

Data File : VL033579.D  
Acq On : 11 Apr 2019 00:57  
Operator : SY/AP  
Sample : K2312-03  
Misc : 400ml/MSVOA\_L  
ALS Vial : 1 Sample Multiplier: 1

Instrument :  
MSVOA\_L  
ClientSampleId :  
A-8

Quant Time: Apr 11 03:48:30 2019  
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA\_L\METHODS\VL032519AIR.M  
Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Tue Mar 26 16:00:50 2019  
QLast Update : Tue Mar 26 16:00:50 2019  
Response via : Initial Calibration

| Internal Standards      | R.T.  | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------|-------|------|----------|-------|-------|----------|
| 1) Bromochloromethane   | 5.76  | 49   | 826283   | 10.00 | ppbv  | 0.00     |
| 33) 1,4-Difluorobenzene | 7.29  | 114  | 1938126  | 10.00 | ppbv  | 0.00     |
| 55) Chlorobenzene-d5    | 12.24 | 117  | 1861982  | 10.00 | ppbv  | 0.00     |

System Monitoring Compounds  
68) 1-Bromo-4-Fluorobenzene 14.57 95 1507792 10.33 ppbv 0.00  
Spiked Amount 10.000 Range 65 - 135 Recovery = 103.30%

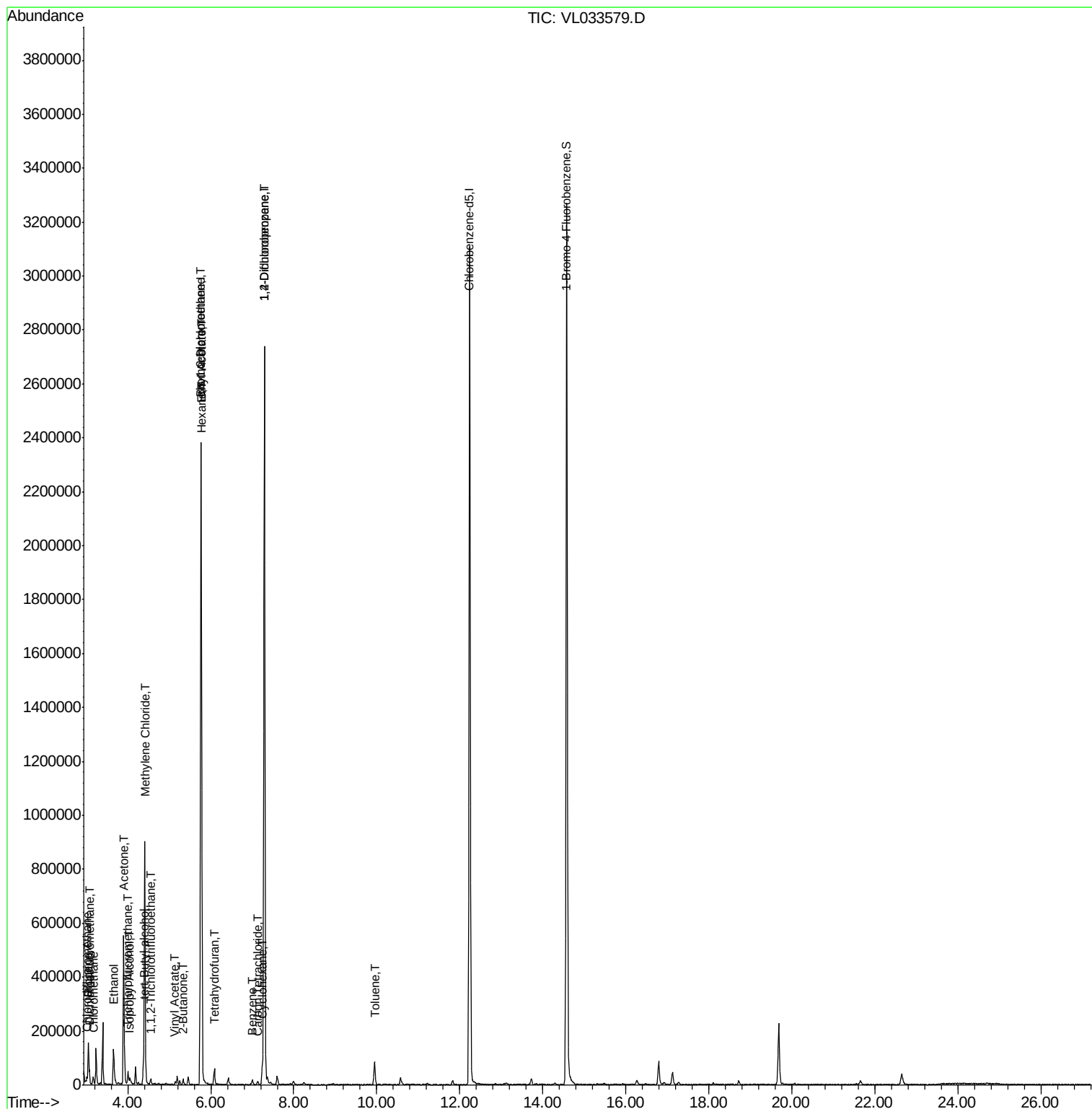
| Target Compounds               |      |     |        |        |        | Qvalue |
|--------------------------------|------|-----|--------|--------|--------|--------|
| 2) Dichlorodifluoromethane     | 3.08 | 85  | 32455  | 0.269  | ppbv   | 93     |
| 3) Chlorodifluoromethane       | 3.01 | 51  | 28051  | 0.295  | ppbv # | 89     |
| 4) Chloromethane               | 3.17 | 50  | 20804  | 0.413  | ppbv   | 93     |
| 9) Propene                     | 3.05 | 41  | 28370  | 0.710  | ppbv # | 77     |
| 11) Trichlorofluoromethane     | 4.01 | 101 | 30545  | 0.206  | ppbv   | 96     |
| 12) 1,1,2-Trichlorotrifluoroet | 4.55 | 101 | 6089   | 0.061  | ppbv   | 99     |
| 13) Ethanol                    | 3.66 | 45  | 136764 | 13.230 | ppbv   | 66     |
| 15) Acetone                    | 3.90 | 43  | 537509 | 5.410  | ppbv   | 99     |
| 17) tert-Butyl alcohol         | 4.38 | 59  | 9838   | 0.539  | ppbv # | 73     |
| 19) Isopropyl Alcohol          | 4.05 | 45  | 5313   | 0.085  | ppbv # | 95     |
| 20) Methylene Chloride         | 4.41 | 84  | 320267 | 7.594  | ppbv   | 96     |
| 23) Vinyl Acetate              | 5.15 | 43  | 7817   | 0.055  | ppbv # | 77     |
| 25) Ethyl Acetate              | 5.78 | 43  | 439748 | 2.386  | ppbv # | 90     |
| 26) Hexane                     | 5.78 | 57  | 406218 | 4.956  | ppbv # | 54     |
| 30) Cyclohexane                | 7.23 | 84  | 3670   | 0.057  | ppbv # | 1      |
| 31) cis-1,2-Dichloroethene     | 5.76 | 61  | 21174  | 0.260  | ppbv # | 32     |
| 34) 2-Butanone                 | 5.34 | 43  | 20844  | 0.179  | ppbv   | 98     |
| 35) Carbon Tetrachloride       | 7.13 | 117 | 7782   | 0.057  | ppbv # | 84     |
| 36) Benzene                    | 7.00 | 78  | 11379  | 0.070  | ppbv # | 83     |
| 39) 1,2-Dichloropropane        | 7.29 | 63  | 509132 | 7.992  | ppbv # | 24     |
| 41) Tetrahydrofuran            | 6.09 | 42  | 5870   | 0.092  | ppbv # | 38     |
| 53) Toluene                    | 9.94 | 91  | 33295  | 0.176  | ppbv # | 21     |

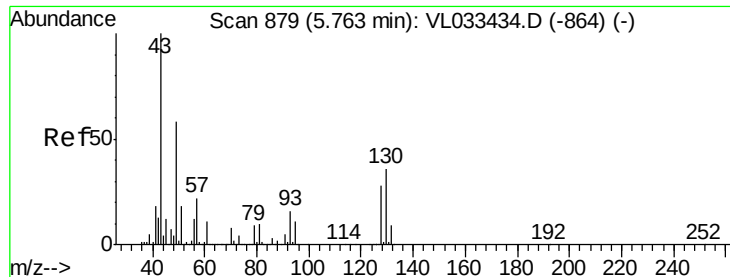
(#) = qualifier out of range (m) = manual integration (+) = signals summed

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#1

Bromochloromethane

Concen: 10.000 ppbv

RT: 5.76 min Scan# 877

Delta R.T. -0.01 min

Lab File: VL033579.D

Acq: 11 Apr 2019 00:57

Instrument :

MSVOA\_L

ClientSampleId :

A-8

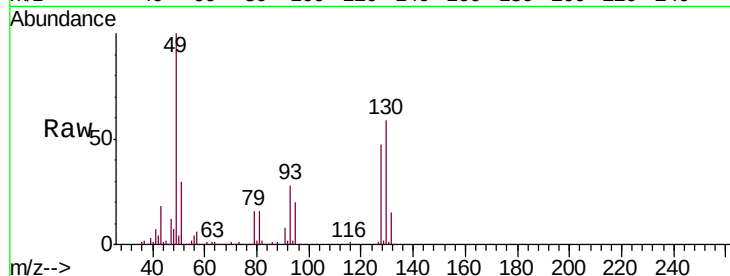
Tgt Ion: 49 Resp: 826283

Ion Ratio Lower Upper

49 100

128 48.4 24.0 72.0

130 62.5 31.2 93.6



Abundance Ion 49.10 (48.80 to 49.80): VL0

Ion 128.00 (127.70 to 128.70): V

Ion 130.00 (129.70 to 130.70): V

600000

500000

400000

300000

200000

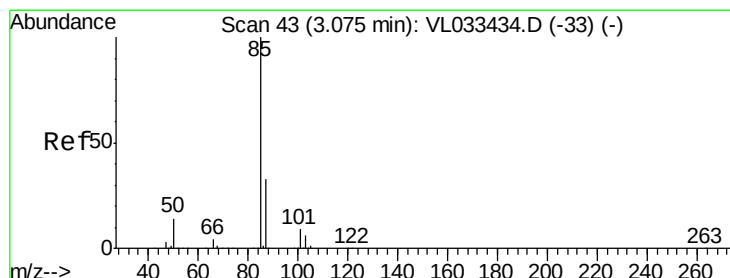
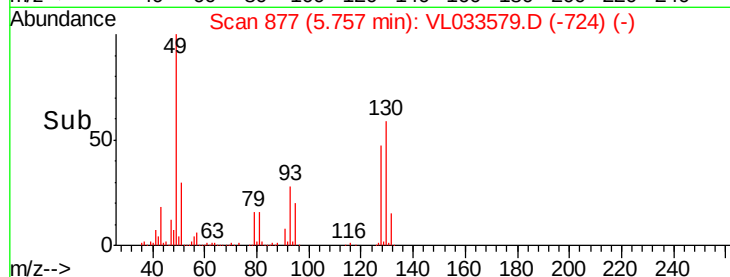
100000

0

5.76

5.70 5.75 5.80 5.85

Time-->



#2

Dichlorodifluoromethane

Concen: 0.269 ppbv

RT: 3.08 min Scan# 44

Delta R.T. 0.00 min

Lab File: VL033579.D

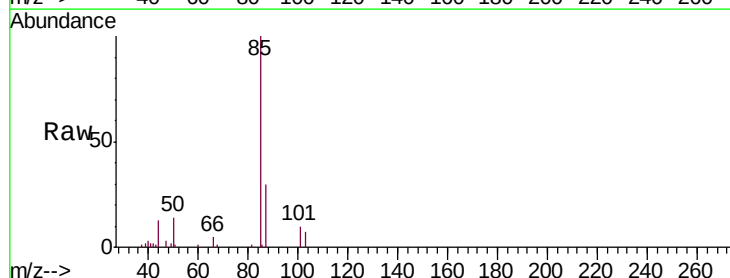
Acq: 11 Apr 2019 00:57

Tgt Ion: 85 Resp: 32455

Ion Ratio Lower Upper

85 100

87 29.3 26.7 40.1



Abundance Ion 85.00 (84.70 to 85.70): VL0

Ion 87.00 (86.70 to 87.70): VL0

30000

20000

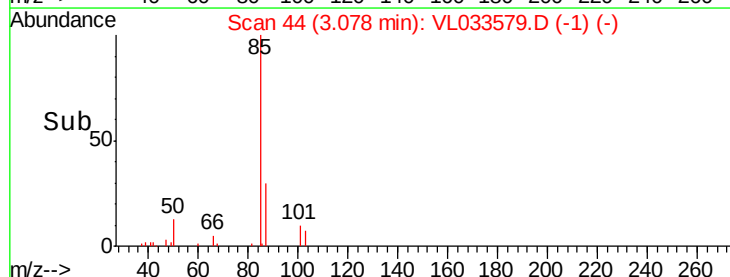
10000

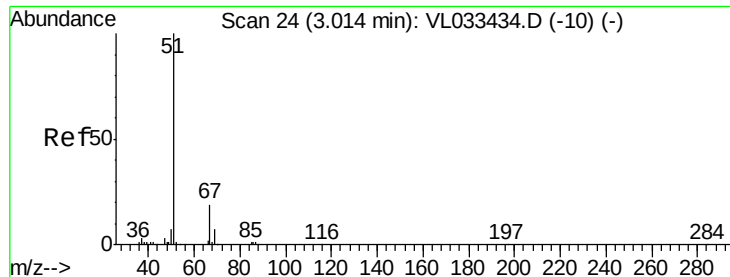
0

3.08

3.04 3.06 3.08 3.10

Time-->

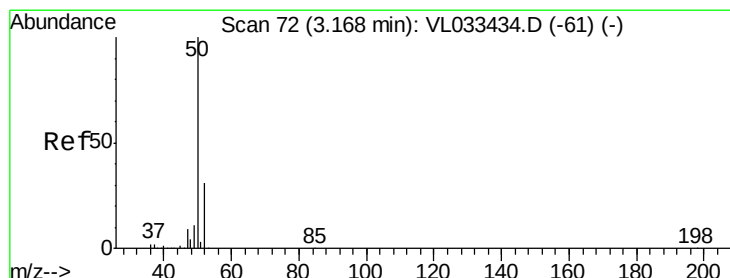
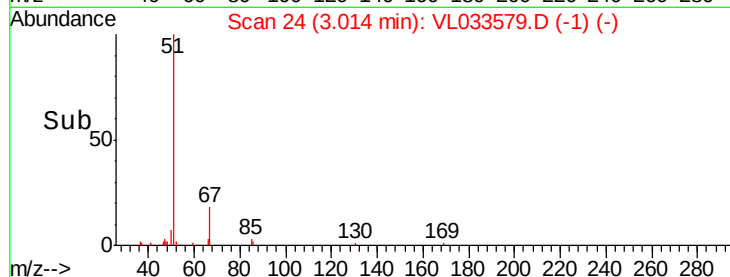
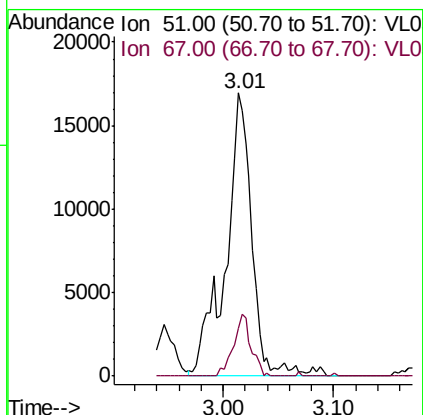
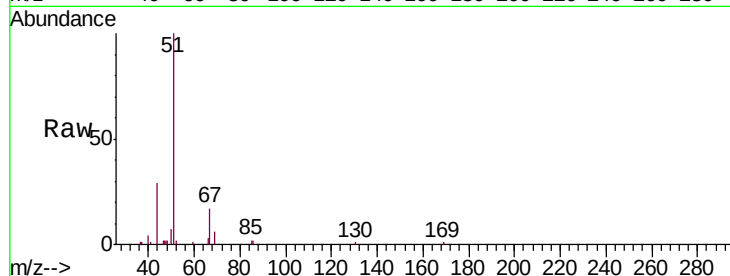




#3  
Chlorodifluoromethane  
Concen: 0.295 ppbv  
RT: 3.01 min Scan# 24  
Delta R.T. -0.00 min  
Lab File: VL033579.D  
Acq: 11 Apr 2019 00:57

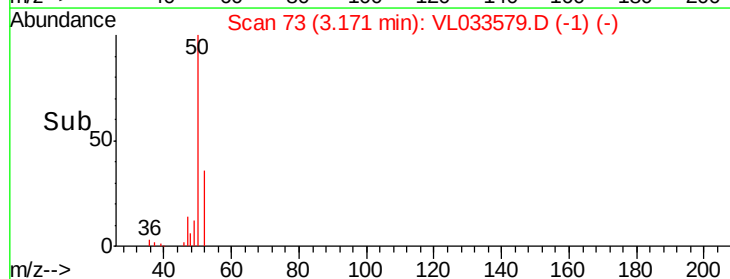
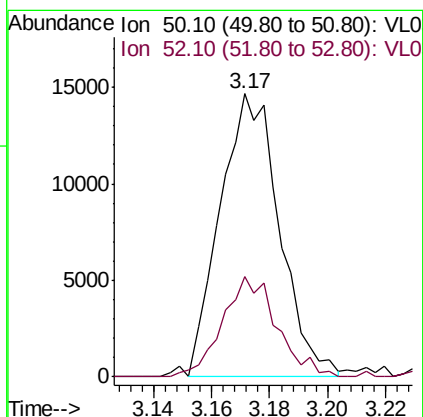
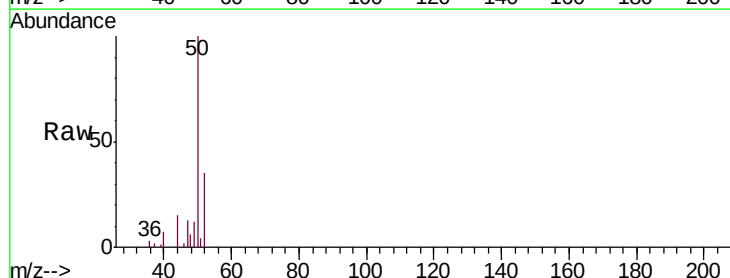
Instrument :  
MSVOA\_L  
ClientSampleId :  
A-8

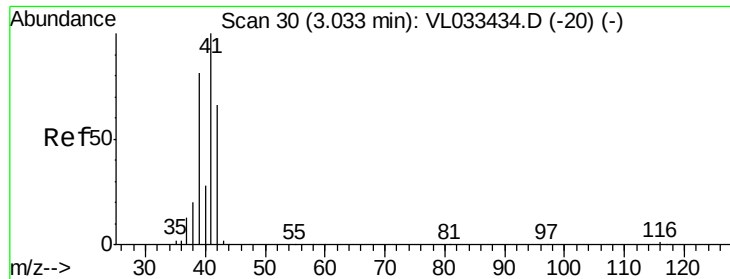
Tgt Ion: 51 Resp: 28051  
Ion Ratio Lower Upper  
51 100  
67 14.4 15.7 23.5#



#4  
Chloromethane  
Concen: 0.413 ppbv  
RT: 3.17 min Scan# 73  
Delta R.T. 0.00 min  
Lab File: VL033579.D  
Acq: 11 Apr 2019 00:57

Tgt Ion: 50 Resp: 20804  
Ion Ratio Lower Upper  
50 100  
52 35.2 25.0 37.6





#9

Propene

Concen: 0.710 ppbv

RT: 3.05 min Scan# 35

Delta R.T. 0.02 min

Lab File: VL033579.D

Acq: 11 Apr 2019 00:57

Instrument :

MSVOA\_L

ClientSampleId :

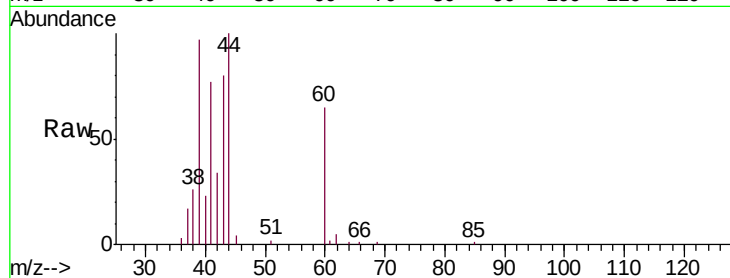
A-8

Tgt Ion: 41 Resp: 28370

Ion Ratio Lower Upper

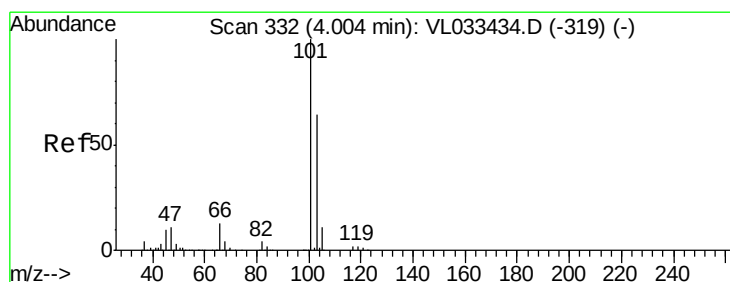
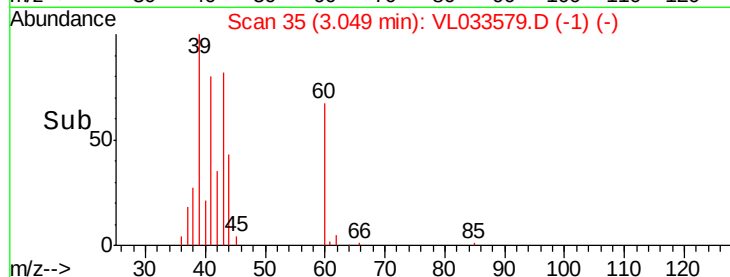
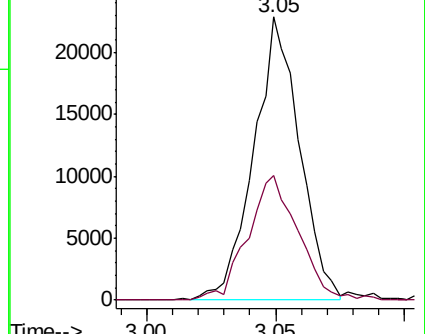
41 100

42 48.6 53.9 80.9#



Abundance Ion 41.10 (40.80 to 41.80): VL0

Ion 42.10 (41.80 to 42.80): VL0



#11

Trichlorofluoromethane

Concen: 0.206 ppbv

RT: 4.01 min Scan# 333

Delta R.T. 0.00 min

Lab File: VL033579.D

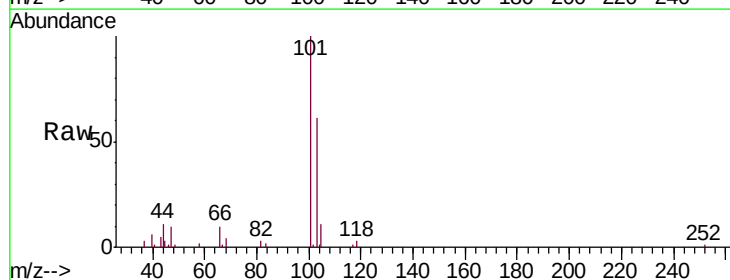
Acq: 11 Apr 2019 00:57

Tgt Ion: 101 Resp: 30545

Ion Ratio Lower Upper

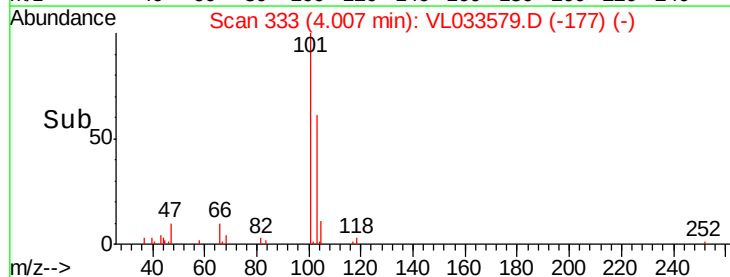
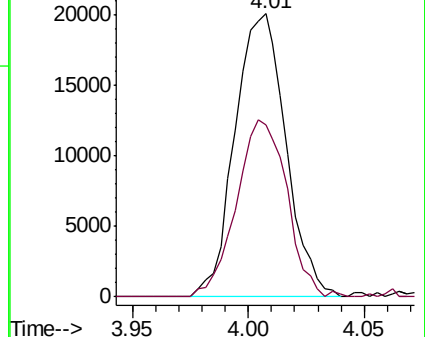
101 100

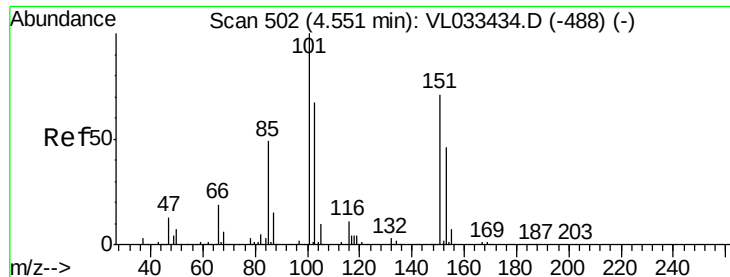
103 60.6 51.3 76.9



Abundance Ion 101.00 (100.70 to 101.70): V

Ion 103.00 (102.70 to 103.70): V





#12

1,1,2-Trichlorotrifluoroethane

Concen: 0.061 ppbv

RT: 4.55 min Scan# 503

Delta R.T. 0.00 min

Lab File: VL033579.D

Acq: 11 Apr 2019 00:57

Instrument :

MSVOA\_L

ClientSampleId :

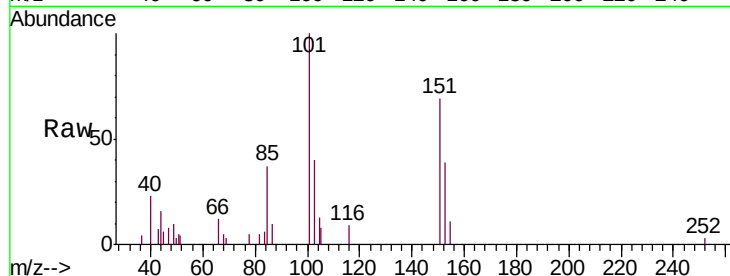
A-8

Tgt Ion:101 Resp: 6089

Ion Ratio Lower Upper

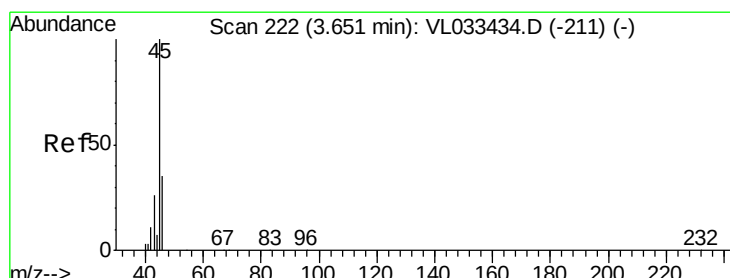
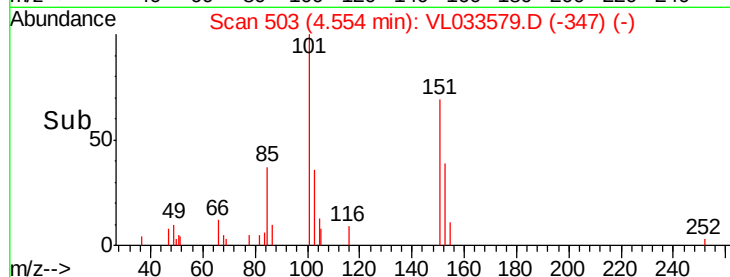
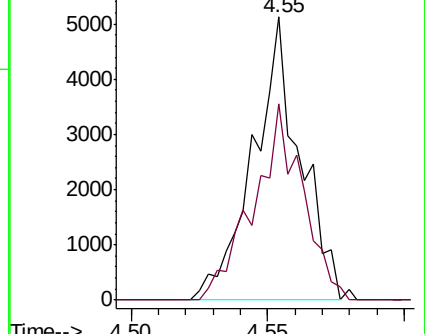
101 100

151 72.6 57.7 86.5



Abundance Ion 101.00 (100.70 to 101.70): V

Ion 151.00 (150.70 to 151.70): V



#13

Ethanol

Concen: 13.230 ppbv

RT: 3.66 min Scan# 225

Delta R.T. 0.01 min

Lab File: VL033579.D

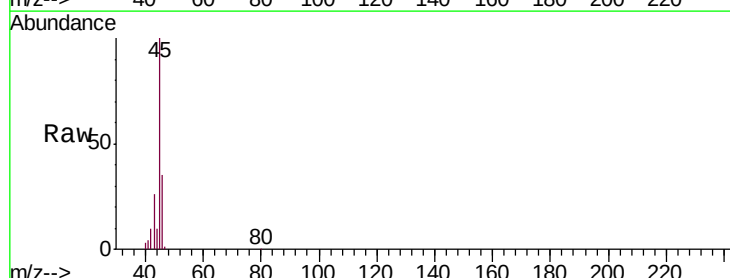
Acq: 11 Apr 2019 00:57

Tgt Ion: 45 Resp: 136764

Ion Ratio Lower Upper

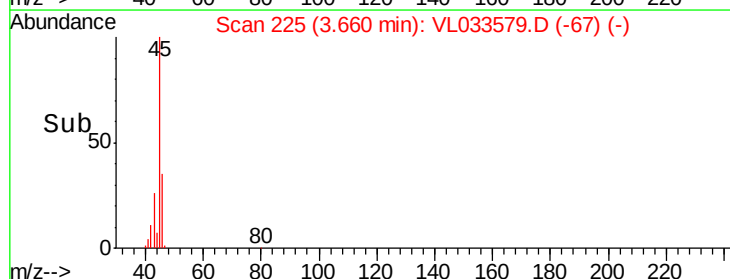
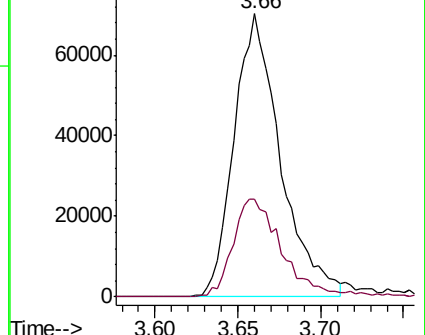
45 100

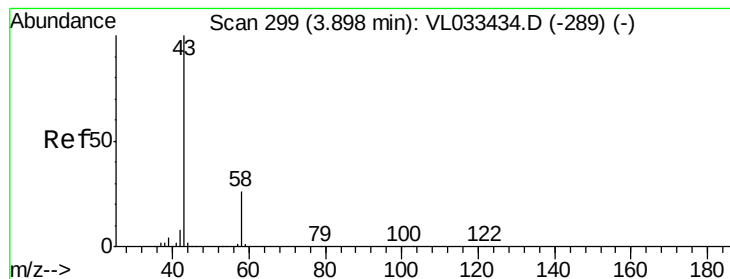
46 37.2 25.4 101.8



Abundance Ion 45.10 (44.80 to 45.80): VL0

Ion 46.10 (45.80 to 46.80): VL0





#15

Acetone

Concen: 5.410 ppbv

RT: 3.90 min Scan# 300

Delta R.T. 0.00 min

Lab File: VL033579.D

Acq: 11 Apr 2019 00:57

Instrument :

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ClientSampleId :

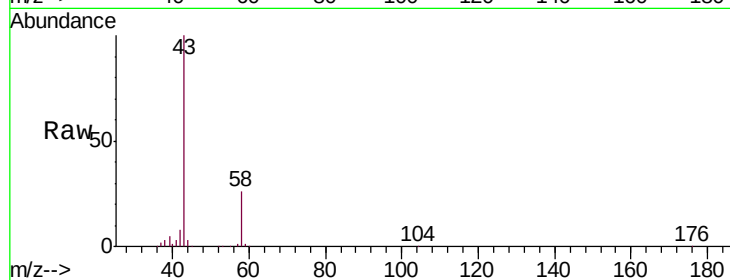
A-8

Tgt Ion: 43 Resp: 537509

Ion Ratio Lower Upper

43 100

58 26.1 20.5 30.7



Abundance Ion 43.10 (42.80 to 43.80): VL0

Ion 58.10 (57.80 to 58.80): VL0

3.90

400000

300000

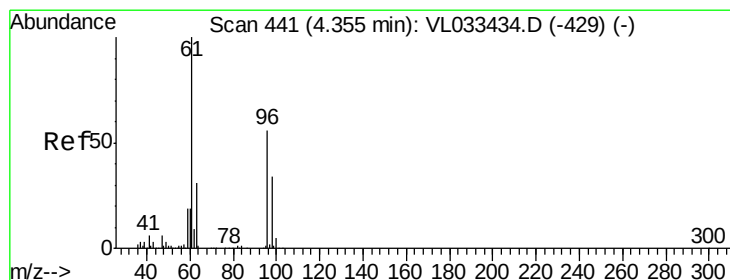
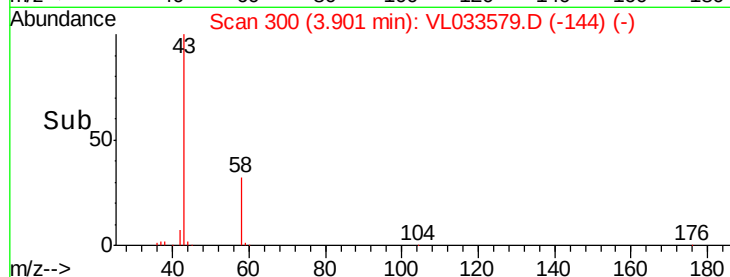
200000

100000

0

Time-->

3.85 3.90 3.95



#17

tert-Butyl alcohol

Concen: 0.539 ppbv

RT: 4.38 min Scan# 448

Delta R.T. 0.02 min

Lab File: VL033579.D

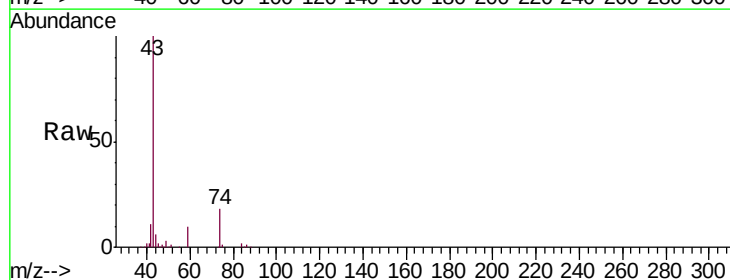
Acq: 11 Apr 2019 00:57

Tgt Ion: 59 Resp: 9838

Ion Ratio Lower Upper

59 100

57 0.0 7.8 11.8#



Abundance Ion 59.10 (58.80 to 59.80): VL0

Ion 57.10 (56.80 to 57.80): VL0

4.38

6000

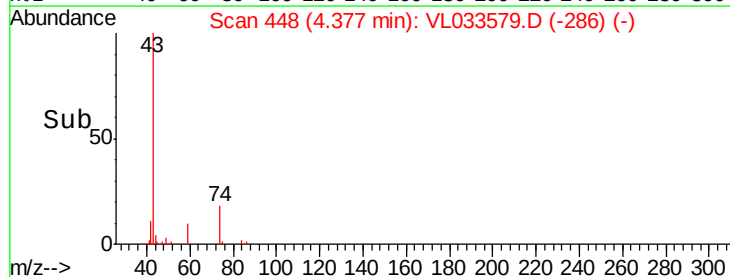
4000

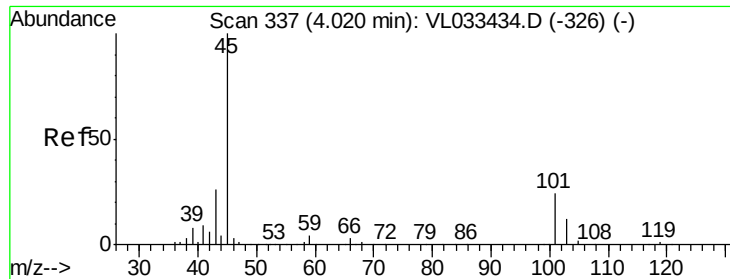
2000

0

Time-->

4.35 4.40





#19

Isopropyl Alcohol

Concen: 0.085 ppbv

RT: 4.05 min Scan# 346

Delta R.T. 0.03 min

Lab File: VL033579.D

Acq: 11 Apr 2019 00:57

Instrument :

MSVOA\_L

ClientSampleId :

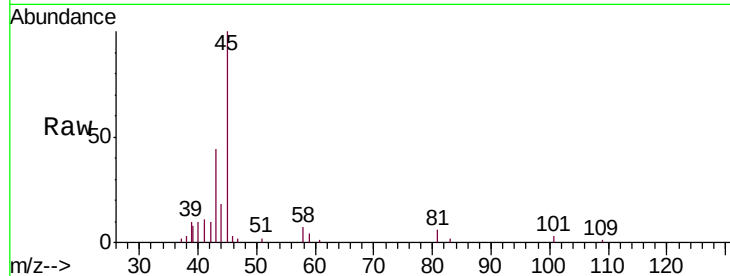
A-8

Tgt Ion: 45 Resp: 5313

Ion Ratio Lower Upper

45 100

58 0.0 1.4 2.2#



Abundance Ion 45.10 (44.80 to 45.80): VL0

Ion 58.10 (57.80 to 58.80): VL0

4.05

12000

10000

8000

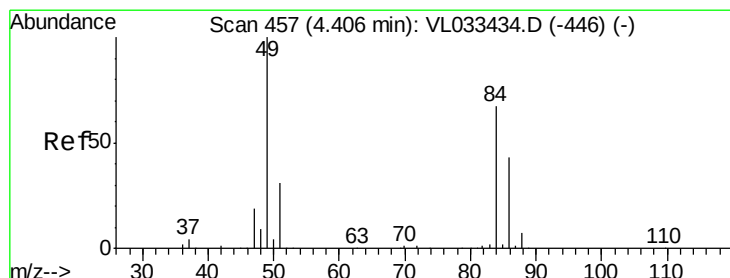
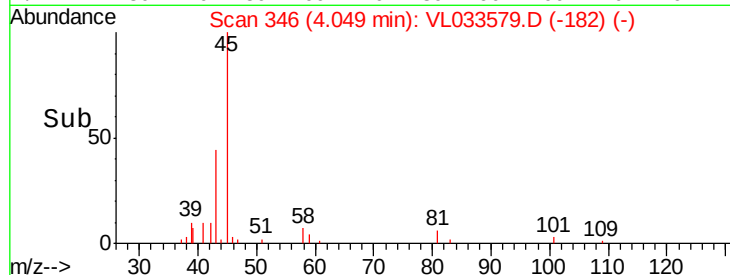
6000

4000

2000

0

Time-->



#20

Methylene Chloride

Concen: 7.594 ppbv

RT: 4.41 min Scan# 458

Delta R.T. 0.00 min

Lab File: VL033579.D

Acq: 11 Apr 2019 00:57

Tgt Ion: 84 Resp: 320267

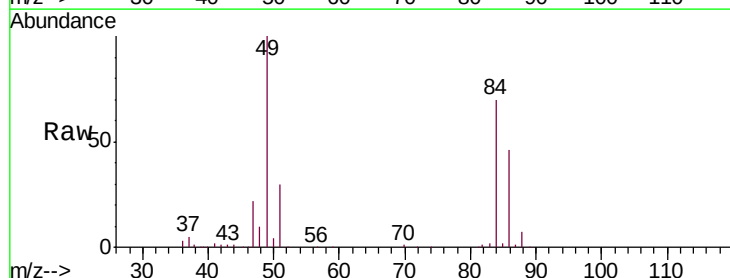
Ion Ratio Lower Upper

84 100

49 143.7 120.0 180.0

51 43.2 36.7 55.1

86 66.3 51.9 77.9



Abundance Ion 84.00 (83.70 to 84.70): VL0

Ion 49.10 (48.80 to 49.80): VL0

Ion 51.10 (50.80 to 51.80): VL0

Ion 86.00 (85.70 to 86.70): VL0

4.41

400000

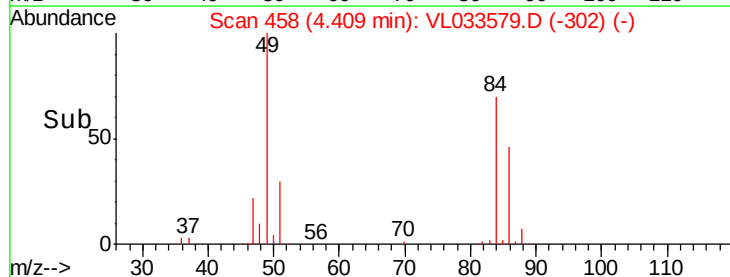
300000

200000

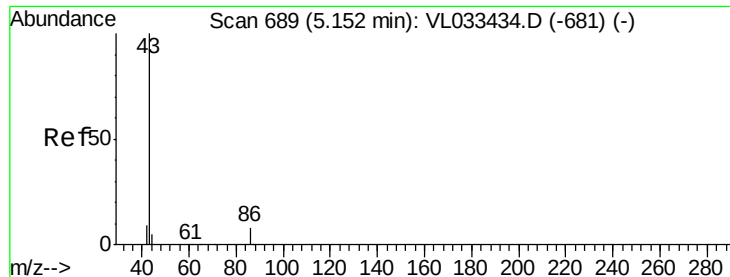
100000

0

Time-->







#23

Vinyl Acetate

Concen: 0.055 ppbv

RT: 5.15 min Scan# 688

Delta R.T. -0.00 min

Lab File: VL033579.D

Acq: 11 Apr 2019 00:57

Instrument :

MSVOA\_L

ClientSampleId :

A-8

Tgt Ion: 43 Resp: 7817

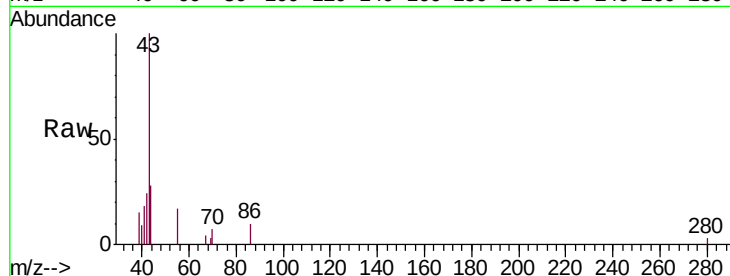
Ion Ratio Lower Upper

43 100

86 10.0 5.6 8.4#

42 20.1 8.0 12.0#

44 16.0 3.9 5.9#

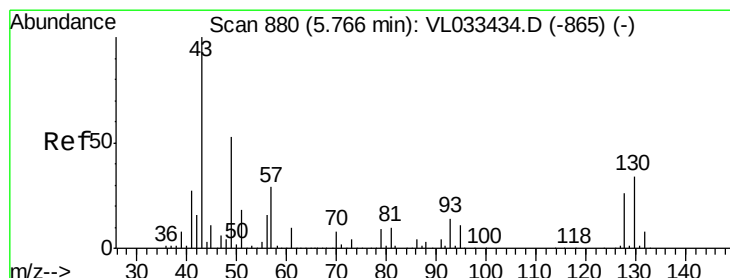
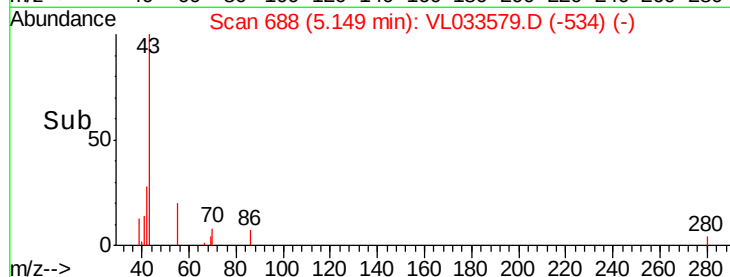
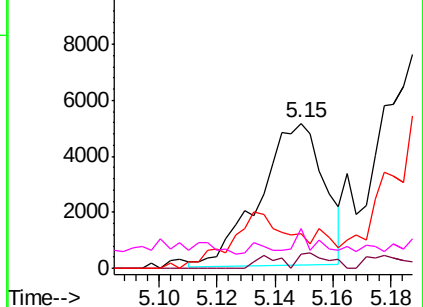


Abundance Ion 43.10 (42.80 to 43.80): VL0

Ion 86.10 (85.80 to 86.80): VL0

Ion 42.10 (41.80 to 42.80): VL0

Ion 44.10 (43.80 to 44.80): VL0



#25

Ethyl Acetate

Concen: 2.386 ppbv

RT: 5.78 min Scan# 883

Delta R.T. 0.01 min

Lab File: VL033579.D

Acq: 11 Apr 2019 00:57

Tgt Ion: 43 Resp: 439748

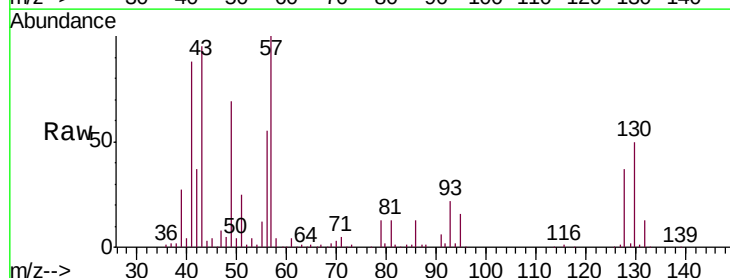
Ion Ratio Lower Upper

43 100

45 5.8 7.8 11.6#

61 4.9 7.3 10.9#

70 4.4 5.6 8.4#

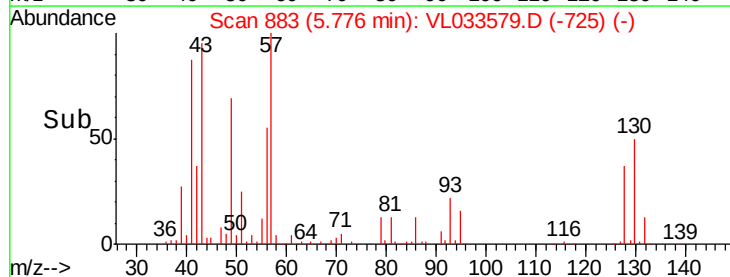
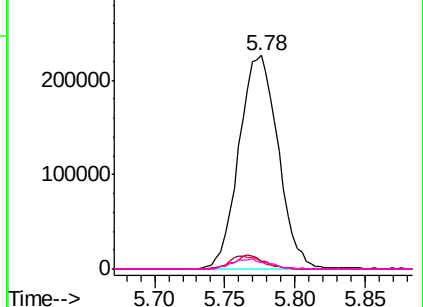


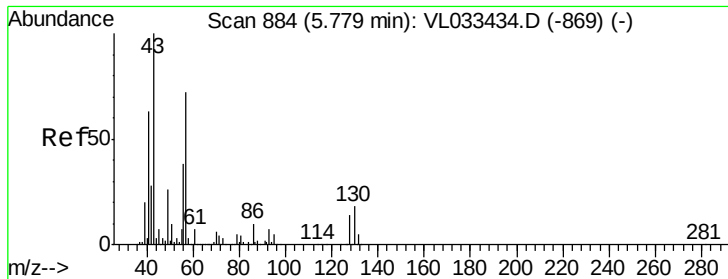
Abundance Ion 43.10 (42.80 to 43.80): VL0

Ion 45.10 (44.80 to 45.80): VL0

Ion 61.10 (60.80 to 61.80): VL0

Ion 70.10 (69.80 to 70.80): VL0

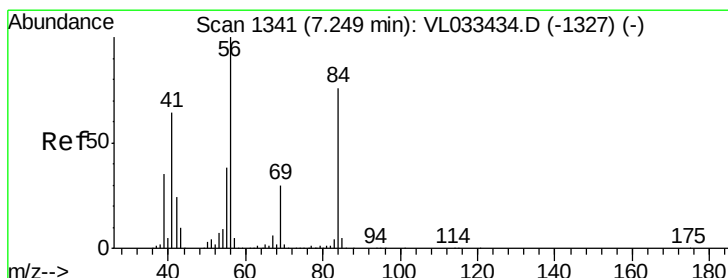
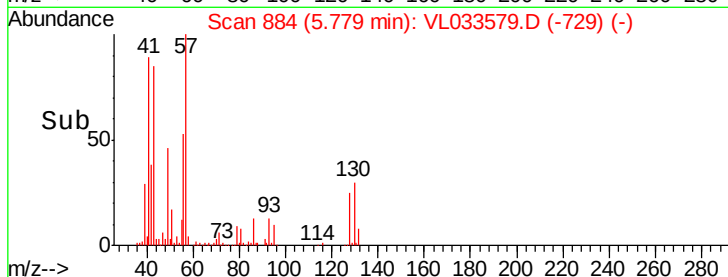
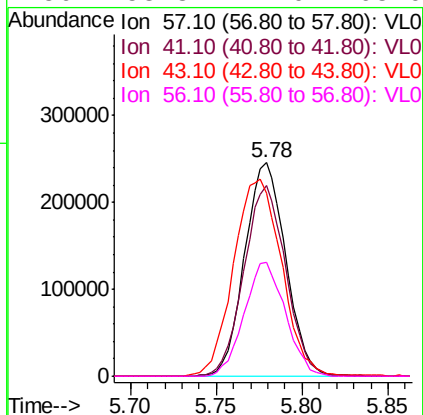
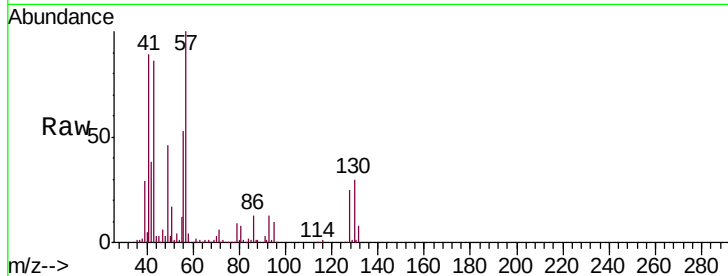




#26  
Hexane  
Concen: 4.956 ppbv  
RT: 5.78 min Scan# 884  
Delta R.T. -0.00 min  
Lab File: VL033579.D  
Acq: 11 Apr 2019 00:57

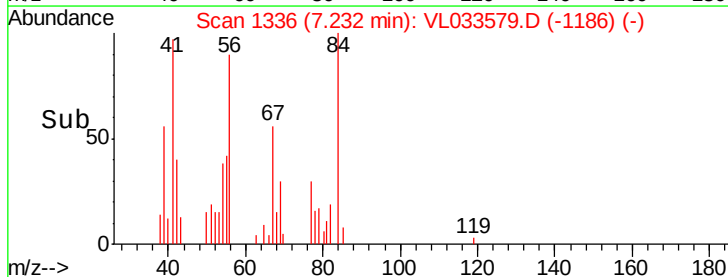
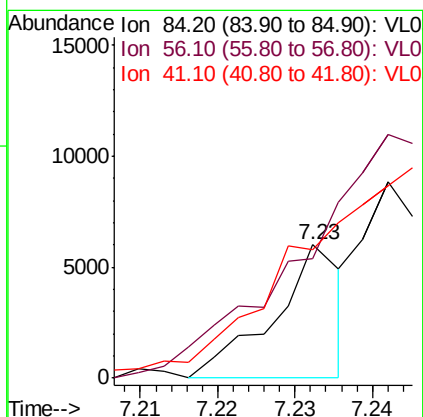
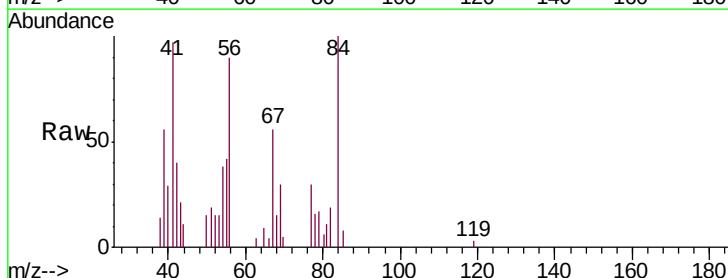
Instrument :  
MSVOA\_L  
ClientSampleId :  
A-8

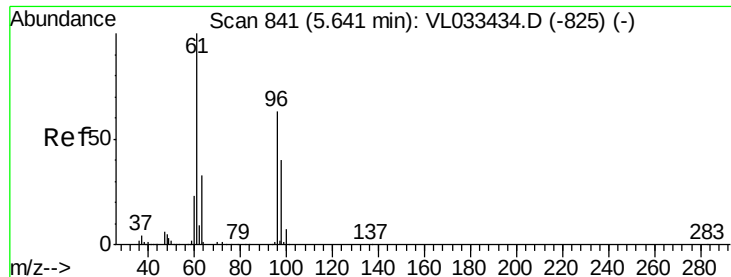
Tgt Ion: 57 Resp: 406218  
Ion Ratio Lower Upper  
57 100  
41 91.7 70.7 106.1  
43 109.0 182.6 274.0#  
56 53.8 42.0 63.0



#30  
Cyclohexane  
Concen: 0.057 ppbv  
RT: 7.23 min Scan# 1336  
Delta R.T. -0.02 min  
Lab File: VL033579.D  
Acq: 11 Apr 2019 00:57

Tgt Ion: 84 Resp: 3670  
Ion Ratio Lower Upper  
84 100  
56 0.0 109.7 164.5#  
41 0.0 68.2 102.2#



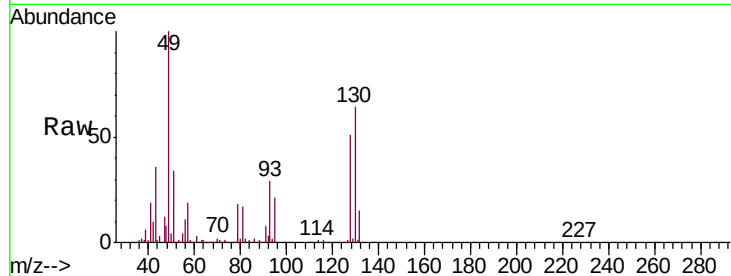


#31

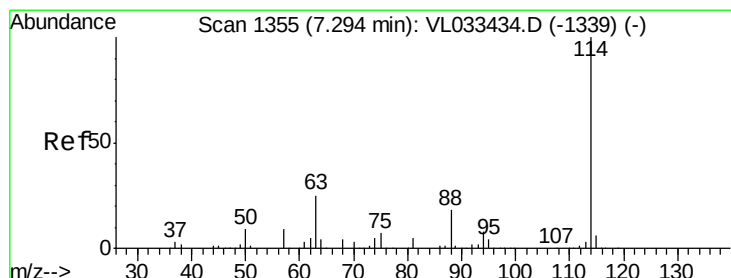
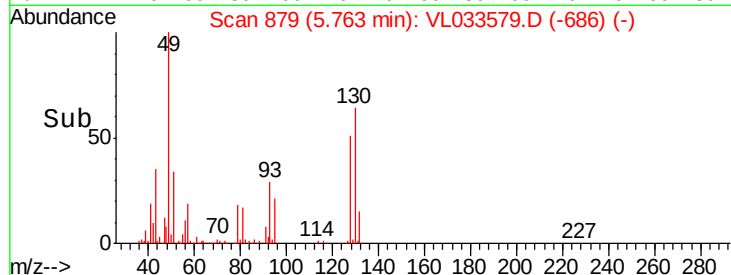
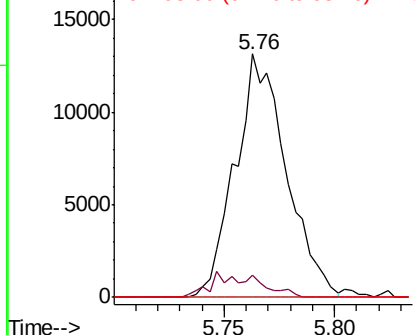
cis-1,2-Dichloroethene  
 Concen: 0.260 ppbv  
 RT: 5.76 min Scan# 879  
 Delta R.T. 0.12 min  
 Lab File: VL033579.D  
 Acq: 11 Apr 2019 00:57

Instrument :  
 MSVOA\_L  
 ClientSampleId :  
 A-8

Tgt Ion: 61 Resp: 21174  
 Ion Ratio Lower Upper  
 61 100  
 96 9.0 50.6 76.0#  
 98 0.0 32.2 48.2#



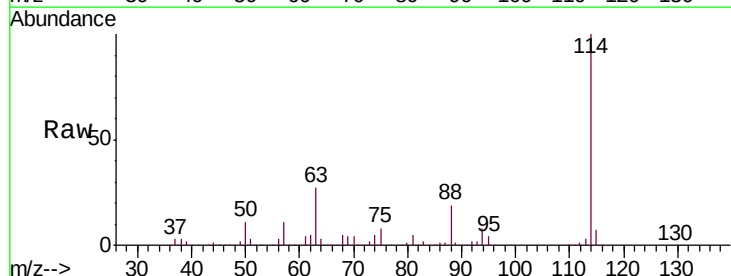
Abundance Ion 61.10 (60.80 to 61.80): VL0  
 Ion 96.00 (95.70 to 96.70): VL0  
 Ion 98.00 (97.70 to 98.70): VL0



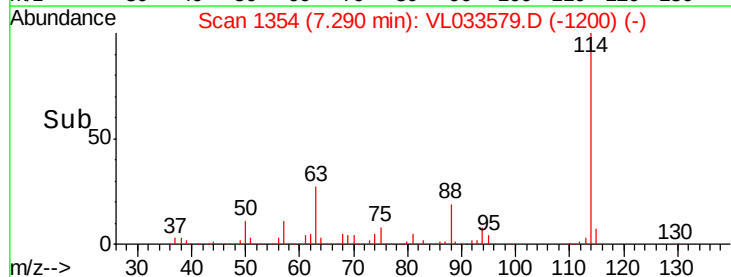
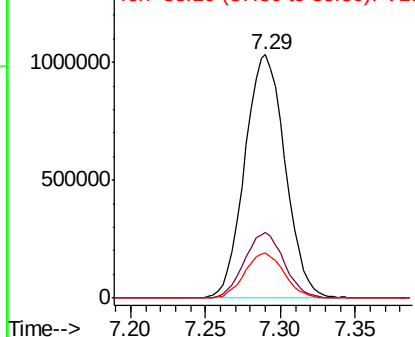
#33

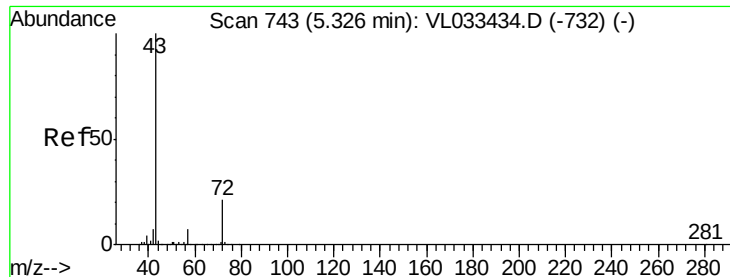
1,4-Difluorobenzene  
 Concen: 10.000 ppbv  
 RT: 7.29 min Scan# 1354  
 Delta R.T. -0.00 min  
 Lab File: VL033579.D  
 Acq: 11 Apr 2019 00:57

Tgt Ion: 114 Resp: 1938126  
 Ion Ratio Lower Upper  
 114 100  
 63 26.5 21.5 32.3  
 88 18.1 14.5 21.7



Abundance Ion 114.10 (113.80 to 114.80): V  
 Ion 63.10 (62.80 to 63.80): VL0  
 Ion 88.10 (87.80 to 88.80): VL0





#34

2-Butanone

Concen: 0.179 ppbv

RT: 5.34 min Scan# 746

Delta R.T. 0.01 min

Lab File: VL033579.D

Acq: 11 Apr 2019 00:57

Instrument :

MSVOA\_L

ClientSampleId :

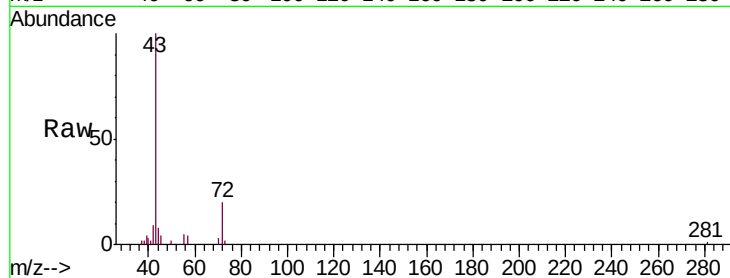
A-8

Tgt Ion: 43 Resp: 20844

Ion Ratio Lower Upper

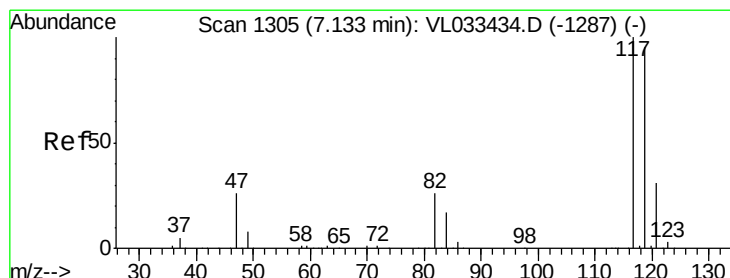
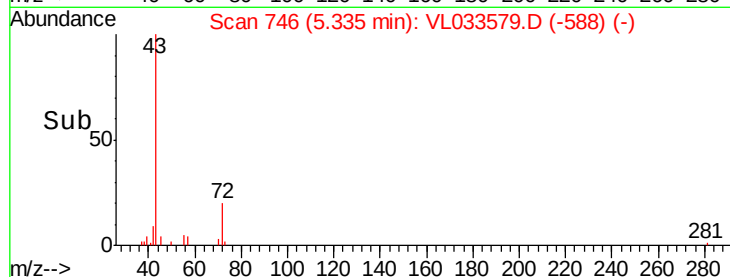
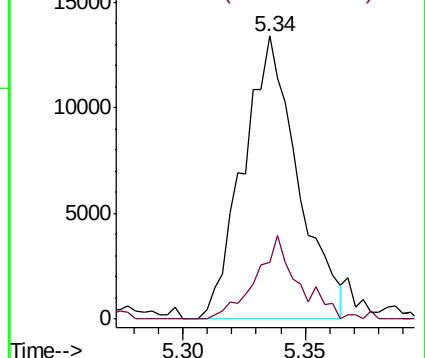
43 100

72 22.7 17.4 26.2



Abundance Ion 43.10 (42.80 to 43.80): VL0

Ion 72.10 (71.80 to 72.80): VL0



#35

Carbon Tetrachloride

Concen: 0.057 ppbv

RT: 7.13 min Scan# 1304

Delta R.T. -0.00 min

Lab File: VL033579.D

Acq: 11 Apr 2019 00:57

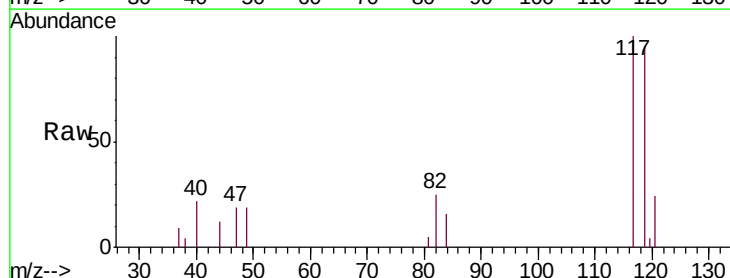
Tgt Ion: 117 Resp: 7782

Ion Ratio Lower Upper

117 100

119 98.2 75.8 113.8

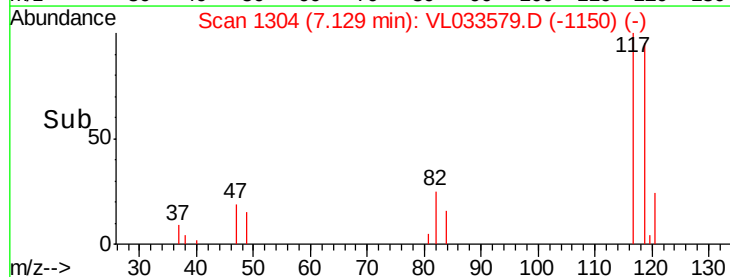
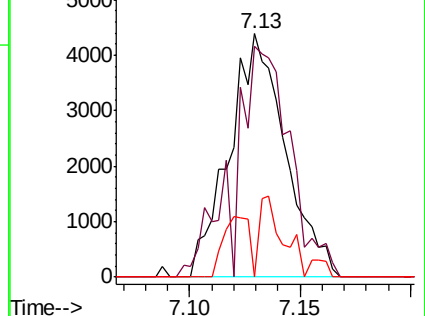
121 0.0 24.7 37.1#

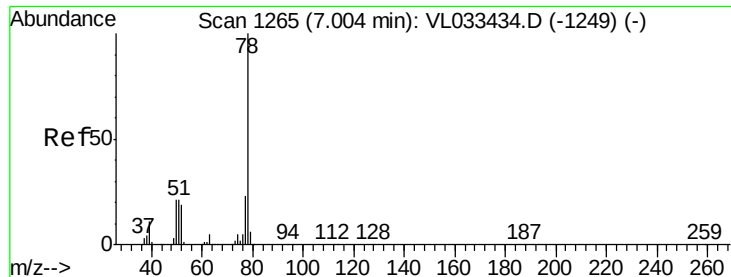


Abundance Ion 117.00 (116.70 to 117.70): V

Ion 119.00 (118.70 to 119.70): V

Ion 121.00 (120.70 to 121.70): V





#36

Benzene

Concen: 0.070 ppbv

RT: 7.00 min Scan# 1264

Delta R.T. -0.00 min

Lab File: VL033579.D

Acq: 11 Apr 2019 00:57

Instrument :

MSVOA\_L

ClientSampleId :

A-8

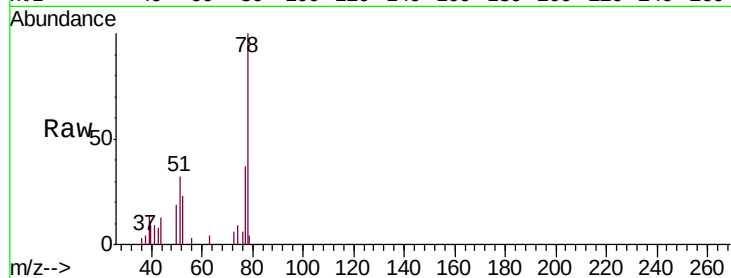
Tgt Ion: 78 Resp: 11379

Ion Ratio Lower Upper

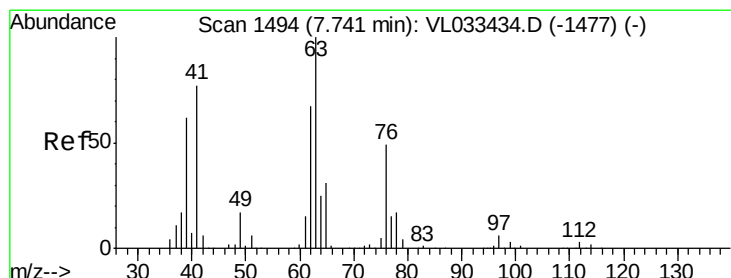
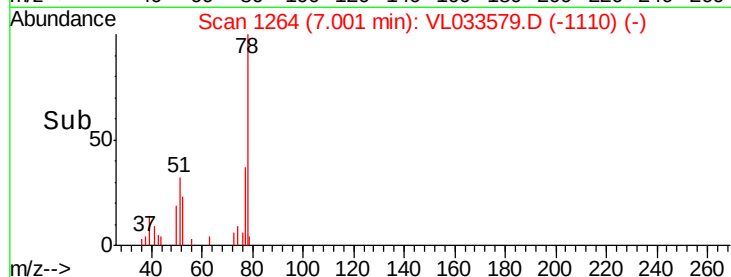
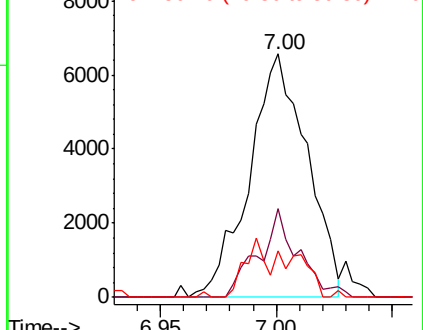
78 100

77 36.5 18.1 27.1#

50 19.2 16.7 25.1



Abundance Ion 78.10 (77.80 to 78.80): VL0  
Ion 77.10 (76.80 to 77.80): VL0  
Ion 50.10 (49.80 to 50.80): VL0



#39

1,2-Dichloropropane

Concen: 7.992 ppbv

RT: 7.29 min Scan# 1354

Delta R.T. -0.45 min

Lab File: VL033579.D

Acq: 11 Apr 2019 00:57

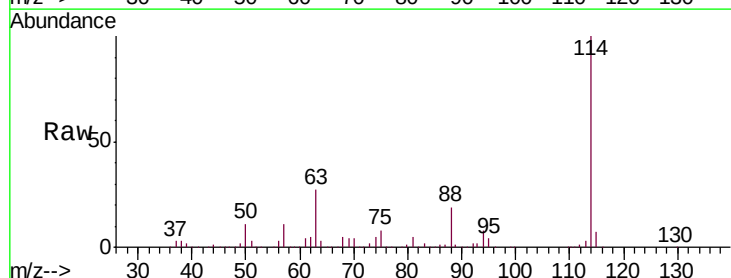
Tgt Ion: 63 Resp: 509132

Ion Ratio Lower Upper

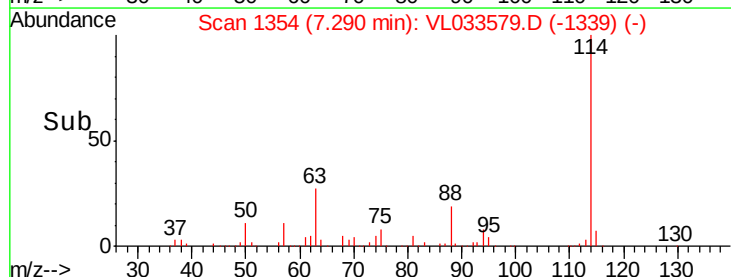
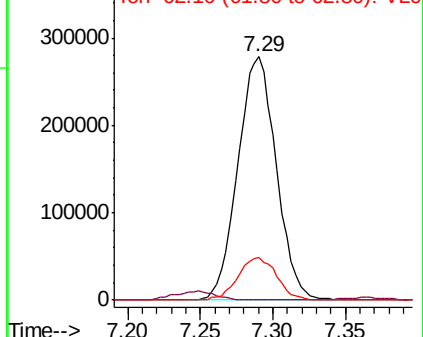
63 100

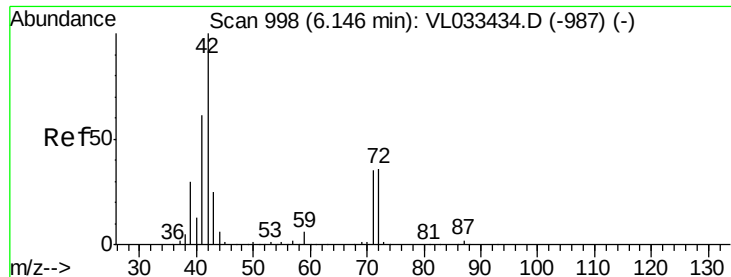
41 0.0 61.2 91.8#

62 17.2 54.0 81.0#



Abundance Ion 63.10 (62.80 to 63.80): VL0  
Ion 41.10 (40.80 to 41.80): VL0  
Ion 62.10 (61.80 to 62.80): VL0





#41

Tetrahydrofuran

Concen: 0.092 ppbv

RT: 6.09 min Scan# 980

Delta R.T. -0.06 min

Lab File: VL033579.D

Acq: 11 Apr 2019 00:57

Instrument :

MSVOA\_L

ClientSampleId :

A-8

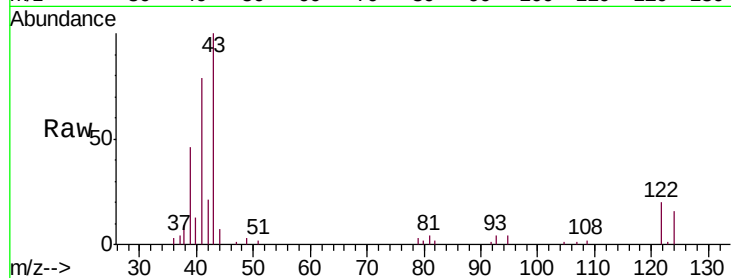
Tgt Ion: 42 Resp: 5870

Ion Ratio Lower Upper

42 100

72 0.0 30.2 45.2#

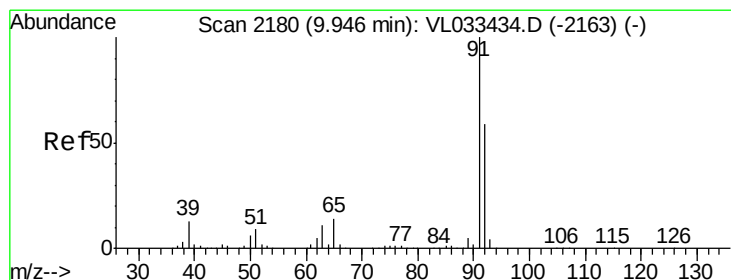
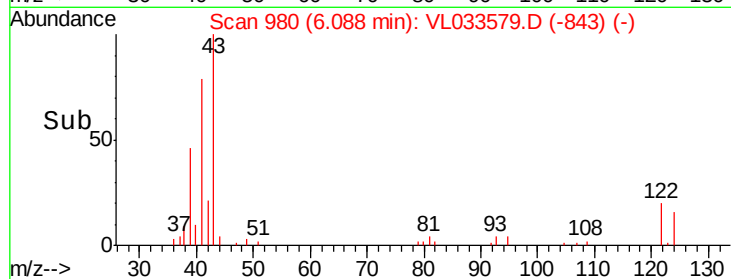
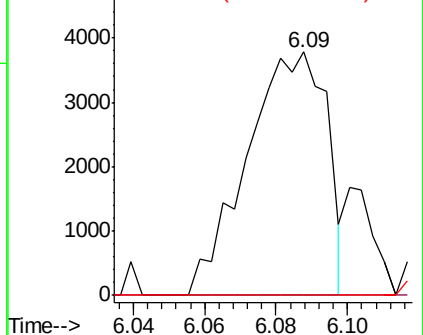
71 0.0 29.4 44.2#



Abundance Ion 42.10 (41.80 to 42.80): VL0

Ion 72.10 (71.80 to 72.80): VL0

Ion 71.10 (70.80 to 71.80): VL0



#53

Toluene

Concen: 0.176 ppbv

RT: 9.94 min Scan# 2179

Delta R.T. -0.00 min

Lab File: VL033579.D

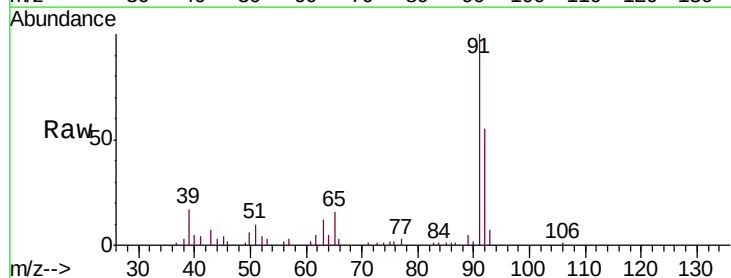
Acq: 11 Apr 2019 00:57

Tgt Ion: 91 Resp: 33295

Ion Ratio Lower Upper

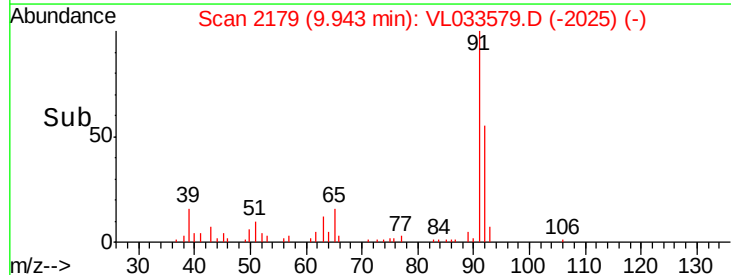
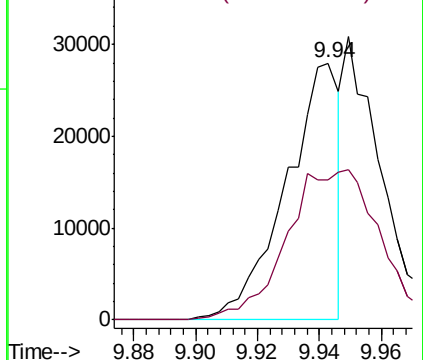
91 100

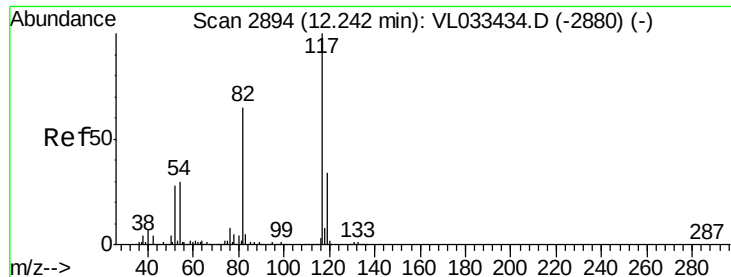
92 0.0 47.4 71.0#



Abundance Ion 91.10 (90.80 to 91.80): VL0

Ion 92.10 (91.80 to 92.80): VL0

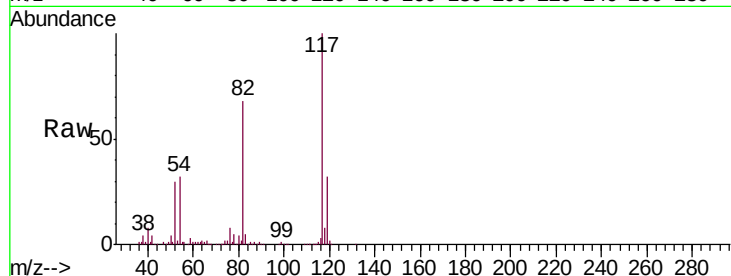




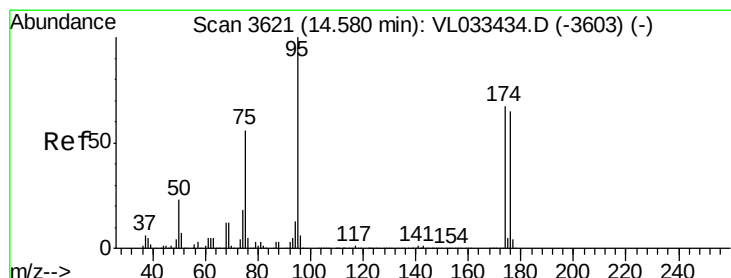
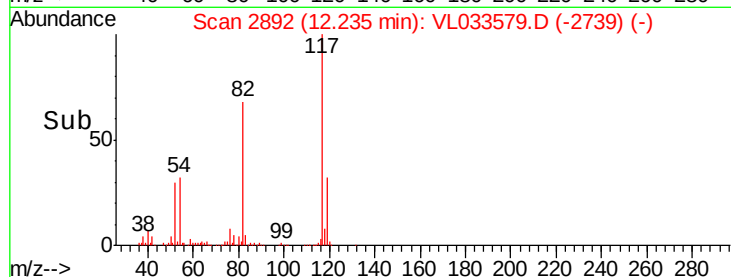
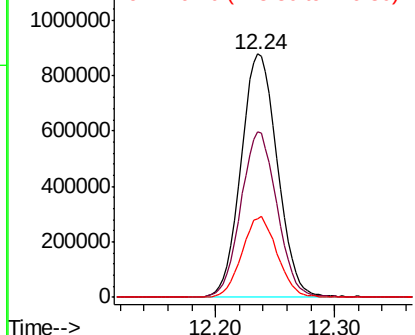
#55  
Chlorobenzene-d5  
Concen: 10.000 ppbv  
RT: 12.24 min Scan# 2892  
Delta R.T. -0.01 min  
Lab File: VL033579.D  
Acq: 11 Apr 2019 00:57

Instrument :  
MSVOA\_L  
ClientSampled :  
A-8

Tgt Ion:117 Resp: 1861982  
Ion Ratio Lower Upper  
117 100  
82 67.8 51.5 77.3  
119 32.3 25.5 38.3

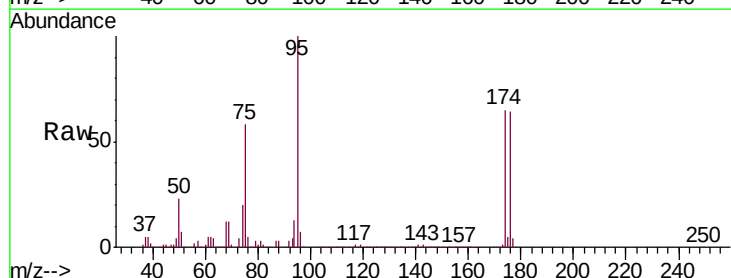


Abundance Ion 117.10 (116.80 to 117.80): V  
1200000  
Ion 82.10 (81.80 to 82.80): VL0  
Ion 119.10 (118.80 to 119.80): V



#68  
1-Bromo-4-Fluorobenzene  
Concen: 10.329 ppbv  
RT: 14.57 min Scan# 3619  
Delta R.T. -0.01 min  
Lab File: VL033579.D  
Acq: 11 Apr 2019 00:57

Tgt Ion: 95 Resp: 1507792  
Ion Ratio Lower Upper  
95 100  
174 66.6 52.9 79.3  
175 4.8 3.8 5.6



Abundance Ion 95.10 (94.80 to 95.80): VL0  
800000  
Ion 174.00 (173.70 to 174.70): V  
Ion 175.00 (174.70 to 175.70): V

