichloropropene					CAS #: 563-58-6		
5.749	5.749 (0.913)	110	3165	2.00000	1.828	0.00- 0.00	100.00
5.742	5.747 (0.912)	75	7551			0.00- 0.00	238.58
115 Isobutanol					CAS #: 78-83-1		
5.893	5.894 (0.936)	39	2360	2.00000	2.391	0.00- 0.00	100.00
5.893	5.893 (0.936)	43	6716			0.00- 0.00	284.58
5.900	5.894 (0.937)	41	5183			0.00- 0.00	219.62
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.294	6.298 (1.000)	114	268789	25.0000		80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 123 1,4-Difluorobenzene (continued)							
6.294	6.297 (1.000)	88	37257			0.00- 44.06	13.86
124 n-Butanol					CAS #: 71-36-3		
6.466	6.466 (1.027)	56	7402	2.00000	2.124	0.00- 0.00	100.00
6.466	6.466 (1.027)	41	6242			0.00- 0.00	84.33
6.466	6.466 (1.027)	43	4554			0.00- 0.00	61.52
128 Ethyl acrylate					CAS #: 140-88-5		
6.595	6.590 (0.755)	99	1191	2.00000	1.993	0.00- 0.00	100.00
6.588	6.588 (0.754)	45	2113			0.00- 0.00	177.41
6.588	6.588 (0.754)	55	19162			0.00- 0.00	1608.90
131 2-Pentanone					CAS #: 107-87-9		
6.681	6.679 (0.765)	43	25756	2.00000	1.895	0.00- 0.00	100.00
6.681	6.679 (0.765)	58	2021			0.00- 0.00	7.85
6.681	6.681 (0.765)	86	2831			0.00- 0.00	10.99
134 Methyl Methacrylate					CAS #: 80-62-6		
6.781	6.782 (0.776)	41	12651	2.00000	1.903	0.00- 0.00	100.00
6.781	6.782 (0.776)	69	5842			0.00- 0.00	46.18
6.788	6.784 (0.777)	100	2511			0.00- 0.00	19.85
137 Dibromomethane					CAS #: 74-95-3		
6.831	6.832 (0.782)	174	11668	2.00000	2.029	0.00- 0.00	100.00
6.831	6.831 (0.782)	93	10152			0.00- 0.00	87.01
6.831	6.831 (0.782)	95	8279			0.00- 0.00	70.95
148 Octane					CAS #: 111-65-9		
7.569	7.569 (1.203)	57	6080	2.00000	1.819	0.00- 0.00	100.00
7.569	7.572 (1.203)	85	4224			0.00- 0.00	69.47
7.569	7.569 (1.203)	43	15788			0.00- 0.00	259.67
159 Butyl Acetate					CAS #: 123-86-4		
8.185	8.183 (1.300)	56	6971	2.00000	1.774	0.00- 0.00	100.00
8.185	8.183 (1.300)	73	2133			0.00- 0.00	30.60
8.185	8.183 (1.300)	43	17960			0.00- 0.00	257.64
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	298407	25.0000		80.00- 120.00	100.00
8.736	8.736 (1.000)	82	129994			14.84- 74.84	43.56
170 Nonane					CAS #: 111-84-2		
8.830	8.830 (1.011)	43	14417	2.00000	1.562	0.00- 0.00	100.00(a)
8.830	8.830 (1.011)	57	11677			0.00- 0.00	80.99
8.830	8.830 (1.011)	85	3388			0.00- 0.00	23.50

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  173 2-Heptanone                                  CAS #: 110-43-0
  9.338   9.338 (1.725)    58      9996 2.00000    1.392   0.00-   0.00   100.00
  9.338   9.338 (1.725)    43     20496                    0.00-   0.00   205.04
-------------------------------------------------------------------------------
  176 Cyclohexanone                                CAS #: 108-94-1
  9.689   9.689 (1.109)    55     10435 2.00000    1.723   0.00-   0.00   100.00
  9.689   9.689 (1.109)    98      3186                    0.00-   0.00    30.53
  9.689   9.689 (1.109)    42      7958                    0.00-   0.00    76.26
-------------------------------------------------------------------------------
  179 alpha-Pinene                                 CAS #: 80-56-8
  9.496   9.494 (1.087)    93     16830 2.00000    1.556   0.00-   0.00   100.00(a)
  9.496   9.494 (1.087)    77      6011                    0.00-   0.00    35.72
-------------------------------------------------------------------------------
  180 Bromobenzene                                 CAS #: 108-86-1
  9.847   9.847 (1.127)   156     14376 2.00000    1.939   0.00-   0.00   100.00
  9.847   9.847 (1.127)   158     14584                    0.00-   0.00   101.45
  9.847   9.847 (1.127)    77     19127                    0.00-   0.00   133.05
-------------------------------------------------------------------------------
  185 1,2,3-Trichloropropane                       CAS #: 96-18-4
  9.890   9.894 (1.132)   110      7263 2.00000    2.152   0.00-   0.00   100.00
  9.890   9.890 (1.132)    75     19184                    0.00-   0.00   264.13
  9.890   9.891 (1.132)    61      5038                    0.00-   0.00    69.37
-------------------------------------------------------------------------------
  187 Decane                                       CAS #: 124-18-5
  9.933   9.933 (1.137)    57     16172 2.00000    1.565   0.00-   0.00   100.00
  9.933   9.933 (1.137)    71      4303                    0.00-   0.00    26.61
  9.925   9.931 (1.136)   142       653                    0.00-   0.00     4.04
-------------------------------------------------------------------------------
  189 2-Chlorotoluene                              CAS #: 95-49-8
  9.990   9.989 (1.143)   126      9852 2.00000    1.756   0.00-   0.00   100.00
  9.983   9.987 (1.143)    91     24251                    0.00-   0.00   246.15
  9.983   9.986 (1.143)    65      2951                    0.00-   0.00    29.95
-------------------------------------------------------------------------------
  191 4-Chlorotoluene                              CAS #: 106-43-4
 10.083  10.083 (1.154)   126     11018 2.00000    1.839   0.00-   0.00   100.00
 10.076  10.079 (1.153)    91     32608                    0.00-   0.00   295.95
 10.076  10.080 (1.153)    63      4030                    0.00-   0.00    36.58
-------------------------------------------------------------------------------
  192 beta-Pinene                                  CAS #: 127-91-3
 10.062  10.062 (1.152)    93     15166 2.00000    1.611   0.00-   0.00   100.00(a)
 10.076  10.079 (1.153)    91     32608                    0.00-   0.00   215.01
-------------------------------------------------------------------------------
  193 Diisobutyl Ketone                            CAS #: 108-83-8
 10.112  10.112 (1.157)    57     21043 2.00000    1.543   0.00-   0.00   100.00(a)
 10.112  10.112 (1.157)    85     14705                    0.00-   0.00    69.88
-------------------------------------------------------------------------------
```

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE		RATIO
195 tert-Butylbenzene					CAS #: 98-06-6			
10.284	10.287 (1.177)	119	29016	2.00000	1.734	0.00-	0.00	100.00
10.284	10.288 (1.177)	134	6696			0.00-	0.00	23.08
10.284	10.284 (1.177)	91	16853			0.00-	0.00	58.08
197 Pentachloroethane					CAS #: 76-01-7			
10.355	10.355 (1.185)	167	10508	2.00000	1.840	0.00-	0.00	100.00
10.355	10.355 (1.185)	117	10170			0.00-	0.00	96.78
10.355	10.355 (1.185)	169	5319			0.00-	0.00	50.62
199 D-Limonene					CAS #: 5989-27-5			
10.534	10.534 (1.206)	68	12141	2.00000	1.491	0.00-	0.00	100.00(a)
10.541	10.542 (1.207)	93	30673			0.00-	0.00	252.64
10.534	10.534 (1.206)	136	3003			0.00-	0.00	24.73
210 1,2,3-Trimethylbenzene					CAS #: 526-73-8			
10.706	10.706 (1.225)	120	12355	2.00000	1.581	0.00-	0.00	100.00
10.706	10.706 (1.225)	105	28622			0.00-	0.00	231.66
10.699	10.705 (1.225)	77	3568			0.00-	0.00	28.88
215 Undecane					CAS #: 1120-21-4			
10.914	10.917 (1.249)	57	18344	2.00000	1.612	0.00-	0.00	100.00(a)
10.914	10.915 (1.249)	43	17042			0.00-	0.00	92.90
217 Hexachloroethane					CAS #: 67-72-1			
11.208	11.208 (1.283)	201	9699	2.00000	1.774	0.00-	0.00	100.00(a)
11.208	11.208 (1.283)	117	12512			0.00-	0.00	129.00
221 1,2-Dibromo-3-chloropropane					CAS #: 96-12-8			
11.702	11.702 (1.339)	157	12430	2.00000	2.005	0.00-	0.00	100.00
11.702	11.702 (1.339)	75	9518			0.00-	0.00	76.57
11.702	11.702 (1.339)	155	9439			0.00-	0.00	75.94
224 1,3,5-Trichlorobenzene					CAS #: 108-70-3			
11.831	11.831 (1.354)	180	21737	2.00000	1.846	0.00-	0.00	100.00(a)
11.831	11.831 (1.354)	182	22330			0.00-	0.00	102.73
225 Dodecane					CAS #: 112-40-3			
11.824	11.824 (1.353)	57	14102	2.00000	1.463	0.00-	0.00	100.00
11.824	11.824 (1.353)	43	12933			0.00-	0.00	91.71
229 1,2,3-Trichlorobenzene					CAS #: 87-61-6			
12.912	12.918 (1.478)	180	15434	2.00000	1.978	0.00-	0.00	100.00(a)
12.920	12.920 (1.479)	182	14405			0.00-	0.00	93.33
12.912	12.914 (1.478)	145	5463			0.00-	0.00	35.40

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M1- Compound response manually integrated because
    Target system did not integrate.

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p120405.d
Lab Smp Id: ICAL Level #3
Analysis Type: VOA
Quant Type: ISTD
Operator: mjb
Method File: /chem/msdp.i/04DEC18.b/p18q1108c.m
Misc Info: 2.0ppbv (5.0ppbv)

Calibration Date: 04-DEC-2018
Calibration Time: 10:52

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	86668	52001	121335	86866	0.23
123 1,4-Difluorobenze	277096	166258	387934	268789	-3.00
163 Chlorobenzene-d5	303080	181848	424312	298407	-1.54

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	-0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/04DEC18.b/p120405.d

Date : 04-DEC-2018 13:28

Client ID:

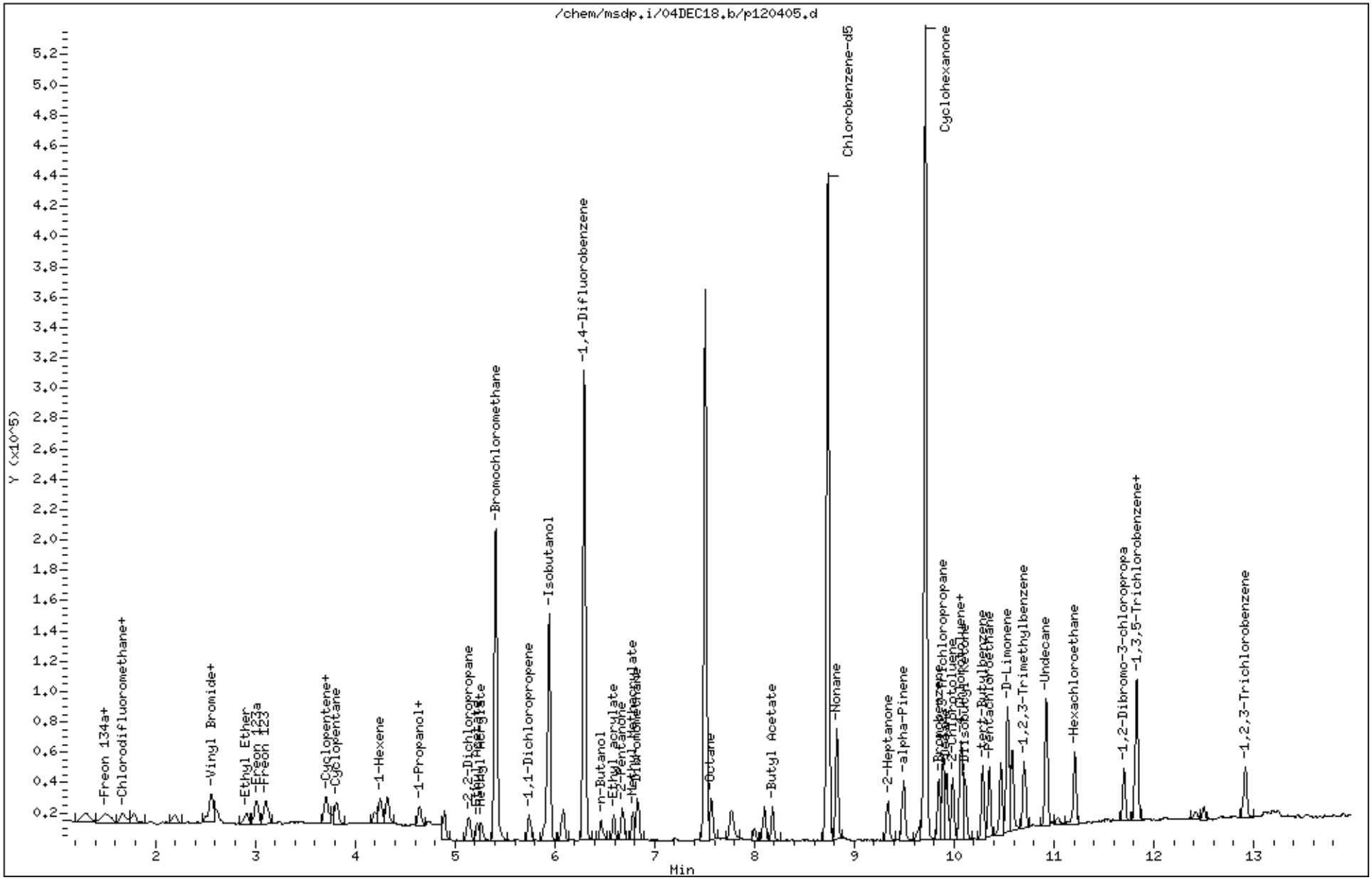
Sample Info: 80ml 3045-196

Column phase: RTX-624

Instrument: msdp.i

Operator: mjb

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/08NOV18a.b/p110815.d
Lab Smp Id: ICAL Level #3
Inj Date : 08-NOV-2018 20:23
Operator : gh Inst ID: msdp.i
Smp Info : 80ml 3018-510
Misc Info : 2.0ppbv(5.0ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/08NOV18a.b/p18q1108a.m
Meth Date : 12-Nov-2018 09:54 u7js Quant Type: ISTD
Cal Date : 08-NOV-2018 20:23 Cal File: p110815.d
Als bottle: 4 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12curve.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.411 (1.000)	130	90648	25.0000		80.00- 120.00	100.00
5.413	5.411 (1.000)	128	69255			48.70- 108.70	76.40
5.413	5.411 (1.000)	49	142187			130.32- 190.32	156.86
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.294	6.296 (1.000)	114	267126	25.0000		80.00- 120.00	100.00
6.294	6.296 (1.000)	88	37712			0.00- 44.06	14.12
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	313000	25.0000		80.00- 120.00	100.00
8.736	8.736 (1.000)	82	135940			14.84- 74.84	43.43
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
5.943	5.942 (1.098)	65	116534	25.0000	24.139	80.00- 120.00	100.00
5.943	5.942 (1.098)	67	55727			26.40- 86.40	47.82
$ 146 Toluene-d8					CAS #: 2037-26-5		
7.504	7.505 (1.192)	98	277331	25.0000	25.128	80.00- 120.00	100.00
7.504	7.505 (1.192)	70	29660			0.00- 40.19	10.69

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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

$ 146 Toluene-d8 (continued)
  7.504   7.505 (1.192)   100    180703                    38.92-  98.92    65.16
-------------------------------------------------------------------------------
$ 177 4-Bromofluorobenzene                          CAS #: 460-00-4
  9.718   9.719 (1.112)   174    188578 25.0000   23.730  80.00- 120.00   100.00
  9.710   9.719 (1.111)    95    207231                   82.53- 142.53   109.89
  9.718   9.719 (1.112)   176    179037                   65.10- 125.10    94.94
-------------------------------------------------------------------------------
    9 Propylene                                     CAS #: 115-07-1
  1.479   1.479 (0.273)    41      7568 2.00000    2.230  80.00- 120.00   100.00
  1.493   1.479 (0.276)    42      4808                   37.41-  97.41    63.53
  1.479   1.479 (0.273)    39      7687                   42.27- 102.27   101.57
-------------------------------------------------------------------------------
   11 Freon 12                                      CAS #: 75-71-8
  1.507   1.511 (0.278)    85     18320 2.00000    2.038  80.00- 120.00   100.00
  1.507   1.511 (0.278)    87      5958                    2.07-  62.07    32.52
-------------------------------------------------------------------------------
   15 Freon 114                                     CAS #: 76-14-2
  1.632   1.629 (0.302)   135     15145 2.00000    2.049  80.00- 120.00   100.00
  1.632   1.629 (0.302)   137      4847                    2.07-  62.07    32.00
-------------------------------------------------------------------------------
   17 Chloromethane                                 CAS #: 74-87-3
  1.730   1.723 (0.320)    50      9008 2.00000    2.186  80.00- 120.00   100.00
  1.730   1.723 (0.320)    52      2725                    0.00-  58.76    30.25
-------------------------------------------------------------------------------
   23 Butane                                        CAS #: 106-97-8
  1.800   1.791 (0.333)    58      1283 2.00000    1.673  80.00- 120.00   100.00(a)
  1.786   1.791 (0.330)    43     14444                 1048.24-1108.24  1125.80
-------------------------------------------------------------------------------
   25 Vinyl Chloride                                CAS #: 75-01-4
  1.814   1.818 (0.335)    62      6809 2.00000    1.862  80.00- 120.00   100.00(a)
  1.814   1.818 (0.335)    64      1768                    0.00-  54.53    25.97
-------------------------------------------------------------------------------
   26 1,3-Butadiene                                 CAS #: 106-99-0
  1.842   1.842 (0.340)    54      6032 2.00000    1.760  80.00- 120.00   100.00(a)
  1.842   1.842 (0.340)    39      9169                   85.58- 145.58   152.01
-------------------------------------------------------------------------------
   29 Bromomethane                                  CAS #: 74-83-9
  2.196   2.195 (0.406)    94      4720 2.00000    1.804  80.00- 120.00   100.00(a)
  2.196   2.195 (0.406)    96      3835                   65.12- 125.12    81.25
-------------------------------------------------------------------------------
   30 Chloroethane                                  CAS #: 75-00-3
  2.304   2.304 (0.426)    64      3037 2.00000    1.957  80.00- 120.00   100.00(a)
  2.311   2.304 (0.427)    66       456                    0.00-  59.74    15.01
  2.297   2.304 (0.424)    49      1269                    9.89-  69.89    41.78
-------------------------------------------------------------------------------
```

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.325	2.327 (0.430)	43	9279	2.00000	1.977	80.00- 120.00	100.00(a)
2.325	2.327 (0.430)	57	5209			31.46- 91.46	56.14
35 Freon 11					CAS #: 75-69-4		
2.555	2.551 (0.472)	101	21338	2.00000	2.045	80.00- 120.00	100.00
2.555	2.551 (0.472)	103	13889			34.29- 94.29	65.09
42 Ethanol					CAS #: 64-17-5		
2.870	2.865 (0.530)	45	3298	2.00000	2.122	80.00- 120.00	100.00
2.855	2.865 (0.528)	46	1225			8.87- 68.87	37.14
49 Freon 113					CAS #: 76-13-1		
3.178	3.182 (0.587)	151	14158	2.00000	2.039	80.00- 120.00	100.00
3.185	3.182 (0.588)	153	9420			34.67- 94.67	66.53
3.185	3.182 (0.588)	101	15628			79.70- 139.70	110.38
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.214	3.214 (0.594)	98	3455	2.00000	1.973	80.00- 120.00	100.00(a)
3.214	3.214 (0.594)	96	5578			126.11- 186.11	161.45
3.214	3.214 (0.594)	61	11270			286.72- 346.72	326.19
52 Acetone					CAS #: 67-64-1		
3.357	3.356 (0.620)	58	3995	2.00000	2.215	80.00- 120.00	100.00
3.357	3.356 (0.620)	43	14120			345.31- 405.31	353.44
56 Carbon Disulfide					CAS #: 75-15-0		
3.457	3.452 (0.639)	76	17086	2.00000	2.179	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.536	3.532 (0.653)	45	13114	2.00000	1.987	80.00- 120.00	100.00(Ta)
3.529	3.532 (0.652)	43	4367			0.00- 53.09	33.30
0.000	3.532 (0.000)	59	0			0.00- 33.51	0.00
58 3-Chloropropene					CAS #: 107-05-1		
3.686	3.685 (0.681)	76	1988	2.00000	1.808	80.00- 120.00	100.00(a)
3.679	3.685 (0.680)	41	9248			428.12- 488.12	465.19
66 Methylene Chloride					CAS #: 75-09-2		
3.873	3.872 (0.715)	49	11826	2.00000	2.126	80.00- 120.00	100.00
3.873	3.872 (0.715)	84	5464			16.41- 76.41	46.20
3.873	3.872 (0.715)	51	3996			0.00- 59.94	33.79
71 tert-Butyl alcohol					CAS #: 75-65-0		
3.994	3.990 (0.738)	59	11652	2.00000	1.710	80.00- 120.00	100.00(a)
3.987	3.990 (0.737)	41	4417			0.00- 58.57	37.91

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   71 tert-Butyl alcohol (continued)
  3.987   3.990 (0.737)    57      1456                     0.00-  41.25    12.50
-------------------------------------------------------------------------------
   72 Methyl tert-butyl ether                        CAS #: 1634-04-4
  4.088   4.088 (0.755)    73     13461 2.00000    1.772  80.00- 120.00   100.00(a)
  4.088   4.088 (0.755)    57      4683                     1.33-  61.33    34.79
  4.088   4.088 (0.755)    41      6514                     8.05-  68.05    48.39
-------------------------------------------------------------------------------
   73 trans-1,2-Dichloroethene                       CAS #: 156-60-5
  4.109   4.112 (0.759)    98      3486 2.00000    1.933  80.00- 120.00   100.00(a)
  4.109   4.112 (0.759)    61      9990                   247.19- 307.19   286.57
  4.116   4.112 (0.760)    96      5812                   131.40- 191.40   166.72
-------------------------------------------------------------------------------
   78 Hexane                                         CAS #: 110-54-3
  4.324   4.329 (0.799)    57      9901 2.00000    1.760  80.00- 120.00   100.00(a)
  4.331   4.329 (0.800)    43      8094                    42.49- 102.49    81.75
  4.331   4.329 (0.800)    86      1157                     0.00-  42.15    11.69
-------------------------------------------------------------------------------
   82 1,1-Dichloroethane                             CAS #: 75-34-3
  4.596   4.598 (0.849)    63     13384 2.00000    2.003  80.00- 120.00   100.00
  4.596   4.598 (0.849)    65      3961                     0.00-  58.69    29.60
-------------------------------------------------------------------------------
   83 Isopropyl ether                                CAS #: 108-20-3
  4.596   4.596 (0.849)    45     25073 2.00000    1.658  80.00- 120.00   100.00(a)
  4.596   4.596 (0.849)    87      4913                     0.00-  46.96    19.59
  4.596   4.596 (0.849)    59      2661                     0.00-  39.98    10.61
-------------------------------------------------------------------------------
   86 Vinyl Acetate                                  CAS #: 108-05-4
  4.646   4.640 (0.858)    86       897 2.00000    1.219  80.00- 120.00   100.00(a)
  4.639   4.640 (0.857)    43     19564                  1735.43-1795.43  2181.05
-------------------------------------------------------------------------------
   88 Ethyl-tert-butyl ether                         CAS #: 637-92-3
  4.954   4.951 (0.915)    59     21443 2.00000    1.721  80.00- 120.00   100.00(a)
  4.947   4.951 (0.914)    87      6469                     1.65-  61.65    30.17
  4.947   4.951 (0.914)    41      7468                     0.00-  54.61    34.83
-------------------------------------------------------------------------------
   91 cis-1,2-Dichloroethene                         CAS #: 156-59-2
  5.183   5.180 (0.958)    98      4677 2.00000    2.049  80.00- 120.00   100.00
  5.183   5.180 (0.958)    96      6484                   123.83- 183.83   138.64
  5.176   5.180 (0.956)    61     11033                   214.95- 274.95   235.90
-------------------------------------------------------------------------------
   92 2-Butanone                                     CAS #: 78-93-3
  5.198   5.200 (0.960)    72      2671 2.00000    1.959  80.00- 120.00   100.00(a)
  5.205   5.200 (0.962)    43     17459                   669.23- 729.23   653.65
  5.205   5.200 (0.962)    57      1427                    20.89-  80.89    53.43
-------------------------------------------------------------------------------
```

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.413	5.410 (1.000)	42	7956	2.00000	1.709	80.00- 120.00	100.00(a)
5.413	5.410 (1.000)	71	1940			0.00- 54.27	24.38
5.413	5.410 (1.000)	72	1904			0.00- 54.41	23.93
100 Chloroform					CAS #: 67-66-3		
5.470	5.474 (1.011)	83	15136	2.00000	2.036	80.00- 120.00	100.00
5.470	5.474 (1.011)	85	11201			38.55- 98.55	74.00
102 Cyclohexane					CAS #: 110-82-7		
5.585	5.583 (1.032)	84	6477	2.00000	1.762	80.00- 120.00	100.00(a)
5.585	5.583 (1.032)	56	11200			149.13- 209.13	172.92
5.577	5.583 (1.030)	41	7617			74.83- 134.83	117.60
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.599	5.598 (1.034)	97	18280	2.00000	2.099	80.00- 120.00	100.00
5.599	5.598 (1.034)	99	11640			35.00- 95.00	63.68
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.714	5.714 (1.056)	119	17546	2.00000	1.862	80.00- 120.00	100.00(a)
5.714	5.714 (1.056)	117	18031			73.60- 133.60	102.76
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.913 (1.093)	57	34338	2.00000	1.714	80.00- 120.00	100.00(a)
5.914	5.913 (1.093)	56	12676			3.59- 63.59	36.92
5.914	5.913 (1.093)	41	12200			0.20- 60.20	35.53
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.942)	78	18538	2.00000	1.963	80.00- 120.00	100.00(a)
5.928	5.928 (0.942)	77	4121			0.00- 54.10	22.23
119 tert-Amyl methyl ether					CAS #: 994-05-8		
6.000	6.000 (0.953)	87	3780	2.00000	1.738	80.00- 120.00	100.00(a)
6.000	6.000 (0.953)	73	15358			327.19- 387.19	406.30
6.000	6.000 (0.953)	55	8582			139.14- 199.14	227.04
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.014	6.010 (0.956)	62	12005	2.00000	2.049	80.00- 120.00	100.00
6.007	6.010 (0.954)	64	4088			0.44- 60.44	34.05
121 Heptane					CAS #: 142-82-5		
6.086	6.085 (0.967)	71	4803	2.00000	1.811	80.00- 120.00	100.00(a)
6.086	6.085 (0.967)	43	14867			259.43- 319.43	309.54
6.086	6.085 (0.967)	57	6808			114.50- 174.50	141.74
125 Trichloroethene					CAS #: 79-01-6		
6.494	6.494 (1.032)	95	10132	2.00000	2.141	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.494	6.494 (1.032)	130	11810			88.76- 148.76	116.56
6.494	6.494 (1.032)	97	6088			35.32- 95.32	60.09
127 Methylcyclohexane					CAS #: 108-87-2		
6.595	6.595 (1.048)	83	8441	2.00000	1.716	80.00- 120.00	100.00(a)
6.595	6.595 (1.048)	98	4175			20.32- 80.32	49.46
6.595	6.595 (1.048)	55	12653			98.90- 158.90	149.90
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.723	6.724 (1.068)	63	8448	2.00000	2.054	80.00- 120.00	100.00
6.723	6.724 (1.068)	62	6085			41.74- 101.74	72.03
6.723	6.724 (1.068)	41	6951			41.01- 101.01	82.28
136 1,4-Dioxane					CAS #: 123-91-1		
6.817	6.817 (1.083)	88	3819	2.00000	1.824	80.00- 120.00	100.00(a)
6.817	6.817 (1.083)	58	4264			66.86- 126.86	111.65
6.817	6.817 (1.083)	57	1370			1.32- 61.32	35.87
138 Bromodichloromethane					CAS #: 75-27-4		
6.953	6.953 (1.105)	83	16761	2.00000	2.167	80.00- 120.00	100.00
6.953	6.953 (1.105)	85	11127			35.98- 95.98	66.39
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.325	7.325 (1.164)	75	9840	2.00000	1.950	80.00- 120.00	100.00(a)
7.325	7.325 (1.164)	77	3307			2.71- 62.71	33.61
7.325	7.325 (1.164)	39	7896			43.85- 103.85	80.24
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.433	7.433 (1.181)	58	6346	2.00000	1.783	80.00- 120.00	100.00(a)
7.433	7.433 (1.181)	43	19840			267.85- 327.85	312.64
7.433	7.433 (1.181)	85	2360			4.54- 64.54	37.19
147 Toluene					CAS #: 108-88-3		
7.562	7.562 (1.201)	91	24964	2.00000	1.991	80.00- 120.00	100.00(a)
7.562	7.562 (1.201)	92	13549			28.88- 88.88	54.27
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.798	7.798 (0.893)	75	10555	2.00000	1.905	80.00- 120.00	100.00(a)
7.798	7.798 (0.893)	77	4112			2.67- 62.67	38.96
7.798	7.798 (0.893)	39	6555			37.60- 97.60	62.10
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.956	7.956 (0.911)	97	9547	2.00000	1.909	80.00- 120.00	100.00(a)
7.956	7.956 (0.911)	99	6576			30.86- 90.86	68.88
7.956	7.956 (0.911)	83	8248			47.74- 107.74	86.39

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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  156 Tetrachloroethene                              CAS #: 127-18-4
  7.999   8.001 (0.916)   166     16168 2.00000    1.992  80.00- 120.00   100.00(a)
  7.999   8.001 (0.916)   129     12730                   48.46- 108.46    78.74
  7.999   8.001 (0.916)   131     12856                   45.42- 105.42    79.52
-------------------------------------------------------------------------------
  158 2-Hexanone                                     CAS #: 591-78-6
  8.120   8.120 (0.929)    58      8642 2.00000    1.751  80.00- 120.00   100.00(a)
  8.120   8.120 (0.929)    43     18466                  185.57- 245.57   213.68
  8.120   8.120 (0.929)   100      1263                    0.00-  46.27    14.61
-------------------------------------------------------------------------------
  160 Dibromochloromethane                           CAS #: 124-48-1
  8.264   8.268 (0.946)   129     21723 2.00000    1.888  80.00- 120.00   100.00(a)
  8.271   8.268 (0.947)   127     17355                   47.61- 107.61    79.89
-------------------------------------------------------------------------------
  161 1,2-Dibromoethane (EDB)                        CAS #: 106-93-4
  8.378   8.378 (0.959)   107     16482 2.00000    2.013  80.00- 120.00   100.00
  8.378   8.378 (0.959)   109     16031                   68.89- 128.89    97.26
-------------------------------------------------------------------------------
  165 Chlorobenzene                                  CAS #: 108-90-7
  8.758   8.758 (1.002)   112     24989 2.00000    1.954  80.00- 120.00   100.00(a)
  8.758   8.758 (1.002)   114      7462                    1.88-  61.88    29.86
  8.758   8.758 (1.002)    77     14973                   20.89-  80.89    59.92
-------------------------------------------------------------------------------
  167 Ethyl Benzene                                  CAS #: 100-41-4
  8.808   8.808 (1.008)   106      9983 2.00000    1.761  80.00- 120.00   100.00(a)
  8.808   8.808 (1.008)    91     29396                  268.95- 328.95   294.46
-------------------------------------------------------------------------------
  169 m,p-Xylene                                     CAS #: 108-38-3
  8.908   8.906 (1.020)   106     11931 2.00000    1.713  80.00- 120.00   100.00(a)
  8.908   8.906 (1.020)    91     22182                  159.20- 219.20   185.92
-------------------------------------------------------------------------------
  171 o-Xylene                                       CAS #: 95-47-6
  9.245   9.245 (1.058)   106     11086 2.00000    1.697  80.00- 120.00   100.00(a)
  9.245   9.245 (1.058)    91     21876                  173.23- 233.23   197.33
-------------------------------------------------------------------------------
  172 Styrene                                        CAS #: 100-42-5
  9.266   9.266 (1.061)   104     17082 2.00000    1.556  80.00- 120.00   100.00(a)
  9.259   9.266 (1.060)    78      8996                   15.83-  75.83    52.66
-------------------------------------------------------------------------------
  174 Bromoform                                      CAS #: 75-25-2
  9.460   9.460 (1.083)   173     20352 2.00000    1.921  80.00- 120.00   100.00(a)
  9.460   9.460 (1.083)   171     10197                   21.75-  81.75    50.10
-------------------------------------------------------------------------------
  175 Cumene                                         CAS #: 98-82-8
  9.531   9.531 (1.091)   105     34823 2.00000    1.642  80.00- 120.00   100.00(a)
  9.531   9.531 (1.091)   120     10169                    0.00-  58.53    29.20
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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  175 Cumene (continued)
  9.531   9.531 (1.091)    51      4436                     0.00-  43.43    12.74
-------------------------------------------------------------------------------
  181 1,1,2,2-Tetrachloroethane                     CAS #: 79-34-5
  9.839   9.839 (1.126)    83     21197 2.00000    1.978  80.00- 120.00   100.00(a)
  9.839   9.839 (1.126)    85     14321                   38.99-  98.99    67.56
-------------------------------------------------------------------------------
  182 Propylbenzene                                 CAS #: 103-65-1
  9.868   9.874 (1.130)    91     42253 2.00000    1.754  80.00- 120.00   100.00(a)
  9.875   9.874 (1.130)   120     11232                    0.00-  56.98    26.58
  9.868   9.874 (1.130)   105      1532                    0.00-  34.22     3.63
-------------------------------------------------------------------------------
  188 4-Ethyltoluene                                CAS #: 622-96-8
  9.968   9.967 (1.141)   120     12223 2.00000    1.718  80.00- 120.00   100.00(a)
  9.961   9.967 (1.140)   105     34867                  277.08- 337.08   285.26
-------------------------------------------------------------------------------
  190 1,3,5-Trimethylbenzene                        CAS #: 108-67-8
 10.018  10.019 (1.147)   120     16156 2.00000    1.620  80.00- 120.00   100.00(a)
 10.018  10.019 (1.147)   105     31025                  165.36- 225.36   192.03
-------------------------------------------------------------------------------
  196 1,2,4-Trimethylbenzene                        CAS #: 95-63-6
 10.341  10.341 (1.184)   120     13357 2.00000    1.595  80.00- 120.00   100.00(a)
 10.334  10.341 (1.183)   105     26186                  173.89- 233.89   196.05
-------------------------------------------------------------------------------
  208 1,3-Dichlorobenzene                           CAS #: 541-73-1
 10.620  10.622 (1.216)   146     30493 2.00000    1.962  80.00- 120.00   100.00(a)
 10.620  10.622 (1.216)   148     18943                   34.36-  94.36    62.12
 10.620  10.622 (1.216)   111     11504                    7.68-  67.68    37.73
-------------------------------------------------------------------------------
  209 1,4-Dichlorobenzene                           CAS #: 106-46-7
 10.706  10.706 (1.225)   146     28111 2.00000    1.821  80.00- 120.00   100.00(a)
 10.699  10.706 (1.225)   148     17884                   33.64-  93.64    63.62
 10.699  10.706 (1.225)   111     10624                    5.53-  65.53    37.79
-------------------------------------------------------------------------------
  212 alpha-Chlorotoluene                           CAS #: 100-44-7
 10.814  10.814 (1.238)    91     29324 2.00000    1.801  80.00- 120.00   100.00(a)
 10.814  10.814 (1.238)   126      7676                    0.00-  55.76    26.18
-------------------------------------------------------------------------------
  214 1,2-Dichlorobenzene                           CAS #: 95-50-1
 11.028  11.029 (1.262)   146     27551 2.00000    1.851  80.00- 120.00   100.00(a)
 11.028  11.029 (1.262)   148     17063                   33.63-  93.63    61.93
 11.028  11.029 (1.262)   111     10313                    8.70-  68.70    37.43
-------------------------------------------------------------------------------
  226 1,2,4-Trichlorobenzene                        CAS #: 120-82-1
 12.411  12.411 (1.421)   180     21377 2.00000    1.759  80.00- 120.00   100.00(a)
 12.411  12.411 (1.421)   182     19505                   66.82- 126.82    91.24
-------------------------------------------------------------------------------
```

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
227 Hexachlorobutadiene						CAS #: 87-68-3		
12.504	12.504	(1.431)	225	18535	2.00000	1.905	80.00- 120.00	100.00(a)
12.504	12.504	(1.431)	223	10936			33.20- 93.20	59.00
228 Naphthalene						CAS #: 91-20-3		
12.669	12.669	(1.450)	128	4890	0.20000	0.1908	80.00- 120.00	100.00(a)
12.676	12.669	(1.451)	127	412			0.00- 43.12	8.43

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p110815.d
Lab Smp Id: ICAL Level #3
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msdp.i/08NOV18a.b/p18q1108a.m
Misc Info: 2.0ppbv(5.0ppbv)

Calibration Date: 08-NOV-2018
Calibration Time: 21:40

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	92663	55598	129728	90648	-2.17
123 1,4-Difluorobenze	304426	182656	426196	267126	-12.25
163 Chlorobenzene-d5	330915	198549	463281	313000	-5.41

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	-0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/08NOV18a.b/p110815.d

Date : 08-NOV-2018 20:23

Client ID:

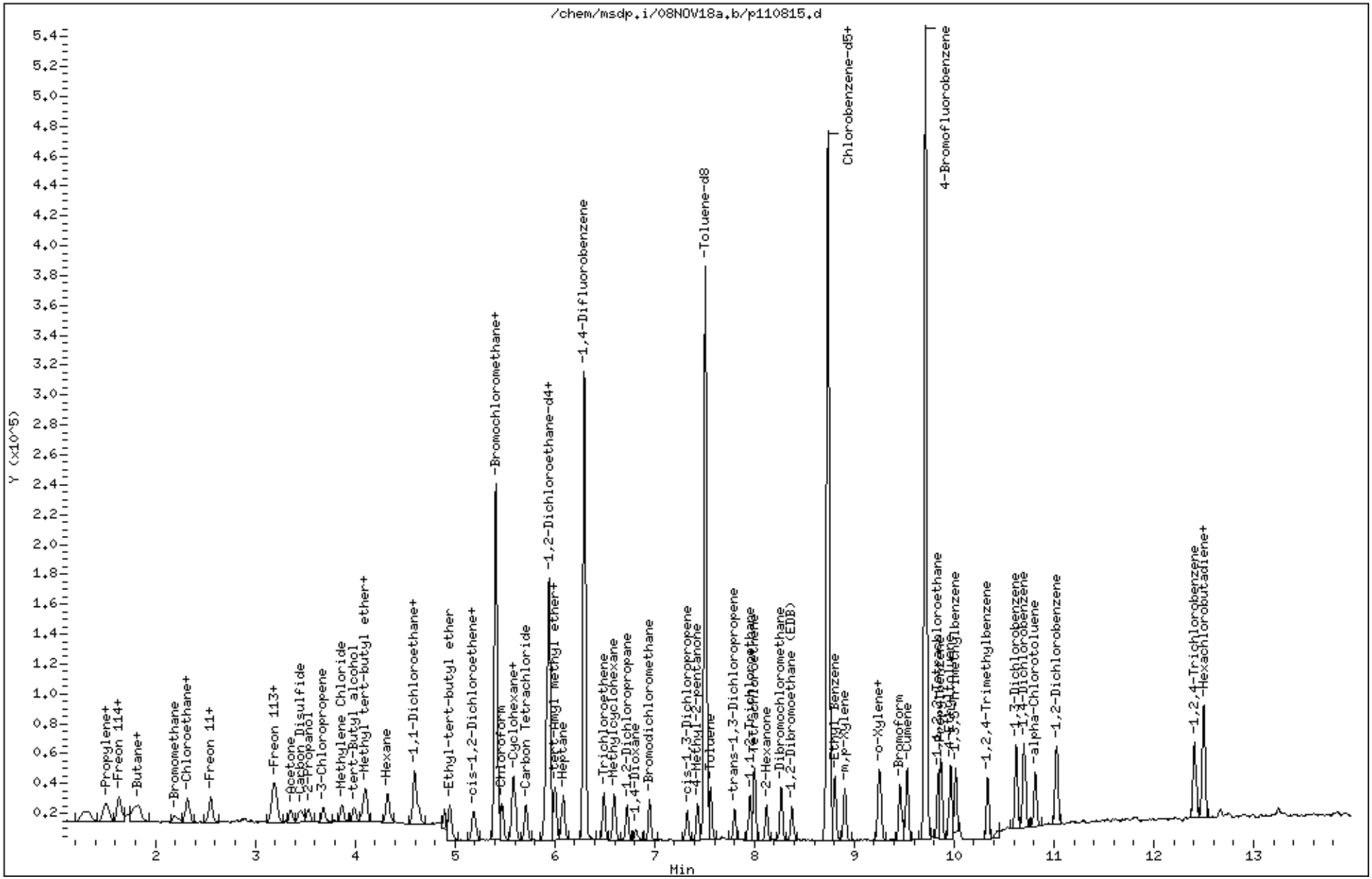
Sample Info: 80ml 3018-510

Column phase: RTX-624

Instrument: msdp.i

Operator: gh

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/26NOV18.b/p092727.d
Lab Smp Id: ICAL Level #3 Client Smp ID: ICAL Level #3
Inj Date : 27-SEP-2018 23:49
Operator : mb Inst ID: msdp.i
Smp Info : 80ml 3018-445
Misc Info : 2.0ppbv (5.0ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/26NOV18.b/p18q1108b.m
Meth Date : 27-Nov-2018 08:30 ugdc Quant Type: ISTD
Cal Date : 08-NOV-2018 20:23 Cal File: p110815.d
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT5CRV.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.414 (1.000)	130	153616	25.0000		80.00- 120.00	100.00
5.413	5.414 (1.000)	128	125693			48.70- 108.70	81.82
5.413	5.411 (1.000)	49	212242			130.32- 190.32	138.16
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.301 (1.000)	114	470666	25.0000		80.00- 120.00	100.00
6.301	6.301 (1.000)	88	65120			0.00- 44.06	13.84
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	558960	25.0000		80.00- 120.00	100.00
8.736	8.736 (1.000)	82	238388			14.84- 74.84	42.65
74 Acrylonitrile					CAS #: 107-13-1		
4.202	4.201 (0.776)	52	8233	2.00000	1.835	0.00- 0.00	100.00(a)
4.195	4.200 (0.775)	53	11097			0.00- 0.00	134.79
157 1,3-Dichloropropane					CAS #: 142-28-9		
8.099	8.100 (1.285)	76	20229	2.00000	1.897	0.00- 0.00	100.00(a)
8.099	8.099 (1.285)	41	19949			0.00- 0.00	98.62

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
157 1,3-Dichloropropane (continued)							
8.099	8.101 (1.285)	78	7144			0.00- 0.00	35.32
168 1,1,1,2-Tetrachloroethane					CAS #: 630-20-6		
8.829	8.829 (1.011)	131	29339	2.00000	1.879	0.00- 0.00	100.00(a)
8.829	8.829 (1.011)	117	22240			0.00- 0.00	75.80
8.829	8.829 (1.011)	95	9398			0.00- 0.00	32.03
203 sec-Butylbenzene					CAS #: 135-98-8		
10.477	10.474 (1.199)	134	16780	2.00000	1.760	0.00- 0.00	100.00(a)
10.470	10.472 (1.198)	105	73286			0.00- 0.00	436.75
10.470	10.471 (1.198)	91	11791			0.00- 0.00	70.27
213 Butylbenzene					CAS #: 104-51-8		
10.935	10.935 (1.252)	134	17873	2.00000	1.440	0.00- 0.00	100.00(a)
10.935	10.934 (1.252)	91	59505			0.00- 0.00	332.93
10.928	10.931 (1.251)	92	30623			0.00- 0.00	171.34
207 p-Cymene					CAS #: 99-87-6		
10.584	10.584 (1.212)	119	68342	2.00000	1.530	0.00- 0.00	100.00(a)
10.584	10.584 (1.212)	134	19177			0.00- 0.00	28.06
10.584	10.584 (1.212)	91	14446			0.00- 0.00	21.14

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p092727.d
Lab Smp Id: ICAL Level #3
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msdp.i/26NOV18.b/p18q1108b.m
Misc Info: 2.0ppbv (5.0ppbv)

Calibration Date: 28-SEP-2018
Calibration Time: 01:04
Client Smp ID: ICAL Level #3
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	162118	97271	226965	153616	-5.24
123 1,4-Difluorobenze	484572	290743	678401	470666	-2.87
163 Chlorobenzene-d5	566566	339940	793192	558960	-1.34

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.30	5.97	6.63	6.30	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/26NOV18.b/p092727.d

Date : 27-SEP-2018 23:49

Client ID: ICAL Level #3

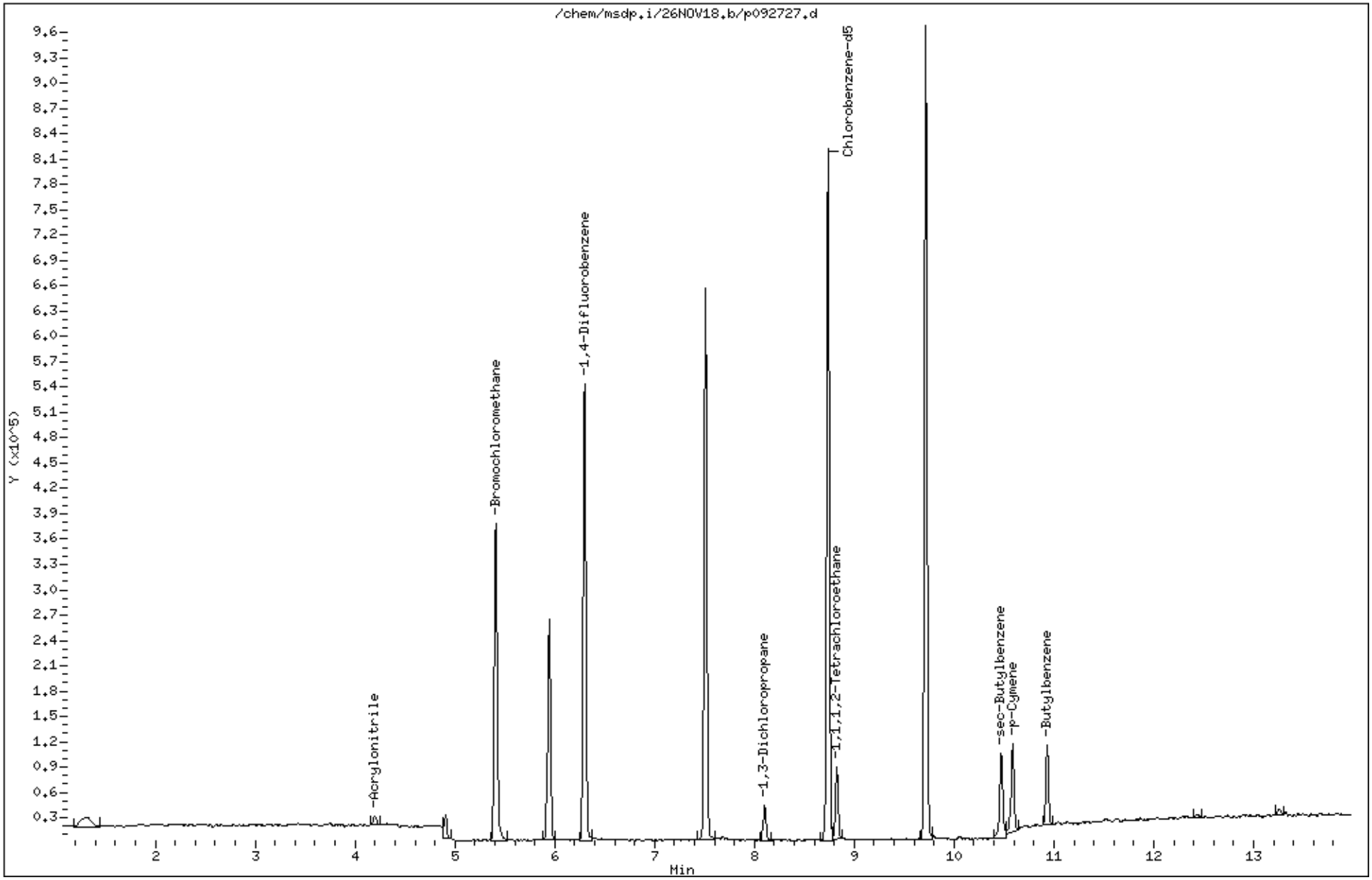
Sample Info: 80ml 3018-445

Column phase: RTX-624

Instrument: msdp.i

Operator: mb

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/04DEC18.b/p120412.d
Lab Smp Id: ICAL Level#4
Inj Date : 04-DEC-2018 16:51
Operator : mjb Inst ID: msdp.i
Smp Info : 200ml 3045-198
Misc Info : 5.0ppbv (5.0 ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/04DEC18.b/p18q1108c.m
Meth Date : 05-Dec-2018 14:02 ugdc Quant Type: ISTD
Cal Date : 04-DEC-2018 16:51 Cal File: p120412.d
Als bottle: 8 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT4mAcrCRV.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
63 Acetonitrile					CAS #: 75-05-8		
3.773	3.771 (0.697)	39	3392	5.00000	4.733	0.00- 0.00	100.00
3.773	3.770 (0.697)	41	16258			0.00- 0.00	479.30
3.773	3.770 (0.697)	40	10489			0.00- 0.00	309.23
184 trans-1,4-Dichloro-2-butene					CAS #: 110-57-6		
9.890	9.890 (1.132)	75	13179	5.00000	4.297	0.00- 0.00	100.00
9.890	9.890 (1.132)	89	8082			0.00- 0.00	61.32
9.890	9.890 (1.132)	53	18113			0.00- 0.00	137.44
206 bis(2-Chloroethyl) Ether					CAS #: 111-44-4		
10.549	10.549 (1.207)	93	43511	5.00000	4.334	0.00- 0.00	100.00
10.549	10.546 (1.207)	95	13177			0.00- 0.00	30.28
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.412 (1.000)	130	82849	25.0000		80.00- 120.00	100.00
5.413	5.412 (1.000)	128	65942			48.70- 108.70	79.59
5.413	5.409 (1.000)	49	121156			130.32- 190.32	146.24
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.298 (1.000)	114	271113	25.0000		80.00- 120.00	100.00

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 123 1,4-Difluorobenzene (continued)								
6.294	6.297	(1.000)	88	38831			0.00- 44.06	14.32
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.736	8.736	(1.000)	117	308753	25.0000		80.00- 120.00	100.00
8.736	8.736	(1.000)	82	133014			14.84- 74.84	43.08

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p120412.d
Lab Smp Id: ICAL Level#4
Analysis Type: VOA
Quant Type: ISTD
Operator: mjb
Method File: /chem/msdp.i/04DEC18.b/p18q1108c.m
Misc Info: 5.0ppbv (5.0 ppbv)

Calibration Date: 04-DEC-2018
Calibration Time: 10:52

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	86668	52001	121335	82849	-4.41
123 1,4-Difluorobenze	277096	166258	387934	271113	-2.16
163 Chlorobenzene-d5	303080	181848	424312	308753	1.87

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.30	0.11
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/04DEC18.b/p120412.d

Date : 04-DEC-2018 16:51

Client ID:

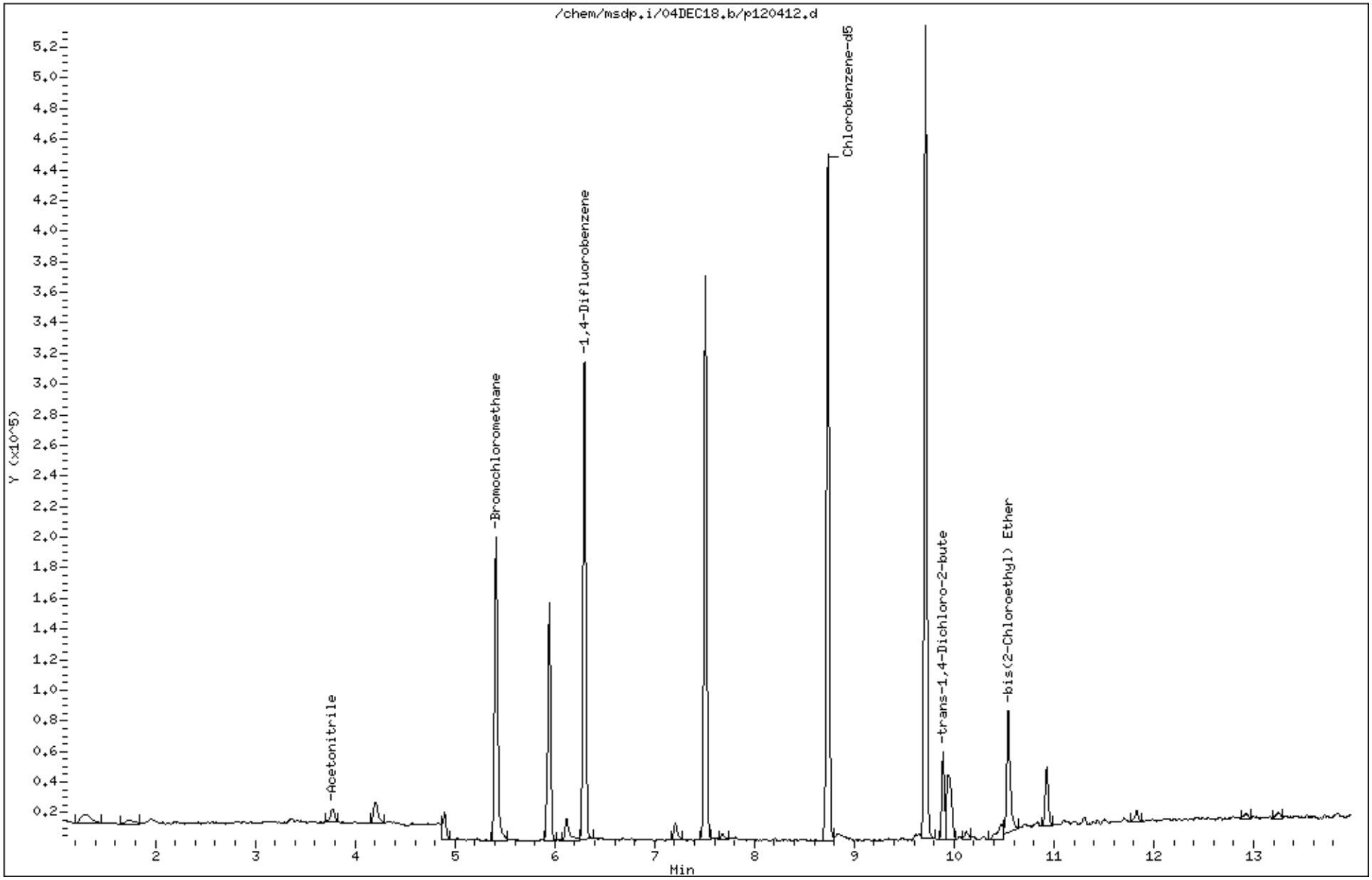
Sample Info: 200ml 3045-198

Column phase: RTX-624

Instrument: msdp.i

Operator: mjb

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/04DEC18.b/p120406.d
Lab Smp Id: ICAL Level #4
Inj Date : 04-DEC-2018 13:54
Operator : mjb Inst ID: msdp.i
Smp Info : 200ml 3045-196
Misc Info : 5.0ppbv (5.0 ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/04DEC18.b/p18q1108c.m
Meth Date : 05-Dec-2018 12:49 ugdc Quant Type: ISTD
Cal Date : 04-DEC-2018 16:51 Cal File: p120412.d
Als bottle: 10 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: MasterCRVM4M5.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
7 Freon 134a					CAS #: 811-97-2		
1.465	1.456 (0.271)	83	11213	5.00000	5.064	0.00- 0.00	100.00
1.451	1.448 (0.268)	69	10765			0.00- 0.00	96.00
8 Propane					CAS #: 74-98-6		
1.493	1.484 (0.276)	39	4193	5.00000	5.003	0.00- 0.00	100.00
1.479	1.481 (0.273)	44	7291			0.00- 0.00	173.89
1.479	1.484 (0.273)	43	5223			0.00- 0.00	124.56
10 1,1-Difluoroethane					CAS #: 75-37-6		
1.507	1.509 (0.278)	65	5004	5.00000	5.222	0.00- 0.00	100.00
1.549	1.546 (0.286)	51	38037			0.00- 0.00	760.13
1.507	1.512 (0.278)	47	2667			0.00- 0.00	53.30
13 Chlorodifluoromethane					CAS #: 75-45-6		
1.563	1.557 (0.289)	67	3414	5.00000	5.392	0.00- 0.00	100.00
1.549	1.546 (0.286)	51	38037			0.00- 0.00	1114.15
1.674	1.672 (0.309)	85	3768			0.00- 0.00	110.37
16 Freon 142b					CAS #: 75-68-3		
1.674	1.669 (0.309)	65	31128	5.00000	4.973	0.00- 0.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
16 Freon 142b (continued)							
1.674	1.669 (0.309)	45	8504			0.00- 0.00	27.32
32 Vinyl Bromide					CAS #: 593-60-2		
2.512	2.510 (0.464)	106	13177	5.00000	4.658	0.00- 0.00	100.00
2.512	2.510 (0.464)	108	13215			0.00- 0.00	100.29
34 Pentane					CAS #: 109-66-0		
2.619	2.618 (0.484)	43	23300	5.00000	5.057	0.00- 0.00	100.00
2.619	2.619 (0.484)	57	3150			0.00- 0.00	13.52
2.612	2.619 (0.483)	72	1292			0.00- 0.00	5.55
36 1-Pentene					CAS #: 109-67-1		
2.562	2.562 (0.473)	55	18450	5.00000	4.820	0.00- 0.00	100.00(a)
2.562	2.562 (0.473)	42	24032			0.00- 0.00	130.25
37 Dichlorofluoromethane					CAS #: 75-43-4		
2.562	2.562 (0.473)	67	30394	5.00000	4.917	0.00- 0.00	100.00
2.562	2.560 (0.473)	69	9059			0.00- 0.00	29.81
44 Ethyl Ether					CAS #: 60-29-7		
2.920	2.920 (0.539)	74	6166	5.00000	4.787	0.00- 0.00	100.00
2.920	2.920 (0.539)	59	11592			0.00- 0.00	188.00
47 Freon 123a					CAS #: 354-23-4		
3.013	3.016 (0.557)	117	26951	5.00000	5.080	0.00- 0.00	100.00(a)
3.013	3.013 (0.557)	67	25246			0.00- 0.00	93.67
48 Freon 123					CAS #: 306-83-2		
3.113	3.113 (0.575)	83	30060	5.00000	4.774	0.00- 0.00	100.00
3.113	3.112 (0.575)	133	8551			0.00- 0.00	28.45
3.113	3.113 (0.575)	85	21747			0.00- 0.00	72.35
59 Cyclopentene					CAS #: 142-29-0		
3.701	3.702 (0.684)	67	19421	5.00000	4.672	0.00- 0.00	100.00
3.701	3.701 (0.684)	68	7340			0.00- 0.00	37.79
3.701	3.701 (0.684)	53	6036			0.00- 0.00	31.08
61 Methyl Acetate					CAS #: 79-20-9		
3.722	3.722 (0.688)	43	44319	5.00000	4.846	0.00- 0.00	100.00(a)
3.729	3.722 (0.689)	74	5489			0.00- 0.00	12.39
64 Cyclopentane					CAS #: 287-92-3		
3.815	3.817 (0.705)	70	6134	5.00000	4.292	0.00- 0.00	100.00
3.815	3.815 (0.705)	55	14220			0.00- 0.00	231.82

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
76 1-Hexene					CAS #: 592-41-6		
4.252	4.254 (0.786)	55	13447	5.00000	4.515	0.00- 0.00	100.00
4.252	4.252 (0.786)	41	20757			0.00- 0.00	154.36
4.259	4.257 (0.787)	84	3866			0.00- 0.00	28.75
84 1-Propanol					CAS #: 71-23-8		
4.739	4.739 (0.876)	59	3062	5.00000	4.426	0.00- 0.00	100.00
4.739	4.739 (0.876)	42	4146			0.00- 0.00	135.40
4.739	4.738 (0.876)	41	2979			0.00- 0.00	97.29
85 Chloroprene					CAS #: 126-99-8		
4.653	4.651 (0.860)	53	26308	5.00000	4.456	0.00- 0.00	100.00
4.646	4.651 (0.858)	88	10720			0.00- 0.00	40.75
4.646	4.649 (0.858)	50	6724			0.00- 0.00	25.56
90 2,2-Dichloropropane					CAS #: 594-20-7		
5.141	5.141 (0.950)	77	26937	5.00000	4.815	0.00- 0.00	100.00
5.141	5.139 (0.950)	79	8413			0.00- 0.00	31.23
5.141	5.141 (0.950)	97	5099			0.00- 0.00	18.93
94 Ethyl Acetate					CAS #: 141-78-6		
5.226	5.225 (0.966)	70	2588	5.00000	4.630	0.00- 0.00	100.00
5.226	5.225 (0.966)	61	4480			0.00- 0.00	173.11
5.226	5.225 (0.966)	45	6799			0.00- 0.00	262.71
93 Methyl Acrylate					CAS #: 96-33-3		
5.269	5.270 (0.974)	55	37742	5.00000	4.440	0.00- 0.00	100.00
5.269	5.270 (0.974)	85	4591			0.00- 0.00	12.16
5.269	5.270 (0.974)	58	3033			0.00- 0.00	8.04
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.412 (1.000)	130	85189	25.0000		80.00- 120.00	100.00
5.413	5.412 (1.000)	128	65569			48.70- 108.70	76.97
5.413	5.408 (1.000)	49	126487			130.32- 190.32	148.48
107 1,1-Dichloropropene					CAS #: 563-58-6		
5.749	5.749 (0.912)	110	8883	5.00000	5.136	0.00- 0.00	100.00
5.749	5.747 (0.912)	75	16887			0.00- 0.00	190.10
115 Isobutanol					CAS #: 78-83-1		
5.900	5.894 (0.936)	39	5922	5.00000	6.006	0.00- 0.00	100.00
5.893	5.893 (0.935)	43	16842			0.00- 0.00	284.40
5.893	5.894 (0.935)	41	13329			0.00- 0.00	225.08
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.298 (1.000)	114	268486	25.0000		80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 123 1,4-Difluorobenzene (continued)							
6.294	6.297 (1.000)	88	38731			0.00- 44.06	14.43
124 n-Butanol					CAS #: 71-36-3		
6.466	6.466 (1.026)	56	17904	5.00000	5.142	0.00- 0.00	100.00
6.466	6.466 (1.026)	41	14458			0.00- 0.00	80.75
6.466	6.466 (1.026)	43	11599			0.00- 0.00	64.78
128 Ethyl acrylate					CAS #: 140-88-5		
6.595	6.590 (0.755)	99	2488	5.00000	4.056	0.00- 0.00	100.00
6.587	6.588 (0.754)	45	4864			0.00- 0.00	195.50
6.587	6.588 (0.754)	55	50253			0.00- 0.00	2019.82
131 2-Pentanone					CAS #: 107-87-9		
6.681	6.679 (0.765)	43	61705	5.00000	4.423	0.00- 0.00	100.00
6.681	6.679 (0.765)	58	4390			0.00- 0.00	7.11
6.681	6.681 (0.765)	86	8182			0.00- 0.00	13.26
134 Methyl Methacrylate					CAS #: 80-62-6		
6.788	6.782 (0.777)	41	30731	5.00000	4.504	0.00- 0.00	100.00
6.788	6.782 (0.777)	69	14449			0.00- 0.00	47.02
6.788	6.784 (0.777)	100	6594			0.00- 0.00	21.46
137 Dibromomethane					CAS #: 74-95-3		
6.831	6.832 (0.782)	174	28158	5.00000	4.772	0.00- 0.00	100.00
6.831	6.831 (0.782)	93	24747			0.00- 0.00	87.89
6.831	6.831 (0.782)	95	20662			0.00- 0.00	73.38
148 Octane					CAS #: 111-65-9		
7.569	7.569 (1.201)	57	14791	5.00000	4.431	0.00- 0.00	100.00
7.569	7.572 (1.201)	85	12162			0.00- 0.00	82.23
7.569	7.569 (1.201)	43	38933			0.00- 0.00	263.22
159 Butyl Acetate					CAS #: 123-86-4		
8.185	8.183 (1.299)	56	16825	5.00000	4.288	0.00- 0.00	100.00
8.185	8.183 (1.299)	73	5052			0.00- 0.00	30.03
8.185	8.183 (1.299)	43	46203			0.00- 0.00	274.61
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	306259	25.0000		80.00- 120.00	100.00
8.736	8.736 (1.000)	82	130925			14.84- 74.84	42.75
170 Nonane					CAS #: 111-84-2		
8.829	8.830 (1.011)	43	39795	5.00000	4.202	0.00- 0.00	100.00
8.829	8.830 (1.011)	57	29514			0.00- 0.00	74.17
8.829	8.830 (1.011)	85	8227			0.00- 0.00	20.67

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
173 2-Heptanone					CAS #: 110-43-0		
9.338	9.338 (1.725)	58	28014	5.00000	3.978	0.00- 0.00	100.00
9.338	9.338 (1.725)	43	52054			0.00- 0.00	185.81
176 Cyclohexanone					CAS #: 108-94-1		
9.689	9.689 (1.109)	55	29762	5.00000	4.789	0.00- 0.00	100.00
9.689	9.689 (1.109)	98	7892			0.00- 0.00	26.52
9.689	9.689 (1.109)	42	18211			0.00- 0.00	61.19
179 alpha-Pinene					CAS #: 80-56-8		
9.496	9.494 (1.087)	93	45318	5.00000	4.082	0.00- 0.00	100.00
9.496	9.494 (1.087)	77	14206			0.00- 0.00	31.35
180 Bromobenzene					CAS #: 108-86-1		
9.847	9.847 (1.127)	156	36943	5.00000	4.855	0.00- 0.00	100.00
9.847	9.847 (1.127)	158	36144			0.00- 0.00	97.84
9.847	9.847 (1.127)	77	46022			0.00- 0.00	124.58
185 1,2,3-Trichloropropane					CAS #: 96-18-4		
9.897	9.894 (1.133)	110	16245	5.00000	4.689	0.00- 0.00	100.00
9.890	9.890 (1.132)	75	48664			0.00- 0.00	299.56
9.897	9.891 (1.133)	61	12527			0.00- 0.00	77.11
187 Decane					CAS #: 124-18-5		
9.933	9.933 (1.137)	57	43466	5.00000	4.098	0.00- 0.00	100.00
9.933	9.933 (1.137)	71	11697			0.00- 0.00	26.91
9.933	9.931 (1.137)	142	2202			0.00- 0.00	5.07
189 2-Chlorotoluene					CAS #: 95-49-8		
9.990	9.989 (1.143)	126	27067	5.00000	4.701	0.00- 0.00	100.00
9.990	9.987 (1.143)	91	64955			0.00- 0.00	239.98
9.990	9.986 (1.143)	65	7188			0.00- 0.00	26.56
191 4-Chlorotoluene					CAS #: 106-43-4		
10.083	10.083 (1.154)	126	27819	5.00000	4.524	0.00- 0.00	100.00
10.083	10.079 (1.154)	91	81692			0.00- 0.00	293.66
10.083	10.080 (1.154)	63	11228			0.00- 0.00	40.36
192 beta-Pinene					CAS #: 127-91-3		
10.062	10.062 (1.152)	93	41545	5.00000	4.299	0.00- 0.00	100.00
10.083	10.079 (1.154)	91	81692			0.00- 0.00	196.63
193 Diisobutyl Ketone					CAS #: 108-83-8		
10.112	10.112 (1.157)	57	60936	5.00000	4.354	0.00- 0.00	100.00
10.112	10.112 (1.157)	85	39529			0.00- 0.00	64.87

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE		RATIO
195 tert-Butylbenzene					CAS #: 98-06-6			
10.291	10.287 (1.178)	119	72705	5.00000	4.234	0.00-	0.00	100.00
10.291	10.288 (1.178)	134	18450			0.00-	0.00	25.38
10.284	10.284 (1.177)	91	43946			0.00-	0.00	60.44
197 Pentachloroethane					CAS #: 76-01-7			
10.355	10.355 (1.185)	167	28708	5.00000	4.899	0.00-	0.00	100.00
10.355	10.355 (1.185)	117	25979			0.00-	0.00	90.49
10.355	10.355 (1.185)	169	12881			0.00-	0.00	44.87
199 D-Limonene					CAS #: 5989-27-5			
10.534	10.534 (1.206)	68	34307	5.00000	4.106	0.00-	0.00	100.00
10.541	10.542 (1.207)	93	80659			0.00-	0.00	235.11
10.534	10.534 (1.206)	136	9800			0.00-	0.00	28.57
210 1,2,3-Trimethylbenzene					CAS #: 526-73-8			
10.706	10.706 (1.225)	120	36693	5.00000	4.576	0.00-	0.00	100.00
10.706	10.706 (1.225)	105	75922			0.00-	0.00	206.91
10.706	10.705 (1.225)	77	8194			0.00-	0.00	22.33
215 Undecane					CAS #: 1120-21-4			
10.921	10.917 (1.250)	57	49119	5.00000	4.205	0.00-	0.00	100.00
10.914	10.915 (1.249)	43	46661			0.00-	0.00	95.00
217 Hexachloroethane					CAS #: 67-72-1			
11.208	11.208 (1.283)	201	23502	5.00000	4.189	0.00-	0.00	100.00
11.208	11.208 (1.283)	117	29711			0.00-	0.00	126.42
221 1,2-Dibromo-3-chloropropane					CAS #: 96-12-8			
11.702	11.702 (1.339)	157	31188	5.00000	4.902	0.00-	0.00	100.00
11.702	11.702 (1.339)	75	23771			0.00-	0.00	76.22
11.702	11.702 (1.339)	155	23429			0.00-	0.00	75.12
224 1,3,5-Trichlorobenzene					CAS #: 108-70-3			
11.831	11.831 (1.354)	180	59229	5.00000	4.903	0.00-	0.00	100.00
11.831	11.831 (1.354)	182	56469			0.00-	0.00	95.34
225 Dodecane					CAS #: 112-40-3			
11.824	11.824 (1.353)	57	38860	5.00000	3.928	0.00-	0.00	100.00
11.824	11.824 (1.353)	43	34619			0.00-	0.00	89.09
229 1,2,3-Trichlorobenzene					CAS #: 87-61-6			
12.920	12.918 (1.479)	180	40173	5.00000	5.018	0.00-	0.00	100.00
12.920	12.920 (1.479)	182	39123			0.00-	0.00	97.39
12.920	12.914 (1.479)	145	14512			0.00-	0.00	36.12

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p120406.d
Lab Smp Id: ICAL Level #4
Analysis Type: VOA
Quant Type: ISTD
Operator: mjb
Method File: /chem/msdp.i/04DEC18.b/p18q1108c.m
Misc Info: 5.0ppbv (5.0 ppbv)

Calibration Date: 04-DEC-2018
Calibration Time: 10:52

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	86668	52001	121335	85189	-1.71
123 1,4-Difluorobenze	277096	166258	387934	268486	-3.11
163 Chlorobenzene-d5	303080	181848	424312	306259	1.05

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.30	0.11
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/04DEC18.b/p120406.d

Date : 04-DEC-2018 13:54

Client ID:

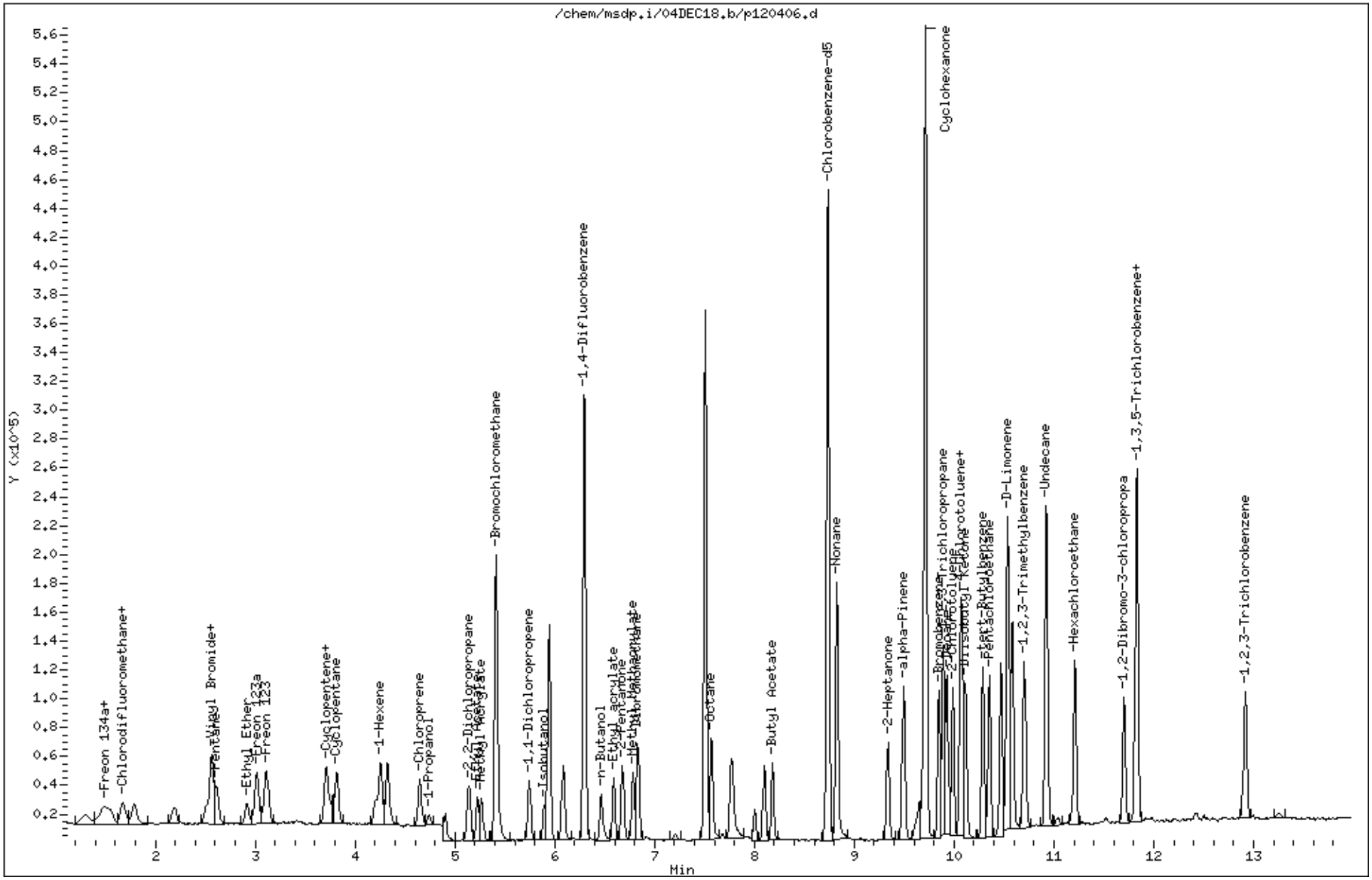
Sample Info: 200ml 3045-196

Column phase: RTX-624

Instrument: msdp.i

Operator: mjb

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/08NOV18a.b/p110816.d
Lab Smp Id: ICAL Level #4
Inj Date : 08-NOV-2018 20:50
Operator : gh Inst ID: msdp.i
Smp Info : 200ml 3018-510
Misc Info : 5.0ppbv(5.0ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/08NOV18a.b/p18q1108a.m
Meth Date : 12-Nov-2018 09:54 u7js Quant Type: ISTD
Cal Date : 08-NOV-2018 20:50 Cal File: p110816.d
Als bottle: 4 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12curve.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.411 (1.000)	130	90205	25.0000		80.00- 120.00	100.00
5.413	5.411 (1.000)	128	71693			48.70- 108.70	79.48
5.413	5.411 (1.000)	49	149935			130.32- 190.32	166.22
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.296 (1.000)	114	290140	25.0000		80.00- 120.00	100.00
6.294	6.296 (1.000)	88	38917			0.00- 44.06	13.41
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	311612	25.0000		80.00- 120.00	100.00
8.736	8.736 (1.000)	82	141663			14.84- 74.84	45.46
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
5.943	5.942 (1.098)	65	116569	25.0000	24.265	80.00- 120.00	100.00
5.943	5.942 (1.098)	67	55520			26.40- 86.40	47.63
$ 146 Toluene-d8					CAS #: 2037-26-5		
7.511	7.505 (1.192)	98	288278	25.0000	24.048	80.00- 120.00	100.00
7.504	7.505 (1.191)	70	29665			0.00- 40.19	10.29

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.511	7.505 (1.192)	100	192370			38.92- 98.92	66.73
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.718	9.719 (1.112)	174	196125	25.0000	24.789	80.00- 120.00	100.00
9.718	9.719 (1.112)	95	218680			82.53- 142.53	111.50
9.718	9.719 (1.112)	176	187937			65.10- 125.10	95.83
9 Propylene					CAS #: 115-07-1		
1.478	1.479 (0.273)	41	17280	5.00000	5.118	80.00- 120.00	100.00
1.478	1.479 (0.273)	42	10953			37.41- 97.41	63.39
1.478	1.479 (0.273)	39	12555			42.27- 102.27	72.66
11 Freon 12					CAS #: 75-71-8		
1.520	1.511 (0.281)	85	47189	5.00000	5.274	80.00- 120.00	100.00
1.520	1.511 (0.281)	87	15089			2.07- 62.07	31.98
15 Freon 114					CAS #: 76-14-2		
1.632	1.629 (0.302)	135	38009	5.00000	5.167	80.00- 120.00	100.00
1.632	1.629 (0.302)	137	11534			2.07- 62.07	30.35
17 Chloromethane					CAS #: 74-87-3		
1.730	1.723 (0.320)	50	20480	5.00000	4.995	80.00- 120.00	100.00
1.716	1.723 (0.317)	52	5919			0.00- 58.76	28.90
23 Butane					CAS #: 106-97-8		
1.786	1.791 (0.330)	58	3690	5.00000	4.835	80.00- 120.00	100.00
1.786	1.791 (0.330)	43	33257			1048.24-1108.24	901.27
25 Vinyl Chloride					CAS #: 75-01-4		
1.828	1.818 (0.338)	62	16893	5.00000	4.643	80.00- 120.00	100.00
1.828	1.818 (0.338)	64	4629			0.00- 54.53	27.40
26 1,3-Butadiene					CAS #: 106-99-0		
1.842	1.842 (0.340)	54	15419	5.00000	4.522	80.00- 120.00	100.00
1.842	1.842 (0.340)	39	24538			85.58- 145.58	159.14
29 Bromomethane					CAS #: 74-83-9		
2.196	2.195 (0.406)	94	10976	5.00000	4.217	80.00- 120.00	100.00
2.196	2.195 (0.406)	96	10584			65.12- 125.12	96.43
30 Chloroethane					CAS #: 75-00-3		
2.304	2.304 (0.426)	64	8182	5.00000	5.299	80.00- 120.00	100.00
2.304	2.304 (0.426)	66	2247			0.00- 59.74	27.46
2.304	2.304 (0.426)	49	3735			9.89- 69.89	45.65

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.325	2.327 (0.430)	43	22757	5.00000	4.872	80.00- 120.00	100.00
2.325	2.327 (0.430)	57	12925			31.46- 91.46	56.80
35 Freon 11					CAS #: 75-69-4		
2.555	2.551 (0.472)	101	51894	5.00000	4.997	80.00- 120.00	100.00
2.555	2.551 (0.472)	103	30817			34.29- 94.29	59.38
42 Ethanol					CAS #: 64-17-5		
2.877	2.865 (0.531)	45	7156	5.00000	4.627	80.00- 120.00	100.00
2.877	2.865 (0.531)	46	2676			8.87- 68.87	37.40
49 Freon 113					CAS #: 76-13-1		
3.185	3.182 (0.588)	151	34986	5.00000	5.064	80.00- 120.00	100.00
3.185	3.182 (0.588)	153	20813			34.67- 94.67	59.49
3.185	3.182 (0.588)	101	36994			79.70- 139.70	105.74
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.214	3.214 (0.594)	98	8120	5.00000	4.659	80.00- 120.00	100.00
3.214	3.214 (0.594)	96	13780			126.11- 186.11	169.70
3.214	3.214 (0.594)	61	26687			286.72- 346.72	328.66
52 Acetone					CAS #: 67-64-1		
3.364	3.356 (0.622)	58	8350	5.00000	4.653	80.00- 120.00	100.00
3.364	3.356 (0.622)	43	29196			345.31- 405.31	349.65
56 Carbon Disulfide					CAS #: 75-15-0		
3.450	3.452 (0.637)	76	40254	5.00000	5.159	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.543	3.532 (0.655)	45	31198	5.00000	4.751	80.00- 120.00	100.00
3.536	3.532 (0.653)	43	8304			0.00- 53.09	26.62
3.529	3.532 (0.652)	59	745			0.00- 33.51	2.39
58 3-Chloropropene					CAS #: 107-05-1		
3.686	3.685 (0.681)	76	5196	5.00000	4.748	80.00- 120.00	100.00
3.686	3.685 (0.681)	41	23698			428.12- 488.12	456.08
66 Methylene Chloride					CAS #: 75-09-2		
3.873	3.872 (0.715)	49	27959	5.00000	5.051	80.00- 120.00	100.00
3.873	3.872 (0.715)	84	13387			16.41- 76.41	47.88
3.873	3.872 (0.715)	51	8904			0.00- 59.94	31.85
71 tert-Butyl alcohol					CAS #: 75-65-0		
3.994	3.990 (0.738)	59	32051	5.00000	4.726	80.00- 120.00	100.00
3.994	3.990 (0.738)	41	10373			0.00- 58.57	32.36

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   71 tert-Butyl alcohol (continued)
  3.987   3.990 (0.737)    57      3465                     0.00-  41.25    10.81
-------------------------------------------------------------------------------
   72 Methyl tert-butyl ether                        CAS #: 1634-04-4
  4.087   4.088 (0.755)    73     32559 5.00000    4.308  80.00- 120.00   100.00
  4.087   4.088 (0.755)    57     10941                     1.33-  61.33    33.60
  4.095   4.088 (0.756)    41     15489                     8.05-  68.05    47.57
-------------------------------------------------------------------------------
   73 trans-1,2-Dichloroethene                       CAS #: 156-60-5
  4.116   4.112 (0.760)    98      8888 5.00000    4.952  80.00- 120.00   100.00
  4.109   4.112 (0.759)    61     23698                   247.19- 307.19   266.63
  4.116   4.112 (0.760)    96     14314                   131.40- 191.40   161.05
-------------------------------------------------------------------------------
   78 Hexane                                         CAS #: 110-54-3
  4.331   4.329 (0.800)    57     24675 5.00000    4.408  80.00- 120.00   100.00
  4.331   4.329 (0.800)    43     20453                    42.49- 102.49    82.89
  4.324   4.329 (0.799)    86      2930                     0.00-  42.15    11.87
-------------------------------------------------------------------------------
   82 1,1-Dichloroethane                             CAS #: 75-34-3
  4.596   4.598 (0.849)    63     33039 5.00000    4.969  80.00- 120.00   100.00
  4.603   4.598 (0.850)    65     10305                     0.00-  58.69    31.19
-------------------------------------------------------------------------------
   83 Isopropyl ether                                CAS #: 108-20-3
  4.596   4.596 (0.849)    45     66013 5.00000    4.386  80.00- 120.00   100.00
  4.596   4.596 (0.849)    87     11756                     0.00-  46.96    17.81
  4.596   4.596 (0.849)    59      7063                     0.00-  39.98    10.70
-------------------------------------------------------------------------------
   86 Vinyl Acetate                                  CAS #: 108-05-4
  4.639   4.640 (0.857)    86      3708 5.00000    5.064  80.00- 120.00   100.00
  4.639   4.640 (0.857)    43     60784                  1735.43-1795.43  1639.27
-------------------------------------------------------------------------------
   88 Ethyl-tert-butyl ether                         CAS #: 637-92-3
  4.954   4.951 (0.915)    59     52615 5.00000    4.244  80.00- 120.00   100.00
  4.954   4.951 (0.915)    87     17244                     1.65-  61.65    32.77
  4.954   4.951 (0.915)    41     17488                     0.00-  54.61    33.24
-------------------------------------------------------------------------------
   91 cis-1,2-Dichloroethene                         CAS #: 156-59-2
  5.183   5.180 (0.958)    98     10985 5.00000    4.835  80.00- 120.00   100.00
  5.183   5.180 (0.958)    96     17246                   123.83- 183.83   157.00
  5.176   5.180 (0.956)    61     27436                   214.95- 274.95   249.76
-------------------------------------------------------------------------------
   92 2-Butanone                                     CAS #: 78-93-3
  5.205   5.200 (0.962)    72      6766 5.00000    4.987  80.00- 120.00   100.00
  5.205   5.200 (0.962)    43     43859                   669.23- 729.23   648.23
  5.205   5.200 (0.962)    57      3179                    20.89-  80.89    46.98
-------------------------------------------------------------------------------
```

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.413	5.410 (1.000)	42	21256	5.00000	4.589	80.00- 120.00	100.00
5.413	5.410 (1.000)	71	4907			0.00- 54.27	23.09
5.413	5.410 (1.000)	72	5337			0.00- 54.41	25.11
100 Chloroform					CAS #: 67-66-3		
5.477	5.474 (1.012)	83	37138	5.00000	5.019	80.00- 120.00	100.00
5.477	5.474 (1.012)	85	25388			38.55- 98.55	68.36
102 Cyclohexane					CAS #: 110-82-7		
5.584	5.583 (1.032)	84	16894	5.00000	4.619	80.00- 120.00	100.00
5.584	5.583 (1.032)	56	28856			149.13- 209.13	170.81
5.584	5.583 (1.032)	41	20038			74.83- 134.83	118.61
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.599	5.598 (1.034)	97	42557	5.00000	4.911	80.00- 120.00	100.00
5.599	5.598 (1.034)	99	26830			35.00- 95.00	63.04
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.713	5.714 (1.056)	119	45070	5.00000	4.806	80.00- 120.00	100.00
5.713	5.714 (1.056)	117	48583			73.60- 133.60	107.79
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.913 (1.093)	57	92026	5.00000	4.616	80.00- 120.00	100.00
5.914	5.913 (1.093)	56	32061			3.59- 63.59	34.84
5.914	5.913 (1.093)	41	31223			0.20- 60.20	33.93
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.941)	78	44915	5.00000	4.380	80.00- 120.00	100.00
5.928	5.928 (0.941)	77	11088			0.00- 54.10	24.69
119 tert-Amyl methyl ether					CAS #: 994-05-8		
6.000	6.000 (0.952)	87	9906	5.00000	4.193	80.00- 120.00	100.00
6.000	6.000 (0.952)	73	37229			327.19- 387.19	375.82
6.000	6.000 (0.952)	55	20383			139.14- 199.14	205.76
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.007	6.010 (0.953)	62	31940	5.00000	5.019	80.00- 120.00	100.00
6.014	6.010 (0.955)	64	9790			0.44- 60.44	30.65
121 Heptane					CAS #: 142-82-5		
6.086	6.085 (0.966)	71	13275	5.00000	4.610	80.00- 120.00	100.00
6.086	6.085 (0.966)	43	36690			259.43- 319.43	276.38
6.086	6.085 (0.966)	57	17998			114.50- 174.50	135.58
125 Trichloroethene					CAS #: 79-01-6		
6.494	6.494 (1.031)	95	24449	5.00000	4.757	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.494	6.494 (1.031)	130	29106			88.76- 148.76	119.05
6.494	6.494 (1.031)	97	15627			35.32- 95.32	63.92
127 Methylcyclohexane					CAS #: 108-87-2		
6.594	6.595 (1.047)	83	22842	5.00000	4.275	80.00- 120.00	100.00
6.594	6.595 (1.047)	98	12366			20.32- 80.32	54.14
6.594	6.595 (1.047)	55	33666			98.90- 158.90	147.39
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.723	6.724 (1.067)	63	20374	5.00000	4.562	80.00- 120.00	100.00
6.723	6.724 (1.067)	62	15628			41.74- 101.74	76.71
6.723	6.724 (1.067)	41	15902			41.01- 101.01	78.05
136 1,4-Dioxane					CAS #: 123-91-1		
6.817	6.817 (1.082)	88	10767	5.00000	4.736	80.00- 120.00	100.00
6.817	6.817 (1.082)	58	9815			66.86- 126.86	91.16
6.817	6.817 (1.082)	57	3567			1.32- 61.32	33.13
138 Bromodichloromethane					CAS #: 75-27-4		
6.953	6.953 (1.103)	83	40928	5.00000	4.871	80.00- 120.00	100.00
6.953	6.953 (1.103)	85	27161			35.98- 95.98	66.36
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.325	7.325 (1.163)	75	23898	5.00000	4.360	80.00- 120.00	100.00
7.325	7.325 (1.163)	77	8374			2.71- 62.71	35.04
7.325	7.325 (1.163)	39	18353			43.85- 103.85	76.80
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.433	7.433 (1.180)	58	16920	5.00000	4.376	80.00- 120.00	100.00
7.433	7.433 (1.180)	43	50175			267.85- 327.85	296.54
7.433	7.433 (1.180)	85	5403			4.54- 64.54	31.93
147 Toluene					CAS #: 108-88-3		
7.561	7.562 (1.200)	91	61712	5.00000	4.532	80.00- 120.00	100.00
7.561	7.562 (1.200)	92	36390			28.88- 88.88	58.97
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.798	7.798 (0.893)	75	25561	5.00000	4.633	80.00- 120.00	100.00
7.798	7.798 (0.893)	77	9041			2.67- 62.67	35.37
7.798	7.798 (0.893)	39	17634			37.60- 97.60	68.99
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.955	7.956 (0.911)	97	23768	5.00000	4.774	80.00- 120.00	100.00
7.955	7.956 (0.911)	99	15255			30.86- 90.86	64.18
7.955	7.956 (0.911)	83	20096			47.74- 107.74	84.55

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
156 Tetrachloroethene					CAS #: 127-18-4		
8.006	8.001 (0.916)	166	40475	5.00000	5.009	80.00- 120.00	100.00
7.998	8.001 (0.916)	129	31311			48.46- 108.46	77.36
7.998	8.001 (0.916)	131	30617			45.42- 105.42	75.64
158 2-Hexanone					CAS #: 591-78-6		
8.120	8.120 (0.929)	58	20251	5.00000	4.122	80.00- 120.00	100.00
8.120	8.120 (0.929)	43	49627			185.57- 245.57	245.06
8.120	8.120 (0.929)	100	3379			0.00- 46.27	16.69
160 Dibromochloromethane					CAS #: 124-48-1		
8.271	8.268 (0.947)	129	56531	5.00000	4.936	80.00- 120.00	100.00
8.271	8.268 (0.947)	127	42533			47.61- 107.61	75.24
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
8.378	8.378 (0.959)	107	39704	5.00000	4.872	80.00- 120.00	100.00
8.378	8.378 (0.959)	109	39816			68.89- 128.89	100.28
165 Chlorobenzene					CAS #: 108-90-7		
8.758	8.758 (1.002)	112	60821	5.00000	4.778	80.00- 120.00	100.00
8.758	8.758 (1.002)	114	18064			1.88- 61.88	29.70
8.758	8.758 (1.002)	77	33540			20.89- 80.89	55.15
167 Ethyl Benzene					CAS #: 100-41-4		
8.808	8.808 (1.008)	106	25243	5.00000	4.474	80.00- 120.00	100.00
8.808	8.808 (1.008)	91	78696			268.95- 328.95	311.75
169 m,p-Xylene					CAS #: 108-38-3		
8.908	8.906 (1.020)	106	30165	5.00000	4.351	80.00- 120.00	100.00
8.908	8.906 (1.020)	91	59443			159.20- 219.20	197.06
171 o-Xylene					CAS #: 95-47-6		
9.245	9.245 (1.058)	106	28910	5.00000	4.445	80.00- 120.00	100.00
9.245	9.245 (1.058)	91	58102			173.23- 233.23	200.98
172 Styrene					CAS #: 100-42-5		
9.266	9.266 (1.061)	104	47222	5.00000	4.322	80.00- 120.00	100.00
9.266	9.266 (1.061)	78	23142			15.83- 75.83	49.01
174 Bromoform					CAS #: 75-25-2		
9.460	9.460 (1.083)	173	50957	5.00000	4.832	80.00- 120.00	100.00
9.460	9.460 (1.083)	171	25774			21.75- 81.75	50.58
175 Cumene					CAS #: 98-82-8		
9.531	9.531 (1.091)	105	93034	5.00000	4.406	80.00- 120.00	100.00
9.531	9.531 (1.091)	120	27027			0.00- 58.53	29.05

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
175 Cumene (continued)							
9.531	9.531 (1.091)	51	12716			0.00- 43.43	13.67
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.839	9.839 (1.126)	83	51894	5.00000	4.865	80.00- 120.00	100.00
9.839	9.839 (1.126)	85	36051			38.99- 98.99	69.47
182 Propylbenzene					CAS #: 103-65-1		
9.875	9.874 (1.130)	91	107053	5.00000	4.465	80.00- 120.00	100.00
9.875	9.874 (1.130)	120	28238			0.00- 56.98	26.38
9.875	9.874 (1.130)	105	4745			0.00- 34.22	4.43
188 4-Ethyltoluene					CAS #: 622-96-8		
9.968	9.967 (1.141)	120	30048	5.00000	4.242	80.00- 120.00	100.00
9.968	9.967 (1.141)	105	92809			277.08- 337.08	308.87
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.018	10.019 (1.147)	120	45158	5.00000	4.548	80.00- 120.00	100.00
10.018	10.019 (1.147)	105	88733			165.36- 225.36	196.49
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.341	10.341 (1.184)	120	35751	5.00000	4.287	80.00- 120.00	100.00
10.341	10.341 (1.184)	105	72741			173.89- 233.89	203.47
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.620	10.622 (1.216)	146	74262	5.00000	4.799	80.00- 120.00	100.00
10.627	10.622 (1.216)	148	47449			34.36- 94.36	63.89
10.620	10.622 (1.216)	111	28250			7.68- 67.68	38.04
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.706	10.706 (1.225)	146	74178	5.00000	4.827	80.00- 120.00	100.00
10.706	10.706 (1.225)	148	46823			33.64- 93.64	63.12
10.706	10.706 (1.225)	111	25945			5.53- 65.53	34.98
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.813	10.814 (1.238)	91	74521	5.00000	4.598	80.00- 120.00	100.00
10.821	10.814 (1.239)	126	18719			0.00- 55.76	25.12
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.028	11.029 (1.262)	146	71648	5.00000	4.836	80.00- 120.00	100.00
11.028	11.029 (1.262)	148	44773			33.63- 93.63	62.49
11.028	11.029 (1.262)	111	26856			8.70- 68.70	37.48
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.411	12.411 (1.421)	180	57562	5.00000	4.757	80.00- 120.00	100.00
12.411	12.411 (1.421)	182	53254			66.82- 126.82	92.52

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
227 Hexachlorobutadiene						CAS #: 87-68-3		
12.504	12.504	(1.431)	225	50615	5.00000	5.224	80.00- 120.00	100.00
12.504	12.504	(1.431)	223	30561			33.20- 93.20	60.38
228 Naphthalene						CAS #: 91-20-3		
12.669	12.669	(1.450)	128	11710	0.50000	0.4588	80.00- 120.00	100.00(a)
12.669	12.669	(1.450)	127	1422			0.00- 43.12	12.14

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p110816.d
Lab Smp Id: ICAL Level #4
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msdp.i/08NOV18a.b/p18q1108a.m
Misc Info: 5.0ppbv(5.0ppbv)

Calibration Date: 08-NOV-2018
Calibration Time: 21:40

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	92663	55598	129728	90205	-2.65
123 1,4-Difluorobenze	304426	182656	426196	290140	-4.69
163 Chlorobenzene-d5	330915	198549	463281	311612	-5.83

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.30	0.11
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

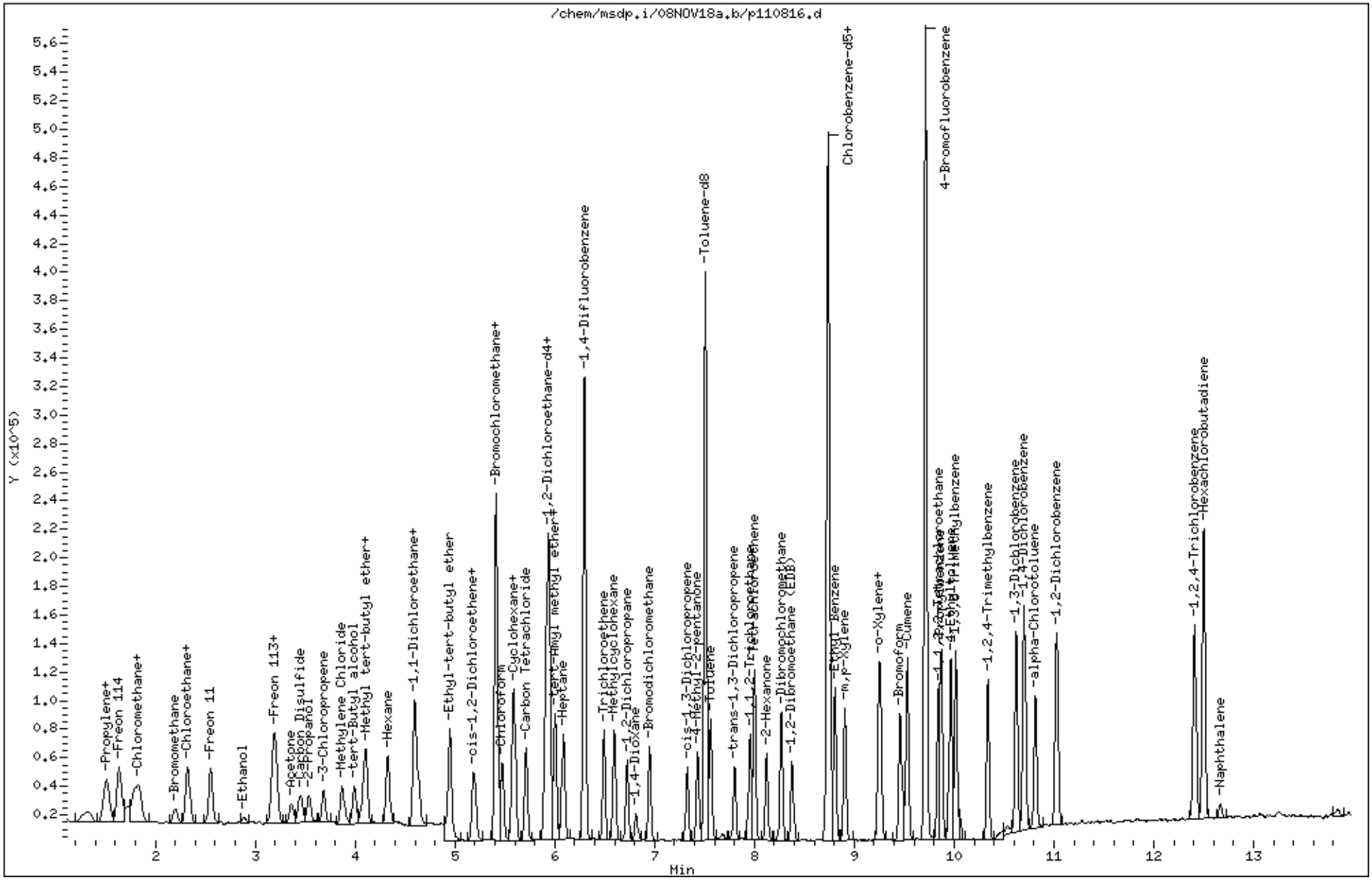
Data File: /chem/msdp.i/08NOV18a.b/p110816.d
Date : 08-NOV-2018 20:50
Client ID:
Sample Info: 200ml 3018-510

Instrument: msdp.i

Operator: gh

Column phase: RTX-624

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/26NOV18.b/p092728.d
Lab Smp Id: ICAL Level #4 Client Smp ID: ICAL Level #4
Inj Date : 28-SEP-2018 00:15
Operator : mb Inst ID: msdp.i
Smp Info : 200ml 3018-445
Misc Info : 5.0ppbv (5.0ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/26NOV18.b/p18q1108b.m
Meth Date : 27-Nov-2018 08:30 ugdc Quant Type: ISTD
Cal Date : 08-NOV-2018 20:50 Cal File: p110816.d
Als bottle: 5 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT5CRV.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.420	5.414 (1.000)	130	160722	25.0000		80.00- 120.00	100.00
5.420	5.414 (1.000)	128	127221			48.70- 108.70	79.16
5.413	5.411 (1.000)	49	218025			130.32- 190.32	135.65
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.301 (1.000)	114	487053	25.0000		80.00- 120.00	100.00
6.301	6.301 (1.000)	88	66728			0.00- 44.06	13.70
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	559982	25.0000		80.00- 120.00	100.00
8.736	8.736 (1.000)	82	244027			14.84- 74.84	43.58
74 Acrylonitrile					CAS #: 107-13-1		
4.209	4.201 (0.777)	52	23239	5.00000	4.951	0.00- 0.00	100.00
4.209	4.200 (0.777)	53	26920			0.00- 0.00	115.84
157 1,3-Dichloropropane					CAS #: 142-28-9		
8.099	8.100 (1.285)	76	50938	5.00000	4.616	0.00- 0.00	100.00
8.099	8.099 (1.285)	41	47924			0.00- 0.00	94.08

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
157 1,3-Dichloropropane (continued)							
8.099	8.101 (1.285)	78	18570			0.00- 0.00	36.46
168 1,1,1,2-Tetrachloroethane					CAS #: 630-20-6		
8.829	8.829 (1.011)	131	72387	5.00000	4.628	0.00- 0.00	100.00
8.829	8.829 (1.011)	117	52649			0.00- 0.00	72.73
8.829	8.829 (1.011)	95	24434			0.00- 0.00	33.75
203 sec-Butylbenzene					CAS #: 135-98-8		
10.470	10.474 (1.198)	134	42691	5.00000	4.470	0.00- 0.00	100.00
10.470	10.472 (1.198)	105	185646			0.00- 0.00	434.86
10.470	10.471 (1.198)	91	31605			0.00- 0.00	74.03
213 Butylbenzene					CAS #: 104-51-8		
10.935	10.935 (1.252)	134	49071	5.00000	3.946	0.00- 0.00	100.00
10.935	10.934 (1.252)	91	154468			0.00- 0.00	314.78
10.928	10.931 (1.251)	92	81632			0.00- 0.00	166.35
207 p-Cymene					CAS #: 99-87-6		
10.584	10.584 (1.212)	119	185638	5.00000	4.149	0.00- 0.00	100.00
10.584	10.584 (1.212)	134	50777			0.00- 0.00	27.35
10.584	10.584 (1.212)	91	40793			0.00- 0.00	21.97

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p092728.d
Lab Smp Id: ICAL Level #4
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msdp.i/26NOV18.b/p18q1108b.m
Misc Info: 5.0ppbv (5.0ppbv)

Calibration Date: 28-SEP-2018
Calibration Time: 01:04
Client Smp ID: ICAL Level #4
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	162118	97271	226965	160722	-0.86
123 1,4-Difluorobenze	484572	290743	678401	487053	0.51
163 Chlorobenzene-d5	566566	339940	793192	559982	-1.16

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.42	0.13
123 1,4-Difluorobenze	6.30	5.97	6.63	6.30	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

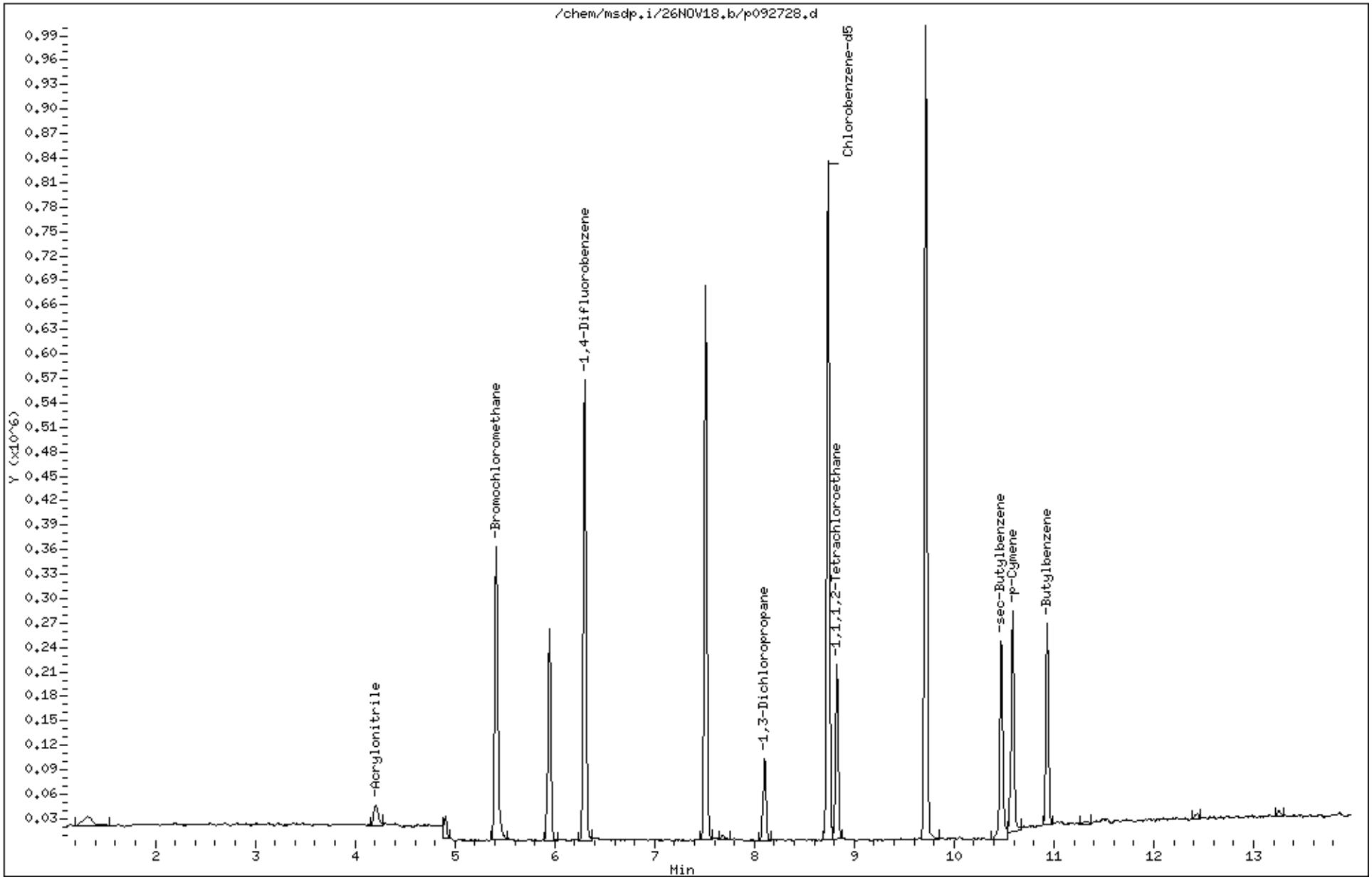
AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/26NOV18.b/p092728.d
Date : 28-SEP-2018 00:15
Client ID: ICAL Level #4
Sample Info: 200ml 3018-445

Column phase: RTX-624

Instrument: msdp.i

Operator: mb
Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/08NOV18a.b/p110817.d
Lab Smp Id: ICAL Level #5
Inj Date : 08-NOV-2018 21:15
Operator : gh Inst ID: msdp.i
Smp Info : 20ml 3018-509
Misc Info : 20ppbv(200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/08NOV18a.b/p18q1108a.m
Meth Date : 09-Nov-2018 17:32 ugdc Quant Type: ISTD
Cal Date : 08-NOV-2018 21:15 Cal File: p110817.d
Als bottle: 13 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12curve.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.406	5.411 (1.000)	130	89345	25.0000		80.00- 120.00	100.00
5.406	5.411 (1.000)	128	70566			48.70- 108.70	78.98
5.406	5.409 (1.000)	49	142872			130.32- 190.32	159.91
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.294	6.296 (1.000)	114	284881	25.0000		80.00- 120.00	100.00
6.294	6.295 (1.000)	88	40267			0.00- 44.06	14.13
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.737	8.736 (1.000)	117	309398	25.0000		80.00- 120.00	100.00
8.729	8.734 (1.000)	82	138962			14.84- 74.84	44.91
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
5.943	5.942 (1.099)	65	118872	25.0000	24.983	80.00- 120.00	100.00
5.943	5.943 (1.099)	67	61093			26.40- 86.40	51.39
$ 146 Toluene-d8					CAS #: 2037-26-5		
7.504	7.505 (1.192)	98	296737	25.0000	25.211	80.00- 120.00	100.00
7.504	7.504 (1.192)	70	30770			0.00- 40.19	10.37

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.504	7.505 (1.192)	100	199232			38.92- 98.92	67.14
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.718	9.719 (1.112)	174	204878	25.0000	26.081	80.00- 120.00	100.00
9.711	9.713 (1.111)	95	228558			82.53- 142.53	111.56
9.718	9.719 (1.112)	176	194602			65.10- 125.10	94.98
9 Propylene					CAS #: 115-07-1		
1.479	1.479 (0.274)	41	62451	20.0000	18.674	80.00- 120.00	100.00
1.479	1.481 (0.274)	42	42090			37.41- 97.41	67.40
1.479	1.479 (0.274)	39	45864			42.27- 102.27	73.44
11 Freon 12					CAS #: 75-71-8		
1.507	1.511 (0.279)	85	175577	20.0000	19.814	80.00- 120.00	100.00
1.507	1.511 (0.279)	87	59320			2.07- 62.07	33.79
15 Freon 114					CAS #: 76-14-2		
1.619	1.629 (0.299)	135	148595	20.0000	20.394	80.00- 120.00	100.00
1.619	1.629 (0.299)	137	46959			2.07- 62.07	31.60
17 Chloromethane					CAS #: 74-87-3		
1.703	1.723 (0.315)	50	84085	20.0000	20.705	80.00- 120.00	100.00
1.717	1.723 (0.318)	52	27469			0.00- 58.76	32.67
23 Butane					CAS #: 106-97-8		
1.787	1.791 (0.330)	58	14012	20.0000	18.536	80.00- 120.00	100.00
1.773	1.786 (0.328)	43	124808			1048.24-1108.24	890.72
25 Vinyl Chloride					CAS #: 75-01-4		
1.815	1.818 (0.336)	62	66872	20.0000	18.556	80.00- 120.00	100.00
1.815	1.818 (0.336)	64	19061			0.00- 54.53	28.50
26 1,3-Butadiene					CAS #: 106-99-0		
1.843	1.842 (0.341)	54	62583	20.0000	18.532	80.00- 120.00	100.00
1.829	1.840 (0.338)	39	83887			85.58- 145.58	134.04
29 Bromomethane					CAS #: 74-83-9		
2.190	2.195 (0.405)	94	55165	20.0000	21.398	80.00- 120.00	100.00
2.190	2.195 (0.405)	96	49143			65.12- 125.12	89.08
30 Chloroethane					CAS #: 75-00-3		
2.304	2.304 (0.426)	64	29485	20.0000	19.279	80.00- 120.00	100.00
2.297	2.304 (0.425)	66	8997			0.00- 59.74	30.51
2.297	2.302 (0.425)	49	13076			9.89- 69.89	44.35

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.326	2.327 (0.430)	43	91366	20.0000	19.748	80.00- 120.00	100.00
2.326	2.327 (0.430)	57	55951			31.46- 91.46	61.24
35 Freon 11					CAS #: 75-69-4		
2.548	2.551 (0.471)	101	207695	20.0000	20.192	80.00- 120.00	100.00
2.548	2.551 (0.471)	103	128572			34.29- 94.29	61.90
42 Ethanol					CAS #: 64-17-5		
2.856	2.865 (0.528)	45	30628	20.0000	19.994	80.00- 120.00	100.00
2.856	2.863 (0.528)	46	11944			8.87- 68.87	39.00
49 Freon 113					CAS #: 76-13-1		
3.178	3.182 (0.588)	151	138527	20.0000	20.245	80.00- 120.00	100.00
3.178	3.184 (0.588)	153	88314			34.67- 94.67	63.75
3.178	3.181 (0.588)	101	155045			79.70- 139.70	111.92
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.207	3.214 (0.593)	98	35156	20.0000	20.367	80.00- 120.00	100.00
3.207	3.213 (0.593)	96	54514			126.11- 186.11	155.06
3.207	3.213 (0.593)	61	110380			286.72- 346.72	313.97
52 Acetone					CAS #: 67-64-1		
3.343	3.356 (0.618)	58	36306	20.0000	20.425	80.00- 120.00	100.00
3.350	3.357 (0.620)	43	131534			345.31- 405.31	362.29
56 Carbon Disulfide					CAS #: 75-15-0		
3.443	3.452 (0.637)	76	147758	20.0000	19.121	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.529	3.532 (0.653)	45	121240	20.0000	18.642	80.00- 120.00	100.00
3.529	3.530 (0.653)	43	31847			0.00- 53.09	26.27
3.529	3.530 (0.653)	59	4332			0.00- 33.51	3.57
58 3-Chloropropene					CAS #: 107-05-1		
3.679	3.685 (0.681)	76	21424	20.0000	19.764	80.00- 120.00	100.00
3.679	3.684 (0.681)	41	95242			428.12- 488.12	444.56
66 Methylene Chloride					CAS #: 75-09-2		
3.866	3.872 (0.715)	49	106858	20.0000	19.490	80.00- 120.00	100.00
3.866	3.872 (0.715)	84	48875			16.41- 76.41	45.74
3.866	3.872 (0.715)	51	32765			0.00- 59.94	30.66
71 tert-Butyl alcohol					CAS #: 75-65-0		
3.987	3.990 (0.738)	59	132090	20.0000	19.663	80.00- 120.00	100.00
3.987	3.989 (0.738)	41	40135			0.00- 58.57	30.38

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
71 tert-Butyl alcohol (continued)							
3.987	3.987 (0.738)	57	15177			0.00- 41.25	11.49
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.088	4.088 (0.756)	73	149871	20.0000	20.021	80.00- 120.00	100.00
4.088	4.088 (0.756)	57	48094			1.33- 61.33	32.09
4.088	4.089 (0.756)	41	62766			8.05- 68.05	41.88
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.109	4.112 (0.760)	98	36520	20.0000	20.542	80.00- 120.00	100.00
4.109	4.110 (0.760)	61	100839			247.19- 307.19	276.12
4.109	4.113 (0.760)	96	57979			131.40- 191.40	158.76
78 Hexane					CAS #: 110-54-3		
4.331	4.329 (0.801)	57	114430	20.0000	20.639	80.00- 120.00	100.00
4.324	4.329 (0.800)	43	80995			42.49- 102.49	70.78
4.331	4.329 (0.801)	86	13432			0.00- 42.15	11.74
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.596	4.598 (0.850)	63	131164	20.0000	19.918	80.00- 120.00	100.00
4.596	4.599 (0.850)	65	37497			0.00- 58.69	28.59
83 Isopropyl ether					CAS #: 108-20-3		
4.596	4.596 (0.850)	45	300526	20.0000	20.161	80.00- 120.00	100.00
4.596	4.596 (0.850)	87	50528			0.00- 46.96	16.81
4.596	4.596 (0.850)	59	30731			0.00- 39.98	10.23
86 Vinyl Acetate					CAS #: 108-05-4		
4.639	4.640 (0.858)	86	13695	20.0000	18.884	80.00- 120.00	100.00
4.639	4.639 (0.858)	43	261199			1735.43-1795.43	1907.26
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
4.947	4.951 (0.915)	59	243053	20.0000	19.795	80.00- 120.00	100.00
4.947	4.951 (0.915)	87	78615			1.65- 61.65	32.34
4.947	4.948 (0.915)	41	65837			0.00- 54.61	27.09
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.176	5.180 (0.958)	98	43973	20.0000	19.542	80.00- 120.00	100.00
5.176	5.180 (0.958)	96	70159			123.83- 183.83	159.55
5.176	5.177 (0.958)	61	112689			214.95- 274.95	256.27
92 2-Butanone					CAS #: 78-93-3		
5.198	5.200 (0.962)	72	25121	20.0000	18.694	80.00- 120.00	100.00
5.198	5.201 (0.962)	43	179946			669.23- 729.23	716.32
5.205	5.204 (0.963)	57	13229			20.89- 80.89	52.66

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.406	5.410 (1.000)	42	93699	20.0000	20.425	80.00- 120.00	100.00
5.406	5.412 (1.000)	71	21239			0.00- 54.27	22.67
5.413	5.412 (1.001)	72	22454			0.00- 54.41	23.96
100 Chloroform					CAS #: 67-66-3		
5.470	5.474 (1.012)	83	146902	20.0000	20.046	80.00- 120.00	100.00
5.470	5.474 (1.012)	85	99347			38.55- 98.55	67.63
102 Cyclohexane					CAS #: 110-82-7		
5.585	5.583 (1.033)	84	72434	20.0000	19.994	80.00- 120.00	100.00
5.585	5.584 (1.033)	56	135765			149.13- 209.13	187.43
5.585	5.583 (1.033)	41	82699			74.83- 134.83	114.17
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.599	5.598 (1.036)	97	170208	20.0000	19.830	80.00- 120.00	100.00
5.599	5.599 (1.036)	99	111973			35.00- 95.00	65.79
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.714	5.714 (1.057)	119	200774	20.0000	21.616	80.00- 120.00	100.00
5.714	5.713 (1.057)	117	207072			73.60- 133.60	103.14
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.913 (1.094)	57	408476	20.0000	20.686	80.00- 120.00	100.00
5.914	5.914 (1.094)	56	144633			3.59- 63.59	35.41
5.914	5.912 (1.094)	41	127368			0.20- 60.20	31.18
116 Benzene					CAS #: 71-43-2		
5.929	5.928 (0.942)	78	187626	20.0000	18.633	80.00- 120.00	100.00
5.921	5.925 (0.941)	77	45671			0.00- 54.10	24.34
119 tert-Amyl methyl ether					CAS #: 994-05-8		
6.000	6.000 (0.953)	87	47833	20.0000	20.621	80.00- 120.00	100.00
6.000	6.000 (0.953)	73	173322			327.19- 387.19	362.35
6.000	5.998 (0.953)	55	91152			139.14- 199.14	190.56
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.007	6.010 (0.954)	62	124184	20.0000	19.876	80.00- 120.00	100.00
6.007	6.009 (0.954)	64	38257			0.44- 60.44	30.81
121 Heptane					CAS #: 142-82-5		
6.086	6.085 (0.967)	71	60229	20.0000	21.300	80.00- 120.00	100.00
6.079	6.084 (0.966)	43	176179			259.43- 319.43	292.52
6.086	6.085 (0.967)	57	86664			114.50- 174.50	143.89
125 Trichloroethene					CAS #: 79-01-6		
6.495	6.494 (1.032)	95	98759	20.0000	19.570	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.495	6.494 (1.032)	130	116008			88.76- 148.76	117.47
6.495	6.494 (1.032)	97	62935			35.32- 95.32	63.73
127 Methylcyclohexane					CAS #: 108-87-2		
6.595	6.595 (1.048)	83	108287	20.0000	20.640	80.00- 120.00	100.00
6.595	6.595 (1.048)	98	55951			20.32- 80.32	51.67
6.595	6.595 (1.048)	55	140410			98.90- 158.90	129.66
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.724	6.724 (1.068)	63	88677	20.0000	20.222	80.00- 120.00	100.00
6.724	6.724 (1.068)	62	65384			41.74- 101.74	73.73
6.724	6.724 (1.068)	41	63049			41.01- 101.01	71.10
136 1,4-Dioxane					CAS #: 123-91-1		
6.817	6.817 (1.083)	88	44952	20.0000	20.136	80.00- 120.00	100.00
6.817	6.817 (1.083)	58	44142			66.86- 126.86	98.20
6.817	6.816 (1.083)	57	14861			1.32- 61.32	33.06
138 Bromodichloromethane					CAS #: 75-27-4		
6.953	6.953 (1.105)	83	162636	20.0000	19.714	80.00- 120.00	100.00
6.953	6.952 (1.105)	85	106498			35.98- 95.98	65.48
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.325	7.325 (1.164)	75	104541	20.0000	19.426	80.00- 120.00	100.00
7.325	7.325 (1.164)	77	34675			2.71- 62.71	33.17
7.325	7.325 (1.164)	39	79602			43.85- 103.85	76.14
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.433	7.433 (1.181)	58	76626	20.0000	20.184	80.00- 120.00	100.00
7.433	7.433 (1.181)	43	232651			267.85- 327.85	303.62
7.433	7.434 (1.181)	85	24963			4.54- 64.54	32.58
147 Toluene					CAS #: 108-88-3		
7.562	7.562 (1.201)	91	263582	20.0000	19.712	80.00- 120.00	100.00
7.562	7.562 (1.201)	92	149610			28.88- 88.88	56.76
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.798	7.798 (0.893)	75	108209	20.0000	19.753	80.00- 120.00	100.00
7.798	7.798 (0.893)	77	36243			2.67- 62.67	33.49
7.798	7.798 (0.893)	39	75215			37.60- 97.60	69.51
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.956	7.956 (0.911)	97	99727	20.0000	20.176	80.00- 120.00	100.00
7.956	7.956 (0.911)	99	61051			30.86- 90.86	61.22
7.956	7.956 (0.911)	83	76977			47.74- 107.74	77.19

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
156 Tetrachloroethene					CAS #: 127-18-4		
7.999	8.001 (0.916)	166	166243	20.0000	20.721	80.00- 120.00	100.00
7.999	7.999 (0.916)	129	126367			48.46- 108.46	76.01
7.999	7.999 (0.916)	131	122066			45.42- 105.42	73.43
158 2-Hexanone					CAS #: 591-78-6		
8.121	8.120 (0.929)	58	96230	20.0000	19.727	80.00- 120.00	100.00
8.121	8.120 (0.929)	43	216928			185.57- 245.57	225.43
8.121	8.120 (0.929)	100	16502			0.00- 46.27	17.15
160 Dibromochloromethane					CAS #: 124-48-1		
8.264	8.268 (0.946)	129	232418	20.0000	20.438	80.00- 120.00	100.00
8.264	8.269 (0.946)	127	177838			47.61- 107.61	76.52
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
8.378	8.378 (0.959)	107	164829	20.0000	20.369	80.00- 120.00	100.00
8.378	8.378 (0.959)	109	162795			68.89- 128.89	98.77
165 Chlorobenzene					CAS #: 108-90-7		
8.758	8.758 (1.002)	112	252596	20.0000	19.987	80.00- 120.00	100.00
8.758	8.758 (1.002)	114	79515			1.88- 61.88	31.48
8.758	8.757 (1.002)	77	127666			20.89- 80.89	50.54
167 Ethyl Benzene					CAS #: 100-41-4		
8.808	8.808 (1.008)	106	116890	20.0000	20.864	80.00- 120.00	100.00
8.808	8.808 (1.008)	91	350083			268.95- 328.95	299.50
169 m,p-Xylene					CAS #: 108-38-3		
8.901	8.906 (1.019)	106	144138	20.0000	20.939	80.00- 120.00	100.00
8.901	8.907 (1.019)	91	279393			159.20- 219.20	193.84
171 o-Xylene					CAS #: 95-47-6		
9.245	9.245 (1.058)	106	135870	20.0000	21.041	80.00- 120.00	100.00
9.245	9.245 (1.058)	91	279150			173.23- 233.23	205.45
172 Styrene					CAS #: 100-42-5		
9.267	9.266 (1.061)	104	240460	20.0000	22.164	80.00- 120.00	100.00
9.267	9.266 (1.061)	78	112407			15.83- 75.83	46.75
174 Bromoform					CAS #: 75-25-2		
9.460	9.460 (1.083)	173	214315	20.0000	20.469	80.00- 120.00	100.00
9.460	9.460 (1.083)	171	109386			21.75- 81.75	51.04
175 Cumene					CAS #: 98-82-8		
9.532	9.531 (1.091)	105	465155	20.0000	22.188	80.00- 120.00	100.00
9.532	9.531 (1.091)	120	131323			0.00- 58.53	28.23

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  175 Cumene (continued)
  9.532   9.531 (1.091)    51     65460                     0.00-  43.43    14.07
-------------------------------------------------------------------------------
  181 1,1,2,2-Tetrachloroethane                    CAS #: 79-34-5
  9.840   9.839 (1.126)    83    217515 20.0000   20.540  80.00- 120.00   100.00
  9.840   9.839 (1.126)    85    150716                   38.99-  98.99    69.29
-------------------------------------------------------------------------------
  182 Propylbenzene                                CAS #: 103-65-1
  9.875   9.874 (1.130)    91    501941 20.0000   21.086  80.00- 120.00   100.00
  9.875   9.875 (1.130)   120    137204                    0.00-  56.98    27.33
  9.875   9.874 (1.130)   105     20437                    0.00-  34.22     4.07
-------------------------------------------------------------------------------
  188 4-Ethyltoluene                               CAS #: 622-96-8
  9.969   9.967 (1.141)   120    153149 20.0000   21.774  80.00- 120.00   100.00
  9.969   9.966 (1.141)   105    461361                  277.08- 337.08   301.25
-------------------------------------------------------------------------------
  190 1,3,5-Trimethylbenzene                       CAS #: 108-67-8
 10.019  10.019 (1.147)   120    218399 20.0000   22.152  80.00- 120.00   100.00
 10.019  10.019 (1.147)   105    426427                  165.36- 225.36   195.25
-------------------------------------------------------------------------------
  196 1,2,4-Trimethylbenzene                       CAS #: 95-63-6
 10.341  10.341 (1.184)   120    180626 20.0000   21.815  80.00- 120.00   100.00
 10.341  10.340 (1.184)   105    356556                  173.89- 233.89   197.40
-------------------------------------------------------------------------------
  208 1,3-Dichlorobenzene                          CAS #: 541-73-1
 10.620  10.622 (1.216)   146    318056 20.0000   20.702  80.00- 120.00   100.00
 10.620  10.623 (1.216)   148    202898                   34.36-  94.36    63.79
 10.620  10.621 (1.216)   111    120904                    7.68-  67.68    38.01
-------------------------------------------------------------------------------
  209 1,4-Dichlorobenzene                          CAS #: 106-46-7
 10.706  10.706 (1.225)   146    317138 20.0000   20.787  80.00- 120.00   100.00
 10.706  10.705 (1.225)   148    206109                   33.64-  93.64    64.99
 10.699  10.702 (1.225)   111    114448                    5.53-  65.53    36.09
-------------------------------------------------------------------------------
  212 alpha-Chlorotoluene                          CAS #: 100-44-7
 10.814  10.814 (1.238)    91    335446 20.0000   20.846  80.00- 120.00   100.00
 10.821  10.817 (1.239)   126     84545                    0.00-  55.76    25.20
-------------------------------------------------------------------------------
  214 1,2-Dichlorobenzene                          CAS #: 95-50-1
 11.029  11.029 (1.262)   146    303504 20.0000   20.630  80.00- 120.00   100.00
 11.029  11.029 (1.262)   148    196420                   33.63-  93.63    64.72
 11.029  11.029 (1.262)   111    118939                    8.70-  68.70    39.19
-------------------------------------------------------------------------------
  226 1,2,4-Trichlorobenzene                       CAS #: 120-82-1
 12.411  12.411 (1.421)   180    226411 20.0000   18.845  80.00- 120.00   100.00
 12.411  12.411 (1.421)   182    220568                   66.82- 126.82    97.42
-------------------------------------------------------------------------------
```

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
227 Hexachlorobutadiene						CAS #: 87-68-3		
12.504	12.504	(1.431)	225	185032	20.0000	19.235	80.00- 120.00	100.00
12.504	12.504	(1.431)	223	113347			33.20- 93.20	61.26
228 Naphthalene						CAS #: 91-20-3		
12.669	12.669	(1.450)	128	43160	2.00000	1.703	80.00- 120.00	100.00(a)
12.669	12.670	(1.450)	127	5816			0.00- 43.12	13.48

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p110817.d
Lab Smp Id: ICAL Level #5
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msdp.i/08NOV18a.b/p18q1108a.m
Misc Info: 20ppbv(200ppbv)

Calibration Date: 08-NOV-2018
Calibration Time: 21:40

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	92663	55598	129728	89345	-3.58
123 1,4-Difluorobenze	304426	182656	426196	284881	-6.42
163 Chlorobenzene-d5	330915	198549	463281	309398	-6.50

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.13
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/08NOV18a.b/p110817.d

Date : 08-NOV-2018 21:15

Client ID:

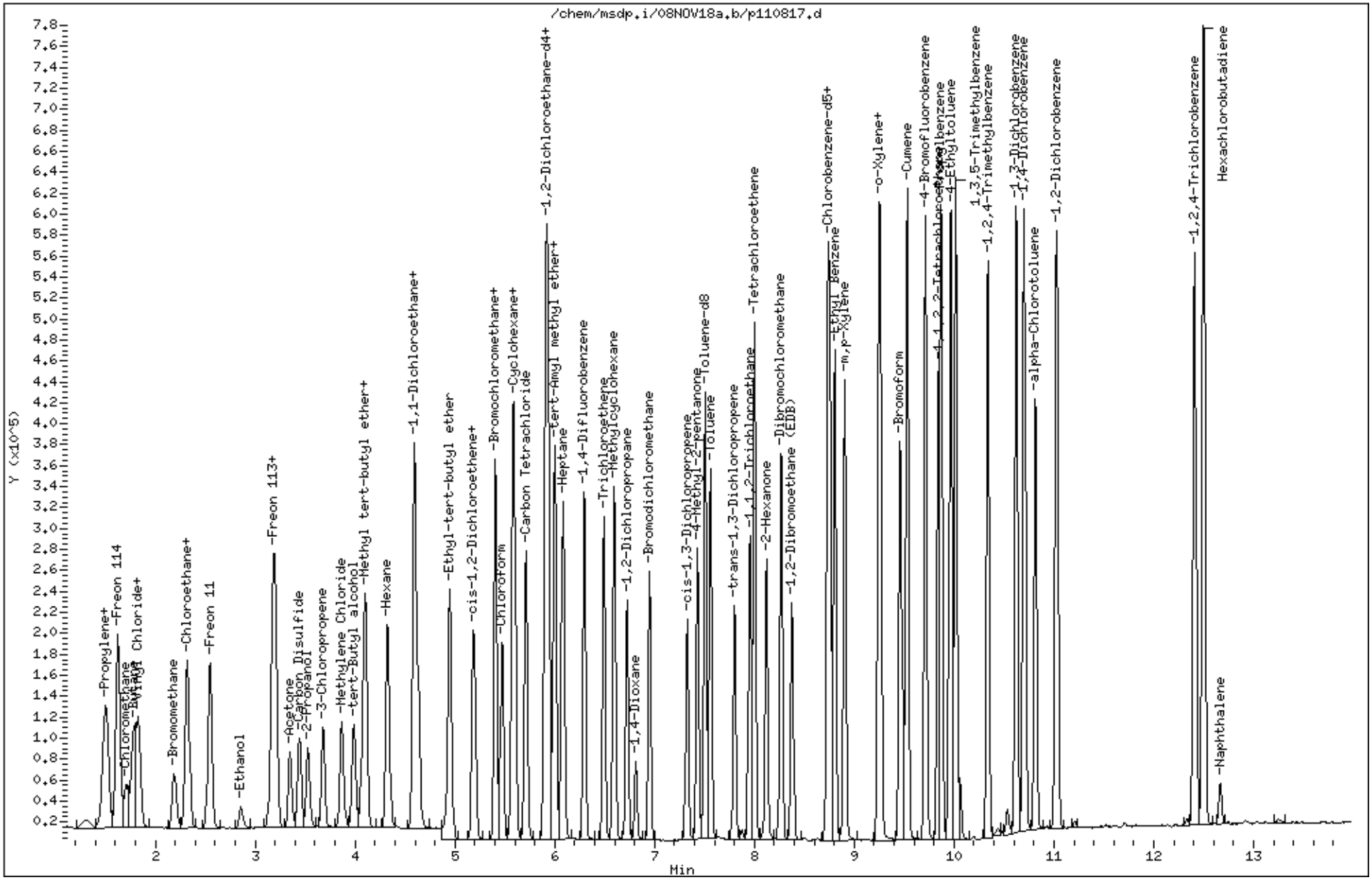
Sample Info: 20ml 3018-509

Column phase: RTX-624

Instrument: msdp.i

Operator: gh

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/26NOV18.b/p092729.d
Lab Smp Id: ICAL Level #5 Client Smp ID: ICAL Level #5
Inj Date : 28-SEP-2018 00:39
Operator : mb Inst ID: msdp.i
Smp Info : 20ml 3045-111
Misc Info : 20ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/26NOV18.b/p18q1108b.m
Meth Date : 27-Nov-2018 08:30 ugdc Quant Type: ISTD
Cal Date : 08-NOV-2018 21:15 Cal File: p110817.d
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT5CRV.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.414 (1.000)	130	162597	25.0000		80.00- 120.00	100.00
5.413	5.414 (1.000)	128	125646			48.70- 108.70	77.27
5.406	5.411 (1.000)	49	215829			130.32- 190.32	132.74
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.301 (1.000)	114	476054	25.0000		80.00- 120.00	100.00
6.301	6.301 (1.000)	88	64232			0.00- 44.06	13.49
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	564593	25.0000		80.00- 120.00	100.00
8.736	8.736 (1.000)	82	239904			14.84- 74.84	42.49
74 Acrylonitrile					CAS #: 107-13-1		
4.195	4.201 (0.775)	52	91619	20.0000	19.295	0.00- 0.00	100.00
4.195	4.200 (0.775)	53	105822			0.00- 0.00	115.50
157 1,3-Dichloropropane					CAS #: 142-28-9		
8.099	8.100 (1.285)	76	217154	20.0000	20.134	0.00- 0.00	100.00
8.099	8.099 (1.285)	41	191235			0.00- 0.00	88.06

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
157 1,3-Dichloropropane (continued)							
8.099	8.101 (1.285)	78	75568			0.00- 0.00	34.80
168 1,1,1,2-Tetrachloroethane					CAS #: 630-20-6		
8.830	8.829 (1.011)	131	321360	20.0000	20.380	0.00- 0.00	100.00
8.830	8.829 (1.011)	117	210814			0.00- 0.00	65.60
8.830	8.829 (1.011)	95	105172			0.00- 0.00	32.73
203 sec-Butylbenzene					CAS #: 135-98-8		
10.477	10.474 (1.199)	134	200510	20.0000	20.822	0.00- 0.00	100.00
10.470	10.472 (1.198)	105	882105			0.00- 0.00	439.93
10.470	10.471 (1.198)	91	133821			0.00- 0.00	66.74
213 Butylbenzene					CAS #: 104-51-8		
10.935	10.935 (1.252)	134	252133	20.0000	20.109	0.00- 0.00	100.00
10.935	10.934 (1.252)	91	798757			0.00- 0.00	316.80
10.935	10.931 (1.252)	92	409505			0.00- 0.00	162.42
207 p-Cymene					CAS #: 99-87-6		
10.584	10.584 (1.212)	119	972033	20.0000	21.549	0.00- 0.00	100.00
10.584	10.584 (1.212)	134	273840			0.00- 0.00	28.17
10.584	10.584 (1.212)	91	212740			0.00- 0.00	21.89

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p092729.d
Lab Smp Id: ICAL Level #5
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msdp.i/26NOV18.b/p18q1108b.m
Misc Info: 20ppbv (200ppbv)

Calibration Date: 28-SEP-2018
Calibration Time: 01:04
Client Smp ID: ICAL Level #5
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	162118	97271	226965	162597	0.30
123 1,4-Difluorobenze	484572	290743	678401	476054	-1.76
163 Chlorobenzene-d5	566566	339940	793192	564593	-0.35

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.30	5.97	6.63	6.30	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/26NOV18.b/p092729.d

Date : 28-SEP-2018 00:39

Client ID: ICAL Level #5

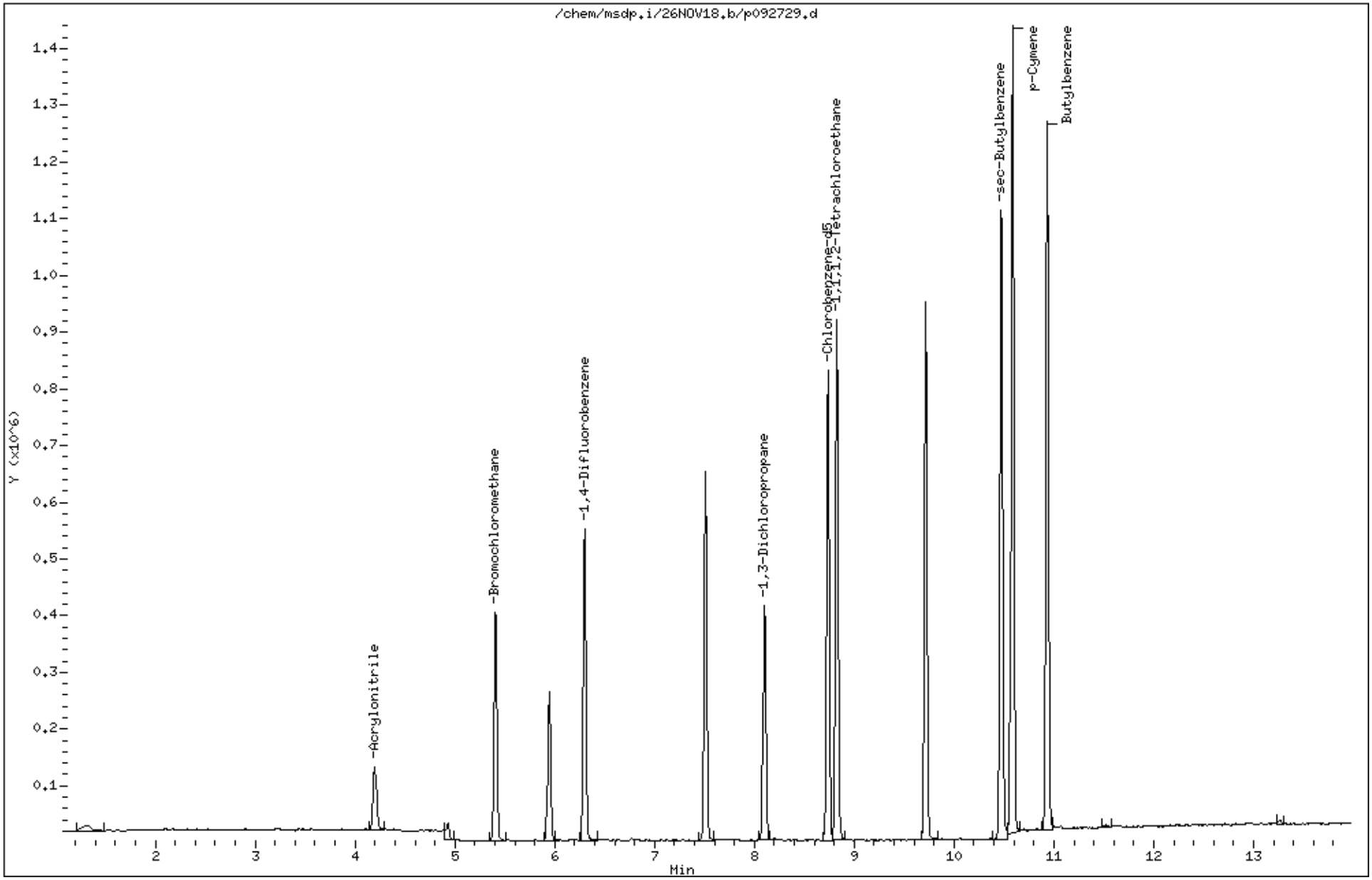
Sample Info: 20ml 3045-111

Column phase: RTX-624

Instrument: msdp.i

Operator: mb

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/04DEC18.b/p120413.d
Lab Smp Id: ICAL Level#6
Inj Date : 04-DEC-2018 17:16
Operator : mjb Inst ID: msdp.i
Smp Info : 50ml 3045-197
Misc Info : 50ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/04DEC18.b/p18q1108c.m
Meth Date : 05-Dec-2018 14:02 ugdc Quant Type: ISTD
Cal Date : 04-DEC-2018 17:16 Cal File: p120413.d
Als bottle: 9 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT4mAcrCRV.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
63 Acetonitrile					CAS #: 75-05-8		
3.765	3.771 (0.696)	39	31636	50.0000	43.364	0.00- 0.00	100.00
3.765	3.770 (0.696)	41	165433			0.00- 0.00	522.93
3.765	3.770 (0.696)	40	94124			0.00- 0.00	297.52
184 trans-1,4-Dichloro-2-butene					CAS #: 110-57-6		
9.890	9.890 (1.132)	75	151349	50.0000	51.116	0.00- 0.00	100.00
9.890	9.890 (1.132)	89	93226			0.00- 0.00	61.60
9.890	9.890 (1.132)	53	188085			0.00- 0.00	124.27
206 bis(2-Chloroethyl) Ether					CAS #: 111-44-4		
10.549	10.549 (1.207)	93	459993	50.0000	47.458	0.00- 0.00	100.00
10.541	10.546 (1.207)	95	149538			0.00- 0.00	32.51
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.412 (1.000)	130	84333	25.0000		80.00- 120.00	100.00
5.413	5.412 (1.000)	128	64084			48.70- 108.70	75.99
5.406	5.409 (1.000)	49	122203			130.32- 190.32	144.91
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.299 (1.000)	114	258423	25.0000		80.00- 120.00	100.00

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 123 1,4-Difluorobenzene (continued)								
6.294	6.297	(1.000)	88	35803			0.00- 44.06	13.85
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.736	8.736	(1.000)	117	298081	25.0000		80.00- 120.00	100.00
8.736	8.736	(1.000)	82	125631			14.84- 74.84	42.15

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p120413.d
Lab Smp Id: ICAL Level#6
Analysis Type: VOA
Quant Type: ISTD
Operator: mjb
Method File: /chem/msdp.i/04DEC18.b/p18q1108c.m
Misc Info: 50ppbv (200ppbv)

Calibration Date: 04-DEC-2018
Calibration Time: 17:16

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	84333	50600	118066	84333	0.00
123 1,4-Difluorobenze	258423	155054	361792	258423	0.00
163 Chlorobenzene-d5	298081	178849	417313	298081	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.30	5.97	6.63	6.30	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/04DEC18.b/p120413.d

Date : 04-DEC-2018 17:16

Client ID:

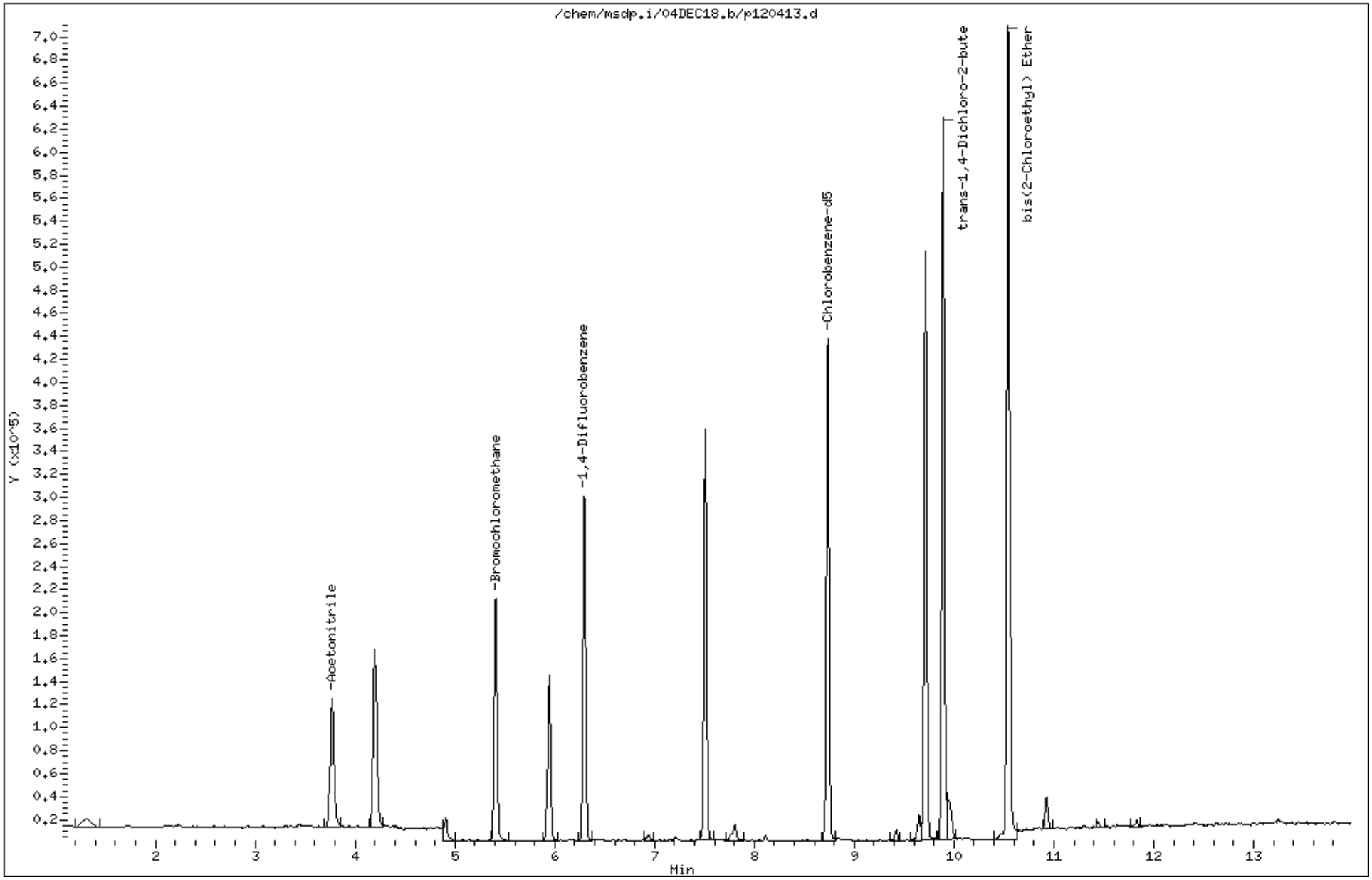
Sample Info: 50ml 3045-197

Column phase: RTX-624

Instrument: msdp.i

Operator: mjb

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/04DEC18.b/p120407.d
Lab Smp Id: ICAL Level #6 Client Smp ID: CCV
Inj Date : 04-DEC-2018 14:19
Operator : mjb Inst ID: msdp.i
Smp Info : 50ml 3045-193
Misc Info : 50ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/04DEC18.b/p18q1108c.m
Meth Date : 05-Dec-2018 12:32 ugdc Quant Type: ISTD
Cal Date : 04-DEC-2018 17:16 Cal File: p120413.d
Als bottle: 11 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: MasterCRVM4M5.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
7 Freon 134a					CAS #: 811-97-2		
1.451	1.456 (0.268)	83	122268	50.0000	53.315	0.00- 0.00	100.00
1.437	1.448 (0.265)	69	148763			0.00- 0.00	121.67
8 Propane					CAS #: 74-98-6		
1.479	1.484 (0.273)	39	35490	50.0000	40.889	0.00- 0.00	100.00
1.479	1.481 (0.273)	44	59753			0.00- 0.00	168.37
1.479	1.484 (0.273)	43	50564			0.00- 0.00	142.47
10 1,1-Difluoroethane					CAS #: 75-37-6		
1.507	1.509 (0.278)	65	57649	50.0000	58.094	0.00- 0.00	100.00
1.535	1.546 (0.283)	51	425512			0.00- 0.00	738.11
1.507	1.512 (0.278)	47	36599			0.00- 0.00	63.49
13 Chlorodifluoromethane					CAS #: 75-45-6		
1.549	1.557 (0.286)	67	33449	50.0000	51.018	0.00- 0.00	100.00
1.535	1.546 (0.283)	51	425512			0.00- 0.00	1272.12
1.661	1.672 (0.307)	85	37087			0.00- 0.00	110.88
16 Freon 142b					CAS #: 75-68-3		
1.661	1.669 (0.307)	65	311603	50.0000	48.074	0.00- 0.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
16 Freon 142b (continued)							
1.661	1.669 (0.307)	45	82029			0.00- 0.00	26.32
32 Vinyl Bromide					CAS #: 593-60-2		
2.505	2.510 (0.463)	106	142757	50.0000	48.728	0.00- 0.00	100.00
2.505	2.510 (0.463)	108	137236			0.00- 0.00	96.13
34 Pentane					CAS #: 109-66-0		
2.619	2.618 (0.484)	43	237942	50.0000	49.870	0.00- 0.00	100.00
2.619	2.619 (0.484)	57	33044			0.00- 0.00	13.89
2.619	2.619 (0.484)	72	15126			0.00- 0.00	6.36
36 1-Pentene					CAS #: 109-67-1		
2.562	2.562 (0.473)	55	189273	50.0000	47.746	0.00- 0.00	100.00
2.562	2.562 (0.473)	42	255896			0.00- 0.00	135.20
37 Dichlorofluoromethane					CAS #: 75-43-4		
2.562	2.562 (0.473)	67	311458	50.0000	48.650	0.00- 0.00	100.00
2.555	2.560 (0.472)	69	97837			0.00- 0.00	31.41
44 Ethyl Ether					CAS #: 60-29-7		
2.920	2.920 (0.539)	74	62486	50.0000	46.839	0.00- 0.00	100.00
2.920	2.920 (0.539)	59	129216			0.00- 0.00	206.79
47 Freon 123a					CAS #: 354-23-4		
3.013	3.016 (0.557)	117	269127	50.0000	48.980	0.00- 0.00	100.00
3.013	3.013 (0.557)	67	273132			0.00- 0.00	101.49
48 Freon 123					CAS #: 306-83-2		
3.113	3.113 (0.575)	83	312631	50.0000	47.947	0.00- 0.00	100.00
3.113	3.112 (0.575)	133	96341			0.00- 0.00	30.82
3.113	3.113 (0.575)	85	224511			0.00- 0.00	71.81
59 Cyclopentene					CAS #: 142-29-0		
3.701	3.702 (0.684)	67	207787	50.0000	48.265	0.00- 0.00	100.00
3.701	3.701 (0.684)	68	76590			0.00- 0.00	36.86
3.701	3.701 (0.684)	53	66424			0.00- 0.00	31.97
61 Methyl Acetate					CAS #: 79-20-9		
3.722	3.722 (0.688)	43	464974	50.0000	49.096	0.00- 0.00	100.00
3.722	3.722 (0.688)	74	60502			0.00- 0.00	13.01
64 Cyclopentane					CAS #: 287-92-3		
3.815	3.817 (0.705)	70	73202	50.0000	49.462	0.00- 0.00	100.00
3.815	3.815 (0.705)	55	156736			0.00- 0.00	214.11

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
76 1-Hexene					CAS #: 592-41-6		
4.252	4.254 (0.786)	55	155607	50.0000	50.456	0.00- 0.00	100.00
4.252	4.252 (0.786)	41	232142			0.00- 0.00	149.18
4.260	4.257 (0.787)	84	41073			0.00- 0.00	26.40
84 1-Propanol					CAS #: 71-23-8		
4.739	4.739 (0.876)	59	36159	50.0000	50.466	0.00- 0.00	100.00
4.739	4.739 (0.876)	42	36838			0.00- 0.00	101.88
4.739	4.738 (0.876)	41	22361			0.00- 0.00	61.84
85 Chloroprene					CAS #: 126-99-8		
4.653	4.651 (0.860)	53	308222	50.0000	50.416	0.00- 0.00	100.00
4.653	4.651 (0.860)	88	111088			0.00- 0.00	36.04
4.653	4.649 (0.860)	50	78239			0.00- 0.00	25.38
90 2,2-Dichloropropane					CAS #: 594-20-7		
5.141	5.141 (0.950)	77	284545	50.0000	49.113	0.00- 0.00	100.00
5.141	5.139 (0.950)	79	89392			0.00- 0.00	31.42
5.141	5.141 (0.950)	97	58766			0.00- 0.00	20.65
94 Ethyl Acetate					CAS #: 141-78-6		
5.227	5.225 (0.966)	70	26558	50.0000	45.883	0.00- 0.00	100.00
5.227	5.225 (0.966)	61	51172			0.00- 0.00	192.68
5.227	5.225 (0.966)	45	73023			0.00- 0.00	274.96
93 Methyl Acrylate					CAS #: 96-33-3		
5.269	5.270 (0.974)	55	440493	50.0000	50.038	0.00- 0.00	100.00
5.269	5.270 (0.974)	85	49678			0.00- 0.00	11.28
5.269	5.270 (0.974)	58	37097			0.00- 0.00	8.42
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.412 (1.000)	130	88223	25.0000		80.00- 120.00	100.00
5.413	5.412 (1.000)	128	69001			48.70- 108.70	78.21
5.406	5.408 (1.000)	49	130712			130.32- 190.32	148.16
107 1,1-Dichloropropene					CAS #: 563-58-6		
5.749	5.749 (0.912)	110	91884	50.0000	48.921	0.00- 0.00	100.00
5.749	5.747 (0.912)	75	204824			0.00- 0.00	222.92
115 Isobutanol					CAS #: 78-83-1		
5.893	5.894 (0.935)	39	47451	50.0000	44.316	0.00- 0.00	100.00
5.893	5.893 (0.935)	43	177830			0.00- 0.00	374.77
5.893	5.894 (0.935)	41	137737			0.00- 0.00	290.27
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.299 (1.000)	114	291577	25.0000		80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 123 1,4-Difluorobenzene (continued)							
6.301	6.297 (1.000)	88	41096			0.00- 44.06	14.09
124 n-Butanol					CAS #: 71-36-3		
6.466	6.466 (1.026)	56	181277	50.0000	47.945	0.00- 0.00	100.00
6.466	6.466 (1.026)	41	140463			0.00- 0.00	77.49
6.466	6.466 (1.026)	43	109601			0.00- 0.00	60.46
128 Ethyl acrylate					CAS #: 140-88-5		
6.588	6.590 (0.754)	99	31340	50.0000	51.026	0.00- 0.00	100.00
6.588	6.588 (0.754)	45	58130			0.00- 0.00	185.48
6.588	6.588 (0.754)	55	596811			0.00- 0.00	1904.31
131 2-Pentanone					CAS #: 107-87-9		
6.681	6.679 (0.765)	43	739275	50.0000	52.924	0.00- 0.00	100.00
6.681	6.679 (0.765)	58	53885			0.00- 0.00	7.29
6.681	6.681 (0.765)	86	87438			0.00- 0.00	11.83
134 Methyl Methacrylate					CAS #: 80-62-6		
6.781	6.782 (0.776)	41	350570	50.0000	51.316	0.00- 0.00	100.00
6.781	6.782 (0.776)	69	176557			0.00- 0.00	50.36
6.781	6.784 (0.776)	100	82206			0.00- 0.00	23.45
137 Dibromomethane					CAS #: 74-95-3		
6.831	6.832 (0.782)	174	302469	50.0000	51.195	0.00- 0.00	100.00
6.831	6.831 (0.782)	93	260920			0.00- 0.00	86.26
6.831	6.831 (0.782)	95	214428			0.00- 0.00	70.89
148 Octane					CAS #: 111-65-9		
7.569	7.569 (1.201)	57	188718	50.0000	52.054	0.00- 0.00	100.00
7.576	7.572 (1.202)	85	156509			0.00- 0.00	82.93
7.569	7.569 (1.201)	43	494878			0.00- 0.00	262.23
159 Butyl Acetate					CAS #: 123-86-4		
8.185	8.183 (1.299)	56	217395	50.0000	51.013	0.00- 0.00	100.00
8.185	8.183 (1.299)	73	59694			0.00- 0.00	27.46
8.185	8.183 (1.299)	43	570807			0.00- 0.00	262.57
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	306653	25.0000		80.00- 120.00	100.00
8.736	8.736 (1.000)	82	132370			14.84- 74.84	43.17
170 Nonane					CAS #: 111-84-2		
8.830	8.830 (1.011)	43	509111	50.0000	53.692	0.00- 0.00	100.00
8.830	8.830 (1.011)	57	410890			0.00- 0.00	80.71
8.830	8.830 (1.011)	85	121411			0.00- 0.00	23.85

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
173 2-Heptanone					CAS #: 110-43-0		
9.338	9.338 (1.725)	58	378348	50.0000	51.882	0.00- 0.00	100.00
9.338	9.338 (1.725)	43	662790			0.00- 0.00	175.18
176 Cyclohexanone					CAS #: 108-94-1		
9.689	9.689 (1.109)	55	324039	50.0000	52.075	0.00- 0.00	100.00
9.689	9.689 (1.109)	98	101398			0.00- 0.00	31.29
9.689	9.689 (1.109)	42	213553			0.00- 0.00	65.90
179 alpha-Pinene					CAS #: 80-56-8		
9.496	9.494 (1.087)	93	598912	50.0000	53.873	0.00- 0.00	100.00
9.496	9.494 (1.087)	77	178391			0.00- 0.00	29.79
180 Bromobenzene					CAS #: 108-86-1		
9.847	9.847 (1.127)	156	379827	50.0000	49.851	0.00- 0.00	100.00
9.847	9.847 (1.127)	158	376644			0.00- 0.00	99.16
9.847	9.847 (1.127)	77	475448			0.00- 0.00	125.17
185 1,2,3-Trichloropropane					CAS #: 96-18-4		
9.897	9.894 (1.133)	110	173707	50.0000	50.074	0.00- 0.00	100.00
9.890	9.890 (1.132)	75	522702			0.00- 0.00	300.91
9.890	9.891 (1.132)	61	131217			0.00- 0.00	75.54
187 Decane					CAS #: 124-18-5		
9.933	9.933 (1.137)	57	590372	50.0000	55.586	0.00- 0.00	100.00
9.933	9.933 (1.137)	71	151797			0.00- 0.00	25.71
9.933	9.931 (1.137)	142	30917			0.00- 0.00	5.24
189 2-Chlorotoluene					CAS #: 95-49-8		
9.990	9.989 (1.143)	126	301106	50.0000	52.226	0.00- 0.00	100.00
9.990	9.987 (1.143)	91	693310			0.00- 0.00	230.25
9.990	9.986 (1.143)	65	69542			0.00- 0.00	23.10
191 4-Chlorotoluene					CAS #: 106-43-4		
10.083	10.083 (1.154)	126	318894	50.0000	51.790	0.00- 0.00	100.00
10.076	10.079 (1.153)	91	905566			0.00- 0.00	283.97
10.083	10.080 (1.154)	63	123272			0.00- 0.00	38.66
192 beta-Pinene					CAS #: 127-91-3		
10.062	10.062 (1.152)	93	510665	50.0000	52.777	0.00- 0.00	100.00
10.076	10.079 (1.153)	91	905566			0.00- 0.00	177.33
193 Diisobutyl Ketone					CAS #: 108-83-8		
10.112	10.112 (1.157)	57	761575	50.0000	54.344	0.00- 0.00	100.00
10.112	10.112 (1.157)	85	479064			0.00- 0.00	62.90

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE		RATIO
195 tert-Butylbenzene					CAS #: 98-06-6			
10.291	10.287 (1.178)	119	899529	50.0000	52.316	0.00-	0.00	100.00
10.291	10.288 (1.178)	134	224688			0.00-	0.00	24.98
10.284	10.284 (1.177)	91	523228			0.00-	0.00	58.17
197 Pentachloroethane					CAS #: 76-01-7			
10.355	10.355 (1.185)	167	295506	50.0000	50.363	0.00-	0.00	100.00
10.355	10.355 (1.185)	117	291776			0.00-	0.00	98.74
10.355	10.355 (1.185)	169	143700			0.00-	0.00	48.63
199 D-Limonene					CAS #: 5989-27-5			
10.534	10.534 (1.206)	68	447084	50.0000	53.434	0.00-	0.00	100.00
10.541	10.542 (1.207)	93	929269			0.00-	0.00	207.85
10.534	10.534 (1.206)	136	124336			0.00-	0.00	27.81
210 1,2,3-Trimethylbenzene					CAS #: 526-73-8			
10.706	10.706 (1.225)	120	418856	50.0000	52.165	0.00-	0.00	100.00
10.706	10.706 (1.225)	105	903310			0.00-	0.00	215.66
10.706	10.705 (1.225)	77	99618			0.00-	0.00	23.78
215 Undecane					CAS #: 1120-21-4			
10.921	10.917 (1.250)	57	626013	50.0000	53.520	0.00-	0.00	100.00
10.921	10.915 (1.250)	43	583485			0.00-	0.00	93.21
217 Hexachloroethane					CAS #: 67-72-1			
11.208	11.208 (1.283)	201	292103	50.0000	52.001	0.00-	0.00	100.00
11.208	11.208 (1.283)	117	382115			0.00-	0.00	130.82
221 1,2-Dibromo-3-chloropropane					CAS #: 96-12-8			
11.702	11.702 (1.339)	157	297192	50.0000	46.656	0.00-	0.00	100.00
11.702	11.702 (1.339)	75	213369			0.00-	0.00	71.80
11.702	11.702 (1.339)	155	227748			0.00-	0.00	76.63
224 1,3,5-Trichlorobenzene					CAS #: 108-70-3			
11.831	11.831 (1.354)	180	564791	50.0000	46.690	0.00-	0.00	100.00
11.831	11.831 (1.354)	182	538853			0.00-	0.00	95.41
225 Dodecane					CAS #: 112-40-3			
11.824	11.824 (1.353)	57	458420	50.0000	46.283	0.00-	0.00	100.00
11.824	11.824 (1.353)	43	387251			0.00-	0.00	84.48
229 1,2,3-Trichlorobenzene					CAS #: 87-61-6			
12.920	12.918 (1.479)	180	312094	50.0000	38.930	0.00-	0.00	100.00
12.920	12.920 (1.479)	182	299028			0.00-	0.00	95.81
12.912	12.914 (1.478)	145	108710			0.00-	0.00	34.83

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p120407.d
Lab Smp Id: ICAL Level #6
Analysis Type: VOA
Quant Type: ISTD
Operator: mjb
Method File: /chem/msdp.i/04DEC18.b/p18q1108c.m
Misc Info: 50ppbv (200ppbv)

Calibration Date: 04-DEC-2018
Calibration Time: 14:19
Client Smp ID: CCV
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	88223	52934	123512	88223	0.00
123 1,4-Difluorobenze	291577	174946	408208	291577	0.00
163 Chlorobenzene-d5	306653	183992	429314	306653	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.30	5.97	6.63	6.30	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

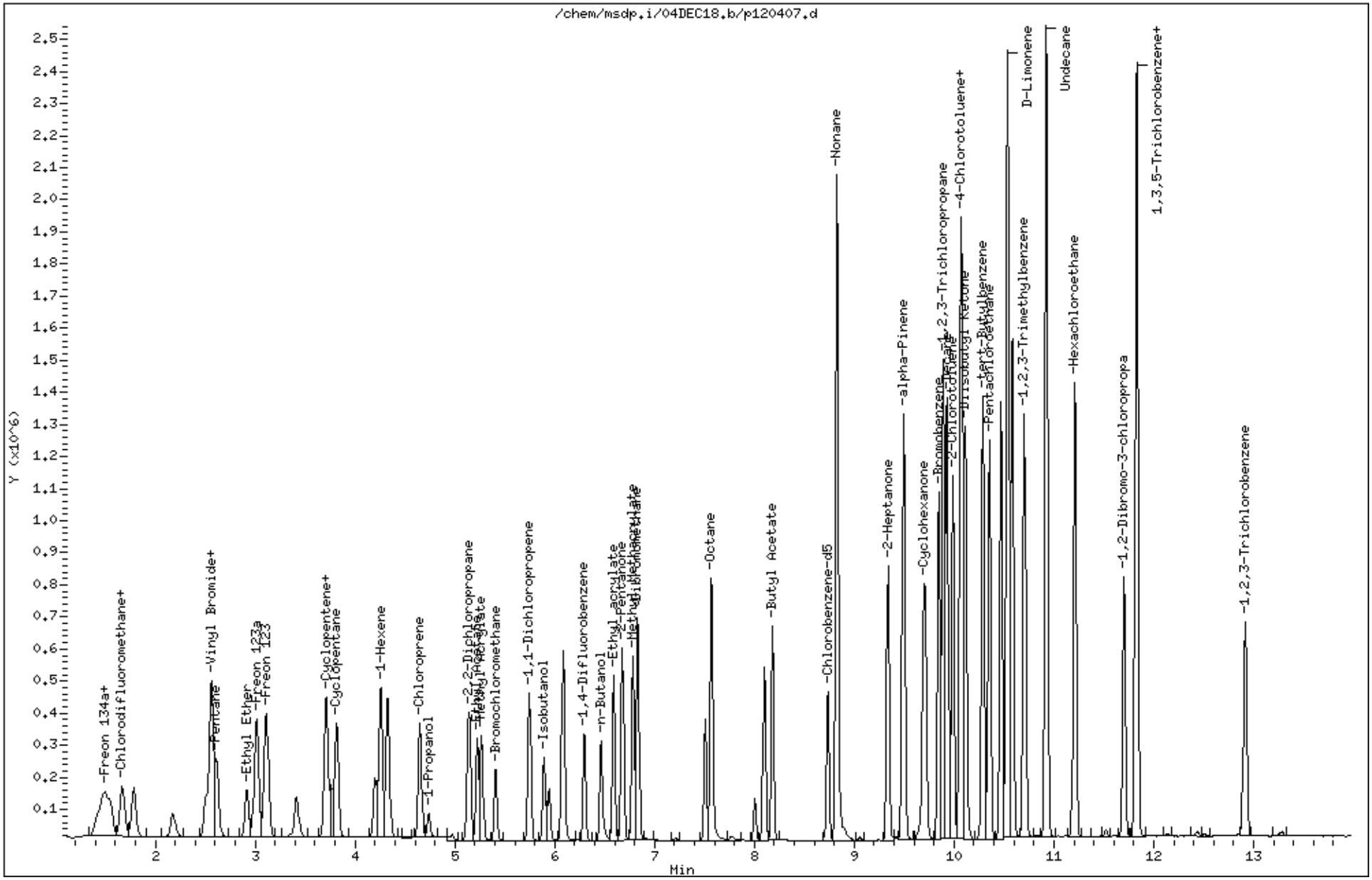
Data File: /chem/msdp.i/04DEC18.b/p120407.d
Date : 04-DEC-2018 14:19
Client ID: CCV
Sample Info: 50ml 3045-193

Instrument: msdp.i

Operator: mjb

Column phase: RTX-624

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/08NOV18a.b/p110818.d
Lab Smp Id: ICAL Level #6
Inj Date : 08-NOV-2018 21:40
Operator : gh Inst ID: msdp.i
Smp Info : 50ml 3018-509
Misc Info : 50ppbv(200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/08NOV18a.b/p18q1108a.m
Meth Date : 09-Nov-2018 17:31 ugdc Quant Type: ISTD
Cal Date : 08-NOV-2018 21:40 Cal File: p110818.d
Als bottle: 13 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12curve.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.411 (1.000)	130	92663	25.0000		80.00- 120.00	100.00
5.413	5.411 (1.000)	128	72924			48.70- 108.70	78.70
5.406	5.409 (1.000)	49	148556			130.32- 190.32	160.32
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.294	6.296 (1.000)	114	304426	25.0000		80.00- 120.00	100.00
6.294	6.295 (1.000)	88	42815			0.00- 44.06	14.06
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	330915	25.0000		80.00- 120.00	100.00
8.736	8.734 (1.000)	82	148392			14.84- 74.84	44.84
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
5.943	5.942 (1.098)	65	123826	25.0000	25.092	80.00- 120.00	100.00
5.943	5.943 (1.098)	67	69834			26.40- 86.40	56.40
$ 146 Toluene-d8					CAS #: 2037-26-5		
7.504	7.505 (1.192)	98	313625	25.0000	24.935	80.00- 120.00	100.00
7.504	7.504 (1.192)	70	31964			0.00- 40.19	10.19

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.504	7.505 (1.192)	100	216147			38.92- 98.92	68.92
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.718	9.719 (1.112)	174	217125	25.0000	25.843	80.00- 120.00	100.00
9.711	9.713 (1.111)	95	244330			82.53- 142.53	112.53
9.718	9.719 (1.112)	176	206491			65.10- 125.10	95.10
9 Propylene					CAS #: 115-07-1		
1.479	1.479 (0.273)	41	168976	50.0000	48.718	80.00- 120.00	100.00
1.479	1.481 (0.273)	42	113906			37.41- 97.41	67.41
1.479	1.479 (0.273)	39	122119			42.27- 102.27	72.27
11 Freon 12					CAS #: 75-71-8		
1.507	1.511 (0.278)	85	468539	50.0000	50.981	80.00- 120.00	100.00
1.507	1.511 (0.278)	87	150249			2.07- 62.07	32.07
15 Freon 114					CAS #: 76-14-2		
1.633	1.629 (0.302)	135	382754	50.0000	50.651	80.00- 120.00	100.00
1.633	1.629 (0.302)	137	122756			2.07- 62.07	32.07
17 Chloromethane					CAS #: 74-87-3		
1.716	1.723 (0.317)	50	228623	50.0000	54.280	80.00- 120.00	100.00
1.716	1.723 (0.317)	52	65745			0.00- 58.76	28.76
23 Butane					CAS #: 106-97-8		
1.786	1.791 (0.330)	58	36848	50.0000	46.999	80.00- 120.00	100.00
1.786	1.786 (0.330)	43	397310			1048.24-1108.24	1078.24
25 Vinyl Chloride					CAS #: 75-01-4		
1.814	1.818 (0.335)	62	207190	50.0000	55.433	80.00- 120.00	100.00
1.814	1.818 (0.335)	64	50823			0.00- 54.53	24.53
26 1,3-Butadiene					CAS #: 106-99-0		
1.842	1.842 (0.340)	54	204457	50.0000	58.374	80.00- 120.00	100.00
1.842	1.840 (0.340)	39	236314			85.58- 145.58	115.58
29 Bromomethane					CAS #: 74-83-9		
2.197	2.195 (0.406)	94	143534	50.0000	53.683	80.00- 120.00	100.00
2.197	2.195 (0.406)	96	136532			65.12- 125.12	95.12
30 Chloroethane					CAS #: 75-00-3		
2.304	2.304 (0.426)	64	79845	50.0000	50.339	80.00- 120.00	100.00
2.304	2.304 (0.426)	66	23743			0.00- 59.74	29.74
2.304	2.302 (0.426)	49	31854			9.89- 69.89	39.89

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.325	2.327 (0.430)	43	243464	50.0000	50.739	80.00- 120.00	100.00
2.325	2.327 (0.430)	57	149623			31.46- 91.46	61.46
35 Freon 11					CAS #: 75-69-4		
2.548	2.551 (0.471)	101	521839	50.0000	48.917	80.00- 120.00	100.00
2.548	2.551 (0.471)	103	335478			34.29- 94.29	64.29
42 Ethanol					CAS #: 64-17-5		
2.856	2.865 (0.528)	45	80465	50.0000	50.647	80.00- 120.00	100.00
2.856	2.863 (0.528)	46	31273			8.87- 68.87	38.87
49 Freon 113					CAS #: 76-13-1		
3.185	3.182 (0.588)	151	348991	50.0000	49.177	80.00- 120.00	100.00
3.185	3.184 (0.588)	153	225697			34.67- 94.67	64.67
3.185	3.181 (0.588)	101	382833			79.70- 139.70	109.70
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.214	3.214 (0.594)	98	94005	50.0000	52.510	80.00- 120.00	100.00
3.214	3.213 (0.594)	96	146755			126.11- 186.11	156.11
3.214	3.213 (0.594)	61	297736			286.72- 346.72	316.72
52 Acetone					CAS #: 67-64-1		
3.350	3.356 (0.619)	58	91437	50.0000	49.598	80.00- 120.00	100.00
3.350	3.357 (0.619)	43	343176			345.31- 405.31	375.31
56 Carbon Disulfide					CAS #: 75-15-0		
3.450	3.452 (0.637)	76	394919	50.0000	49.275	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.529	3.532 (0.652)	45	341478	50.0000	50.625	80.00- 120.00	100.00
3.529	3.530 (0.652)	43	78840			0.00- 53.09	23.09
3.529	3.530 (0.652)	59	11976			0.00- 33.51	3.51
58 3-Chloropropene					CAS #: 107-05-1		
3.686	3.685 (0.681)	76	57917	50.0000	51.518	80.00- 120.00	100.00
3.686	3.684 (0.681)	41	265331			428.12- 488.12	458.12
66 Methylene Chloride					CAS #: 75-09-2		
3.873	3.872 (0.715)	49	283246	50.0000	49.811	80.00- 120.00	100.00
3.873	3.872 (0.715)	84	131442			16.41- 76.41	46.41
3.873	3.872 (0.715)	51	84795			0.00- 59.94	29.94
71 tert-Butyl alcohol					CAS #: 75-65-0		
3.987	3.990 (0.737)	59	358758	50.0000	51.492	80.00- 120.00	100.00
3.987	3.989 (0.737)	41	102493			0.00- 58.57	28.57

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
71 tert-Butyl alcohol (continued)							
3.987	3.987 (0.737)	57	40355			0.00- 41.25	11.25
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.088	4.088 (0.755)	73	411203	50.0000	52.966	80.00- 120.00	100.00
4.088	4.088 (0.755)	57	128835			1.33- 61.33	31.33
4.088	4.089 (0.755)	41	156445			8.05- 68.05	38.05
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.109	4.112 (0.759)	98	97979	50.0000	53.139	80.00- 120.00	100.00
4.109	4.110 (0.759)	61	271586			247.19- 307.19	277.19
4.109	4.113 (0.759)	96	158134			131.40- 191.40	161.40
78 Hexane					CAS #: 110-54-3		
4.331	4.329 (0.800)	57	314779	50.0000	54.742	80.00- 120.00	100.00
4.331	4.329 (0.800)	43	228199			42.49- 102.49	72.49
4.331	4.329 (0.800)	86	38231			0.00- 42.15	12.15
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.596	4.598 (0.849)	63	345784	50.0000	50.628	80.00- 120.00	100.00
4.596	4.599 (0.849)	65	99220			0.00- 58.69	28.69
83 Isopropyl ether					CAS #: 108-20-3		
4.596	4.596 (0.849)	45	835594	50.0000	54.050	80.00- 120.00	100.00
4.596	4.596 (0.849)	87	141679			0.00- 46.96	16.96
4.596	4.596 (0.849)	59	83430			0.00- 39.98	9.98
86 Vinyl Acetate					CAS #: 108-05-4		
4.639	4.640 (0.857)	86	42750	50.0000	56.836	80.00- 120.00	100.00
4.639	4.639 (0.857)	43	754720			1735.43-1795.43	1765.43
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
4.954	4.951 (0.915)	59	678359	50.0000	53.270	80.00- 120.00	100.00
4.954	4.951 (0.915)	87	214691			1.65- 61.65	31.65
4.947	4.948 (0.914)	41	166977			0.00- 54.61	24.61
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.176	5.180 (0.956)	98	124020	50.0000	53.143	80.00- 120.00	100.00
5.176	5.180 (0.956)	96	190780			123.83- 183.83	153.83
5.176	5.177 (0.956)	61	303789			214.95- 274.95	244.95
92 2-Butanone					CAS #: 78-93-3		
5.198	5.200 (0.960)	72	71168	50.0000	51.065	80.00- 120.00	100.00
5.198	5.201 (0.960)	43	497626			669.23- 729.23	699.23
5.198	5.204 (0.960)	57	36220			20.89- 80.89	50.89

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.406	5.410 (0.999)	42	262841	50.0000	55.244	80.00- 120.00	100.00
5.413	5.412 (1.000)	71	63800			0.00- 54.27	24.27
5.413	5.412 (1.000)	72	64156			0.00- 54.41	24.41
100 Chloroform					CAS #: 67-66-3		
5.477	5.474 (1.012)	83	380521	50.0000	50.065	80.00- 120.00	100.00
5.477	5.474 (1.012)	85	260839			38.55- 98.55	68.55
102 Cyclohexane					CAS #: 110-82-7		
5.585	5.583 (1.032)	84	207853	50.0000	55.319	80.00- 120.00	100.00
5.585	5.584 (1.032)	56	372318			149.13- 209.13	179.13
5.585	5.583 (1.032)	41	217902			74.83- 134.83	104.83
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.599	5.598 (1.034)	97	446058	50.0000	50.108	80.00- 120.00	100.00
5.599	5.599 (1.034)	99	289946			35.00- 95.00	65.00
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.714	5.714 (1.056)	119	497030	50.0000	51.595	80.00- 120.00	100.00
5.714	5.713 (1.056)	117	514910			73.60- 133.60	103.60
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.913 (1.093)	57	1134180	50.0000	55.382	80.00- 120.00	100.00
5.914	5.914 (1.093)	56	380948			3.59- 63.59	33.59
5.914	5.912 (1.093)	41	342485			0.20- 60.20	30.20
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.942)	78	501246	50.0000	46.583	80.00- 120.00	100.00
5.921	5.925 (0.941)	77	120779			0.00- 54.10	24.10
119 tert-Amyl methyl ether					CAS #: 994-05-8		
6.000	6.000 (0.953)	87	132238	50.0000	53.349	80.00- 120.00	100.00
6.000	6.000 (0.953)	73	472343			327.19- 387.19	357.19
6.000	5.998 (0.953)	55	223671			139.14- 199.14	169.14
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.007	6.010 (0.954)	62	327646	50.0000	49.074	80.00- 120.00	100.00
6.007	6.009 (0.954)	64	99735			0.44- 60.44	30.44
121 Heptane					CAS #: 142-82-5		
6.086	6.085 (0.967)	71	165457	50.0000	54.757	80.00- 120.00	100.00
6.086	6.084 (0.967)	43	478890			259.43- 319.43	289.43
6.086	6.085 (0.967)	57	239091			114.50- 174.50	144.50
125 Trichloroethene					CAS #: 79-01-6		
6.494	6.494 (1.032)	95	264443	50.0000	49.038	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.494	6.494 (1.032)	130	314052			88.76- 148.76	118.76
6.494	6.494 (1.032)	97	172730			35.32- 95.32	65.32
127 Methylcyclohexane					CAS #: 108-87-2		
6.595	6.595 (1.048)	83	301700	50.0000	53.814	80.00- 120.00	100.00
6.595	6.595 (1.048)	98	151816			20.32- 80.32	50.32
6.595	6.595 (1.048)	55	388905			98.90- 158.90	128.90
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.724	6.724 (1.068)	63	234833	50.0000	50.113	80.00- 120.00	100.00
6.724	6.724 (1.068)	62	168474			41.74- 101.74	71.74
6.724	6.724 (1.068)	41	166765			41.01- 101.01	71.01
136 1,4-Dioxane					CAS #: 123-91-1		
6.817	6.817 (1.083)	88	124060	50.0000	52.005	80.00- 120.00	100.00
6.817	6.817 (1.083)	58	120159			66.86- 126.86	96.86
6.810	6.816 (1.082)	57	38859			1.32- 61.32	31.32
138 Bromodichloromethane					CAS #: 75-27-4		
6.953	6.953 (1.105)	83	432607	50.0000	49.072	80.00- 120.00	100.00
6.953	6.952 (1.105)	85	285422			35.98- 95.98	65.98
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.325	7.325 (1.164)	75	292978	50.0000	50.947	80.00- 120.00	100.00
7.325	7.325 (1.164)	77	95836			2.71- 62.71	32.71
7.325	7.325 (1.164)	39	216373			43.85- 103.85	73.85
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.433	7.433 (1.181)	58	213850	50.0000	52.714	80.00- 120.00	100.00
7.433	7.433 (1.181)	43	636949			267.85- 327.85	297.85
7.433	7.434 (1.181)	85	73863			4.54- 64.54	34.54
147 Toluene					CAS #: 108-88-3		
7.562	7.562 (1.201)	91	697867	50.0000	48.840	80.00- 120.00	100.00
7.562	7.562 (1.201)	92	410913			28.88- 88.88	58.88
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.798	7.798 (0.893)	75	303558	50.0000	51.811	80.00- 120.00	100.00
7.798	7.798 (0.893)	77	99174			2.67- 62.67	32.67
7.798	7.798 (0.893)	39	205205			37.60- 97.60	67.60
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.956	7.956 (0.911)	97	263330	50.0000	49.811	80.00- 120.00	100.00
7.956	7.956 (0.911)	99	160274			30.86- 90.86	60.86
7.956	7.956 (0.911)	83	204725			47.74- 107.74	77.74

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
156 Tetrachloroethene					CAS #: 127-18-4		
7.999	8.001 (0.916)	166	431518	50.0000	50.288	80.00- 120.00	100.00
7.999	7.999 (0.916)	129	338564			48.46- 108.46	78.46
7.999	7.999 (0.916)	131	325465			45.42- 105.42	75.42
158 2-Hexanone					CAS #: 591-78-6		
8.120	8.120 (0.929)	58	281915	50.0000	54.034	80.00- 120.00	100.00
8.120	8.120 (0.929)	43	607715			185.57- 245.57	215.57
8.120	8.120 (0.929)	100	45877			0.00- 46.27	16.27
160 Dibromochloromethane					CAS #: 124-48-1		
8.271	8.268 (0.947)	129	599146	50.0000	49.261	80.00- 120.00	100.00
8.271	8.269 (0.947)	127	464980			47.61- 107.61	77.61
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
8.378	8.378 (0.959)	107	440604	50.0000	50.909	80.00- 120.00	100.00
8.378	8.378 (0.959)	109	435715			68.89- 128.89	98.89
165 Chlorobenzene					CAS #: 108-90-7		
8.758	8.758 (1.002)	112	670952	50.0000	49.637	80.00- 120.00	100.00
8.758	8.758 (1.002)	114	213871			1.88- 61.88	31.88
8.758	8.757 (1.002)	77	341453			20.89- 80.89	50.89
167 Ethyl Benzene					CAS #: 100-41-4		
8.808	8.808 (1.008)	106	321860	50.0000	53.715	80.00- 120.00	100.00
8.808	8.808 (1.008)	91	962215			268.95- 328.95	298.95
169 m,p-Xylene					CAS #: 108-38-3		
8.908	8.906 (1.020)	106	409265	50.0000	55.588	80.00- 120.00	100.00
8.908	8.907 (1.020)	91	774319			159.20- 219.20	189.20
171 o-Xylene					CAS #: 95-47-6		
9.245	9.245 (1.058)	106	380955	50.0000	55.160	80.00- 120.00	100.00
9.245	9.245 (1.058)	91	774225			173.23- 233.23	203.23
172 Styrene					CAS #: 100-42-5		
9.266	9.266 (1.061)	104	667734	50.0000	57.544	80.00- 120.00	100.00
9.266	9.266 (1.061)	78	306041			15.83- 75.83	45.83
174 Bromoform					CAS #: 75-25-2		
9.460	9.460 (1.083)	173	561643	50.0000	50.153	80.00- 120.00	100.00
9.460	9.460 (1.083)	171	290645			21.75- 81.75	51.75
175 Cumene					CAS #: 98-82-8		
9.531	9.531 (1.091)	105	1280596	50.0000	57.112	80.00- 120.00	100.00
9.531	9.531 (1.091)	120	365367			0.00- 58.53	28.53

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
175 Cumene (continued)							
9.531	9.531 (1.091)	51	171987			0.00- 43.43	13.43
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.840	9.839 (1.126)	83	557310	50.0000	49.204	80.00- 120.00	100.00
9.840	9.839 (1.126)	85	384504			38.99- 98.99	68.99
182 Propylbenzene					CAS #: 103-65-1		
9.875	9.874 (1.130)	91	1373031	50.0000	53.928	80.00- 120.00	100.00
9.875	9.875 (1.130)	120	370381			0.00- 56.98	26.98
9.875	9.874 (1.130)	105	57927			0.00- 34.22	4.22
188 4-Ethyltoluene					CAS #: 622-96-8		
9.968	9.967 (1.141)	120	412675	50.0000	54.858	80.00- 120.00	100.00
9.968	9.966 (1.141)	105	1267247			277.08- 337.08	307.08
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.019	10.019 (1.147)	120	591046	50.0000	56.051	80.00- 120.00	100.00
10.019	10.019 (1.147)	105	1154659			165.36- 225.36	195.36
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.341	10.341 (1.184)	120	505844	50.0000	57.120	80.00- 120.00	100.00
10.341	10.340 (1.184)	105	1031345			173.89- 233.89	203.89
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.620	10.622 (1.216)	146	843924	50.0000	51.358	80.00- 120.00	100.00
10.620	10.623 (1.216)	148	543135			34.36- 94.36	64.36
10.620	10.621 (1.216)	111	317996			7.68- 67.68	37.68
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.706	10.706 (1.225)	146	860069	50.0000	52.708	80.00- 120.00	100.00
10.706	10.705 (1.225)	148	547330			33.64- 93.64	63.64
10.699	10.702 (1.225)	111	305580			5.53- 65.53	35.53
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.814	10.814 (1.238)	91	923006	50.0000	53.629	80.00- 120.00	100.00
10.814	10.817 (1.238)	126	237735			0.00- 55.76	25.76
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.029	11.029 (1.262)	146	814070	50.0000	51.737	80.00- 120.00	100.00
11.029	11.029 (1.262)	148	517961			33.63- 93.63	63.63
11.029	11.029 (1.262)	111	315014			8.70- 68.70	38.70
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.411	12.411 (1.421)	180	663748	50.0000	51.654	80.00- 120.00	100.00
12.411	12.411 (1.421)	182	642637			66.82- 126.82	96.82

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
227 Hexachlorobutadiene					CAS #: 87-68-3		
12.504	12.504 (1.431)	225	519598	50.0000	50.502	80.00- 120.00	100.00
12.504	12.504 (1.431)	223	328388			33.20- 93.20	63.20
228 Naphthalene					CAS #: 91-20-3		
12.669	12.669 (1.450)	128	139488	5.00000	5.147	80.00- 120.00	100.00
12.669	12.670 (1.450)	127	18298			0.00- 43.12	13.12

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p110818.d
Lab Smp Id: ICAL Level #6
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msdp.i/08NOV18a.b/p18q1108a.m
Misc Info: 50ppbv(200ppbv)

Calibration Date: 08-NOV-2018
Calibration Time: 21:40

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	92663	55598	129728	92663	0.00
123 1,4-Difluorobenze	304426	182656	426196	304426	0.00
163 Chlorobenzene-d5	330915	198549	463281	330915	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/08NOV18a.b/p110818.d

Date : 08-NOV-2018 21:40

Client ID:

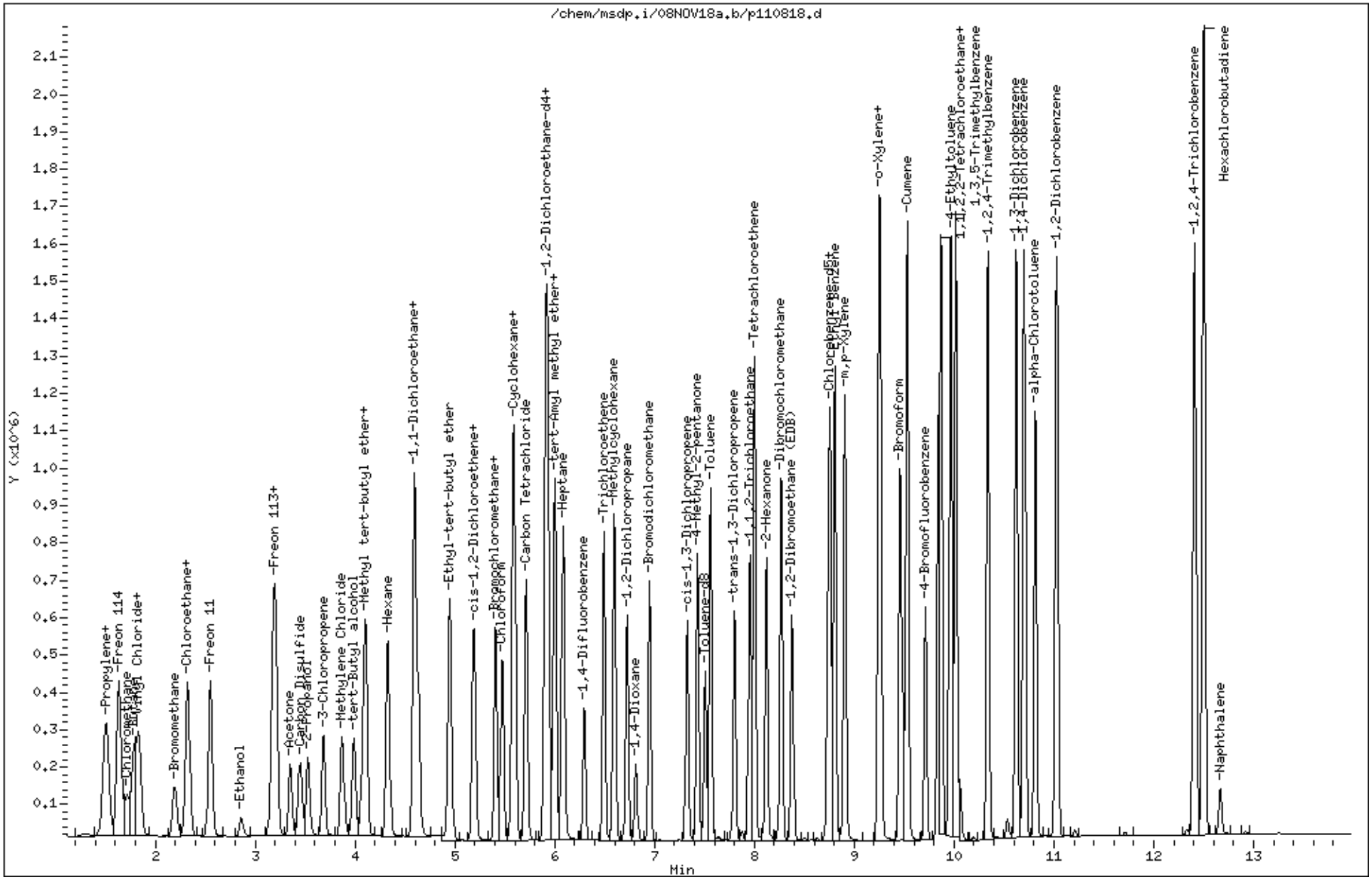
Sample Info: 50ml 3018-509

Column phase: RTX-624

Instrument: msdp.i

Operator: gh

Column diameter: 0.25



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EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/26NOV18.b/p092730.d
Lab Smp Id: ICAL Level #6 Client Smp ID: ICAL Level #6
Inj Date : 28-SEP-2018 01:04
Operator : mb Inst ID: msdp.i
Smp Info : 50ml 3045-111
Misc Info : 50ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/26NOV18.b/p18q1108b.m
Meth Date : 21-Nov-2018 15:21 ugdc Quant Type: ISTD
Cal Date : 08-NOV-2018 21:40 Cal File: p110818.d
Als bottle: 6 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT5CRV.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.414 (1.000)	130	162118	25.0000		80.00- 120.00	100.00
5.413	5.414 (1.000)	128	125078			48.70- 108.70	77.15
5.413	5.411 (1.000)	49	217091			130.32- 190.32	133.91
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.301 (1.000)	114	484572	25.0000		80.00- 120.00	100.00
6.301	6.301 (1.000)	88	69688			0.00- 44.06	14.38
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	566566	25.0000		80.00- 120.00	100.00
8.736	8.736 (1.000)	82	245019			14.84- 74.84	43.25
74 Acrylonitrile					CAS #: 107-13-1		
4.202	4.201 (0.776)	52	235479	50.0000	49.740	0.00- 0.00	100.00
4.202	4.200 (0.776)	53	285741			0.00- 0.00	121.34
157 1,3-Dichloropropane					CAS #: 142-28-9		
8.099	8.100 (1.285)	76	559149	50.0000	50.932	0.00- 0.00	100.00
8.099	8.099 (1.285)	41	490744			0.00- 0.00	87.77

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
157 1,3-Dichloropropane (continued)							
8.099	8.101 (1.285)	78	189748			0.00- 0.00	33.94
168 1,1,1,2-Tetrachloroethane					CAS #: 630-20-6		
8.829	8.829 (1.011)	131	789507	50.0000	49.895	0.00- 0.00	100.00
8.829	8.829 (1.011)	117	501208			0.00- 0.00	63.48
8.829	8.829 (1.011)	95	260058			0.00- 0.00	32.94
203 sec-Butylbenzene					CAS #: 135-98-8		
10.477	10.474 (1.199)	134	569917	50.0000	58.976	0.00- 0.00	100.00
10.470	10.472 (1.198)	105	2456594			0.00- 0.00	431.04
10.470	10.471 (1.198)	91	381786			0.00- 0.00	66.99
213 Butylbenzene					CAS #: 104-51-8		
10.935	10.935 (1.252)	134	697793	50.0000	55.458	0.00- 0.00	100.00
10.928	10.934 (1.251)	91	2164797			0.00- 0.00	310.23
10.928	10.931 (1.251)	92	1123514			0.00- 0.00	161.01
207 p-Cymene					CAS #: 99-87-6		
10.584	10.584 (1.212)	119	2653203	50.0000	58.613	0.00- 0.00	100.00
10.584	10.584 (1.212)	134	732671			0.00- 0.00	27.61
10.584	10.584 (1.212)	91	556174			0.00- 0.00	20.96

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p092730.d
Lab Smp Id: ICAL Level #6
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msdp.i/26NOV18.b/p18q1108b.m
Misc Info: 50ppbv (200ppbv)

Calibration Date: 28-SEP-2018
Calibration Time: 01:04
Client Smp ID: ICAL Level #6
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	162118	97271	226965	162118	0.00
123 1,4-Difluorobenze	484572	290743	678401	484572	0.00
163 Chlorobenzene-d5	566566	339940	793192	566566	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.30	5.97	6.63	6.30	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/26NOV18.b/p092730.d

Date : 28-SEP-2018 01:04

Client ID: ICAL Level #6

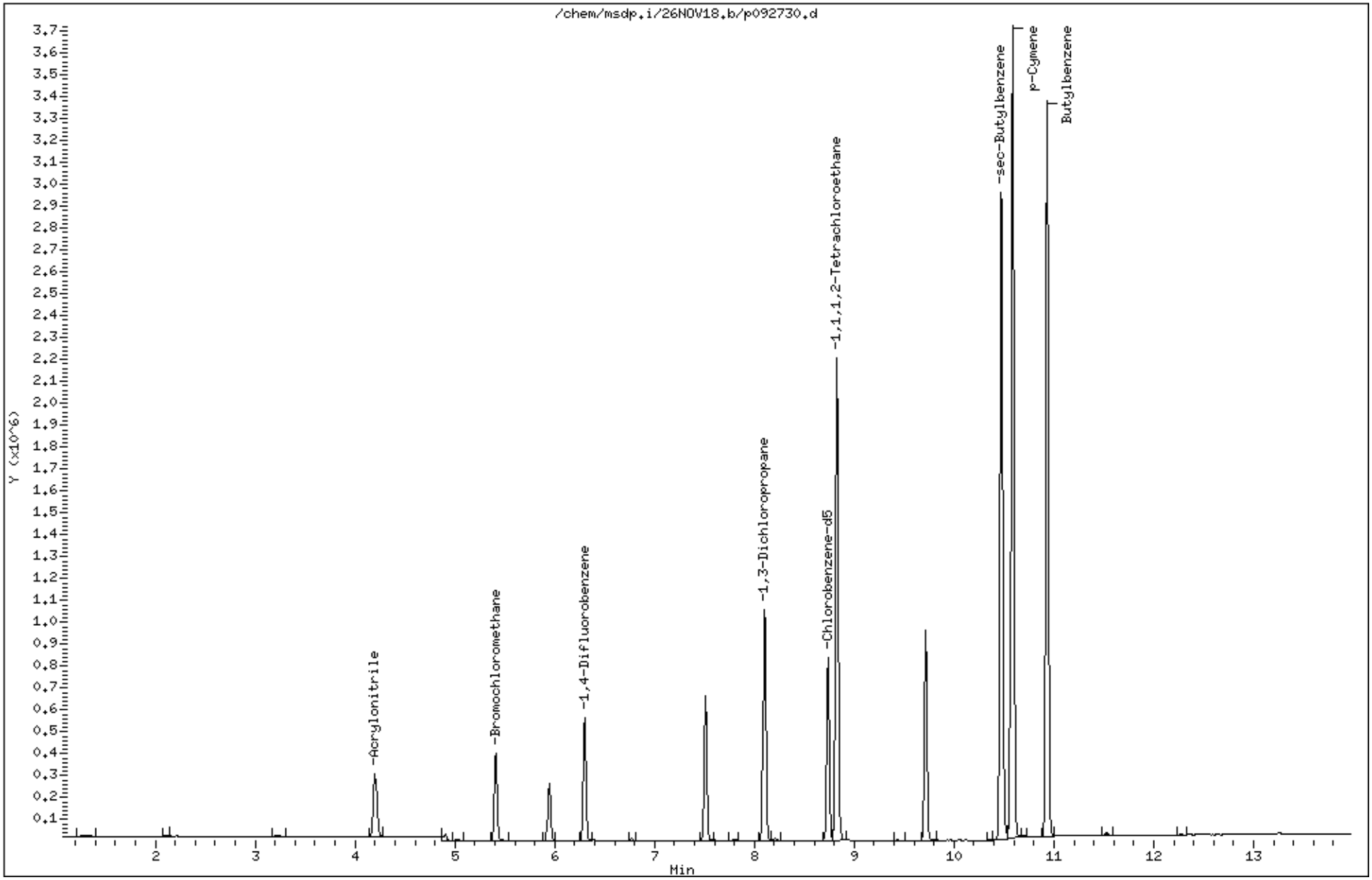
Sample Info: 50ml 3045-111

Column phase: RTX-624

Instrument: msdp.i

Operator: mb

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/04DEC18.b/p120414.d
Lab Smp Id: ICAL Level#7
Inj Date : 04-DEC-2018 17:40
Operator : mjb Inst ID: msdp.i
Smp Info : 100ml 3045-197
Misc Info : 100ppbv (200 ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/04DEC18.b/p18q1108c.m
Meth Date : 05-Dec-2018 16:38 ugdc Quant Type: ISTD
Cal Date : 04-DEC-2018 17:40 Cal File: p120414.d
Als bottle: 9 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT4mAcrCRV.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
63 Acetonitrile					CAS #: 75-05-8		
3.772	3.772 (0.697)	39	62077	100.000	86.088	0.00- 0.00	100.00
3.772	3.770 (0.697)	41	333086			0.00- 0.00	536.57
3.772	3.770 (0.697)	40	179029			0.00- 0.00	288.40
184 trans-1,4-Dichloro-2-butene					CAS #: 110-57-6		
9.890	9.890 (1.132)	75	314820	100.000	106.24	0.00- 0.00	100.00
9.890	9.890 (1.132)	89	198568			0.00- 0.00	63.07
9.890	9.890 (1.132)	53	388653			0.00- 0.00	123.45
206 bis(2-Chloroethyl) Ether					CAS #: 111-44-4		
10.549	10.547 (1.207)	93	947678	100.000	97.692	0.00- 0.00	100.00
10.549	10.546 (1.207)	95	303215			0.00- 0.00	32.00
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.413 (1.000)	130	83356	25.0000		80.00- 120.00	100.00
5.413	5.413 (1.000)	128	66854			48.70- 108.70	80.20
5.413	5.409 (1.000)	49	124758			130.32- 190.32	149.67
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.299 (1.000)	114	263151	25.0000		80.00- 120.00	100.00

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 123 1,4-Difluorobenzene (continued)								
6.294	6.297	(1.000)	88	35442			0.00- 44.06	13.47
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.736	8.736	(1.000)	117	298326	25.0000		80.00- 120.00	100.00
8.736	8.736	(1.000)	82	127793			14.84- 74.84	42.84

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p120414.d
Lab Smp Id: ICAL Level#7
Analysis Type: VOA
Quant Type: ISTD
Operator: mjb
Method File: /chem/msdp.i/04DEC18.b/p18q1108c.m
Misc Info: 100ppbv (200 ppbv)

Calibration Date: 04-DEC-2018
Calibration Time: 10:52

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	86668	52001	121335	83356	-3.82
123 1,4-Difluorobenze	277096	166258	387934	263151	-5.03
163 Chlorobenzene-d5	303080	181848	424312	298326	-1.57

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.30	0.11
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/04DEC18.b/p120414.d

Date : 04-DEC-2018 17:40

Client ID:

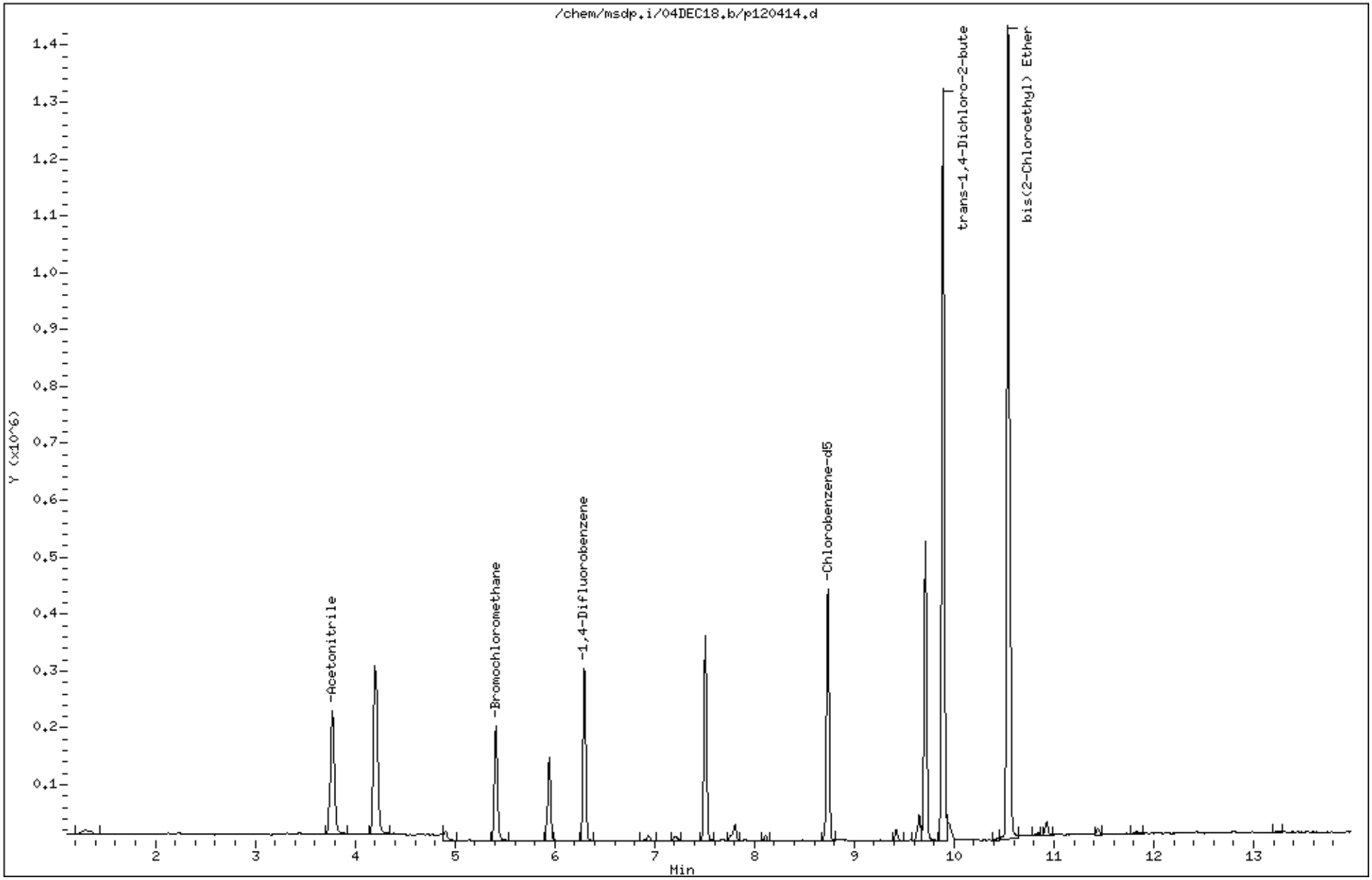
Sample Info: 100ml 3045-197

Column phase: RTX-624

Instrument: msdp.i

Operator: mjb

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/04DEC18.b/p120408.d
Lab Smp Id: ICAL Level #7
Inj Date : 04-DEC-2018 14:45
Operator : mjb Inst ID: msdp.i
Smp Info : 100ml 3045-193
Misc Info : 100ppbv (200 ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/04DEC18.b/p18q1108c.m
Meth Date : 05-Dec-2018 12:49 ugdc Quant Type: ISTD
Cal Date : 04-DEC-2018 17:40 Cal File: p120414.d
Als bottle: 11 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: MasterCRVM4M5.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
7 Freon 134a					CAS #: 811-97-2		
1.451	1.456 (0.268)	83	238272	100.000	104.00	0.00- 0.00	100.00
1.451	1.448 (0.268)	69	239789			0.00- 0.00	100.64
8 Propane					CAS #: 74-98-6		
1.479	1.484 (0.273)	39	74807	100.000	86.273	0.00- 0.00	100.00
1.479	1.481 (0.273)	44	117298			0.00- 0.00	156.80
1.479	1.484 (0.273)	43	102524			0.00- 0.00	137.05
10 1,1-Difluoroethane					CAS #: 75-37-6		
1.507	1.509 (0.278)	65	100884	100.000	101.76	0.00- 0.00	100.00
1.549	1.546 (0.286)	51	814928			0.00- 0.00	807.79
1.507	1.512 (0.278)	47	67521			0.00- 0.00	66.93
13 Chlorodifluoromethane					CAS #: 75-45-6		
1.549	1.557 (0.286)	67	69151	100.000	105.58	0.00- 0.00	100.00
1.549	1.546 (0.286)	51	814928			0.00- 0.00	1178.48
1.675	1.672 (0.309)	85	76614			0.00- 0.00	110.79
16 Freon 142b					CAS #: 75-68-3		
1.675	1.669 (0.309)	65	627536	100.000	96.912	0.00- 0.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
16 Freon 142b (continued)							
1.675	1.669 (0.309)	45	166490			0.00- 0.00	26.53
32 Vinyl Bromide					CAS #: 593-60-2		
2.512	2.510 (0.464)	106	296759	100.000	101.39	0.00- 0.00	100.00
2.512	2.510 (0.464)	108	288663			0.00- 0.00	97.27
34 Pentane					CAS #: 109-66-0		
2.619	2.618 (0.484)	43	475064	100.000	99.666	0.00- 0.00	100.00
2.619	2.619 (0.484)	57	69836			0.00- 0.00	14.70
2.619	2.619 (0.484)	72	31688			0.00- 0.00	6.67
36 1-Pentene					CAS #: 109-67-1		
2.562	2.562 (0.473)	55	398979	100.000	100.75	0.00- 0.00	100.00
2.562	2.562 (0.473)	42	508392			0.00- 0.00	127.42
37 Dichlorofluoromethane					CAS #: 75-43-4		
2.562	2.562 (0.473)	67	635618	100.000	99.381	0.00- 0.00	100.00
2.562	2.560 (0.473)	69	204562			0.00- 0.00	32.18
44 Ethyl Ether					CAS #: 60-29-7		
2.920	2.920 (0.539)	74	132653	100.000	99.534	0.00- 0.00	100.00
2.920	2.920 (0.539)	59	274007			0.00- 0.00	206.56
47 Freon 123a					CAS #: 354-23-4		
3.020	3.016 (0.558)	117	555999	100.000	101.29	0.00- 0.00	100.00
3.013	3.013 (0.557)	67	562545			0.00- 0.00	101.18
48 Freon 123					CAS #: 306-83-2		
3.114	3.113 (0.575)	83	657473	100.000	100.93	0.00- 0.00	100.00
3.114	3.112 (0.575)	133	200065			0.00- 0.00	30.43
3.114	3.113 (0.575)	85	456626			0.00- 0.00	69.45
59 Cyclopentene					CAS #: 142-29-0		
3.701	3.702 (0.684)	67	441278	100.000	102.60	0.00- 0.00	100.00
3.701	3.701 (0.684)	68	156516			0.00- 0.00	35.47
3.701	3.701 (0.684)	53	139712			0.00- 0.00	31.66
61 Methyl Acetate					CAS #: 79-20-9		
3.722	3.722 (0.688)	43	949349	100.000	100.34	0.00- 0.00	100.00
3.722	3.722 (0.688)	74	127801			0.00- 0.00	13.46
64 Cyclopentane					CAS #: 287-92-3		
3.823	3.817 (0.706)	70	153739	100.000	103.98	0.00- 0.00	100.00
3.815	3.815 (0.705)	55	328277			0.00- 0.00	213.53

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
76 1-Hexene					CAS #: 592-41-6		
4.260	4.254 (0.787)	55	332133	100.000	107.80	0.00- 0.00	100.00
4.252	4.252 (0.786)	41	501981			0.00- 0.00	151.14
4.260	4.257 (0.787)	84	86915			0.00- 0.00	26.17
84 1-Propanol					CAS #: 71-23-8		
4.740	4.739 (0.876)	59	78838	100.000	110.14	0.00- 0.00	100.00
4.740	4.739 (0.876)	42	75947			0.00- 0.00	96.33
4.740	4.738 (0.876)	41	50603			0.00- 0.00	64.19
85 Chloroprene					CAS #: 126-99-8		
4.654	4.651 (0.860)	53	655573	100.000	107.34	0.00- 0.00	100.00
4.654	4.651 (0.860)	88	243192			0.00- 0.00	37.10
4.654	4.649 (0.860)	50	171269			0.00- 0.00	26.13
90 2,2-Dichloropropane					CAS #: 594-20-7		
5.141	5.141 (0.950)	77	592698	100.000	102.40	0.00- 0.00	100.00
5.141	5.139 (0.950)	79	190648			0.00- 0.00	32.17
5.141	5.141 (0.950)	97	118633			0.00- 0.00	20.02
94 Ethyl Acetate					CAS #: 141-78-6		
5.227	5.225 (0.966)	70	59755	100.000	103.34	0.00- 0.00	100.00
5.227	5.225 (0.966)	61	110213			0.00- 0.00	184.44
5.227	5.225 (0.966)	45	146973			0.00- 0.00	245.96
93 Methyl Acrylate					CAS #: 96-33-3		
5.270	5.270 (0.974)	55	942923	100.000	107.22	0.00- 0.00	100.00
5.270	5.270 (0.974)	85	105689			0.00- 0.00	11.21
5.270	5.270 (0.974)	58	77487			0.00- 0.00	8.22
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.412 (1.000)	130	88136	25.0000		80.00- 120.00	100.00
5.413	5.412 (1.000)	128	66539			48.70- 108.70	75.50
5.413	5.408 (1.000)	49	129916			130.32- 190.32	147.40
107 1,1-Dichloropropene					CAS #: 563-58-6		
5.750	5.749 (0.912)	110	199176	100.000	103.82	0.00- 0.00	100.00
5.750	5.747 (0.912)	75	445316			0.00- 0.00	223.58
115 Isobutanol					CAS #: 78-83-1		
5.893	5.894 (0.935)	39	96626	100.000	88.354	0.00- 0.00	100.00
5.893	5.893 (0.935)	43	384225			0.00- 0.00	397.64
5.893	5.894 (0.935)	41	286514			0.00- 0.00	296.52
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.298 (1.000)	114	297813	25.0000		80.00- 120.00	100.00

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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

* 123 1,4-Difluorobenzene (continued)
  6.294   6.297 (1.000)    88     42585                     0.00-  44.06    14.30
-------------------------------------------------------------------------------
  124 n-Butanol                                   CAS #: 71-36-3
  6.466   6.466 (1.026)    56    383123 100.000   99.208   0.00-   0.00   100.00
  6.466   6.466 (1.026)    41    290175                     0.00-   0.00    75.74
  6.466   6.466 (1.026)    43    221871                     0.00-   0.00    57.91
-------------------------------------------------------------------------------
  128 Ethyl acrylate                              CAS #: 140-88-5
  6.588   6.590 (0.754)    99     69162 100.000   108.90   0.00-   0.00   100.00
  6.588   6.588 (0.754)    45    122462                     0.00-   0.00   177.07
  6.588   6.588 (0.754)    55   1288052                     0.00-   0.00  1862.37
-------------------------------------------------------------------------------
  131 2-Pentanone                                 CAS #: 107-87-9
  6.681   6.679 (0.765)    43   1550589 100.000   107.36   0.00-   0.00   100.00
  6.681   6.679 (0.765)    58    112196                     0.00-   0.00     7.24
  6.681   6.681 (0.765)    86    194736                     0.00-   0.00    12.56
-------------------------------------------------------------------------------
  134 Methyl Methacrylate                         CAS #: 80-62-6
  6.781   6.782 (0.776)    41    753414 100.000   106.66   0.00-   0.00   100.00
  6.781   6.782 (0.776)    69    381673                     0.00-   0.00    50.66
  6.781   6.784 (0.776)   100    177055                     0.00-   0.00    23.50
-------------------------------------------------------------------------------
  137 Dibromomethane                              CAS #: 74-95-3
  6.838   6.832 (0.783)   174    619298 100.000   101.38   0.00-   0.00   100.00
  6.831   6.831 (0.782)    93    540081                     0.00-   0.00    87.21
  6.831   6.831 (0.782)    95    435402                     0.00-   0.00    70.31
-------------------------------------------------------------------------------
  148 Octane                                      CAS #: 111-65-9
  7.569   7.569 (1.201)    57    400981 100.000   108.28   0.00-   0.00   100.00
  7.576   7.572 (1.202)    85    336443                     0.00-   0.00    83.90
  7.569   7.569 (1.201)    43   1060799                     0.00-   0.00   264.55
-------------------------------------------------------------------------------
  159 Butyl Acetate                               CAS #: 123-86-4
  8.185   8.183 (1.299)    56    481354 100.000   110.59   0.00-   0.00   100.00
  8.185   8.183 (1.299)    73    131806                     0.00-   0.00    27.38
  8.185   8.183 (1.299)    43   1240410                     0.00-   0.00   257.69
-------------------------------------------------------------------------------
* 163 Chlorobenzene-d5                            CAS #: 3114-55-4
  8.736   8.736 (1.000)   117    317074 25.0000            80.00- 120.00   100.00
  8.736   8.736 (1.000)    82    137622                    14.84-  74.84    43.40
-------------------------------------------------------------------------------
  170 Nonane                                      CAS #: 111-84-2
  8.830   8.830 (1.011)    43   1134911 100.000   115.76   0.00-   0.00   100.00
  8.830   8.830 (1.011)    57    928195                     0.00-   0.00    81.79
  8.830   8.830 (1.011)    85    268365                     0.00-   0.00    23.65
-------------------------------------------------------------------------------
```

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
173 2-Heptanone					CAS #: 110-43-0		
9.338	9.338 (1.725)	58	851263	100.000	116.85	0.00- 0.00	100.00
9.338	9.338 (1.725)	43	1469387			0.00- 0.00	172.61
176 Cyclohexanone					CAS #: 108-94-1		
9.689	9.689 (1.109)	55	692437	100.000	107.62	0.00- 0.00	100.00
9.689	9.689 (1.109)	98	220826			0.00- 0.00	31.89
9.689	9.689 (1.109)	42	455273			0.00- 0.00	65.75
179 alpha-Pinene					CAS #: 80-56-8		
9.496	9.494 (1.087)	93	1323924	100.000	115.17	0.00- 0.00	100.00
9.496	9.494 (1.087)	77	393150			0.00- 0.00	29.70
180 Bromobenzene					CAS #: 108-86-1		
9.847	9.847 (1.127)	156	817342	100.000	103.75	0.00- 0.00	100.00
9.847	9.847 (1.127)	158	788576			0.00- 0.00	96.48
9.847	9.847 (1.127)	77	1013026			0.00- 0.00	123.94
185 1,2,3-Trichloropropane					CAS #: 96-18-4		
9.897	9.894 (1.133)	110	360747	100.000	100.57	0.00- 0.00	100.00
9.890	9.890 (1.132)	75	1108948			0.00- 0.00	307.40
9.890	9.891 (1.132)	61	273135			0.00- 0.00	75.71
187 Decane					CAS #: 124-18-5		
9.933	9.933 (1.137)	57	1261852	100.000	114.90	0.00- 0.00	100.00
9.933	9.933 (1.137)	71	332677			0.00- 0.00	26.36
9.933	9.931 (1.137)	142	66295			0.00- 0.00	5.25
189 2-Chlorotoluene					CAS #: 95-49-8		
9.990	9.989 (1.143)	126	639162	100.000	107.22	0.00- 0.00	100.00
9.990	9.987 (1.143)	91	1486923			0.00- 0.00	232.64
9.983	9.986 (1.143)	65	147605			0.00- 0.00	23.09
191 4-Chlorotoluene					CAS #: 106-43-4		
10.083	10.083 (1.154)	126	685749	100.000	107.71	0.00- 0.00	100.00
10.083	10.079 (1.154)	91	1941030			0.00- 0.00	283.05
10.083	10.080 (1.154)	63	264834			0.00- 0.00	38.62
192 beta-Pinene					CAS #: 127-91-3		
10.062	10.062 (1.152)	93	1152045	100.000	115.15	0.00- 0.00	100.00
10.083	10.079 (1.154)	91	1941030			0.00- 0.00	168.49
193 Diisobutyl Ketone					CAS #: 108-83-8		
10.112	10.112 (1.157)	57	1646687	100.000	113.64	0.00- 0.00	100.00
10.112	10.112 (1.157)	85	1047039			0.00- 0.00	63.58

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
195 tert-Butylbenzene					CAS #: 98-06-6		
10.284	10.287 (1.177)	119	1989520	100.000	111.91	0.00- 0.00	100.00
10.291	10.288 (1.178)	134	506566			0.00- 0.00	25.46
10.284	10.284 (1.177)	91	1149637			0.00- 0.00	57.78
197 Pentachloroethane					CAS #: 76-01-7		
10.355	10.355 (1.185)	167	635850	100.000	104.80	0.00- 0.00	100.00
10.355	10.355 (1.185)	117	618891			0.00- 0.00	97.33
10.355	10.355 (1.185)	169	305943			0.00- 0.00	48.12
199 D-Limonene					CAS #: 5989-27-5		
10.534	10.534 (1.206)	68	1005384	100.000	116.21	0.00- 0.00	100.00
10.542	10.542 (1.207)	93	2036654			0.00- 0.00	202.57
10.534	10.534 (1.206)	136	274257			0.00- 0.00	27.28
210 1,2,3-Trimethylbenzene					CAS #: 526-73-8		
10.706	10.706 (1.225)	120	925217	100.000	111.44	0.00- 0.00	100.00
10.706	10.706 (1.225)	105	2012066			0.00- 0.00	217.47
10.706	10.705 (1.225)	77	221331			0.00- 0.00	23.92
215 Undecane					CAS #: 1120-21-4		
10.914	10.917 (1.249)	57	1378065	100.000	113.94	0.00- 0.00	100.00
10.914	10.915 (1.249)	43	1262081			0.00- 0.00	91.58
217 Hexachloroethane					CAS #: 67-72-1		
11.208	11.208 (1.283)	201	646282	100.000	111.27	0.00- 0.00	100.00
11.208	11.208 (1.283)	117	837764			0.00- 0.00	129.63
221 1,2-Dibromo-3-chloropropane					CAS #: 96-12-8		
11.702	11.702 (1.339)	157	677252	100.000	102.83	0.00- 0.00	100.00
11.702	11.702 (1.339)	75	477310			0.00- 0.00	70.48
11.702	11.702 (1.339)	155	520868			0.00- 0.00	76.91
224 1,3,5-Trichlorobenzene					CAS #: 108-70-3		
11.831	11.831 (1.354)	180	1323364	100.000	105.80	0.00- 0.00	100.00
11.831	11.831 (1.354)	182	1264371			0.00- 0.00	95.54
225 Dodecane					CAS #: 112-40-3		
11.824	11.824 (1.353)	57	1254702	100.000	122.51	0.00- 0.00	100.00
11.824	11.824 (1.353)	43	1066102			0.00- 0.00	84.97
229 1,2,3-Trichlorobenzene					CAS #: 87-61-6		
12.920	12.918 (1.479)	180	868262	100.000	104.74	0.00- 0.00	100.00
12.920	12.920 (1.479)	182	825901			0.00- 0.00	95.12
12.913	12.914 (1.478)	145	295085			0.00- 0.00	33.99

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p120408.d
Lab Smp Id: ICAL Level #7
Analysis Type: VOA
Quant Type: ISTD
Operator: mjb
Method File: /chem/msdp.i/04DEC18.b/p18q1108c.m
Misc Info: 100ppbv (200 ppbv)

Calibration Date: 04-DEC-2018
Calibration Time: 10:52

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	86668	52001	121335	88136	1.69
123 1,4-Difluorobenze	277096	166258	387934	297813	7.48
163 Chlorobenzene-d5	303080	181848	424312	317074	4.62

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.30	0.11
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

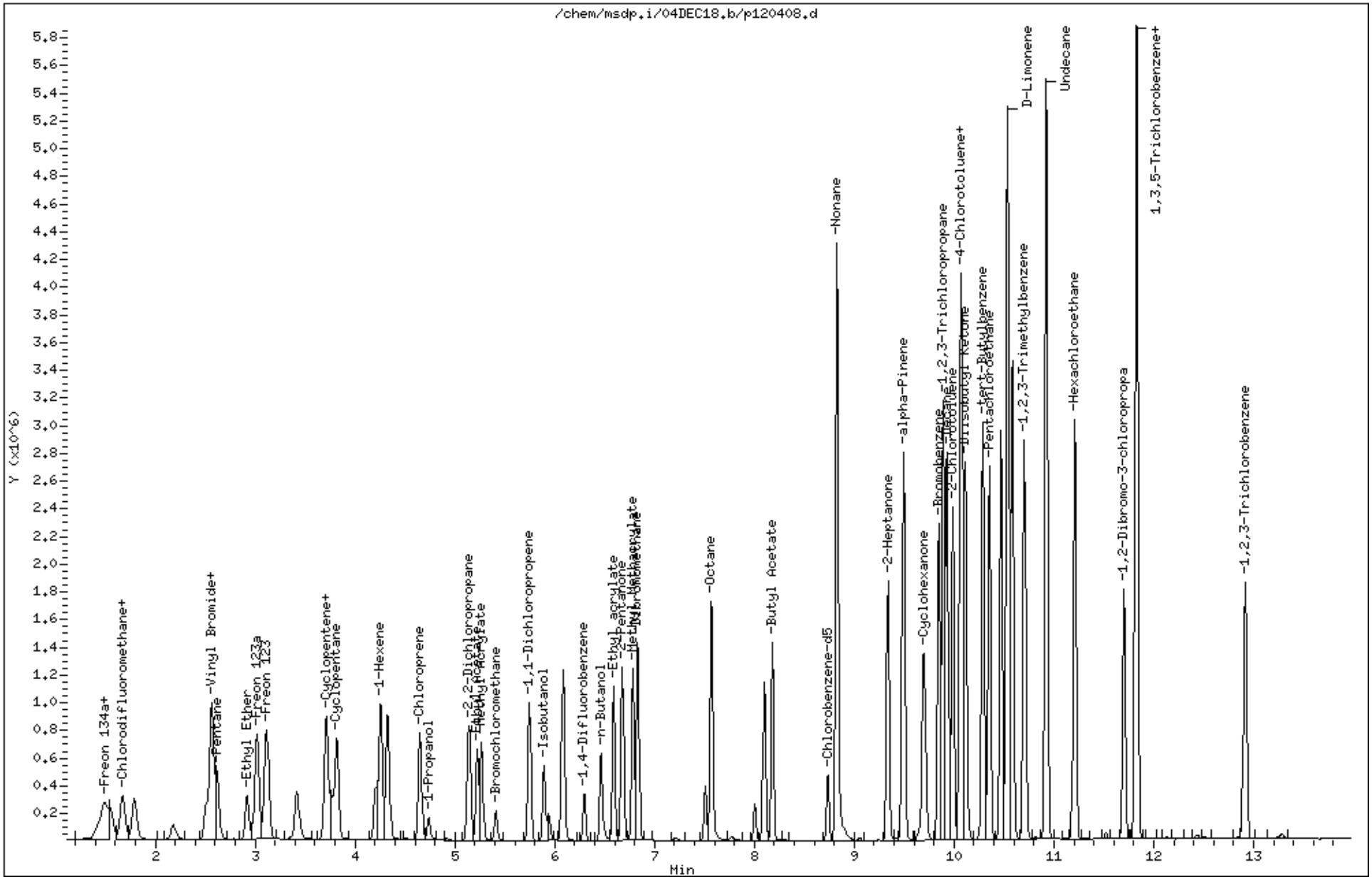
Data File: /chem/msdp.i/04DEC18.b/p120408.d
Date : 04-DEC-2018 14:45
Client ID:
Sample Info: 100ml 3045-193

Instrument: msdp.i

Operator: mjb

Column phase: RTX-624

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/08NOV18a.b/p110819.d
Lab Smp Id: ICAL Level #7
Inj Date : 08-NOV-2018 22:06
Operator : gh Inst ID: msdp.i
Smp Info : 100ml 3018-509
Misc Info : 100ppbv(200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/08NOV18a.b/p18q1108a.m
Meth Date : 09-Nov-2018 17:32 ugdc Quant Type: ISTD
Cal Date : 08-NOV-2018 22:06 Cal File: p110819.d
Als bottle: 13 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12curve.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.411 (1.000)	130	93737	25.0000		80.00- 120.00	100.00
5.413	5.411 (1.000)	128	74265			48.70- 108.70	79.23
5.413	5.409 (1.000)	49	146178			130.32- 190.32	155.94
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.294	6.296 (1.000)	114	308583	25.0000		80.00- 120.00	100.00
6.294	6.295 (1.000)	88	43516			0.00- 44.06	14.10
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.737	8.736 (1.000)	117	340345	25.0000		80.00- 120.00	100.00
8.737	8.734 (1.000)	82	150527			14.84- 74.84	44.23
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
5.943	5.942 (1.098)	65	126780	25.0000	25.396	80.00- 120.00	100.00
5.943	5.943 (1.098)	67	73668			26.40- 86.40	58.11
$ 146 Toluene-d8					CAS #: 2037-26-5		
7.504	7.505 (1.192)	98	320892	25.0000	25.169	80.00- 120.00	100.00
7.504	7.504 (1.192)	70	31973			0.00- 40.19	9.96

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.504	7.505 (1.192)	100	217410			38.92- 98.92	67.75
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.718	9.719 (1.112)	174	222513	25.0000	25.750	80.00- 120.00	100.00
9.711	9.713 (1.111)	95	244928			82.53- 142.53	110.07
9.718	9.719 (1.112)	176	210377			65.10- 125.10	94.55
9 Propylene					CAS #: 115-07-1		
1.479	1.479 (0.273)	41	351414	100.000	100.16	80.00- 120.00	100.00
1.479	1.481 (0.273)	42	235981			37.41- 97.41	67.15
1.479	1.479 (0.273)	39	248052			42.27- 102.27	70.59
11 Freon 12					CAS #: 75-71-8		
1.507	1.511 (0.278)	85	945273	100.000	101.67	80.00- 120.00	100.00
1.507	1.511 (0.278)	87	304161			2.07- 62.07	32.18
15 Freon 114					CAS #: 76-14-2		
1.633	1.629 (0.302)	135	778774	100.000	101.88	80.00- 120.00	100.00
1.633	1.629 (0.302)	137	251093			2.07- 62.07	32.24
17 Chloromethane					CAS #: 74-87-3		
1.731	1.723 (0.320)	50	438734	100.000	102.97	80.00- 120.00	100.00
1.731	1.723 (0.320)	52	130187			0.00- 58.76	29.67
23 Butane					CAS #: 106-97-8		
1.787	1.791 (0.330)	58	92950	100.000	117.20	80.00- 120.00	100.00
1.787	1.786 (0.330)	43	778923			1048.24-1108.24	838.00
25 Vinyl Chloride					CAS #: 75-01-4		
1.815	1.818 (0.335)	62	396575	100.000	104.89	80.00- 120.00	100.00
1.815	1.818 (0.335)	64	129864			0.00- 54.53	32.75
26 1,3-Butadiene					CAS #: 106-99-0		
1.843	1.842 (0.340)	54	409966	100.000	115.71	80.00- 120.00	100.00
1.843	1.840 (0.340)	39	508571			85.58- 145.58	124.05
29 Bromomethane					CAS #: 74-83-9		
2.197	2.195 (0.406)	94	294883	100.000	109.02	80.00- 120.00	100.00
2.197	2.195 (0.406)	96	277031			65.12- 125.12	93.95
30 Chloroethane					CAS #: 75-00-3		
2.304	2.304 (0.426)	64	162479	100.000	101.26	80.00- 120.00	100.00
2.304	2.304 (0.426)	66	47004			0.00- 59.74	28.93
2.304	2.302 (0.426)	49	66123			9.89- 69.89	40.70

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.326	2.327 (0.430)	43	506521	100.000	104.35	80.00- 120.00	100.00
2.326	2.327 (0.430)	57	314592			31.46- 91.46	62.11
35 Freon 11					CAS #: 75-69-4		
2.555	2.551 (0.472)	101	1057956	100.000	98.036	80.00- 120.00	100.00
2.555	2.551 (0.472)	103	688683			34.29- 94.29	65.10
42 Ethanol					CAS #: 64-17-5		
2.863	2.865 (0.529)	45	163838	100.000	101.94	80.00- 120.00	100.00
2.863	2.863 (0.529)	46	61583			8.87- 68.87	37.59
49 Freon 113					CAS #: 76-13-1		
3.185	3.182 (0.588)	151	704991	100.000	98.203	80.00- 120.00	100.00
3.185	3.184 (0.588)	153	447666			34.67- 94.67	63.50
3.185	3.181 (0.588)	101	781663			79.70- 139.70	110.88
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.214	3.214 (0.594)	98	198999	100.000	109.88	80.00- 120.00	100.00
3.214	3.213 (0.594)	96	309709			126.11- 186.11	155.63
3.214	3.213 (0.594)	61	626170			286.72- 346.72	314.66
52 Acetone					CAS #: 67-64-1		
3.357	3.356 (0.620)	58	187133	100.000	100.34	80.00- 120.00	100.00
3.357	3.357 (0.620)	43	673529			345.31- 405.31	359.92
56 Carbon Disulfide					CAS #: 75-15-0		
3.457	3.452 (0.639)	76	792386	100.000	97.735	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.529	3.532 (0.652)	45	730977	100.000	107.13	80.00- 120.00	100.00
3.529	3.530 (0.652)	43	156027			0.00- 53.09	21.34
3.529	3.530 (0.652)	59	25382			0.00- 33.51	3.47
58 3-Chloropropene					CAS #: 107-05-1		
3.687	3.685 (0.681)	76	121393	100.000	106.74	80.00- 120.00	100.00
3.687	3.684 (0.681)	41	561633			428.12- 488.12	462.66
66 Methylene Chloride					CAS #: 75-09-2		
3.873	3.872 (0.715)	49	577323	100.000	100.36	80.00- 120.00	100.00
3.873	3.872 (0.715)	84	267008			16.41- 76.41	46.25
3.873	3.872 (0.715)	51	175521			0.00- 59.94	30.40
71 tert-Butyl alcohol					CAS #: 75-65-0		
3.987	3.990 (0.737)	59	774411	100.000	109.88	80.00- 120.00	100.00
3.987	3.989 (0.737)	41	206909			0.00- 58.57	26.72

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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   71 tert-Butyl alcohol (continued)
  3.987   3.987 (0.737)    57     85024                     0.00-  41.25    10.98
-------------------------------------------------------------------------------
   72 Methyl tert-butyl ether                        CAS #: 1634-04-4
  4.088   4.088 (0.755)    73    867448 100.000   110.45  80.00- 120.00   100.00
  4.088   4.088 (0.755)    57    277058                    1.33-  61.33    31.94
  4.088   4.089 (0.755)    41    306422                    8.05-  68.05    35.32
-------------------------------------------------------------------------------
   73 trans-1,2-Dichloroethene                       CAS #: 156-60-5
  4.116   4.112 (0.760)    98    205110 100.000   109.97  80.00- 120.00   100.00
  4.109   4.110 (0.759)    61    557807                  247.19- 307.19   271.96
  4.116   4.113 (0.760)    96    319857                  131.40- 191.40   155.94
-------------------------------------------------------------------------------
   78 Hexane                                         CAS #: 110-54-3
  4.331   4.329 (0.800)    57    683428 100.000   117.49  80.00- 120.00   100.00
  4.331   4.329 (0.800)    43    480057                   42.49- 102.49    70.24
  4.331   4.329 (0.800)    86     76478                    0.00-  42.15    11.19
-------------------------------------------------------------------------------
   82 1,1-Dichloroethane                             CAS #: 75-34-3
  4.603   4.598 (0.850)    63    705557 100.000   102.12  80.00- 120.00   100.00
  4.603   4.599 (0.850)    65    207348                    0.00-  58.69    29.39
-------------------------------------------------------------------------------
   83 Isopropyl ether                                CAS #: 108-20-3
  4.596   4.596 (0.849)    45   1759935 100.000   112.54  80.00- 120.00   100.00
  4.596   4.596 (0.849)    87    303237                    0.00-  46.96    17.23
  4.596   4.596 (0.849)    59    174165                    0.00-  39.98     9.90
-------------------------------------------------------------------------------
   86 Vinyl Acetate                                  CAS #: 108-05-4
  4.639   4.640 (0.857)    86     89031 100.000   117.01  80.00- 120.00   100.00
  4.639   4.639 (0.857)    43   1563329                  1735.43-1795.43  1755.94
-------------------------------------------------------------------------------
   88 Ethyl-tert-butyl ether                         CAS #: 637-92-3
  4.947   4.951 (0.914)    59   1450047 100.000   112.56  80.00- 120.00   100.00
  4.954   4.951 (0.915)    87    458069                    1.65-  61.65    31.59
  4.947   4.948 (0.914)    41    324398                    0.00-  54.61    22.37
-------------------------------------------------------------------------------
   91 cis-1,2-Dichloroethene                         CAS #: 156-59-2
  5.184   5.180 (0.958)    98    252778 100.000   107.08  80.00- 120.00   100.00
  5.184   5.180 (0.958)    96    392539                  123.83- 183.83   155.29
  5.176   5.177 (0.956)    61    613084                  214.95- 274.95   242.54
-------------------------------------------------------------------------------
   92 2-Butanone                                     CAS #: 78-93-3
  5.198   5.200 (0.960)    72    146277 100.000   103.75  80.00- 120.00   100.00
  5.198   5.201 (0.960)    43   1012695                  669.23- 729.23   692.31
  5.205   5.204 (0.962)    57     72700                   20.89-  80.89    49.70
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RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.406	5.410 (0.999)	42	547538	100.000	113.76	80.00- 120.00	100.00
5.413	5.412 (1.000)	71	129188			0.00- 54.27	23.59
5.413	5.412 (1.000)	72	134488			0.00- 54.41	24.56
100 Chloroform					CAS #: 67-66-3		
5.477	5.474 (1.012)	83	773195	100.000	100.56	80.00- 120.00	100.00
5.477	5.474 (1.012)	85	522541			38.55- 98.55	67.58
102 Cyclohexane					CAS #: 110-82-7		
5.585	5.583 (1.032)	84	432060	100.000	113.67	80.00- 120.00	100.00
5.585	5.584 (1.032)	56	772814			149.13- 209.13	178.87
5.585	5.583 (1.032)	41	443200			74.83- 134.83	102.58
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.599	5.598 (1.034)	97	900232	100.000	99.968	80.00- 120.00	100.00
5.599	5.599 (1.034)	99	589251			35.00- 95.00	65.46
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.714	5.714 (1.056)	119	1005746	100.000	103.21	80.00- 120.00	100.00
5.714	5.713 (1.056)	117	1049825			73.60- 133.60	104.38
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.913 (1.093)	57	2399908	100.000	115.84	80.00- 120.00	100.00
5.914	5.914 (1.093)	56	792227			3.59- 63.59	33.01
5.914	5.912 (1.093)	41	673798			0.20- 60.20	28.08
116 Benzene					CAS #: 71-43-2		
5.929	5.928 (0.942)	78	1031113	100.000	94.535	80.00- 120.00	100.00
5.929	5.925 (0.942)	77	244815			0.00- 54.10	23.74
119 tert-Amyl methyl ether					CAS #: 994-05-8		
6.000	6.000 (0.953)	87	282418	100.000	112.40	80.00- 120.00	100.00
6.000	6.000 (0.953)	73	1002091			327.19- 387.19	354.83
5.993	5.998 (0.952)	55	443972			139.14- 199.14	157.20
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.015	6.010 (0.956)	62	655263	100.000	96.822	80.00- 120.00	100.00
6.007	6.009 (0.954)	64	200651			0.44- 60.44	30.62
121 Heptane					CAS #: 142-82-5		
6.086	6.085 (0.967)	71	338844	100.000	110.63	80.00- 120.00	100.00
6.086	6.084 (0.967)	43	999377			259.43- 319.43	294.94
6.086	6.085 (0.967)	57	490103			114.50- 174.50	144.64
125 Trichloroethene					CAS #: 79-01-6		
6.494	6.494 (1.032)	95	542753	100.000	99.291	80.00- 120.00	100.00

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  125 Trichloroethene (continued)
  6.494   6.494 (1.032)   130    651904                    88.76- 148.76   120.11
  6.494   6.494 (1.032)    97    349058                    35.32-  95.32    64.31
-------------------------------------------------------------------------------
  127 Methylcyclohexane                              CAS #: 108-87-2
  6.595   6.595 (1.048)    83    628727 100.000   110.64  80.00- 120.00   100.00
  6.595   6.595 (1.048)    98    326432                    20.32-  80.32    51.92
  6.595   6.595 (1.048)    55    792745                    98.90- 158.90   126.09
-------------------------------------------------------------------------------
  132 1,2-Dichloropropane                            CAS #: 78-87-5
  6.724   6.724 (1.068)    63    481815 100.000   101.43  80.00- 120.00   100.00
  6.724   6.724 (1.068)    62    346025                    41.74- 101.74    71.82
  6.724   6.724 (1.068)    41    324287                    41.01- 101.01    67.31
-------------------------------------------------------------------------------
  136 1,4-Dioxane                                    CAS #: 123-91-1
  6.817   6.817 (1.083)    88    256972 100.000   106.27  80.00- 120.00   100.00
  6.817   6.817 (1.083)    58    249018                    66.86- 126.86    96.90
  6.817   6.816 (1.083)    57     82351                     1.32-  61.32    32.05
-------------------------------------------------------------------------------
  138 Bromodichloromethane                           CAS #: 75-27-4
  6.953   6.953 (1.105)    83    884102 100.000   98.935  80.00- 120.00   100.00
  6.953   6.952 (1.105)    85    589219                    35.98-  95.98    66.65
-------------------------------------------------------------------------------
  144 cis-1,3-Dichloropropene                        CAS #: 10061-01-5
  7.325   7.325 (1.164)    75    618046 100.000   106.03  80.00- 120.00   100.00
  7.325   7.325 (1.164)    77    207327                     2.71-  62.71    33.55
  7.325   7.325 (1.164)    39    453802                    43.85- 103.85    73.43
-------------------------------------------------------------------------------
  145 4-Methyl-2-pentanone                           CAS #: 108-10-1
  7.433   7.433 (1.181)    58    452574 100.000   110.06  80.00- 120.00   100.00
  7.433   7.433 (1.181)    43   1324701                   267.85- 327.85   292.70
  7.433   7.434 (1.181)    85    152130                     4.54-  64.54    33.61
-------------------------------------------------------------------------------
  147 Toluene                                        CAS #: 108-88-3
  7.562   7.562 (1.201)    91   1452465 100.000   100.28  80.00- 120.00   100.00
  7.562   7.562 (1.201)    92    836559                    28.88-  88.88    57.60
-------------------------------------------------------------------------------
  150 trans-1,3-Dichloropropene                      CAS #: 10061-02-6
  7.798   7.798 (0.893)    75    633490 100.000   105.13  80.00- 120.00   100.00
  7.798   7.798 (0.893)    77    208629                     2.67-  62.67    32.93
  7.798   7.798 (0.893)    39    424479                    37.60-  97.60    67.01
-------------------------------------------------------------------------------
  155 1,1,2-Trichloroethane                          CAS #: 79-00-5
  7.956   7.956 (0.911)    97    529078 100.000   97.307  80.00- 120.00   100.00
  7.956   7.956 (0.911)    99    333427                    30.86-  90.86    63.02
  7.956   7.956 (0.911)    83    415968                    47.74- 107.74    78.62
-------------------------------------------------------------------------------
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  156 Tetrachloroethene                              CAS #: 127-18-4
  7.999   8.001 (0.916)   166    886015 100.000   100.39  80.00- 120.00   100.00
  7.999   7.999 (0.916)   129    695548                   48.46- 108.46    78.50
  7.999   7.999 (0.916)   131    665669                   45.42- 105.42    75.13
-------------------------------------------------------------------------------
  158 2-Hexanone                                     CAS #: 591-78-6
  8.120   8.120 (0.929)    58    605955 100.000   112.92  80.00- 120.00   100.00
  8.120   8.120 (0.929)    43   1279199                  185.57- 245.57   211.10
  8.120   8.120 (0.929)   100     98979                    0.00-  46.27    16.33
-------------------------------------------------------------------------------
  160 Dibromochloromethane                           CAS #: 124-48-1
  8.271   8.268 (0.947)   129   1241118 100.000   99.216  80.00- 120.00   100.00
  8.271   8.269 (0.947)   127    970737                   47.61- 107.61    78.21
-------------------------------------------------------------------------------
  161 1,2-Dibromoethane (EDB)                        CAS #: 106-93-4
  8.378   8.378 (0.959)   107    914175 100.000   102.70  80.00- 120.00   100.00
  8.378   8.378 (0.959)   109    902239                   68.89- 128.89    98.69
-------------------------------------------------------------------------------
  165 Chlorobenzene                                  CAS #: 108-90-7
  8.758   8.758 (1.002)   112   1397116 100.000   100.50  80.00- 120.00   100.00
  8.758   8.758 (1.002)   114    448842                    1.88-  61.88    32.13
  8.758   8.757 (1.002)    77    695369                   20.89-  80.89    49.77
-------------------------------------------------------------------------------
  167 Ethyl Benzene                                  CAS #: 100-41-4
  8.808   8.808 (1.008)   106    679850 100.000   110.32  80.00- 120.00   100.00
  8.808   8.808 (1.008)    91   2018812                  268.95- 328.95   296.95
-------------------------------------------------------------------------------
  169 m,p-Xylene                                     CAS #: 108-38-3
  8.908   8.906 (1.020)   106    850838 100.000   112.36  80.00- 120.00   100.00
  8.908   8.907 (1.020)    91   1643179                  159.20- 219.20   193.12
-------------------------------------------------------------------------------
  171 o-Xylene                                       CAS #: 95-47-6
  9.245   9.245 (1.058)   106    800936 100.000   112.76  80.00- 120.00   100.00
  9.245   9.245 (1.058)    91   1633343                  173.23- 233.23   203.93
-------------------------------------------------------------------------------
  172 Styrene                                        CAS #: 100-42-5
  9.267   9.266 (1.061)   104   1387598 100.000   116.27  80.00- 120.00   100.00
  9.267   9.266 (1.061)    78    655724                   15.83-  75.83    47.26
-------------------------------------------------------------------------------
  174 Bromoform                                      CAS #: 75-25-2
  9.460   9.460 (1.083)   173   1160899 100.000   100.79  80.00- 120.00   100.00
  9.460   9.460 (1.083)   171    591223                   21.75-  81.75    50.93
-------------------------------------------------------------------------------
  175 Cumene                                         CAS #: 98-82-8
  9.532   9.531 (1.091)   105   2676626 100.000   116.06  80.00- 120.00   100.00
  9.532   9.531 (1.091)   120    764481                    0.00-  58.53    28.56
```

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
175 Cumene (continued)							
9.532	9.531 (1.091)	51	353406			0.00- 43.43	13.20
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.840	9.839 (1.126)	83	1123333	100.000	96.429	80.00- 120.00	100.00
9.840	9.839 (1.126)	85	763884			38.99- 98.99	68.00
182 Propylbenzene					CAS #: 103-65-1		
9.875	9.874 (1.130)	91	2856657	100.000	109.09	80.00- 120.00	100.00
9.875	9.875 (1.130)	120	777736			0.00- 56.98	27.23
9.875	9.874 (1.130)	105	113135			0.00- 34.22	3.96
188 4-Ethyltoluene					CAS #: 622-96-8		
9.961	9.967 (1.140)	120	861707	100.000	111.38	80.00- 120.00	100.00
9.961	9.966 (1.140)	105	2637487			277.08- 337.08	306.08
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.019	10.019 (1.147)	120	1225301	100.000	112.98	80.00- 120.00	100.00
10.019	10.019 (1.147)	105	2382229			165.36- 225.36	194.42
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.341	10.341 (1.184)	120	1079909	100.000	118.56	80.00- 120.00	100.00
10.341	10.340 (1.184)	105	2211512			173.89- 233.89	204.79
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.620	10.622 (1.216)	146	1737786	100.000	102.82	80.00- 120.00	100.00
10.620	10.623 (1.216)	148	1111433			34.36- 94.36	63.96
10.620	10.621 (1.216)	111	646166			7.68- 67.68	37.18
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.706	10.706 (1.225)	146	1764038	100.000	105.11	80.00- 120.00	100.00
10.706	10.705 (1.225)	148	1134761			33.64- 93.64	64.33
10.699	10.702 (1.225)	111	626561			5.53- 65.53	35.52
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.814	10.814 (1.238)	91	1942566	100.000	109.74	80.00- 120.00	100.00
10.814	10.817 (1.238)	126	503405			0.00- 55.76	25.91
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.029	11.029 (1.262)	146	1679293	100.000	103.77	80.00- 120.00	100.00
11.029	11.029 (1.262)	148	1061334			33.63- 93.63	63.20
11.029	11.029 (1.262)	111	641250			8.70- 68.70	38.19
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.411	12.411 (1.421)	180	1457499	100.000	110.28	80.00- 120.00	100.00
12.411	12.411 (1.421)	182	1378113			66.82- 126.82	94.55

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
227 Hexachlorobutadiene						CAS #: 87-68-3		
12.504	12.504	(1.431)	225	1090753	100.000	103.08	80.00- 120.00	100.00
12.504	12.504	(1.431)	223	679686			33.20- 93.20	62.31
228 Naphthalene						CAS #: 91-20-3		
12.669	12.669	(1.450)	128	308421	10.0000	11.065	80.00- 120.00	100.00
12.669	12.670	(1.450)	127	39236			0.00- 43.12	12.72

Report Date: 09-Nov-2018 17:32

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p110819.d
Lab Smp Id: ICAL Level #7
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msdp.i/08NOV18a.b/p18q1108a.m
Misc Info: 100ppbv(200ppbv)

Calibration Date: 08-NOV-2018
Calibration Time: 21:40

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	92663	55598	129728	93737	1.16
123 1,4-Difluorobenze	304426	182656	426196	308583	1.37
163 Chlorobenzene-d5	330915	198549	463281	340345	2.85

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/08NOV18a.b/p110819.d

Date : 08-NOV-2018 22:06

Client ID:

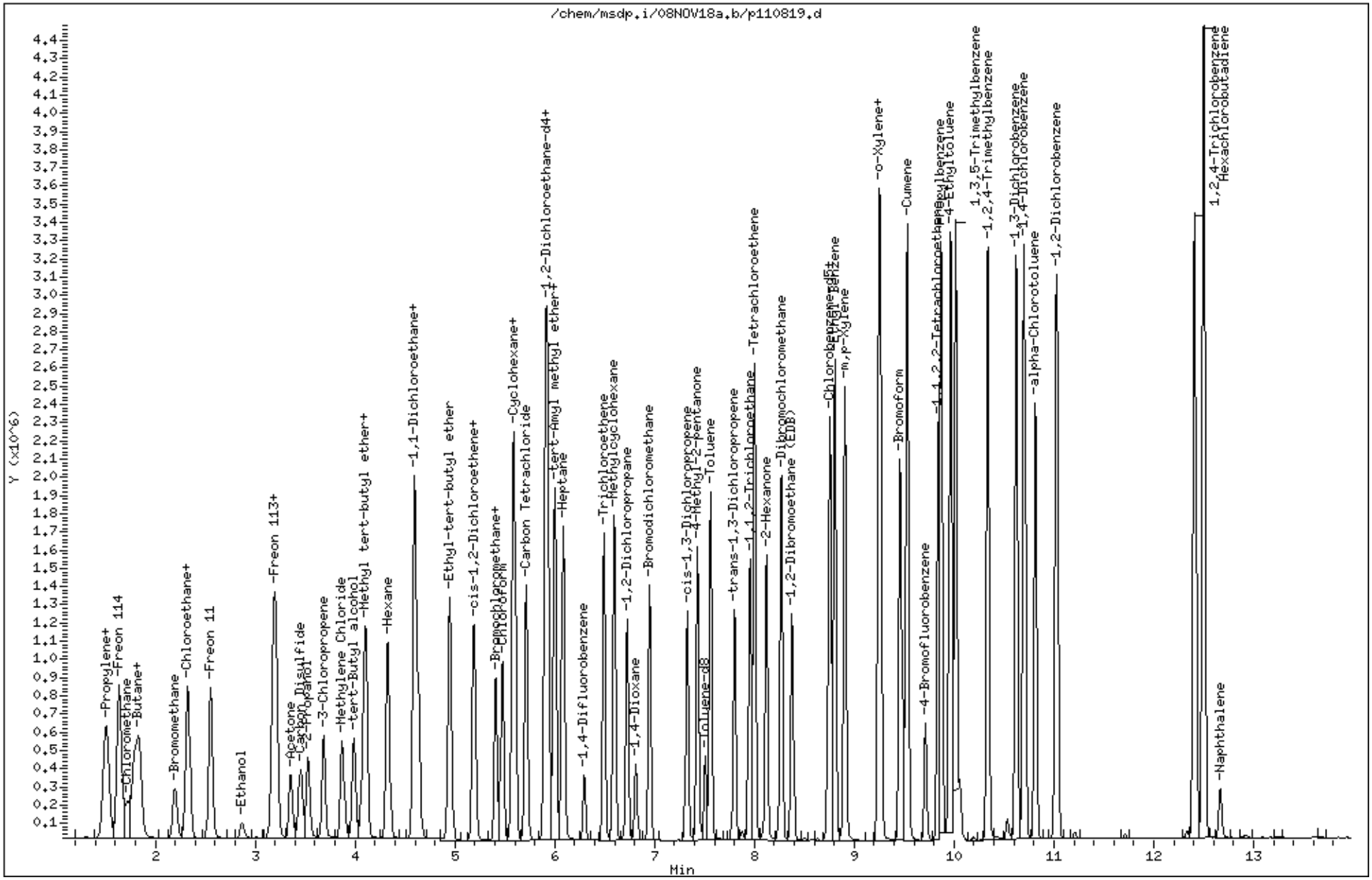
Sample Info: 100ml 3018-509

Column phase: RTX-624

Instrument: msdp.i

Operator: gh

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/26NOV18.b/p092731.d
Lab Smp Id: ICAL Level #7 Client Smp ID: ICAL Level #7
Inj Date : 28-SEP-2018 01:28
Operator : mb Inst ID: msdp.i
Smp Info : 100ml 3045-111
Misc Info : 100ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/26NOV18.b/p18q1108b.m
Meth Date : 27-Nov-2018 08:30 ugdc Quant Type: ISTD
Cal Date : 08-NOV-2018 22:06 Cal File: p110819.d
Als bottle: 6 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT5CRV.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.414 (1.000)	130	158868	25.0000		80.00- 120.00	100.00
5.413	5.414 (1.000)	128	123623			48.70- 108.70	77.81
5.413	5.411 (1.000)	49	219007			130.32- 190.32	137.85
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.301 (1.000)	114	491742	25.0000		80.00- 120.00	100.00
6.301	6.301 (1.000)	88	69605			0.00- 44.06	14.15
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	559160	25.0000		80.00- 120.00	100.00
8.736	8.736 (1.000)	82	248384			14.84- 74.84	44.42
74 Acrylonitrile					CAS #: 107-13-1		
4.202	4.201 (0.776)	52	495926	100.000	106.90	0.00- 0.00	100.00
4.202	4.200 (0.776)	53	575979			0.00- 0.00	116.14
157 1,3-Dichloropropane					CAS #: 142-28-9		
8.099	8.100 (1.285)	76	1134285	100.000	101.81	0.00- 0.00	100.00
8.099	8.099 (1.285)	41	1006591			0.00- 0.00	88.74

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
157 1,3-Dichloropropane (continued)							
8.099	8.101 (1.285)	78	384200			0.00- 0.00	33.87
168 1,1,1,2-Tetrachloroethane					CAS #: 630-20-6		
8.829	8.829 (1.011)	131	1562473	100.000	100.05	0.00- 0.00	100.00
8.829	8.829 (1.011)	117	1004459			0.00- 0.00	64.29
8.829	8.829 (1.011)	95	527697			0.00- 0.00	33.77
203 sec-Butylbenzene					CAS #: 135-98-8		
10.477	10.474 (1.199)	134	1216247	100.000	127.53	0.00- 0.00	100.00
10.477	10.472 (1.199)	105	5235821			0.00- 0.00	430.49
10.470	10.471 (1.198)	91	779649			0.00- 0.00	64.10
213 Butylbenzene					CAS #: 104-51-8		
10.935	10.935 (1.252)	134	1473367	100.000	118.65	0.00- 0.00	100.00
10.935	10.934 (1.252)	91	4501839			0.00- 0.00	305.55
10.935	10.931 (1.252)	92	2351836			0.00- 0.00	159.62
207 p-Cymene					CAS #: 99-87-6		
10.584	10.584 (1.212)	119	5497117	100.000	123.05	0.00- 0.00	100.00
10.584	10.584 (1.212)	134	1503929			0.00- 0.00	27.36
10.584	10.584 (1.212)	91	1136760			0.00- 0.00	20.68

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p092731.d
Lab Smp Id: ICAL Level #7
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msdp.i/26NOV18.b/p18q1108b.m
Misc Info: 100ppbv (200ppbv)

Calibration Date: 28-SEP-2018
Calibration Time: 01:04
Client Smp ID: ICAL Level #7
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	162118	97271	226965	158868	-2.00
123 1,4-Difluorobenze	484572	290743	678401	491742	1.48
163 Chlorobenzene-d5	566566	339940	793192	559160	-1.31

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.30	5.97	6.63	6.30	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/26NOV18.b/p092731.d

Page 1

Date : 28-SEP-2018 01:28

Client ID: ICAL Level #7

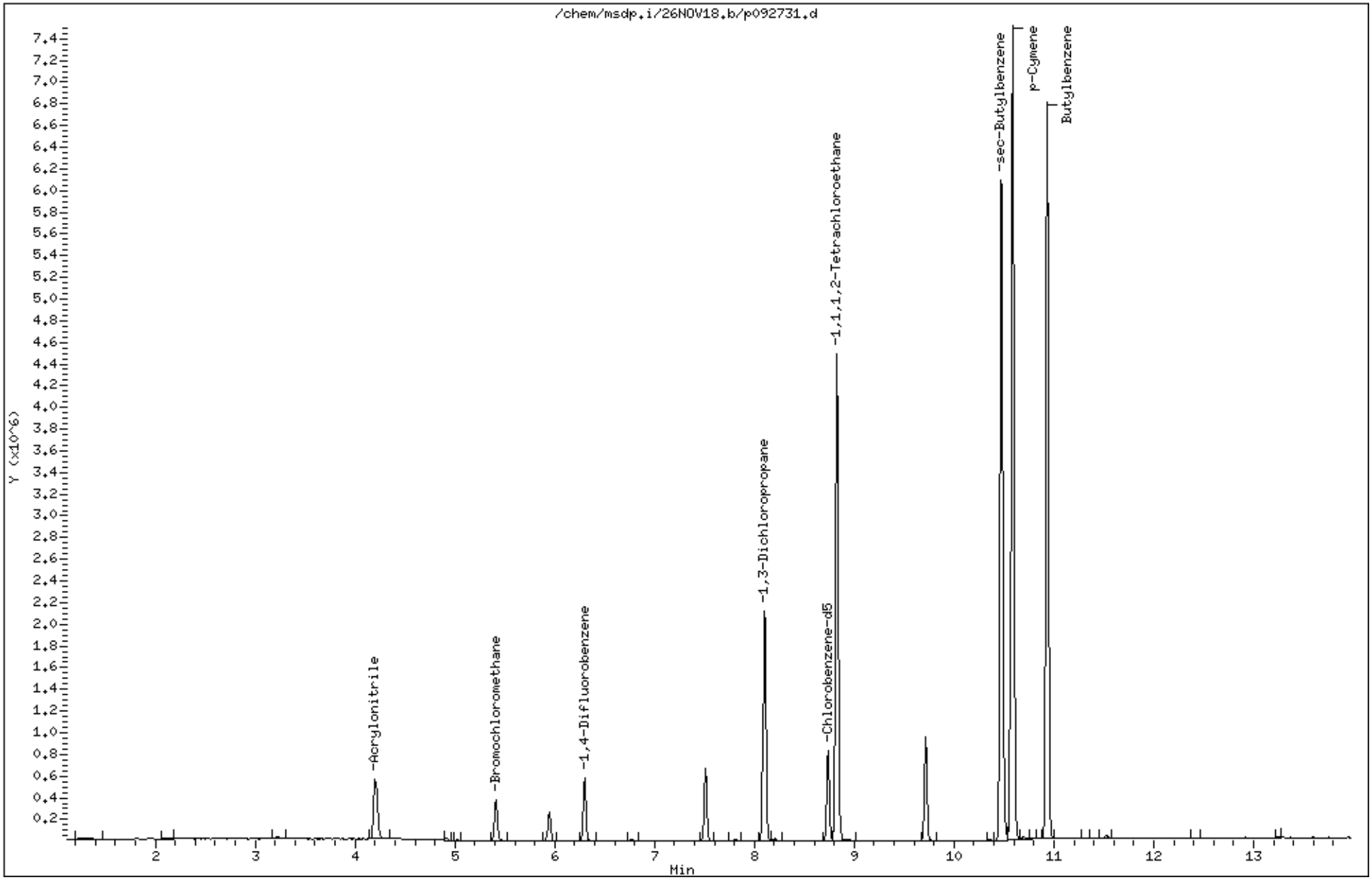
Instrument: msdp.i

Sample Info: 100ml 3045-111

Operator: mb

Column phase: RTX-624

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/04DEC18.b/p120415.d
Lab Smp Id: ICAL Level#8
Inj Date : 04-DEC-2018 18:07
Operator : mjb Inst ID: msdp.i
Smp Info : 200ml 3045-197
Misc Info : 200ppbv (200 ppbb)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/04DEC18.b/p18q1108c.m
Meth Date : 05-Dec-2018 16:38 ugdc Quant Type: ISTD
Cal Date : 04-DEC-2018 18:07 Cal File: p120415.d
Als bottle: 9 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT4mAcrCRV.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
63 Acetonitrile					CAS #: 75-05-8		
3.772	3.772 (0.696)	39	127351	200.000	184.83	0.00- 0.00	100.00
3.772	3.770 (0.696)	41	656160			0.00- 0.00	515.24
3.772	3.770 (0.696)	40	339755			0.00- 0.00	266.79
184 trans-1,4-Dichloro-2-butene					CAS #: 110-57-6		
9.890	9.890 (1.132)	75	653881	200.000	225.24	0.00- 0.00	100.00(A)
9.890	9.890 (1.132)	89	408210			0.00- 0.00	62.43
9.890	9.890 (1.132)	53	795881			0.00- 0.00	121.72
206 bis(2-Chloroethyl) Ether					CAS #: 111-44-4		
10.549	10.547 (1.207)	93	1941046	200.000	204.24	0.00- 0.00	100.00(A)
10.549	10.546 (1.207)	95	626686			0.00- 0.00	32.29
* 98 Bromochloromethane					CAS #: 74-97-5		
5.420	5.413 (1.000)	130	79648	25.0000		80.00- 120.00	100.00
5.420	5.413 (1.000)	128	60817			48.70- 108.70	76.36
5.413	5.409 (1.000)	49	113971			130.32- 190.32	143.09
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.299 (1.000)	114	261183	25.0000		80.00- 120.00	100.00

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 123 1,4-Difluorobenzene (continued)								
6.301	6.297	(1.000)	88	35404			0.00- 44.06	13.56
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.736	8.736	(1.000)	117	292266	25.0000		80.00- 120.00	100.00
8.736	8.736	(1.000)	82	126164			14.84- 74.84	43.17

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p120415.d
Lab Smp Id: ICAL Level#8
Analysis Type: VOA
Quant Type: ISTD
Operator: mjb
Method File: /chem/msdp.i/04DEC18.b/p18q1108c.m
Misc Info: 200ppbv (200 ppbb)

Calibration Date: 04-DEC-2018
Calibration Time: 10:52

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	86668	52001	121335	79648	-8.10
123 1,4-Difluorobenze	277096	166258	387934	261183	-5.74
163 Chlorobenzene-d5	303080	181848	424312	292266	-3.57

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.42	0.13
123 1,4-Difluorobenze	6.29	5.96	6.62	6.30	0.11
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/04DEC18.b/p120415.d

Date : 04-DEC-2018 18:07

Client ID:

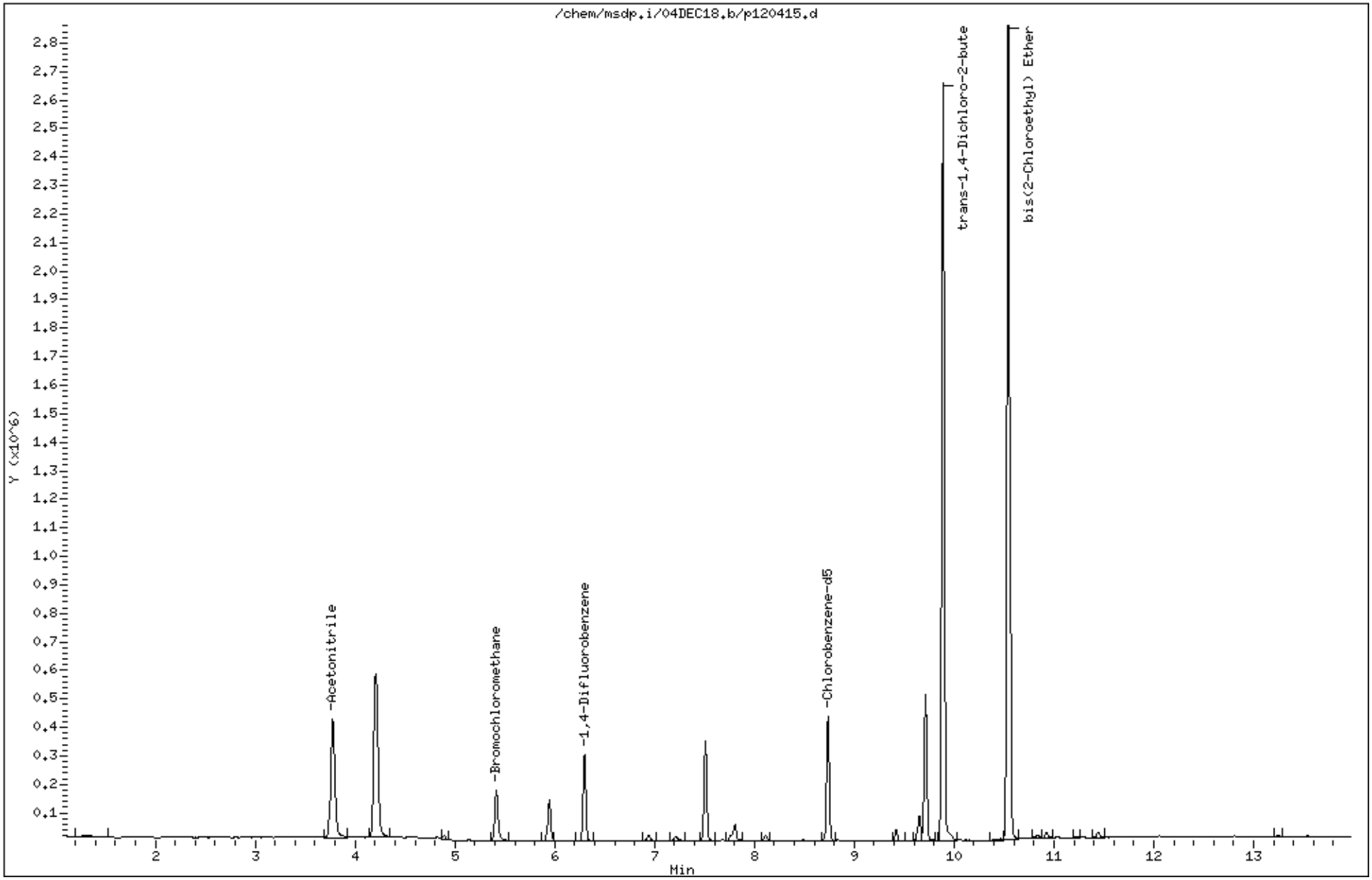
Sample Info: 200ml 3045-197

Column phase: RTX-624

Instrument: msdp.i

Operator: mjb

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/04DEC18.b/p120409.d
Lab Smp Id: ICAL Level #8
Inj Date : 04-DEC-2018 15:11
Operator : mjb Inst ID: msdp.i
Smp Info : 200ml 3045-193
Misc Info : 200ppbv (200 ppbb)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/04DEC18.b/p18q1108c.m
Meth Date : 05-Dec-2018 12:49 ugdc Quant Type: ISTD
Cal Date : 04-DEC-2018 18:07 Cal File: p120415.d
Als bottle: 11 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: MasterCRVM4M5.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
7 Freon 134a					CAS #: 811-97-2		
1.465	1.456 (0.271)	83	367688	200.000	156.62	0.00- 0.00	100.00
1.451	1.448 (0.268)	69	362390			0.00- 0.00	98.56
8 Propane					CAS #: 74-98-6		
1.493	1.484 (0.276)	39	150704	200.000	169.61	0.00- 0.00	100.00
1.493	1.481 (0.276)	44	243922			0.00- 0.00	161.86
1.493	1.484 (0.276)	43	221070			0.00- 0.00	146.69
10 1,1-Difluoroethane					CAS #: 75-37-6		
1.521	1.509 (0.281)	65	127127	200.000	125.14	0.00- 0.00	100.00
1.549	1.546 (0.286)	51	1222278			0.00- 0.00	961.46
1.521	1.512 (0.281)	47	95564			0.00- 0.00	75.17
13 Chlorodifluoromethane					CAS #: 75-45-6		
1.563	1.557 (0.289)	67	107981	200.000	160.88	0.00- 0.00	100.00
1.549	1.546 (0.286)	51	1222278			0.00- 0.00	1131.94
1.675	1.672 (0.309)	85	164677			0.00- 0.00	152.51
16 Freon 142b					CAS #: 75-68-3		
1.675	1.669 (0.309)	65	1361775	200.000	205.23	0.00- 0.00	100.00(A)

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
16 Freon 142b (continued)							
1.675	1.669 (0.309)	45	354313			0.00- 0.00	26.02
32 Vinyl Bromide					CAS #: 593-60-2		
2.512	2.510 (0.464)	106	642566	200.000	214.25	0.00- 0.00	100.00(A)
2.512	2.510 (0.464)	108	635483			0.00- 0.00	98.90
34 Pentane					CAS #: 109-66-0		
2.619	2.618 (0.484)	43	1034243	200.000	211.74	0.00- 0.00	100.00(A)
2.619	2.619 (0.484)	57	148724			0.00- 0.00	14.38
2.619	2.619 (0.484)	72	70171			0.00- 0.00	6.78
36 1-Pentene					CAS #: 109-67-1		
2.562	2.562 (0.473)	55	858829	200.000	211.63	0.00- 0.00	100.00(A)
2.562	2.562 (0.473)	42	1083376			0.00- 0.00	126.15
37 Dichlorofluoromethane					CAS #: 75-43-4		
2.562	2.562 (0.473)	67	1379610	200.000	210.50	0.00- 0.00	100.00(A)
2.562	2.560 (0.473)	69	434365			0.00- 0.00	31.48
44 Ethyl Ether					CAS #: 60-29-7		
2.920	2.920 (0.539)	74	296482	200.000	217.09	0.00- 0.00	100.00(A)
2.920	2.920 (0.539)	59	605080			0.00- 0.00	204.09
47 Freon 123a					CAS #: 354-23-4		
3.020	3.016 (0.558)	117	1164966	200.000	207.11	0.00- 0.00	100.00(A)
3.013	3.013 (0.557)	67	1202392			0.00- 0.00	103.21
48 Freon 123					CAS #: 306-83-2		
3.114	3.113 (0.575)	83	1417443	200.000	212.35	0.00- 0.00	100.00(A)
3.114	3.112 (0.575)	133	433558			0.00- 0.00	30.59
3.114	3.113 (0.575)	85	1006966			0.00- 0.00	71.04
59 Cyclopentene					CAS #: 142-29-0		
3.701	3.702 (0.684)	67	980005	200.000	222.36	0.00- 0.00	100.00(A)
3.701	3.701 (0.684)	68	351358			0.00- 0.00	35.85
3.701	3.701 (0.684)	53	303035			0.00- 0.00	30.92
61 Methyl Acetate					CAS #: 79-20-9		
3.722	3.722 (0.688)	43	2012326	200.000	207.56	0.00- 0.00	100.00(A)
3.722	3.722 (0.688)	74	274611			0.00- 0.00	13.65
64 Cyclopentane					CAS #: 287-92-3		
3.816	3.817 (0.705)	70	343378	200.000	226.64	0.00- 0.00	100.00(A)
3.816	3.815 (0.705)	55	715048			0.00- 0.00	208.24

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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   76 1-Hexene                                          CAS #: 592-41-6
  4.252   4.254 (0.786)    55    717682 200.000   227.32   0.00-   0.00   100.00(A)
  4.252   4.252 (0.786)    41   1041226                     0.00-   0.00   145.08
  4.252   4.257 (0.786)    84    192817                     0.00-   0.00    26.87
-------------------------------------------------------------------------------
   84 1-Propanol                                        CAS #: 71-23-8
  4.740   4.739 (0.876)    59    170167 200.000   232.00   0.00-   0.00   100.00(A)
  4.740   4.739 (0.876)    42    167664                     0.00-   0.00    98.53
  4.740   4.738 (0.876)    41    103778                     0.00-   0.00    60.99
-------------------------------------------------------------------------------
   85 Chloroprene                                       CAS #: 126-99-8
  4.646   4.651 (0.858)    53   1440266 200.000   230.13   0.00-   0.00   100.00(A)
  4.654   4.651 (0.860)    88    537043                     0.00-   0.00    37.29
  4.646   4.649 (0.858)    50    370075                     0.00-   0.00    25.69
-------------------------------------------------------------------------------
   90 2,2-Dichloropropane                               CAS #: 594-20-7
  5.141   5.141 (0.950)    77   1253214 200.000   211.30   0.00-   0.00   100.00(A)
  5.141   5.139 (0.950)    79    403766                     0.00-   0.00    32.22
  5.141   5.141 (0.950)    97    253985                     0.00-   0.00    20.27
-------------------------------------------------------------------------------
   94 Ethyl Acetate                                     CAS #: 141-78-6
  5.227   5.225 (0.966)    70    134296 200.000   226.64   0.00-   0.00   100.00(A)
  5.219   5.225 (0.964)    61    245178                     0.00-   0.00   182.57
  5.219   5.225 (0.964)    45    324286                     0.00-   0.00   241.47
-------------------------------------------------------------------------------
   93 Methyl Acrylate                                   CAS #: 96-33-3
  5.270   5.270 (0.974)    55   2045195 200.000   226.94   0.00-   0.00   100.00(A)
  5.270   5.270 (0.974)    85    241492                     0.00-   0.00    11.81
  5.270   5.270 (0.974)    58    170426                     0.00-   0.00     8.33
-------------------------------------------------------------------------------
*  98 Bromochloromethane                                 CAS #: 74-97-5
  5.413   5.412 (1.000)   130     90315 25.0000            80.00- 120.00   100.00
  5.413   5.412 (1.000)   128     70606                    48.70- 108.70    78.18
  5.413   5.408 (1.000)    49    130899                   130.32- 190.32   144.94
-------------------------------------------------------------------------------
  107 1,1-Dichloropropene                               CAS #: 563-58-6
  5.750   5.749 (0.913)   110    442355 200.000   208.42   0.00-   0.00   100.00(A)
  5.742   5.747 (0.912)    75   1001785                     0.00-   0.00   226.47
-------------------------------------------------------------------------------
  115 Isobutanol                                        CAS #: 78-83-1
  5.893   5.894 (0.936)    39    201655 200.000   166.67   0.00-   0.00   100.00
  5.893   5.893 (0.936)    43    850973                     0.00-   0.00   421.99
  5.893   5.894 (0.936)    41    613845                     0.00-   0.00   304.40
-------------------------------------------------------------------------------
* 123 1,4-Difluorobenzene                               CAS #: 540-36-3
  6.294   6.298 (1.000)   114    329479 25.0000           80.00- 120.00   100.00
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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

* 123 1,4-Difluorobenzene (continued)
  6.294   6.297 (1.000)    88     47421                     0.00-  44.06    14.39
-------------------------------------------------------------------------------
  124 n-Butanol                                   CAS #: 71-36-3
  6.466   6.466 (1.027)    56    819149 200.000   191.73   0.00-   0.00   100.00
  6.466   6.466 (1.027)    41    599145                     0.00-   0.00    73.14
  6.466   6.466 (1.027)    43    470754                     0.00-   0.00    57.47
-------------------------------------------------------------------------------
  128 Ethyl acrylate                              CAS #: 140-88-5
  6.588   6.590 (0.755)    99    152813 200.000   216.57   0.00-   0.00   100.00(A)
  6.588   6.588 (0.755)    45    271496                     0.00-   0.00   177.67
  6.588   6.588 (0.755)    55   2833015                     0.00-   0.00  1853.91
-------------------------------------------------------------------------------
  131 2-Pentanone                                 CAS #: 107-87-9
  6.674   6.679 (0.764)    43   3324997 200.000   207.19   0.00-   0.00   100.00(A)
  6.674   6.679 (0.764)    58    247927                     0.00-   0.00     7.46
  6.681   6.681 (0.765)    86    421557                     0.00-   0.00    12.68
-------------------------------------------------------------------------------
  134 Methyl Methacrylate                         CAS #: 80-62-6
  6.781   6.782 (0.777)    41   1655557 200.000   210.94   0.00-   0.00   100.00(A)
  6.781   6.782 (0.777)    69    852966                     0.00-   0.00    51.52
  6.781   6.784 (0.777)   100    402131                     0.00-   0.00    24.29
-------------------------------------------------------------------------------
  137 Dibromomethane                              CAS #: 74-95-3
  6.831   6.832 (0.783)   174   1348252 200.000   198.63   0.00-   0.00   100.00
  6.831   6.831 (0.783)    93   1162973                     0.00-   0.00    86.26
  6.831   6.831 (0.783)    95    951954                     0.00-   0.00    70.61
-------------------------------------------------------------------------------
  148 Octane                                      CAS #: 111-65-9
  7.569   7.569 (1.203)    57    885177 200.000   216.07   0.00-   0.00   100.00(A)
  7.569   7.572 (1.203)    85    760578                     0.00-   0.00    85.92
  7.569   7.569 (1.203)    43   2343462                     0.00-   0.00   264.75
-------------------------------------------------------------------------------
  159 Butyl Acetate                               CAS #: 123-86-4
  8.178   8.183 (1.299)    56   1087411 200.000   225.82   0.00-   0.00   100.00(A)
  8.178   8.183 (1.299)    73    300684                     0.00-   0.00    27.65
  8.178   8.183 (1.299)    43   2779598                     0.00-   0.00   255.62
-------------------------------------------------------------------------------
* 163 Chlorobenzene-d5                            CAS #: 3114-55-4
  8.729   8.736 (1.000)   117    352300 25.0000            80.00- 120.00   100.00
  8.729   8.736 (1.000)    82    151733                    14.84-  74.84    43.07
-------------------------------------------------------------------------------
  170 Nonane                                      CAS #: 111-84-2
  8.830   8.830 (1.011)    43   2498828 200.000   229.38   0.00-   0.00   100.00(A)
  8.830   8.830 (1.011)    57   2101024                     0.00-   0.00    84.08
  8.830   8.830 (1.011)    85    625182                     0.00-   0.00    25.02
-------------------------------------------------------------------------------
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  173 2-Heptanone                                   CAS #: 110-43-0
  9.338   9.338 (1.725)    58   1944275 200.000   260.44   0.00-   0.00   100.00(A)
  9.338   9.338 (1.725)    43   3299995                    0.00-   0.00   169.73
-------------------------------------------------------------------------------
  176 Cyclohexanone                                 CAS #: 108-94-1
  9.689   9.689 (1.110)    55   1519542 200.000   212.56   0.00-   0.00   100.00(A)
  9.689   9.689 (1.110)    98    489621                    0.00-   0.00    32.22
  9.689   9.689 (1.110)    42    994349                    0.00-   0.00    65.44
-------------------------------------------------------------------------------
  179 alpha-Pinene                                  CAS #: 80-56-8
  9.489   9.494 (1.087)    93   3005538 200.000   235.32   0.00-   0.00   100.00(A)
  9.489   9.494 (1.087)    77    875404                    0.00-   0.00    29.13
-------------------------------------------------------------------------------
  180 Bromobenzene                                  CAS #: 108-86-1
  9.847   9.847 (1.128)   156   1794594 200.000   205.02   0.00-   0.00   100.00(A)
  9.847   9.847 (1.128)   158   1758615                    0.00-   0.00    98.00
  9.847   9.847 (1.128)    77   2296935                    0.00-   0.00   127.99
-------------------------------------------------------------------------------
  185 1,2,3-Trichloropropane                        CAS #: 96-18-4
  9.890   9.894 (1.133)   110    780532 200.000   195.85   0.00-   0.00   100.00
  9.890   9.890 (1.133)    75   2458298                    0.00-   0.00   314.95
  9.890   9.891 (1.133)    61    597046                    0.00-   0.00    76.49
-------------------------------------------------------------------------------
  187 Decane                                        CAS #: 124-18-5
  9.933   9.933 (1.138)    57   2775513 200.000   227.46   0.00-   0.00   100.00(A)
  9.933   9.933 (1.138)    71    738378                    0.00-   0.00    26.60
  9.933   9.931 (1.138)   142    145129                    0.00-   0.00     5.23
-------------------------------------------------------------------------------
  189 2-Chlorotoluene                               CAS #: 95-49-8
  9.983   9.989 (1.144)   126   1411056 200.000   213.03   0.00-   0.00   100.00(A)
  9.983   9.987 (1.144)    91   3273784                    0.00-   0.00   232.01
  9.983   9.986 (1.144)    65    334650                    0.00-   0.00    23.72
-------------------------------------------------------------------------------
  191 4-Chlorotoluene                               CAS #: 106-43-4
 10.083  10.083 (1.155)   126   1503815 200.000   212.58   0.00-   0.00   100.00(A)
 10.076  10.079 (1.154)    91   4267031                    0.00-   0.00   283.75
 10.076  10.080 (1.154)    63    573766                    0.00-   0.00    38.15
-------------------------------------------------------------------------------
  192 beta-Pinene                                   CAS #: 127-91-3
 10.062  10.062 (1.153)    93   2507192 200.000   225.54   0.00-   0.00   100.00(A)
 10.076  10.079 (1.154)    91   4267031                    0.00-   0.00   170.19
-------------------------------------------------------------------------------
  193 Diisobutyl Ketone                             CAS #: 108-83-8
 10.112  10.112 (1.158)    57   3652640 200.000   226.87   0.00-   0.00   100.00(A)
 10.112  10.112 (1.158)    85   2332192                    0.00-   0.00    63.85
-------------------------------------------------------------------------------
```

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
195 tert-Butylbenzene					CAS #: 98-06-6		
10.284	10.287 (1.178)	119	4427651	200.000	224.14	0.00- 0.00	100.00(A)
10.284	10.288 (1.178)	134	1118486			0.00- 0.00	25.26
10.284	10.284 (1.178)	91	2579398			0.00- 0.00	58.26
197 Pentachloroethane					CAS #: 76-01-7		
10.355	10.355 (1.186)	167	1408478	200.000	208.94	0.00- 0.00	100.00(A)
10.355	10.355 (1.186)	117	1357641			0.00- 0.00	96.39
10.355	10.355 (1.186)	169	670943			0.00- 0.00	47.64
199 D-Limonene					CAS #: 5989-27-5		
10.534	10.534 (1.207)	68	2311844	200.000	240.50	0.00- 0.00	100.00(A)
10.542	10.542 (1.208)	93	4548650			0.00- 0.00	196.75
10.534	10.534 (1.207)	136	629368			0.00- 0.00	27.22
210 1,2,3-Trimethylbenzene					CAS #: 526-73-8		
10.706	10.706 (1.226)	120	2096752	200.000	227.30	0.00- 0.00	100.00(A)
10.706	10.706 (1.226)	105	4571624			0.00- 0.00	218.03
10.706	10.705 (1.226)	77	499842			0.00- 0.00	23.84
215 Undecane					CAS #: 1120-21-4		
10.914	10.917 (1.250)	57	3072935	200.000	228.68	0.00- 0.00	100.00(A)
10.914	10.915 (1.250)	43	2776102			0.00- 0.00	90.34
217 Hexachloroethane					CAS #: 67-72-1		
11.208	11.208 (1.284)	201	1448441	200.000	224.44	0.00- 0.00	100.00(A)
11.208	11.208 (1.284)	117	1897017			0.00- 0.00	130.97
221 1,2-Dibromo-3-chloropropane					CAS #: 96-12-8		
11.702	11.702 (1.341)	157	1544764	200.000	211.09	0.00- 0.00	100.00(A)
11.702	11.702 (1.341)	75	1094128			0.00- 0.00	70.83
11.702	11.702 (1.341)	155	1200621			0.00- 0.00	77.72
224 1,3,5-Trichlorobenzene					CAS #: 108-70-3		
11.831	11.831 (1.355)	180	3069489	200.000	220.87	0.00- 0.00	100.00(A)
11.831	11.831 (1.355)	182	2933634			0.00- 0.00	95.57
225 Dodecane					CAS #: 112-40-3		
11.824	11.824 (1.354)	57	3031322	200.000	266.39	0.00- 0.00	100.00(A)
11.824	11.824 (1.354)	43	2516214			0.00- 0.00	83.01
229 1,2,3-Trichlorobenzene					CAS #: 87-61-6		
12.920	12.918 (1.480)	180	2175894	200.000	236.25	0.00- 0.00	100.00(A)
12.920	12.920 (1.480)	182	2087808			0.00- 0.00	95.95
12.913	12.914 (1.479)	145	750580			0.00- 0.00	34.50

QC Flag Legend

A - Target compound detected but, quantitated amount
exceeded maximum amount.

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p120409.d
Lab Smp Id: ICAL Level #8
Analysis Type: VOA
Quant Type: ISTD
Operator: mjb
Method File: /chem/msdp.i/04DEC18.b/p18q1108c.m
Misc Info: 200ppbv (200 ppbb)

Calibration Date: 04-DEC-2018
Calibration Time: 10:52

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	86668	52001	121335	90315	4.21
123 1,4-Difluorobenze	277096	166258	387934	329479	18.90
163 Chlorobenzene-d5	303080	181848	424312	352300	16.24

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.73	-0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/04DEC18.b/p120409.d

Date : 04-DEC-2018 15:11

Client ID:

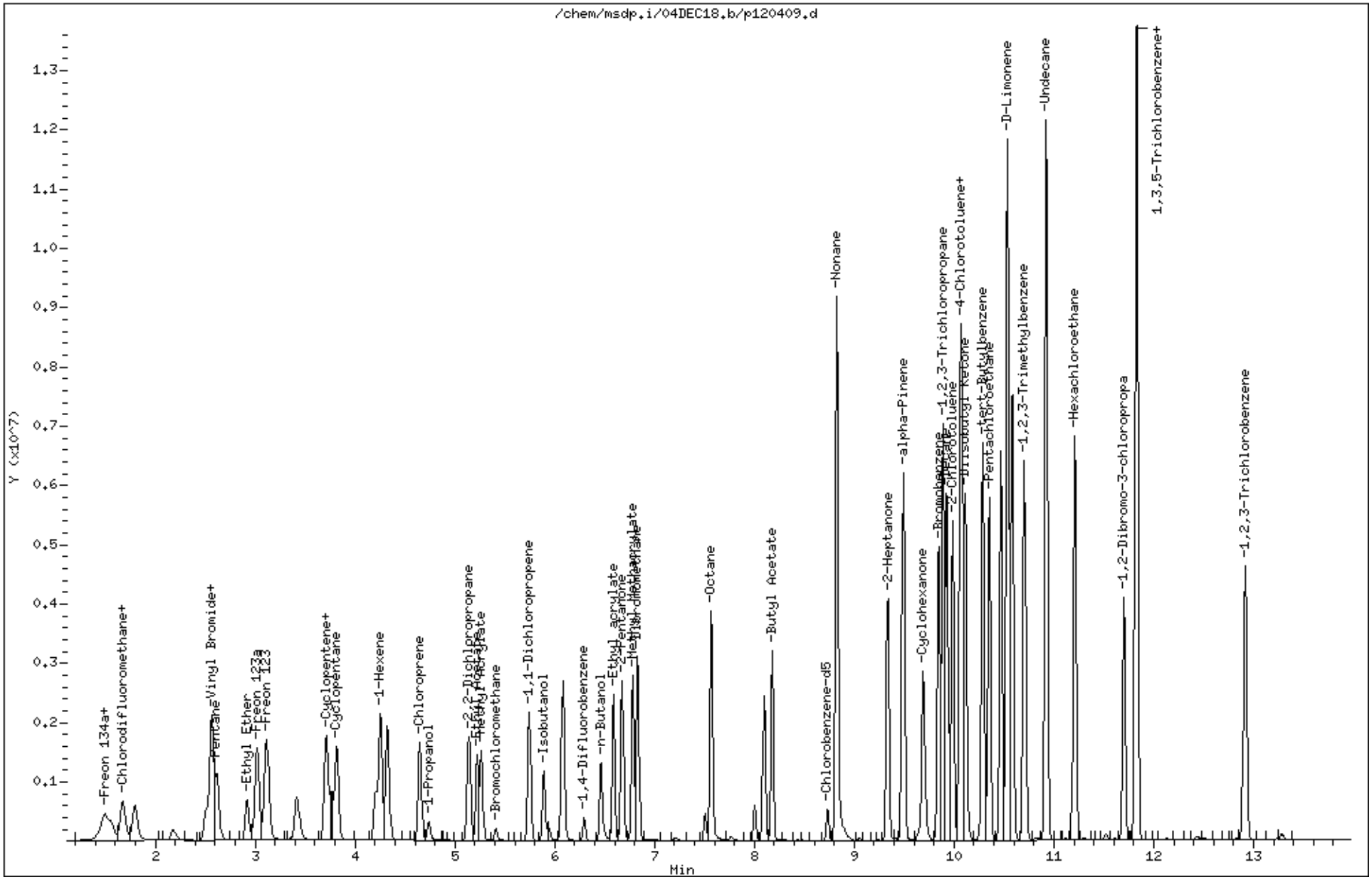
Sample Info: 200ml 3045-193

Column phase: RTX-624

Instrument: msdp.i

Operator: mjb

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/08NOV18a.b/p110820.d
Lab Smp Id: ICAL Level #8
Inj Date : 08-NOV-2018 22:32
Operator : gh Inst ID: msdp.i
Smp Info : 200ml 3018-509
Misc Info : 200ppbv(200ppbv
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/08NOV18a.b/p18q1108a.m
Meth Date : 09-Nov-2018 17:32 ugdc Quant Type: ISTD
Cal Date : 08-NOV-2018 22:32 Cal File: p110820.d
Als bottle: 13 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12curve.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.420	5.411 (1.000)	130	102008	25.0000		80.00- 120.00	100.00
5.420	5.411 (1.000)	128	79216			48.70- 108.70	77.66
5.413	5.409 (1.000)	49	144499			130.32- 190.32	141.65
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.296 (1.000)	114	337421	25.0000		80.00- 120.00	100.00
6.301	6.295 (1.000)	88	48537			0.00- 44.06	14.38
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	369455	25.0000		80.00- 120.00	100.00
8.736	8.734 (1.000)	82	166423			14.84- 74.84	45.05
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
5.943	5.942 (1.096)	65	142583	25.0000	26.246	80.00- 120.00	100.00
5.943	5.943 (1.096)	67	100667			26.40- 86.40	70.60
$ 146 Toluene-d8					CAS #: 2037-26-5		
7.504	7.505 (1.191)	98	353165	25.0000	25.333	80.00- 120.00	100.00
7.504	7.504 (1.191)	70	35868			0.00- 40.19	10.16

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.504	7.505 (1.191)	100	236375			38.92- 98.92	66.93
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.718	9.719 (1.112)	174	240786	25.0000	25.669	80.00- 120.00	100.00
9.711	9.713 (1.111)	95	275101			82.53- 142.53	114.25
9.718	9.719 (1.112)	176	227264			65.10- 125.10	94.38
9 Propylene					CAS #: 115-07-1		
1.479	1.479 (0.273)	41	726634	200.000	190.31	80.00- 120.00	100.00
1.479	1.481 (0.273)	42	491646			37.41- 97.41	67.66
1.479	1.479 (0.273)	39	520028			42.27- 102.27	71.57
11 Freon 12					CAS #: 75-71-8		
1.521	1.511 (0.281)	85	1941084	200.000	191.86	80.00- 120.00	100.00
1.521	1.511 (0.281)	87	627866			2.07- 62.07	32.35
15 Freon 114					CAS #: 76-14-2		
1.633	1.629 (0.301)	135	1631568	200.000	196.13	80.00- 120.00	100.00
1.633	1.629 (0.301)	137	528296			2.07- 62.07	32.38
17 Chloromethane					CAS #: 74-87-3		
1.730	1.723 (0.319)	50	702284	200.000	151.46	80.00- 120.00	100.00
1.730	1.723 (0.319)	52	210497			0.00- 58.76	29.97
23 Butane					CAS #: 106-97-8		
1.800	1.791 (0.332)	58	199863	200.000	231.57	80.00- 120.00	100.00(A)
1.800	1.786 (0.332)	43	1689806			1048.24-1108.24	845.48
25 Vinyl Chloride					CAS #: 75-01-4		
1.828	1.818 (0.337)	62	943085	200.000	229.20	80.00- 120.00	100.00(A)
1.828	1.818 (0.337)	64	261284			0.00- 54.53	27.71
26 1,3-Butadiene					CAS #: 106-99-0		
1.856	1.842 (0.343)	54	844925	200.000	219.13	80.00- 120.00	100.00(A)
1.856	1.840 (0.343)	39	1041358			85.58- 145.58	123.25
29 Bromomethane					CAS #: 74-83-9		
2.197	2.195 (0.405)	94	600731	200.000	204.10	80.00- 120.00	100.00(A)
2.197	2.195 (0.405)	96	567845			65.12- 125.12	94.53
30 Chloroethane					CAS #: 75-00-3		
2.304	2.304 (0.425)	64	341621	200.000	195.64	80.00- 120.00	100.00
2.304	2.304 (0.425)	66	102908			0.00- 59.74	30.12
2.304	2.302 (0.425)	49	136485			9.89- 69.89	39.95

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.333	2.327 (0.430)	43	1047499	200.000	198.30	80.00- 120.00	100.00
2.333	2.327 (0.430)	57	665936			31.46- 91.46	63.57
35 Freon 11					CAS #: 75-69-4		
2.555	2.551 (0.471)	101	2194246	200.000	186.84	80.00- 120.00	100.00
2.555	2.551 (0.471)	103	1414507			34.29- 94.29	64.46
42 Ethanol					CAS #: 64-17-5		
2.870	2.865 (0.529)	45	343319	200.000	196.30	80.00- 120.00	100.00
2.870	2.863 (0.529)	46	130434			8.87- 68.87	37.99
49 Freon 113					CAS #: 76-13-1		
3.185	3.182 (0.588)	151	1452861	200.000	185.97	80.00- 120.00	100.00
3.185	3.184 (0.588)	153	929488			34.67- 94.67	63.98
3.185	3.181 (0.588)	101	1626913			79.70- 139.70	111.98
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.221	3.214 (0.594)	98	419657	200.000	212.94	80.00- 120.00	100.00(A)
3.221	3.213 (0.594)	96	660457			126.11- 186.11	157.38
3.221	3.213 (0.594)	61	1331368			286.72- 346.72	317.25
52 Acetone					CAS #: 67-64-1		
3.364	3.356 (0.621)	58	383679	200.000	189.05	80.00- 120.00	100.00
3.364	3.357 (0.621)	43	1352117			345.31- 405.31	352.41
56 Carbon Disulfide					CAS #: 75-15-0		
3.457	3.452 (0.638)	76	1693244	200.000	191.92	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.529	3.532 (0.651)	45	1544831	200.000	208.04	80.00- 120.00	100.00(A)
3.529	3.530 (0.651)	43	330381			0.00- 53.09	21.39
3.536	3.530 (0.652)	59	54096			0.00- 33.51	3.50
58 3-Chloropropene					CAS #: 107-05-1		
3.686	3.685 (0.680)	76	262519	200.000	212.12	80.00- 120.00	100.00(A)
3.686	3.684 (0.680)	41	1160254			428.12- 488.12	441.97
66 Methylene Chloride					CAS #: 75-09-2		
3.873	3.872 (0.715)	49	1192536	200.000	190.50	80.00- 120.00	100.00
3.873	3.872 (0.715)	84	564099			16.41- 76.41	47.30
3.873	3.872 (0.715)	51	356664			0.00- 59.94	29.91
71 tert-Butyl alcohol					CAS #: 75-65-0		
3.987	3.990 (0.736)	59	1669541	200.000	217.67	80.00- 120.00	100.00(A)
3.987	3.989 (0.736)	41	421307			0.00- 58.57	25.23

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   71 tert-Butyl alcohol (continued)
  3.987   3.987 (0.736)    57    186198                     0.00-  41.25    11.15
-------------------------------------------------------------------------------
   72 Methyl tert-butyl ether                        CAS #: 1634-04-4
  4.088   4.088 (0.754)    73   1858406 200.000   217.45  80.00- 120.00   100.00(A)
  4.088   4.088 (0.754)    57    592790                     1.33-  61.33    31.90
  4.088   4.089 (0.754)    41    613013                     8.05-  68.05    32.99
-------------------------------------------------------------------------------
   73 trans-1,2-Dichloroethene                       CAS #: 156-60-5
  4.116   4.112 (0.759)    98    422272 200.000   208.04  80.00- 120.00   100.00(A)
  4.116   4.110 (0.759)    61   1147060                   247.19- 307.19   271.64
  4.116   4.113 (0.759)    96    664085                   131.40- 191.40   157.26
-------------------------------------------------------------------------------
   78 Hexane                                         CAS #: 110-54-3
  4.331   4.329 (0.799)    57   1453646 200.000   229.64  80.00- 120.00   100.00(A)
  4.331   4.329 (0.799)    43   1006157                    42.49- 102.49    69.22
  4.331   4.329 (0.799)    86    169720                     0.00-  42.15    11.68
-------------------------------------------------------------------------------
   82 1,1-Dichloroethane                             CAS #: 75-34-3
  4.603   4.598 (0.849)    63   1462173 200.000   194.47  80.00- 120.00   100.00
  4.603   4.599 (0.849)    65    424934                     0.00-  58.69    29.06
-------------------------------------------------------------------------------
   83 Isopropyl ether                                CAS #: 108-20-3
  4.596   4.596 (0.848)    45   3673749 200.000   215.86  80.00- 120.00   100.00(A)
  4.596   4.596 (0.848)    87    648214                     0.00-  46.96    17.64
  4.596   4.596 (0.848)    59    366796                     0.00-  39.98     9.98
-------------------------------------------------------------------------------
   86 Vinyl Acetate                                  CAS #: 108-05-4
  4.639   4.640 (0.856)    86    186577 200.000   225.33  80.00- 120.00   100.00(A)
  4.639   4.639 (0.856)    43   3228433                  1735.43-1795.43  1730.35
-------------------------------------------------------------------------------
   88 Ethyl-tert-butyl ether                         CAS #: 637-92-3
  4.947   4.951 (0.913)    59   3111264 200.000   221.94  80.00- 120.00   100.00(A)
  4.947   4.951 (0.913)    87    989886                     1.65-  61.65    31.82
  4.947   4.948 (0.913)    41    654198                     0.00-  54.61    21.03
-------------------------------------------------------------------------------
   91 cis-1,2-Dichloroethene                         CAS #: 156-59-2
  5.184   5.180 (0.956)    98    532472 200.000   207.26  80.00- 120.00   100.00(A)
  5.184   5.180 (0.956)    96    834224                   123.83- 183.83   156.67
  5.184   5.177 (0.956)    61   1311189                   214.95- 274.95   246.25
-------------------------------------------------------------------------------
   92 2-Butanone                                     CAS #: 78-93-3
  5.205   5.200 (0.960)    72    315890 200.000   205.89  80.00- 120.00   100.00(A)
  5.205   5.201 (0.960)    43   2097157                   669.23- 729.23   663.89
  5.205   5.204 (0.960)    57    157263                    20.89-  80.89    49.78
-------------------------------------------------------------------------------
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RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.413	5.410 (0.999)	42	1156053	200.000	220.72	80.00- 120.00	100.00(A)
5.413	5.412 (0.999)	71	279033			0.00- 54.27	24.14
5.413	5.412 (0.999)	72	289442			0.00- 54.41	25.04
100 Chloroform					CAS #: 67-66-3		
5.477	5.474 (1.011)	83	1599438	200.000	191.16	80.00- 120.00	100.00
5.477	5.474 (1.011)	85	1090414			38.55- 98.55	68.17
102 Cyclohexane					CAS #: 110-82-7		
5.585	5.583 (1.030)	84	920976	200.000	222.66	80.00- 120.00	100.00(A)
5.585	5.584 (1.030)	56	1643989			149.13- 209.13	178.51
5.585	5.583 (1.030)	41	926694			74.83- 134.83	100.62
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.599	5.598 (1.033)	97	1881757	200.000	192.02	80.00- 120.00	100.00
5.599	5.599 (1.033)	99	1211563			35.00- 95.00	64.38
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.714	5.714 (1.054)	119	2077564	200.000	195.91	80.00- 120.00	100.00
5.714	5.713 (1.054)	117	2151857			73.60- 133.60	103.58
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.907	5.913 (1.090)	57	5068089	200.000	224.80	80.00- 120.00	100.00(A)
5.914	5.914 (1.091)	56	1653801			3.59- 63.59	32.63
5.907	5.912 (1.090)	41	1387004			0.20- 60.20	27.37
116 Benzene					CAS #: 71-43-2		
5.928	5.928 (0.941)	78	2158516	200.000	180.98	80.00- 120.00	100.00
5.928	5.925 (0.941)	77	517476			0.00- 54.10	23.97
119 tert-Amyl methyl ether					CAS #: 994-05-8		
6.000	6.000 (0.952)	87	588156	200.000	214.08	80.00- 120.00	100.00(A)
6.000	6.000 (0.952)	73	2136209			327.19- 387.19	363.20
5.993	5.998 (0.951)	55	892170			139.14- 199.14	151.69
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.014	6.010 (0.955)	62	1336387	200.000	180.59	80.00- 120.00	100.00
6.014	6.009 (0.955)	64	411521			0.44- 60.44	30.79
121 Heptane					CAS #: 142-82-5		
6.086	6.085 (0.966)	71	728436	200.000	217.50	80.00- 120.00	100.00(A)
6.086	6.084 (0.966)	43	2094760			259.43- 319.43	287.57
6.086	6.085 (0.966)	57	1027541			114.50- 174.50	141.06
125 Trichloroethene					CAS #: 79-01-6		
6.494	6.494 (1.031)	95	1142552	200.000	191.15	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.494	6.494 (1.031)	130	1382657			88.76- 148.76	121.01
6.494	6.494 (1.031)	97	731721			35.32- 95.32	64.04
127 Methylcyclohexane					CAS #: 108-87-2		
6.595	6.595 (1.047)	83	1348045	200.000	216.94	80.00- 120.00	100.00(A)
6.595	6.595 (1.047)	98	694752			20.32- 80.32	51.54
6.595	6.595 (1.047)	55	1682559			98.90- 158.90	124.81
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.724	6.724 (1.067)	63	1000363	200.000	192.60	80.00- 120.00	100.00
6.724	6.724 (1.067)	62	714125			41.74- 101.74	71.39
6.724	6.724 (1.067)	41	657511			41.01- 101.01	65.73
136 1,4-Dioxane					CAS #: 123-91-1		
6.817	6.817 (1.082)	88	545250	200.000	206.21	80.00- 120.00	100.00(A)
6.817	6.817 (1.082)	58	526060			66.86- 126.86	96.48
6.817	6.816 (1.082)	57	173060			1.32- 61.32	31.74
138 Bromodichloromethane					CAS #: 75-27-4		
6.953	6.953 (1.103)	83	1853546	200.000	189.69	80.00- 120.00	100.00
6.953	6.952 (1.103)	85	1229590			35.98- 95.98	66.34
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.325	7.325 (1.163)	75	1346717	200.000	211.28	80.00- 120.00	100.00(A)
7.325	7.325 (1.163)	77	443506			2.71- 62.71	32.93
7.325	7.325 (1.163)	39	961219			43.85- 103.85	71.37
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.433	7.433 (1.180)	58	966829	200.000	215.02	80.00- 120.00	100.00(A)
7.433	7.433 (1.180)	43	2791533			267.85- 327.85	288.73
7.433	7.434 (1.180)	85	325287			4.54- 64.54	33.64
147 Toluene					CAS #: 108-88-3		
7.562	7.562 (1.200)	91	3077255	200.000	194.30	80.00- 120.00	100.00
7.562	7.562 (1.200)	92	1784644			28.88- 88.88	57.99
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.798	7.798 (0.893)	75	1368678	200.000	209.24	80.00- 120.00	100.00(A)
7.798	7.798 (0.893)	77	448185			2.67- 62.67	32.75
7.798	7.798 (0.893)	39	904483			37.60- 97.60	66.08
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.956	7.956 (0.911)	97	1100200	200.000	186.40	80.00- 120.00	100.00
7.956	7.956 (0.911)	99	696576			30.86- 90.86	63.31
7.956	7.956 (0.911)	83	881498			47.74- 107.74	80.12

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  156 Tetrachloroethene                              CAS #: 127-18-4
  8.006   8.001 (0.916)   166   1885431 200.000   196.80  80.00- 120.00   100.00
  7.999   7.999 (0.916)   129   1451327                   48.46- 108.46    76.98
  7.999   7.999 (0.916)   131   1417619                   45.42- 105.42    75.19
-------------------------------------------------------------------------------
  158 2-Hexanone                                     CAS #: 591-78-6
  8.120   8.120 (0.929)    58   1309892 200.000   224.87  80.00- 120.00   100.00(A)
  8.120   8.120 (0.929)    43   2699900                  185.57- 245.57   206.12
  8.120   8.120 (0.929)   100    218200                    0.00-  46.27    16.66
-------------------------------------------------------------------------------
  160 Dibromochloromethane                           CAS #: 124-48-1
  8.271   8.268 (0.947)   129   2635249 200.000   194.06  80.00- 120.00   100.00
  8.271   8.269 (0.947)   127   2025037                   47.61- 107.61    76.84
-------------------------------------------------------------------------------
  161 1,2-Dibromoethane (EDB)                        CAS #: 106-93-4
  8.378   8.378 (0.959)   107   1921438 200.000   198.85  80.00- 120.00   100.00
  8.378   8.378 (0.959)   109   1891900                   68.89- 128.89    98.46
-------------------------------------------------------------------------------
  165 Chlorobenzene                                  CAS #: 108-90-7
  8.758   8.758 (1.002)   112   2956619 200.000   195.91  80.00- 120.00   100.00
  8.758   8.758 (1.002)   114    932400                    1.88-  61.88    31.54
  8.758   8.757 (1.002)    77   1475328                   20.89-  80.89    49.90
-------------------------------------------------------------------------------
  167 Ethyl Benzene                                  CAS #: 100-41-4
  8.808   8.808 (1.008)   106   1452920 200.000   217.18  80.00- 120.00   100.00(A)
  8.808   8.808 (1.008)    91   4331982                  268.95- 328.95   298.16
-------------------------------------------------------------------------------
  169 m,p-Xylene                                     CAS #: 108-38-3
  8.908   8.906 (1.020)   106   1828835 200.000   222.49  80.00- 120.00   100.00(A)
  8.908   8.907 (1.020)    91   3509218                  159.20- 219.20   191.88
-------------------------------------------------------------------------------
  171 o-Xylene                                       CAS #: 95-47-6
  9.245   9.245 (1.058)   106   1728813 200.000   224.21  80.00- 120.00   100.00(A)
  9.245   9.245 (1.058)    91   3520808                  173.23- 233.23   203.65
-------------------------------------------------------------------------------
  172 Styrene                                        CAS #: 100-42-5
  9.266   9.266 (1.061)   104   2949462 200.000   227.66  80.00- 120.00   100.00(A)
  9.266   9.266 (1.061)    78   1377138                   15.83-  75.83    46.69
-------------------------------------------------------------------------------
  174 Bromoform                                      CAS #: 75-25-2
  9.460   9.460 (1.083)   173   2511697 200.000   200.89  80.00- 120.00   100.00(A)
  9.460   9.460 (1.083)   171   1281429                   21.75-  81.75    51.02
-------------------------------------------------------------------------------
  175 Cumene                                         CAS #: 98-82-8
  9.531   9.531 (1.091)   105   5659575 200.000   226.08  80.00- 120.00   100.00(A)
  9.531   9.531 (1.091)   120   1622172                    0.00-  58.53    28.66
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  175 Cumene (continued)
  9.531   9.531 (1.091)    51    750555                     0.00-  43.43    13.26
-------------------------------------------------------------------------------
  181 1,1,2,2-Tetrachloroethane                    CAS #: 79-34-5
  9.840   9.839 (1.126)    83   2388353 200.000   188.87  80.00- 120.00   100.00
  9.840   9.839 (1.126)    85   1635219                   38.99-  98.99    68.47
-------------------------------------------------------------------------------
  182 Propylbenzene                                CAS #: 103-65-1
  9.875   9.874 (1.130)    91   6097851 200.000   214.52  80.00- 120.00   100.00(A)
  9.875   9.875 (1.130)   120   1661757                    0.00-  56.98    27.25
  9.875   9.874 (1.130)   105    243166                    0.00-  34.22     3.99
-------------------------------------------------------------------------------
  188 4-Ethyltoluene                               CAS #: 622-96-8
  9.968   9.967 (1.141)   120   1817931 200.000   216.45  80.00- 120.00   100.00(A)
  9.968   9.966 (1.141)   105   5509844                  277.08- 337.08   303.08
-------------------------------------------------------------------------------
  190 1,3,5-Trimethylbenzene                       CAS #: 108-67-8
 10.019  10.019 (1.147)   120   2628182 200.000   223.24  80.00- 120.00   100.00(A)
 10.019  10.019 (1.147)   105   5151086                  165.36- 225.36   195.99
-------------------------------------------------------------------------------
  196 1,2,4-Trimethylbenzene                       CAS #: 95-63-6
 10.341  10.341 (1.184)   120   2323717 200.000   235.02  80.00- 120.00   100.00(A)
 10.341  10.340 (1.184)   105   4738601                  173.89- 233.89   203.92
-------------------------------------------------------------------------------
  208 1,3-Dichlorobenzene                          CAS #: 541-73-1
 10.627  10.622 (1.216)   146   3688445 200.000   201.05  80.00- 120.00   100.00(A)
 10.627  10.623 (1.216)   148   2357183                   34.36-  94.36    63.91
 10.620  10.621 (1.216)   111   1375337                    7.68-  67.68    37.29
-------------------------------------------------------------------------------
  209 1,4-Dichlorobenzene                          CAS #: 106-46-7
 10.706  10.706 (1.225)   146   3796064 200.000   208.37  80.00- 120.00   100.00(A)
 10.706  10.705 (1.225)   148   2401963                   33.64-  93.64    63.28
 10.706  10.702 (1.225)   111   1348606                    5.53-  65.53    35.53
-------------------------------------------------------------------------------
  212 alpha-Chlorotoluene                          CAS #: 100-44-7
 10.814  10.814 (1.238)    91   4183660 200.000   217.72  80.00- 120.00   100.00(A)
 10.821  10.817 (1.239)   126   1076234                    0.00-  55.76    25.72
-------------------------------------------------------------------------------
  214 1,2-Dichlorobenzene                          CAS #: 95-50-1
 11.029  11.029 (1.262)   146   3531737 200.000   201.04  80.00- 120.00   100.00(A)
 11.029  11.029 (1.262)   148   2240456                   33.63-  93.63    63.44
 11.029  11.029 (1.262)   111   1361605                    8.70-  68.70    38.55
-------------------------------------------------------------------------------
  226 1,2,4-Trichlorobenzene                       CAS #: 120-82-1
 12.411  12.411 (1.421)   180   3130618 200.000   218.21  80.00- 120.00   100.00(A)
 12.411  12.411 (1.421)   182   3001100                   66.82- 126.82    95.86
-------------------------------------------------------------------------------
```

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
227 Hexachlorobutadiene						CAS #: 87-68-3		
12.504	12.504	(1.431)	225	2298114	200.000	200.06	80.00- 120.00	100.00(A)
12.504	12.504	(1.431)	223	1449944			33.20- 93.20	63.09
228 Naphthalene						CAS #: 91-20-3		
12.669	12.669	(1.450)	128	690483	20.0000	22.820	80.00- 120.00	100.00
12.669	12.670	(1.450)	127	86950			0.00- 43.12	12.59

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p110820.d
Lab Smp Id: ICAL Level #8
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msdp.i/08NOV18a.b/p18q1108a.m
Misc Info: 200ppbv(200ppbv

Calibration Date: 08-NOV-2018
Calibration Time: 21:40

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	92663	55598	129728	102008	10.08
123 1,4-Difluorobenze	304426	182656	426196	337421	10.84
163 Chlorobenzene-d5	330915	198549	463281	369455	11.65

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.42	0.13
123 1,4-Difluorobenze	6.29	5.96	6.62	6.30	0.11
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/08NOV18a.b/p110820.d

Date : 08-NOV-2018 22:32

Client ID:

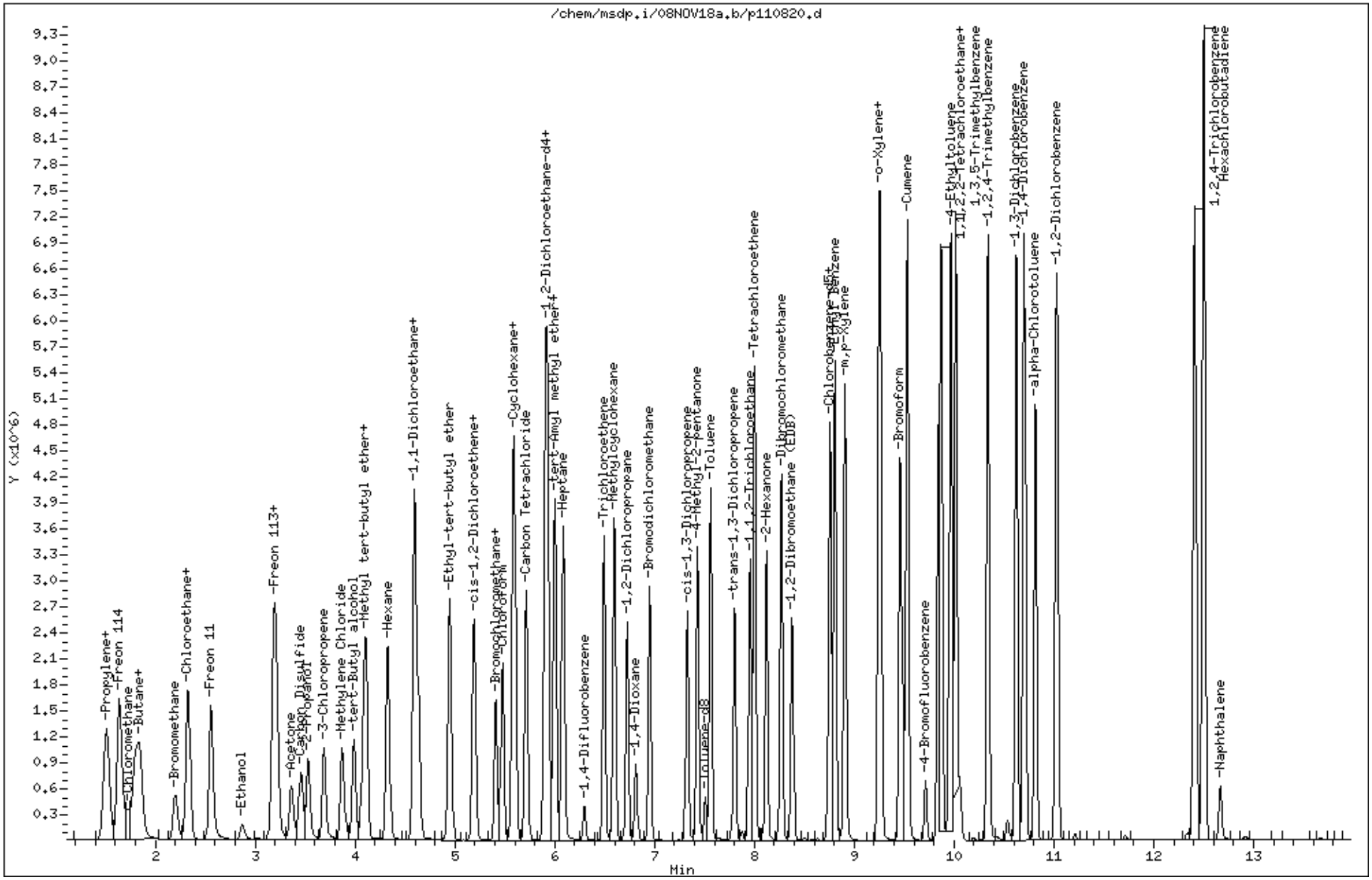
Sample Info: 200ml 3018-509

Column phase: RTX-624

Instrument: msdp.i

Operator: gh

Column diameter: 0.25



US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/26NOV18.b/p092732.d
Lab Smp Id: ICAL Level #8 Client Smp ID: ICAL Level #8
Inj Date : 28-SEP-2018 01:54
Operator : mb Inst ID: msdp.i
Smp Info : 200ml 3045-111
Misc Info : 200ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/26NOV18.b/p18q1108b.m
Meth Date : 27-Nov-2018 08:30 ugdc Quant Type: ISTD
Cal Date : 08-NOV-2018 22:32 Cal File: p110820.d
Als bottle: 6 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT5CRV.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.420	5.414 (1.000)	130	163530	25.0000		80.00- 120.00	100.00
5.420	5.414 (1.000)	128	128491			48.70- 108.70	78.57
5.420	5.411 (1.000)	49	225019			130.32- 190.32	137.60
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.301	6.301 (1.000)	114	495673	25.0000		80.00- 120.00	100.00
6.301	6.301 (1.000)	88	72090			0.00- 44.06	14.54
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.736	8.736 (1.000)	117	562325	25.0000		80.00- 120.00	100.00
8.736	8.736 (1.000)	82	247690			14.84- 74.84	44.05
74 Acrylonitrile					CAS #: 107-13-1		
4.209	4.201 (0.777)	52	997374	200.000	208.85	0.00- 0.00	100.00(A)
4.209	4.200 (0.777)	53	1183745			0.00- 0.00	118.69
157 1,3-Dichloropropane					CAS #: 142-28-9		
8.099	8.100 (1.285)	76	2334536	200.000	207.89	0.00- 0.00	100.00(A)
8.099	8.099 (1.285)	41	2026056			0.00- 0.00	86.79

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
157 1,3-Dichloropropane (continued)							
8.099	8.101 (1.285)	78	785951			0.00- 0.00	33.67
168 1,1,1,2-Tetrachloroethane					CAS #: 630-20-6		
8.829	8.829 (1.011)	131	3169138	200.000	201.79	0.00- 0.00	100.00(A)
8.829	8.829 (1.011)	117	2030728			0.00- 0.00	64.08
8.829	8.829 (1.011)	95	1037704			0.00- 0.00	32.74
203 sec-Butylbenzene					CAS #: 135-98-8		
10.477	10.474 (1.199)	134	2534475	200.000	264.25	0.00- 0.00	100.00(A)
10.477	10.472 (1.199)	105	10926699			0.00- 0.00	431.12
10.477	10.471 (1.199)	91	1625380			0.00- 0.00	64.13
213 Butylbenzene					CAS #: 104-51-8		
10.935	10.935 (1.252)	134	2996042	200.000	239.91	0.00- 0.00	100.00(A)
10.935	10.934 (1.252)	91	9087707			0.00- 0.00	303.32
10.935	10.931 (1.252)	92	4789766			0.00- 0.00	159.87
207 p-Cymene					CAS #: 99-87-6		
10.584	10.584 (1.212)	119	11115483	200.000	247.41	0.00- 0.00	100.00(A)
10.584	10.584 (1.212)	134	3067545			0.00- 0.00	27.60
10.584	10.584 (1.212)	91	2307579			0.00- 0.00	20.76

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p092732.d
Lab Smp Id: ICAL Level #8
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msdp.i/26NOV18.b/p18q1108b.m
Misc Info: 200ppbv (200ppbv)

Calibration Date: 28-SEP-2018
Calibration Time: 01:04
Client Smp ID: ICAL Level #8
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	162118	97271	226965	163530	0.87
123 1,4-Difluorobenze	484572	290743	678401	495673	2.29
163 Chlorobenzene-d5	566566	339940	793192	562325	-0.75

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.42	0.13
123 1,4-Difluorobenze	6.30	5.97	6.63	6.30	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/26NOV18.b/p092732.d

Date : 28-SEP-2018 01:54

Client ID: ICAL Level #8

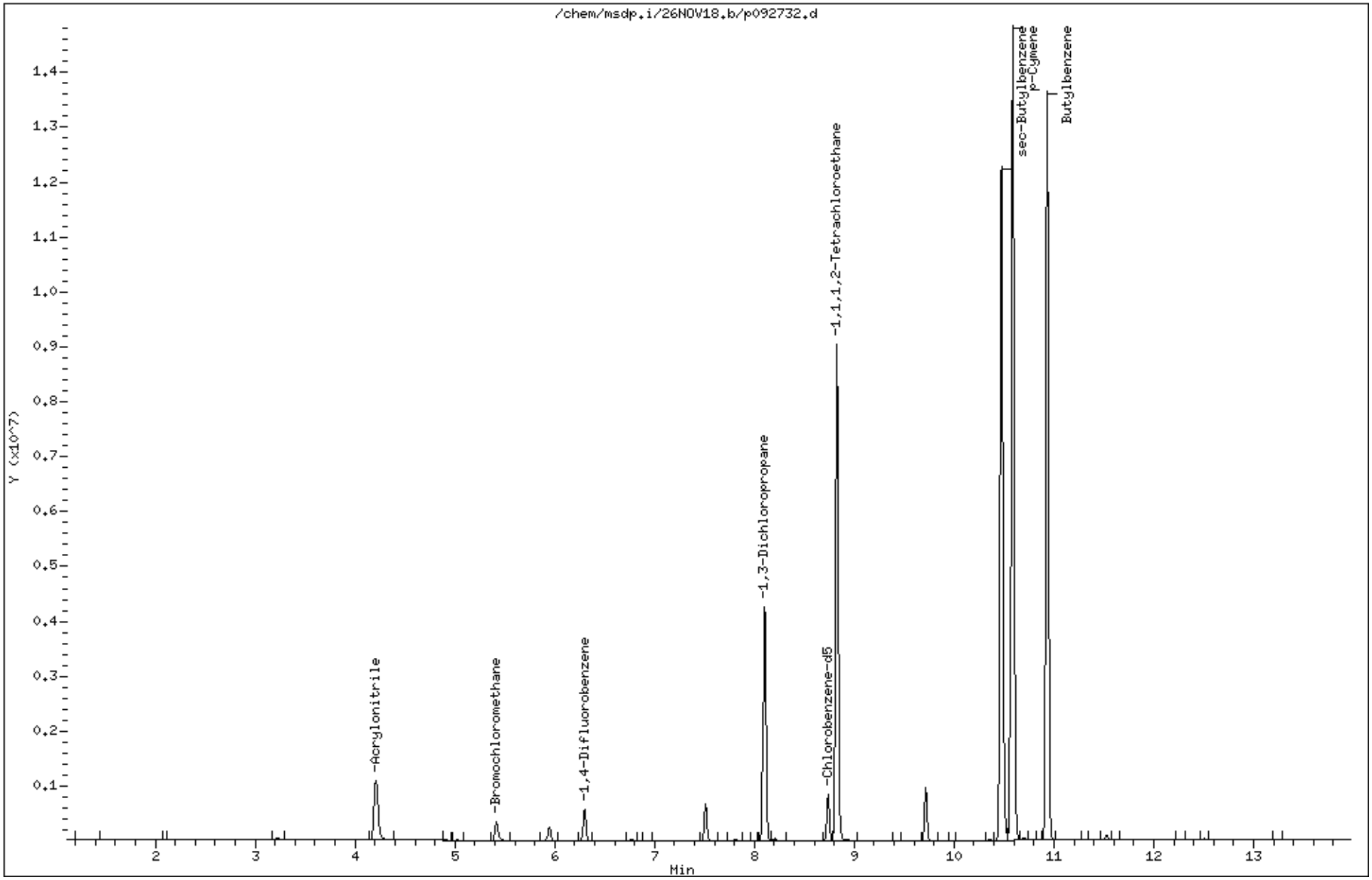
Sample Info: 200ml 3045-111

Column phase: RTX-624

Instrument: msdp.i

Operator: mb

Column diameter: 0.25



eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1812211-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p121202**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/18 10:47 AM**

Compound	%Recovery
Freon 12	106
Freon 114	105
Chloromethane	91
Vinyl Chloride	114
1,3-Butadiene	108
Bromomethane	105
Chloroethane	96
Freon 11	106
Ethanol	89
Freon 113	102
1,1-Dichloroethene	100
Acetone	99
2-Propanol	89
Carbon Disulfide	93
3-Chloropropene	95
Methylene Chloride	96
Methyl tert-butyl ether	100
trans-1,2-Dichloroethene	105
Hexane	101
1,1-Dichloroethane	99
2-Butanone (Methyl Ethyl Ketone)	95
cis-1,2-Dichloroethene	100
Tetrahydrofuran	100
Chloroform	102
1,1,1-Trichloroethane	107
Cyclohexane	102
Carbon Tetrachloride	108
2,2,4-Trimethylpentane	101
Benzene	100
1,2-Dichloroethane	112
Heptane	109
Trichloroethene	104
1,2-Dichloropropane	102
1,4-Dioxane	104
Bromodichloromethane	111
cis-1,3-Dichloropropene	104
4-Methyl-2-pentanone	101
Toluene	103
trans-1,3-Dichloropropene	105
1,1,2-Trichloroethane	104
Tetrachloroethene	114
2-Hexanone	98

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1812211-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p121202**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/18 10:47 AM**	

Compound	**%Recovery**
Dibromochloromethane	112
1,2-Dibromoethane (EDB)	108
Chlorobenzene	105
Ethyl Benzene	111
m,p-Xylene	115
o-Xylene	113
Styrene	114
Bromoform	116
Cumene	118
1,1,2,2-Tetrachloroethane	103
Propylbenzene	111
4-Ethyltoluene	114
1,3,5-Trimethylbenzene	122
1,2,4-Trimethylbenzene	118
1,3-Dichlorobenzene	114
1,4-Dichlorobenzene	117
alpha-Chlorotoluene	99
1,2-Dichlorobenzene	114
1,2,4-Trichlorobenzene	114
Hexachlorobutadiene	118
Methyl Acetate	98
Methylcyclohexane	108
Naphthalene	93

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	106	70-130

US32APPTV002

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msdp.i Injection Date: 12-DEC-2018 10:47
Lab File ID: p121202.d Init. Cal. Date(s): 27-SEP-2018 04-DEC-2018
Analysis Type: AIR Init. Cal. Times: 22:59 18:07
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msdp.i/12DEC18.b/p18q1108c.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 117 1,2-Dichloroethane-d4	1.33141	1.32932	0.010	0.15686	30.00000	Averaged
$ 146 Toluene-d8	1.03289	1.04977	0.010	-1.63372	30.00000	Averaged
$ 177 4-Bromofluorobenzene	0.63474	0.67248	0.010	-5.94560	30.00000	Averaged
9 Propylene	0.93576	0.81933	0.010	12.44203	30.00000	Averaged
11 Freon 12	2.47955	2.63837	0.010	-6.40545	30.00000	Averaged
15 Freon 114	2.03874	2.14471	0.010	-5.19795	30.00000	Averaged
17 Chloromethane	1.13635	1.03614	0.010	8.81800	30.00000	Averaged
23 Butane	0.21152	0.18820	0.010	11.02693	30.00000	Averaged
25 Vinyl Chloride	1.00841	1.14588	0.010	-13.63298	30.00000	Averaged
26 1,3-Butadiene	0.94496	1.02074	0.010	-8.01969	30.00000	Averaged
29 Bromomethane	0.72136	0.75486	0.010	-4.64426	30.00000	Averaged
30 Chloroethane	0.42794	0.40903	0.010	4.41710	30.00000	Averaged
31 Isopentane	1.29457	1.17275	0.010	9.41013	40.00000	Averaged
35 Freon 11	2.87813	3.06157	0.010	-6.37387	30.00000	Averaged
42 Ethanol	0.42863	0.38082	0.010	11.15497	30.00000	Averaged
49 Freon 113	1.91465	1.95463	0.010	-2.08808	30.00000	Averaged
50 1,1-Dichloroethene	0.48299	0.48494	0.010	-0.40355	30.00000	Averaged
52 Acetone	0.49738	0.49286	0.010	0.91040	30.00000	Averaged
56 Carbon Disulfide	2.16229	2.01466	0.010	6.82736	30.00000	Averaged
57 2-Propanol	1.81984	1.62215	0.010	10.86273	30.00000	Averaged
58 3-Chloropropene	0.30331	0.28933	0.010	4.60814	30.00000	Averaged
66 Methylene Chloride	1.53416	1.47568	0.010	3.81162	30.00000	Averaged
71 tert-Butyl alcohol	1.87974	1.83800	0.010	2.22010	30.00000	Averaged
72 Methyl tert-butyl ether	2.09456	2.09756	0.010	-0.14342	30.00000	Averaged
73 trans-1,2-Dichloroethene	0.49745	0.52197	0.010	-4.92825	30.00000	Averaged
78 Hexane	1.55138	1.57152	0.010	-1.29798	30.00000	Averaged
82 1,1-Dichloroethane	1.84268	1.82424	0.010	1.00076	30.00000	Averaged
83 Isopropyl ether	4.17091	4.02735	0.010	3.44205	30.00000	Averaged
86 Vinyl Acetate	0.20293	0.20907	0.010	-3.02436	40.00000	Averaged
88 Ethyl-tert-butyl ether	3.43567	3.32251	0.010	3.29361	40.00000	Averaged
91 cis-1,2-Dichloroethene	0.62962	0.62838	0.010	0.19647	30.00000	Averaged
92 2-Butanone	0.37601	0.35725	0.010	4.98987	30.00000	Averaged
99 Tetrahydrofuran	1.28364	1.27989	0.010	0.29219	30.00000	Averaged
100 Chloroform	2.05058	2.08340	0.010	-1.60054	30.00000	Averaged
102 Cyclohexane	1.01372	1.03879	0.010	-2.47290	30.00000	Averaged
103 1,1,1-Trichloroethane	2.40171	2.56623	0.010	-6.84986	30.00000	Averaged

US32APPTV002

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msdp.i Injection Date: 12-DEC-2018 10:47
Lab File ID: p121202.d Init. Cal. Date(s): 27-SEP-2018 04-DEC-2018
Analysis Type: AIR Init. Cal. Times: 22:59 18:07
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msdp.i/12DEC18.b/p18q1108c.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
106 Carbon Tetrachloride	2.59903	2.81402	0.010	-8.27211	30.00000	Averaged
113 2,2,4-Trimethylpentane	5.52524	5.60397	0.010	-1.42495	30.00000	Averaged
116 Benzene	0.88365	0.88040	0.010	0.36784	30.00000	Averaged
119 tert-Amyl methyl ether	0.20356	0.23204	0.010	-13.99110	30.00000	Averaged
120 1,2-Dichloroethane	0.54829	0.61146	0.010	-11.52140	30.00000	Averaged
121 Heptane	0.24814	0.26976	0.010	-8.71031	30.00000	Averaged
125 Trichloroethene	0.44285	0.46177	0.010	-4.27092	30.00000	Averaged
127 Methylcyclohexane	0.46040	0.49539	0.010	-7.60005	30.00000	Averaged
132 1,2-Dichloropropane	0.38483	0.39284	0.010	-2.08284	30.00000	Averaged
136 1,4-Dioxane	0.19591	0.20378	0.010	-4.01981	30.00000	Averaged
138 Bromodichloromethane	0.72397	0.80473	0.010	-11.15543	30.00000	Averaged
144 cis-1,3-Dichloropropene	0.47225	0.49273	0.010	-4.33645	30.00000	Averaged
145 4-Methyl-2-pentanone	0.33315	0.33568	0.010	-0.75724	30.00000	Averaged
147 Toluene	1.17342	1.21201	0.010	-3.28839	30.00000	Averaged
150 trans-1,3-Dichloropropene	0.44263	0.46557	0.010	-5.18180	30.00000	Averaged
155 1,1,2-Trichloroethane	0.39939	0.41736	0.010	-4.49925	30.00000	Averaged
156 Tetrachloroethene	0.64827	0.74061	0.010	-14.24288	30.00000	Averaged
158 2-Hexanone	0.39416	0.38530	0.010	2.24809	30.00000	Averaged
160 Dibromochloromethane	0.91886	1.02857	0.010	-11.93881	30.00000	Averaged
161 1,2-Dibromoethane (EDB)	0.65385	0.70695	0.010	-8.12092	30.00000	Averaged
165 Chlorobenzene	1.02119	1.07511	0.010	-5.27955	30.00000	Averaged
167 Ethyl Benzene	0.45268	0.50449	0.010	-11.44599	30.00000	Averaged
169 m,p-Xylene	0.55622	0.63913	0.010	-14.90550	30.00000	Averaged
171 o-Xylene	0.52176	0.58869	0.010	-12.82656	30.00000	Averaged
172 Styrene	0.87665	1.00186	0.010	-14.28353	30.00000	Averaged
174 Bromoform	0.84603	0.98260	0.010	-16.14235	30.00000	Averaged
175 Cumene	1.69397	2.00435	0.010	-18.32261	30.00000	Averaged
181 1,1,2,2-Tetrachloroethane	0.85570	0.88563	0.010	-3.49845	30.00000	Averaged
182 Propylbenzene	1.92348	2.14192	0.010	-11.35626	30.00000	Averaged
188 4-Ethyltoluene	0.56832	0.64981	0.010	-14.33984	30.00000	Averaged
190 1,3,5-Trimethylbenzene	0.79664	0.97081	0.010	-21.86367	30.00000	Averaged
196 1,2,4-Trimethylbenzene	0.66904	0.79308	0.010	-18.54058	30.00000	Averaged
208 1,3-Dichlorobenzene	1.24143	1.41901	0.010	-14.30460	30.00000	Averaged
209 1,4-Dichlorobenzene	1.23277	1.43930	0.010	-16.75344	30.00000	Averaged
212 alpha-Chlorotoluene	1.30025	1.28801	0.010	0.94139	30.00000	Averaged

US32APPTV002

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msdp.i Injection Date: 12-DEC-2018 10:47
Lab File ID: p121202.d Init. Cal. Date(s): 27-SEP-2018 04-DEC-2018
Analysis Type: AIR Init. Cal. Times: 22:59 18:07
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msdp.i/12DEC18.b/p18q1108c.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
214 1,2-Dichlorobenzene	1.18873	1.35712	0.010	-14.16527	30.00000	Averaged
226 1,2,4-Trichlorobenzene	0.97079	1.10706	0.010	-14.03717	30.00000	Averaged
227 Hexachlorobutadiene	0.77729	0.91604	0.010	-17.84977	30.00000	Averaged
228 Naphthalene	2.04747	1.90425	0.010	6.99497	40.00000	Averaged

US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/12DEC18.b/p121202.d
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 12-DEC-2018 10:47
Operator : jg Inst ID: msdp.i
Smp Info : 100ml 3018-509A;CCV
Misc Info : 50ppbv(100ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/12DEC18.b/p18q1108c.m
Meth Date : 12-Dec-2018 17:11 u7js Quant Type: ISTD
Cal Date : 04-DEC-2018 18:07 Cal File: p120415.d
Als bottle: 13 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.413 (1.000)	130	75875	25.0000		80.00- 120.00	100.00
5.413	5.413 (1.000)	128	59173			48.70- 108.70	77.99
5.406	5.409 (1.000)	49	108765			130.32- 190.32	143.35
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.294	6.299 (1.000)	114	227347	25.0000		80.00- 120.00	100.00
6.294	6.297 (1.000)	88	31054			0.00- 44.06	13.66
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.737	8.736 (1.000)	117	252646	25.0000		80.00- 120.00	100.00
8.729	8.736 (1.000)	82	107023			14.84- 74.84	42.36
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
5.943	5.942 (1.098)	65	100862	25.0000	24.961	80.00- 120.00	100.00
5.943	5.943 (1.098)	67	56191			26.40- 86.40	55.71
$ 146 Toluene-d8					CAS #: 2037-26-5		
7.504	7.505 (1.192)	98	238661	25.0000	25.408	80.00- 120.00	100.00
7.504	7.504 (1.192)	70	25331			0.00- 40.19	10.61

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.504	7.505 (1.192)	100	163830			38.92- 98.92	68.65
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.725	9.720 (1.113)	174	169899	25.0000	26.486	80.00- 120.00	100.00
9.718	9.714 (1.112)	95	189189			82.53- 142.53	111.35
9.725	9.720 (1.113)	176	163695			65.10- 125.10	96.35
9 Propylene					CAS #: 115-07-1		
1.479	1.479 (0.273)	41	124334	50.0000	43.779	80.00- 120.00	100.00
1.479	1.481 (0.273)	42	82721			37.41- 97.41	66.53
1.479	1.479 (0.273)	39	95336			42.27- 102.27	76.68
11 Freon 12					CAS #: 75-71-8		
1.507	1.511 (0.278)	85	400373	50.0000	53.203	80.00- 120.00	100.00
1.507	1.511 (0.278)	87	129097			2.07- 62.07	32.24
15 Freon 114					CAS #: 76-14-2		
1.633	1.629 (0.302)	135	325460	50.0000	52.599	80.00- 120.00	100.00
1.633	1.629 (0.302)	137	104093			2.07- 62.07	31.98
17 Chloromethane					CAS #: 74-87-3		
1.731	1.726 (0.320)	50	157235	50.0000	45.591	80.00- 120.00	100.00
1.731	1.726 (0.320)	52	47379			0.00- 58.76	30.13
23 Butane					CAS #: 106-97-8		
1.787	1.791 (0.330)	58	28559	50.0000	44.486	80.00- 120.00	100.00
1.787	1.786 (0.330)	43	244357			1048.24-1108.24	855.62
25 Vinyl Chloride					CAS #: 75-01-4		
1.815	1.818 (0.335)	62	173888	50.0000	56.816	80.00- 120.00	100.00
1.815	1.818 (0.335)	64	39561			0.00- 54.53	22.75
26 1,3-Butadiene					CAS #: 106-99-0		
1.843	1.842 (0.340)	54	154898	50.0000	54.010	80.00- 120.00	100.00
1.843	1.840 (0.340)	39	197145			85.58- 145.58	127.27
29 Bromomethane					CAS #: 74-83-9		
2.197	2.195 (0.406)	94	114550	50.0000	52.322	80.00- 120.00	100.00
2.197	2.195 (0.406)	96	105064			65.12- 125.12	91.72
30 Chloroethane					CAS #: 75-00-3		
2.304	2.304 (0.426)	64	62071	50.0000	47.791	80.00- 120.00	100.00
2.304	2.304 (0.426)	66	18242			0.00- 59.74	29.39
2.304	2.302 (0.426)	49	25201			9.89- 69.89	40.60

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.326	2.327 (0.430)	43	177965	50.0000	45.295	80.00- 120.00	100.00
2.326	2.327 (0.430)	57	111162			31.46- 91.46	62.46
35 Freon 11					CAS #: 75-69-4		
2.548	2.551 (0.471)	101	464594	50.0000	53.187	80.00- 120.00	100.00
2.548	2.551 (0.471)	103	295442			34.29- 94.29	63.59
42 Ethanol					CAS #: 64-17-5		
2.863	2.866 (0.529)	45	57789	50.0000	44.422	80.00- 120.00	100.00
2.863	2.864 (0.529)	46	20319			8.87- 68.87	35.16
49 Freon 113					CAS #: 76-13-1		
3.185	3.182 (0.588)	151	296615	50.0000	51.044	80.00- 120.00	100.00
3.185	3.184 (0.588)	153	192375			34.67- 94.67	64.86
3.178	3.180 (0.587)	101	320393			79.70- 139.70	108.02
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.214	3.214 (0.594)	98	73590	50.0000	50.202	80.00- 120.00	100.00
3.214	3.213 (0.594)	96	115854			126.11- 186.11	157.43
3.214	3.213 (0.594)	61	233531			286.72- 346.72	317.34
52 Acetone					CAS #: 67-64-1		
3.350	3.356 (0.619)	58	74791	50.0000	49.545	80.00- 120.00	100.00
3.350	3.357 (0.619)	43	286161			345.31- 405.31	382.61
56 Carbon Disulfide					CAS #: 75-15-0		
3.450	3.452 (0.637)	76	305725	50.0000	46.586	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.529	3.532 (0.652)	45	246162	50.0000	44.569	80.00- 120.00	100.00
3.529	3.530 (0.652)	43	63465			0.00- 53.09	25.78
3.529	3.530 (0.652)	59	8021			0.00- 33.51	3.26
58 3-Chloropropene					CAS #: 107-05-1		
3.687	3.685 (0.681)	76	43906	50.0000	47.696	80.00- 120.00	100.00
3.687	3.684 (0.681)	41	197066			428.12- 488.12	448.84
66 Methylene Chloride					CAS #: 75-09-2		
3.866	3.870 (0.714)	49	223935	50.0000	48.094	80.00- 120.00	100.00
3.866	3.870 (0.714)	84	102931			16.41- 76.41	45.96
3.866	3.870 (0.714)	51	68318			0.00- 59.94	30.51
71 tert-Butyl alcohol					CAS #: 75-65-0		
3.987	3.990 (0.737)	59	278917	50.0000	48.890	80.00- 120.00	100.00
3.987	3.989 (0.737)	41	81296			0.00- 58.57	29.15

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
71 tert-Butyl alcohol (continued)							
3.987	3.987 (0.737)	57	31146			0.00- 41.25	11.17
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.088	4.088 (0.755)	73	318305	50.0000	50.072	80.00- 120.00	100.00
4.088	4.088 (0.755)	57	101373			1.33- 61.33	31.85
4.088	4.089 (0.755)	41	125444			8.05- 68.05	39.41
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.109	4.112 (0.759)	98	79209	50.0000	52.464	80.00- 120.00	100.00
4.109	4.110 (0.759)	61	211471			247.19- 307.19	266.98
4.109	4.113 (0.759)	96	124024			131.40- 191.40	156.58
78 Hexane					CAS #: 110-54-3		
4.324	4.328 (0.799)	57	238478	50.0000	50.649	80.00- 120.00	100.00
4.324	4.328 (0.799)	43	171152			42.49- 102.49	71.77
4.324	4.328 (0.799)	86	28833			0.00- 42.15	12.09
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.596	4.598 (0.849)	63	276828	50.0000	49.500	80.00- 120.00	100.00
4.596	4.599 (0.849)	65	78448			0.00- 58.69	28.34
83 Isopropyl ether					CAS #: 108-20-3		
4.596	4.596 (0.849)	45	611150	50.0000	48.279	80.00- 120.00	100.00
4.596	4.596 (0.849)	87	109068			0.00- 46.96	17.85
4.596	4.596 (0.849)	59	61919			0.00- 39.98	10.13
86 Vinyl Acetate					CAS #: 108-05-4		
4.639	4.640 (0.857)	86	31726	50.0000	51.512	80.00- 120.00	100.00
4.639	4.639 (0.857)	43	555871			1735.43-1795.43	1752.10
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
4.947	4.950 (0.914)	59	504191	50.0000	48.353	80.00- 120.00	100.00
4.947	4.950 (0.914)	87	164148			1.65- 61.65	32.56
4.947	4.948 (0.914)	41	133640			0.00- 54.61	26.51
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.176	5.180 (0.956)	98	95357	50.0000	49.902	80.00- 120.00	100.00
5.176	5.180 (0.956)	96	154183			123.83- 183.83	161.69
5.176	5.177 (0.956)	61	237879			214.95- 274.95	249.46
92 2-Butanone					CAS #: 78-93-3		
5.198	5.200 (0.960)	72	54212	50.0000	47.505	80.00- 120.00	100.00
5.198	5.201 (0.960)	43	381916			669.23- 729.23	704.49
5.198	5.204 (0.960)	57	28304			20.89- 80.89	52.21

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
99 Tetrahydrofuran					CAS #: 109-99-9		
5.406	5.410 (0.999)	42	194223	50.0000	49.854	80.00- 120.00	100.00
5.413	5.412 (1.000)	71	44038			0.00- 54.27	22.67
5.406	5.411 (0.999)	72	47201			0.00- 54.41	24.30
100 Chloroform					CAS #: 67-66-3		
5.470	5.473 (1.011)	83	316156	50.0000	50.800	80.00- 120.00	100.00
5.470	5.473 (1.011)	85	213197			38.55- 98.55	67.43
102 Cyclohexane					CAS #: 110-82-7		
5.585	5.583 (1.032)	84	157636	50.0000	51.236	80.00- 120.00	100.00
5.585	5.584 (1.032)	56	278922			149.13- 209.13	176.94
5.585	5.583 (1.032)	41	170265			74.83- 134.83	108.01
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.599	5.598 (1.034)	97	389425	50.0000	53.425	80.00- 120.00	100.00
5.599	5.599 (1.034)	99	246182			35.00- 95.00	63.22
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.714	5.714 (1.056)	119	427028	50.0000	54.136	80.00- 120.00	100.00
5.714	5.713 (1.056)	117	445246			73.60- 133.60	104.27
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.913 (1.093)	57	850402	50.0000	50.712	80.00- 120.00	100.00
5.914	5.914 (1.093)	56	293970			3.59- 63.59	34.57
5.907	5.911 (1.091)	41	269971			0.20- 60.20	31.75
116 Benzene					CAS #: 71-43-2		
5.921	5.927 (0.941)	78	400313	50.0000	49.816	80.00- 120.00	100.00
5.921	5.925 (0.941)	77	96508			0.00- 54.10	24.11
119 tert-Amyl methyl ether					CAS #: 994-05-8		
5.993	5.999 (0.952)	87	105507	50.0000	56.996	80.00- 120.00	100.00
5.993	5.999 (0.952)	73	364187			327.19- 387.19	345.18
5.993	5.997 (0.952)	55	179964			139.14- 199.14	170.57
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.007	6.010 (0.954)	62	278027	50.0000	55.761	80.00- 120.00	100.00
6.007	6.009 (0.954)	64	86304			0.44- 60.44	31.04
121 Heptane					CAS #: 142-82-5		
6.086	6.085 (0.967)	71	122657	50.0000	54.355	80.00- 120.00	100.00
6.079	6.083 (0.966)	43	367119			259.43- 319.43	299.31
6.086	6.085 (0.967)	57	179050			114.50- 174.50	145.98
125 Trichloroethene					CAS #: 79-01-6		
6.495	6.494 (1.032)	95	209962	50.0000	52.135	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
125 Trichloroethene (continued)							
6.495	6.494 (1.032)	130	264835			88.76- 148.76	126.13
6.495	6.494 (1.032)	97	135608			35.32- 95.32	64.59
127 Methylcyclohexane					CAS #: 108-87-2		
6.595	6.595 (1.048)	83	225251	50.0000	53.800	80.00- 120.00	100.00
6.595	6.595 (1.048)	98	118687			20.32- 80.32	52.69
6.595	6.595 (1.048)	55	296993			98.90- 158.90	131.85
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.724	6.724 (1.068)	63	178623	50.0000	51.041	80.00- 120.00	100.00
6.724	6.724 (1.068)	62	130773			41.74- 101.74	73.21
6.724	6.724 (1.068)	41	135185			41.01- 101.01	75.68
136 1,4-Dioxane					CAS #: 123-91-1		
6.817	6.817 (1.083)	88	92658	50.0000	52.010	80.00- 120.00	100.00
6.810	6.816 (1.082)	58	87159			66.86- 126.86	94.07
6.810	6.816 (1.082)	57	29534			1.32- 61.32	31.87
138 Bromodichloromethane					CAS #: 75-27-4		
6.953	6.953 (1.105)	83	365906	50.0000	55.578	80.00- 120.00	100.00
6.953	6.952 (1.105)	85	245943			35.98- 95.98	67.21
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.325	7.325 (1.164)	75	224042	50.0000	52.168	80.00- 120.00	100.00
7.325	7.325 (1.164)	77	74010			2.71- 62.71	33.03
7.325	7.325 (1.164)	39	171811			43.85- 103.85	76.69
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.433	7.433 (1.181)	58	152630	50.0000	50.379	80.00- 120.00	100.00
7.433	7.433 (1.181)	43	467989			267.85- 327.85	306.62
7.433	7.434 (1.181)	85	51117			4.54- 64.54	33.49
147 Toluene					CAS #: 108-88-3		
7.562	7.562 (1.201)	91	551093	50.0000	51.644	80.00- 120.00	100.00
7.562	7.562 (1.201)	92	321344			28.88- 88.88	58.31
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.798	7.798 (0.893)	75	235248	50.0000	52.591	80.00- 120.00	100.00
7.798	7.798 (0.893)	77	78809			2.67- 62.67	33.50
7.798	7.798 (0.893)	39	166543			37.60- 97.60	70.79
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.956	7.956 (0.911)	97	210888	50.0000	52.250	80.00- 120.00	100.00
7.956	7.956 (0.911)	99	132286			30.86- 90.86	62.73
7.956	7.956 (0.911)	83	164136			47.74- 107.74	77.83

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
156 Tetrachloroethene					CAS #: 127-18-4		
7.999	8.001 (0.916)	166	374223	50.0000	57.121	80.00- 120.00	100.00
7.999	7.999 (0.916)	129	283583			48.46- 108.46	75.78
7.999	7.999 (0.916)	131	273320			45.42- 105.42	73.04
158 2-Hexanone					CAS #: 591-78-6		
8.120	8.120 (0.929)	58	194690	50.0000	48.876	80.00- 120.00	100.00
8.120	8.120 (0.929)	43	429046			185.57- 245.57	220.37
8.120	8.120 (0.929)	100	33198			0.00- 46.27	17.05
160 Dibromochloromethane					CAS #: 124-48-1		
8.264	8.267 (0.946)	129	519726	50.0000	55.969	80.00- 120.00	100.00
8.264	8.268 (0.946)	127	401463			47.61- 107.61	77.25
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
8.378	8.378 (0.959)	107	357216	50.0000	54.060	80.00- 120.00	100.00
8.378	8.378 (0.959)	109	356333			68.89- 128.89	99.75
165 Chlorobenzene					CAS #: 108-90-7		
8.758	8.758 (1.002)	112	543243	50.0000	52.640	80.00- 120.00	100.00
8.758	8.758 (1.002)	114	174408			1.88- 61.88	32.10
8.758	8.757 (1.002)	77	265781			20.89- 80.89	48.92
167 Ethyl Benzene					CAS #: 100-41-4		
8.808	8.808 (1.008)	106	254917	50.0000	55.723	80.00- 120.00	100.00
8.808	8.808 (1.008)	91	749516			268.95- 328.95	294.02
169 m,p-Xylene					CAS #: 108-38-3		
8.901	8.905 (1.019)	106	322948	50.0000	57.453	80.00- 120.00	100.00
8.901	8.906 (1.019)	91	621175			159.20- 219.20	192.35
171 o-Xylene					CAS #: 95-47-6		
9.245	9.245 (1.058)	106	297460	50.0000	56.413	80.00- 120.00	100.00
9.245	9.245 (1.058)	91	605068			173.23- 233.23	203.41
172 Styrene					CAS #: 100-42-5		
9.267	9.266 (1.061)	104	506233	50.0000	57.142	80.00- 120.00	100.00
9.259	9.265 (1.060)	78	243021			15.83- 75.83	48.01
174 Bromoform					CAS #: 75-25-2		
9.467	9.461 (1.084)	173	496499	50.0000	58.071	80.00- 120.00	100.00
9.467	9.461 (1.084)	171	254562			21.75- 81.75	51.27
175 Cumene					CAS #: 98-82-8		
9.532	9.532 (1.091)	105	1012781	50.0000	59.161	80.00- 120.00	100.00
9.539	9.533 (1.092)	120	295948			0.00- 58.53	29.22

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
175 Cumene (continued)							
9.532	9.532 (1.091)	51	130950			0.00- 43.43	12.93
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.847	9.841 (1.127)	83	447504	50.0000	51.749	80.00- 120.00	100.00
9.847	9.841 (1.127)	85	308483			38.99- 98.99	68.93
182 Propylbenzene					CAS #: 103-65-1		
9.883	9.875 (1.131)	91	1082295	50.0000	55.678	80.00- 120.00	100.00
9.883	9.876 (1.131)	120	306451			0.00- 56.98	28.31
9.883	9.875 (1.131)	105	46323			0.00- 34.22	4.28
188 4-Ethyltoluene					CAS #: 622-96-8		
9.976	9.968 (1.142)	120	328346	50.0000	57.170	80.00- 120.00	100.00
9.976	9.967 (1.142)	105	1040745			277.08- 337.08	316.97
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.026	10.020 (1.148)	120	490543	50.0000	60.932	80.00- 120.00	100.00
10.026	10.020 (1.148)	105	900512			165.36- 225.36	183.57
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.355	10.343 (1.185)	120	400737	50.0000	59.270	80.00- 120.00	100.00
10.355	10.342 (1.185)	105	802826			173.89- 233.89	200.34
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.642	10.625 (1.218)	146	717015	50.0000	57.152	80.00- 120.00	100.00
10.642	10.626 (1.218)	148	462329			34.36- 94.36	64.48
10.642	10.624 (1.218)	111	260928			7.68- 67.68	36.39
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.721	10.708 (1.227)	146	727269	50.0000	58.377	80.00- 120.00	100.00
10.721	10.707 (1.227)	148	458859			33.64- 93.64	63.09
10.721	10.705 (1.227)	111	256017			5.53- 65.53	35.20
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.835	10.817 (1.240)	91	650821	50.0000	49.529	80.00- 120.00	100.00
10.835	10.820 (1.240)	126	172346			0.00- 55.76	26.48
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.050	11.032 (1.265)	146	685740	50.0000	57.083	80.00- 120.00	100.00
11.050	11.032 (1.265)	148	443629			33.63- 93.63	64.69
11.050	11.032 (1.265)	111	261657			8.70- 68.70	38.16
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.447	12.417 (1.425)	180	559391	50.0000	57.018	80.00- 120.00	100.00
12.447	12.417 (1.425)	182	531329			66.82- 126.82	94.98

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
227 Hexachlorobutadiene					CAS #: 87-68-3		
12.533	12.509 (1.435)	225	462866	50.0000	58.925	80.00- 120.00	100.00
12.533	12.509 (1.435)	223	289755			33.20- 93.20	62.60
228 Naphthalene					CAS #: 91-20-3		
12.705	12.675 (1.454)	128	96220	5.00000	4.650	80.00- 120.00	100.00
12.698	12.675 (1.453)	127	13246			0.00- 43.12	13.77

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p121202.d
Lab Smp Id: CCV
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msdp.i/12DEC18.b/p18q1108c.m
Misc Info: 50ppbv(100ppbv)

Calibration Date: 12-DEC-2018
Calibration Time: 12:53
Client Smp ID: CCV
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	83642	50185	117099	75875	-9.29
123 1,4-Difluorobenze	265308	159185	371431	227347	-14.31
163 Chlorobenzene-d5	294874	176924	412824	252646	-14.32

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/12DEC18.b/p121202.d

Date : 12-DEC-2018 10:47

Client ID: CCV

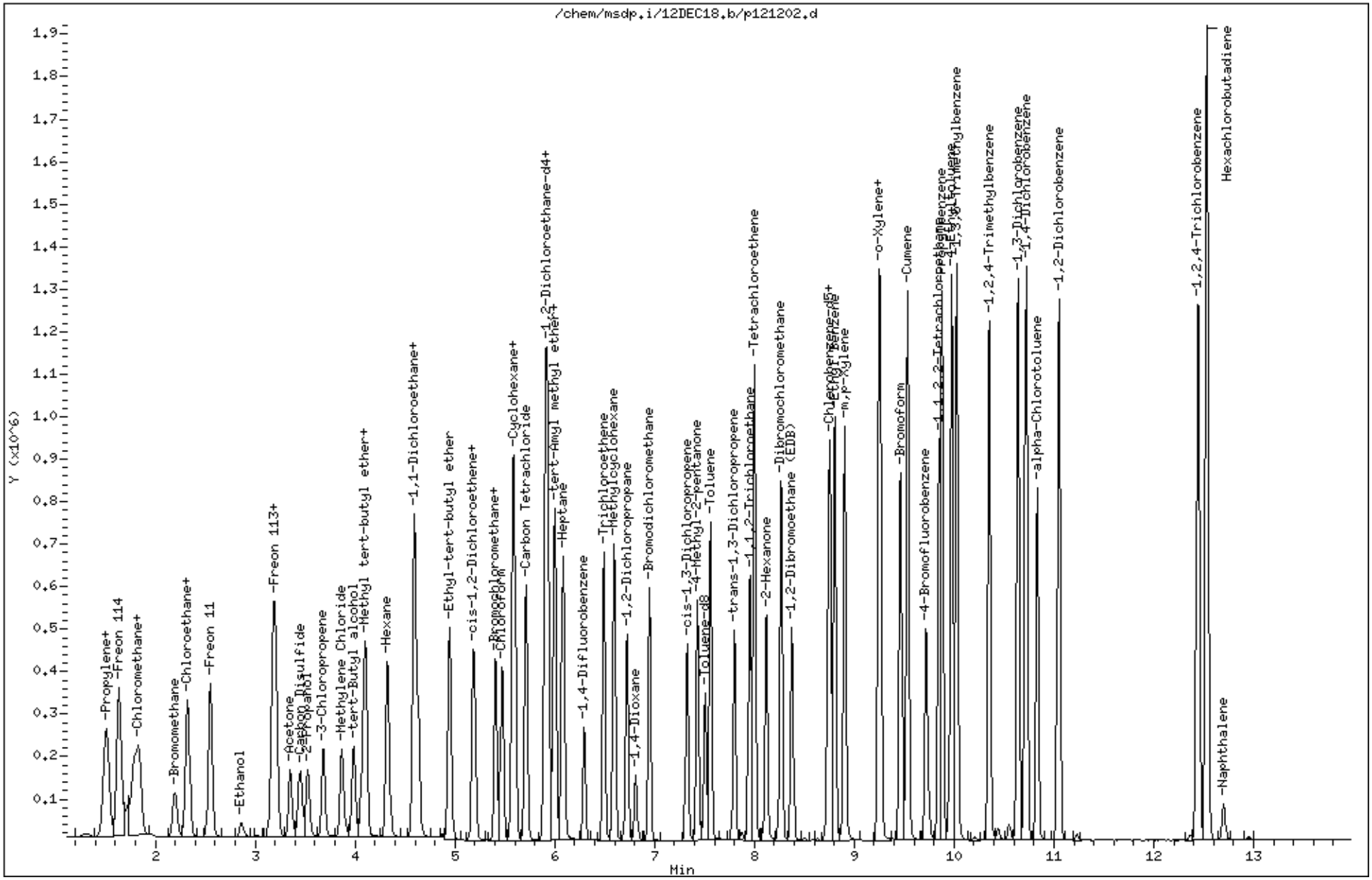
Sample Info: 100ml 3018-509A;CCV

Column phase: RTX-624

Instrument: msdp.i

Operator: jg

Column diameter: 0.25



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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msdp.i Injection Date: 12-DEC-2018 12:53
Lab File ID: p121205.d Init. Cal. Date(s): 27-SEP-2018 04-DEC-2018
Analysis Type: AIR Init. Cal. Times: 22:59 18:07
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msdp.i/12DEC18.b/p18q1108c.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
6 Freon 143a	++++	++++	0.010	++++	30.00000	Averaged	<-
7 Freon 134a	0.64986	0.71359	0.010	-9.80690	30.00000	Averaged	
8 Propane	0.24596	0.20503	0.010	16.63980	30.00000	Averaged	
10 1,1-Difluoroethane	0.28120	0.31060	0.010	-10.45280	30.00000	Averaged	
13 Chlorodifluoromethane	0.18579	0.19564	0.010	-5.30358	30.00000	Averaged	
16 Freon 142b	1.83675	1.79886	0.010	2.06280	30.00000	Averaged	
32 Vinyl Bromide	0.83018	0.80427	0.010	3.12194	30.00000	Averaged	
34 Pentane	1.35204	1.35028	0.010	0.12999	30.00000	Averaged	
36 1-Pentene	1.12333	1.10265	0.010	1.84130	30.00000	Averaged	
37 Dichlorofluoromethane	1.81417	1.77847	0.010	1.96797	30.00000	Averaged	
44 Ethyl Ether	0.37804	0.34346	0.010	9.14511	30.00000	Averaged	
47 Freon 123a	1.55701	1.53228	0.010	1.58854	30.00000	Averaged	
48 Freon 123	1.84769	1.76570	0.010	4.43741	30.00000	Averaged	
53 Iodomethane	++++	1.15314	0.010	++++	30.00000	Averaged	<-
59 Cyclopentene	1.21996	1.17078	0.010	4.03101	30.00000	Averaged	
61 Methyl Acetate	2.68375	2.63247	0.010	1.91076	30.00000	Averaged	
63 Acetonitrile	0.21627	0.73885	0.010	-242	30.00000	Averaged	<-
64 Cyclopentane	0.41938	0.40665	0.010	3.03629	30.00000	Averaged	
74 Acrylonitrile	0.73006	0.91645	0.010	-25.53125	30.00000	Averaged	
76 1-Hexene	0.87393	0.87100	0.010	0.33550	30.00000	Averaged	
84 1-Propanol	0.20304	0.21169	0.010	-4.26158	30.00000	Averaged	
85 Chloroprene	1.73240	1.70815	0.010	1.40003	30.00000	Averaged	
90 2,2-Dichloropropane	1.64176	1.63246	0.010	0.56643	30.00000	Averaged	
94 Ethyl Acetate	0.16402	0.15972	0.010	2.62395	30.00000	Averaged	
93 Methyl Acrylate	2.49457	2.45244	0.010	1.68887	30.00000	Averaged	
107 1,1-Dichloropropene	0.16104	0.16150	0.010	-0.28366	30.00000	Averaged	
115 Isobutanol	0.09180	0.08913	0.010	2.91121	30.00000	Averaged	
$ 117 1,2-Dichloroethane-d4	1.33141	1.35497	0.010	-1.76947	30.00000	Averaged	
124 n-Butanol	0.32418	0.30891	0.010	4.70886	30.00000	Averaged	
128 Ethyl acrylate	0.05007	0.05152	0.010	-2.88889	30.00000	Averaged	
131 2-Pentanone	1.13880	1.19390	0.010	-4.83865	30.00000	Averaged	
134 Methyl Methacrylate	0.55694	0.57439	0.010	-3.13277	30.00000	Averaged	
137 Dibromomethane	0.48166	0.49209	0.010	-2.16404	30.00000	Averaged	
$ 146 Toluene-d8	1.03289	0.95783	0.010	7.26741	30.00000	Averaged	
148 Octane	0.31085	0.32510	0.010	-4.58486	30.00000	Averaged	

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msdp.i Injection Date: 12-DEC-2018 12:53
Lab File ID: p121205.d Init. Cal. Date(s): 27-SEP-2018 04-DEC-2018
Analysis Type: AIR Init. Cal. Times: 22:59 18:07
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msdp.i/12DEC18.b/p18q1108c.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
157 1,3-Dichloropropane	0.56639	0.47568	0.010	16.01589	30.00000	Averaged	
159 Butyl Acetate	0.36539	0.38422	0.010	-5.15379	30.00000	Averaged	
168 1,1,1,2-Tetrachloroethane	0.69821	0.60582	0.010	13.23157	30.00000	Averaged	
170 Nonane	0.77303	0.81019	0.010	-4.80715	30.00000	Averaged	
173 2-Heptanone	2.06650	2.07827	0.010	-0.56935	30.00000	Averaged	
176 Cyclohexanone	0.50729	0.51141	0.010	-0.81086	30.00000	Averaged	
$ 177 4-Bromofluorobenzene	0.63474	0.71037	0.010	-11.91541	30.00000	Averaged	
179 alpha-Pinene	0.90633	0.95546	0.010	-5.42071	30.00000	Averaged	
180 Bromobenzene	0.62116	0.62168	0.010	-0.08222	30.00000	Averaged	
184 trans-1,4-Dichloro-2-butene	0.24833	0.83004	0.010	-234	30.00000	Averaged	<-
185 1,2,3-Trichloropropane	0.28281	0.28038	0.010	0.85932	30.00000	Averaged	
187 Decane	0.86587	0.92918	0.010	-7.31149	30.00000	Averaged	
189 2-Chlorotoluene	0.47003	0.48082	0.010	-2.29583	30.00000	Averaged	
191 4-Chlorotoluene	0.50198	0.51760	0.010	-3.11154	30.00000	Averaged	
192 beta-Pinene	0.78882	0.81969	0.010	-3.91238	30.00000	Averaged	
193 Diisobutyl Ketone	1.14248	1.19502	0.010	-4.59871	30.00000	Averaged	
195 tert-Butylbenzene	1.40175	1.44007	0.010	-2.73334	30.00000	Averaged	
197 Pentachloroethane	0.47835	0.48922	0.010	-2.27209	30.00000	Averaged	
199 D-Limonene	0.68212	0.70419	0.010	-3.23449	30.00000	Averaged	
203 sec-Butylbenzene	0.42641	0.41524	0.010	2.61824	30.00000	Averaged	
206 bis(2-Chloroethyl) Ether	0.81292	1.48380	0.010	-82.52656	30.00000	Averaged	<-
207 p-Cymene	1.99739	1.86504	0.010	6.62632	30.00000	Averaged	
210 1,2,3-Trimethylbenzene	0.65460	0.67666	0.010	-3.36993	30.00000	Averaged	
213 Butylbenzene	0.55520	0.47144	0.010	15.08760	30.00000	Averaged	
215 Undecane	0.95358	0.98907	0.010	-3.72167	30.00000	Averaged	
217 Hexachloroethane	0.45795	0.47928	0.010	-4.65896	30.00000	Averaged	
221 1,2-Dibromo-3-chloropropane	0.51930	0.47789	0.010	7.97504	40.00000	Averaged	
224 1,3,5-Trichlorobenzene	0.98618	0.93881	0.010	4.80371	30.00000	Averaged	
225 Dodecane	0.80749	0.74831	0.010	7.32906	30.00000	Averaged	
229 1,2,3-Trichlorobenzene	0.65358	0.51419	0.010	21.32670	40.00000	Averaged	

US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/12DEC18.b/p121205.d
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 12-DEC-2018 12:53
Operator : jg Inst ID: msdp.i
Smp Info : 50ml 3045-193
Misc Info : 50ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/12DEC18.b/p18q1108c.m
Meth Date : 12-Dec-2018 13:24 u7js Quant Type: ISTD
Cal Date : 04-DEC-2018 18:07 Cal File: p120415.d
Als bottle: 11 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: MasterCCV.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
7 Freon 134a					CAS #: 811-97-2		
1.451	1.456 (0.268)	83	119372	50.0000	54.903	0.00- 0.00	100.00
1.437	1.448 (0.265)	69	138178			0.00- 0.00	115.75
8 Propane					CAS #: 74-98-6		
1.479	1.484 (0.273)	39	34298	50.0000	41.680	0.00- 0.00	100.00
1.479	1.481 (0.273)	44	57400			0.00- 0.00	167.36
1.479	1.484 (0.273)	43	47171			0.00- 0.00	137.53
10 1,1-Difluoroethane					CAS #: 75-37-6		
1.507	1.509 (0.278)	65	51958	50.0000	55.226	0.00- 0.00	100.00
1.535	1.546 (0.284)	51	397556			0.00- 0.00	765.15
1.507	1.512 (0.278)	47	34102			0.00- 0.00	65.63
13 Chlorodifluoromethane					CAS #: 75-45-6		
1.549	1.557 (0.286)	67	32728	50.0000	52.652	0.00- 0.00	100.00
1.535	1.546 (0.284)	51	397556			0.00- 0.00	1214.73
1.661	1.672 (0.307)	85	34802			0.00- 0.00	106.34
16 Freon 142b					CAS #: 75-68-3		
1.661	1.669 (0.307)	65	300920	50.0000	48.969	0.00- 0.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
16 Freon 142b (continued)							
1.661	1.669 (0.307)	45	80968			0.00- 0.00	26.91
32 Vinyl Bromide					CAS #: 593-60-2		
2.505	2.510 (0.463)	106	134541	50.0000	48.439	0.00- 0.00	100.00
2.505	2.510 (0.463)	108	131736			0.00- 0.00	97.92
34 Pentane					CAS #: 109-66-0		
2.612	2.616 (0.483)	43	225881	50.0000	49.935	0.00- 0.00	100.00
2.619	2.619 (0.484)	57	31071			0.00- 0.00	13.76
2.612	2.618 (0.483)	72	14439			0.00- 0.00	6.39
36 1-Pentene					CAS #: 109-67-1		
2.562	2.562 (0.473)	55	184455	50.0000	49.079	0.00- 0.00	100.00
2.562	2.562 (0.473)	42	244522			0.00- 0.00	132.56
37 Dichlorofluoromethane					CAS #: 75-43-4		
2.555	2.560 (0.472)	67	297510	50.0000	49.016	0.00- 0.00	100.00
2.555	2.560 (0.472)	69	91651			0.00- 0.00	30.81
44 Ethyl Ether					CAS #: 60-29-7		
2.913	2.919 (0.538)	74	57456	50.0000	45.427	0.00- 0.00	100.00
2.913	2.919 (0.538)	59	123043			0.00- 0.00	214.15
47 Freon 123a					CAS #: 354-23-4		
3.013	3.016 (0.557)	117	256326	50.0000	49.206	0.00- 0.00	100.00
3.013	3.013 (0.557)	67	259782			0.00- 0.00	101.35
48 Freon 123					CAS #: 306-83-2		
3.113	3.113 (0.575)	83	295374	50.0000	47.781	0.00- 0.00	100.00
3.113	3.112 (0.575)	133	93368			0.00- 0.00	31.61
3.113	3.113 (0.575)	85	211127			0.00- 0.00	71.48
53 Iodomethane					CAS #: 74-88-4		
3.414	3.414 (0.631)	142	192902	50.0000		0.00- 0.00	100.00(a)
3.414	3.414 (0.631)	127	96104			0.00- 0.00	49.82
59 Cyclopentene					CAS #: 142-29-0		
3.701	3.702 (0.684)	67	195853	50.0000	47.984	0.00- 0.00	100.00
3.701	3.701 (0.684)	68	69524			0.00- 0.00	35.50
3.701	3.701 (0.684)	53	61871			0.00- 0.00	31.59
61 Methyl Acetate					CAS #: 79-20-9		
3.715	3.721 (0.686)	43	440370	50.0000	49.045	0.00- 0.00	100.00
3.715	3.721 (0.686)	74	55972			0.00- 0.00	12.71

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
63 Acetonitrile					CAS #: 75-05-8		
3.815	3.781 (0.705)	39	123597	50.0000	170.82	0.00- 0.00	100.00
3.765	3.770 (0.696)	41	298856			0.00- 0.00	241.80
3.765	3.770 (0.696)	40	121838			0.00- 0.00	98.58
64 Cyclopentane					CAS #: 287-92-3		
3.815	3.817 (0.705)	70	68026	50.0000	48.482	0.00- 0.00	100.00
3.815	3.815 (0.705)	55	146401			0.00- 0.00	215.21
74 Acrylonitrile					CAS #: 107-13-1		
4.202	4.201 (0.776)	52	153308	50.0000	62.766	0.00- 0.00	100.00
4.202	4.200 (0.776)	53	197713			0.00- 0.00	128.96
76 1-Hexene					CAS #: 592-41-6		
4.252	4.254 (0.786)	55	145704	50.0000	49.832	0.00- 0.00	100.00
4.252	4.252 (0.786)	41	219172			0.00- 0.00	150.42
4.260	4.257 (0.787)	84	39236			0.00- 0.00	26.93
84 1-Propanol					CAS #: 71-23-8		
4.739	4.739 (0.876)	59	35412	50.0000	52.131	0.00- 0.00	100.00
4.739	4.739 (0.876)	42	34856			0.00- 0.00	98.43
4.739	4.738 (0.876)	41	23434			0.00- 0.00	66.18
85 Chloroprene					CAS #: 126-99-8		
4.654	4.651 (0.860)	53	285746	50.0000	49.300	0.00- 0.00	100.00
4.654	4.651 (0.860)	88	108386			0.00- 0.00	37.93
4.646	4.648 (0.858)	50	75365			0.00- 0.00	26.37
90 2,2-Dichloropropane					CAS #: 594-20-7		
5.141	5.141 (0.950)	77	273085	50.0000	49.717	0.00- 0.00	100.00
5.141	5.139 (0.950)	79	87064			0.00- 0.00	31.88
5.141	5.141 (0.950)	97	53243			0.00- 0.00	19.50
94 Ethyl Acetate					CAS #: 141-78-6		
5.219	5.224 (0.964)	70	26718	50.0000	48.688	0.00- 0.00	100.00
5.219	5.224 (0.964)	61	48467			0.00- 0.00	181.40
5.219	5.224 (0.964)	45	68642			0.00- 0.00	256.91
93 Methyl Acrylate					CAS #: 96-33-3		
5.270	5.270 (0.974)	55	410254	50.0000	49.156	0.00- 0.00	100.00
5.270	5.270 (0.974)	85	47762			0.00- 0.00	11.64
5.270	5.270 (0.974)	58	34829			0.00- 0.00	8.49
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.413 (1.000)	130	83642	25.0000		80.00- 120.00	100.00
5.413	5.413 (1.000)	128	67065			48.70- 108.70	80.18

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

*  98 Bromochloromethane (continued)
  5.406   5.409 (1.000)    49    124641                  130.32- 190.32   149.02
-------------------------------------------------------------------------------
  107 1,1-Dichloropropene                          CAS #: 563-58-6
  5.749   5.749 (0.913)   110     85693 50.0000   50.142   0.00-   0.00   100.00
  5.749   5.747 (0.913)    75    193646                    0.00-   0.00   225.98
-------------------------------------------------------------------------------
  115 Isobutanol                                   CAS #: 78-83-1
  5.893   5.894 (0.936)    39     47295 50.0000   48.544   0.00-   0.00   100.00
  5.893   5.893 (0.936)    43    166224                    0.00-   0.00   351.46
  5.893   5.894 (0.936)    41    131746                    0.00-   0.00   278.56
-------------------------------------------------------------------------------
$ 117 1,2-Dichloroethane-d4                        CAS #: 17060-07-0
  5.943   5.942 (1.098)    65    113332 25.0000   25.442  80.00- 120.00   100.00
  5.943   5.943 (1.098)    67     49252                   26.40-  86.40    43.46
-------------------------------------------------------------------------------
* 123 1,4-Difluorobenzene                          CAS #: 540-36-3
  6.294   6.299 (1.000)   114    265308 25.0000           80.00- 120.00   100.00
  6.294   6.297 (1.000)    88     38688                    0.00-  44.06    14.58
-------------------------------------------------------------------------------
  124 n-Butanol                                    CAS #: 71-36-3
  6.466   6.466 (1.027)    56    163915 50.0000   47.646   0.00-   0.00   100.00
  6.466   6.466 (1.027)    41    133804                    0.00-   0.00    81.63
  6.466   6.466 (1.027)    43    102075                    0.00-   0.00    62.27
-------------------------------------------------------------------------------
  128 Ethyl acrylate                               CAS #: 140-88-5
  6.588   6.590 (0.754)    99     30383 50.0000   51.444   0.00-   0.00   100.00
  6.588   6.588 (0.754)    45     53490                    0.00-   0.00   176.05
  6.588   6.588 (0.754)    55    556579                    0.00-   0.00  1831.88
-------------------------------------------------------------------------------
  131 2-Pentanone                                  CAS #: 107-87-9
  6.681   6.679 (0.765)    43    704103 50.0000   52.419   0.00-   0.00   100.00
  6.681   6.679 (0.765)    58     50309                    0.00-   0.00     7.15
  6.681   6.681 (0.765)    86     83489                    0.00-   0.00    11.86
-------------------------------------------------------------------------------
  134 Methyl Methacrylate                          CAS #: 80-62-6
  6.781   6.782 (0.776)    41    338745 50.0000   51.566   0.00-   0.00   100.00
  6.781   6.782 (0.776)    69    163353                    0.00-   0.00    48.22
  6.781   6.784 (0.776)   100     78322                    0.00-   0.00    23.12
-------------------------------------------------------------------------------
  137 Dibromomethane                               CAS #: 74-95-3
  6.831   6.832 (0.782)   174    290207 50.0000   51.082   0.00-   0.00   100.00
  6.831   6.831 (0.782)    93    240109                    0.00-   0.00    82.74
  6.831   6.831 (0.782)    95    202228                    0.00-   0.00    69.68
-------------------------------------------------------------------------------
$ 146 Toluene-d8                                   CAS #: 2037-26-5
  7.504   7.505 (1.192)    98    254119 25.0000   23.183  80.00- 120.00   100.00
```

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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

$ 146 Toluene-d8 (continued)
  7.504   7.504 (1.192)    70     28962                     0.00-  40.19    11.40
  7.504   7.505 (1.192)   100    171147                    38.92-  98.92    67.35
--------------------------------------------------------------------------------
  148 Octane                                          CAS #: 111-65-9
  7.569   7.569 (1.203)    57    172504 50.0000   52.292   0.00-   0.00   100.00
  7.569   7.570 (1.203)    85    140061                     0.00-   0.00    81.19
  7.569   7.569 (1.203)    43    456060                     0.00-   0.00   264.38
--------------------------------------------------------------------------------
  157 1,3-Dichloropropane                             CAS #: 142-28-9
  8.099   8.100 (1.287)    76    252403 50.0000   41.992   0.00-   0.00   100.00
  8.099   8.099 (1.287)    41    253065                     0.00-   0.00   100.26
  8.099   8.101 (1.287)    78     85465                     0.00-   0.00    33.86
--------------------------------------------------------------------------------
  159 Butyl Acetate                                   CAS #: 123-86-4
  8.185   8.183 (1.300)    56    203872 50.0000   52.577   0.00-   0.00   100.00
  8.185   8.183 (1.300)    73     53194                     0.00-   0.00    26.09
  8.185   8.183 (1.300)    43    532433                     0.00-   0.00   261.16
--------------------------------------------------------------------------------
* 163 Chlorobenzene-d5                                CAS #: 3114-55-4
  8.736   8.736 (1.000)   117    294874 25.0000            80.00- 120.00   100.00
  8.729   8.736 (1.000)    82    126874                    14.84-  74.84    43.03
--------------------------------------------------------------------------------
  168 1,1,1,2-Tetrachloroethane                       CAS #: 630-20-6
  8.822   8.829 (1.010)   131    357284 50.0000   43.384   0.00-   0.00   100.00
  8.822   8.829 (1.010)   117    228752                     0.00-   0.00    64.03
  8.822   8.829 (1.010)    95    122754                     0.00-   0.00    34.36
--------------------------------------------------------------------------------
  170 Nonane                                          CAS #: 111-84-2
  8.830   8.830 (1.011)    43    477810 50.0000   52.404   0.00-   0.00   100.00
  8.830   8.830 (1.011)    57    384947                     0.00-   0.00    80.56
  8.830   8.830 (1.011)    85    110201                     0.00-   0.00    23.06
--------------------------------------------------------------------------------
  173 2-Heptanone                                     CAS #: 110-43-0
  9.338   9.338 (1.725)    58    347661 50.0000   50.285   0.00-   0.00   100.00
  9.338   9.338 (1.725)    43    611743                     0.00-   0.00   175.96
--------------------------------------------------------------------------------
  176 Cyclohexanone                                   CAS #: 108-94-1
  9.689   9.689 (1.109)    55    301601 50.0000   50.405   0.00-   0.00   100.00
  9.689   9.689 (1.109)    98     92395                     0.00-   0.00    30.63
  9.689   9.689 (1.109)    42    195862                     0.00-   0.00    64.94
--------------------------------------------------------------------------------
$ 177 4-Bromofluorobenzene                            CAS #: 460-00-4
  9.718   9.719 (1.112)   174    209470 25.0000   27.979  80.00- 120.00   100.00
  9.711   9.713 (1.111)    95    227538                    82.53- 142.53   108.63
  9.718   9.719 (1.112)   176    199521                    65.10- 125.10    95.25
--------------------------------------------------------------------------------
```

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
179 alpha-Pinene					CAS #: 80-56-8		
9.496	9.494 (1.087)	93	563480	50.0000	52.710	0.00- 0.00	100.00
9.496	9.494 (1.087)	77	172201			0.00- 0.00	30.56
180 Bromobenzene					CAS #: 108-86-1		
9.847	9.847 (1.127)	156	366632	50.0000	50.041	0.00- 0.00	100.00
9.847	9.847 (1.127)	158	354811			0.00- 0.00	96.78
9.847	9.847 (1.127)	77	445022			0.00- 0.00	121.38
184 trans-1,4-Dichloro-2-butene					CAS #: 110-57-6		
9.890	9.890 (1.132)	75	489513	50.0000	167.12	0.00- 0.00	100.00
9.890	9.890 (1.132)	89	95240			0.00- 0.00	19.46
9.890	9.890 (1.132)	53	213622			0.00- 0.00	43.64
185 1,2,3-Trichloropropane					CAS #: 96-18-4		
9.897	9.894 (1.133)	110	165355	50.0000	49.570	0.00- 0.00	100.00
9.890	9.890 (1.132)	75	489513			0.00- 0.00	296.04
9.897	9.893 (1.133)	61	125134			0.00- 0.00	75.68
187 Decane					CAS #: 124-18-5		
9.933	9.933 (1.137)	57	547983	50.0000	53.656	0.00- 0.00	100.00
9.933	9.933 (1.137)	71	139971			0.00- 0.00	25.54
9.933	9.931 (1.137)	142	28902			0.00- 0.00	5.27
189 2-Chlorotoluene					CAS #: 95-49-8		
9.990	9.989 (1.143)	126	283564	50.0000	51.148	0.00- 0.00	100.00
9.990	9.987 (1.143)	91	653607			0.00- 0.00	230.50
9.990	9.986 (1.143)	65	66307			0.00- 0.00	23.38
191 4-Chlorotoluene					CAS #: 106-43-4		
10.083	10.083 (1.154)	126	305256	50.0000	51.556	0.00- 0.00	100.00
10.083	10.080 (1.154)	91	868071			0.00- 0.00	284.37
10.083	10.080 (1.154)	63	119524			0.00- 0.00	39.16
192 beta-Pinene					CAS #: 127-91-3		
10.069	10.063 (1.153)	93	483408	50.0000	51.956	0.00- 0.00	100.00
10.083	10.080 (1.154)	91	868071			0.00- 0.00	179.57
193 Diisobutyl Ketone					CAS #: 108-83-8		
10.112	10.112 (1.157)	57	704762	50.0000	52.299	0.00- 0.00	100.00
10.112	10.112 (1.157)	85	447778			0.00- 0.00	63.54
195 tert-Butylbenzene					CAS #: 98-06-6		
10.291	10.287 (1.178)	119	849277	50.0000	51.367	0.00- 0.00	100.00
10.291	10.288 (1.178)	134	212817			0.00- 0.00	25.06
10.284	10.284 (1.177)	91	489994			0.00- 0.00	57.70

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE		RATIO
197 Pentachloroethane					CAS #: 76-01-7			
10.355	10.355 (1.185)	167	288518	50.0000	51.136	0.00-	0.00	100.00
10.355	10.355 (1.185)	117	276689			0.00-	0.00	95.90
10.355	10.355 (1.185)	169	136791			0.00-	0.00	47.41
199 D-Limonene					CAS #: 5989-27-5			
10.534	10.534 (1.206)	68	415293	50.0000	51.617	0.00-	0.00	100.00
10.542	10.542 (1.207)	93	875066			0.00-	0.00	210.71
10.534	10.534 (1.206)	136	118786			0.00-	0.00	28.60
203 sec-Butylbenzene					CAS #: 135-98-8			
10.470	10.473 (1.198)	134	244888	50.0000	48.691	0.00-	0.00	100.00
10.470	10.472 (1.198)	105	1042387			0.00-	0.00	425.66
10.470	10.471 (1.198)	91	158811			0.00-	0.00	64.85
206 bis(2-Chloroethyl) Ether					CAS #: 111-44-4			
10.542	10.547 (1.207)	93	875066	50.0000	91.263	0.00-	0.00	100.00
10.542	10.546 (1.207)	95	201736			0.00-	0.00	23.05
207 p-Cymene					CAS #: 99-87-6			
10.585	10.584 (1.212)	119	1099902	50.0000	46.687	0.00-	0.00	100.00
10.585	10.584 (1.212)	134	304833			0.00-	0.00	27.71
10.585	10.584 (1.212)	91	241293			0.00-	0.00	21.94
210 1,2,3-Trimethylbenzene					CAS #: 526-73-8			
10.706	10.706 (1.225)	120	399057	50.0000	51.685	0.00-	0.00	100.00
10.706	10.706 (1.225)	105	858517			0.00-	0.00	215.14
10.706	10.705 (1.225)	77	96778			0.00-	0.00	24.25
213 Butylbenzene					CAS #: 104-51-8			
10.928	10.934 (1.251)	134	278028	50.0000	42.456	0.00-	0.00	100.00
10.928	10.934 (1.251)	91	822591			0.00-	0.00	295.87
10.928	10.931 (1.251)	92	431776			0.00-	0.00	155.30
215 Undecane					CAS #: 1120-21-4			
10.914	10.915 (1.249)	57	583303	50.0000	51.861	0.00-	0.00	100.00
10.914	10.914 (1.249)	43	561013			0.00-	0.00	96.18
217 Hexachloroethane					CAS #: 67-72-1			
11.208	11.208 (1.283)	201	282657	50.0000	52.329	0.00-	0.00	100.00
11.208	11.208 (1.283)	117	363984			0.00-	0.00	128.77
221 1,2-Dibromo-3-chloropropane					CAS #: 96-12-8			
11.702	11.702 (1.339)	157	281834	50.0000	46.012	0.00-	0.00	100.00
11.702	11.702 (1.339)	75	205216			0.00-	0.00	72.81
11.702	11.702 (1.339)	155	219005			0.00-	0.00	77.71

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
224 1,3,5-Trichlorobenzene					CAS #: 108-70-3		
11.831	11.831 (1.354)	180	553662	50.0000	47.598	0.00- 0.00	100.00
11.831	11.831 (1.354)	182	531577			0.00- 0.00	96.01
225 Dodecane					CAS #: 112-40-3		
11.824	11.824 (1.353)	57	441312	50.0000	46.335	0.00- 0.00	100.00
11.824	11.824 (1.353)	43	381837			0.00- 0.00	86.52
229 1,2,3-Trichlorobenzene					CAS #: 87-61-6		
12.912	12.917 (1.478)	180	303242	50.0000	39.337	0.00- 0.00	100.00
12.912	12.918 (1.478)	182	295813			0.00- 0.00	97.55
12.912	12.914 (1.478)	145	106185			0.00- 0.00	35.02

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p121205.d
Lab Smp Id: CCV
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msdp.i/12DEC18.b/p18q1108c.m
Misc Info: 50ppbv (200ppbv)

Calibration Date: 12-DEC-2018
Calibration Time: 10:47
Client Smp ID: CCV
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	75875	45525	106225	83642	10.24
123 1,4-Difluorobenze	227347	136408	318286	265308	16.70
163 Chlorobenzene-d5	252646	151588	353704	294874	16.71

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	-0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.74	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/12DEC18.b/p121205.d

Date : 12-DEC-2018 12:53

Client ID: CCV

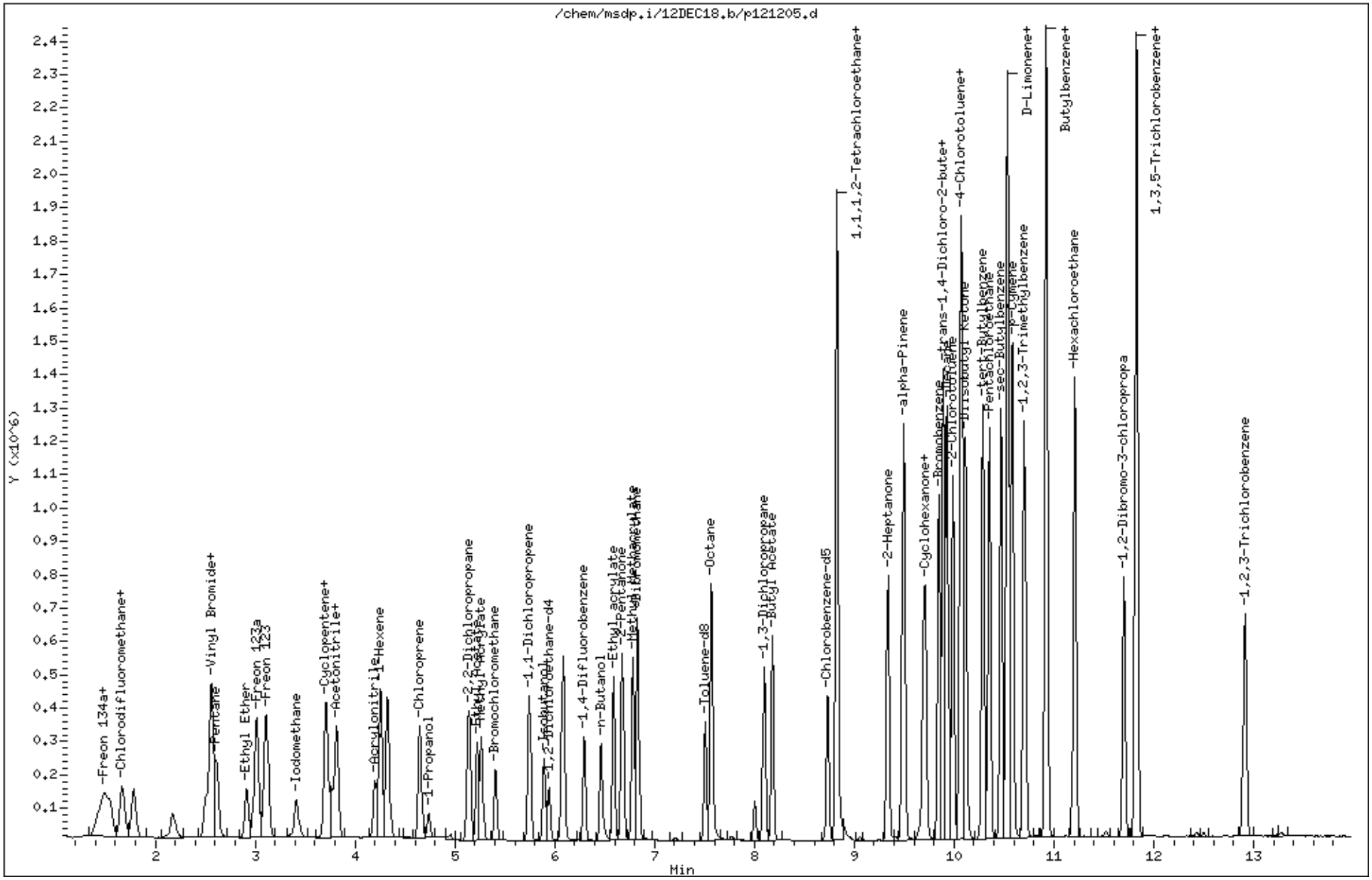
Sample Info: 50ml 3045-193

Column phase: RTX-624

Instrument: msdp.i

Operator: jg

Column diameter: 0.25



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Client Sample ID: LCS

Lab ID#: 1812211-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p121203**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/18 12:02 PM**	

Compound	%Recovery	Method Limits
Freon 12	102	70-130
Freon 114	102	70-130
Chloromethane	99	70-130
Vinyl Chloride	112	70-130
1,3-Butadiene	104	70-130
Bromomethane	102	70-130
Chloroethane	96	70-130
Freon 11	100	70-130
Ethanol	89	70-130
Freon 113	97	70-130
1,1-Dichloroethene	96	70-130
Acetone	92	70-130
2-Propanol	96	70-130
Carbon Disulfide	93	70-130
3-Chloropropene	97	70-130
Methylene Chloride	92	70-130
Methyl tert-butyl ether	94	70-130
trans-1,2-Dichloroethene	107	70-130
Hexane	99	70-130
1,1-Dichloroethane	92	70-130
2-Butanone (Methyl Ethyl Ketone)	93	70-130
cis-1,2-Dichloroethene	88	70-130
Tetrahydrofuran	99	70-130
Chloroform	96	70-130
1,1,1-Trichloroethane	100	70-130
Cyclohexane	100	70-130
Carbon Tetrachloride	103	70-130
2,2,4-Trimethylpentane	100	70-130
Benzene	89	70-130
1,2-Dichloroethane	96	70-130
Heptane	102	70-130
Trichloroethene	96	70-130
1,2-Dichloropropane	93	70-130
1,4-Dioxane	104	70-130
Bromodichloromethane	99	70-130
cis-1,3-Dichloropropene	102	70-130
4-Methyl-2-pentanone	107	70-130
Toluene	93	70-130
trans-1,3-Dichloropropene	100	70-130
1,1,2-Trichloroethane	97	70-130
Tetrachloroethene	104	70-130
2-Hexanone	115	70-130

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Client Sample ID: LCS

Lab ID#: 1812211-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p121203**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/18 12:02 PM**	

Compound	**%Recovery**	**Method Limits**
Dibromochloromethane	103	70-130
1,2-Dibromoethane (EDB)	100	70-130
Chlorobenzene	97	70-130
Ethyl Benzene	105	70-130
m,p-Xylene	107	70-130
o-Xylene	106	70-130
Styrene	113	70-130
Bromoform	109	70-130
Cumene	107	70-130
1,1,2,2-Tetrachloroethane	96	70-130
Propylbenzene	105	70-130
4-Ethyltoluene	113	70-130
1,3,5-Trimethylbenzene	113	70-130
1,2,4-Trimethylbenzene	113	70-130
1,3-Dichlorobenzene	105	70-130
1,4-Dichlorobenzene	108	70-130
alpha-Chlorotoluene	115	70-130
1,2-Dichlorobenzene	106	70-130
1,2,4-Trichlorobenzene	102	70-130
Hexachlorobutadiene	106	70-130
Methyl Acetate	Not Spiked	
Methylcyclohexane	101	60-140
Naphthalene	100	60-140

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	106	70-130

Report Date: 12-Dec-2018 13:14

US32APPTV002

RECOVERY REPORT

Client Name:
Client SDG: 12DEC18
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: LCS
Client Smp ID: LCS
Level: LOW
Operator: jg
Data Type: MS DATA
SampleType: LCS
SpikeList File: AT12.spk
Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msdp.i/12DEC18.b/p18q1108c.m
Misc Info: 50ppbv (200ppbv)

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
9 Propylene	50.000	42.864	85.73
11 Freon 12	50.000	51.255	102.51
15 Freon 114	50.000	51.192	102.38
17 Chloromethane	50.000	49.382	98.76
23 Butane	50.000	43.289	86.58
25 Vinyl Chloride	50.000	55.805	111.61
26 1,3-Butadiene	50.000	51.966	103.93
29 Bromomethane	50.000	51.251	102.50
30 Chloroethane	50.000	47.906	95.81
31 Isopentane	50.000	44.461	88.92
35 Freon 11	50.000	49.844	99.69
42 Ethanol	50.000	44.619	89.24
49 Freon 113	50.000	48.451	96.90
50 1,1-Dichloroethene	50.000	48.156	96.31
52 Acetone	50.000	46.283	92.57
56 Carbon Disulfide	50.000	46.358	92.72
57 2-Propanol	50.000	48.170	96.34
58 3-Chloropropene	50.000	48.656	97.31
66 Methylene Chloride	50.000	45.762	91.53
72 Methyl tert-butyl ether	50.000	47.259	94.52
73 trans-1,2-Dichloroethene	50.000	53.386	106.77
78 Hexane	50.000	49.473	98.95
82 1,1-Dichloroethane	50.000	45.963	91.93
86 Vinyl Acetate	50.000	46.357	92.71
91 cis-1,2-Dichloroethene	50.000	43.880	87.76
92 2-Butanone	50.000	46.372	92.74
99 Tetrahydrofuran	50.000	49.501	99.00
100 Chloroform	50.000	48.270	96.54
103 1,1,1-Trichloroethane	50.000	49.857	99.71
106 Carbon Tetrachloride	50.000	51.637	103.27
102 Cyclohexane	50.000	49.784	99.57
113 2,2,4-Trimethylpentane	50.000	50.188	100.38
116 Benzene	50.000	44.728	89.46

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
120 1,2-Dichloroethane	50.000	48.246	96.49
121 Heptane	50.000	50.761	101.52
125 Trichloroethene	50.000	48.289	96.58
127 Methylcyclohexane	50.000	50.434	100.87
132 1,2-Dichloropropane	50.000	46.440	92.88
136 1,4-Dioxane	50.000	52.133	104.27
138 Bromodichloromethane	50.000	49.446	98.89
144 cis-1,3-Dichloropropene	50.000	51.093	102.19
145 4-Methyl-2-pentanone	50.000	53.550	107.10
147 Toluene	50.000	46.657	93.31
150 trans-1,3-Dichloropropene	50.000	49.806	99.61
155 1,1,2-Trichloroethane	50.000	48.336	96.67
156 Tetrachloroethene	50.000	52.077	104.15
158 2-Hexanone	50.000	57.459	114.92
160 Dibromochloromethane	50.000	51.520	103.04
161 1,2-Dibromoethane (EDB)	50.000	49.983	99.97
165 Chlorobenzene	50.000	48.731	97.46
167 Ethyl Benzene	50.000	52.352	104.70
169 m,p-Xylene	50.000	53.486	106.97
171 o-Xylene	50.000	52.966	105.93
172 Styrene	50.000	56.373	112.75
174 Bromoform	50.000	54.678	109.36
175 Cumene	50.000	53.449	106.90
181 1,1,2,2-Tetrachloroethane	50.000	47.938	95.88
182 Propylbenzene	50.000	52.363	104.73
188 4-Ethyltoluene	50.000	56.473	112.95
190 1,3,5-Trimethylbenzene	50.000	56.741	113.48
196 1,2,4-Trimethylbenzene	50.000	56.713	113.43
208 1,3-Dichlorobenzene	50.000	52.344	104.69
209 1,4-Dichlorobenzene	50.000	54.262	108.52
212 alpha-Chlorotoluene	50.000	57.445	114.89
214 1,2-Dichlorobenzene	50.000	52.804	105.61
226 1,2,4-Trichlorobenzene	50.000	50.787	101.57
227 Hexachlorobutadiene	50.000	52.935	105.87
228 Naphthalene	5.000	4.994	99.87

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 117 1,2-Dichloroethane-d4	25.000	25.077	100.31
$ 146 Toluene-d8	25.000	24.521	98.08
$ 177 4-Bromofluorobenzene	25.000	26.498	105.99

US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/12DEC18.b/p121203.d
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 12-DEC-2018 12:02
Operator : jg Inst ID: msdp.i
Smp Info : 50ml 3018-537;LCS
Misc Info : 50ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/12DEC18.b/p18q1108c.m
Meth Date : 12-Dec-2018 13:12 u7js Quant Type: ISTD
Cal Date : 04-DEC-2018 18:07 Cal File: p120415.d
Als bottle: 14 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5		
5.406	5.413	(1.000)	130	83096	25.0000		80.00- 120.00	100.00
5.406	5.413	(1.000)	128	64256			48.70- 108.70	77.33
5.406	5.409	(1.000)	49	121558			130.32- 190.32	146.29
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
6.294	6.299	(1.000)	114	263813	25.0000		80.00- 120.00	100.00
6.294	6.297	(1.000)	88	35425			0.00- 44.06	13.43
* 163 Chlorobenzene-d5						CAS #: 3114-55-4		
8.729	8.736	(1.000)	117	287858	25.0000		80.00- 120.00	100.00
8.729	8.736	(1.000)	82	123852			14.84- 74.84	43.03
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
5.943	5.942	(1.099)	65	110976	25.0772	25.077	80.00- 120.00	100.00
5.943	5.943	(1.099)	67	60973			26.40- 86.40	54.94
$ 146 Toluene-d8						CAS #: 2037-26-5		
7.504	7.505	(1.192)	98	267266	24.5207	24.521	80.00- 120.00	100.00
7.504	7.504	(1.192)	70	27026			0.00- 40.19	10.11

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.504	7.505 (1.192)	100	183947			38.92- 98.92	68.83
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.718	9.720 (1.113)	174	193665	26.4983	26.498	80.00- 120.00	100.00
9.711	9.714 (1.112)	95	204944			82.53- 142.53	105.82
9.718	9.720 (1.113)	176	185575			65.10- 125.10	95.82
9 Propylene					CAS #: 115-07-1		
1.479	1.479 (0.274)	41	133320	42.8637	42.864	80.00- 120.00	100.00
1.479	1.481 (0.274)	42	86247			37.41- 97.41	64.69
1.479	1.479 (0.274)	39	99470			42.27- 102.27	74.61
11 Freon 12					CAS #: 75-71-8		
1.507	1.511 (0.279)	85	422423	51.2549	51.255	80.00- 120.00	100.00
1.507	1.511 (0.279)	87	136283			2.07- 62.07	32.26
15 Freon 114					CAS #: 76-14-2		
1.633	1.629 (0.302)	135	346903	51.1925	51.192	80.00- 120.00	100.00
1.633	1.629 (0.302)	137	110508			2.07- 62.07	31.86
17 Chloromethane					CAS #: 74-87-3		
1.716	1.726 (0.318)	50	186518	49.3821	49.382	80.00- 120.00	100.00
1.716	1.726 (0.318)	52	53466			0.00- 58.76	28.67
23 Butane					CAS #: 106-97-8		
1.786	1.791 (0.330)	58	30435	43.2890	43.289	80.00- 120.00	100.00
1.786	1.786 (0.330)	43	263517			1048.24-1108.24	865.84
25 Vinyl Chloride					CAS #: 75-01-4		
1.814	1.818 (0.336)	62	187047	55.8051	55.805	80.00- 120.00	100.00
1.814	1.818 (0.336)	64	44262			0.00- 54.53	23.66
26 1,3-Butadiene					CAS #: 106-99-0		
1.842	1.842 (0.341)	54	163219	51.9657	51.966	80.00- 120.00	100.00
1.842	1.840 (0.341)	39	200936			85.58- 145.58	123.11
29 Bromomethane					CAS #: 74-83-9		
2.189	2.195 (0.405)	94	122884	51.2512	51.251	80.00- 120.00	100.00
2.189	2.195 (0.405)	96	117108			65.12- 125.12	95.30
30 Chloroethane					CAS #: 75-00-3		
2.297	2.304 (0.425)	64	68142	47.9066	47.906	80.00- 120.00	100.00
2.304	2.304 (0.426)	66	19764			0.00- 59.74	29.00
2.297	2.302 (0.425)	49	27017			9.89- 69.89	39.65

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.325	2.327 (0.430)	43	191313	44.4609	44.461	80.00- 120.00	100.00
2.325	2.327 (0.430)	57	123549			31.46- 91.46	64.58
35 Freon 11					CAS #: 75-69-4		
2.548	2.551 (0.471)	101	476831	49.8442	49.844	80.00- 120.00	100.00
2.548	2.551 (0.471)	103	307705			34.29- 94.29	64.53
42 Ethanol					CAS #: 64-17-5		
2.863	2.866 (0.530)	45	63569	44.6192	44.619	80.00- 120.00	100.00
2.863	2.864 (0.530)	46	24818			8.87- 68.87	39.04
49 Freon 113					CAS #: 76-13-1		
3.178	3.182 (0.588)	151	308341	48.4509	48.451	80.00- 120.00	100.00
3.178	3.184 (0.588)	153	195467			34.67- 94.67	63.39
3.178	3.180 (0.588)	101	331438			79.70- 139.70	107.49
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.207	3.214 (0.593)	98	77310	48.1565	48.156	80.00- 120.00	100.00
3.207	3.213 (0.593)	96	121864			126.11- 186.11	157.63
3.207	3.213 (0.593)	61	244329			286.72- 346.72	316.04
52 Acetone					CAS #: 67-64-1		
3.350	3.356 (0.620)	58	76517	46.2834	46.283	80.00- 120.00	100.00
3.350	3.357 (0.620)	43	281800			345.31- 405.31	368.28
56 Carbon Disulfide					CAS #: 75-15-0		
3.443	3.452 (0.637)	76	333180	46.3580	46.358	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.529	3.532 (0.653)	45	291376	48.1704	48.170	80.00- 120.00	100.00
3.522	3.530 (0.651)	43	71973			0.00- 53.09	24.70
3.529	3.530 (0.653)	59	10313			0.00- 33.51	3.54
58 3-Chloropropene					CAS #: 107-05-1		
3.679	3.685 (0.681)	76	49053	48.6566	48.656	80.00- 120.00	100.00
3.679	3.684 (0.681)	41	218824			428.12- 488.12	446.10
66 Methylene Chloride					CAS #: 75-09-2		
3.866	3.870 (0.715)	49	233357	45.7625	45.762	80.00- 120.00	100.00
3.866	3.870 (0.715)	84	110634			16.41- 76.41	47.41
3.866	3.870 (0.715)	51	70310			0.00- 59.94	30.13
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.088	4.088 (0.756)	73	329016	47.2590	47.259	80.00- 120.00	100.00
4.088	4.088 (0.756)	57	105280			1.33- 61.33	32.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
72 Methyl tert-butyl ether (continued)							
4.088	4.089 (0.756)	41	128579			8.05- 68.05	39.08
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.109	4.112 (0.760)	98	88271	53.3857	53.386	80.00- 120.00	100.00
4.109	4.110 (0.760)	61	248790			247.19- 307.19	281.85
4.109	4.113 (0.760)	96	144287			131.40- 191.40	163.46
78 Hexane					CAS #: 110-54-3		
4.324	4.328 (0.800)	57	255108	49.4726	49.473	80.00- 120.00	100.00
4.324	4.328 (0.800)	43	182608			42.49- 102.49	71.58
4.324	4.328 (0.800)	86	30104			0.00- 42.15	11.80
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.596	4.598 (0.850)	63	281512	45.9629	45.963	80.00- 120.00	100.00
4.596	4.599 (0.850)	65	82261			0.00- 58.69	29.22
86 Vinyl Acetate					CAS #: 108-05-4		
4.639	4.640 (0.858)	86	31268	46.3568	46.357	80.00- 120.00	100.00
4.639	4.639 (0.858)	43	486325			1735.43-1795.43	1555.34
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.176	5.180 (0.958)	98	91831	43.8805	43.880	80.00- 120.00	100.00
5.176	5.180 (0.958)	96	141823			123.83- 183.83	154.44
5.176	5.177 (0.958)	61	220016			214.95- 274.95	239.59
92 2-Butanone					CAS #: 78-93-3		
5.198	5.200 (0.962)	72	57955	46.3718	46.372	80.00- 120.00	100.00
5.198	5.201 (0.962)	43	399072			669.23- 729.23	688.59
5.198	5.204 (0.962)	57	29827			20.89- 80.89	51.47
99 Tetrahydrofuran					CAS #: 109-99-9		
5.406	5.410 (1.000)	42	211203	49.5014	49.501	80.00- 120.00	100.00
5.406	5.412 (1.000)	71	50130			0.00- 54.27	23.74
5.406	5.411 (1.000)	72	51448			0.00- 54.41	24.36
100 Chloroform					CAS #: 67-66-3		
5.470	5.473 (1.012)	83	328998	48.2699	48.270	80.00- 120.00	100.00
5.470	5.473 (1.012)	85	223297			38.55- 98.55	67.87
102 Cyclohexane					CAS #: 110-82-7		
5.577	5.583 (1.032)	84	167743	49.7836	49.784	80.00- 120.00	100.00
5.577	5.584 (1.032)	56	295691			149.13- 209.13	176.28
5.577	5.583 (1.032)	41	178252			74.83- 134.83	106.26
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.592	5.598 (1.034)	97	398001	49.8566	49.857	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
103 1,1,1-Trichloroethane (continued)							
5.592	5.599 (1.034)	99	259811			35.00- 95.00	65.28
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.714	5.714 (1.057)	119	446082	51.6373	51.637	80.00- 120.00	100.00
5.714	5.713 (1.057)	117	466619			73.60- 133.60	104.60
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.907	5.913 (1.093)	57	921703	50.1880	50.188	80.00- 120.00	100.00
5.907	5.914 (1.093)	56	318993			3.59- 63.59	34.61
5.907	5.911 (1.093)	41	288169			0.20- 60.20	31.26
116 Benzene					CAS #: 71-43-2		
5.921	5.927 (0.941)	78	417076	44.7279	44.728	80.00- 120.00	100.00
5.921	5.925 (0.941)	77	99565			0.00- 54.10	23.87
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.007	6.010 (0.954)	62	279142	48.2458	48.246	80.00- 120.00	100.00
6.007	6.009 (0.954)	64	85674			0.44- 60.44	30.69
121 Heptane					CAS #: 142-82-5		
6.079	6.085 (0.966)	71	132920	50.7612	50.761	80.00- 120.00	100.00
6.079	6.083 (0.966)	43	382774			259.43- 319.43	287.97
6.079	6.085 (0.966)	57	189943			114.50- 174.50	142.90
125 Trichloroethene					CAS #: 79-01-6		
6.494	6.494 (1.032)	95	225666	48.2894	48.289	80.00- 120.00	100.00
6.494	6.494 (1.032)	130	277414			88.76- 148.76	122.93
6.494	6.494 (1.032)	97	141673			35.32- 95.32	62.78
127 Methylcyclohexane					CAS #: 108-87-2		
6.595	6.595 (1.048)	83	245029	50.4343	50.434	80.00- 120.00	100.00
6.595	6.595 (1.048)	98	129012			20.32- 80.32	52.65
6.595	6.595 (1.048)	55	313365			98.90- 158.90	127.89
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.724	6.724 (1.068)	63	188589	46.4403	46.440	80.00- 120.00	100.00
6.724	6.724 (1.068)	62	138594			41.74- 101.74	73.49
6.724	6.724 (1.068)	41	140141			41.01- 101.01	74.31
136 1,4-Dioxane					CAS #: 123-91-1		
6.810	6.817 (1.082)	88	107774	52.1327	52.133	80.00- 120.00	100.00
6.810	6.816 (1.082)	58	102511			66.86- 126.86	95.12
6.810	6.816 (1.082)	57	34579			1.32- 61.32	32.08
138 Bromodichloromethane					CAS #: 75-27-4		
6.953	6.953 (1.105)	83	377756	49.4465	49.446	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
138 Bromodichloromethane (continued)							
6.953	6.952 (1.105)	85	256502			35.98- 95.98	67.90
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.325	7.325 (1.164)	75	254618	51.0927	51.093	80.00- 120.00	100.00
7.325	7.325 (1.164)	77	83983			2.71- 62.71	32.98
7.325	7.325 (1.164)	39	193094			43.85- 103.85	75.84
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.433	7.433 (1.181)	58	188262	53.5503	53.550	80.00- 120.00	100.00
7.433	7.433 (1.181)	43	560830			267.85- 327.85	297.90
7.433	7.434 (1.181)	85	63698			4.54- 64.54	33.83
147 Toluene					CAS #: 108-88-3		
7.562	7.562 (1.201)	91	577732	46.6569	46.657	80.00- 120.00	100.00
7.562	7.562 (1.201)	92	332708			28.88- 88.88	57.59
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.798	7.798 (0.893)	75	253843	49.8063	49.806	80.00- 120.00	100.00
7.798	7.798 (0.893)	77	83535			2.67- 62.67	32.91
7.798	7.798 (0.893)	39	171054			37.60- 97.60	67.39
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.956	7.956 (0.911)	97	222282	48.3359	48.336	80.00- 120.00	100.00
7.956	7.956 (0.911)	99	136472			30.86- 90.86	61.40
7.948	7.956 (0.911)	83	173923			47.74- 107.74	78.24
156 Tetrachloroethene					CAS #: 127-18-4		
7.999	8.001 (0.916)	166	388728	52.0773	52.077	80.00- 120.00	100.00
7.999	7.999 (0.916)	129	289846			48.46- 108.46	74.56
7.999	7.999 (0.916)	131	282067			45.42- 105.42	72.56
158 2-Hexanone					CAS #: 591-78-6		
8.120	8.120 (0.930)	58	260778	57.4588	57.459	80.00- 120.00	100.00
8.120	8.120 (0.930)	43	568713			185.57- 245.57	218.08
8.120	8.120 (0.930)	100	44754			0.00- 46.27	17.16
160 Dibromochloromethane					CAS #: 124-48-1		
8.264	8.267 (0.947)	129	545085	51.5199	51.520	80.00- 120.00	100.00
8.264	8.268 (0.947)	127	421794			47.61- 107.61	77.38
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
8.378	8.378 (0.960)	107	376308	49.9835	49.983	80.00- 120.00	100.00
8.378	8.378 (0.960)	109	370724			68.89- 128.89	98.52
165 Chlorobenzene					CAS #: 108-90-7		
8.758	8.758 (1.003)	112	573000	48.7314	48.731	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
165 Chlorobenzene (continued)							
8.758	8.758 (1.003)	114	184452			1.88- 61.88	32.19
8.758	8.757 (1.003)	77	283224			20.89- 80.89	49.43
167 Ethyl Benzene					CAS #: 100-41-4		
8.808	8.808 (1.009)	106	272873	52.3516	52.352	80.00- 120.00	100.00
8.808	8.808 (1.009)	91	801704			268.95- 328.95	293.80
169 m,p-Xylene					CAS #: 108-38-3		
8.901	8.905 (1.020)	106	342554	53.4862	53.486	80.00- 120.00	100.00
8.901	8.906 (1.020)	91	654970			159.20- 219.20	191.20
171 o-Xylene					CAS #: 95-47-6		
9.245	9.245 (1.059)	106	318209	52.9663	52.966	80.00- 120.00	100.00
9.245	9.245 (1.059)	91	648175			173.23- 233.23	203.69
172 Styrene					CAS #: 100-42-5		
9.266	9.266 (1.062)	104	569027	56.3729	56.373	80.00- 120.00	100.00
9.259	9.265 (1.061)	78	268578			15.83- 75.83	47.20
174 Bromoform					CAS #: 75-25-2		
9.460	9.461 (1.084)	173	532642	54.6779	54.678	80.00- 120.00	100.00
9.460	9.461 (1.084)	171	278280			21.75- 81.75	52.25
175 Cumene					CAS #: 98-82-8		
9.531	9.532 (1.092)	105	1042514	53.4488	53.449	80.00- 120.00	100.00
9.531	9.533 (1.092)	120	303682			0.00- 58.53	29.13
9.531	9.532 (1.092)	51	134471			0.00- 43.43	12.90
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.839	9.841 (1.127)	83	472324	47.9381	47.938	80.00- 120.00	100.00
9.839	9.841 (1.127)	85	322999			38.99- 98.99	68.39
182 Propylbenzene					CAS #: 103-65-1		
9.875	9.875 (1.131)	91	1159721	52.3633	52.363	80.00- 120.00	100.00
9.875	9.876 (1.131)	120	321183			0.00- 56.98	27.69
9.875	9.875 (1.131)	105	48867			0.00- 34.22	4.21
188 4-Ethyltoluene					CAS #: 622-96-8		
9.968	9.968 (1.142)	120	369549	56.4731	56.473	80.00- 120.00	100.00
9.961	9.967 (1.141)	105	1098513			277.08- 337.08	297.26
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.019	10.020 (1.148)	120	520473	56.7413	56.741	80.00- 120.00	100.00
10.019	10.020 (1.148)	105	991250			165.36- 225.36	190.45

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.341	10.343 (1.185)	120	436892	56.7134	56.713	80.00- 120.00	100.00
10.341	10.342 (1.185)	105	879034			173.89- 233.89	201.20
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.620	10.625 (1.217)	146	748216	52.3440	52.344	80.00- 120.00	100.00
10.620	10.626 (1.217)	148	475012			34.36- 94.36	63.49
10.620	10.624 (1.217)	111	272707			7.68- 67.68	36.45
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.699	10.708 (1.226)	146	770220	54.2617	54.262	80.00- 120.00	100.00
10.706	10.707 (1.226)	148	492602			33.64- 93.64	63.96
10.699	10.705 (1.226)	111	270013			5.53- 65.53	35.06
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.814	10.817 (1.239)	91	860035	57.4448	57.445	80.00- 120.00	100.00
10.814	10.820 (1.239)	126	229533			0.00- 55.76	26.69
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.029	11.032 (1.263)	146	722753	52.8042	52.804	80.00- 120.00	100.00
11.029	11.032 (1.263)	148	463860			33.63- 93.63	64.18
11.029	11.032 (1.263)	111	273894			8.70- 68.70	37.90
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.411	12.417 (1.422)	180	567701	50.7873	50.787	80.00- 120.00	100.00
12.411	12.417 (1.422)	182	544629			66.82- 126.82	95.94
227 Hexachlorobutadiene					CAS #: 87-68-3		
12.497	12.509 (1.432)	225	473767	52.9349	52.935	80.00- 120.00	100.00
12.497	12.509 (1.432)	223	298313			33.20- 93.20	62.97
228 Naphthalene					CAS #: 91-20-3		
12.669	12.675 (1.451)	128	117726	4.99364	4.994	80.00- 120.00	100.00
12.669	12.675 (1.451)	127	16535			0.00- 43.12	14.05

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p121203.d
Lab Smp Id: LCS
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msdp.i/12DEC18.b/p18q1108c.m
Misc Info: 50ppbv (200ppbv)

Calibration Date: 12-DEC-2018
Calibration Time: 10:47
Client Smp ID: LCS
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	75875	45525	106225	83096	9.52
123 1,4-Difluorobenze	227347	136408	318286	263813	16.04
163 Chlorobenzene-d5	252646	151588	353704	287858	13.94

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.13
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	-0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.73	-0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/12DEC18.b/p121203.d

Date : 12-DEC-2018 12:02

Client ID: LCS

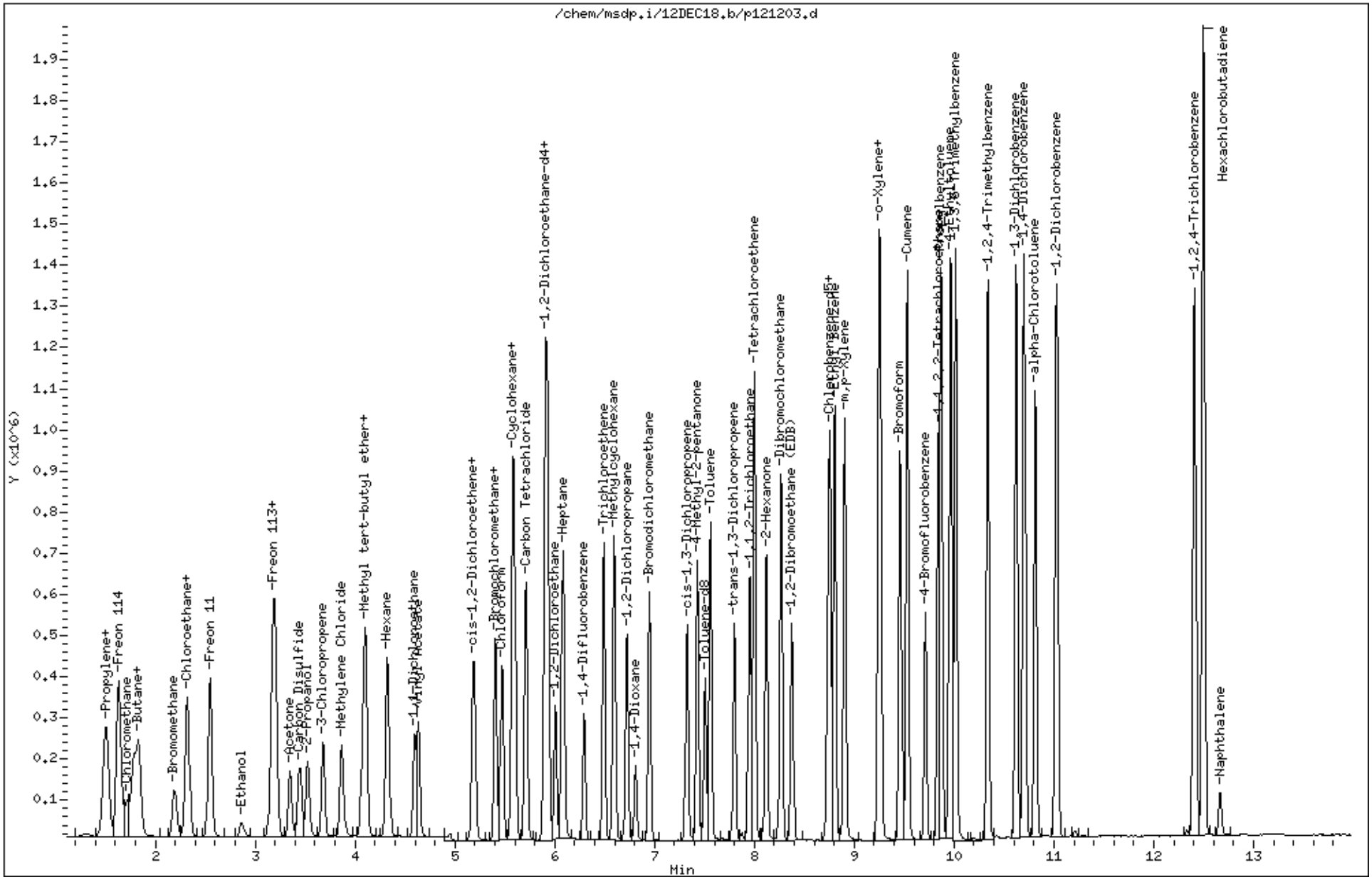
Sample Info: 50ml 3018-537;LCS

Column phase: RTX-624

Instrument: msdp.i

Operator: jg

Column diameter: 0.25



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Client Sample ID: LCSD

Lab ID#: 1812211-07AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p121204**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/18 12:27 PM**	

Compound	%Recovery	Method Limits
Freon 12	102	70-130
Freon 114	100	70-130
Chloromethane	94	70-130
Vinyl Chloride	111	70-130
1,3-Butadiene	103	70-130
Bromomethane	101	70-130
Chloroethane	95	70-130
Freon 11	100	70-130
Ethanol	91	70-130
Freon 113	96	70-130
1,1-Dichloroethene	97	70-130
Acetone	93	70-130
2-Propanol	98	70-130
Carbon Disulfide	92	70-130
3-Chloropropene	102	70-130
Methylene Chloride	89	70-130
Methyl tert-butyl ether	95	70-130
trans-1,2-Dichloroethene	113	70-130
Hexane	100	70-130
1,1-Dichloroethane	92	70-130
2-Butanone (Methyl Ethyl Ketone)	92	70-130
cis-1,2-Dichloroethene	88	70-130
Tetrahydrofuran	99	70-130
Chloroform	96	70-130
1,1,1-Trichloroethane	102	70-130
Cyclohexane	99	70-130
Carbon Tetrachloride	104	70-130
2,2,4-Trimethylpentane	100	70-130
Benzene	89	70-130
1,2-Dichloroethane	96	70-130
Heptane	100	70-130
Trichloroethene	96	70-130
1,2-Dichloropropane	95	70-130
1,4-Dioxane	105	70-130
Bromodichloromethane	101	70-130
cis-1,3-Dichloropropene	103	70-130
4-Methyl-2-pentanone	108	70-130
Toluene	94	70-130
trans-1,3-Dichloropropene	99	70-130
1,1,2-Trichloroethane	95	70-130
Tetrachloroethene	102	70-130
2-Hexanone	116	70-130

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Client Sample ID: LCSD

Lab ID#: 1812211-07AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p121204**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/18 12:27 PM**	

Compound	**%Recovery**	**Method Limits**
Dibromochloromethane	102	70-130
1,2-Dibromoethane (EDB)	100	70-130
Chlorobenzene	96	70-130
Ethyl Benzene	101	70-130
m,p-Xylene	105	70-130
o-Xylene	106	70-130
Styrene	110	70-130
Bromoform	108	70-130
Cumene	106	70-130
1,1,2,2-Tetrachloroethane	95	70-130
Propylbenzene	102	70-130
4-Ethyltoluene	111	70-130
1,3,5-Trimethylbenzene	111	70-130
1,2,4-Trimethylbenzene	113	70-130
1,3-Dichlorobenzene	104	70-130
1,4-Dichlorobenzene	108	70-130
alpha-Chlorotoluene	116	70-130
1,2-Dichlorobenzene	105	70-130
1,2,4-Trichlorobenzene	108	70-130
Hexachlorobutadiene	111	70-130
Methyl Acetate	Not Spiked	
Methylcyclohexane	102	60-140
Naphthalene	108	60-140

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	104	70-130

Report Date: 12-Dec-2018 13:17

US32APPTV002

RECOVERY REPORT

Client Name:
Sample Matrix: GAS
Lab Smp Id: LCSD
Level: LOW
Data Type: MS DATA
SpikeList File: AT12.spk
Sublist File: AT12.sub
Method File: /chem/msdp.i/12DEC18.b/p18q1108c.m
Misc Info: 50ppbv (200ppbv)

Client SDG: 12DEC18
Fraction: VOA
Client Smp ID: LCSD
Operator: jg
SampleType: LCSD
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
9 Propylene	50.000	42.006	84.01
11 Freon 12	50.000	50.799	101.60
15 Freon 114	50.000	50.212	100.42
17 Chloromethane	50.000	47.153	94.31
23 Butane	50.000	41.285	82.57
25 Vinyl Chloride	50.000	55.400	110.80
26 1,3-Butadiene	50.000	51.434	102.87
29 Bromomethane	50.000	50.717	101.43
30 Chloroethane	50.000	47.374	94.75
31 Isopentane	50.000	43.829	87.66
35 Freon 11	50.000	49.884	99.77
42 Ethanol	50.000	45.593	91.19
49 Freon 113	50.000	47.816	95.63
50 1,1-Dichloroethene	50.000	48.448	96.90
52 Acetone	50.000	46.360	92.72
56 Carbon Disulfide	50.000	45.897	91.79
57 2-Propanol	50.000	49.118	98.24
58 3-Chloropropene	50.000	51.294	102.59
66 Methylene Chloride	50.000	44.541	89.08
72 Methyl tert-butyl ether	50.000	47.618	95.24
73 trans-1,2-Dichloroethene	50.000	56.395	112.79
78 Hexane	50.000	49.964	99.93
82 1,1-Dichloroethane	50.000	46.012	92.02
86 Vinyl Acetate	50.000	48.056	96.11
91 cis-1,2-Dichloroethene	50.000	44.235	88.47
92 2-Butanone	50.000	46.056	92.11
99 Tetrahydrofuran	50.000	49.480	98.96
100 Chloroform	50.000	48.147	96.29
103 1,1,1-Trichloroethane	50.000	50.815	101.63
106 Carbon Tetrachloride	50.000	52.082	104.16
102 Cyclohexane	50.000	49.601	99.20
113 2,2,4-Trimethylpentane	50.000	50.234	100.47
116 Benzene	50.000	44.749	89.50

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
120 1,2-Dichloroethane	50.000	48.272	96.54
121 Heptane	50.000	49.795	99.59
125 Trichloroethene	50.000	47.916	95.83
127 Methylcyclohexane	50.000	51.055	102.11
132 1,2-Dichloropropane	50.000	47.322	94.64
136 1,4-Dioxane	50.000	52.637	105.27
138 Bromodichloromethane	50.000	50.632	101.26
144 cis-1,3-Dichloropropene	50.000	51.442	102.88
145 4-Methyl-2-pentanone	50.000	53.859	107.72
147 Toluene	50.000	47.175	94.35
150 trans-1,3-Dichloropropene	50.000	49.526	99.05
155 1,1,2-Trichloroethane	50.000	47.645	95.29
156 Tetrachloroethene	50.000	51.084	102.17
158 2-Hexanone	50.000	57.848	115.70
160 Dibromochloromethane	50.000	51.178	102.36
161 1,2-Dibromoethane (EDB)	50.000	49.789	99.58
165 Chlorobenzene	50.000	48.178	96.36
167 Ethyl Benzene	50.000	50.514	101.03
169 m,p-Xylene	50.000	52.671	105.34
171 o-Xylene	50.000	53.011	106.02
172 Styrene	50.000	55.166	110.33
174 Bromoform	50.000	54.159	108.32
175 Cumene	50.000	53.131	106.26
181 1,1,2,2-Tetrachloroethane	50.000	47.312	94.62
182 Propylbenzene	50.000	51.265	102.53
188 4-Ethyltoluene	50.000	55.539	111.08
190 1,3,5-Trimethylbenzene	50.000	55.533	111.07
196 1,2,4-Trimethylbenzene	50.000	56.655	113.31
208 1,3-Dichlorobenzene	50.000	52.279	104.56
209 1,4-Dichlorobenzene	50.000	53.791	107.58
212 alpha-Chlorotoluene	50.000	57.920	115.84
214 1,2-Dichlorobenzene	50.000	52.667	105.33
226 1,2,4-Trichlorobenzene	50.000	53.897	107.79
227 Hexachlorobutadiene	50.000	55.333	110.67
228 Naphthalene	5.000	5.375	107.49

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 117 1,2-Dichloroethane-d4	25.000	25.199	100.80
$ 146 Toluene-d8	25.000	24.974	99.89
$ 177 4-Bromofluorobenzene	25.000	26.109	104.44

US32APPTV002

EPA TO-15/MODIFIED TO14A

Data file : /chem/msdp.i/12DEC18.b/p121204.d
Lab Smp Id: LCSD Client Smp ID: LCSD
Inj Date : 12-DEC-2018 12:27
Operator : jg Inst ID: msdp.i
Smp Info : 50ml 3018-537;LCSD
Misc Info : 50ppbv (200ppbv)
Comment : STANDARD LEVEL - GC/MS
Method : /chem/msdp.i/12DEC18.b/p18q1108c.m
Meth Date : 12-Dec-2018 13:12 u7js Quant Type: ISTD
Cal Date : 04-DEC-2018 18:07 Cal File: p120415.d
Als bottle: 14 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Sample Matrix: AIR
Processing Host: us32apptv003

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
5.413	5.413 (1.000)	130	82770	25.0000		80.00- 120.00	100.00
5.406	5.413 (1.000)	128	65174			48.70- 108.70	78.74
5.406	5.409 (1.000)	49	123643			130.32- 190.32	149.38
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
6.294	6.299 (1.000)	114	261803	25.0000		80.00- 120.00	100.00
6.294	6.297 (1.000)	88	35838			0.00- 44.06	13.69
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
8.729	8.736 (1.000)	117	291155	25.0000		80.00- 120.00	100.00
8.729	8.736 (1.000)	82	125246			14.84- 74.84	43.02
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
5.943	5.942 (1.098)	65	111079	25.1993	25.199	80.00- 120.00	100.00
5.943	5.943 (1.098)	67	59639			26.40- 86.40	53.69
$ 146 Toluene-d8					CAS #: 2037-26-5		
7.504	7.505 (1.192)	98	270129	24.9737	24.974	80.00- 120.00	100.00
7.504	7.504 (1.192)	70	27014			0.00- 40.19	10.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.504	7.505 (1.192)	100	182868			38.92- 98.92	67.70
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.711	9.720 (1.112)	174	193006	26.1091	26.109	80.00- 120.00	100.00
9.711	9.714 (1.112)	95	208727			82.53- 142.53	108.15
9.711	9.720 (1.112)	176	184248			65.10- 125.10	95.46
9 Propylene					CAS #: 115-07-1		
1.479	1.479 (0.273)	41	130139	42.0058	42.006	80.00- 120.00	100.00
1.479	1.481 (0.273)	42	85765			37.41- 97.41	65.90
1.479	1.479 (0.273)	39	96009			42.27- 102.27	73.77
11 Freon 12					CAS #: 75-71-8		
1.507	1.511 (0.278)	85	417025	50.7992	50.799	80.00- 120.00	100.00
1.507	1.511 (0.278)	87	135214			2.07- 62.07	32.42
15 Freon 114					CAS #: 76-14-2		
1.633	1.629 (0.302)	135	338927	50.2125	50.212	80.00- 120.00	100.00
1.633	1.629 (0.302)	137	108151			2.07- 62.07	31.91
17 Chloromethane					CAS #: 74-87-3		
1.716	1.726 (0.317)	50	177400	47.1530	47.153	80.00- 120.00	100.00
1.716	1.726 (0.317)	52	54095			0.00- 58.76	30.49
23 Butane					CAS #: 106-97-8		
1.786	1.791 (0.330)	58	28912	41.2847	41.285	80.00- 120.00	100.00
1.786	1.786 (0.330)	43	308652			1048.24-1108.24	1067.56
25 Vinyl Chloride					CAS #: 75-01-4		
1.814	1.818 (0.335)	62	184960	55.3998	55.400	80.00- 120.00	100.00
1.814	1.818 (0.335)	64	42053			0.00- 54.53	22.74
26 1,3-Butadiene					CAS #: 106-99-0		
1.842	1.842 (0.340)	54	160915	51.4339	51.434	80.00- 120.00	100.00
1.842	1.840 (0.340)	39	206849			85.58- 145.58	128.55
29 Bromomethane					CAS #: 74-83-9		
2.189	2.195 (0.404)	94	121126	50.7170	50.717	80.00- 120.00	100.00
2.189	2.195 (0.404)	96	113405			65.12- 125.12	93.63
30 Chloroethane					CAS #: 75-00-3		
2.304	2.304 (0.426)	64	67120	47.3739	47.374	80.00- 120.00	100.00
2.304	2.304 (0.426)	66	19876			0.00- 59.74	29.61
2.304	2.302 (0.426)	49	27050			9.89- 69.89	40.30

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
2.325	2.327 (0.430)	43	187854	43.8290	43.829	80.00- 120.00	100.00
2.325	2.327 (0.430)	57	120419			31.46- 91.46	64.10
35 Freon 11					CAS #: 75-69-4		
2.548	2.551 (0.471)	101	475338	49.8838	49.884	80.00- 120.00	100.00
2.548	2.551 (0.471)	103	307558			34.29- 94.29	64.70
42 Ethanol					CAS #: 64-17-5		
2.863	2.866 (0.529)	45	64702	45.5933	45.593	80.00- 120.00	100.00
2.863	2.864 (0.529)	46	25834			8.87- 68.87	39.93
49 Freon 113					CAS #: 76-13-1		
3.178	3.182 (0.587)	151	303106	47.8159	47.816	80.00- 120.00	100.00
3.185	3.184 (0.588)	153	198401			34.67- 94.67	65.46
3.178	3.180 (0.587)	101	330513			79.70- 139.70	109.04
50 1,1-Dichloroethene					CAS #: 75-35-4		
3.214	3.214 (0.594)	98	77473	48.4481	48.448	80.00- 120.00	100.00
3.207	3.213 (0.592)	96	123917			126.11- 186.11	159.95
3.207	3.213 (0.592)	61	249196			286.72- 346.72	321.66
52 Acetone					CAS #: 67-64-1		
3.350	3.356 (0.619)	58	76343	46.3600	46.360	80.00- 120.00	100.00
3.350	3.357 (0.619)	43	284881			345.31- 405.31	373.16
56 Carbon Disulfide					CAS #: 75-15-0		
3.450	3.452 (0.637)	76	328572	45.8969	45.897	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
3.529	3.532 (0.652)	45	295942	49.1180	49.118	80.00- 120.00	100.00
3.529	3.530 (0.652)	43	71479			0.00- 53.09	24.15
3.529	3.530 (0.652)	59	10437			0.00- 33.51	3.53
58 3-Chloropropene					CAS #: 107-05-1		
3.686	3.685 (0.681)	76	51509	51.2940	51.294	80.00- 120.00	100.00
3.679	3.684 (0.680)	41	220348			428.12- 488.12	427.79
66 Methylene Chloride					CAS #: 75-09-2		
3.866	3.870 (0.714)	49	226238	44.5412	44.541	80.00- 120.00	100.00
3.866	3.870 (0.714)	84	106944			16.41- 76.41	47.27
3.866	3.870 (0.714)	51	71150			0.00- 59.94	31.45
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
4.088	4.088 (0.755)	73	330215	47.6180	47.618	80.00- 120.00	100.00
4.088	4.088 (0.755)	57	103555			1.33- 61.33	31.36

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
72 Methyl tert-butyl ether (continued)							
4.088	4.089 (0.755)	41	126144			8.05- 68.05	38.20
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
4.109	4.112 (0.759)	98	92881	56.3950	56.395	80.00- 120.00	100.00
4.109	4.110 (0.759)	61	245351			247.19- 307.19	264.16
4.109	4.113 (0.759)	96	142219			131.40- 191.40	153.12
78 Hexane					CAS #: 110-54-3		
4.324	4.328 (0.799)	57	256630	49.9638	49.964	80.00- 120.00	100.00
4.324	4.328 (0.799)	43	182255			42.49- 102.49	71.02
4.324	4.328 (0.799)	86	29678			0.00- 42.15	11.56
82 1,1-Dichloroethane					CAS #: 75-34-3		
4.596	4.598 (0.849)	63	280710	46.0125	46.012	80.00- 120.00	100.00
4.596	4.599 (0.849)	65	83010			0.00- 58.69	29.57
86 Vinyl Acetate					CAS #: 108-05-4		
4.639	4.640 (0.857)	86	32287	48.0560	48.056	80.00- 120.00	100.00
4.639	4.639 (0.857)	43	503977			1735.43-1795.43	1560.93
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
5.176	5.180 (0.956)	98	92209	44.2346	44.235	80.00- 120.00	100.00
5.176	5.180 (0.956)	96	143206			123.83- 183.83	155.31
5.176	5.177 (0.956)	61	221387			214.95- 274.95	240.09
92 2-Butanone					CAS #: 78-93-3		
5.198	5.200 (0.960)	72	57334	46.0556	46.056	80.00- 120.00	100.00
5.198	5.201 (0.960)	43	401575			669.23- 729.23	700.41
5.198	5.204 (0.960)	57	30926			20.89- 80.89	53.94
99 Tetrahydrofuran					CAS #: 109-99-9		
5.406	5.410 (0.999)	42	210286	49.4806	49.480	80.00- 120.00	100.00
5.406	5.412 (0.999)	71	51425			0.00- 54.27	24.45
5.406	5.411 (0.999)	72	52100			0.00- 54.41	24.78
100 Chloroform					CAS #: 67-66-3		
5.470	5.473 (1.011)	83	326872	48.1469	48.147	80.00- 120.00	100.00
5.470	5.473 (1.011)	85	222936			38.55- 98.55	68.20
102 Cyclohexane					CAS #: 110-82-7		
5.585	5.583 (1.032)	84	166473	49.6013	49.601	80.00- 120.00	100.00
5.585	5.584 (1.032)	56	298853			149.13- 209.13	179.52
5.585	5.583 (1.032)	41	180036			74.83- 134.83	108.15
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
5.599	5.598 (1.034)	97	404062	50.8152	50.815	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
103 1,1,1-Trichloroethane (continued)							
5.599	5.599 (1.034)	99	256943			35.00- 95.00	63.59
106 Carbon Tetrachloride					CAS #: 56-23-5		
5.714	5.714 (1.056)	119	448156	52.0817	52.082	80.00- 120.00	100.00
5.714	5.713 (1.056)	117	470337			73.60- 133.60	104.95
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
5.914	5.913 (1.093)	57	918935	50.2344	50.234	80.00- 120.00	100.00
5.914	5.914 (1.093)	56	310152			3.59- 63.59	33.75
5.914	5.911 (1.093)	41	283843			0.20- 60.20	30.89
116 Benzene					CAS #: 71-43-2		
5.921	5.927 (0.941)	78	414098	44.7494	44.749	80.00- 120.00	100.00
5.921	5.925 (0.941)	77	96812			0.00- 54.10	23.38
120 1,2-Dichloroethane					CAS #: 107-06-2		
6.007	6.010 (0.954)	62	277166	48.2721	48.272	80.00- 120.00	100.00
6.007	6.009 (0.954)	64	84418			0.44- 60.44	30.46
121 Heptane					CAS #: 142-82-5		
6.086	6.085 (0.967)	71	129396	49.7948	49.795	80.00- 120.00	100.00
6.086	6.083 (0.967)	43	382201			259.43- 319.43	295.37
6.086	6.085 (0.967)	57	193835			114.50- 174.50	149.80
125 Trichloroethene					CAS #: 79-01-6		
6.494	6.494 (1.032)	95	222216	47.9162	47.916	80.00- 120.00	100.00
6.494	6.494 (1.032)	130	273618			88.76- 148.76	123.13
6.494	6.494 (1.032)	97	144480			35.32- 95.32	65.02
127 Methylcyclohexane					CAS #: 108-87-2		
6.595	6.595 (1.048)	83	246154	51.0549	51.055	80.00- 120.00	100.00
6.595	6.595 (1.048)	98	127794			20.32- 80.32	51.92
6.595	6.595 (1.048)	55	316364			98.90- 158.90	128.52
132 1,2-Dichloropropane					CAS #: 78-87-5		
6.724	6.724 (1.068)	63	190707	47.3224	47.322	80.00- 120.00	100.00
6.724	6.724 (1.068)	62	132608			41.74- 101.74	69.53
6.724	6.724 (1.068)	41	135810			41.01- 101.01	71.21
136 1,4-Dioxane					CAS #: 123-91-1		
6.817	6.817 (1.083)	88	107988	52.6373	52.637	80.00- 120.00	100.00
6.810	6.816 (1.082)	58	103578			66.86- 126.86	95.92
6.817	6.816 (1.083)	57	34081			1.32- 61.32	31.56
138 Bromodichloromethane					CAS #: 75-27-4		
6.953	6.953 (1.105)	83	383865	50.6319	50.632	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
138 Bromodichloromethane (continued)							
6.953	6.952 (1.105)	85	255342			35.98- 95.98	66.52
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
7.325	7.325 (1.164)	75	254408	51.4425	51.442	80.00- 120.00	100.00
7.325	7.325 (1.164)	77	85637			2.71- 62.71	33.66
7.325	7.325 (1.164)	39	191456			43.85- 103.85	75.26
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
7.433	7.433 (1.181)	58	187905	53.8591	53.859	80.00- 120.00	100.00
7.433	7.433 (1.181)	43	556170			267.85- 327.85	295.98
7.433	7.434 (1.181)	85	65304			4.54- 64.54	34.75
147 Toluene					CAS #: 108-88-3		
7.562	7.562 (1.201)	91	579698	47.1751	47.175	80.00- 120.00	100.00
7.562	7.562 (1.201)	92	330023			28.88- 88.88	56.93
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
7.798	7.798 (0.893)	75	255305	49.5259	49.526	80.00- 120.00	100.00
7.798	7.798 (0.893)	77	84176			2.67- 62.67	32.97
7.798	7.798 (0.893)	39	173680			37.60- 97.60	68.03
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
7.956	7.956 (0.911)	97	221614	47.6449	47.645	80.00- 120.00	100.00
7.956	7.956 (0.911)	99	137779			30.86- 90.86	62.17
7.956	7.956 (0.911)	83	173719			47.74- 107.74	78.39
156 Tetrachloroethene					CAS #: 127-18-4		
7.999	8.001 (0.916)	166	385682	51.0842	51.084	80.00- 120.00	100.00
7.999	7.999 (0.916)	129	292013			48.46- 108.46	75.71
7.999	7.999 (0.916)	131	286019			45.42- 105.42	74.16
158 2-Hexanone					CAS #: 591-78-6		
8.120	8.120 (0.930)	58	265551	57.8479	57.848	80.00- 120.00	100.00
8.120	8.120 (0.930)	43	568439			185.57- 245.57	214.06
8.120	8.120 (0.930)	100	45460			0.00- 46.27	17.12
160 Dibromochloromethane					CAS #: 124-48-1		
8.264	8.267 (0.947)	129	547670	51.1780	51.178	80.00- 120.00	100.00
8.264	8.268 (0.947)	127	420075			47.61- 107.61	76.70
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
8.378	8.378 (0.960)	107	379139	49.7892	49.789	80.00- 120.00	100.00
8.378	8.378 (0.960)	109	373907			68.89- 128.89	98.62
165 Chlorobenzene					CAS #: 108-90-7		
8.758	8.758 (1.003)	112	572988	48.1785	48.178	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
165 Chlorobenzene (continued)							
8.758	8.758 (1.003)	114	182661			1.88- 61.88	31.88
8.758	8.757 (1.003)	77	282962			20.89- 80.89	49.38
167 Ethyl Benzene					CAS #: 100-41-4		
8.808	8.808 (1.009)	106	266311	50.5141	50.514	80.00- 120.00	100.00
8.808	8.808 (1.009)	91	802503			268.95- 328.95	301.34
169 m,p-Xylene					CAS #: 108-38-3		
8.901	8.905 (1.020)	106	341197	52.6710	52.671	80.00- 120.00	100.00
8.901	8.906 (1.020)	91	652164			159.20- 219.20	191.14
171 o-Xylene					CAS #: 95-47-6		
9.245	9.245 (1.059)	106	322127	53.0113	53.011	80.00- 120.00	100.00
9.245	9.245 (1.059)	91	640734			173.23- 233.23	198.91
172 Styrene					CAS #: 100-42-5		
9.266	9.266 (1.062)	104	563226	55.1663	55.166	80.00- 120.00	100.00
9.259	9.265 (1.061)	78	266824			15.83- 75.83	47.37
174 Bromoform					CAS #: 75-25-2		
9.460	9.461 (1.084)	173	533629	54.1589	54.159	80.00- 120.00	100.00
9.460	9.461 (1.084)	171	276014			21.75- 81.75	51.72
175 Cumene					CAS #: 98-82-8		
9.531	9.532 (1.092)	105	1048177	53.1306	53.131	80.00- 120.00	100.00
9.531	9.533 (1.092)	120	306594			0.00- 58.53	29.25
9.531	9.532 (1.092)	51	133237			0.00- 43.43	12.71
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
9.839	9.841 (1.127)	83	471497	47.3123	47.312	80.00- 120.00	100.00
9.839	9.841 (1.127)	85	321811			38.99- 98.99	68.25
182 Propylbenzene					CAS #: 103-65-1		
9.868	9.875 (1.130)	91	1148399	51.2649	51.265	80.00- 120.00	100.00
9.868	9.876 (1.130)	120	321652			0.00- 56.98	28.01
9.868	9.875 (1.130)	105	46875			0.00- 34.22	4.08
188 4-Ethyltoluene					CAS #: 622-96-8		
9.961	9.968 (1.141)	120	367602	55.5395	55.539	80.00- 120.00	100.00
9.961	9.967 (1.141)	105	1117302			277.08- 337.08	303.94
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
10.019	10.020 (1.148)	120	515224	55.5330	55.533	80.00- 120.00	100.00
10.019	10.020 (1.148)	105	984226			165.36- 225.36	191.03

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
10.341	10.343 (1.185)	120	441440	56.6549	56.655	80.00- 120.00	100.00
10.334	10.342 (1.184)	105	894155			173.89- 233.89	202.55
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
10.620	10.625 (1.217)	146	755850	52.2792	52.279	80.00- 120.00	100.00
10.620	10.626 (1.217)	148	484302			34.36- 94.36	64.07
10.620	10.624 (1.217)	111	273987			7.68- 67.68	36.25
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
10.699	10.708 (1.226)	146	772280	53.7907	53.791	80.00- 120.00	100.00
10.699	10.707 (1.226)	148	500495			33.64- 93.64	64.81
10.699	10.705 (1.226)	111	274057			5.53- 65.53	35.49
212 alpha-Chlorotoluene					CAS #: 100-44-7		
10.814	10.817 (1.239)	91	877076	57.9197	57.920	80.00- 120.00	100.00
10.814	10.820 (1.239)	126	232879			0.00- 55.76	26.55
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
11.029	11.032 (1.263)	146	729132	52.6670	52.667	80.00- 120.00	100.00
11.029	11.032 (1.263)	148	467741			33.63- 93.63	64.15
11.029	11.032 (1.263)	111	274212			8.70- 68.70	37.61
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
12.411	12.417 (1.422)	180	609367	53.8974	53.897	80.00- 120.00	100.00
12.411	12.417 (1.422)	182	588431			66.82- 126.82	96.56
227 Hexachlorobutadiene					CAS #: 87-68-3		
12.497	12.509 (1.432)	225	500901	55.3329	55.333	80.00- 120.00	100.00
12.497	12.509 (1.432)	223	316144			33.20- 93.20	63.12
228 Naphthalene					CAS #: 91-20-3		
12.662	12.675 (1.450)	128	128161	5.37471	5.375	80.00- 120.00	100.00
12.662	12.675 (1.450)	127	17278			0.00- 43.12	13.48

US32APPTV002

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdp.i
Lab File ID: p121204.d
Lab Smp Id: LCSD
Analysis Type: VOA
Quant Type: ISTD
Operator: jg
Method File: /chem/msdp.i/12DEC18.b/p18q1108c.m
Misc Info: 50ppbv (200ppbv)

Calibration Date: 12-DEC-2018
Calibration Time: 10:47
Client Smp ID: LCSD
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	75875	45525	106225	82770	9.09
123 1,4-Difluorobenze	227347	136408	318286	261803	15.16
163 Chlorobenzene-d5	252646	151588	353704	291155	15.24

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.41	5.08	5.74	5.41	-0.00
123 1,4-Difluorobenze	6.29	5.96	6.62	6.29	-0.00
163 Chlorobenzene-d5	8.74	8.41	9.07	8.73	-0.08

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdp.i/12DEC18.b/p121204.d

Date : 12-DEC-2018 12:27

Client ID: LCSD

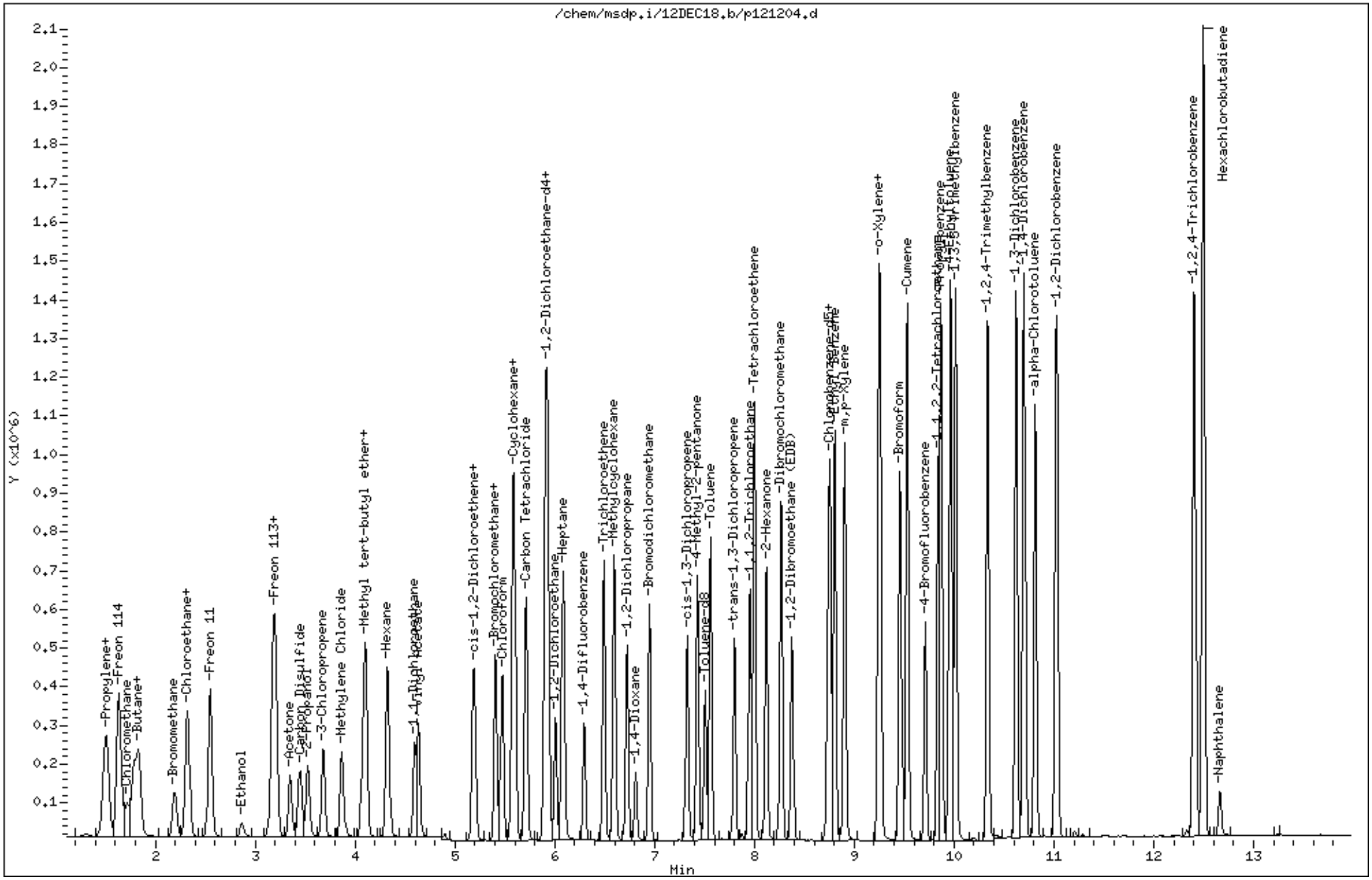
Sample Info: 50ml 3018-537;LCSD

Column phase: RTX-624

Instrument: msdp.i

Operator: jg

Column diameter: 0.25



MSDP

BFB Verification of 176/174 ratio: (61048/62912) * 100 = 97.04%			
	3045-156	Exp. Date:	1/2/19
BCM	75,875		
1,4-DFB	227,347		
CB-d5	252,646		

Verified CCV vs ICAL mid-point(-40%):_____jg_____

Method:_____P18q1108c.m

Method TO-15/TO-14	
SOP# 6	
Vacuum:	NA

Please check all standards

Surr.# 3045-156	Exp. Date:	1/2/19	Surrogate# NA	Exp. Date:	NA
CCV #3018-509A	Exp. Date:	2/8/19	LCS #	Exp. Date:	
CCV sp1#	Exp. Date:		LCS sp1 #	Exp. Date:	
CCV sp2#	Exp. Date:		LCS sp2 #	Exp. Date:	
CCV sp3#	Exp. Date:		LCS sp3 #	Exp. Date:	

Use	File #	Enter/Scan Sample ID#	Canister#	Cart Pos.	Pressure	mL	DF	Verify Load	Loaded Init	Date Analyzed	Time	Review Init	Comments
√	p121201	BFB	3045-156	10	36ng	50ml	1.00	jg	jg	12/12/18	1023	jg	exp. 1/2/19;
√	p121202	CCV	3018-509A	13	50ppbv(100ppbv)	100ml	1.00	jg	jg	12/12/18	1047	jg	exp. 2/8/19; 0 out
√	p121203	LCS	3018-537	14	50ppbv (200ppbv)	50ml	1.00	jg	jg	12/12/18	1202	jg	exp.2/15/18; 0 out
√	p121204	LCSD	3018-537	14	50ppbv (200ppbv)	50ml	1.00	jg	jg	12/12/18	1227	jg	exp.2/15/18; 0 out; RPD ok
√	p121205	CCV sp	3045-193	11	50ppbv (200ppbv)	50ml	1.00	jg	jg	12/12/18	1253	jg	Master; exp. 2/19/19; ok
√	p121206	LCS sp	3045-215	12	50ppbv (200ppbv)	50ml	1.00	jg	jg	12/12/18	1319	jg	AT-5 exp. 3/7/19; 0 out
√	p121207	LCSD sp	3045-215	12	50ppbv (200ppbv)	50ml	1.00	jg	jg	12/12/18	1345	jg	AT-5 exp. 3/7/19; 0 out; RPD
√	p121208	Lab Blank	24229	10	humid	200ml	1.00	jg	jg	12/12/18	1411	jg	
X	p121209	1811648-02A	32128	1	5.0 Hg->5 psi	40ml	8.04	kk	jg	12/12/18	1652	kk	Air used as carrier gas
X	p121210	System Blank	24229	10	humid	200ml	1.00	kk	kk	12/12/18	1742	kk	
√	p121211	System Blank	24229	10	humid	200ml	1.00	kk	kk	12/12/18	1837	kk	No TICS/TPHg
√	p121212	1812211-01A	N1674	3	0.1 psi->5 psi	200ml	1.33	kk	kk	12/12/18	1904	kk	Blue dot: 4.1psi->3.5psi
√	p121213	1812211-02A	N1675	4	3.9 Hg->5 psi	200ml	1.54	kk	kk	12/12/18	1930	kk	
√	p121214	1812211-03A	N3255	5	3.9 Hg->4.9 psi	200ml	1.53	kk	kk	12/12/18	1956	kk	
√	p121215	1812211-04A	N0731	6	1.8 Hg->5 psi	200ml	1.42	kk	kk	12/12/18	2023	kk	

9H 12/12/18

US32APPTV002

Data file : /chem/msdp.i/27Sep18.b/p092710.d
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 27-SEP-2018 15:23
Operator : jg Inst ID: msdp.i
Smp Info : 200ml 3045-94;BFB;BFB
Misc Info : 36ng
Comment :
Method : /chem/msdp.i/27Sep18.b/bfb30.m
Meth Date : 03-Aug-2018 14:47 uexa Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 12 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: WATER
Processing Host: us32apptv003

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
9.718	9.898	-0.180	95	181930			100.00- 100.00	100.00
9.718	9.898	-0.180	50	39472			8.00- 40.00	21.70
9.718	9.898	-0.180	75	82685			30.00- 66.00	45.45
9.718	9.898	-0.180	96	12409			5.00- 9.00	6.82
9.718	9.898	-0.180	173	1658			0.00- 1.99	0.97
9.718	9.898	-0.180	174	171392			50.01- 120.00	94.21
9.718	9.898	-0.180	175	12457			4.00- 9.00	7.27
9.718	9.898	-0.180	176	166165			93.00- 101.00	96.95
9.718	9.898	-0.180	177	11065			5.00- 9.00	6.66

Data File: /chem/msdp.i/27Sep18.b/p092710.d

Date : 27-SEP-2018 15:23

Client ID: BFB

Instrument: msdp.i

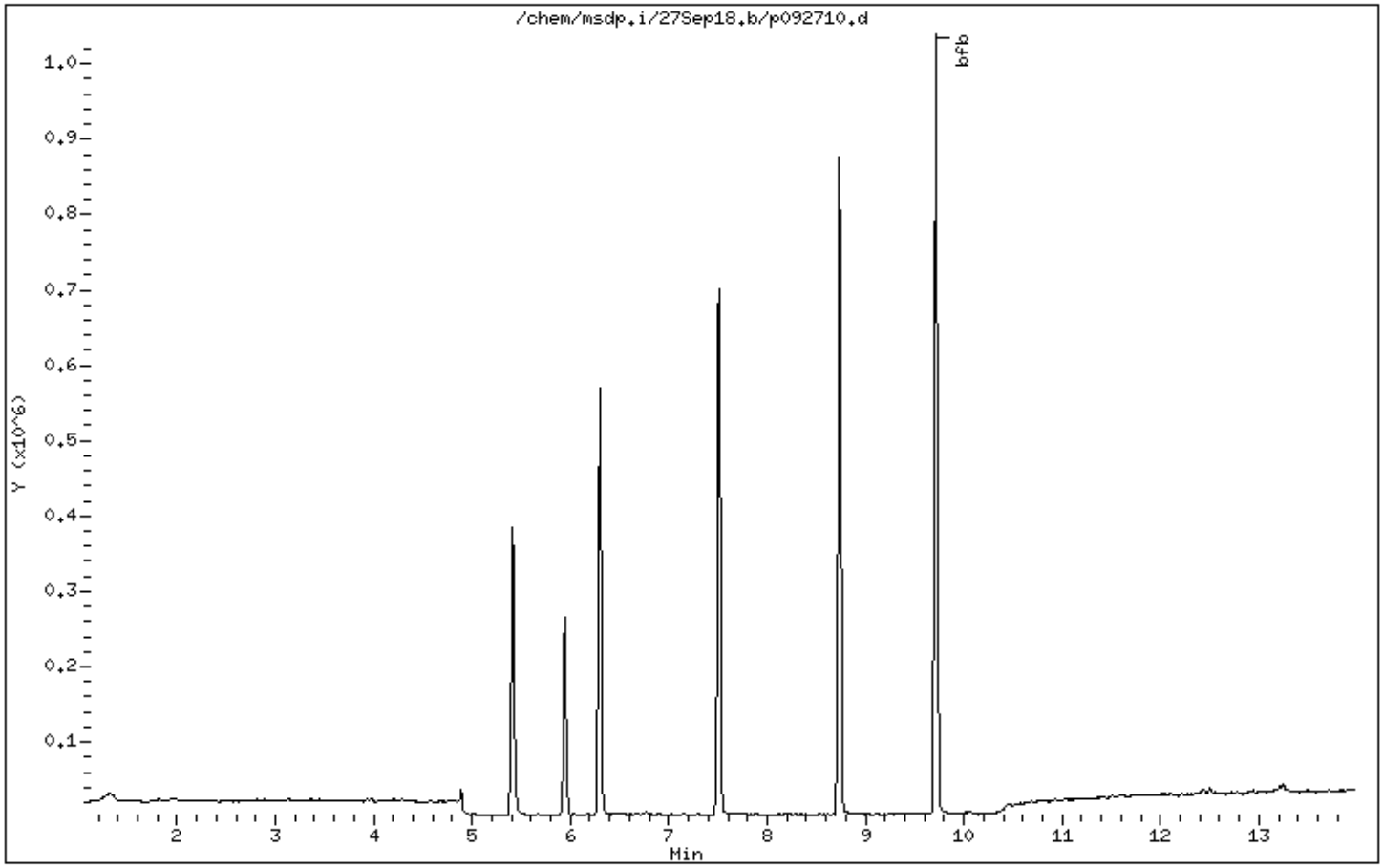
Sample Info: 200ml 3045-94;BFB;BFB

Volume Injected (uL): 1.0

Operator: jg

Column phase:

Column diameter: 2.00



Data File: /chem/msdp.i/27Sep18.b/p092710.d

Date : 27-SEP-2018 15:23

Client ID: BFB

Instrument: msdp.i

Sample Info: 200ml 3045-94;BFB;BFB

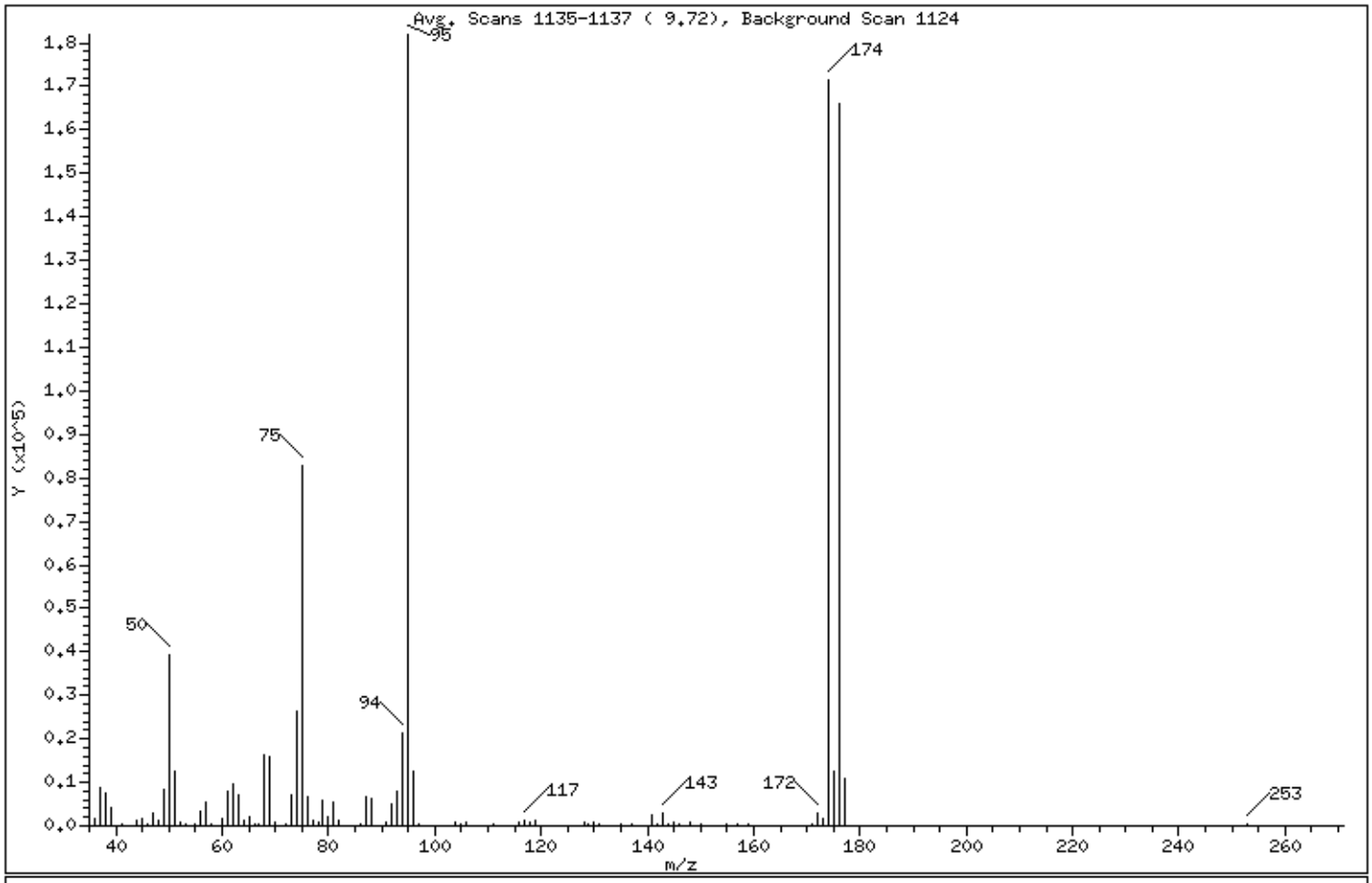
Volume Injected (uL): 1.0

Operator: jg

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	21.70
75	30.00 - 66.00% of mass 95	45.45
96	5.00 - 9.00% of mass 95	6.82
173	Less than 1.99% of mass 174	0.91 (0.97)
174	50.01 - 120.00% of mass 95	94.21
175	4.00 - 9.00% of mass 174	6.85 (7.27)
176	93.00 - 101.00% of mass 174	91.33 (96.95)
177	5.00 - 9.00% of mass 176	6.08 (6.66)

Data File: /chem/msdp.i/27Sep18.b/p092710.d

Date : 27-SEP-2018 15:23

Client ID: BFB

Instrument: msdp.i

Sample Info: 200ml 3045-94;BFB;BFB

Volume Injected (uL): 1.0

Operator: jg

Column phase:

Column diameter: 2.00

Data File: p092710.d
Spectrum: Avg. Scans 1135-1137 (9.72), Background Scan 1124
Location of Maximum: 95.00
Number of points: 109

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1520	66.00	248	105.00	427	146.00	372
37.00	8805	67.00	415	106.00	843	147.00	126
38.00	7611	68.00	16512	107.00	189	148.00	668
39.00	4089	69.00	15868	111.00	247	149.00	149
41.00	279	70.00	932	112.00	44	150.00	240
42.00	129	72.00	581	113.00	177	153.00	137
43.00	168	73.00	7104	115.00	138	154.00	203
44.00	1301	74.00	26312	116.00	919	155.00	564
45.00	1672	75.00	82680	117.00	1427	156.00	33
46.00	298	76.00	6707	118.00	731	157.00	551
47.00	2733	77.00	1176	119.00	1355	159.00	242
48.00	1223	78.00	824	124.00	39	161.00	201
49.00	8391	79.00	5759	127.00	186	170.00	100
50.00	39472	80.00	1911	128.00	753	171.00	351
51.00	12674	81.00	5410	129.00	425	172.00	2874
52.00	789	82.00	1368	130.00	814	173.00	1658
53.00	305	86.00	213	131.00	342	174.00	171392
54.00	106	87.00	6761	133.00	145	175.00	12457
55.00	551	88.00	6208	135.00	546	176.00	166144
56.00	3388	91.00	708	136.00	40	177.00	11065
57.00	5240	92.00	5198	137.00	438	178.00	184
58.00	224	93.00	8084	139.00	135	179.00	52
60.00	1599	94.00	21344	140.00	85	191.00	107
61.00	8100	95.00	181888	141.00	2362	253.00	251
62.00	9528	96.00	12409	142.00	233	270.00	85
63.00	6941	97.00	335	143.00	2973		
64.00	1076	103.00	152	144.00	212		
65.00	1882	104.00	772	145.00	909		

US32APPTV002

Data file : /chem/msdp.i/08NOV18a.b/p110812.d
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 08-NOV-2018 18:59
Operator : gh Inst ID: msdp.i
Smp Info : 50ml #3045-156;BFB;BFB
Misc Info : 36ng
Comment :
Method : /chem/msdp.i/08NOV18a.b/bfb30.m
Meth Date : 03-Aug-2018 14:47 uexa Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 12 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: WATER
Processing Host: us32apptv003

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
9.725	9.898	-0.173	95	91976			100.00- 100.00	100.00
9.725	9.898	-0.173	50	23186			8.00- 40.00	25.21
9.725	9.898	-0.173	75	41200			30.00- 66.00	44.79
9.725	9.898	-0.173	96	6054			5.00- 9.00	6.58
9.725	9.898	-0.173	173	1164			0.00- 1.99	1.35
9.725	9.898	-0.173	174	86162			50.01- 120.00	93.68
9.725	9.898	-0.173	175	6115			4.00- 9.00	7.10
9.725	9.898	-0.173	176	81634			93.00- 101.00	94.74
9.725	9.898	-0.173	177	5457			5.00- 9.00	6.68

Data File: /chem/msdp.i/08NOV18a.b/p110812.d

Date : 08-NOV-2018 18:59

Client ID: BFB

Instrument: msdp.i

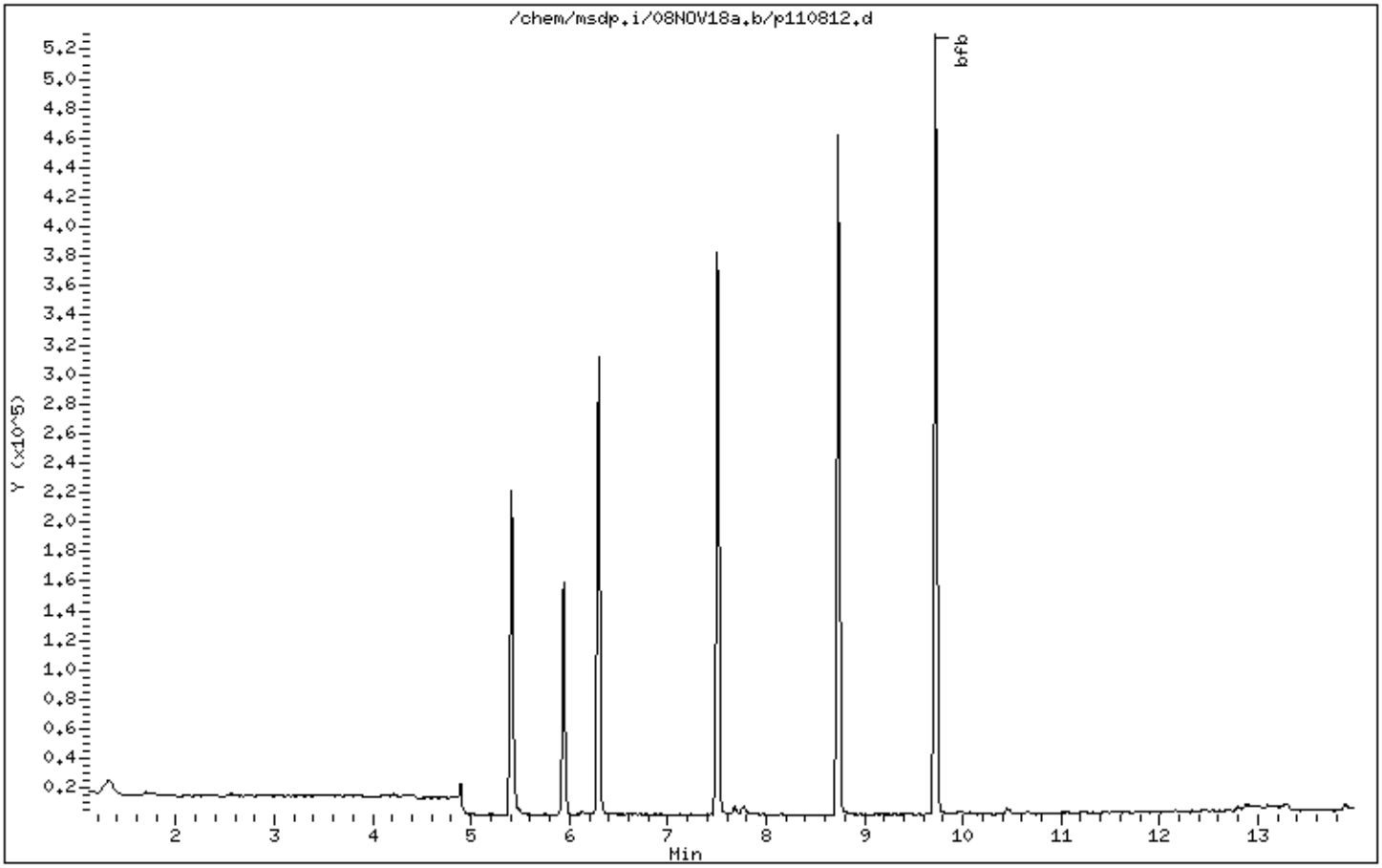
Sample Info: 50ml #3045-156;BFB;BFB

Volume Injected (uL): 1.0

Operator: gh

Column phase:

Column diameter: 2.00



Data File: /chem/msdp.i/08NOV18a.b/p110812.d

Date : 08-NOV-2018 18:59

Client ID: BFB

Instrument: msdp.i

Sample Info: 50ml #3045-156;BFB;BFB

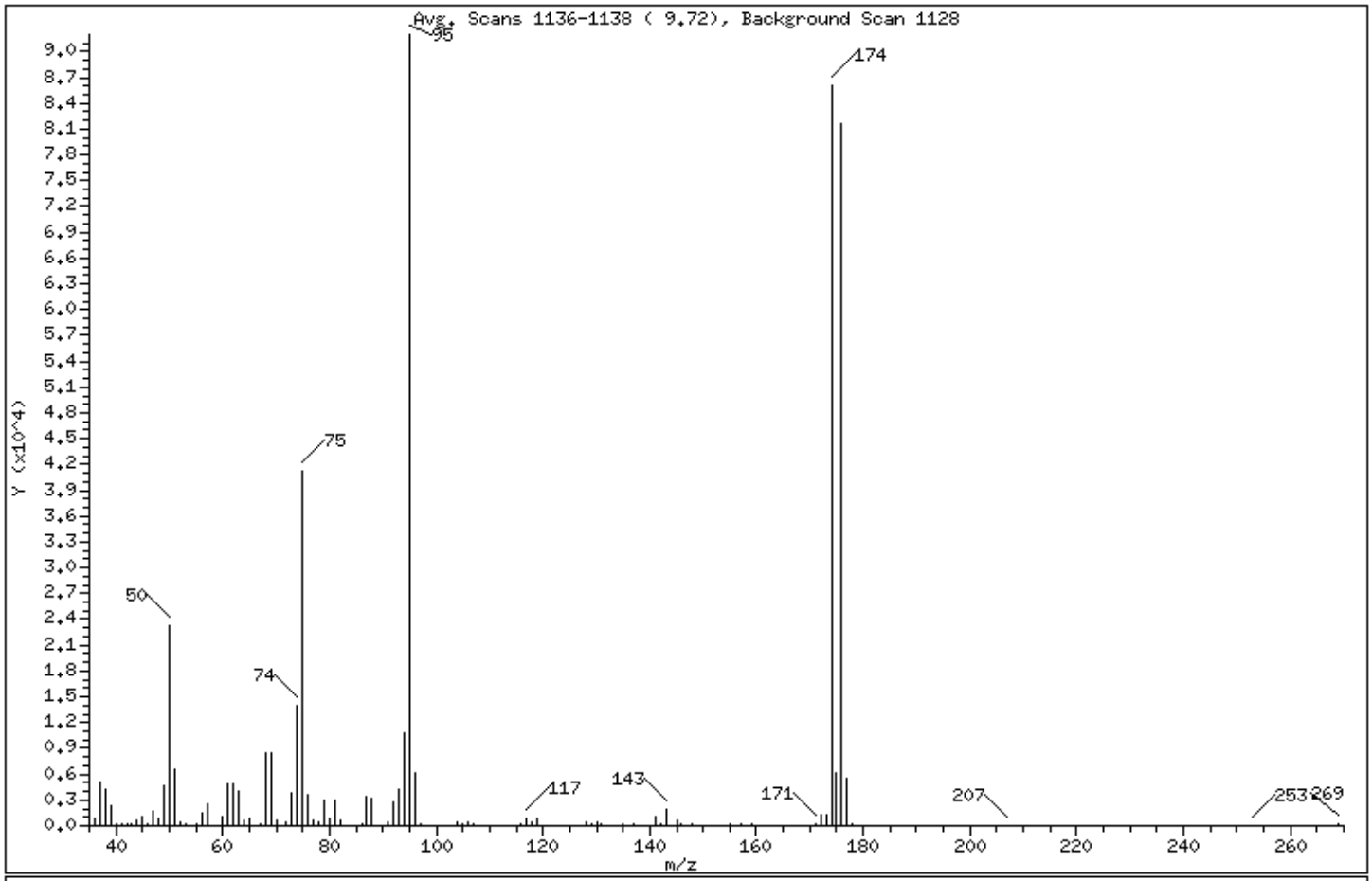
Volume Injected (uL): 1.0

Operator: gh

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	25.21
75	30.00 - 66.00% of mass 95	44.79
96	5.00 - 9.00% of mass 95	6.58
173	Less than 1.99% of mass 174	1.27 (1.35)
174	50.01 - 120.00% of mass 95	93.68
175	4.00 - 9.00% of mass 174	6.65 (7.10)
176	93.00 - 101.00% of mass 174	88.76 (94.74)
177	5.00 - 9.00% of mass 176	5.93 (6.68)

Data File: /chem/msdp.i/08NOV18a.b/p110812.d

Date : 08-NOV-2018 18:59

Client ID: BFB

Instrument: msdp.i

Sample Info: 50ml #3045-156;BFB;BFB

Volume Injected (uL): 1.0

Operator: gh

Column phase:

Column diameter: 2.00

Data File: p110812.d
Spectrum: Avg. Scans 1136-1138 (9.72), Background Scan 1128
Location of Maximum: 95.00
Number of points: 94

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	921	62.00	4778	92.00	2852	143.00	1985
37.00	5134	63.00	4092	93.00	4132	144.00	101
38.00	4196	64.00	596	94.00	10866	145.00	633
39.00	2351	65.00	922	95.00	91976	146.00	152
40.00	110	66.00	77	96.00	6054	148.00	310
41.00	131	67.00	209	97.00	220	149.00	77
42.00	160	68.00	8548	103.00	34	153.00	34
43.00	245	69.00	8427	104.00	386	155.00	273
44.00	568	70.00	658	105.00	138	157.00	182
45.00	1015	72.00	349	106.00	467	159.00	151
46.00	223	73.00	3712	107.00	109	161.00	34
47.00	1618	74.00	14012	111.00	35	171.00	296
48.00	751	75.00	41200	116.00	268	172.00	1183
49.00	4664	76.00	3656	117.00	866	173.00	1164
50.00	23184	77.00	529	118.00	445	174.00	86160
51.00	6532	78.00	359	119.00	757	175.00	6115
52.00	327	79.00	2994	128.00	429	176.00	81632
53.00	237	80.00	916	129.00	281	177.00	5457
55.00	223	81.00	3006	130.00	359	178.00	107
56.00	1545	82.00	703	131.00	147	207.00	71
57.00	2523	86.00	215	135.00	303	253.00	81
58.00	77	87.00	3355	137.00	130	269.00	168
60.00	952	88.00	3137	141.00	991		
61.00	4952	91.00	405	142.00	178		

US32APPTV002

Data file : /chem/msdp.i/04DEC18.b/p120401.d
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 04-DEC-2018 10:03
Operator : mjb Inst ID: msdp.i
Smp Info : 200ml 3045-156;BFB
Misc Info : 36ng
Comment :
Method : /chem/msdp.i/04DEC18.b/bfb30.m
Meth Date : 03-Aug-2018 14:47 uexa Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 8 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: WATER
Processing Host: us32apptv003

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
9.725	9.898	-0.173	95	80093			100.00- 100.00	100.00
9.725	9.898	-0.173	50	19490			8.00- 40.00	24.33
9.725	9.898	-0.173	75	37549			30.00- 66.00	46.88
9.725	9.898	-0.173	96	5243			5.00- 9.00	6.55
9.725	9.898	-0.173	173	1226			0.00- 1.99	1.57
9.725	9.898	-0.173	174	78133			50.01- 120.00	97.55
9.725	9.898	-0.173	175	5766			4.00- 9.00	7.38
9.725	9.898	-0.173	176	74437			93.00- 101.00	95.27
9.725	9.898	-0.173	177	4691			5.00- 9.00	6.30

Data File: /chem/msdp.i/04DEC18.b/p120401.d

Date : 04-DEC-2018 10:03

Client ID: BFB

Instrument: msdp.i

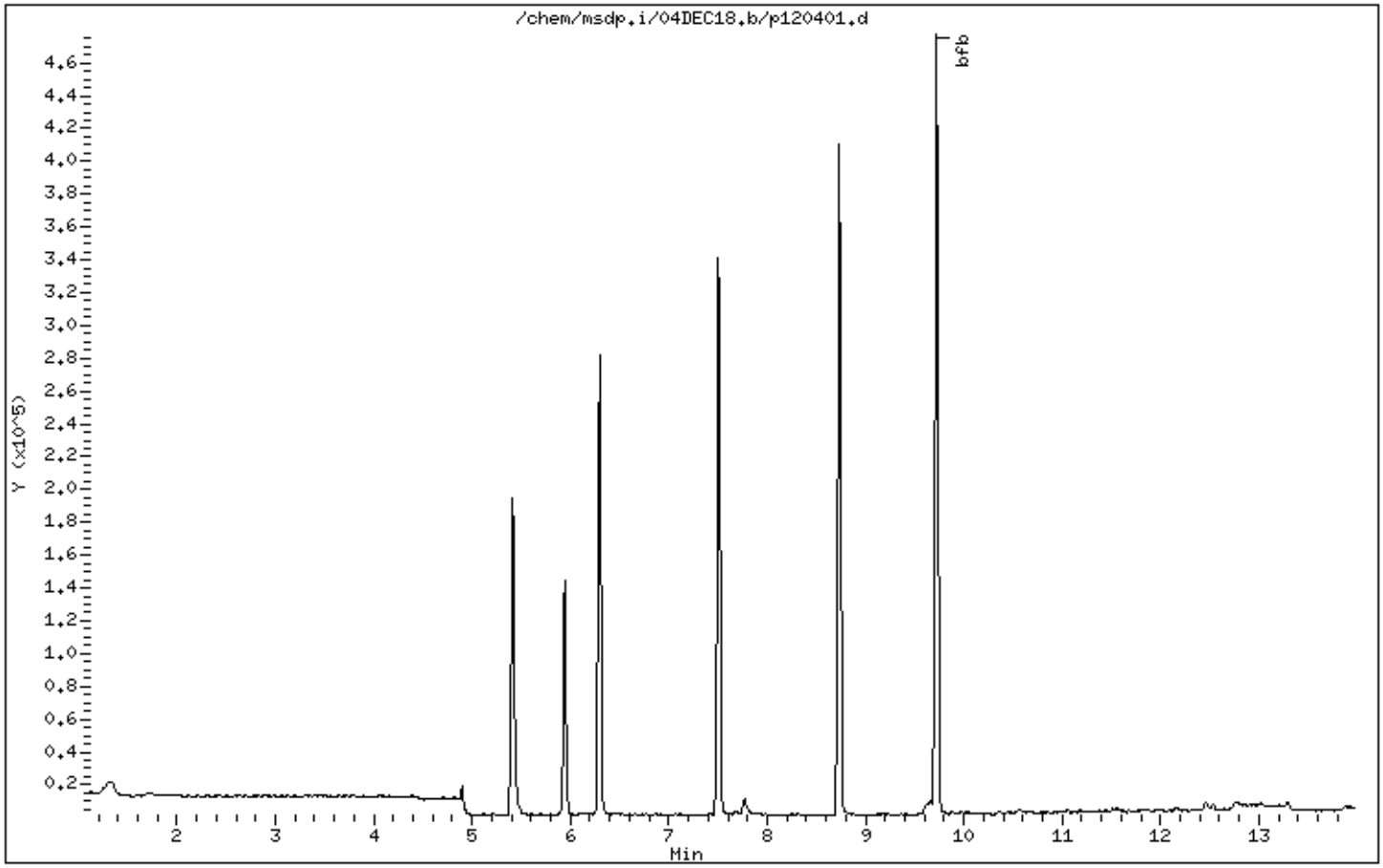
Sample Info: 200ml 3045-156;BFB

Volume Injected (uL): 1.0

Operator: mjb

Column phase:

Column diameter: 2.00



Data File: /chem/msdp.i/04DEC18.b/p120401.d

Date : 04-DEC-2018 10:03

Client ID: BFB

Instrument: msdp.i

Sample Info: 200ml 3045-156;BFB

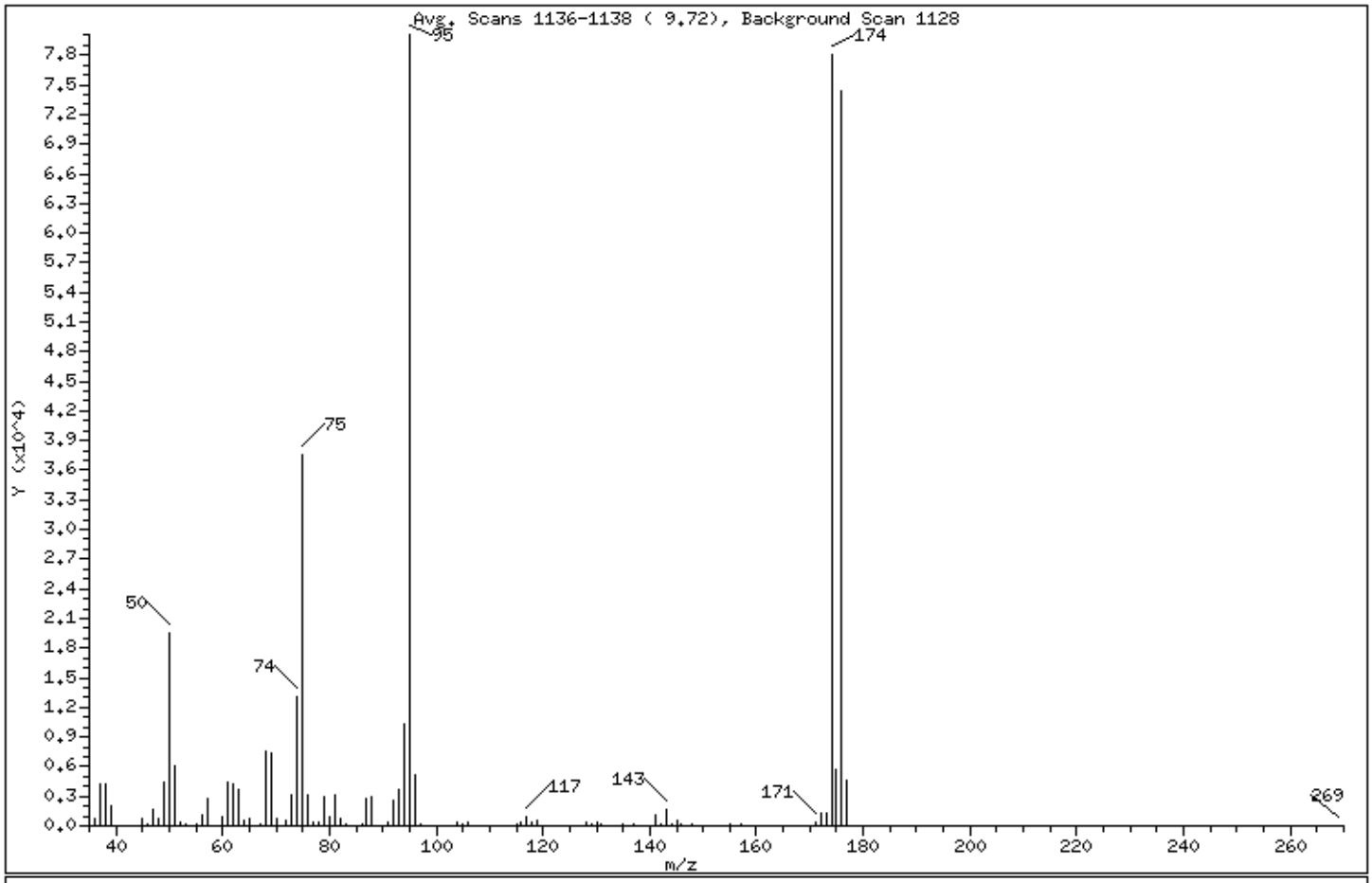
Volume Injected (uL): 1.0

Operator: mjb

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	24.33
75	30.00 - 66.00% of mass 95	46.88
96	5.00 - 9.00% of mass 95	6.55
173	Less than 1.99% of mass 174	1.53 (1.57)
174	50.01 - 120.00% of mass 95	97.55
175	4.00 - 9.00% of mass 174	7.20 (7.38)
176	93.00 - 101.00% of mass 174	92.94 (95.27)
177	5.00 - 9.00% of mass 176	5.86 (6.30)

Data File: /chem/msdp.i/04DEC18.b/p120401.d

Date : 04-DEC-2018 10:03

Client ID: BFB

Instrument: msdp.i

Sample Info: 200ml 3045-156;BFB

Volume Injected (uL): 1.0

Operator: mjb

Column phase:

Column diameter: 2.00

Data File: p120401.d
Spectrum: Avg. Scans 1136-1138 (9.72), Background Scan 1128
Location of Maximum: 95.00
Number of points: 86

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	769	65.00	805	93.00	3658	142.00	188
37.00	4293	67.00	238	94.00	10229	143.00	1626
38.00	4240	68.00	7514	95.00	80088	144.00	133
39.00	1998	69.00	7397	96.00	5243	145.00	572
45.00	684	70.00	674	97.00	212	146.00	193
46.00	187	72.00	504	104.00	450	148.00	198
47.00	1696	73.00	3073	105.00	96	149.00	33
48.00	718	74.00	13136	106.00	358	155.00	192
49.00	4473	75.00	37544	113.00	77	157.00	230
50.00	19488	76.00	3181	115.00	120	159.00	75
51.00	6060	77.00	421	116.00	378	161.00	37
52.00	397	78.00	400	117.00	946	171.00	294
53.00	188	79.00	2979	118.00	408	172.00	1264
55.00	264	80.00	835	119.00	578	173.00	1226
56.00	1183	81.00	3040	128.00	360	174.00	78128
57.00	2710	82.00	721	129.00	97	175.00	5766
58.00	34	83.00	131	130.00	335	176.00	74432
60.00	874	86.00	175	131.00	130	177.00	4691
61.00	4446	87.00	2767	135.00	154	178.00	74
62.00	4166	88.00	2950	137.00	231	269.00	48
63.00	3649	91.00	416	140.00	38		
64.00	469	92.00	2532	141.00	1112		

US32APPTV002

Data file : /chem/msdp.i/12DEC18.b/p121201.d
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 12-DEC-2018 10:23
Operator : jg Inst ID: msdp.i
Smp Info : 50ml 3045-156;BFB
Misc Info : 36ng
Comment :
Method : /chem/msdp.i/12DEC18.b/bfb30.m
Meth Date : 03-Aug-2018 14:47 uexa Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 10 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: WATER
Processing Host: us32apptv003

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
9.711	9.898	-0.187	95	70165			100.00- 100.00	100.00
9.711	9.898	-0.187	50	17636			8.00- 40.00	25.14
9.711	9.898	-0.187	75	32205			30.00- 66.00	45.90
9.711	9.898	-0.187	96	4580			5.00- 9.00	6.53
9.711	9.898	-0.187	173	992			0.00- 1.99	1.58
9.711	9.898	-0.187	174	62917			50.01- 120.00	89.67
9.711	9.898	-0.187	175	4672			4.00- 9.00	7.43
9.711	9.898	-0.187	176	61053			93.00- 101.00	97.04
9.711	9.898	-0.187	177	4234			5.00- 9.00	6.93

Data File: /chem/msdp.i/12DEC18.b/p121201.d

Date : 12-DEC-2018 10:23

Client ID: BFB

Instrument: msdp.i

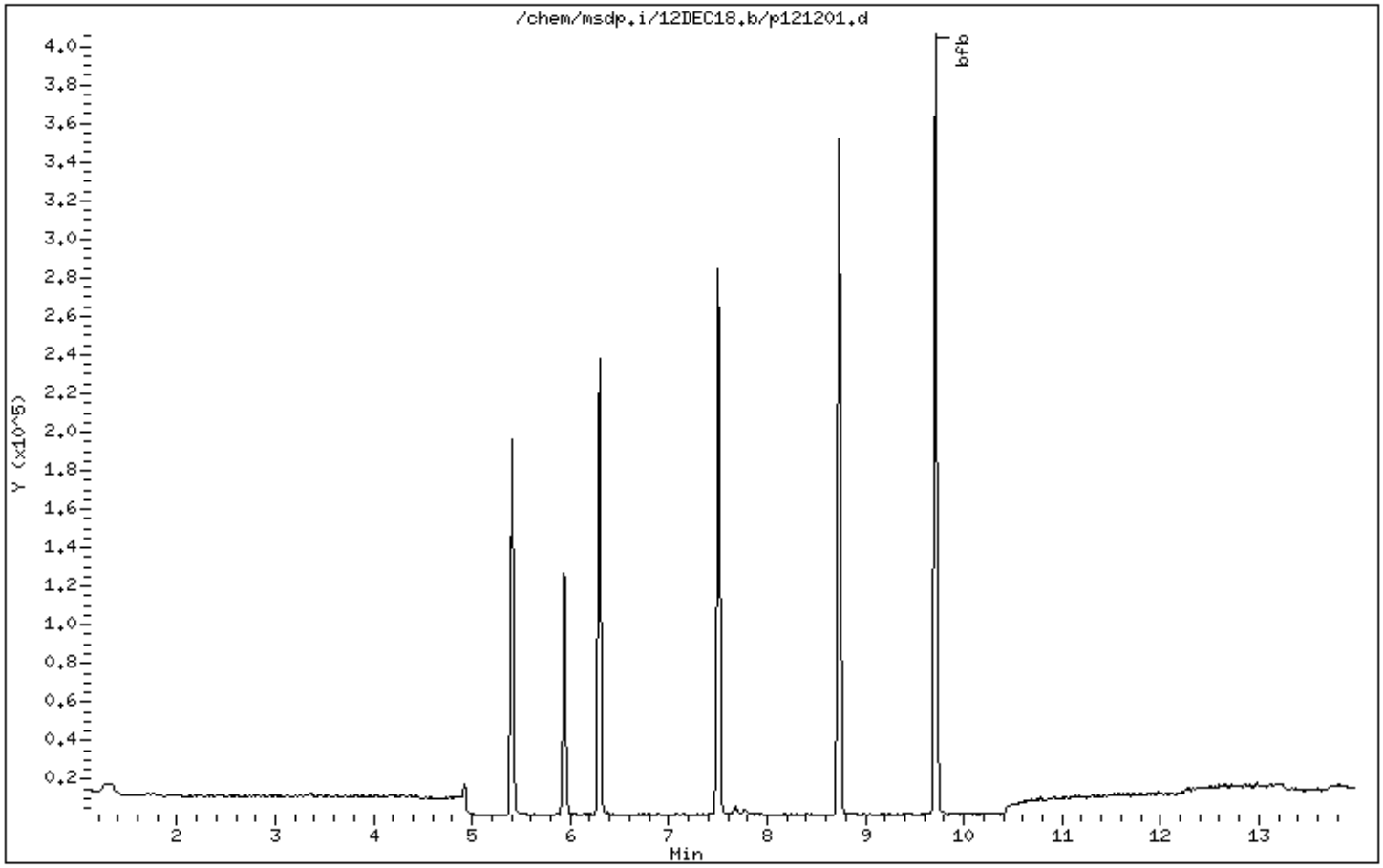
Sample Info: 50ml 3045-156;BFB

Volume Injected (uL): 1.0

Operator: jg

Column phase:

Column diameter: 2.00



Data File: /chem/msdp.i/12DEC18.b/p121201.d

Date : 12-DEC-2018 10:23

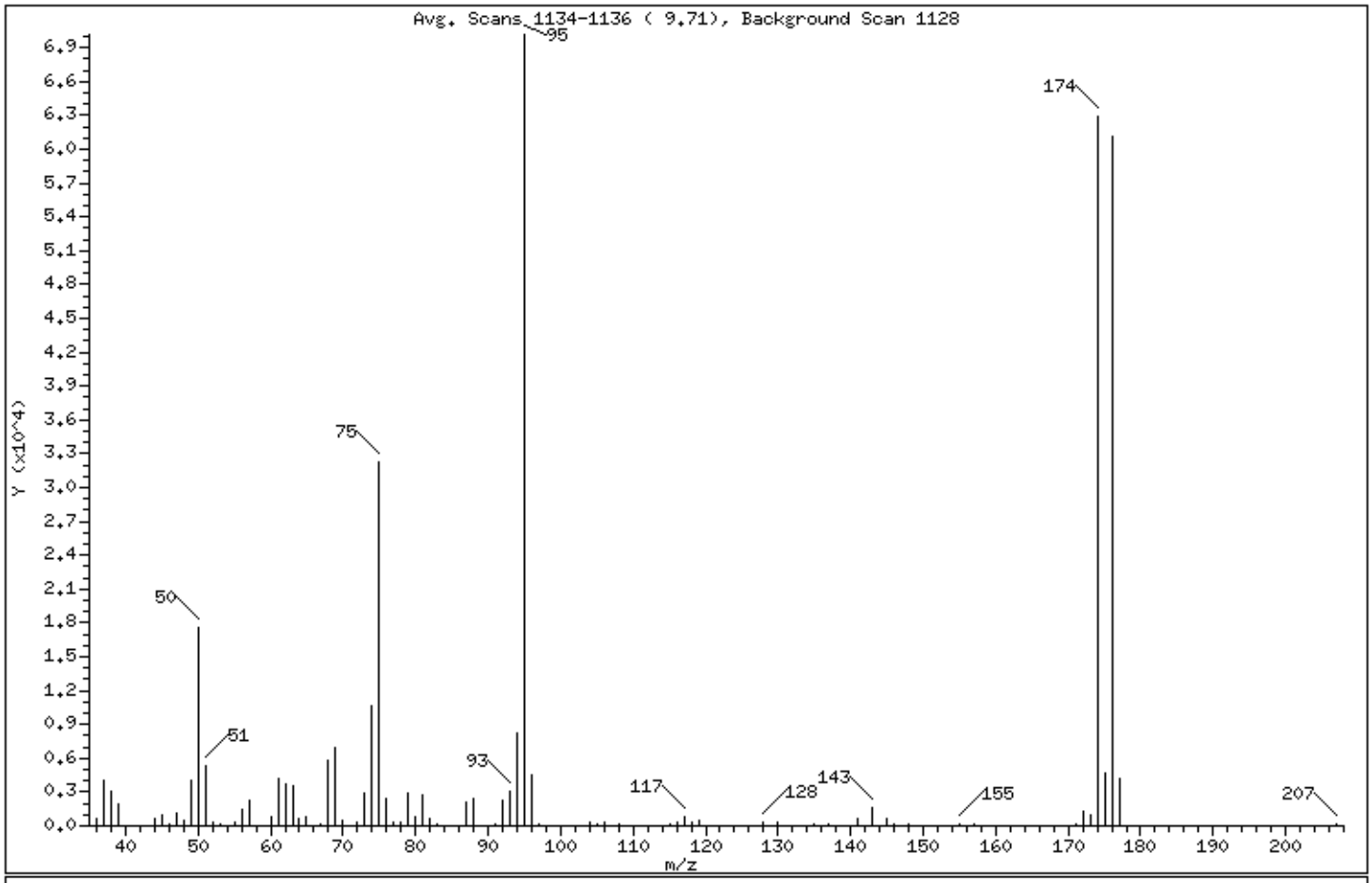
Client ID: BFB Instrument: msdp.i

Sample Info: 50ml 3045-156;BFB

Volume Injected (uL): 1.0 Operator: jg

Column phase: Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	25.14
75	30.00 - 66.00% of mass 95	45.90
96	5.00 - 9.00% of mass 95	6.53
173	Less than 1.99% of mass 174	1.41 (1.58)
174	50.01 - 120.00% of mass 95	89.67
175	4.00 - 9.00% of mass 174	6.66 (7.43)
176	93.00 - 101.00% of mass 174	87.01 (97.04)
177	5.00 - 9.00% of mass 176	6.03 (6.93)

Data File: /chem/msdp.i/12DEC18.b/p121201.d

Date : 12-DEC-2018 10:23

Client ID: BFB

Instrument: msdp.i

Sample Info: 50ml 3045-156;BFB

Volume Injected (uL): 1.0

Operator: jg

Column phase:

Column diameter: 2.00

Data File: p121201.d
Spectrum: Avg. Scans 1134-1136 (9.71), Background Scan 1128
Location of Maximum: 95.00
Number of points: 86

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	720	62.00	3642	88.00	2446	135.00	171
37.00	3993	63.00	3599	91.00	236	137.00	146
38.00	3131	64.00	718	92.00	2275	141.00	722
39.00	1870	65.00	770	93.00	3015	142.00	75
40.00	12	66.00	33	94.00	8259	143.00	1688
41.00	43	67.00	170	95.00	70160	145.00	703
44.00	586	68.00	5727	96.00	4580	146.00	149
45.00	1022	69.00	6896	97.00	181	148.00	174
46.00	200	70.00	468	104.00	328	155.00	225
47.00	1194	72.00	379	105.00	82	157.00	159
48.00	492	73.00	2895	106.00	367	159.00	74
49.00	3977	74.00	10584	108.00	81	161.00	70
50.00	17632	75.00	32200	113.00	69	171.00	171
51.00	5374	76.00	2483	115.00	126	172.00	1263
52.00	257	77.00	376	116.00	326	173.00	992
53.00	205	78.00	250	117.00	785	174.00	62912
54.00	79	79.00	2863	118.00	340	175.00	4672
55.00	306	80.00	786	119.00	533	176.00	61048
56.00	1450	81.00	2703	128.00	338	177.00	4234
57.00	2304	82.00	645	129.00	36	207.00	131
60.00	728	83.00	117	130.00	327		
61.00	4173	87.00	2172	131.00	40		

Shipping/ Receiving Documents

Eurofins Air Toxics, Inc. Sample Receipt Confirmation Cover Page

Thank you for choosing Eurofins Air Toxics, Inc. (EATL). We have received your samples and have listed any Sample Receipt Descrepancies below.

In order to expedite analysis and reporting, please review the attached information for accuracy.

For corrections call: **Air Toxics, Ltd. at 916-985-1000**

EATL will proceed with the analysis as specified on the Chain of Custody (COC) and Sample Receipt Summary page.

Please note : The Sample Receipt Confirmation, including the total workorder charge, is subject to change upon secondary review. Our aim is to provide a confirmation to you in a timely manner. Sample Receipt Discrepancies, if any, may not include discrepancies regarding sample receipt pressure(s). Additionally, the COC will be provided with the final report.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:30 A.M to 5:30 P.M. PST

Browns Tree Care Dump

20600.012-001-1182-01

USEPA

DateShipped: 12/11/2018
CarrierName: FedEx
AirbillNo:

CHAIN OF CUSTODY RECORD

Site #: XXXX
Contact Name: JOSE OJEDA
Contact Phone: 619-417-3298

No: 6-120718-134239-0011

Cooler #:
Lab: Eurofins Air Toxics
Lab Phone: 916-985-1000

Lab #	Sample #	Matrix	Numb Cont	Container	Analyses	Preservative	Start_Date	Start_Time	Stop_Date	Stop_Time
01A	BVF-SUM-011-20181210-1	Air	1	Summa Canister	TO-15	None	12/10/2018	9:25:00 AM	12/11/2018	9:45:00 AM
02A	BVF-SUM-012-20181210-1	Air	1	Summa Canister	TO-15	None	12/10/2018	10:18:00 AM	12/11/2018	10:35:00 AM
03A	BVF-SUM-013-20181210-1	Air	1	Summa Canister	TO-15	None	12/10/2018	9:01:00 AM	12/11/2018	8:45:00 AM
04A	BVF-SUM-014-20181210-1	Air	1	Summa Canister	TO-15	None	12/10/2018	10:00:00 AM	12/11/2018	10:14:00 AM

Special Instructions: 24-hour TAT

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
1 box 4 Summas	[signature] Weston	12-11-18 11:30	[signature] EAR	12/12/18 1010	Good
			Fed by		
			Custody Seal Intact?		
			Y N None	Temp NA	

1812211

eurofins | Air Toxics

SAMPLE RECEIPT SUMMARY

WORKORDER 1812211

Client

Mr. Jeff Wright
Weston Solutions, Inc.
13702 Coursey Blvd.,
Bldg #7, STE A
Baton Rouge, LA 70817

Sales Rep: N/A

Phone

225-297-5415

Fax

Date Promised: 12/13/18 3:00 pm
Date Completed: 12/13/18
Date Received: 12/12/18
PO#: 0098768
Project#: 20600.012-001-1182-01 Browns Tree Care Dump
Total $: $ 1,360.00
Logged By: AB

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
01A	BVF-SUM-011-20181210-1	TO-15	12/11/2018	0.1 psi	$260.00
02A	BVF-SUM-012-20181210-1	TO-15	12/11/2018	3.9 "Hg	$260.00
03A	BVF-SUM-013-20181210-1	TO-15	12/11/2018	3.9 "Hg	$260.00
04A	BVF-SUM-014-20181210-1	TO-15	12/11/2018	1.8 "Hg	$260.00
05A	Lab Blank	TO-15	NA	NA	$0.00
06A	CCV	TO-15	NA	NA	$0.00
07A	LCS	TO-15	NA	NA	$0.00
07AA	LCSD	TO-15	NA	NA	$0.00

Misc. Charges	6 Liter Summa Canister (100% Cert Ambient) (4) @ $50.00 each., Ship	$200.00
	Flow Controller-24 hr (100% Certified) (4) @ $25.00 each., Shipment 1	$100.00
	eCVP (4) @ $5.00 each.	$20.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: Browns Tree Care Dump/23155

BILL TO: Mr. Jeff Wright
Weston Solutions, Inc.
13702 Coursey Blvd.,
Bldg #7, STE A
Baton Rouge, LA 70817

Analysis Code: TO-14A

TERMS:

Reporting Method: TO-15 (Sp)-Weston (Bella Vista)

Sample Discrepancy Report

Identification

Initiated By: JYW **Project ID:** 23155 **PM:** BSW **Date:** 12/12/2018 **Discrepancy Type:** ☐ 1. ☒ 2. ☐ 3.

Workorder(s) affected: 1812211 **Sample(s) affected:** 01A

1. Sample Receipt Discrepancies

Narration Not Required:

1.1. ☐ Sample container (cartridge/tube) was received broken, however sample was intact.
1.2. ☐ No brass cap on canister.
1.3. ☐ Date of Collection noted on first sample, but no arrow down to indicate all samples.
1.4. ☐ Sampling year not documented on COC but noted on sample tag.
1.5. ☐ Sorbent Sample received outside method required temperature of 2°C to 6°C but less than 6°C.

Notify Lab for further determination:

1.6. ☐ Tedlar bag received with minimal volume.

Narration Required in Lab Narrative and Sample Confirmation:

1.7. ☐ COC was not filled out in ink.
1.8. ☐ COC improperly relinquished / received.
☐Signature missing ☐date missing ☐time missing.
1.9. ☐ Sample ID on tags do not match the COC.
1.10. ☐ Can numbers do not match the COC.
1.11. ☐ Sampling date discrepancy.
1.12. ☐ Custody Seal on the outside of the container was ☐ broken / ☐ improperly placed (check one).
1.13. ☐ ID-none on the sample Tag/Blank.
1.14. ☐ Other (describe below).

Initials: _____ Date: _____

Describe the Discrepancy: _____

2. Sample Receipt/Screening Discrepancies requiring PM notification

Document on Cover Page of Sample Receipt Confirmation and in Receiving Notes of Lab Narrative

If Section II. is filled out PM must be notified within 24 hrs of initiation

2.1. ☐ COC was not received with samples.
2.2. ☐ Analysis method(s) is ☐ not specified / ☐ incorrectly specified (check one) on the COC.
2.3. ☐ Incorrect sampling media / container for analysis requested.
2.4. ☐ Number of samples on the COC does not match the number of samples that were received.
2.5. ☐ Samples were received expired.
2.6. ☐ Sampling date is not documented for ☐ *some* / ☐ *any* samples (check one).
2.7. ☐ Sample received with amount of H_2O in the Tedlar Bag.
2.8. ☐ Sample cannot be analyzed. Container was ☐ received broken / ☐ leaking / ☐ flat / ☐ defective.
2.9. ☐ Tedlar bag / canister received emitting a strong odor; Sample ☐ can / ☐ cannot (check one) be analyzed.
2.10. ☐ Sorbent samples -sampling volume was not provided.
2.11. ☒ Flow controller used – canister samples received at ambient or under pressure.
2.12. ☐ Canister was at ambient pressure at time of pressurization and (check all that apply):
☐ Canister valve was open.
☐ Brass nut was loose/not present.
☐ Sample can be analyzed.
☐ Sample cannot be analyzed.
2.13. ☐ Canister sample received with a vacuum difference >5.0"Hg between the receipt vac. and the final recorded vac. on the COC.
☐ Canister passed leak check in lab <2psi, no evidence sample was compromised.
☐ Canister failed lab leak check, canister found to be leaking. Canister sample compromised.
2.14. ☐ Canister sample received at >15"Hg (*not* identified as a Trip/Field Blank).
2.15. ☐ Canister Trip Blank received at low vacuum (<25"Hg).
2.16. ☐ Sorbent Sample received outside method required temperature of 2°C to 6°C; ☐ ice / ☐ blue ice (check one) was present. A temp. Blank ☐ was / ☐ was not present (check one).
2.17. ☐ Other (describe below).

Notify Receiving: ☐ **Notify PM:** ☒

Initials: jyw **Date:** 12/12/2018

Describe the Discrepancy: 2.11-01A, sample rec'd at 0.1 PSI and no pressure listed on COC

2.11(Update): 01A passed leak check and held pressure during analysis. Pi:4.1psi. Pf:3.5psi. -KK 12/12/2018

3. Lab Discrepancies requiring Team Leader/PM notification

Document in Analytical Notes of Lab Narrative

If Section III. is filled out PM must be notified within 24 hrs of initiation

3.1. ☐ Tedlar Bag found to be leaking at the time of analysis; sample ☐ can / ☐ cannot (check one) be analyzed.

3.2. ☐ Tedlar Bag found to be flat/low volume; sample cannot be analyzed.

3.3. ☐ Samples received with insufficient time to analyze prior to expiration.

3.4. ☐ Canister found to be leaking at the time of analysis.

3.5. ☐ Sample loss due to instrument malfunction / broken glassware.

3.6. ☐ Low/high surrogate recoveries noted in QC/sample(s) for extractable samples.

3.7. ☐ Reporting Limit was raised.

3.8. ☐ Post weight > Pre weight in field/lab Blank for PM10/TSP samples.

3.9. ☐ Sample Trip Blank has a reportable level(s) of target compound(s) present. Re-analysis confirmed the initial result.

3.10. ☐ Other (describe below).

Initials: _____ **Date:** _____ **Notify Receiving:** ☐ **Notify PM:** ☐ _____

Team Lead Initials: _____ **Date:** _____

Describe the Discrepancy: _____

How Does this Affect Client: _____

Project Manager Use Only

Project Manager Notification ☒ **Section 2 Complete** ☐ **Section 3 Complete**

Action:

☒ It is not necessary to notify the client. Narrate the discrepancy in Receiving Notes/Analytical Notes of Lab Narrative.

PM Initials: BSW Date: 12/13/2018

☐ Client notification required. See attached client contact / email, or comments below:

Client Notification:

PM Initials: _____ Person notified: _____ Date: _____

☐ Waiting for Client Reply

Comments: **Sample passed leak check upon lab receipt and again at the time of analysis. Narrate and proceed with reporting.**

☐ Notify Lab Name: _____ Date: _____ **Notify Receiving:** ☐

☐ **Additional notifications attached.**

Additional Comments:

_____

Other Records

Compound Listing

TO-15 (Sp)-Weston (Bella Vista)

CAS Number	Compound	Detection Limit ppbv	Type
75-71-8	Freon 12	0.50	
76-14-2	Freon 114	0.50	
64-17-5	Ethanol	2.0	
76-13-1	Freon 113	0.50	
75-35-4	1,1-Dichloroethene	0.50	
67-64-1	Acetone	5.0	
67-63-0	2-Propanol	2.0	
75-15-0	Carbon Disulfide	2.0	
107-05-1	3-Chloropropene	2.0	
75-09-2	Methylene Chloride	5.0	
1634-04-4	Methyl tert-butyl ether	2.0	
156-60-5	trans-1,2-Dichloroethene	0.50	
110-54-3	Hexane	0.50	
75-34-3	1,1-Dichloroethane	0.50	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	2.0	
156-59-2	cis-1,2-Dichloroethene	0.50	
109-99-9	Tetrahydrofuran	0.50	
67-66-3	Chloroform	0.50	
71-55-6	1,1,1-Trichloroethane	0.50	
110-82-7	Cyclohexane	0.50	
56-23-5	Carbon Tetrachloride	0.50	
540-84-1	2,2,4-Trimethylpentane	0.50	
71-43-2	Benzene	0.50	
107-06-2	1,2-Dichloroethane	0.50	
142-82-5	Heptane	0.50	
79-01-6	Trichloroethene	0.50	
78-87-5	1,2-Dichloropropane	0.50	
123-91-1	1,4-Dioxane	2.0	
75-27-4	Bromodichloromethane	0.50	
10061-01-5	cis-1,3-Dichloropropene	0.50	
108-10-1	4-Methyl-2-pentanone	0.50	
108-88-3	Toluene	0.50	
10061-02-6	trans-1,3-Dichloropropene	0.50	
79-00-5	1,1,2-Trichloroethane	0.50	
127-18-4	Tetrachloroethene	0.50	
591-78-6	2-Hexanone	2.0	
124-48-1	Dibromochloromethane	0.50	
106-93-4	1,2-Dibromoethane (EDB)	0.50	
108-90-7	Chlorobenzene	0.50	
100-41-4	Ethyl Benzene	0.50	
108-38-3	m,p-Xylene	0.50	
95-47-6	o-Xylene	0.50	
100-42-5	Styrene	0.50	
75-25-2	Bromoform	0.50	
98-82-8	Cumene	0.50	
79-34-5	1,1,2,2-Tetrachloroethane	0.50	

Compound Listing

TO-15 (Sp)-Weston (Bella Vista)

CAS Number	Compound	Detection Limit ppbv	Type
103-65-1	Propylbenzene	0.50	
622-96-8	4-Ethyltoluene	0.50	
108-67-8	1,3,5-Trimethylbenzene	0.50	
95-63-6	1,2,4-Trimethylbenzene	0.50	
541-73-1	1,3-Dichlorobenzene	0.50	
106-46-7	1,4-Dichlorobenzene	0.50	
100-44-7	alpha-Chlorotoluene	0.50	
95-50-1	1,2-Dichlorobenzene	0.50	
120-82-1	1,2,4-Trichlorobenzene	2.0	
87-68-3	Hexachlorobutadiene	2.0	
2037-26-5	Toluene-d8		
17060-07-0	1,2-Dichloroethane-d4		
460-00-4	4-Bromofluorobenzene		
79-20-9	Methyl Acetate	5.0	
108-87-2	Methylcyclohexane	2.0	
91-20-3	Naphthalene	1.0	
74-87-3	Chloromethane	5.0	
75-01-4	Vinyl Chloride	0.50	
106-99-0	1,3-Butadiene	0.50	
74-83-9	Bromomethane	5.0	
75-00-3	Chloroethane	2.0	
75-69-4	Freon 11	0.50	

eurofins | Air Toxics

Media Certification Report

Canister Number: 6I1047
Can#: 122167-1674
Date : 12/04/18 19:27
Data File: d120416.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1,1-Trichloroethane	71-55-6	ND	ppbv
1,1,2,2-Tetrachloroethane	79-34-5	ND	ppbv
1,1,2-Trichloroethane	79-00-5	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
1,2,4-Trichlorobenzene	120-82-1	ND	ppbv
1,2,4-Trimethylbenzene	95-63-6	ND	ppbv
1,2-Dibromoethane (EDB)	106-93-4	ND	ppbv
1,2-Dichlorobenzene	95-50-1	ND	ppbv
1,2-Dichloroethane	107-06-2	ND	ppbv
1,2-Dichloropropane	78-87-5	ND	ppbv
1,3,5-Trimethylbenzene	108-67-8	ND	ppbv
1,3-Butadiene	106-99-0	ND	ppbv
1,3-Dichlorobenzene	541-73-1	ND	ppbv
1,4-Dichlorobenzene	106-46-7	ND	ppbv
1,4-Dioxane	123-91-1	ND	ppbv
2,2,4-Trimethylpentane	540-84-1	ND	ppbv
2-Butanone (Methyl Ethyl Ketone)	78-93-3	ND	ppbv
2-Hexanone	591-78-6	ND	ppbv
2-Propanol	67-63-0	ND	ppbv
3-Chloropropene	107-05-1	ND	ppbv
4-Ethyltoluene	622-96-8	ND	ppbv
4-Methyl-2-pentanone	108-10-1	ND	ppbv
Acetone	67-64-1	ND	ppbv
alpha-Chlorotoluene	100-44-7	ND	ppbv
Benzene	71-43-2	ND	ppbv
Bromodichloromethane	75-27-4	ND	ppbv
Bromoform	75-25-2	ND	ppbv
Bromomethane	74-83-9	ND	ppbv
Carbon Disulfide	75-15-0	ND	ppbv
Carbon Tetrachloride	56-23-5	ND	ppbv
Chlorobenzene	108-90-7	ND	ppbv
Chloroethane	75-00-3	ND	ppbv
Chloroform	67-66-3	ND	ppbv
Chloromethane	74-87-3	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
cis-1,3-Dichloropropene	10061-01-5	ND	ppbv
Cumene	98-82-8	ND	ppbv
Cyclohexane	110-82-7	ND	ppbv
Dibromochloromethane	124-48-1	ND	ppbv
Ethanol	64-17-5	ND	ppbv
Ethyl Benzene	100-41-4	ND	ppbv

All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.

Name	CAS	Conc.	Units
Freon 11	75-69-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Freon 114	76-14-2	ND	ppbv
Freon 12	75-71-8	ND	ppbv
Heptane	142-82-5	ND	ppbv
Hexachlorobutadiene	87-68-3	ND	ppbv
Hexane	110-54-3	ND	ppbv
m,p-Xylene	108-38-3	ND	ppbv
Methyl Acetate	79-20-9	ND	ppbv
Methyl tert-butyl ether	1634-04-4	ND	ppbv
Methylcyclohexane	108-87-2	ND	ppbv
Methylene Chloride	75-09-2	ND	ppbv
Naphthalene	91-20-3	ND	ppbv
o-Xylene	95-47-6	ND	ppbv
Propylbenzene	103-65-1	ND	ppbv
Styrene	100-42-5	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
Tetrahydrofuran	109-99-9	ND	ppbv
Toluene	108-88-3	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
trans-1,3-Dichloropropene	10061-02-6	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	101.00	% Recovery

All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.

eurofins | Air Toxics

Media Certification Report

Canister Number: 6I0911
Can#: 122167-1675
Date : 12/04/18 15:11
Data File: d120409.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1,1-Trichloroethane	71-55-6	ND	ppbv
1,1,2,2-Tetrachloroethane	79-34-5	ND	ppbv
1,1,2-Trichloroethane	79-00-5	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
1,2,4-Trichlorobenzene	120-82-1	ND	ppbv
1,2,4-Trimethylbenzene	95-63-6	ND	ppbv
1,2-Dibromoethane (EDB)	106-93-4	ND	ppbv
1,2-Dichlorobenzene	95-50-1	ND	ppbv
1,2-Dichloroethane	107-06-2	ND	ppbv
1,2-Dichloropropane	78-87-5	ND	ppbv
1,3,5-Trimethylbenzene	108-67-8	ND	ppbv
1,3-Butadiene	106-99-0	ND	ppbv
1,3-Dichlorobenzene	541-73-1	ND	ppbv
1,4-Dichlorobenzene	106-46-7	ND	ppbv
1,4-Dioxane	123-91-1	ND	ppbv
2,2,4-Trimethylpentane	540-84-1	ND	ppbv
2-Butanone (Methyl Ethyl Ketone)	78-93-3	ND	ppbv
2-Hexanone	591-78-6	ND	ppbv
2-Propanol	67-63-0	ND	ppbv
3-Chloropropene	107-05-1	ND	ppbv
4-Ethyltoluene	622-96-8	ND	ppbv
4-Methyl-2-pentanone	108-10-1	ND	ppbv
Acetone	67-64-1	ND	ppbv
alpha-Chlorotoluene	100-44-7	ND	ppbv
Benzene	71-43-2	ND	ppbv
Bromodichloromethane	75-27-4	ND	ppbv
Bromoform	75-25-2	ND	ppbv
Bromomethane	74-83-9	ND	ppbv
Carbon Disulfide	75-15-0	ND	ppbv
Carbon Tetrachloride	56-23-5	ND	ppbv
Chlorobenzene	108-90-7	ND	ppbv
Chloroethane	75-00-3	ND	ppbv
Chloroform	67-66-3	ND	ppbv
Chloromethane	74-87-3	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
cis-1,3-Dichloropropene	10061-01-5	ND	ppbv
Cumene	98-82-8	ND	ppbv
Cyclohexane	110-82-7	ND	ppbv
Dibromochloromethane	124-48-1	ND	ppbv
Ethanol	64-17-5	ND	ppbv
Ethyl Benzene	100-41-4	ND	ppbv

All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.

Name	CAS	Conc.	Units
Freon 11	75-69-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Freon 114	76-14-2	ND	ppbv
Freon 12	75-71-8	ND	ppbv
Heptane	142-82-5	ND	ppbv
Hexachlorobutadiene	87-68-3	ND	ppbv
Hexane	110-54-3	ND	ppbv
m,p-Xylene	108-38-3	ND	ppbv
Methyl Acetate	79-20-9	ND	ppbv
Methyl tert-butyl ether	1634-04-4	ND	ppbv
Methylcyclohexane	108-87-2	ND	ppbv
Methylene Chloride	75-09-2	ND	ppbv
Naphthalene	91-20-3	ND	ppbv
o-Xylene	95-47-6	ND	ppbv
Propylbenzene	103-65-1	ND	ppbv
Styrene	100-42-5	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
Tetrahydrofuran	109-99-9	ND	ppbv
Toluene	108-88-3	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
trans-1,3-Dichloropropene	10061-02-6	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	95.00	% Recovery

All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.

eurofins | Air Toxics

Media Certification Report

Canister Number: 6I1846
Can#: 122167-3255
Date : 12/04/18 17:00
Data File: d120412.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1,1-Trichloroethane	71-55-6	ND	ppbv
1,1,2,2-Tetrachloroethane	79-34-5	ND	ppbv
1,1,2-Trichloroethane	79-00-5	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
1,2,4-Trichlorobenzene	120-82-1	ND	ppbv
1,2,4-Trimethylbenzene	95-63-6	ND	ppbv
1,2-Dibromoethane (EDB)	106-93-4	ND	ppbv
1,2-Dichlorobenzene	95-50-1	ND	ppbv
1,2-Dichloroethane	107-06-2	ND	ppbv
1,2-Dichloropropane	78-87-5	ND	ppbv
1,3,5-Trimethylbenzene	108-67-8	ND	ppbv
1,3-Butadiene	106-99-0	ND	ppbv
1,3-Dichlorobenzene	541-73-1	ND	ppbv
1,4-Dichlorobenzene	106-46-7	ND	ppbv
1,4-Dioxane	123-91-1	ND	ppbv
2,2,4-Trimethylpentane	540-84-1	ND	ppbv
2-Butanone (Methyl Ethyl Ketone)	78-93-3	ND	ppbv
2-Hexanone	591-78-6	ND	ppbv
2-Propanol	67-63-0	ND	ppbv
3-Chloropropene	107-05-1	ND	ppbv
4-Ethyltoluene	622-96-8	ND	ppbv
4-Methyl-2-pentanone	108-10-1	ND	ppbv
Acetone	67-64-1	ND	ppbv
alpha-Chlorotoluene	100-44-7	ND	ppbv
Benzene	71-43-2	ND	ppbv
Bromodichloromethane	75-27-4	ND	ppbv
Bromoform	75-25-2	ND	ppbv
Bromomethane	74-83-9	ND	ppbv
Carbon Disulfide	75-15-0	ND	ppbv
Carbon Tetrachloride	56-23-5	ND	ppbv
Chlorobenzene	108-90-7	ND	ppbv
Chloroethane	75-00-3	ND	ppbv
Chloroform	67-66-3	ND	ppbv
Chloromethane	74-87-3	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
cis-1,3-Dichloropropene	10061-01-5	ND	ppbv
Cumene	98-82-8	ND	ppbv
Cyclohexane	110-82-7	ND	ppbv
Dibromochloromethane	124-48-1	ND	ppbv
Ethanol	64-17-5	ND	ppbv
Ethyl Benzene	100-41-4	ND	ppbv

All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.

Name	CAS	Conc.	Units
Freon 11	75-69-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Freon 114	76-14-2	ND	ppbv
Freon 12	75-71-8	ND	ppbv
Heptane	142-82-5	ND	ppbv
Hexachlorobutadiene	87-68-3	ND	ppbv
Hexane	110-54-3	ND	ppbv
m,p-Xylene	108-38-3	ND	ppbv
Methyl Acetate	79-20-9	ND	ppbv
Methyl tert-butyl ether	1634-04-4	ND	ppbv
Methylcyclohexane	108-87-2	ND	ppbv
Methylene Chloride	75-09-2	ND	ppbv
Naphthalene	91-20-3	ND	ppbv
o-Xylene	95-47-6	ND	ppbv
Propylbenzene	103-65-1	ND	ppbv
Styrene	100-42-5	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
Tetrahydrofuran	109-99-9	ND	ppbv
Toluene	108-88-3	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
trans-1,3-Dichloropropene	10061-02-6	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	96.00	% Recovery

All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.

eurofins | Air Toxics

Media Certification Report

Canister Number: 6I1400
Can#: 122167-0731
Date : 12/04/18 20:02
Data File: d120417.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1,1-Trichloroethane	71-55-6	ND	ppbv
1,1,2,2-Tetrachloroethane	79-34-5	ND	ppbv
1,1,2-Trichloroethane	79-00-5	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
1,2,4-Trichlorobenzene	120-82-1	ND	ppbv
1,2,4-Trimethylbenzene	95-63-6	ND	ppbv
1,2-Dibromoethane (EDB)	106-93-4	ND	ppbv
1,2-Dichlorobenzene	95-50-1	ND	ppbv
1,2-Dichloroethane	107-06-2	ND	ppbv
1,2-Dichloropropane	78-87-5	ND	ppbv
1,3,5-Trimethylbenzene	108-67-8	ND	ppbv
1,3-Butadiene	106-99-0	ND	ppbv
1,3-Dichlorobenzene	541-73-1	ND	ppbv
1,4-Dichlorobenzene	106-46-7	ND	ppbv
1,4-Dioxane	123-91-1	ND	ppbv
2,2,4-Trimethylpentane	540-84-1	ND	ppbv
2-Butanone (Methyl Ethyl Ketone)	78-93-3	ND	ppbv
2-Hexanone	591-78-6	ND	ppbv
2-Propanol	67-63-0	ND	ppbv
3-Chloropropene	107-05-1	ND	ppbv
4-Ethyltoluene	622-96-8	ND	ppbv
4-Methyl-2-pentanone	108-10-1	ND	ppbv
Acetone	67-64-1	ND	ppbv
alpha-Chlorotoluene	100-44-7	ND	ppbv
Benzene	71-43-2	ND	ppbv
Bromodichloromethane	75-27-4	ND	ppbv
Bromoform	75-25-2	ND	ppbv
Bromomethane	74-83-9	ND	ppbv
Carbon Disulfide	75-15-0	ND	ppbv
Carbon Tetrachloride	56-23-5	ND	ppbv
Chlorobenzene	108-90-7	ND	ppbv
Chloroethane	75-00-3	ND	ppbv
Chloroform	67-66-3	ND	ppbv
Chloromethane	74-87-3	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
cis-1,3-Dichloropropene	10061-01-5	ND	ppbv
Cumene	98-82-8	ND	ppbv
Cyclohexane	110-82-7	ND	ppbv
Dibromochloromethane	124-48-1	ND	ppbv
Ethanol	64-17-5	ND	ppbv
Ethyl Benzene	100-41-4	ND	ppbv

All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.

Name	CAS	Conc.	Units
Freon 11	75-69-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Freon 114	76-14-2	ND	ppbv
Freon 12	75-71-8	ND	ppbv
Heptane	142-82-5	ND	ppbv
Hexachlorobutadiene	87-68-3	ND	ppbv
Hexane	110-54-3	ND	ppbv
m,p-Xylene	108-38-3	ND	ppbv
Methyl Acetate	79-20-9	ND	ppbv
Methyl tert-butyl ether	1634-04-4	ND	ppbv
Methylcyclohexane	108-87-2	ND	ppbv
Methylene Chloride	75-09-2	ND	ppbv
Naphthalene	91-20-3	ND	ppbv
o-Xylene	95-47-6	ND	ppbv
Propylbenzene	103-65-1	ND	ppbv
Styrene	100-42-5	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
Tetrahydrofuran	109-99-9	ND	ppbv
Toluene	108-88-3	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
trans-1,3-Dichloropropene	10061-02-6	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	100.00	% Recovery

All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.

Eurofins Air Toxics	Data Review Checklist			Release Date: 10/12/18
Workorder # 1812211	Form F1.27	Revision #16	Revision Date: 10/12/18	Page 1 of 2

S1	S2	S3	S4	D	Section 1 – Spec Out				
					Initials/Instrument/Date	S1: MDP 12/12/18	S2:	S3:	S4:
✓				■	Project Identification (PID), Project Requirements Table (PRT), Daily QC and ICAL met Criteria				
✓				■	Lumen QC and ICAL evaluation (ref. SOP/Method) report initialed and in folder				
NA				■	Manual Integrations included and approved				
✓				✓	Chain of Custody verified for special comments/notes and analyses requested (add comments below)				
✓				■	Non-standard Target sublist verified (MDL, LOD, RL, control limits, etc.)				
✓				■	Verified standard expiration dates				

Profile, analyses, reporting, special notes and unusual circumstances: 12hr, Methyl Acetate & Methylcyclohexane - SP Rpt

A1	A2	A3	A4	D	Section 2 – Sample Analysis				
					Initials/Date	A1: KK 12/12/18	A2:	A3:	A4:
✓				✓	IS/Surr Recoveries, Dilution Factors, Load Volumes, leg(s) of instrument, Initial/Final Pressures, Canister #s Verified and dilution ranges are met per SOP (ex. Over-ranged/overdiluted)				
NA				NA	a) Tedlar Bag IDs verified against COC b) Tedlar Bag ID confirmed with loading sequence/leg(s) of instrument				
NA				NA	Manual Integrations/Bag or Can Dilution Forms/Re-pressurization Forms/Bag-Can Transfer Forms present (circle all that apply)				
✓				■	12/24 Hr clock time & Hold Time met for all samples				
NA				✓	Re-analysis of sample(s) has been evaluated for comparability and/or sample(s) has/have been checked for trends (Inf/Eff), field dups/trip blanks, samples following bad loads on CIAAs have been verified (system blks, confirmation runs).				
✓				✓	All runs have been evaluated for potential carry-over (TPHg/non-Target/over-range compounds/ etc.)				

Analytical and special notes: A1: 01A ~~[illegible]~~ 02A full loads. 01A Blue dot: 4.1psi → 3.5psi. SOP updated.

D1	D2	D3	D4	T	3T	Section 3 – Target Data Reduction	Technical Review Needed? Circle one: Yes/No		T:	
						Initials/Instrument/Date	D1: AG 12/13/18	D2:	D3:	D4:
NA					■	CAR # (if applicable)				
✓					■	Spectra Verified (documentation of spectral defense included if applicable)				
NA					■	TICs resemble reference spectra/ TICs between sample dups. are consistent (if applicable)				
✓						Lab Narrative is correct				
NA					■	TPH/NMOC calculations complete and included in folder				

Special notes:

A	3T	Section 4- Atlas Data Entry	Lumen verified and included in folder	Circle one: Yes/No
		Initials/Date: AG 12/13/18	3rd Tier: (needed only for DOD or per client request)	
	✓	Sample Discrepancy Report (SDR) complete and approved (if applicable)		
	NA	Manually entered results are checked		
	✓	At least one result per sample is verified against Target quant sheets		
	NA	Appropriate data qualifier flags are applied		
	✓	Final invoice is correct/ Final PDF report, COC and EDD reviewed and correct		

Special Notes:

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Workorder # :				Reason for Reissue:
W	T	3T	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director

Additional Comments:

Write Up (Initials/Date)	Tech Review (Initials/Date)	*3rd Tier Review ** 3rd Tier Report Review is for DoD & Client Specific projects only* (Initials/Date)	QA Review (Initials/Date)

Workorder # :				Reason for Reissue:
W	T	3T	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director

Additional Comments:

Write Up (Initials/Date)	Tech Review (Initials/Date)	*3rd Tier Review ** 3rd Tier Report Review is for DoD & Client Specific projects only* (Initials/Date)	QA Review (Initials/Date)

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Not Applicable