Graczyk, Lisa

From: Radcliffe, Michael <Radcliffe.Michael@cleanharbors.com>
Sent: Tuesday, February 19, 2019 2:22 PM
To: Graczyk, Lisa
Cc: Lambesis, Christopher
Subject: FW: Memorandum for EPA 2/18/19
Attachments: EPA_Memorandum_2_18_2019U.docx; PCB_Congener_Three_Levels_2_18_2019.xlsx; Analytical_Method.pdf; Low_level_Chromatograms_2_18_19.pdf; Mid_High_level_Chromatograms_2_18_19.pdf

Dear Lisa,
Sorry but this took a little bit of extra time than originally predicted. Please review and contact me with any questions you may have.

Regards,
Michael

Michael Radcliffe | Sr Environmental Compliance Manager | Safety-Kleen |

| A Clean Harbors Company |Radcliffe.michael@cleanharbors.com|

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From: Elizarraras-Nelson, Erika P.
Sent: Tuesday, February 19, 2019 2:16 PM
To: Radcliffe, Michael <Radcliffe.Michael@cleanharbors.com>
Cc: Shoff, Jason R <Jason.Shoff@safety-kleen.com>; Chen, David <David.Chen@safety-kleen.com>; Dang, Hy <Hy.Dang@safety-kleen.com>; Hull, Anthony W <Anthony.Hull@safety-kleen.com>; Elizarraras-Nelson, Erika P. <Erika.Nelson@safety-kleen.com>
Subject: Memorandum for EPA 2/18/19

February 19, 2019

Mike,

Please find attached the Memorandum for EPA with the accompanied data requested.

Thanks,

Erika E Nelson Refinery Lab Manager | Safety-Kleen |A Clean Harbors Company |

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MEMORANDUM

TO: Lisa Graczyk, Environmental Protection Agency

FROM: Erika Nelson, Laboratory Manager

DATE: February 18, 2019

SUBJECT: PCB CONGENER (TOTAL PCB) ANALYZED AT THREE DIFFERENT LEVELS AND TH EXPLANATION OF HOW IT IS CALCULATED.

The purpose of this document is to submit the information requested by EPA on an e-mail submitted on 10/12/18:

"There was one final step (#4) not done that I had put in the email dated 10/12/18. Please check this method against an Aroclor standard similar to what Safety-Kleen described in their 03/23/2018 memorandum (an Aroclor 1016/1260 standard at three levels approximately equal to the LLOQ, mid, and, high calibration standard levels). Also, please provide examples of the calculations for determining the total PCB concentration of these Aroclor standards (either by data system quantitation or manual quantitation, whichever is used)".

Based on this request, a mix of 1016/1260 Aroclor was performed at three different levels (low, mid, and high). Table 3 shows all the data results, and Table 4 is a summary of all the concentrations and their percent recoveries.

For the second request, to demonstrate the calculation of Total PCB concentration in a sample using the congener method a step by step calculation of the Low Level Test 1 sample is shown below. These steps were performed in all nine analyses:

Step 1: Determine the retention time windows. The retention time windows for all congeners with the exception of the first and last (2-chlorobiphenyl and 2,2,3,3,4,4,5,5,6-nonachlorobiphenyl) are determined in the same way using the retention times of the CCS congeners. Essentially the retention time window of a given congener peak begins halfway between the peak of interest and the previous peak and ends halfway between the peak of interest and the very next eluting peak. So if peak A elutes at 1.0 min, peak B at 2.0 min and peak C at 4.0 min, the retention time widow of peak B would start at minute 1.5 and end at minute 3.0. The two exceptional peak windows are calculated slightly differently. The congener 2-chlorobiphenyl is the first congener peak to elute and the retention time for this window begins when the peak elutes and ends halfway between it and the next peak 2,3-dichlorobiphenyl. The only other peak which is calculated slightly different is the last of the nineteen congeners to elute 2,2,3,3,4,4,5,5,6-nonachlorobiphenyl. The window for this peak begins halfway between it and the previous peak, but it continues up to the DCB peak. This method ensures that all peaks that fall from the first peak 2-chlorobiphenyl to the DCB peak are included in the calculation for the total PCB. Below are the retention time windows from the Low Level Test 1 sample.

Table 1: Retention Time Windows for Total PCB Calculation.

Congener	CCS RT	Rt. Window (min)	
2-Clorobiphenyl	3.318	3.318	3.960
2,3-Dichlorobiphenyl	4.601	3.960	4.839
2,2,5-Trichlorobiphenyl	5.077	4.839	5.333
2,4,5-Trichlorobiphenyl	5.589	5.333	5.766
2,2,5,5-Tetrachlorobiphenyl	5.943	5.766	6.036
2,2,3,5-Tetrachlorobiphenyl	6.129	6.036	6.343
2,3,4,4-Tetrachlorobiphenyl	6.557	6.343	6.670
2,2,4,5,5-Pentachlorobiphenyl	6.783	6.670	6.906
2,2,3,4,5-Pentachlorobiphenyl	7.028	6.906	7.070
2,3,3,4,6-Pentachlorobiphenyl	7.112	7.070	7.165
2,2,3,5,5,6-Hexachlorobiphenyl	7.218	7.165	7.398
2,2,4,4,5,5-Hexachlorobiphenyl	7.578	7.398	7.635
2,2,3,4,5,5-Hexachlorobiphenyl	7.692	7.635	7.758
2,2,3,4,4,5-Hexachlorobiphenyl	7.824	7.758	7.894
2,2,3,4,5,5,6-Heptachlorobiphenyl	7.963	7.894	7.989
2,2,3,4,4,5,6-Heptachlorobiphenyl	8.015	7.989	8.240
2,2,3,4,4,5,5-Heptachlorobiphenyl	8.464	8.240	8.587
2,2,3,3,4,4,5-Heptachlorobiphenyl	8.709	8.587	9.202
2,2,3,3,4,4,5,5,6-Nonachlorobiphenyl	9.695	9.202	DCB

Step 2: Calculate all peak areas within each retention time window. Table 2 shows how this was done for the Low Level Test 1 sample.

Step 3: Determine the instrument concentrations in µg/mL for each congener retention time window. This is done by plugging the total window area into the line equation of the congener corresponding to the retention time window and solving for X. This calculation for the window represented by the congener 2,2,5-trichlorobiphenyl is shown below. The results for all other congeners along with the slopes and b values used to determine the instrument concentration are shown in Table 3.

$$Y=mX+b$$

Where **Y** is the total window area found in Table 2, **b** is the y-intercept given in Table 3, **m** is the slope also in Table 3, and X is the instrument concentration in µg/mL.

Rearranging the equation to solve for X:

$$X=(Y-b)/m$$

Plugging in the values for 2,2,5-trichlorobiphenyl found in Table 2 and Table 3:

$$X=(2159-615.36338)/196977.1$$

$$X=0.00783663 \text{ µg/mL}$$

Step 4: Determine the sample concentration for each retention time window and then total all 19 windows to determine the total PCB concentration of the sample in µg/g. Here the instrument

concentration is multiplied by the total volume of the sample prep which is 30 mL. This amount is then divided by the sample weight in grams. Again this calculation is shown below for 2,2,5-trichlorobiphenyl.

2,2,5-trichlorobiphenyl Sample concentration = [(0.00783663 µg/mL)(30.0mL)]/2.5771g
= 0.091 µg/g.

All data is stated in Table 3, and a summary of the results for all test runs and the corresponding percent recovery is shown in Table 4.

Table 2: Retention Time Window Area Calculations for the Low Level Test Sample 1.

2-Clorobiphenyl 3.318-3.960 (min)		
R.T. time (min)	Area	Total Area
	0	0
2,3-Dichlorobiphenyl 3.960-4.839 (min)		
R.T. time (min)	Area	Total Area
4.392	297	1008
4.536	191	
4.613	520	
2,2,5-Trichlorobiphenyl 4.839-5.333 (min)		
R.T. time (min)	Area	Total Area
5.081	1223	2159
5.180	218	
5.277	718	
2,4,5-Trichlorobiphenyl 5.333-5.766 (min)		
R.T. time (min)	Area	Total Area
5.418	162	3391
5.503	336	
5.593	1815	
5.674	638	
5.759	440	
2,2,5,5-Tetrachlorobiphenyl 5.766-6.036 (min)		
R.T. time (min)	Area	Total Area
5.788	199	1404
5.944	421	
5.981	784	
2,2,3,5-Tetrachlorobiphenyl 6.036-6.343 (min)		
R.T. time (min)	Area	Total Area
6.131	681	1353
6.253	553	
6.314	119	
2,3,4,4-Tetrachlorobiphenyl 6.343-6.670 (min)		
R.T. time (min)	Area	Total Area
6.548	457	457
2,2,4,5,5-Pentachlorobiphenyl 6.6707-6.906 (min)		
R.T. time (min)	Area	Total Area
6.727	91	429
6.783	338	
2,2,3,4,5-Pentachlorobiphenyl 6.906-7.070 (min)		
R.T. time (min)	Area	Total Area
	0	0
2,3,3,4,6-Pentachlorobiphenyl 7.070-7.165 (min)		
R.T. time (min)	Area	Total Area
7.080	195	405
7.111	210	

2,2,3,5,5,6-Hexachlorobiphenyl 7.165-7.398 (min)		
R.T. time (min)	Area	Total Area
7.215	517	1827
7.254	256	
7.327	1054	
2,2,4,4,5,5-Hexachlorobiphenyl 7.398-7.635 (min)		
R.T. time (min)	Area	Total Area
7.511	176	1805
7.574	1629	
2,2,3,4,5,5-Hexachlorobiphenyl 7.635-7.758 (min)		
R.T. time (min)	Area	Total Area
7.682	986	1128
7.749	142	
2,2,3,4,4,5-Hexachlorobiphenyl 7.758-7.894 (min)		
R.T. time (min)	Area	Total Area
7.814	1407	1753
7.871	346	
2,2,3,4,5,5,6-Heptachlorobiphenyl 7.894-7.989 (min)		
R.T. time (min)	Area	Total Area
7.954	1114	1114
2,2,3,4,4,5,6-Heptachlorobiphenyl 7.989-8.240 (min)		
R.T. time (min)	Area	Total Area
8.006	506	2043
8.104	207	
8.166	822	
8.212	508	
2,2,3,4,4,5,5-Heptachlorobiphenyl 8.240-8.587 (min)		
R.T. time (min)	Area	Total Area
8.257	262	3198
8.303	218	
8.381	194	
8.447	2423	
8.525	101	
2,2,3,3,4,4,5-Heptachlorobiphenyl 8.587-9.202 (min)		
R.T. time (min)	Area	Total Area
8.693	993	2542
8.758	488	
8.815	645	
9.066	416	
2,2,3,3,4,4,5,5,6-Nonachlorobiphenyl 9.202-DCB		
R.T. time (min)	Area	Total Area
9.287	630	925
9.650	295	

Table 3: Relevant Data for Calculating the Total PCB Concentration in a Sample Using the Congener Method.

Low Level Test 1								
Congener	CCS RT	Rt. Window		Window Area	m	B	Instrument (ug/mL)	Sample (ug/g)
2-Clorobiphenyl	3.318	3.318	3.9595	0	27592.37	-26.1415	0.00094742	0.011
2,3-Dichlorobiphenyl	4.601	3.9595	4.839	1008	297264.7	435.2471	0.00192674	0.022
2,2,5-Trichlorobiphenyl	5.077	4.839	5.333	2159	196977.1	615.3634	0.00783663	0.091
2,4,5-Trichlorobiphenyl	5.589	5.333	5.766	3391	312171.3	237.5887	0.01010154	0.118
2,2,5,5-Tetrachlorobiphenyl	5.943	5.766	6.036	1404	242877.5	420.6349	0.00404881	0.047
2,2,3,5-Tetrachlorobiphenyl	6.129	6.036	6.343	1353	316833.8	713.2764	0.00201911	0.024
2,3,4,4-Tetrachlorobiphenyl	6.557	6.343	6.67	457	395907.1	326.4695	0.00032970	0.004
2,2,4,5,5-Pentachlorobiphenyl	6.783	6.67	6.9055	429	321335.3	353.5682	0.00023474	0.003
2,2,3,4,5-Pentachlorobiphenyl	7.028	6.9055	7.07	0	461196.6	225.6633	-0.00048930	-0.006
2,3,3,4,6-Pentachlorobiphenyl	7.112	7.07	7.165	405	428751.4	505.7667	-0.00023502	-0.003
2,2,3,5,5,6-Hexachlorobiphenyl	7.218	7.165	7.398	1827	417773.7	342.4376	0.00355351	0.041
2,2,4,4,5,5-Hexachlorobiphenyl	7.578	7.398	7.635	1805	399515.6	240.4059	0.00391623	0.046
2,2,3,4,5,5-Hexachlorobiphenyl	7.692	7.635	7.758	1128	593939.4	387.5446	0.00124669	0.015
2,2,3,4,4,5-Hexachlorobiphenyl	7.824	7.758	7.8935	1753	485457.8	442.3469	0.00269983	0.031
2,2,3,4,5,5,6-Heptachlorobiphenyl	7.963	7.8935	7.989	1114	469856.9	342.9029	0.00164113	0.019
2,2,3,4,4,5,6-Heptachlorobiphenyl	8.015	7.989	8.2395	2043	537140.8	126.955	0.00356712	0.042
2,2,3,4,4,5,5-Heptachlorobiphenyl	8.464	8.2395	8.5865	3198	603230.6	283.0922	0.00483216	0.056
2,2,3,3,4,4,5-Heptachlorobiphenyl	8.709	8.5865	9.202	2542	614391.2	351.8876	0.00356469	0.041
2,2,3,3,4,4,5,5,6-Nonachlorobiphenyl	9.695	9.202	DCB	925	718226.6	453.5265	0.00065644	0.008
DCB				30840	563184.9	655.7508	0.05359563	0.624
							Sample PCB (ug/g)	0.618
							Theoretical PBC (ug/g	0.617
							Percent recovery	100

Low Level Test 2								
Congener	CCS RT	Rt. Window		Window Area	m	B	Instrument (ug/mL)	Sample (ug/g)
2-Clorobiphenyl	3.318	3.318	3.9595	0	27592.37	-26.1415	0.00094742	0.011
2,3-Dichlorobiphenyl	4.601	3.9595	4.839	1563	297264.7	435.2471	0.00379377	0.045
2,2,5-Trichlorobiphenyl	5.077	4.839	5.333	2137	196977.1	615.3634	0.00772494	0.091
2,4,5-Trichlorobiphenyl	5.589	5.333	5.766	3632	312171.3	237.5887	0.01087355	0.128
2,2,5,5-Tetrachlorobiphenyl	5.943	5.766	6.036	1353	242877.5	420.6349	0.00383883	0.045
2,2,3,5-Tetrachlorobiphenyl	6.129	6.036	6.343	1530	316833.8	713.2764	0.00257777	0.030
2,3,4,4-Tetrachlorobiphenyl	6.557	6.343	6.67	501	395907.1	326.4695	0.00044084	0.005
2,2,4,5,5-Pentachlorobiphenyl	6.783	6.67	6.9055	346	321335.3	353.5682	-0.00002355	0.000
2,2,3,4,5-Pentachlorobiphenyl	7.028	6.9055	7.07	0	461196.6	225.6633	-0.00048930	-0.006
2,3,3,4,6-Pentachlorobiphenyl	7.112	7.07	7.165	414	428751.4	505.7667	-0.00021403	-0.003
2,2,3,5,5,6-Hexachlorobiphenyl	7.218	7.165	7.398	1963	417773.7	342.4376	0.00387904	0.046
2,2,4,4,5,5-Hexachlorobiphenyl	7.578	7.398	7.635	1906	399515.6	240.4059	0.00416903	0.049
2,2,3,4,5,5-Hexachlorobiphenyl	7.692	7.635	7.758	1136	593939.4	387.5446	0.00126015	0.015
2,2,3,4,4,5-Hexachlorobiphenyl	7.824	7.758	7.8935	1775	485457.8	442.3469	0.00274515	0.032
2,2,3,4,5,5,6-Heptachlorobiphenyl	7.963	7.8935	7.989	1173	469856.9	342.9029	0.00176670	0.021
2,2,3,4,4,5,6-Heptachlorobiphenyl	8.015	7.989	8.2395	2180	537140.8	126.955	0.00382217	0.045
2,2,3,4,4,5,5-Heptachlorobiphenyl	8.464	8.2395	8.5865	3283	603230.6	283.0922	0.00497307	0.059
2,2,3,3,4,4,5-Heptachlorobiphenyl	8.709	8.5865	9.202	2806	614391.2	351.8876	0.00399438	0.047
2,2,3,3,4,4,5,5,6-Nonachlorobiphenyl	9.695	9.202	DCB	957	718226.6	453.5265	0.00070100	0.008
DCB				31212	563184.9	655.7508	0.05425616	0.640
							Sample PCB (ug/g)	0.678
							Theoretical PBC (ug/g	0.624
							Percent recovery	109

Low Level Test 3								
Congener	CCS RT	Rt. Window		Window Area	m	B	Instrument (ug/mL)	Sample (ug/g)
2-Clorobiphenyl	3.318	3.318	3.9595	0	27592.37	-26.1415	0.00094742	0.011
2,3-Dichlorobiphenyl	4.601	3.9595	4.839	956	297264.7	435.2471	0.00175182	0.021
2,2,5-Trichlorobiphenyl	5.077	4.839	5.333	2302	196977.1	615.3634	0.00856260	0.101
2,4,5-Trichlorobiphenyl	5.589	5.333	5.766	3688	312171.3	237.5887	0.01105294	0.131
2,2,5,5-Tetrachlorobiphenyl	5.943	5.766	6.036	1461	242877.5	420.6349	0.00428350	0.051
2,2,3,5-Tetrachlorobiphenyl	6.129	6.036	6.343	1490	316833.8	713.2764	0.00245152	0.029
2,3,4,4-Tetrachlorobiphenyl	6.557	6.343	6.67	466	395907.1	326.4695	0.00035243	0.004
2,2,4,5,5-Pentachlorobiphenyl	6.783	6.67	6.9055	451	321335.3	353.5682	0.00030321	0.004
2,2,3,4,5-Pentachlorobiphenyl	7.028	6.9055	7.07	0	461196.6	225.6633	-0.00048930	-0.006
2,3,3,4,6-Pentachlorobiphenyl	7.112	7.07	7.165	425	428751.4	505.7667	-0.00018838	-0.002
2,2,3,5,5,6-Hexachlorobiphenyl	7.218	7.165	7.398	1994	417773.7	342.4376	0.00395325	0.047
2,2,4,4,5,5-Hexachlorobiphenyl	7.578	7.398	7.635	1966	399515.6	240.4059	0.00431922	0.051
2,2,3,4,5,5-Hexachlorobiphenyl	7.692	7.635	7.758	1171	593939.4	387.5446	0.00131908	0.016
2,2,3,4,4,5-Hexachlorobiphenyl	7.824	7.758	7.8935	1828	485457.8	442.3469	0.00285432	0.034
2,2,3,4,5,5,6-Heptachlorobiphenyl	7.963	7.8935	7.989	1186	469856.9	342.9029	0.00179437	0.021
2,2,3,4,4,5,6-Heptachlorobiphenyl	8.015	7.989	8.2395	2195	537140.8	126.955	0.00385010	0.046
2,2,3,4,4,5,5-Heptachlorobiphenyl	8.464	8.2395	8.5865	3879	603230.6	283.0922	0.00596108	0.071
2,2,3,3,4,4,5-Heptachlorobiphenyl	8.709	8.5865	9.202	2712	614391.2	351.8876	0.00384138	0.046
2,2,3,3,4,4,5,5,6-Nonachlorobiphenyl	9.695	9.202	DCB	1053	718226.6	453.5265	0.00083466	0.010
DCB				30549	563184.9	655.7508	0.05307893	0.629
							Sample PCB (ug/g)	0.693
							Theoretical PBC (ug/g	0.627
							Percent recovery	110

Mid Level Test 1								
Congener	CCS RT	Rt. Window		Window Area	m	B	Instrument (ug/mL)	Sample (ug/g)
2-Clorobiphenyl	3.318	3.318	3.960	0	27592.37	-26.1415	0.00094742	0.011
2,3-Dichlorobiphenyl	4.601	3.960	4.839	3751	297264.7	435.2471	0.01115421	0.131
2,2,5-Trichlorobiphenyl	5.077	4.839	5.333	6305	196977.1	615.3634	0.02888476	0.338
2,4,5-Trichlorobiphenyl	5.589	5.333	5.766	11339	312171.3	237.5887	0.03556192	0.417
2,2,5,5-Tetrachlorobiphenyl	5.943	5.766	6.036	2220	242877.5	420.6349	0.00740853	0.087
2,2,3,5-Tetrachlorobiphenyl	6.129	6.036	6.343	7743	316833.8	713.2764	0.02218742	0.260
2,3,4,4-Tetrachlorobiphenyl	6.557	6.343	6.670	1629	395907.1	326.4695	0.00328999	0.039
2,2,4,5,5-Pentachlorobiphenyl	6.783	6.670	6.906	1334	321335.3	353.5682	0.00305112	0.036
2,2,3,4,5-Pentachlorobiphenyl	7.028	6.906	7.070	134	461196.6	225.6633	-0.00019875	-0.002
2,3,3,4,6-Pentachlorobiphenyl	7.112	7.070	7.165	1072	428751.4	505.7667	0.00132066	0.015
2,2,3,5,5,6-Hexachlorobiphenyl	7.218	7.165	7.398	6412	417773.7	342.4376	0.01452835	0.170
2,2,4,4,5,5-Hexachlorobiphenyl	7.578	7.398	7.635	6201	399515.6	240.4059	0.01491955	0.175
2,2,3,4,5,5-Hexachlorobiphenyl	7.692	7.635	7.758	3396	593939.4	387.5446	0.00506526	0.059
2,2,3,4,4,5-Hexachlorobiphenyl	7.824	7.758	7.894	5493	485457.8	442.3469	0.01040390	0.122
2,2,3,4,5,5,6-Heptachlorobiphenyl	7.963	7.894	7.989	3750	469856.9	342.9029	0.00725135	0.085
2,2,3,4,4,5,6-Heptachlorobiphenyl	8.015	7.989	8.240	7296	537140.8	126.955	0.01334668	0.156
2,2,3,4,4,5,5-Heptachlorobiphenyl	8.464	8.240	8.587	11019	603230.6	283.0922	0.01779735	0.209
2,2,3,3,4,4,5-Heptachlorobiphenyl	8.709	8.587	9.202	8887	614391.2	351.8876	0.01389198	0.163
2,2,3,3,4,4,5,5,6-Nonachlorobiphenyl	9.695	9.202	DCB	2807	718226.6	453.5265	0.00327678	0.038
DCB				31627	563184.9	655.7508	0.05499304	0.644
							Sample PCB (ug/g)	2.511
							Theoretical PBC (ug/g	2.500
							Percent recovery	100

Mid Level Test 2								
Congener	CCS RT	Rt. Window		Window Area	m	B	Instrument (ug/mL)	Sample (ug/g)
2-Clorobiphenyl	3.318	3.318	3.960	0	27592.37	-26.1415	0.00094742	0.011
2,3-Dichlorobiphenyl	4.601	3.960	4.839	4124	297264.7	435.2471	0.01240899	0.146
2,2,5-Trichlorobiphenyl	5.077	4.839	5.333	7073	196977.1	615.3634	0.03278369	0.387
2,4,5-Trichlorobiphenyl	5.589	5.333	5.766	12945	312171.3	237.5887	0.04070653	0.480
2,2,5,5-Tetrachlorobiphenyl	5.943	5.766	6.036	4939	242877.5	420.6349	0.01860347	0.219
2,2,3,5-Tetrachlorobiphenyl	6.129	6.036	6.343	5596	316833.8	713.2764	0.01541099	0.182
2,3,4,4-Tetrachlorobiphenyl	6.557	6.343	6.670	1985	395907.1	326.4695	0.00418919	0.049
2,2,4,5,5-Pentachlorobiphenyl	6.783	6.670	6.906	1471	321335.3	353.5682	0.00347746	0.041
2,2,3,4,5-Pentachlorobiphenyl	7.028	6.906	7.070	151	461196.6	225.6633	-0.00016189	-0.002
2,3,3,4,6-Pentachlorobiphenyl	7.112	7.070	7.165	1195	428751.4	505.7667	0.00160754	0.019
2,2,3,5,5,6-Hexachlorobiphenyl	7.218	7.165	7.398	7096	417773.7	342.4376	0.01616560	0.191
2,2,4,4,5,5-Hexachlorobiphenyl	7.578	7.398	7.635	7075	399515.6	240.4059	0.01710720	0.202
2,2,3,4,5,5-Hexachlorobiphenyl	7.692	7.635	7.758	3788	593939.4	387.5446	0.00572526	0.068
2,2,3,4,4,5-Hexachlorobiphenyl	7.824	7.758	7.894	6198	485457.8	442.3469	0.01185614	0.140
2,2,3,4,5,5,6-Heptachlorobiphenyl	7.963	7.894	7.989	4187	469856.9	342.9029	0.00818142	0.096
2,2,3,4,4,5,6-Heptachlorobiphenyl	8.015	7.989	8.240	8283	537140.8	126.955	0.01518418	0.179
2,2,3,4,4,5,5-Heptachlorobiphenyl	8.464	8.240	8.587	12252	603230.6	283.0922	0.01984135	0.234
2,2,3,3,4,4,5-Heptachlorobiphenyl	8.709	8.587	9.202	9916	614391.2	351.8876	0.01556681	0.184
2,2,3,3,4,4,5,5,6-Nonachlorobiphenyl	9.695	9.202	DCB	3129	718226.6	453.5265	0.00372511	0.044
DCB				31551	563184.9	655.7508	0.05485809	0.647
							Sample PCB (ug/g)	2.872
							Theoretical PBC (ug/g	2.510
							Percent recovery	114

Mid Level Test 3								
Congener	CCS RT	Rt. Window		Window Area	m	B	Instrument (ug/mL)	Sample (ug/g)
2-Clorobiphenyl	3.318	3.318	3.960	0	27592.37	-26.1415	0.00094742	0.011
2,3-Dichlorobiphenyl	4.601	3.960	4.839	4403	297264.7	435.2471	0.01334754	0.157
2,2,5-Trichlorobiphenyl	5.077	4.839	5.333	7146	196977.1	615.3634	0.03315429	0.390
2,4,5-Trichlorobiphenyl	5.589	5.333	5.766	12781	312171.3	237.5887	0.04018118	0.473
2,2,5,5-Tetrachlorobiphenyl	5.943	5.766	6.036	5145	242877.5	420.6349	0.01945164	0.229
2,2,3,5-Tetrachlorobiphenyl	6.129	6.036	6.343	5566	316833.8	713.2764	0.01531631	0.180
2,3,4,4-Tetrachlorobiphenyl	6.557	6.343	6.670	2129	395907.1	326.4695	0.00455291	0.054
2,2,4,5,5-Pentachlorobiphenyl	6.783	6.670	6.906	1490	321335.3	353.5682	0.00353659	0.042
2,2,3,4,5-Pentachlorobiphenyl	7.028	6.906	7.070	149	461196.6	225.6633	-0.00016623	-0.002
2,3,3,4,6-Pentachlorobiphenyl	7.112	7.070	7.165	1218	428751.4	505.7667	0.00166118	0.020
2,2,3,5,5,6-Hexachlorobiphenyl	7.218	7.165	7.398	7091	417773.7	342.4376	0.01615363	0.190
2,2,4,4,5,5-Hexachlorobiphenyl	7.578	7.398	7.635	7049	399515.6	240.4059	0.01704212	0.201
2,2,3,4,5,5-Hexachlorobiphenyl	7.692	7.635	7.758	3860	593939.4	387.5446	0.00584648	0.069
2,2,3,4,4,5-Hexachlorobiphenyl	7.824	7.758	7.894	6277	485457.8	442.3469	0.01201887	0.142
2,2,3,4,5,5,6-Heptachlorobiphenyl	7.963	7.894	7.989	4183	469856.9	342.9029	0.00817291	0.096
2,2,3,4,4,5,6-Heptachlorobiphenyl	8.015	7.989	8.240	8350	537140.8	126.955	0.01530892	0.180
2,2,3,4,4,5,5-Heptachlorobiphenyl	8.464	8.240	8.587	12155	603230.6	283.0922	0.01968055	0.232
2,2,3,3,4,4,5-Heptachlorobiphenyl	8.709	8.587	9.202	9878	614391.2	351.8876	0.01550496	0.183
2,2,3,3,4,4,5,5,6-Nonachlorobiphenyl	9.695	9.202	DCB	3121	718226.6	453.5265	0.00371397	0.044
DCB				30931	563184.9	655.7508	0.05375721	0.633
							Sample PCB (ug/g)	2.892
							Theoretical PBC (ug/g	2.510
							Percent recovery	115

High Level Test 1								
Congener	CCS RT	Rt. Window		Window Area	m	B	Instrument (ug/mL)	Sample (ug/g)
2-Clorobiphenyl	3.318	3.318	3.960	0	27592.37	-26.1415	0.00094742	0.011
2,3-Dichlorobiphenyl	4.601	3.960	4.839	9564	297264.7	435.2471	0.03070918	0.361
2,2,5-Trichlorobiphenyl	5.077	4.839	5.333	18406	196977.1	615.3634	0.09031830	1.061
2,4,5-Trichlorobiphenyl	5.589	5.333	5.766	35414	312171.3	237.5887	0.11268303	1.324
2,2,5,5-Tetrachlorobiphenyl	5.943	5.766	6.036	13624	242877.5	420.6349	0.05436224	0.639
2,2,3,5-Tetrachlorobiphenyl	6.129	6.036	6.343	15326	316833.8	713.2764	0.04612110	0.542
2,3,4,4-Tetrachlorobiphenyl	6.557	6.343	6.670	5778	395907.1	326.4695	0.01376972	0.162
2,2,4,5,5-Pentachlorobiphenyl	6.783	6.670	6.906	4108	321335.3	353.5682	0.01168384	0.137
2,2,3,4,5-Pentachlorobiphenyl	7.028	6.906	7.070	425	461196.6	225.6633	0.00043222	0.005
2,3,3,4,6-Pentachlorobiphenyl	7.112	7.070	7.165	3134	428751.4	505.7667	0.00612997	0.072
2,2,3,5,5,6-Hexachlorobiphenyl	7.218	7.165	7.398	19709	417773.7	342.4376	0.04635658	0.545
2,2,4,4,5,5-Hexachlorobiphenyl	7.578	7.398	7.635	19970	399515.6	240.4059	0.04938378	0.580
2,2,3,4,5,5-Hexachlorobiphenyl	7.692	7.635	7.758	10439	593939.4	387.5446	0.01692337	0.199
2,2,3,4,4,5-Hexachlorobiphenyl	7.824	7.758	7.894	17178	485457.8	442.3469	0.03447396	0.405
2,2,3,4,5,5,6-Heptachlorobiphenyl	7.963	7.894	7.989	11745	469856.9	342.9029	0.02426717	0.285
2,2,3,4,4,5,6-Heptachlorobiphenyl	8.015	7.989	8.240	23453	537140.8	126.955	0.04342631	0.510
2,2,3,4,4,5,5-Heptachlorobiphenyl	8.464	8.240	8.587	34979	603230.6	283.0922	0.05751682	0.676
2,2,3,3,4,4,5-Heptachlorobiphenyl	8.709	8.587	9.202	27752	614391.2	351.8876	0.04459717	0.524
2,2,3,3,4,4,5,5,6-Nonachlorobiphenyl	9.695	9.202	DCB	8542	718226.6	453.5265	0.01126173	0.132
DCB				30999	563184.9	655.7508	0.05387795	0.633
							Sample PCB (ug/g)	8.170
							Theoretical PBC (ug/g	7.430
							Percent recovery	110

High Level Test 2								
Congener	CCS RT	Rt. Window		Window Area	m	B	Instrument (ug/mL)	Sample (ug/g)
2-Clorobiphenyl	3.318	3.318	3.960	0	27592.37	-26.1415	0.00094742	0.011
2,3-Dichlorobiphenyl	4.601	3.960	4.839	10367	297264.7	435.2471	0.03341047	0.395
2,2,5-Trichlorobiphenyl	5.077	4.839	5.333	20212	196977.1	615.3634	0.09948688	1.176
2,4,5-Trichlorobiphenyl	5.589	5.333	5.766	38886	312171.3	237.5887	0.12380513	1.463
2,2,5,5-Tetrachlorobiphenyl	5.943	5.766	6.036	15091	242877.5	420.6349	0.06040232	0.714
2,2,3,5-Tetrachlorobiphenyl	6.129	6.036	6.343	16556	316833.8	713.2764	0.05000326	0.591
2,3,4,4-Tetrachlorobiphenyl	6.557	6.343	6.670	6423	395907.1	326.4695	0.01539889	0.182
2,2,4,5,5-Pentachlorobiphenyl	6.783	6.670	6.906	4505	321335.3	353.5682	0.01291931	0.153
2,2,3,4,5-Pentachlorobiphenyl	7.028	6.906	7.070	462	461196.6	225.6633	0.00051244	0.006
2,3,3,4,6-Pentachlorobiphenyl	7.112	7.070	7.165	3446	428751.4	505.7667	0.00685766	0.081
2,2,3,5,5,6-Hexachlorobiphenyl	7.218	7.165	7.398	21665	417773.7	342.4376	0.05103854	0.603
2,2,4,4,5,5-Hexachlorobiphenyl	7.578	7.398	7.635	21960	399515.6	240.4059	0.05436482	0.643
2,2,3,4,5,5-Hexachlorobiphenyl	7.692	7.635	7.758	11541	593939.4	387.5446	0.01877878	0.222
2,2,3,4,4,5-Hexachlorobiphenyl	7.824	7.758	7.894	18952	485457.8	442.3469	0.03812824	0.451
2,2,3,4,5,5,6-Heptachlorobiphenyl	7.963	7.894	7.989	12930	469856.9	342.9029	0.02678921	0.317
2,2,3,4,4,5,6-Heptachlorobiphenyl	8.015	7.989	8.240	25839	537140.8	126.955	0.04786835	0.566
2,2,3,4,4,5,5-Heptachlorobiphenyl	8.464	8.240	8.587	38535	603230.6	283.0922	0.06341175	0.749
2,2,3,3,4,4,5-Heptachlorobiphenyl	8.709	8.587	9.202	30522	614391.2	351.8876	0.04910570	0.580
2,2,3,3,4,4,5,5,6-Nonachlorobiphenyl	9.695	9.202	DCB	9379	718226.6	453.5265	0.01242710	0.147
DCB				31413	563184.9	655.7508	0.05461306	0.645
							Sample PCB (ug/g)	9.049
							Theoretical PBC (ug/g	7.470
							Percent recovery	121

High Level Test 3								
Congener	CCS RT	Rt. Window		Window Area	m	B	Instrument (ug/mL)	Sample (ug/g)
2-Clorobiphenyl	3.318	3.318	3.960	0	27592.37	-26.1415	0.00094742	0.011
2,3-Dichlorobiphenyl	4.601	3.960	4.839	9788	297264.7	435.2471	0.03146271	0.371
2,2,5-Trichlorobiphenyl	5.077	4.839	5.333	20413	196977.1	615.3634	0.10050730	1.186
2,4,5-Trichlorobiphenyl	5.589	5.333	5.766	39411	312171.3	237.5887	0.12548690	1.481
2,2,5,5-Tetrachlorobiphenyl	5.943	5.766	6.036	15254	242877.5	420.6349	0.06107344	0.721
2,2,3,5-Tetrachlorobiphenyl	6.129	6.036	6.343	16806	316833.8	713.2764	0.05079232	0.599
2,3,4,4-Tetrachlorobiphenyl	6.557	6.343	6.670	6517	395907.1	326.4695	0.01563632	0.185
2,2,4,5,5-Pentachlorobiphenyl	6.783	6.670	6.906	4550	321335.3	353.5682	0.01305935	0.154
2,2,3,4,5-Pentachlorobiphenyl	7.028	6.906	7.070	479	461196.6	225.6633	0.00054930	0.006
2,3,3,4,6-Pentachlorobiphenyl	7.112	7.070	7.165	3484	428751.4	505.7667	0.00694629	0.082
2,2,3,5,5,6-Hexachlorobiphenyl	7.218	7.165	7.398	21911	417773.7	342.4376	0.05162738	0.609
2,2,4,4,5,5-Hexachlorobiphenyl	7.578	7.398	7.635	22197	399515.6	240.4059	0.05495803	0.649
2,2,3,4,5,5-Hexachlorobiphenyl	7.692	7.635	7.758	11640	593939.4	387.5446	0.01894546	0.224
2,2,3,4,4,5-Hexachlorobiphenyl	7.824	7.758	7.894	19193	485457.8	442.3469	0.03862468	0.456
2,2,3,4,5,5,6-Heptachlorobiphenyl	7.963	7.894	7.989	13089	469856.9	342.9029	0.02712761	0.320
2,2,3,4,4,5,6-Heptachlorobiphenyl	8.015	7.989	8.240	26189	537140.8	126.955	0.04851995	0.573
2,2,3,4,4,5,5-Heptachlorobiphenyl	8.464	8.240	8.587	39052	603230.6	283.0922	0.06426880	0.758
2,2,3,3,4,4,5-Heptachlorobiphenyl	8.709	8.587	9.202	30954	614391.2	351.8876	0.04980884	0.588
2,2,3,3,4,4,5,5,6-Nonachlorobiphenyl	9.695	9.202	DCB	9501	718226.6	453.5265	0.01259696	0.149
DCB				31636	563184.9	655.7508	0.05500902	0.649
							Sample PCB (ug/g)	9.121
							Theoretical PBC (ug/g	7.460
							Percent recovery	122

Table 4: Percent Recovery Table.

Test Run ID	Theoretical Concentration (ug/g)	Calculated Concentration (ug/g)	Percent Recovery
Low Level Test 1	0.617	0.618	100
Low Level Test 2	0.624	0.678	109
Low Level Test 3	0.627	0.693	111
Mid Level Test1	2.500	2.511	100
Mid Level Test 2	2.510	2.872	114
Mid Level Test 3	2.510	2.892	115
High Level Test 1	7.430	8.170	110
High Level Test 2	7.470	9.049	121
High Level Test 3	7.460	9.121	122

CCS Calculation

CCS BATCH#: 2PCBS805
METHOD ID: CONF18C.M
SEQUENCE: G320211A
DATE: 2/11/2019

Congener	(ug/mL)	Area	Recovery (ug/mL)	Percent Recovery	Pass/Fail
2-Clorobiphenyl	0.02	468	0.018	90	PASS
2,3-Dichlorobiphenyl	0.02	5448	0.017	84	PASS
2,2,5-Trichlorobiphenyl	0.02	3798	0.016	81	PASS
2,4,5-Trichlorobiphenyl	0.01	2898	0.009	85	PASS
2,2,5,5-Tetrachlorobiphenyl	0.016	3839	0.014	88	PASS
2,2,3,5-Tetrachlorobiphenyl	0.016	5146	0.014	87	PASS
2,3,4,4-Tetrachlorobiphenyl	0.01	4525	0.011	106	PASS
2,2,4,5,5-Pentachlorobiphenyl	0.01	3427	0.010	96	PASS
2,2,3,4,5-Pentachlorobiphenyl	0.004	2035	0.004	98	PASS
2,3,3,4,6-Pentachlorobiphenyl	0.01	4700	0.010	98	PASS
2,2,3,5,5,6-Hexachlorobiphenyl	0.01	4132	0.009	91	PASS
2,2,4,4,5,5-Hexachlorobiphenyl	0.01	3949	0.009	93	PASS
2,2,3,4,5,5-Hexachlorobiphenyl	0.01	6903	0.011	110	PASS
2,2,3,4,4,5-Hexachlorobiphenyl	0.01	5493	0.010	104	PASS
2,2,3,4,5,5,6-Heptachlorobiphenyl	0.01	4675	0.009	92	PASS
2,2,3,4,4,5,6-Heptachlorobiphenyl	0.01	5460	0.010	99	PASS
2,2,3,4,4,5,5-Heptachlorobiphenyl	0.016	9988	0.016	101	PASS
2,2,3,3,4,4,5-Heptachlorobiphenyl	0.01	5563	0.008	85	PASS
2,2,3,3,4,4,5,5,6-Nonachlorobiphenyl	0.01	6728	0.009	87	PASS
Decachlorobiphenyl	0.024	12709	0.021	89	PASS

Comments: _____

Sample Name : CCS 2PCBS-791 Inst. GC #32Could not execute ->

Data File : C:\HPCHEM\1\DATA\2019\G320211A\001F0201.D

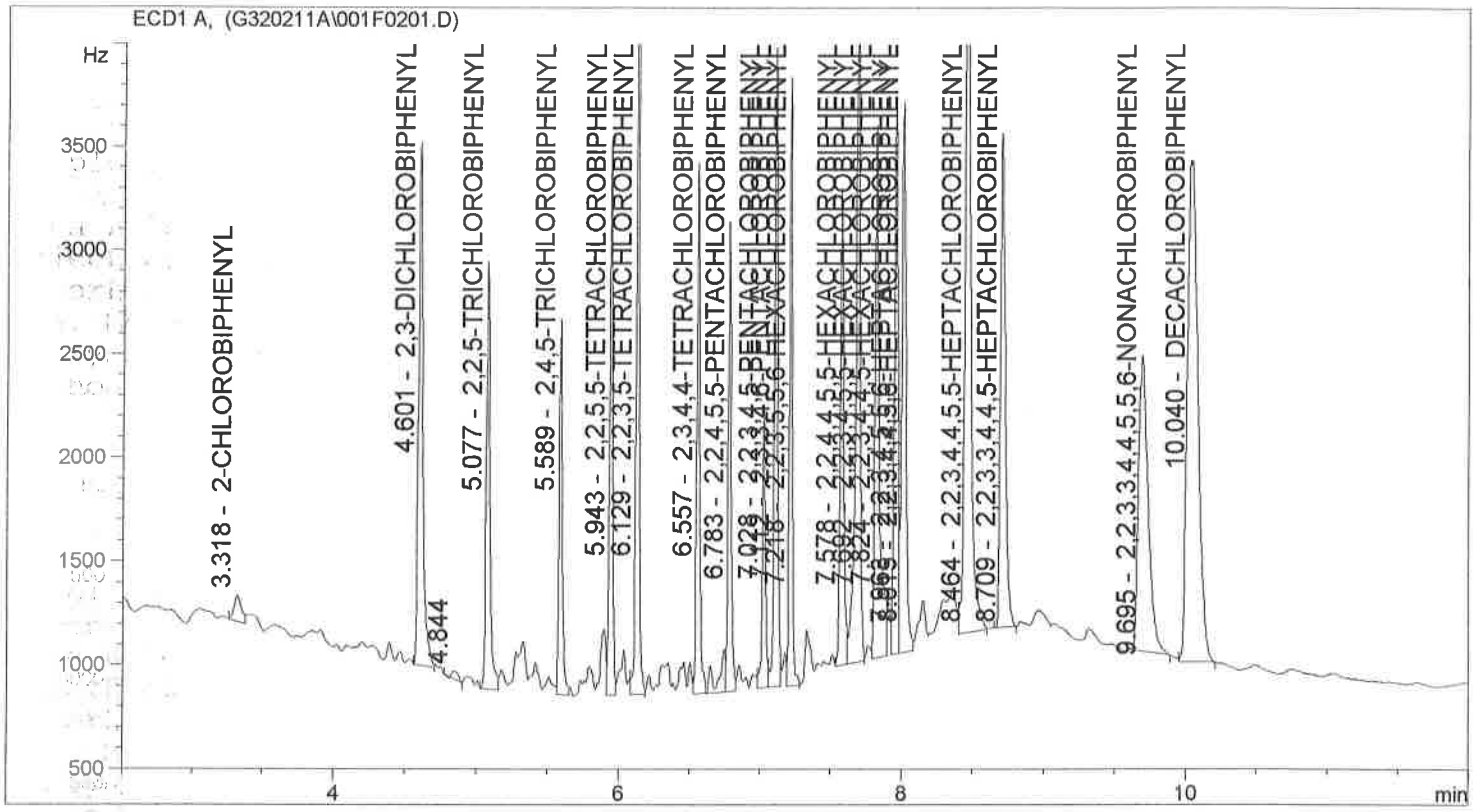
Injection Date : 2/11/2019 11:32:16 AM Analyst ID. : NK ML AH

Report Created : 2/11/201912:01:24 PM Vial No. : 1

Acq. Method : CONF18C.M Sample Amt. : 0.0000

Analysis Method: C:\HPCHEM\1\METHODS\CONF18C.M Dilution : 1.0000

Method Modified: 2/11/2019 11:57:56 AM Multiplier : 1.0000

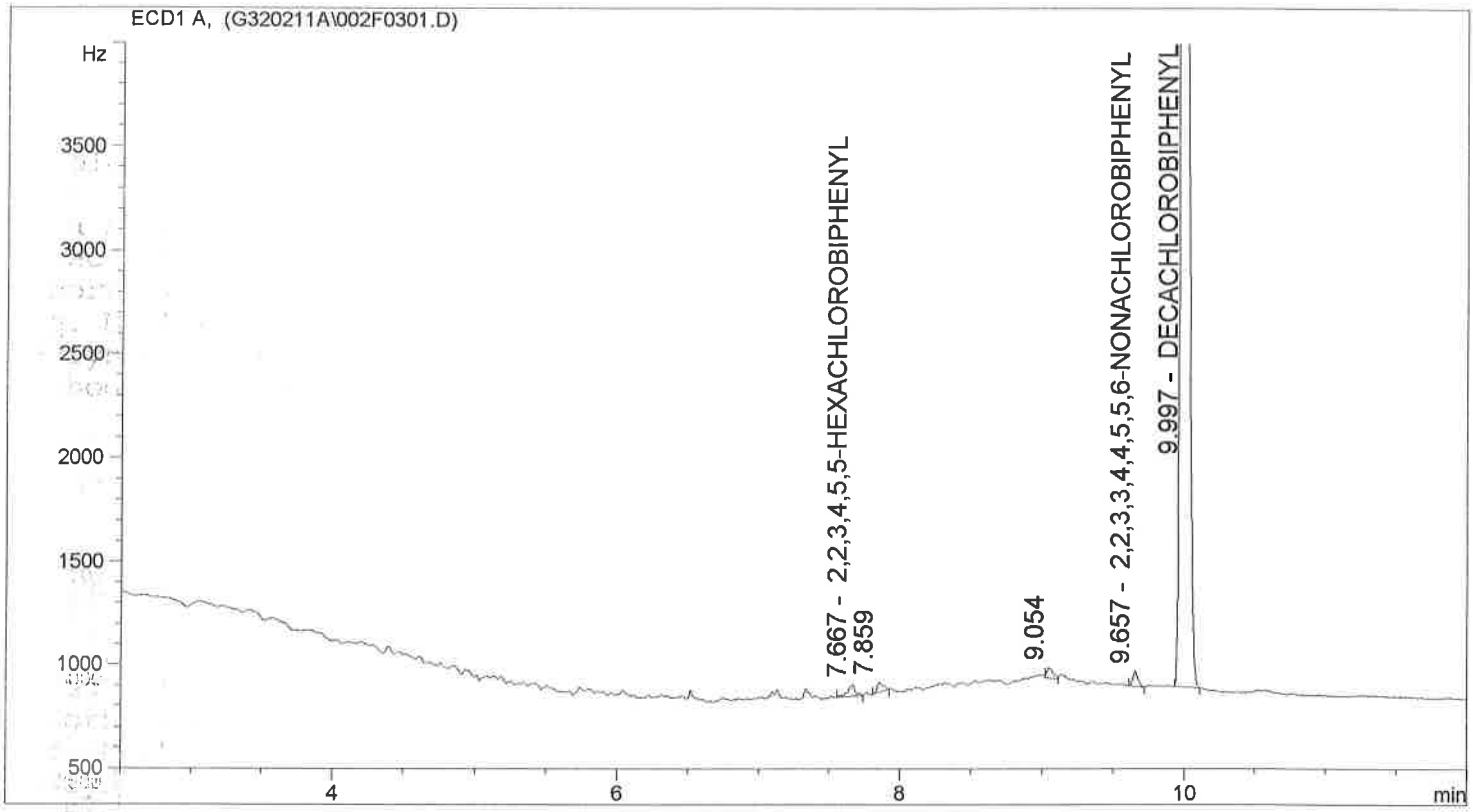


CalTbl R.T.	Actual R.T.	Congener Name	Peak Area
3.318	3.318	2-CHLOROBIPHENYL	468.5
4.599	4.601	2,3-DICHLOROBIPHENYL	5447.8
5.076	5.077	2,2,5-TRICHLOROBIPHENYL	3798.1
5.589	5.589	2,4,5-TRICHLOROBIPHENYL	2897.7
5.942	5.943	2,2,5,5-TETRACHLOROBIPHENYL	3838.9
6.128	6.129	2,2,3,5-TETRACHLOROBIPHENYL	5146.1
6.555	6.557	2,3,4,4-TETRACHLOROBIPHENYL	4525.3
6.780	6.783	2,2,4,5,5-PENTACHLOROBIPHENYL	3426.9
7.024	7.028	2,2,3,4,5-PENTACHLOROBIPHENYL	2034.9
7.107	7.112	2,3,3,4,6-PENTACHLOROBIPHENYL	4700.0
7.211	7.218	2,2,3,5,5,6-HEXACHLOROBIPHENYL	4131.6
7.565	7.578	2,2,4,4,5,5-HEXACHLOROBIPHENYL	3949.4
7.679	7.692	2,2,3,4,5,5-HEXACHLOROBIPHENYL	6903.3
7.807	7.824	2,2,3,4,4,5-HEXACHLOROBIPHENYL	5492.8
7.943	7.963	2,2,3,4,5,5,6-HEPTACHLOROBIPHENYL	4674.9
7.994	8.015	2,2,3,4,4,5,6-HEPTACHLOROBIPHENYL	5459.5
8.431	8.464	2,2,3,4,4,5,5-HEPTACHLOROBIPHENYL	9988.3
8.677	8.709	2,2,3,3,4,4,5-HEPTACHLOROBIPHENYL	5563.2
9.695	9.695	2,2,3,3,4,4,5,5,6-NONACHLOROBIPHENYL	6728.3
10.040	10.040	DECACHLOROBIPHENYL	12708.5

Comments: _____

Sample Name : METHOD BLANK Inst. GC #32Could not execute ->

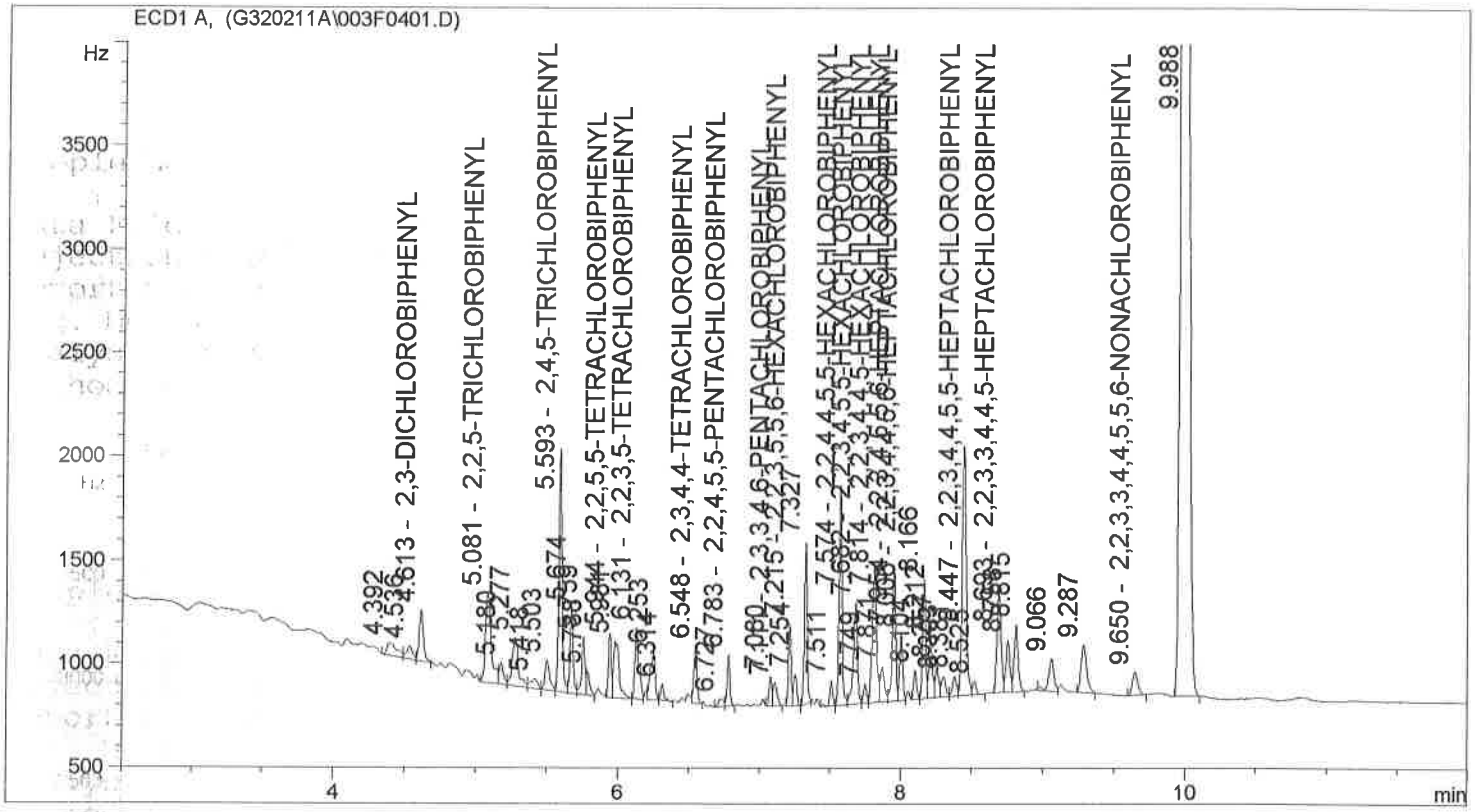
Data File : C:\HPCHEM\1\DATA\2019\G320211A\002F0301.D
Injection Date : 2/11/2019 12:05:11 PM Analyst ID. : NK ML AH
Report Created : 2/12/2019 9:30:14 AM Vial No. : 2
Acq. Method : CONF18C.M Sample Amt. : 2.5236
Analysis Method: C:\HPCHEM\1\METHODS\CONF18C.M Dilution : 1.0000
Method Modified: 2/12/2019 09:14:01 AM Multiplier : 1.0000



CalTbl R.T.	Actual R.T.	Congener Name	Peak Area
3.318	0.000	2-CHLOROBIPHENYL	0.0
4.599	0.000	2,3-DICHLOROBIPHENYL	0.0
5.076	0.000	2,2,5-TRICHLOROBIPHENYL	0.0
5.589	0.000	2,4,5-TRICHLOROBIPHENYL	0.0
5.942	0.000	2,2,5,5-TETRACHLOROBIPHENYL	0.0
6.128	0.000	2,2,3,5-TETRACHLOROBIPHENYL	0.0
6.555	0.000	2,3,4,4-TETRACHLOROBIPHENYL	0.0
6.780	0.000	2,2,4,5,5-PENTACHLOROBIPHENYL	0.0
7.024	0.000	2,2,3,4,5-PENTACHLOROBIPHENYL	0.0
7.107	0.000	2,3,3,4,6-PENTACHLOROBIPHENYL	0.0
7.211	0.000	2,2,3,5,5,6-HEXACHLOROBIPHENYL	0.0
7.565	0.000	2,2,4,4,5,5-HEXACHLOROBIPHENYL	0.0
7.679	7.667	2,2,3,4,5,5-HEXACHLOROBIPHENYL	209.9
7.807	0.000	2,2,3,4,4,5-HEXACHLOROBIPHENYL	0.0
7.943	0.000	2,2,3,4,5,5,6-HEPTACHLOROBIPHENYL	0.0
7.994	0.000	2,2,3,4,4,5,6-HEPTACHLOROBIPHENYL	0.0
8.431	0.000	2,2,3,4,4,5,5-HEPTACHLOROBIPHENYL	0.0
8.677	0.000	2,2,3,3,4,4,5-HEPTACHLOROBIPHENYL	0.0
9.695	9.657	2,2,3,3,4,4,5,5,6-NONACHLOROBIPHENYL	178.2
10.040	9.997	DECACHLOROBIPHENYL	31223.1

Comments: _____

Sample Name : LOWLVL TEST 1 Inst. GC #32Could not execute ->
1016/1260 0.617 UG/ML TOTAL PCB ->
Data File : C:\HPCHEM\1\DATA\2019\G320211A\003F0401.D
Injection Date : 2/11/2019 12:20:20 PM Analyst ID. : NK ML AH
Report Created : 2/12/2019 9:30:34 AM Vial No. : 3
Acq. Method : CONF18C.M Sample Amt. : 2.5771
Analysis Method: C:\HPCHEM\1\METHODS\CONF18C.M Dilution : 1.0000
Method Modified: 2/12/2019 09:14:01 AM Multiplier : 1.0000



CalTbl R.T.	Actual R.T.	Congener Name	Peak Area
3.318	0.000	2-CHLOROBIPHENYL	0.0
4.599	4.613	2,3-DICHLOROBIPHENYL	520.3
5.076	5.081	2,2,5-TRICHLOROBIPHENYL	1223.4
5.589	5.593	2,4,5-TRICHLOROBIPHENYL	1814.6
5.942	5.944	2,2,5,5-TETRACHLOROBIPHENYL	420.6
6.128	6.131	2,2,3,5-TETRACHLOROBIPHENYL	680.5
6.555	6.548	2,3,4,4-TETRACHLOROBIPHENYL	457.3
6.780	6.783	2,2,4,5,5-PENTACHLOROBIPHENYL	338.5
7.024	0.000	2,2,3,4,5-PENTACHLOROBIPHENYL	0.0
7.107	7.111	2,3,3,4,6-PENTACHLOROBIPHENYL	210.1
7.211	7.215	2,2,3,5,5,6-HEXACHLOROBIPHENYL	516.6
7.565	7.574	2,2,4,4,5,5-HEXACHLOROBIPHENYL	1628.9
7.679	7.682	2,2,3,4,5,5-HEXACHLOROBIPHENYL	985.9
7.807	7.814	2,2,3,4,4,5-HEXACHLOROBIPHENYL	1407.4
7.943	7.954	2,2,3,4,5,5,6-HEPTACHLOROBIPHENYL	1114.2
7.994	8.006	2,2,3,4,4,5,6-HEPTACHLOROBIPHENYL	506.0
8.431	8.447	2,2,3,4,4,5,5-HEPTACHLOROBIPHENYL	2422.8
8.677	8.693	2,2,3,3,4,4,5-HEPTACHLOROBIPHENYL	993.1
9.695	9.650	2,2,3,3,4,4,5,5,6-NONACHLOROBIPHENYL	295.3
10.040	0.000	DECACHLOROBIPHENYL	0.0

Comments: _____

Integration Results

Signal 1: ECD1 A,
Integrated with enhanced integrator!

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
1	1.704	BB	410.98547	60.58435	0.0901	1.573	1.856
2	4.392	PB	296.69781	61.53517	0.0633	4.339	4.489
3	4.536	BV	191.03656	63.94862	0.0419	4.489	4.580
4	4.613	VB	520.28247	249.94011	0.0313	4.580	4.686
5	5.081	VV	1223.36194	434.18457	0.0429	5.030	5.160
6	5.180	VV	217.66258	103.49326	0.0305	5.160	5.222
7	5.277	VV	718.28906	234.12308	0.0468	5.222	5.365
8	5.418	VV	161.79929	46.11463	0.0469	5.365	5.461
9	5.503	VV	336.40546	144.19089	0.0352	5.461	5.563
10	5.593	VV	1814.57654	1171.49500	0.0241	5.563	5.646
11	5.674	VV	638.09003	415.46652	0.0239	5.646	5.714
12	5.759	VV	440.05124	279.82019	0.0233	5.714	5.778
13	5.788	VV	198.95813	117.55145	0.0237	5.778	5.839
14	5.944	VV	420.60092	314.82977	0.0216	5.919	5.963
15	5.981	VV	783.85956	277.86624	0.0369	5.963	6.100
16	6.131	VV	680.51349	349.46756	0.0277	6.100	6.183
17	6.253	VV	553.05096	241.16641	0.0318	6.209	6.288
18	6.314	VB	118.84428	80.00470	0.0233	6.288	6.389
19	6.548	VB	457.29187	279.98837	0.0251	6.519	6.599
20	6.727	PV	91.43166	38.17410	0.0339	6.683	6.758
21	6.783	VP	338.48541	248.02966	0.0209	6.758	6.829
22	7.080	VV	195.13693	142.03372	0.0210	7.048	7.097
23	7.111	VB	210.11542	113.38941	0.0266	7.097	7.166
24	7.215	BV	516.63495	402.50623	0.0200	7.192	7.237
25	7.254	VP	256.21304	152.99397	0.0265	7.237	7.295
26	7.327	VB	1054.01355	793.32574	0.0205	7.295	7.366
27	7.511	VP	175.99211	120.80230	0.0230	7.435	7.541
28	7.574	VV	1628.89355	1075.08704	0.0237	7.541	7.625
29	7.682	VV	985.91840	493.61020	0.0303	7.625	7.725
30	7.749	VV	142.46315	94.99423	0.0225	7.725	7.775
31	7.814	VV	1407.37646	676.37622	0.0323	7.775	7.851
32	7.871	VV	346.17404	169.36485	0.0288	7.851	7.909
33	7.954	VV	1114.22168	660.92456	0.0257	7.909	7.983
34	8.006	VV	505.99185	319.73495	0.0255	7.983	8.038
35	8.104	VV	207.30318	141.01471	0.0232	8.078	8.135
36	8.166	VV	822.08051	576.79840	0.0216	8.135	8.191
37	8.212	VV	508.07889	297.27963	0.0259	8.191	8.240
38	8.257	VV	262.09509	155.85565	0.0246	8.240	8.282
39	8.303	VV	217.55496	99.89795	0.0334	8.282	8.347
40	8.381	VV	194.11134	99.40794	0.0298	8.347	8.410
41	8.447	VV	2422.80737	1207.11353	0.0304	8.410	8.505
42	8.525	VP	100.53088	66.13038	0.0237	8.505	8.599
43	8.693	BV	993.08533	498.07184	0.0313	8.660	8.732
44	8.758	VV	487.84113	251.53366	0.0306	8.732	8.787
45	8.815	VB	645.00122	325.32626	0.0301	8.787	8.873
46	9.066	BV	416.20819	156.50784	0.0380	8.969	9.109
47	9.287	BB	629.75562	229.17465	0.0421	9.243	9.369
48	9.650	PP	295.25272	112.07247	0.0407	9.597	9.729
49	9.988	PB S	3.08400e4	1.03355e4	0.0418	9.929	10.106

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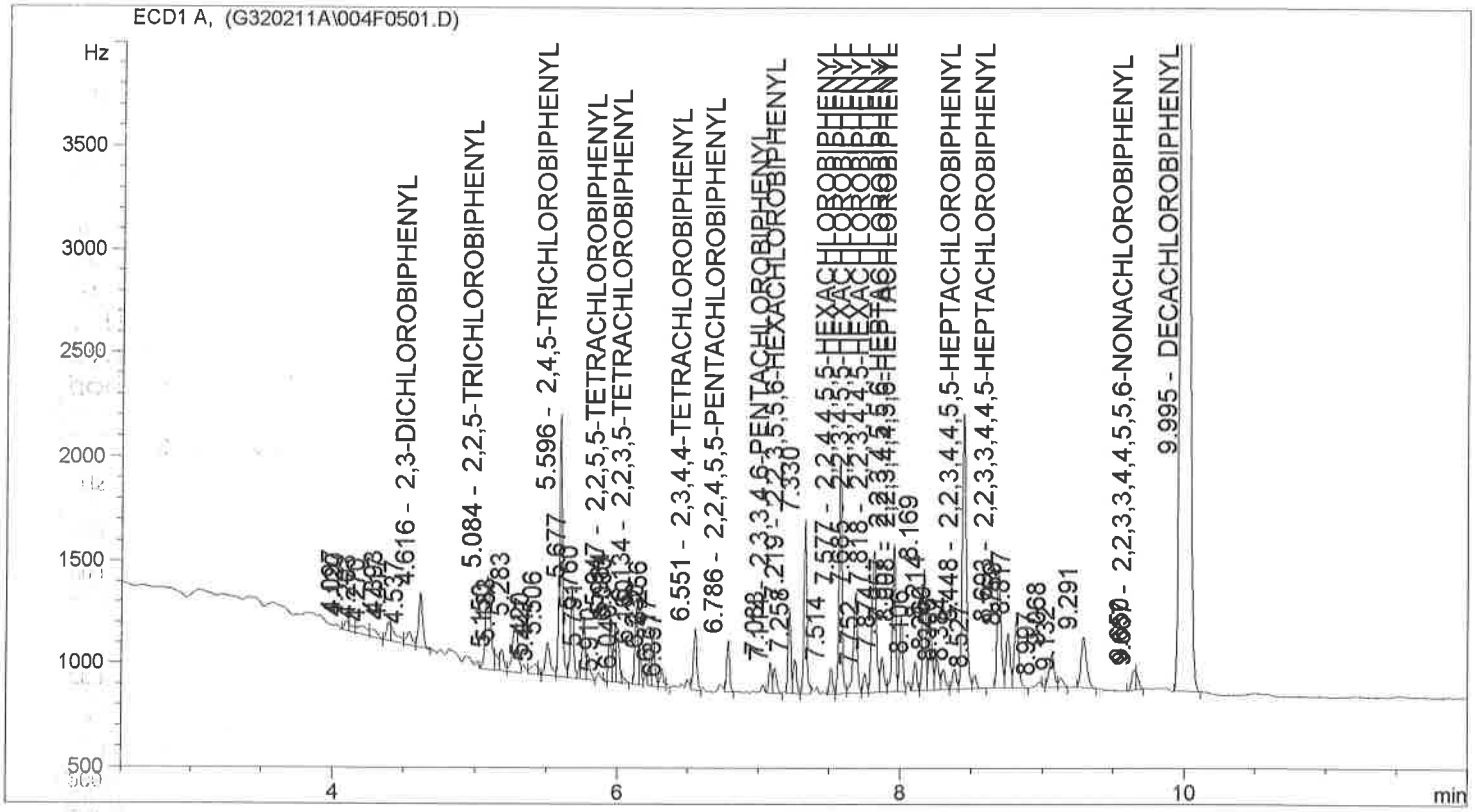
Sample Name : LOWLVL TEST 2 Inst. GC #32Could not execute ->
1016/1260 0.624 UG/ML TOTAL PCB ->
Data File : C:\HPCHEM\1\DATA\2019\G320211A\004F0501.D
Injection Date : 2/11/2019 4:25:28 PM Analyst ID. : NK ML AH
Report Created : 2/12/2019 8:18:35 AM Vial No. : 4
Acq. Method : CONF18C.M Sample Amt. : 2.5445
Analysis Method: C:\HPCHEM\1\METHODS\CONF18C.M Dilution : 1.0000
Method Modified: 2/12/2019 08:17:54 AM Multiplier : 1.0000



CalTbl R.T.	Actual R.T.	Congener Name	Peak Area
3.318	0.000	2-CHLOROBIPHENYL	0.0
4.599	4.616	2,3-DICHLOROBIPHENYL	520.0
5.076	5.084	2,2,5-TRICHLOROBIPHENYL	1159.7
5.589	5.596	2,4,5-TRICHLOROBIPHENYL	1939.3
5.942	5.947	2,2,5,5-TETRACHLOROBIPHENYL	423.5
6.128	6.134	2,2,3,5-TETRACHLOROBIPHENYL	533.1
6.555	6.551	2,3,4,4-TETRACHLOROBIPHENYL	482.0
6.780	6.786	2,2,4,5,5-PENTACHLOROBIPHENYL	345.8
7.024	0.000	2,2,3,4,5-PENTACHLOROBIPHENYL	0.0
7.107	7.114	2,3,3,4,6-PENTACHLOROBIPHENYL	206.7
7.211	7.219	2,2,3,5,5,6-HEXACHLOROBIPHENYL	542.3
7.565	7.577	2,2,4,4,5,5-HEXACHLOROBIPHENYL	1722.0
7.679	7.685	2,2,3,4,5,5-HEXACHLOROBIPHENYL	983.6
7.807	7.818	2,2,3,4,4,5-HEXACHLOROBIPHENYL	1458.5
7.943	7.957	2,2,3,4,5,5,6-HEPTACHLOROBIPHENYL	1173.5
7.994	8.008	2,2,3,4,4,5,6-HEPTACHLOROBIPHENYL	558.6
8.431	8.448	2,2,3,4,4,5,5-HEPTACHLOROBIPHENYL	2530.0
8.677	8.693	2,2,3,3,4,4,5-HEPTACHLOROBIPHENYL	1050.9
9.695	9.667	2,2,3,3,4,4,5,5,6-NONACHLOROBIPHENYL	114.3
10.040	9.995	DECACHLOROBIPHENYL	31212.2

Comments: _____

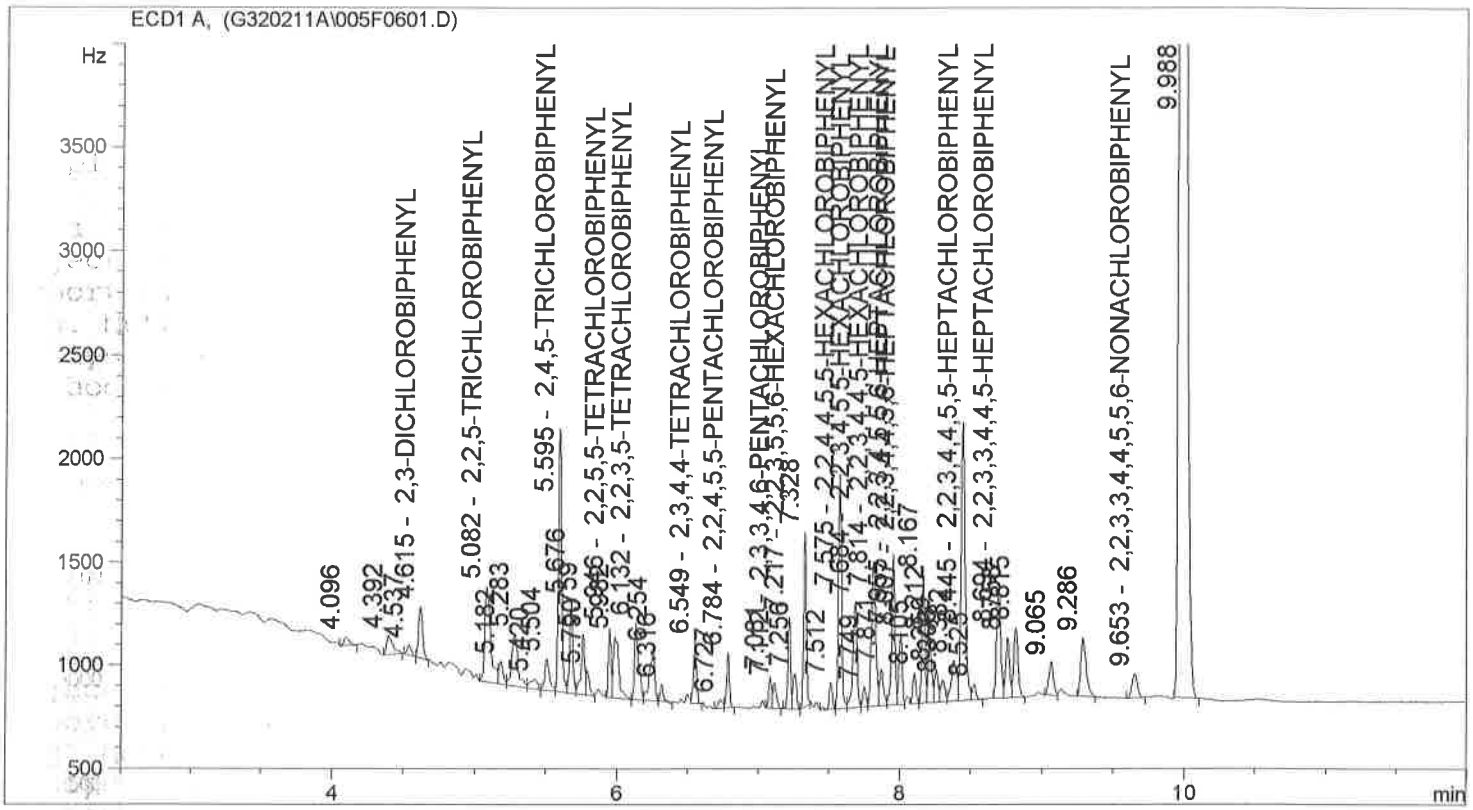
Integration Results

Signal 1: ECD1 A,
Integrated with enhanced integrator!

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
1	1.706	VB	381.63925	66.95803	0.0755	1.657	1.857
2	4.097	PV	90.70337	47.90310	0.0281	4.063	4.113
3	4.120	VB B	73.59059	34.84118	0.0352	4.113	4.157
4	4.203	BV	198.29100	40.49777	0.0611	4.157	4.257
5	4.270	VP	135.17686	36.19722	0.0456	4.257	4.352
6	4.393	VV	158.24722	90.25131	0.0265	4.352	4.407
7	4.417	VB B	205.89854	67.06082	0.0388	4.407	4.497
8	4.537	BV	181.05792	65.02541	0.0375	4.500	4.582
9	4.616	VB	520.03613	267.15582	0.0287	4.582	4.683
10	5.084	VV	1159.73279	458.13730	0.0395	5.034	5.137
11	5.150	VV B	121.48376	73.11112	0.0234	5.137	5.167
12	5.183	VV	201.00420	104.03596	0.0295	5.167	5.222
13	5.283	VV	654.84064	237.96210	0.0431	5.222	5.321
14	5.420	VV	154.61334	49.74490	0.0423	5.365	5.440
15	5.447	VP B	21.47082	25.03761	0.0140	5.440	5.463
16	5.506	VV	381.81384	159.59981	0.0359	5.463	5.566
17	5.596	VV	1939.29211	1271.87512	0.0238	5.566	5.648
18	5.677	VV	694.64404	452.01422	0.0229	5.648	5.714
19	5.760	VV	439.80298	302.47098	0.0220	5.740	5.781
20	5.791	VV	202.71681	123.34397	0.0232	5.781	5.841
21	5.910	VV B	4.44310	7.92289	0.0105	5.900	5.927
22	5.947	VV	423.50162	330.55124	0.0199	5.927	5.966
23	5.984	VV	370.51990	287.19571	0.0191	5.966	5.994
24	6.000	VV	351.19791	264.45782	0.0205	5.994	6.033
25	6.040	VB B	53.99302	33.14800	0.0240	6.033	6.083
26	6.134	BV	533.11749	365.84412	0.0220	6.110	6.153
27	6.160	VV B	182.16054	162.92548	0.0170	6.153	6.185
28	6.230	VV F	227.08684	147.71471	0.0219	6.212	6.243
29	6.256	VV	389.68054	262.09222	0.0223	6.243	6.291
30	6.317	VV	144.42526	89.21914	0.0239	6.291	6.347
31	6.357	VB B	18.51033	15.96234	0.0175	6.347	6.373
32	6.551	VV	481.95203	301.35352	0.0237	6.521	6.592
33	6.786	VB	345.84506	249.31607	0.0212	6.760	6.823
34	7.083	VV	206.57605	147.79715	0.0213	7.051	7.100
35	7.114	VB	206.68388	118.52652	0.0243	7.100	7.170
36	7.219	BV	542.32788	421.86490	0.0200	7.196	7.240
37	7.258	VV	277.23392	165.58684	0.0265	7.240	7.296
38	7.330	VB	1143.79907	846.74323	0.0208	7.296	7.370
39	7.514	VV	183.62772	128.15247	0.0227	7.486	7.545
40	7.577	VV	1722.01660	1146.76904	0.0225	7.545	7.627
41	7.685	VV	983.56085	496.08090	0.0311	7.627	7.728
42	7.752	VV	151.97098	95.82663	0.0245	7.728	7.778
43	7.818	VV	1458.53162	693.10187	0.0336	7.778	7.855
44	7.874	VV	316.13770	168.84709	0.0268	7.855	7.909
45	7.957	VV	1173.48816	719.98676	0.0260	7.909	7.985
46	8.008	VV	558.58044	357.73071	0.0242	7.985	8.041
47	8.106	VV	220.73567	142.30785	0.0251	8.080	8.138
48	8.169	VV	869.21271	600.52789	0.0229	8.138	8.193
49	8.214	VV	530.80859	310.71652	0.0249	8.193	8.242

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
50	8.260	VV	265.47864	154.42735	0.0261	8.242	8.285
51	8.306	VV	199.79347	97.76795	0.0308	8.285	8.351
52	8.384	VV	184.55876	101.24265	0.0283	8.351	8.412
53	8.448	VV	2529.98755	1337.27893	0.0291	8.412	8.507
54	8.527	VP	102.59630	63.10982	0.0260	8.507	8.607
55	8.693	BV	1050.86511	551.92334	0.0292	8.663	8.733
56	8.759	VV	524.68597	266.50598	0.0300	8.733	8.788
57	8.817	VP	705.62805	320.47632	0.0337	8.788	8.900
58	8.997	VB	B 19.67735	20.70451	0.0158	8.997	9.020
59	9.068	BV	406.83109	162.51607	0.0372	9.023	9.110
60	9.132	VB	97.09875	42.52074	0.0326	9.110	9.180
61	9.291	BB	672.38733	248.14551	0.0406	9.248	9.380
62	9.650	PV	171.28325	96.22758	0.0278	9.601	9.660
63	9.667	VB	B 114.27642	79.98975	0.0217	9.660	9.713
64	9.995	PB	S 3.12122e4	1.05561e4	0.0415	9.930	10.117

Sample Name	: LOWLVL TEST 3 Inst. GC #32Could not execute -> 1016/1260 0.627 UG/ML TOTAL PCB		->
Data File	: C:\HPCHEM\1\DATA\2019\G320211A\005F0601.D		
Injection Date	: 2/11/2019 12:50:35 PM	Analyst ID.	: NK ML AH
Report Created	: 2/12/2019 9:13:51 AM	Vial No.	: 5
Acq. Method	: CONF18C.M	Sample Amt.	: 2.5310
Analysis Method	: C:\HPCHEM\1\METHODS\CONF18C.M	Dilution	: 1.0000
Method Modified	: 2/12/2019 08:17:54 AM	Multiplier	: 1.0000



CalTbl R.T.	Actual R.T.	Congener Name	Peak Area
3.318	0.000	2-CHLOROBIPHENYL	0.0
4.599	4.615	2,3-DICHLOROBIPHENYL	480.2
5.076	5.082	2,2,5-TRICHLOROBIPHENYL	1311.2
5.589	5.595	2,4,5-TRICHLOROBIPHENYL	1961.4
5.942	5.946	2,2,5,5-TETRACHLOROBIPHENYL	446.4
6.128	6.132	2,2,3,5-TETRACHLOROBIPHENYL	736.3
6.555	6.549	2,3,4,4-TETRACHLOROBIPHENYL	465.9
6.780	6.784	2,2,4,5,5-PENTACHLOROBIPHENYL	360.7
7.024	0.000	2,2,3,4,5-PENTACHLOROBIPHENYL	0.0
7.107	7.112	2,3,3,4,6-PENTACHLOROBIPHENYL	213.7
7.211	7.217	2,2,3,5,5,6-HEXACHLOROBIPHENYL	578.7
7.565	7.575	2,2,4,4,5,5-HEXACHLOROBIPHENYL	1761.6
7.679	7.684	2,2,3,4,5,5-HEXACHLOROBIPHENYL	1023.3
7.807	7.814	2,2,3,4,4,5-HEXACHLOROBIPHENYL	1495.6
7.943	7.955	2,2,3,4,5,5,6-HEPTACHLOROBIPHENYL	1186.5
7.994	8.007	2,2,3,4,4,5,6-HEPTACHLOROBIPHENYL	549.9
8.431	8.445	2,2,3,4,4,5,5-HEPTACHLOROBIPHENYL	2735.2
8.677	8.694	2,2,3,3,4,4,5-HEPTACHLOROBIPHENYL	1082.9
9.695	9.653	2,2,3,3,4,4,5,5,6-NONACHLOROBIPHENYL	298.8
10.040	0.000	DECACHLOROBIPHENYL	0.0

Comments: _____

Integration Results

Signal 1: ECD1 A,
Integrated with enhanced integrator!

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
1	1.707	PB	411.29553	63.81511	0.0842	1.576	1.847
2	4.096	PP	96.58248	39.72079	0.0364	4.051	4.171
3	4.392	PB	278.86606	88.96027	0.0436	4.356	4.487
4	4.537	BV	99.65550	48.41881	0.0310	4.504	4.582
5	4.615	VB	480.19046	253.11153	0.0291	4.582	4.674
6	5.082	VV	1311.24329	466.66168	0.0388	5.032	5.163
7	5.182	VV	227.48752	109.92107	0.0311	5.163	5.222
8	5.283	VV	763.74377	252.82312	0.0462	5.222	5.367
9	5.420	VP	167.98285	47.67644	0.0461	5.367	5.462
10	5.504	VV	364.69666	153.19832	0.0358	5.462	5.564
11	5.595	VV	1961.44690	1281.10010	0.0229	5.564	5.648
12	5.676	VV	686.83301	449.85001	0.0238	5.648	5.713
13	5.759	VV	507.09375	293.01831	0.0252	5.713	5.780
14	5.790	VV	192.75824	118.56966	0.0240	5.780	5.840
15	5.946	VV	446.41202	341.36786	0.0213	5.921	5.964
16	5.982	VP	821.66125	300.32193	0.0359	5.964	6.100
17	6.132	VV	736.32489	375.78195	0.0279	6.100	6.184
18	6.254	VV	643.65729	257.04239	0.0342	6.184	6.291
19	6.316	VB	110.22388	82.24845	0.0196	6.291	6.391
20	6.549	VP	465.92285	305.17590	0.0228	6.520	6.597
21	6.727	PV	90.03071	40.28292	0.0301	6.689	6.759
22	6.784	VP	360.73804	267.80411	0.0207	6.759	6.831
23	7.081	VV	210.70705	152.80270	0.0211	7.050	7.098
24	7.112	VB	213.65213	124.53249	0.0250	7.098	7.161
25	7.217	BV	578.69580	442.67645	0.0203	7.174	7.238
26	7.256	VP	288.28687	173.09766	0.0264	7.238	7.295
27	7.328	VB	1126.81519	854.66034	0.0204	7.295	7.367
28	7.512	VV	204.22588	133.06656	0.0239	7.435	7.542
29	7.575	VV	1761.59644	1148.17212	0.0239	7.542	7.624
30	7.684	VV	1023.32288	515.51147	0.0312	7.624	7.726
31	7.749	VV	147.97325	98.46992	0.0245	7.726	7.775
32	7.814	VV	1495.55371	705.83044	0.0317	7.775	7.853
33	7.871	VV	331.50421	178.47679	0.0267	7.853	7.909
34	7.955	VV	1186.48022	734.01312	0.0249	7.909	7.983
35	8.007	VV	549.90778	350.06439	0.0243	7.983	8.038
36	8.105	VV	220.53156	151.96037	0.0219	8.077	8.136
37	8.167	VV	884.52069	620.98621	0.0216	8.136	8.192
38	8.212	VV	539.32904	317.97421	0.0258	8.192	8.240
39	8.259	VV	275.55972	161.50241	0.0259	8.240	8.282
40	8.306	VV	215.60976	103.77958	0.0322	8.282	8.335
41	8.382	VV	526.42706	197.38805	0.0361	8.335	8.413
42	8.445	VV	2735.24829	1354.84106	0.0296	8.413	8.506
43	8.525	VB	126.40323	74.82610	0.0247	8.506	8.587
44	8.694	BV	1082.88696	520.53857	0.0323	8.658	8.731
45	8.758	VV	549.37885	291.59836	0.0290	8.731	8.787
46	8.815	VB	712.19800	340.97913	0.0324	8.787	8.877
47	9.065	BV	368.47482	161.99644	0.0355	9.021	9.109
48	9.286	BB	753.64917	283.91241	0.0380	9.245	9.371
49	9.653	PP	298.80942	115.46243	0.0392	9.597	9.727

Data File C:\HPCHEM\1\DATA\2019\G320211A\005F0601.D Sample Name: LOWLVL TEST 3

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
50	9.988	BB S	3.05491e4	1.03611e4	0.0444	9.931	10.105

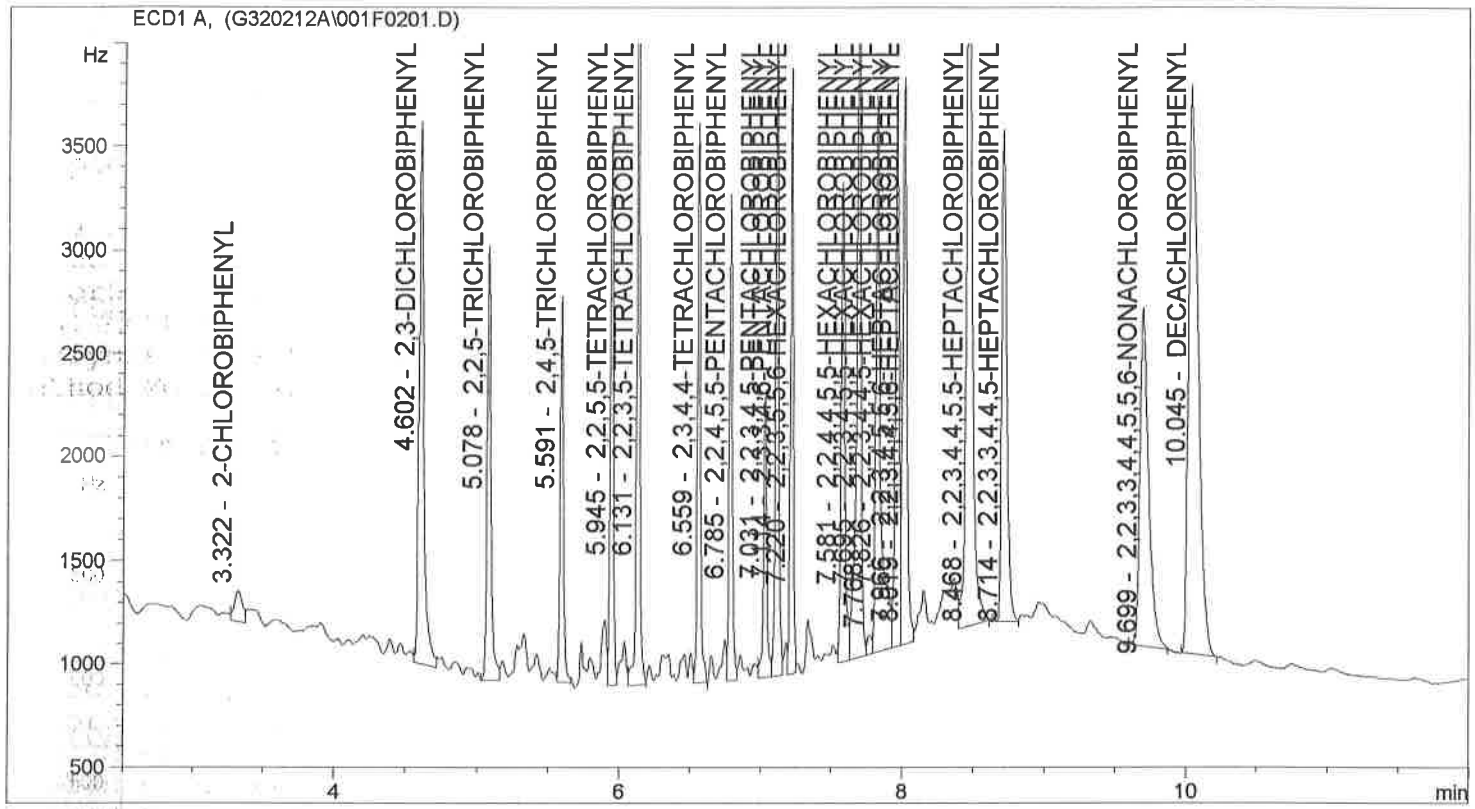
CCS Calculation

CCS BATCH#: 2PCBS805
METHOD ID: CONF18C.M
SEQUENCE: G320212A
DATE: 2/12/2019

Congener	(ug/mL)	Area	Recovery (ug/mL)	Percent Recovery	Pass/Fail
2-Clorobiphenyl	0.02	592	0.022	112	PASS
2,3-Dichlorobiphenyl	0.02	5973	0.019	93	PASS
2,2,5-Trichlorobiphenyl	0.02	3955	0.017	85	PASS
2,4,5-Trichlorobiphenyl	0.01	2919	0.009	86	PASS
2,2,5,5-Tetrachlorobiphenyl	0.016	3951	0.015	91	PASS
2,2,3,5-Tetrachlorobiphenyl	0.016	5419	0.015	93	PASS
2,3,4,4-Tetrachlorobiphenyl	0.01	3946	0.009	91	PASS
2,2,4,5,5-Pentachlorobiphenyl	0.01	3527	0.010	99	PASS
2,2,3,4,5-Pentachlorobiphenyl	0.004	2165	0.004	105	PASS
2,3,3,4,6-Pentachlorobiphenyl	0.01	4809	0.010	100	PASS
2,2,3,5,5,6-Hexachlorobiphenyl	0.01	4166	0.009	92	PASS
2,2,4,4,5,5-Hexachlorobiphenyl	0.01	4238	0.010	100	PASS
2,2,3,4,5,5-Hexachlorobiphenyl	0.01	7196	0.011	115	PASS
2,2,3,4,4,5-Hexachlorobiphenyl	0.01	6176	0.012	118	PASS
2,2,3,4,5,5,6-Heptachlorobiphenyl	0.01	5036	0.010	100	PASS
2,2,3,4,4,5,6-Heptachlorobiphenyl	0.01	5464	0.010	99	PASS
2,2,3,4,4,5,5-Heptachlorobiphenyl	0.016	10329	0.017	104	PASS
2,2,3,3,4,4,5-Heptachlorobiphenyl	0.01	5784	0.009	88	PASS
2,2,3,3,4,4,5,5,6-Nonachlorobiphenyl	0.01	6958	0.009	91	PASS
Decachlorobiphenyl	0.024	12829	0.022	90	PASS

Comments: _____

Sample Name : CCS Inst. GC #32Could not execute ->
2PCBS-791 ->
Data File : C:\HPCHEM\1\DATA\2019\G320212A\001F0201.D
Injection Date : 2/12/2019 1:06:29 PM Analyst ID. : NK ML AH
Report Created : 2/12/2019 1:34:12 PM Vial No. : 1
Acq. Method : CONF18C.M Sample Amt. : 0.0000
Analysis Method: C:\HPCHEM\1\METHODS\CONF18C.M Dilution : 1.0000
Method Modified: 2/12/2019 09:14:01 AM Multiplier : 1.0000

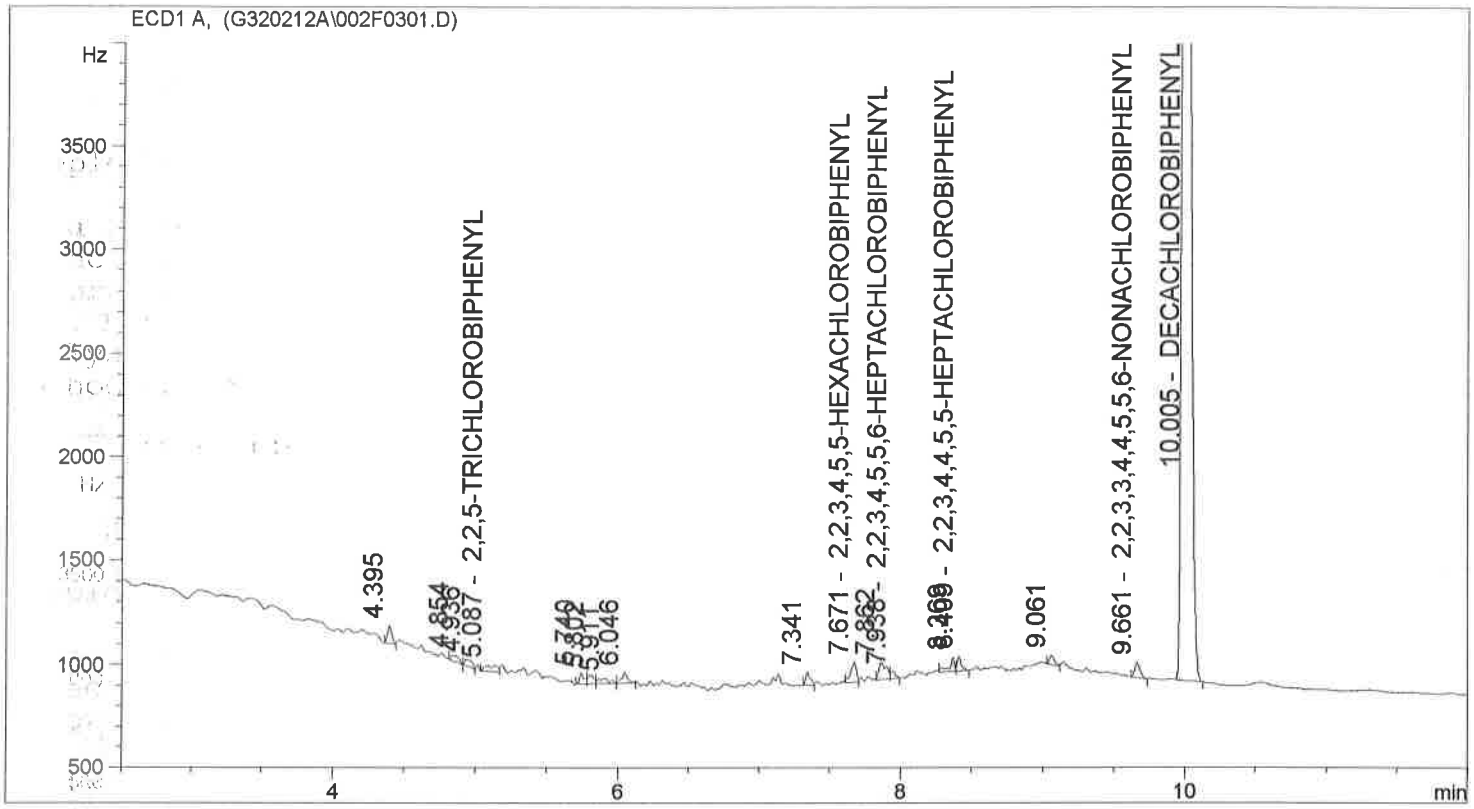


CalTbl R.T.	Actual R.T.	Congener Name	Peak Area
3.318	3.322	2-CHLOROBIPHENYL	591.8
4.599	4.602	2,3-DICHLOROBIPHENYL	5972.8
5.076	5.078	2,2,5-TRICHLOROBIPHENYL	3955.5
5.589	5.591	2,4,5-TRICHLOROBIPHENYL	2919.0
5.942	5.945	2,2,5,5-TETRACHLOROBIPHENYL	3950.5
6.128	6.131	2,2,3,5-TETRACHLOROBIPHENYL	5418.9
6.555	6.559	2,3,4,4-TETRACHLOROBIPHENYL	3946.2
6.780	6.785	2,2,4,5,5-PENTACHLOROBIPHENYL	3526.6
7.024	7.031	2,2,3,4,5-PENTACHLOROBIPHENYL	2164.6
7.107	7.114	2,3,3,4,6-PENTACHLOROBIPHENYL	4809.3
7.211	7.220	2,2,3,5,5,6-HEXACHLOROBIPHENYL	4165.8
7.565	7.581	2,2,4,4,5,5-HEXACHLOROBIPHENYL	4238.4
7.679	7.695	2,2,3,4,5,5-HEXACHLOROBIPHENYL	7196.2
7.807	7.826	2,2,3,4,4,5-HEXACHLOROBIPHENYL	6175.7
7.943	7.966	2,2,3,4,5,5,6-HEPTACHLOROBIPHENYL	5035.9
7.994	8.019	2,2,3,4,4,5,6-HEPTACHLOROBIPHENYL	5464.0
8.431	8.468	2,2,3,4,4,5,5-HEPTACHLOROBIPHENYL	10328.6
8.677	8.714	2,2,3,3,4,4,5-HEPTACHLOROBIPHENYL	5783.5
9.695	9.699	2,2,3,3,4,4,5,5,6-NONACHLOROBIPHENYL	6958.6
10.040	10.045	DECACHLOROBIPHENYL	12828.6

Comments: _____

Sample Name : METHOD BLANK Inst. GC #32Could not execute ->

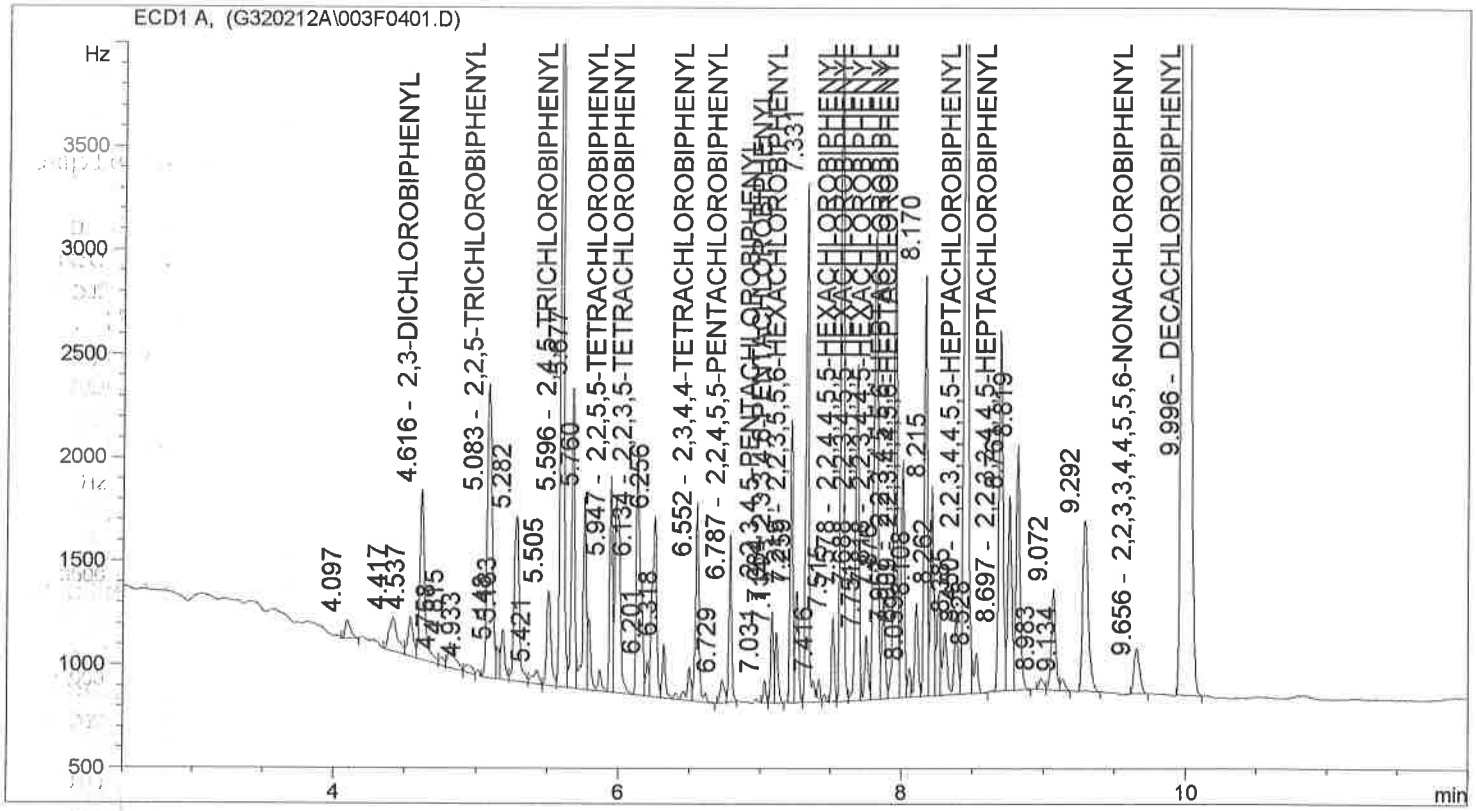
Data File : C:\HPCHEM\1\DATA\2019\G320212A\002F0301.D
Injection Date : 2/12/2019 1:38:38 PM Analyst ID. : NK ML AH
Report Created : 2/12/2019 3:38:16 PM Vial No. : 2
Acq. Method : CONF18C.M Sample Amt. : 2.5569
Analysis Method: C:\HPCHEM\1\METHODS\CONF18C.M Dilution : 1.0000
Method Modified: 2/12/2019 09:14:01 AM Multiplier : 1.0000



CalTbl R.T.	Actual R.T.	Congener Name	Peak Area
3.318	0.000	2-CHLOROBIPHENYL	0.0
4.599	0.000	2,3-DICHLOROBIPHENYL	0.0
5.076	5.087	2,2,5-TRICHLOROBIPHENYL	159.3
5.589	0.000	2,4,5-TRICHLOROBIPHENYL	0.0
5.942	0.000	2,2,5,5-TETRACHLOROBIPHENYL	0.0
6.128	0.000	2,2,3,5-TETRACHLOROBIPHENYL	0.0
6.555	0.000	2,3,4,4-TETRACHLOROBIPHENYL	0.0
6.780	0.000	2,2,4,5,5-PENTACHLOROBIPHENYL	0.0
7.024	0.000	2,2,3,4,5-PENTACHLOROBIPHENYL	0.0
7.107	0.000	2,3,3,4,6-PENTACHLOROBIPHENYL	0.0
7.211	0.000	2,2,3,5,5,6-HEXACHLOROBIPHENYL	0.0
7.565	0.000	2,2,4,4,5,5-HEXACHLOROBIPHENYL	0.0
7.679	7.671	2,2,3,4,5,5-HEXACHLOROBIPHENYL	262.9
7.807	0.000	2,2,3,4,4,5-HEXACHLOROBIPHENYL	0.0
7.943	7.938	2,2,3,4,5,5,6-HEPTACHLOROBIPHENYL	90.3
7.994	0.000	2,2,3,4,4,5,6-HEPTACHLOROBIPHENYL	0.0
8.431	8.409	2,2,3,4,4,5,5-HEPTACHLOROBIPHENYL	134.9
8.677	0.000	2,2,3,3,4,4,5-HEPTACHLOROBIPHENYL	0.0
9.695	9.661	2,2,3,3,4,4,5,5,6-NONACHLOROBIPHENYL	186.5
10.040	10.005	DECACHLOROBIPHENYL	31429.1

Comments: _____

Sample Name : MIDLVL TEST 1 Inst. GC #32Could not execute ->
1016/1260 2.50 UG/ML TOTAL PCB ->
Data File : C:\HPCHEM\1\DATA\2019\G320212A\003F0401.D
Injection Date : 2/12/2019 1:53:40 PM Analyst ID. : NK ML AH
Report Created : 2/12/2019 3:39:47 PM Vial No. : 3
Acq. Method : CONF18C.M Sample Amt. : 2.5604
Analysis Method: C:\HPCHEM\1\METHODS\CONF18C.M Dilution : 1.0000
Method Modified: 2/12/2019 09:14:01 AM Multiplier : 1.0000



CalTbl R.T.	Actual R.T.	Congener Name	Peak Area
3.318	0.000	2-CHLOROBIPHENYL	0.0
4.599	4.616	2,3-DICHLOROBIPHENYL	1910.3
5.076	5.083	2,2,5-TRICHLOROBIPHENYL	3465.8
5.589	5.596	2,4,5-TRICHLOROBIPHENYL	6344.3
5.942	5.947	2,2,5,5-TETRACHLOROBIPHENYL	2219.7
6.128	6.134	2,2,3,5-TETRACHLOROBIPHENYL	4824.5
6.555	6.552	2,3,4,4-TETRACHLOROBIPHENYL	1629.2
6.780	6.787	2,2,4,5,5-PENTACHLOROBIPHENYL	1107.9
7.024	7.031	2,2,3,4,5-PENTACHLOROBIPHENYL	134.4
7.107	7.114	2,3,3,4,6-PENTACHLOROBIPHENYL	503.6
7.211	7.219	2,2,3,5,5,6-HEXACHLOROBIPHENYL	1783.8
7.565	7.578	2,2,4,4,5,5-HEXACHLOROBIPHENYL	5529.7
7.679	7.688	2,2,3,4,5,5-HEXACHLOROBIPHENYL	2825.0
7.807	7.818	2,2,3,4,4,5-HEXACHLOROBIPHENYL	4661.6
7.943	7.957	2,2,3,4,5,5,6-HEPTACHLOROBIPHENYL	3750.1
7.994	8.009	2,2,3,4,4,5,6-HEPTACHLOROBIPHENYL	1812.7
8.431	8.450	2,2,3,4,4,5,5-HEPTACHLOROBIPHENYL	8470.9
8.677	8.697	2,2,3,3,4,4,5-HEPTACHLOROBIPHENYL	3495.2
9.695	9.656	2,2,3,3,4,4,5,5,6-NONACHLOROBIPHENYL	592.3
10.040	9.996	DECACHLOROBIPHENYL	31626.6

Comments: _____

Integration Results

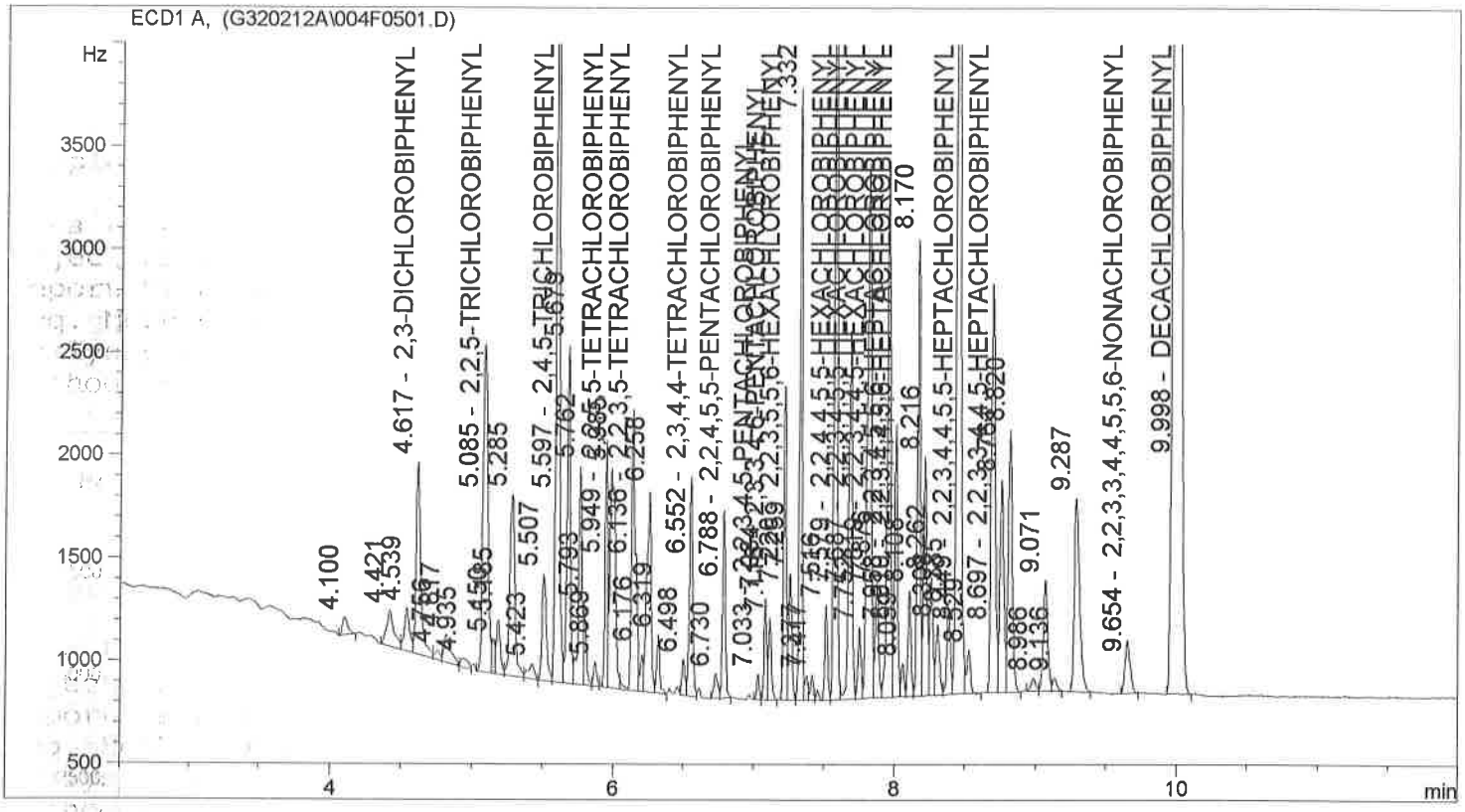
Signal 1: ECD1 A,
Integrated with enhanced integrator!

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
1	4.097	PP	219.28156	86.01561	0.0387	4.054	4.175
2	4.417	PV	652.98291	163.80342	0.0535	4.348	4.498
3	4.537	VV	484.65063	188.86525	0.0379	4.498	4.581
4	4.616	VB	1910.27515	821.73279	0.0341	4.581	4.732
5	4.758	BV	95.46949	39.60046	0.0361	4.732	4.784
6	4.815	VV	389.05109	120.95038	0.0445	4.784	4.906
7	4.933	VV	141.48738	38.13356	0.0503	4.906	4.993
8	5.083	VV	3465.84375	1428.29333	0.0383	5.033	5.136
9	5.148	VV	225.10078	151.93092	0.0223	5.136	5.163
10	5.183	VV	461.03329	241.07668	0.0283	5.163	5.225
11	5.282	VV	2011.72632	798.54474	0.0404	5.225	5.365
12	5.421	VP	208.59358	66.58980	0.0425	5.365	5.463
13	5.505	VV	977.77850	458.33200	0.0329	5.463	5.564
14	5.596	MF	6344.32227	4192.27588	0.0252	5.564	5.638
15	5.677	MF	2289.25952	1477.50891	0.0258	5.638	5.703
16	5.760	MF	1518.57190	944.69360	0.0268	5.703	5.777
17	5.947	MF	2219.69385	1064.34082	0.0348	5.777	5.967
18	6.134	MF	4824.50391	1204.57642	0.0668	5.967	6.184
19	6.201	MF	244.89059	169.51782	0.0241	6.184	6.216
20	6.256	MF	1919.70642	875.61200	0.0365	6.216	6.295
21	6.318	MF	753.44489	262.53647	0.0478	6.295	6.517
22	6.552	FM	1629.22131	967.16412	0.0281	6.517	6.678
23	6.729	BV	226.11646	110.39423	0.0289	6.695	6.761
24	6.787	VB	1107.85754	818.84045	0.0218	6.761	6.832
25	7.031	VV	134.44318	108.64242	0.0194	7.004	7.055
26	7.084	VV	567.72949	446.34549	0.0198	7.055	7.100
27	7.114	VB	503.55170	346.44699	0.0220	7.100	7.168
28	7.219	BV	1783.80286	1376.82361	0.0201	7.195	7.240
29	7.259	VV	926.24139	539.67609	0.0270	7.240	7.299
30	7.331	VV S	3702.42285	2519.62378	0.0231	7.299	7.546
31	7.416	VV X	111.81413	95.88457	0.0196	7.395	7.438
32	7.515	VV T	559.16327	405.93915	0.0211	7.486	7.546
33	7.578	MF	5529.72998	3708.70361	0.0249	7.546	7.626
34	7.688	MF	2825.03296	1635.07971	0.0288	7.626	7.710
35	7.751	MF	571.04095	310.94016	0.0306	7.710	7.784
36	7.818	MF	4661.57324	2272.22437	0.0342	7.784	7.853
37	7.876	MF	830.85071	494.50592	0.0280	7.853	7.908
38	7.957	MF	3750.11768	2295.21753	0.0272	7.908	7.987
39	8.009	MF	1812.67688	1159.43677	0.0261	7.987	8.038
40	8.059	MF	192.71051	141.66924	0.0227	8.038	8.070
41	8.108	MF	731.93768	452.86310	0.0269	8.070	8.135
42	8.170	MF	2868.15845	2068.68872	0.0231	8.135	8.191
43	8.215	MF	1689.58496	1021.01654	0.0276	8.191	8.237
44	8.262	MF	788.15918	499.80338	0.0263	8.237	8.274
45	8.385	FM	1365.63049	355.71576	0.0640	8.274	8.414
46	8.450	MF	8470.86621	4294.38867	0.0329	8.414	8.496
47	8.528	FM	393.73599	193.41525	0.0339	8.496	8.608
48	8.697	BV	3495.15234	1748.98560	0.0313	8.662	8.735
49	8.761	VV	1817.78503	938.87311	0.0286	8.735	8.792

Data File C:\HPCHEM\1\DATA\2019\G320212A\003F0401.D Sample Name: MIDLVL TEST 1

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
50	8.819	VP	2324.05933	1189.14197	0.0288	8.792	8.912
51	8.983	BV	109.08943	51.81343	0.0306	8.951	9.020
52	9.072	VV	1023.92584	489.22400	0.0304	9.020	9.116
53	9.134	VP	116.89491	54.77981	0.0329	9.116	9.188
54	9.292	BB	2214.82739	825.31897	0.0413	9.248	9.398
55	9.656	BB	592.28705	220.94180	0.0413	9.612	9.735
56	9.996	BB S	3.16266e4	1.09927e4	0.0416	9.935	10.115

Sample Name : MIDLVL TEST 2 Inst. GC #32Could not execute ->
1016/1260 2.51 UG/ML TOTAL PCB ->
Data File : C:\HPCHEM\1\DATA\2019\G320212A\004F0501.D
Injection Date : 2/12/2019 2:08:53 PM Analyst ID. : NK ML AH
Report Created : 2/12/2019 3:57:51 PM Vial No. : 4
Acq. Method : CONF18C.M Sample Amt. : 2.5437
Analysis Method: C:\HPCHEM\1\METHODS\CONF18C.M Dilution : 1.0000
Method Modified: 2/12/2019 09:14:01 AM Multiplier : 1.0000



CalTbl R.T.	Actual R.T.	Congener Name	Peak Area
3.318	0.000	2-CHLOROBIPHENYL	0.0
4.599	4.617	2,3-DICHLOROBIPHENYL	2145.2
5.076	5.085	2,2,5-TRICHLOROBIPHENYL	3903.6
5.589	5.597	2,4,5-TRICHLOROBIPHENYL	7159.9
5.942	5.949	2,2,5,5-TETRACHLOROBIPHENYL	1486.2
6.128	6.136	2,2,3,5-TETRACHLOROBIPHENYL	2722.1
6.555	6.552	2,3,4,4-TETRACHLOROBIPHENYL	1717.6
6.780	6.788	2,2,4,5,5-PENTACHLOROBIPHENYL	1235.4
7.024	7.033	2,2,3,4,5-PENTACHLOROBIPHENYL	151.4
7.107	7.116	2,3,3,4,6-PENTACHLOROBIPHENYL	559.5
7.211	7.220	2,2,3,5,5,6-HEXACHLOROBIPHENYL	2012.1
7.565	7.579	2,2,4,4,5,5-HEXACHLOROBIPHENYL	6188.2
7.679	7.687	2,2,3,4,5,5-HEXACHLOROBIPHENYL	3254.2
7.807	7.819	2,2,3,4,4,5-HEXACHLOROBIPHENYL	5262.1
7.943	7.958	2,2,3,4,5,5,6-HEPTACHLOROBIPHENYL	4186.9
7.994	8.010	2,2,3,4,4,5,6-HEPTACHLOROBIPHENYL	2061.4
8.431	8.449	2,2,3,4,4,5,5-HEPTACHLOROBIPHENYL	9534.3
8.677	8.697	2,2,3,3,4,4,5-HEPTACHLOROBIPHENYL	3896.9
9.695	9.654	2,2,3,3,4,4,5,5,6-NONACHLOROBIPHENYL	646.6
10.040	9.998	DECACHLOROBIPHENYL	31551.1

Comments: _____

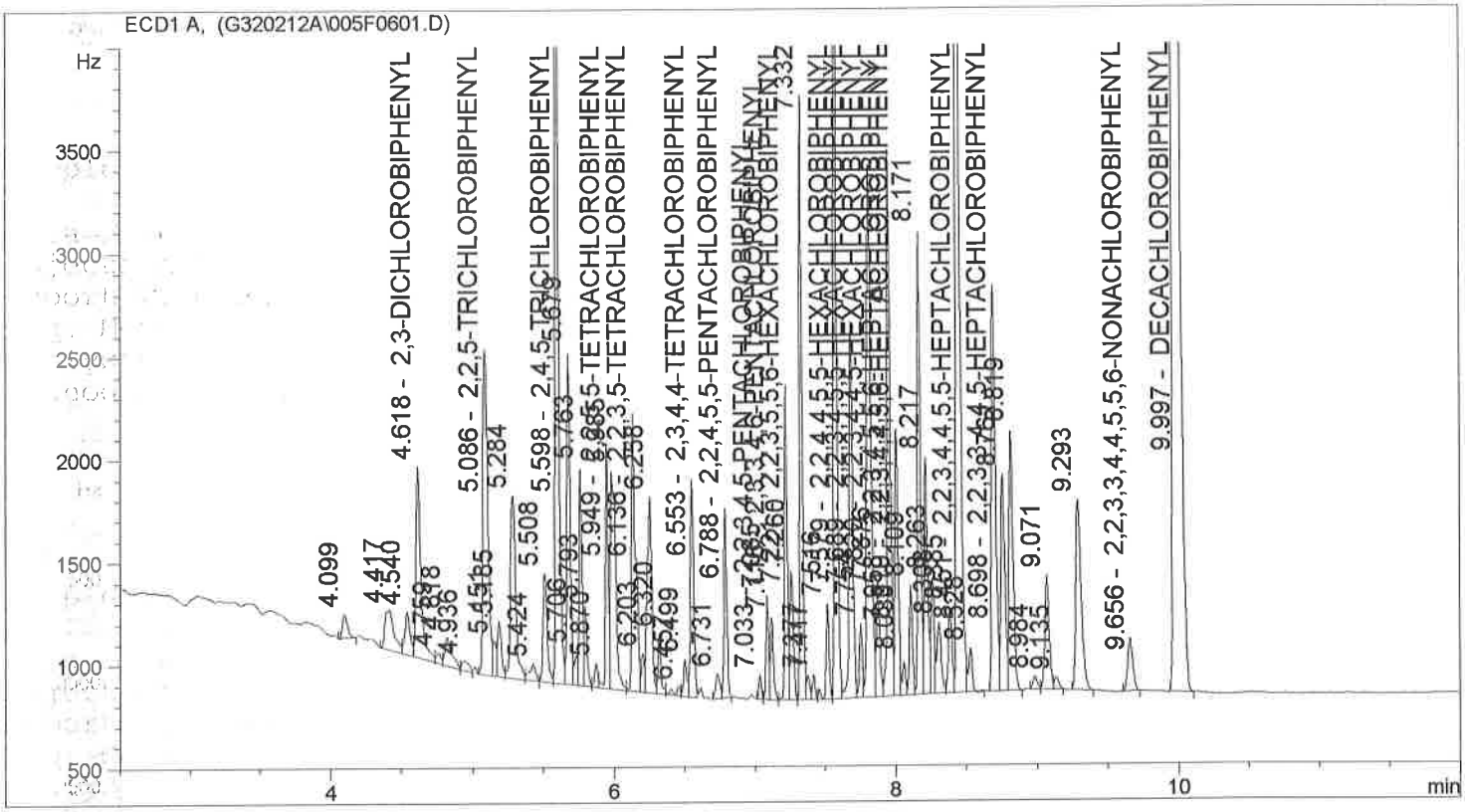
Integration Results

Signal 1: ECD1 A,
Integrated with enhanced integrator!

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
1	4.100	PP	220.48798	85.13038	0.0412	4.058	4.179
2	4.421	PV	649.51123	175.77051	0.0501	4.358	4.500
3	4.539	VV	537.30109	210.19092	0.0368	4.500	4.582
4	4.617	VB	2145.22852	939.72986	0.0336	4.582	4.722
5	4.756	BV	128.75856	46.09942	0.0396	4.722	4.786
6	4.817	VV	442.62164	135.98155	0.0460	4.786	4.908
7	4.935	VV	160.50795	42.76907	0.0488	4.908	4.994
8	5.085	VV	3903.56519	1598.11487	0.0395	5.034	5.138
9	5.150	VV	247.10307	169.33945	0.0210	5.138	5.165
10	5.185	VV	509.33694	266.72220	0.0273	5.165	5.227
11	5.285	VV	2252.36987	884.38312	0.0397	5.227	5.367
12	5.423	VP	224.96477	73.44863	0.0417	5.367	5.465
13	5.507	VV	1093.71252	520.10645	0.0325	5.465	5.565
14	5.597	MF	7159.91162	4628.61914	0.0258	5.565	5.644
15	5.679	MF	2612.53955	1653.10315	0.0263	5.644	5.715
16	5.762	MF	1852.94482	1066.95215	0.0289	5.715	5.789
17	5.793	MF	415.20193	396.60425	0.0174	5.789	5.846
18	5.869	FM	184.78606	117.60336	0.0262	5.846	5.903
19	5.949	MF	1486.23230	1209.44592	0.0205	5.903	5.960
20	5.985	MF	2853.16284	1066.78162	0.0446	5.960	6.048
21	6.136	MF	2722.07544	1373.33594	0.0330	6.048	6.176
22	6.176	MF	283.80057	210.01286	0.0225	6.176	6.213
23	6.258	MF	2168.99976	991.46112	0.0365	6.213	6.294
24	6.319	FM	421.29956	287.43835	0.0244	6.294	6.379
25	6.498	VV	266.72067	177.59770	0.0215	6.476	6.522
26	6.552	VV	1717.64453	1067.45178	0.0238	6.522	6.595
27	6.730	PV	235.87634	121.08139	0.0277	6.697	6.762
28	6.788	VB	1235.37891	915.11011	0.0207	6.762	6.839
29	7.033	VV	151.38069	125.05295	0.0191	7.005	7.056
30	7.084	VV	634.90607	501.73413	0.0198	7.056	7.101
31	7.116	VB	559.51392	398.25583	0.0214	7.101	7.169
32	7.220	BV	2012.13379	1549.81006	0.0201	7.195	7.242
33	7.259	VV	1051.21362	617.46405	0.0269	7.242	7.300
34	7.332	MF	3868.33911	2991.10449	0.0216	7.300	7.361
35	7.377	MF	164.94246	118.60519	0.0232	7.361	7.391
36	7.417	MF	173.86296	124.96206	0.0232	7.391	7.435
37	7.516	FM	712.92334	465.05481	0.0255	7.435	7.547
38	7.579	MF	6188.15234	4160.92773	0.0248	7.547	7.617
39	7.687	MF	3254.17676	1813.69067	0.0299	7.617	7.724
40	7.752	MF	533.57977	347.32446	0.0256	7.724	7.775
41	7.819	MF	5262.09521	2608.75073	0.0336	7.775	7.852
42	7.876	FM	936.35895	562.70343	0.0277	7.852	7.909
43	7.958	MF	4186.87500	2610.04028	0.0267	7.909	7.987
44	8.010	MF	2061.38037	1340.41992	0.0256	7.987	8.044
45	8.059	MF	221.42754	160.98271	0.0229	8.044	8.081
46	8.108	FM	804.82135	520.73846	0.0258	8.081	8.139
47	8.170	VV S	3271.46582	2233.65112	0.0231	8.139	8.196
48	8.216	VV S	1925.31628	1161.75769	0.0243	8.196	8.244
49	8.262	MF	913.91412	576.69702	0.0264	8.244	8.286

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
50	8.308	MF	650.54926	344.60797	0.0315	8.286	8.343
51	8.385	FM	762.84076	413.45654	0.0308	8.343	8.414
52	8.449	MF	9534.32715	4818.44238	0.0330	8.414	8.501
53	8.529	FM	389.60049	212.01083	0.0306	8.501	8.616
54	8.697	BV	3896.94727	2003.14783	0.0307	8.662	8.735
55	8.761	VV	2020.75342	1036.31616	0.0297	8.735	8.791
56	8.820	VP	2575.72217	1281.11621	0.0305	8.791	8.899
57	8.986	BV	141.25063	61.71964	0.0357	8.936	9.025
58	9.071	VV	1147.55444	543.82758	0.0316	9.025	9.114
59	9.136	VB	133.25273	62.46691	0.0319	9.114	9.186
60	9.287	BB	2482.45117	944.21112	0.0407	9.249	9.392
61	9.654	BB	646.64050	257.82941	0.0353	9.609	9.729
62	9.998	BB S	3.15511e4	1.05511e4	0.0469	9.935	10.106

Sample Name : MIDLVL TEST 3 Inst. GC #32Could not execute ->
1016/1260 2.51 UG/ML TOTAL PCB ->
Data File : C:\HPCHEM\1\DATA\2019\G320212A\005F0601.D
Injection Date : 2/12/2019 2:23:58 PM Analyst ID. : NK ML AH
Report Created : 2/12/2019 4:32:58 PM Vial No. : 5
Acq. Method : CONF18C.M Sample Amt. : 2.5477
Analysis Method: C:\HPCHEM\1\METHODS\CONF18C.M Dilution : 1.0000
Method Modified: 2/12/2019 09:14:01 AM Multiplier : 1.0000



CalTbl R.T.	Actual R.T.	Congener Name	Peak Area
3.318	0.000	2-CHLOROBIPHENYL	0.0
4.599	4.618	2,3-DICHLOROBIPHENYL	2180.2
5.076	5.086	2,2,5-TRICHLOROBIPHENYL	3886.5
5.589	5.598	2,4,5-TRICHLOROBIPHENYL	7138.6
5.942	5.949	2,2,5,5-TETRACHLOROBIPHENYL	1675.6
6.128	6.136	2,2,3,5-TETRACHLOROBIPHENYL	2696.0
6.555	6.553	2,3,4,4-TETRACHLOROBIPHENYL	1683.0
6.780	6.788	2,2,4,5,5-PENTACHLOROBIPHENYL	1233.7
7.024	7.033	2,2,3,4,5-PENTACHLOROBIPHENYL	149.0
7.107	7.116	2,3,3,4,6-PENTACHLOROBIPHENYL	580.7
7.211	7.221	2,2,3,5,5,6-HEXACHLOROBIPHENYL	2008.6
7.565	7.579	2,2,4,4,5,5-HEXACHLOROBIPHENYL	6184.7
7.679	7.689	2,2,3,4,5,5-HEXACHLOROBIPHENYL	3334.2
7.807	7.820	2,2,3,4,4,5-HEXACHLOROBIPHENYL	5339.9
7.943	7.958	2,2,3,4,5,5,6-HEPTACHLOROBIPHENYL	4183.3
7.994	8.010	2,2,3,4,4,5,6-HEPTACHLOROBIPHENYL	1989.7
8.431	8.451	2,2,3,4,4,5,5-HEPTACHLOROBIPHENYL	9494.1
8.677	8.698	2,2,3,3,4,4,5-HEPTACHLOROBIPHENYL	3890.5
9.695	9.656	2,2,3,3,4,4,5,5,6-NONACHLOROBIPHENYL	641.7
10.040	9.997	DECACHLOROBIPHENYL	30930.7

Comments: _____

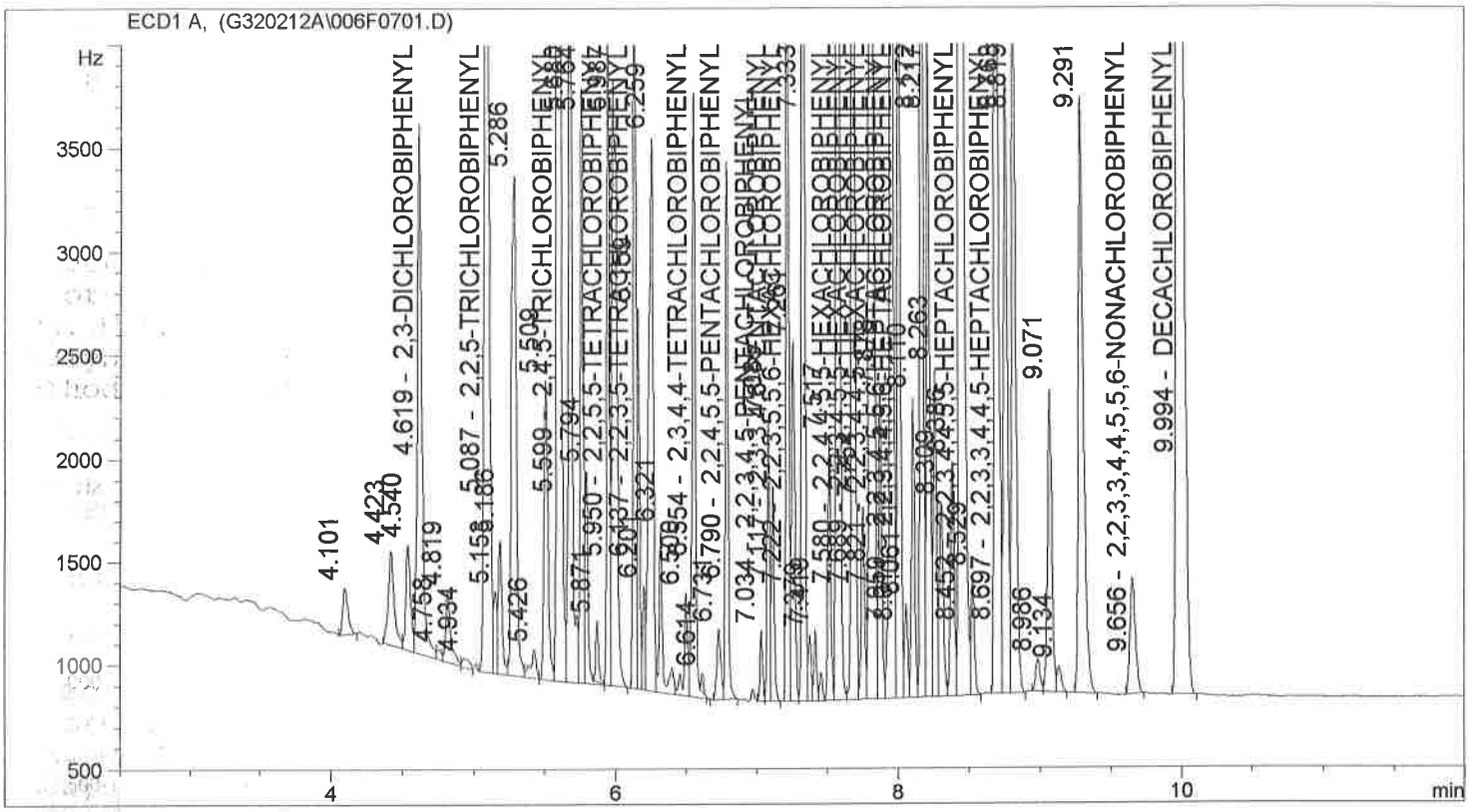
Integration Results

Signal 1: ECD1 A,
Integrated with enhanced integrator!

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
1	1.707	PB	467.48682	70.43584	0.0874	1.581	1.828
2	4.099	PP	271.72549	113.61549	0.0359	4.056	4.181
3	4.417	PV	857.31512	193.55592	0.0577	4.351	4.501
4	4.540	VV	535.77905	208.11871	0.0380	4.501	4.583
5	4.618	VB	2180.17603	927.31763	0.0344	4.583	4.734
6	4.759	BV	114.35490	48.26291	0.0346	4.734	4.787
7	4.818	VV	444.45450	137.92242	0.0446	4.787	4.909
8	4.936	VV	165.65237	43.80401	0.0511	4.909	4.996
9	5.086	VV	3886.45337	1588.21313	0.0395	5.036	5.138
10	5.151	VV	261.45480	171.76108	0.0228	5.138	5.166
11	5.185	VV	520.39447	270.03931	0.0285	5.166	5.228
12	5.284	VV	2313.24316	889.02277	0.0414	5.228	5.368
13	5.424	VP	242.61000	81.48936	0.0397	5.368	5.465
14	5.508	VV	1086.73901	526.90118	0.0321	5.465	5.566
15	5.598	MF	7138.63428	4710.20020	0.0253	5.566	5.647
16	5.679	MF	2517.27832	1632.76978	0.0257	5.647	5.706
17	5.706	MF	272.52933	171.03009	0.0266	5.706	5.742
18	5.763	MF	1521.66553	1069.68921	0.0237	5.742	5.782
19	5.793	MF	565.48169	393.76355	0.0239	5.782	5.837
20	5.870	MF	170.01787	118.01495	0.0240	5.837	5.886
21	5.949	MF	1675.58105	1218.85461	0.0229	5.886	5.968
22	5.985	MF	2734.19897	1064.83862	0.0428	5.968	6.085
23	6.136	MF	2695.99756	1374.39087	0.0327	6.085	6.180
24	6.203	MF	286.83203	188.27164	0.0254	6.180	6.216
25	6.258	MF	2157.53345	956.05444	0.0376	6.216	6.298
26	6.320	MF	424.94958	295.12775	0.0240	6.298	6.361
27	6.457	MF	121.42578	46.12384	0.0439	6.361	6.469
28	6.499	MF	324.99030	182.28365	0.0297	6.469	6.528
29	6.553	MF	1682.97620	1066.10706	0.0263	6.528	6.587
30	6.731	BV	255.54904	122.59290	0.0283	6.696	6.763
31	6.788	VB	1233.72791	922.79333	0.0206	6.763	6.831
32	7.033	VV	148.98160	119.31965	0.0196	7.008	7.057
33	7.085	VV	637.04651	506.01581	0.0197	7.057	7.101
34	7.116	VP	580.70630	403.21115	0.0208	7.101	7.164
35	7.221	VV	2008.61633	1533.25684	0.0203	7.164	7.242
36	7.260	VV	1038.79993	624.96930	0.0264	7.242	7.300
37	7.332	MF	3852.31055	2984.70654	0.0215	7.300	7.359
38	7.377	MF	190.65115	116.50178	0.0273	7.359	7.400
39	7.417	MF	161.05870	121.46619	0.0221	7.400	7.445
40	7.516	FM	702.99109	467.76306	0.0250	7.445	7.547
41	7.579	MF	6184.65869	4151.59131	0.0248	7.547	7.617
42	7.689	MF	3334.18359	1841.63318	0.0302	7.617	7.721
43	7.754	MF	525.99500	362.57599	0.0242	7.721	7.771
44	7.820	MF	5339.86670	2617.69287	0.0340	7.771	7.856
45	7.876	FM	936.55743	572.38531	0.0273	7.856	7.911
46	7.958	MF	4183.25879	2668.95752	0.0261	7.911	7.988
47	8.010	MF	1989.68640	1306.51746	0.0254	7.988	8.033
48	8.033	MF	275.26770	186.57903	0.0246	8.033	8.078
49	8.109	MF	801.68231	539.57379	0.0248	8.078	8.132

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
50	8.171	MF	3259.26343	2258.10254	0.0241	8.132	8.194
51	8.217	MF	2024.42981	1155.72266	0.0292	8.194	8.248
52	8.263	MF	782.52679	567.13141	0.0230	8.248	8.280
53	8.308	MF	750.38208	347.19955	0.0360	8.280	8.356
54	8.385	FM	750.01691	414.45746	0.0302	8.356	8.415
55	8.451	MF	9494.10449	4903.84229	0.0323	8.415	8.501
56	8.528	FM	377.64505	210.36223	0.0299	8.501	8.624
57	8.698	BV	3890.47510	1971.00208	0.0310	8.661	8.736
58	8.761	VV	2001.57495	1052.59949	0.0292	8.736	8.791
59	8.819	VP	2569.40698	1271.20801	0.0306	8.791	8.894
60	8.984	BV	139.28589	64.57514	0.0302	8.950	9.022
61	9.071	VV	1146.67017	556.70471	0.0310	9.022	9.115
62	9.135	VB	130.64725	60.30545	0.0313	9.115	9.181
63	9.293	BB	2479.17847	925.76233	0.0402	9.247	9.394
64	9.656	BP	641.65228	257.53885	0.0391	9.610	9.728
65	9.997	BB S	3.09307e4	1.09504e4	0.0460	9.937	10.104

Sample Name : HGHLVL TEST 1 Inst. GC #32Could not execute ->
1016/1260 7.43 UG/ML TOTAL PCB ->
Data File : C:\HPCHEM\1\DATA\2019\G320212A\006F0701.D
Injection Date : 2/12/2019 2:39:05 PM Analyst ID. : NK ML AH
Report Created : 2/13/2019 8:20:28 AM Vial No. : 6
Acq. Method : CONF18C.M Sample Amt. : 2.5533
Analysis Method: C:\HPCHEM\1\METHODS\CONF18C.M Dilution : 1.0000
Method Modified: 2/12/2019 09:14:01 AM Multiplier : 1.0000



CalTbl R.T.	Actual R.T.	Congener Name	Peak Area
3.318	0.000	2-CHLOROBIPHENYL	0.0
4.599	4.619	2,3-DICHLOROBIPHENYL	5543.9
5.076	5.087	2,2,5-TRICHLOROBIPHENYL	10548.4
5.589	5.599	2,4,5-TRICHLOROBIPHENYL	20277.5
5.942	5.950	2,2,5,5-TETRACHLOROBIPHENYL	4369.9
6.128	6.137	2,2,3,5-TETRACHLOROBIPHENYL	5491.0
6.555	6.554	2,3,4,4-TETRACHLOROBIPHENYL	4769.3
6.780	6.790	2,2,4,5,5-PENTACHLOROBIPHENYL	3440.8
7.024	7.034	2,2,3,4,5-PENTACHLOROBIPHENYL	424.7
7.107	7.117	2,3,3,4,6-PENTACHLOROBIPHENYL	1438.8
7.211	7.222	2,2,3,5,5,6-HEXACHLOROBIPHENYL	5630.1
7.565	7.580	2,2,4,4,5,5-HEXACHLOROBIPHENYL	17534.2
7.679	7.689	2,2,3,4,5,5-HEXACHLOROBIPHENYL	8912.5
7.807	7.821	2,2,3,4,4,5-HEXACHLOROBIPHENYL	14872.5
7.943	7.959	2,2,3,4,5,5,6-HEPTACHLOROBIPHENYL	11745.4
7.994	8.011	2,2,3,4,4,5,6-HEPTACHLOROBIPHENYL	5873.4
8.431	8.452	2,2,3,4,4,5,5-HEPTACHLOROBIPHENYL	27635.5
8.677	8.697	2,2,3,3,4,4,5-HEPTACHLOROBIPHENYL	11131.2
9.695	9.656	2,2,3,3,4,4,5,5,6-NONACHLOROBIPHENYL	1510.2
10.040	9.994	DECACHLOROBIPHENYL	30999.3

Comments: _____

Integration Results

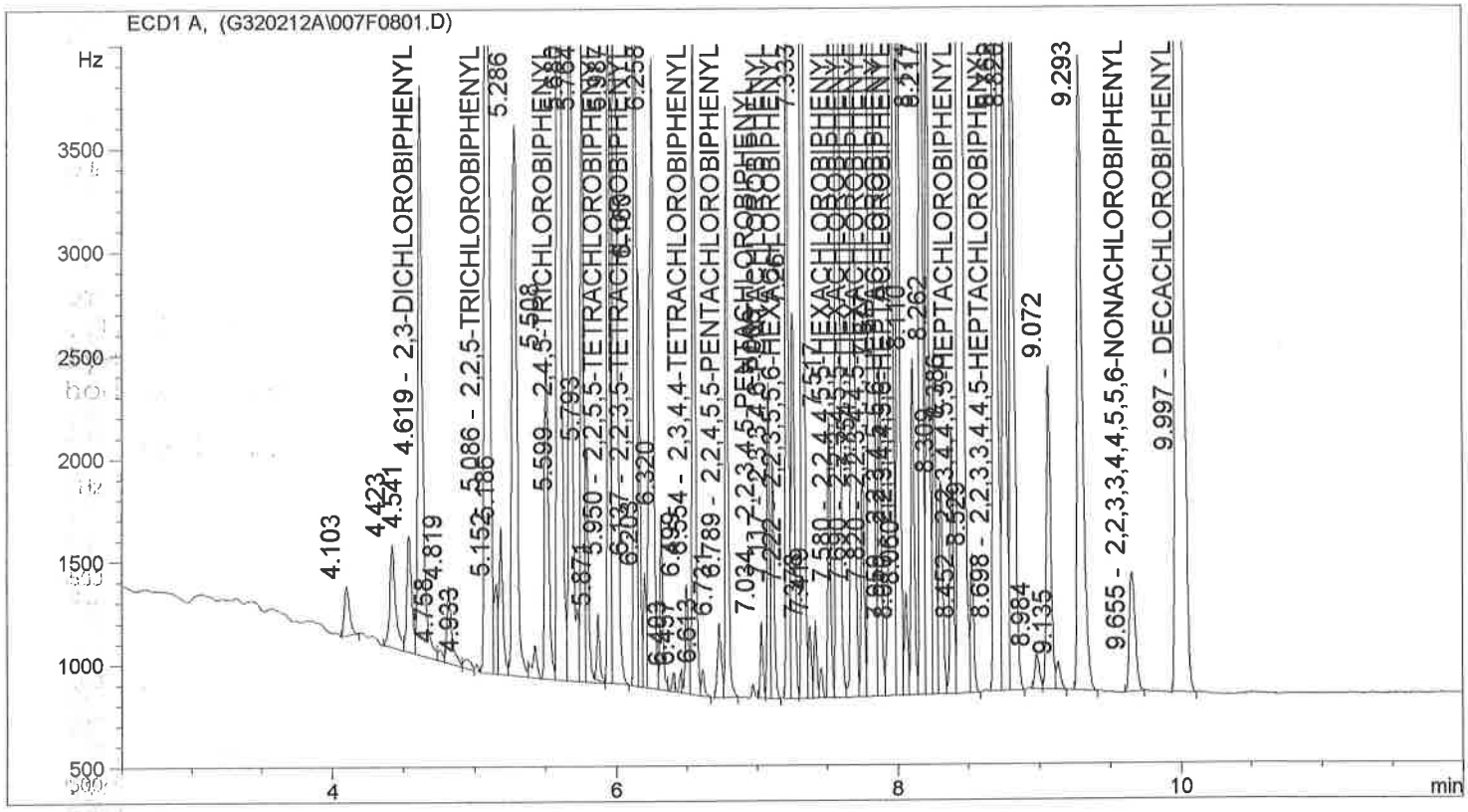
Signal 1: ECD1 A,
Integrated with enhanced integrator!

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
1	4.101	PP	578.88849	227.30658	0.0377	4.061	4.185
2	4.423	PV	1314.40527	456.91455	0.0416	4.365	4.501
3	4.540	VV	1163.56470	514.95923	0.0344	4.501	4.583
4	4.619	VV	5543.91943	2562.01025	0.0322	4.583	4.736
5	4.758	VV	122.28707	51.04200	0.0370	4.736	4.786
6	4.819	VV	841.33929	339.45026	0.0359	4.786	4.909
7	4.934	VV	164.96852	42.70076	0.0511	4.909	4.996
8	5.087	MF	1.05484e4	4492.39941	0.0391	5.037	5.138
9	5.153	MF	637.28259	398.73392	0.0266	5.138	5.168
10	5.186	MF	1184.28345	652.55292	0.0302	5.168	5.242
11	5.286	MF	5871.58105	2428.52100	0.0403	5.242	5.360
12	5.426	MF	371.70755	138.98071	0.0446	5.360	5.460
13	5.509	FM	2872.22339	1450.82092	0.0330	5.460	5.565
14	5.599	VV S	2.02775e4	1.31480e4	0.0240	5.565	5.651
15	5.680	VV S	7620.19336	4654.99170	0.0251	5.651	5.739
16	5.764	VV S	4271.63330	2911.23828	0.0231	5.739	5.785
17	5.794	VV S	1476.25964	1038.83069	0.0206	5.785	5.922
18	5.871	BV T	415.74365	296.68631	0.0213	5.845	5.922
19	5.950	VV S	4369.91309	3368.66577	0.0201	5.922	5.969
20	5.987	VB S	7362.31787	2955.32349	0.0346	5.969	6.085
21	6.137	BV S	5490.95264	3832.35425	0.0217	6.109	6.156
22	6.159	MF	1862.03015	1840.00220	0.0169	6.156	6.188
23	6.201	MF	609.51996	508.52512	0.0200	6.188	6.214
24	6.259	MF	5955.37891	2687.82886	0.0369	6.214	6.288
25	6.321	MF	1407.86426	795.04315	0.0295	6.288	6.423
26	6.500	FM	908.32715	504.65790	0.0300	6.423	6.523
27	6.554	VB S	4769.34863	2948.15186	0.0249	6.523	6.672
28	6.614	BB T	101.05561	90.01710	0.0181	6.597	6.642
29	6.731	BV	666.82288	340.89685	0.0268	6.695	6.764
30	6.790	VB S	3440.79126	2621.75049	0.0203	6.764	6.865
31	7.034	VV	424.74380	343.45239	0.0184	7.005	7.059
32	7.085	VV	1695.22473	1371.80212	0.0194	7.059	7.102
33	7.117	VP	1438.82568	1057.16016	0.0209	7.102	7.169
34	7.222	BV S	5630.11523	4326.78564	0.0202	7.195	7.243
35	7.261	VV S	2926.38110	1742.12402	0.0266	7.243	7.301
36	7.333	MF	1.07184e4	8477.65234	0.0211	7.301	7.363
37	7.379	MF	435.49200	319.56113	0.0227	7.363	7.396
38	7.419	MF	450.55847	342.97971	0.0219	7.396	7.439
39	7.517	FM	1984.59424	1283.68420	0.0258	7.439	7.548
40	7.580	VV S	1.75342e4	1.18579e4	0.0233	7.548	7.637
41	7.689	MF	8912.54102	5225.70264	0.0284	7.637	7.722
42	7.754	FM	1526.08301	950.20361	0.0268	7.722	7.780
43	7.821	VV S	1.48725e4	7398.33057	0.0335	7.780	7.857
44	7.878	VV S	2305.43970	1489.15723	0.0241	7.857	7.909
45	7.959	VV S	1.17454e4	7461.59473	0.0244	7.909	7.988
46	8.011	MF	5873.38916	3693.72510	0.0265	7.988	8.043
47	8.061	MF	673.76447	462.07574	0.0243	8.043	8.084
48	8.110	FM	2254.24390	1462.31152	0.0257	8.084	8.141
49	8.172	VV S	9280.38574	6663.70752	0.0212	8.141	8.197

Data File C:\HPCHEM\1\DATA\2019\G320212A\006F0701.D Sample Name: HGHLVL TEST 1

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
50	8.217	VV S	5371.89746	3314.92822	0.0239	8.197	8.245
51	8.263	VV S	2512.32275	1590.40601	0.0263	8.245	8.287
52	8.309	MF	1774.16980	941.54547	0.0314	8.287	8.350
53	8.386	FM	2096.70361	1144.33655	0.0305	8.350	8.415
54	8.452	VV S	2.76355e4	1.42977e4	0.0306	8.415	8.511
55	8.529	VB S	959.64667	589.67090	0.0271	8.511	8.586
56	8.697	BV S	1.11312e4	5712.55029	0.0287	8.659	8.736
57	8.763	VV S	5712.29834	2999.24487	0.0292	8.736	8.792
58	8.819	VB S	7323.96240	3876.57080	0.0270	8.792	8.898
59	8.986	BV	340.28729	153.40341	0.0339	8.947	9.025
60	9.071	VV	2989.43262	1474.27307	0.0317	9.025	9.117
61	9.134	VB	255.75294	125.12741	0.0308	9.117	9.189
62	9.291	BP	7032.01221	2889.94556	0.0344	9.245	9.405
63	9.656	BB	1510.23230	560.66833	0.0414	9.609	9.735
64	9.994	BB S	3.09993e4	1.09350e4	0.0401	9.935	10.110

Sample Name : HGHLVL TEST 2 Inst. GC #32Could not execute ->
1016/1260 7.47 UG/ML TOTAL PCB ->
Data File : C:\HPCHEM\1\DATA\2019\G320212A\007F0801.D
Injection Date : 2/12/2019 2:54:08 PM Analyst ID. : NK ML AH
Report Created : 2/13/2019 8:28:55 AM Vial No. : 7
Acq. Method : CONF18C.M Sample Amt. : 2.5383
Analysis Method: C:\HPCHEM\1\METHODS\CONF18C.M Dilution : 1.0000
Method Modified: 2/12/2019 09:14:01 AM Multiplier : 1.0000



CalTbl R.T.	Actual R.T.	Congener Name	Peak Area
3.318	0.000	2-CHLOROBIPHENYL	0.0
4.599	4.619	2,3-DICHLOROBIPHENYL	6096.6
5.076	5.086	2,2,5-TRICHLOROBIPHENYL	11428.2
5.589	5.599	2,4,5-TRICHLOROBIPHENYL	22316.9
5.942	5.950	2,2,5,5-TETRACHLOROBIPHENYL	4803.6
6.128	6.137	2,2,3,5-TETRACHLOROBIPHENYL	6011.4
6.555	6.554	2,3,4,4-TETRACHLOROBIPHENYL	5136.7
6.780	6.789	2,2,4,5,5-PENTACHLOROBIPHENYL	3783.9
7.024	7.034	2,2,3,4,5-PENTACHLOROBIPHENYL	462.4
7.107	7.117	2,3,3,4,6-PENTACHLOROBIPHENYL	1577.1
7.211	7.222	2,2,3,5,5,6-HEXACHLOROBIPHENYL	6183.1
7.565	7.580	2,2,4,4,5,5-HEXACHLOROBIPHENYL	19292.8
7.679	7.690	2,2,3,4,5,5-HEXACHLOROBIPHENYL	9879.4
7.807	7.820	2,2,3,4,4,5-HEXACHLOROBIPHENYL	16402.4
7.943	7.959	2,2,3,4,5,5,6-HEPTACHLOROBIPHENYL	12929.5
7.994	8.010	2,2,3,4,4,5,6-HEPTACHLOROBIPHENYL	6402.5
8.431	8.452	2,2,3,4,4,5,5-HEPTACHLOROBIPHENYL	30430.8
8.677	8.698	2,2,3,3,4,4,5-HEPTACHLOROBIPHENYL	12254.7
9.695	9.655	2,2,3,3,4,4,5,5,6-NONACHLOROBIPHENYL	1647.3
10.040	9.997	DECACHLOROBIPHENYL	31412.8

Comments: _____

Integration Results

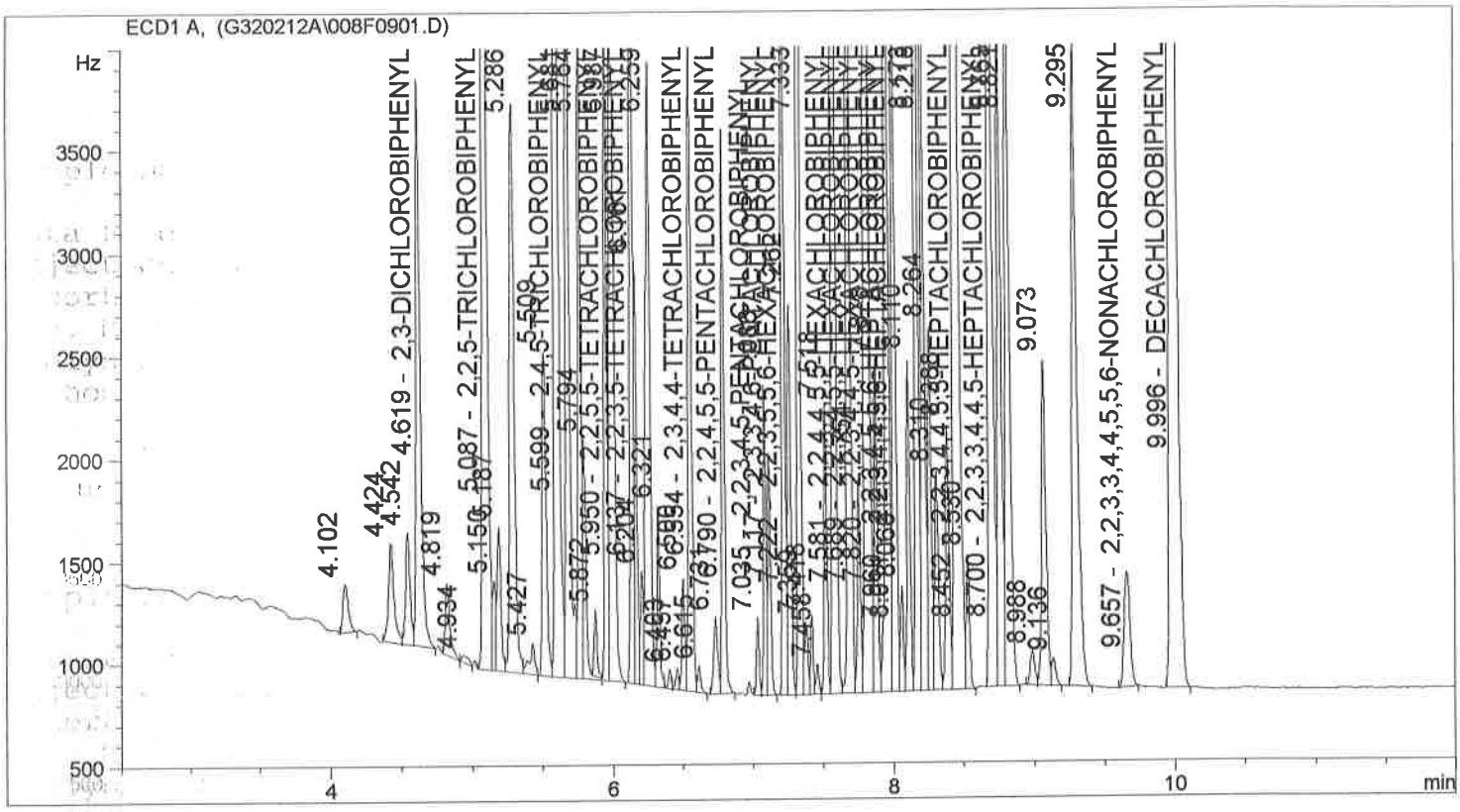
Signal 1: ECD1 A,
Integrated with enhanced integrator!

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
1	4.103	PB	592.79089	236.72856	0.0382	4.062	4.189
2	4.423	PV	1373.81238	497.26843	0.0392	4.363	4.504
3	4.541	VV	1275.97571	565.24170	0.0343	4.504	4.584
4	4.619	VV	6096.64502	2758.50073	0.0328	4.584	4.740
5	4.758	VV	120.30478	54.39656	0.0318	4.740	4.787
6	4.819	VV	906.53253	370.99109	0.0355	4.787	4.909
7	4.933	VV	174.00038	43.78550	0.0514	4.909	4.996
8	5.086	MF	1.14282e4	4822.61963	0.0395	5.036	5.133
9	5.152	MF	682.87073	435.87146	0.0261	5.133	5.162
10	5.186	MF	1387.47778	714.90112	0.0323	5.162	5.234
11	5.286	MF	6539.65723	2673.33228	0.0408	5.234	5.377
12	5.508	FM	3503.93823	1573.58679	0.0371	5.377	5.565
13	5.599	VV S	2.23169e4	1.47106e4	0.0237	5.565	5.651
14	5.680	VV S	8388.80078	5155.71045	0.0240	5.651	5.739
15	5.764	VV S	4675.71631	3265.24390	0.0217	5.739	5.784
16	5.793	VV S	1659.08154	1138.10706	0.0220	5.784	5.919
17	5.871	BV T	462.43048	322.26508	0.0227	5.845	5.919
18	5.950	VV S	4803.64307	3745.15015	0.0200	5.919	5.968
19	5.987	VB S	8166.18750	3190.59790	0.0409	5.968	6.086
20	6.137	BV S	6011.35254	4359.17773	0.0211	6.109	6.156
21	6.160	MF	2044.09204	2043.04980	0.0171	6.156	6.185
22	6.203	MF	821.41595	558.56409	0.0245	6.185	6.219
23	6.258	MF	6486.78076	3087.33594	0.0350	6.219	6.295
24	6.320	MF	1193.31653	864.98590	0.0230	6.295	6.362
25	6.403	MF	118.73530	92.33852	0.0214	6.362	6.413
26	6.457	MF	134.67508	102.77019	0.0218	6.413	6.463
27	6.499	FM	833.55121	533.68359	0.0260	6.463	6.523
28	6.554	MF	5136.65137	3301.51392	0.0259	6.523	6.594
29	6.613	FM	198.22437	127.05647	0.0260	6.594	6.673
30	6.731	BV	720.55969	364.04034	0.0281	6.696	6.763
31	6.789	VB S	3783.87305	2869.30542	0.0204	6.763	6.866
32	7.034	VV	462.39194	373.79526	0.0194	7.006	7.059
33	7.086	VV	1868.51709	1537.10815	0.0182	7.059	7.102
34	7.117	VP	1577.14221	1159.05261	0.0209	7.102	7.169
35	7.222	BV S	6183.07764	4800.06445	0.0210	7.193	7.243
36	7.261	VV S	3205.98901	1881.17871	0.0284	7.243	7.302
37	7.333	MF	1.18050e4	9285.97266	0.0212	7.302	7.364
38	7.378	MF	471.39267	354.11450	0.0222	7.364	7.398
39	7.419	MF	484.95374	379.76437	0.0213	7.398	7.439
40	7.517	FM	2181.55151	1376.65637	0.0264	7.439	7.548
41	7.580	VV S	1.92928e4	1.30219e4	0.0233	7.548	7.636
42	7.690	MF	9879.42480	5806.94727	0.0284	7.636	7.725
43	7.754	FM	1662.32495	1080.10327	0.0257	7.725	7.780
44	7.820	VV S	1.64024e4	8255.96094	0.0292	7.780	7.857
45	7.877	VV S	2550.36816	1609.11780	0.0245	7.857	7.909
46	7.959	VV S	1.29295e4	8220.54102	0.0243	7.909	7.988
47	8.010	MF	6402.54785	4117.07959	0.0259	7.988	8.039
48	8.060	MF	753.99774	497.85138	0.0252	8.039	8.078
49	8.110	FM	2529.34277	1639.76245	0.0257	8.078	8.141

Data File C:\HPCHEM\1\DATA\2019\G320212A\007F0801.D Sample Name: HGHLVL TEST 2

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
50	8.171	VV S	1.02546e4	6986.32764	0.0231	8.141	8.197
51	8.217	VV S	5897.76660	3666.04370	0.0238	8.197	8.244
52	8.262	VV S	2776.54980	1677.98303	0.0253	8.244	8.286
53	8.309	MF	1953.46094	1036.69458	0.0314	8.286	8.346
54	8.386	FM	2327.91064	1295.97754	0.0299	8.346	8.415
55	8.452	VV S	3.04308e4	1.58172e4	0.0304	8.415	8.511
56	8.529	VB S	1046.21069	675.48755	0.0231	8.511	8.584
57	8.698	BV S	1.22547e4	6295.88330	0.0307	8.659	8.735
58	8.762	VV S	6284.00146	3311.99194	0.0281	8.735	8.792
59	8.820	VB S	8068.72998	3818.72656	0.0337	8.792	8.898
60	8.984	BV	366.51212	166.63324	0.0337	8.950	9.025
61	9.072	VV	3271.71265	1569.50854	0.0323	9.025	9.116
62	9.135	VB	274.74393	134.13602	0.0299	9.116	9.189
63	9.293	BP	7731.85156	3082.85498	0.0373	9.246	9.409
64	9.655	PB	1647.31311	581.81384	0.0440	9.606	9.739
65	9.997	BB S	3.14128e4	1.07489e4	0.0451	9.939	10.109

Sample Name : HGHLVL TEST 3 Inst. GC #32Could not execute ->
1016/1260 7.46 UG/ML TOTAL PCB ->
Data File : C:\HPCHEM\1\DATA\2019\G320212A\008F0901.D
Injection Date : 2/12/2019 3:09:22 PM Analyst ID. : NK ML AH
Report Created : 2/13/2019 8:30:17 AM Vial No. : 8
Acq. Method : CONF18C.M Sample Amt. : 2.5422
Analysis Method: C:\HPCHEM\1\METHODS\CONF18C.M Dilution : 1.0000
Method Modified: 2/12/2019 09:14:01 AM Multiplier : 1.0000



CalTbl R.T.	Actual R.T.	Congener Name	Peak Area
3.318	0.000	2-CHLOROBIPHENYL	0.0
4.599	4.619	2,3-DICHLOROBIPHENYL	5891.5
5.076	5.087	2,2,5-TRICHLOROBIPHENYL	11700.8
5.589	5.599	2,4,5-TRICHLOROBIPHENYL	22571.2
5.942	5.950	2,2,5,5-TETRACHLOROBIPHENYL	4857.2
6.128	6.137	2,2,3,5-TETRACHLOROBIPHENYL	6092.8
6.555	6.554	2,3,4,4-TETRACHLOROBIPHENYL	5201.3
6.780	6.790	2,2,4,5,5-PENTACHLOROBIPHENYL	3819.4
7.024	7.035	2,2,3,4,5-PENTACHLOROBIPHENYL	479.0
7.107	7.117	2,3,3,4,6-PENTACHLOROBIPHENYL	1603.2
7.211	7.222	2,2,3,5,5,6-HEXACHLOROBIPHENYL	6238.3
7.565	7.581	2,2,4,4,5,5-HEXACHLOROBIPHENYL	19503.8
7.679	7.689	2,2,3,4,5,5-HEXACHLOROBIPHENYL	9957.9
7.807	7.820	2,2,3,4,4,5-HEXACHLOROBIPHENYL	16641.1
7.943	7.960	2,2,3,4,5,5,6-HEPTACHLOROBIPHENYL	13089.3
7.994	8.011	2,2,3,4,4,5,6-HEPTACHLOROBIPHENYL	6515.3
8.431	8.452	2,2,3,4,4,5,5-HEPTACHLOROBIPHENYL	30845.1
8.677	8.700	2,2,3,3,4,4,5-HEPTACHLOROBIPHENYL	12457.4
9.695	9.657	2,2,3,3,4,4,5,5,6-NONACHLOROBIPHENYL	1670.2
10.040	9.996	DECACHLOROBIPHENYL	31635.7

Comments: _____

Data File C:\HPCHEM\1\DATA\2019\G320212A\008F0901.D Sample Name: HGHLVL TEST 3

Integration Results

Signal 1: ECD1 A,
Integrated with enhanced integrator!

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
1	4.102	PP	605.93640	236.64651	0.0409	4.065	4.185
2	4.424	PV	1317.67542	486.72388	0.0396	4.365	4.503
3	4.542	VV	1200.43872	549.47913	0.0325	4.503	4.583
4	4.619	VB S	5891.54639	2769.90503	0.0318	4.583	4.738
5	4.819	VV	772.22058	354.55786	0.0324	4.787	4.909
6	4.934	VV	123.25535	32.08827	0.0498	4.909	4.997
7	5.087	MF	1.17008e4	4845.92285	0.0402	5.036	5.137
8	5.150	MF	622.44293	441.31204	0.0235	5.137	5.164
9	5.187	MF	1381.08276	714.51978	0.0322	5.164	5.232
10	5.286	MF	6585.66650	2779.52051	0.0395	5.232	5.356
11	5.427	MF	415.15665	156.14337	0.0443	5.356	5.464
12	5.509	FM	3170.20215	1586.15405	0.0333	5.464	5.566
13	5.599	VV S	2.25712e4	1.50198e4	0.0225	5.566	5.651
14	5.681	VV S	8517.37793	5174.43457	0.0242	5.651	5.740
15	5.764	VV S	4737.90283	3315.31079	0.0217	5.740	5.785
16	5.794	VV S	1683.47485	1169.90002	0.0208	5.785	5.921
17	5.872	BV T	463.25491	330.12643	0.0214	5.846	5.921
18	5.950	VV S	4857.20361	3732.25464	0.0202	5.921	5.969
19	5.987	VB S	8251.29980	3278.77222	0.0414	5.969	6.088
20	6.137	BV S	6092.81934	4235.91992	0.0208	6.108	6.156
21	6.161	MF	2066.15161	2070.01587	0.0166	6.156	6.186
22	6.204	MF	821.76324	563.40234	0.0243	6.186	6.219
23	6.259	MF	6613.50098	3080.63086	0.0358	6.219	6.297
24	6.321	MF	1210.55200	887.95428	0.0227	6.297	6.363
25	6.403	MF	139.24635	95.61180	0.0243	6.363	6.422
26	6.457	MF	151.80934	102.91617	0.0246	6.422	6.474
27	6.500	FM	824.45001	557.57202	0.0246	6.474	6.523
28	6.554	MF	5201.28516	3268.22778	0.0265	6.523	6.595
29	6.615	FM	200.64558	130.95990	0.0255	6.595	6.671
30	6.731	BV	730.51593	375.50656	0.0277	6.695	6.764
31	6.790	VB S	3819.36401	2784.70654	0.0220	6.764	6.868
32	7.035	VV	479.02130	381.29059	0.0197	7.004	7.060
33	7.086	VV	1880.52954	1529.59058	0.0193	7.060	7.102
34	7.117	VP	1603.16663	1193.62769	0.0207	7.102	7.168
35	7.222	BV S	6238.32471	4856.96533	0.0200	7.195	7.243
36	7.262	VV S	3251.71729	1903.17139	0.0269	7.243	7.302
37	7.333	MF	1.18490e4	9237.81348	0.0214	7.302	7.359
38	7.359	MF	571.96613	362.08246	0.0263	7.359	7.402
39	7.418	MF	477.41745	392.59943	0.0203	7.402	7.438
40	7.458	MF	213.52034	150.02000	0.0237	7.438	7.487
41	7.518	FM	2002.02527	1424.47241	0.0234	7.487	7.548
42	7.581	VV S	1.95038e4	1.32568e4	0.0232	7.548	7.636
43	7.689	MF	9957.88770	5879.35107	0.0282	7.636	7.725
44	7.754	FM	1682.29309	1060.69336	0.0264	7.725	7.781
45	7.820	VV S	1.66411e4	8220.97559	0.0306	7.781	7.858
46	7.878	VV S	2551.92822	1629.90991	0.0243	7.858	7.910
47	7.960	VV S	1.30893e4	8324.83984	0.0243	7.910	7.989
48	8.011	MF	6515.28564	4150.72168	0.0262	7.989	8.042
49	8.060	MF	776.80615	522.37750	0.0248	8.042	8.085

Data File C:\HPCHEM\1\DATA\2019\G320212A\008F0901.D Sample Name: HGHLVL TEST 3

Peak #	Time [min]	Type	Area [Hz*s]	Height [Hz]	Width [min]	Start [min]	End [min]
50	8.110	FM	2520.26709	1636.18848	0.0257	8.085	8.141
51	8.173	VV S	1.03872e4	7514.18115	0.0211	8.141	8.197
52	8.218	VV S	5990.16943	3758.55640	0.0236	8.197	8.246
53	8.264	VV S	2808.74072	1784.62488	0.0234	8.246	8.288
54	8.310	MF	1983.74915	1078.63611	0.0307	8.288	8.349
55	8.388	FM	2354.83691	1296.53699	0.0303	8.349	8.416
56	8.452	VV S	3.08451e4	1.62333e4	0.0292	8.416	8.512
57	8.530	VB S	1058.79553	665.12946	0.0265	8.512	8.586
58	8.700	BV S	1.24574e4	6671.04492	0.0288	8.661	8.737
59	8.763	VV S	6372.55957	3358.23364	0.0281	8.737	8.793
60	8.821	VB S	8138.88623	4022.53857	0.0306	8.793	8.896
61	8.988	BV	369.91815	164.34926	0.0343	8.941	9.024
62	9.073	VV	3338.56421	1592.48511	0.0325	9.024	9.118
63	9.136	VB	275.69778	134.78677	0.0309	9.118	9.191
64	9.295	BB	7831.28467	3143.95386	0.0371	9.248	9.408
65	9.657	PB	1670.16443	567.35638	0.0463	9.599	9.738
66	9.996	BB S	3.16357e4	1.13622e4	0.0425	9.938	10.111

Method Information

SOP 9213 FOR PCB ANALYSIS FOR 30 METER COLUMN .32mm ID .25um FILM WITH A 12 MINUTE RUN TIME AND 1.0 MICROLITER INJECTION SPLITLESS 1 MINUTE PURGE ON

Method Change History

Operator	Date	Change Information
NK ML AH	11/28/2018 12:38:51 PM	NEW METHOD 10%120

Run Time Checklist

Pre-Run Cmd/Macro:	off
Data Acquisition:	on
Standard Data Analysis:	on
Customized Data Analysis:	off
Save GLP Data:	off
Post-Run Cmd/Macro:	off
Save Method with Data:	skipped - no ACQ running

Injection Source and Location

Injection Source:	HP GC Injector
Injection Location:	Dual

HP6890 GC METHOD

OVEN
- Initial temp: 130 'C (On)
- Initial time: 2.00 min
- Ramps:

#	Rate	Final temp	Final time
1	20.00	270	3.00
2	0.0(Off)		

- Post temp: 0 'C
- Post time: 0.00 min
- Run time: 12.00 min
- Maximum temp: 350 'C
- Equilibration time: 0.00 min

FRONT INLET (SPLIT/SPLITLESS)
- Mode: Splitless
- Initial temp: 280 'C (On)
- Pressure: 12.98 psi (On)
- Purge flow: 50.0 mL/min
- Purge time: 1.00 min
- Total flow: 59.6 mL/min
- Gas saver: On
- Saver flow: 20.0 mL/min
- Saver time: 1.00 min
- Gas type: Hydrogen

BACK INLET (SPLIT/SPLITLESS)
- Mode: Splitless
- Initial temp: 280 'C (On)
- Pressure: 11.84 psi (On)
- Purge flow: 50.0 mL/min
- Purge time: 1.00 min
- Total flow: 60.5 mL/min
- Gas saver: On
- Saver flow: 20.0 mL/min
- Saver time: 1.00 min
- Gas type: Hydrogen

COLUMN 1
- Capillary Column
- Model Number: Zebron ZB-5MS
- 5% Methyl Silicate
- Max temperature: 350 'C
- Nominal length: 30.0 m
- Nominal diameter: 320.00 um
- Nominal film thickness: 0.25 um
- Mode: constant flow
- Initial flow: 4.5 mL/min
- Nominal init pressure: 12.98 psi
- Average velocity: 85 cm/sec
- Inlet: Front Inlet
- Outlet: Front Detector
- Outlet pressure: ambient

COLUMN 2
- Capillary Column
- Model Number: Zebron ZB-5MS
- 5% Methyl Silicate
- Max temperature: 350 'C
- Nominal length: 30.0 m
- Nominal diameter: 320.00 um
- Nominal film thickness: 0.25 um
- Mode: constant flow
- Initial flow: 4.0 mL/min
- Nominal init pressure: 11.84 psi
- Average velocity: 78 cm/sec
- Inlet: Back Inlet
- Outlet: Back Detector
- Outlet pressure: ambient

FRONT DETECTOR (μECD)
- Temperature: 350 'C (On)
- Mode: Constant column+makeup flow
- Combined flow: 65.0 mL/min
- Makeup flow: On
- Makeup Gas Type: Nitrogen
- Electrometer: On

BACK DETECTOR (μECD)
- Temperature: 350 'C (On)
- Mode: Constant column+makeup flow
- Combined flow: 65.0 mL/min
- Makeup flow: On
- Makeup Gas Type: Nitrogen
- Electrometer: On

SIGNAL 1
- Data rate: 5 Hz
- Type: front det - col comp 1
- Save Data: On
- Start Save Time: 1.50 min

SIGNAL 2
- Data rate: 5 Hz
- Type: back det - col comp 2
- Save Data: On
- Start Save Time: 1.50 min

Stop Save Time: 12.00 min
Zero: 50.0 (On)
Range: 0
Fast Peaks: Off
Attenuation: 0

Stop Save Time: 12.00 min
Zero: 50.0 (On)
Range: 0
Fast Peaks: Off
Attenuation: 0

COLUMN COMP 1
Derive from front detector

COLUMN COMP 2
Derive from back detector

POST RUN
Post Time: 0.00 min

TIME TABLE

Time	Specifier	Parameter & Setpoint

7673 Injector

Front Injector:		
Sample Washes	3	
Sample Pumps	3	
Injection Volume	1.0	microliters
Syringe Size	5.0	microliters
Nanoliter Adapter	Off	
PostInj Solvent A Washes	5	
PostInj Solvent B Washes	5	
Viscosity Delay	0	seconds
Plunger Speed	Fast	
PreInjection Dwell	0.00	minutes
PostInjection Dwell	0.00	minutes
Back Injector:		
Sample Washes	3	
Sample Pumps	3	
Injection Volume	1.0	microliters
Syringe Size	5.0	microliters
Nanoliter Adapter	Off	
PostInj Solvent A Washes	5	
PostInj Solvent B Washes	5	
Viscosity Delay	0	seconds
Plunger Speed	Fast	
PreInjection Dwell	0.00	minutes
PostInjection Dwell	0.00	minutes

Integration Events

esults will be produced with the enhanced integrator.

Default Integration Event Table "Event"

Event	Value	Time
Initial Slope Sensitivity	1.000	Initial
Initial Peak Width	0.040	Initial
Initial Area Reject	1.000	Initial
Initial Height Reject	1.700	Initial
Initial Shoulders	OFF	Initial

Detector Default Integration Event Table "Event_TCD"

Event	Value	Time
Initial Slope Sensitivity	100.000	Initial
Initial Peak Width	0.040	Initial
Initial Area Reject	1.000	Initial
Initial Height Reject	1.000	Initial
Initial Shoulders	OFF	Initial

Detector Default Integration Event Table "Event_ADC"

Event	Value	Time
Initial Slope Sensitivity	20.000	Initial
Initial Peak Width	0.040	Initial
Initial Area Reject	1.000	Initial
Initial Height Reject	1.000	Initial
Initial Shoulders	OFF	Initial

Detector Default Integration Event Table "Event_FID"

Event	Value	Time
Initial Slope Sensitivity	50.000	Initial
Initial Peak Width	0.040	Initial
Initial Area Reject	1.000	Initial
Initial Height Reject	1.000	Initial
Initial Shoulders	OFF	Initial

Detector Default Integration Event Table "Event_NPD"

Event	Value	Time
Initial Slope Sensitivity	500.000	Initial
Initial Peak Width	0.040	Initial
Initial Area Reject	1.000	Initial
Initial Height Reject	1.000	Initial
Initial Shoulders	OFF	Initial

Detector Default Integration Event Table "Event_FPD"

Event	Value	Time
Initial Slope Sensitivity	50.000	Initial
Initial Peak Width	0.040	Initial
Initial Area Reject	1.000	Initial
Initial Height Reject	1.000	Initial
Initial Shoulders	OFF	Initial

Detector Default Integration Event Table "Event_uECD"

Event	Value	Time
Initial Slope Sensitivity	1.000	Initial
Initial Peak Width	0.040	Initial
Initial Area Reject	1.000	Initial
Initial Height Reject	1.700	Initial
Initial Shoulders	OFF	Initial

Detector Default Integration Event Table "Event_ECD"

Event	Value	Time
Initial Slope Sensitivity	50.000	Initial
Initial Peak Width	0.010	Initial
Initial Area Reject	200.000	Initial
Initial Height Reject	100.000	Initial
Initial Shoulders	DROP	Initial
Integration OFF		0.000
Integration ON		1.500
Slope Sensitivity	500.000	3.380
Slope Sensitivity	0.000	5.331
Baseline Now		5.332
Tail Tangent Skim OFF		10.000

Method: C:\HPCHEM\1\METHODS\CONF18C.M of 11/28/2018 12:40:10 PM

Signal Specific Integration Event Table "Event_ECD1A"

Event	Value	Time
Initial Slope Sensitivity	500.000	Initial
Initial Peak Width	0.026	Initial
Initial Area Reject	16.268	Initial
Initial Height Reject	5.168	Initial
Initial Shoulders	DROP	Initial
Integration ON		0.000

Apply Manual Integration Events: No

Method C:\HPCHEM\1\METHODS\CONF18C.M

Calibration Table

OP 9202 TIER I ANALYSIS

Calib. Data Modified : Wednesday, November 28, 2018 12:36:34 PM

Calculate : External Standard
Based on : Peak Area

Rel. Reference Window : 1.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 1.000 %
Abs. Non-ref. Window : 0.000 min
Uncalibrated Peaks : compound name not specified
Partial Calibration : Yes, identified peaks are recalibrated
Correct All Ret. Times: No, only for identified peaks

Curve Type : Linear
Origin : Ignored
Weight : Equal

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Signal 1: ECD1 A,

RetTime [min]	Sig	Lvl	Amount [ug/ml]	Area	Amt/Area	Ref	Grp	Name
3.318	1	1	5.00000e-3	101.10966	4.94513e-5			2-CHLOROBIPHENYL
		2	1.00000e-2	259.24149	3.85741e-5			
		3	2.00000e-2	524.93158	3.81002e-5			
		4	4.00000e-2	1082.24353	3.69603e-5			
		5	8.00000e-2	2178.58350	3.67211e-5			
4.599	1	1	5.00000e-3	1874.34766	2.66759e-6			2,3-DI
		2	1.00000e-2	3440.30566	2.90672e-6			
		3	2.00000e-2	6371.10742	3.13917e-6			
		4	4.00000e-2	1.23718e4	3.23316e-6			
		5	8.00000e-2	2.41947e4	3.30651e-6			
5.076	1	1	5.00000e-3	1560.55017	3.20400e-6			2,2,5-TRI
		2	1.00000e-2	2591.68823	3.85849e-6			
		3	2.00000e-2	4553.09375	4.39262e-6			
		4	4.00000e-2	8560.13086	4.67283e-6			
		5	8.00000e-2	1.63428e4	4.89512e-6			
5.589	1	1	2.50000e-3	964.27203	2.59263e-6			2,4,5-TRI
		2	5.00000e-3	1829.58423	2.73286e-6			
		3	1.00000e-2	3365.96069	2.97092e-6			
		4	2.00000e-2	6517.30615	3.06875e-6			
		5	4.00000e-2	1.27041e4	3.14859e-6			

Method C:\HPCHEM\1\METHODS\CONF18C.M

RetTime [min]	Sig	Lvl	Amount [ug/ml]	Area	Amt/Area	Ref	Grp	Name
5.942	1	1	4.00000e-3	1340.79565	2.98330e-6			2,2,5,5-TETRA
		2	8.00000e-3	2392.61768	3.34362e-6			
		3	1.60000e-2	4309.60937	3.71263e-6			
		4	3.20000e-2	8233.91016	3.88637e-6			
		5	6.40000e-2	1.59431e4	4.01429e-6			
6.128	1	1	4.00000e-3	2331.28735	1.71579e-6			2,2,3,5-TETRA
		2	8.00000e-3	3077.38159	2.59961e-6			
		3	1.60000e-2	5595.22559	2.85958e-6			
		4	3.20000e-2	1.07740e4	2.97011e-6			
		5	6.40000e-2	2.10759e4	3.03665e-6			
6.555	1	1	2.50000e-3	1252.00781	1.99679e-6			2,3,4,4-TETRA
		2	5.00000e-3	2305.68628	2.16855e-6			
		3	1.00000e-2	4330.93018	2.30897e-6			
		4	2.00000e-2	8297.51660	2.41036e-6			
		5	4.00000e-2	1.61290e4	2.48000e-6			
6.780	1	1	2.50000e-3	1089.90845	2.29377e-6			2,2,4,5,5-PENTA
		2	5.00000e-3	1938.71301	2.57903e-6			
		3	1.00000e-2	3628.99268	2.75559e-6			
		4	2.00000e-2	6850.47070	2.91951e-6			
		5	4.00000e-2	1.31632e4	3.03876e-6			
7.024	1	1	1.00000e-3	651.42078	1.53511e-6			2,2,3,4,5-PENTA
		2	2.00000e-3	1126.97900	1.77466e-6			
		3	4.00000e-3	2111.81934	1.89410e-6			
		4	8.00000e-3	3956.51489	2.02198e-6			
		5	1.60000e-2	7578.67578	2.11119e-6			
7.107	1	1	2.50000e-3	1622.63049	1.54071e-6			2,3,3,4,6-PENTA
		2	5.00000e-3	2681.88818	1.86436e-6			
		3	1.00000e-2	4712.55615	2.12199e-6			
		4	2.00000e-2	9060.89551	2.20729e-6			
		5	4.00000e-2	1.76791e4	2.26256e-6			
7.211	1	1	2.50000e-3	1352.17749	1.84887e-6			2,2,3,5,5,6-HEXA
		2	5.00000e-3	2445.42944	2.04463e-6			
		3	1.00000e-2	4526.02588	2.20944e-6			
		4	2.00000e-2	8729.47168	2.29109e-6			
		5	4.00000e-2	1.70365e4	2.34789e-6			
7.565	1	1	2.50000e-3	1205.74731	2.07340e-6			2,2,4,4,5,5-HEXA
		2	5.00000e-3	2234.71533	2.23742e-6			
		3	1.00000e-2	4255.82471	2.34972e-6			
		4	2.00000e-2	8268.75977	2.41874e-6			
		5	4.00000e-2	1.61994e4	2.46922e-6			
7.679	1	1	2.50000e-3	2002.99414	1.24813e-6			2,2,3,4,5,5-HEXA
		2	5.00000e-3	3386.80640	1.47632e-6			
		3	1.00000e-2	6227.38379	1.60581e-6			
		4	2.00000e-2	1.21190e4	1.65029e-6			
		5	4.00000e-2	2.42318e4	1.65072e-6			
7.807	1	1	2.50000e-3	1511.58130	1.65390e-6			2,2,3,4,4,5-HEXA
		2	5.00000e-3	2952.25464	1.69362e-6			
		3	1.00000e-2	5346.17529	1.87050e-6			
		4	2.00000e-2	1.02038e4	1.96005e-6			
		5	4.00000e-2	1.98209e4	2.01807e-6			
7.943	1	1	2.50000e-3	1472.47839	1.69782e-6			2,2,3,4,5,5,6-HEPTA
		2	5.00000e-3	2714.14600	1.84220e-6			
		3	1.00000e-2	5073.05029	1.97120e-6			
		4	2.00000e-2	9738.74609	2.05365e-6			
		5	4.00000e-2	1.91300e4	2.09096e-6			
7.994	1	1	2.50000e-3	1417.81030	1.76328e-6			2,2,3,4,4,5,6-HEPTA

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RetTime [min]	Sig	Lvl	Amount [ug/ml]	Area	Amt/Area	Ref Grp	Name
		2	5.00000e-3	2858.97461	1.74888e-6		
		3	1.00000e-2	5514.56006	1.81338e-6		
		4	2.00000e-2	1.08619e4	1.84130e-6		
		5	4.00000e-2	2.16099e4	1.85100e-6		
8.431	1	1	4.00000e-3	2827.25049	1.41480e-6		2,2,3,4,4,5,5-HEPTA
		2	8.00000e-3	5201.72900	1.53795e-6		
		3	1.60000e-2	9811.57129	1.63073e-6		
		4	3.20000e-2	1.93628e4	1.65265e-6		
		5	6.40000e-2	3.90127e4	1.64049e-6		
8.677	1	1	2.50000e-3	1933.61389	1.29292e-6		2,2,3,3,4,4,5-HEPTA
		2	5.00000e-3	3528.54639	1.41701e-6		
		3	1.00000e-2	6393.75000	1.56403e-6		
		4	2.00000e-2	1.25238e4	1.59696e-6		
		5	4.00000e-2	2.49951e4	1.60032e-6		
9.634	1	1	2.50000e-3	2114.78052	1.18216e-6		2,2,3,3,4,4,5,5,6-NONA
		2	5.00000e-3	4088.95581	1.22281e-6		
		3	1.00000e-2	7697.41797	1.29914e-6		
		4	2.00000e-2	1.48999e4	1.34229e-6		
		5	4.00000e-2	2.91291e4	1.37320e-6		
9.973	1	1	6.00000e-3	3940.63257	1.52260e-6		DECACHLOROBIPHENYL
		2	1.20000e-2	7517.47266	1.59628e-6		
		3	2.40000e-2	1.42575e4	1.68333e-6		
		4	4.80000e-2	2.75563e4	1.74189e-6		
		5	9.60000e-2	5.47593e4	1.75313e-6		

1 Warnings or Errors :

Warning : Overlapping peak time windows at 7.943 min, signal 1

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Peak Sum Table

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No Entries in table

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Calibration Curves

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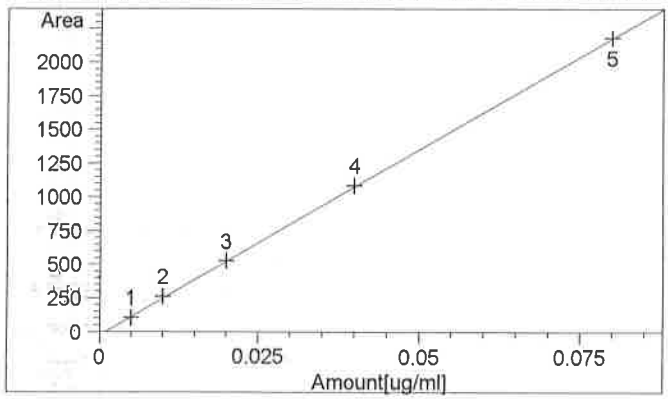
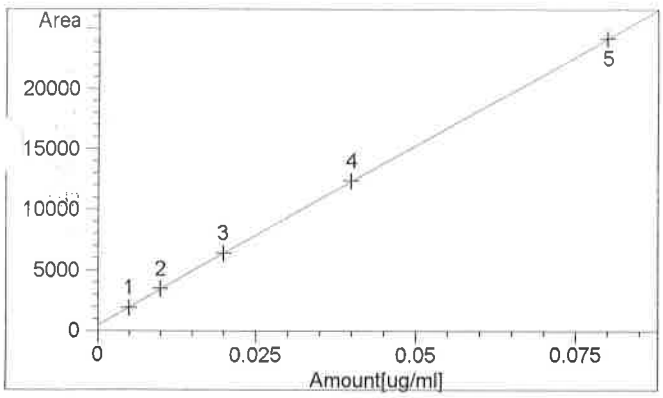
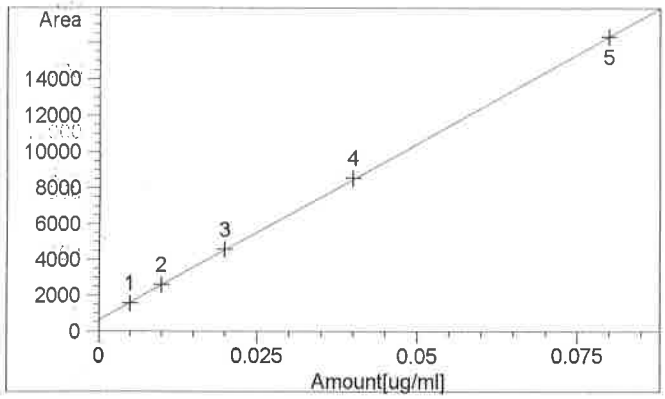


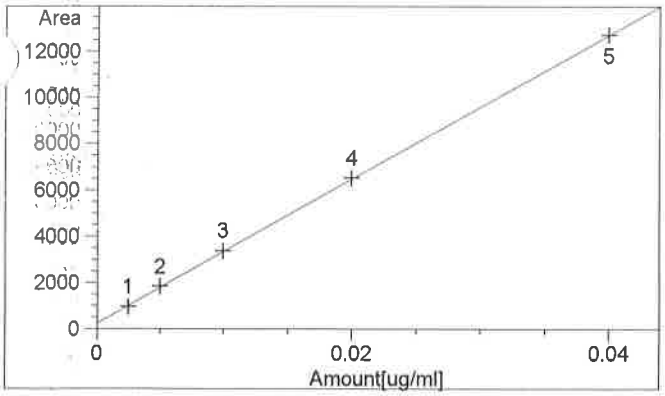
2-CHLOROBIPHENYL at exp. RT: 3.318
ECD1 A,
Correlation: 0.99996
Residual Std. Dev.: 8.82978
Formula: y = mx + b
m: 27592.36915
b: -26.14149
x: Amount [ug/ml]
y: Area



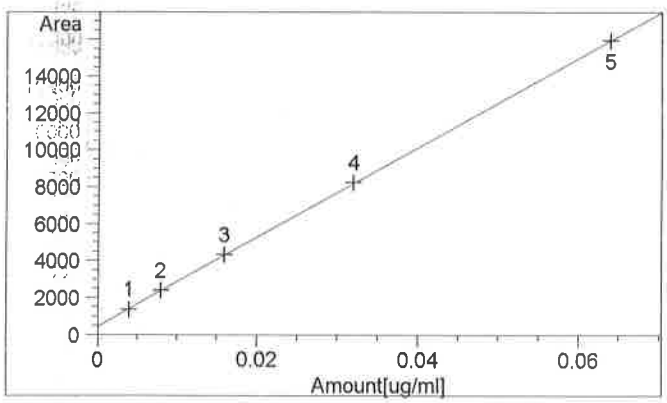
2,3-DI at exp. RT: 4.599
ECD1 A,
Correlation: 0.99999
Residual Std. Dev.: 44.55328
Formula: y = mx + b
m: 297264.67364
b: 435.24707
x: Amount[ug/ml]
y: Area



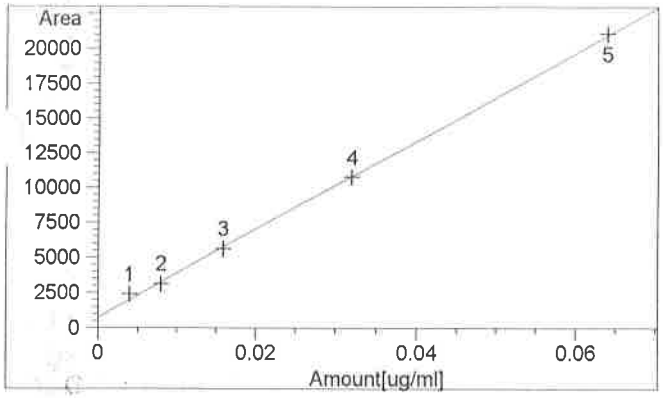
2,2,5-TRI at exp. RT: 5.076
ECD1 A,
Correlation: 0.99998
Residual Std. Dev.: 47.89110
Formula: y = mx + b
m: 196977.10184
b: 615.36338
x: Amount[ug/ml]
y: Area



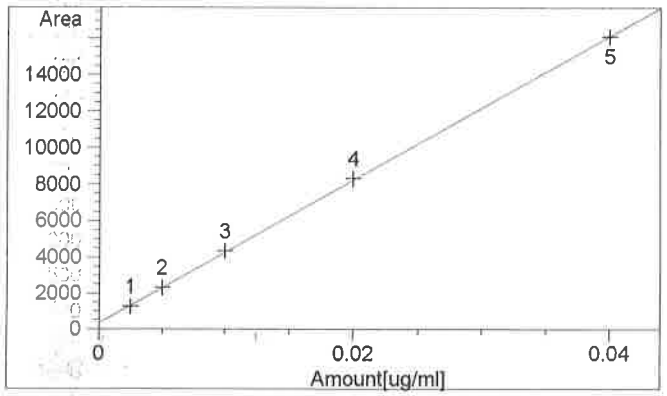
2,4,5-TRI at exp. RT: 5.589
ECD1 A,
Correlation: 0.99997
Residual Std. Dev.: 43.33346
Formula: y = mx + b
m: 312171.33284
b: 237.58869
x: Amount[ug/ml]
y: Area



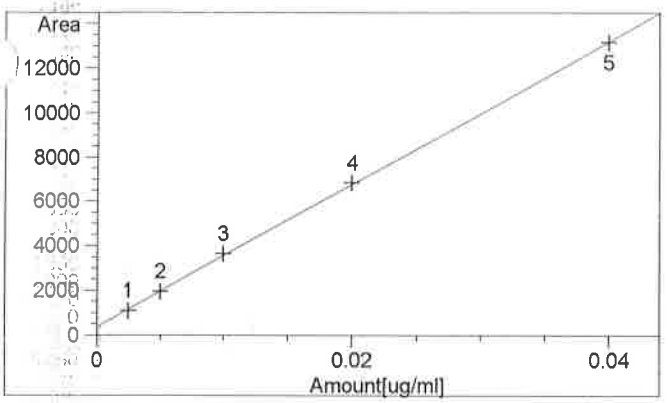
2,2,5,5-TETRA at exp. RT: 5.942
ECD1 A,
Correlation: 0.99998
Residual Std. Dev.: 43.41230
Formula: y = mx + b
m: 242877.52344
b: 420.63493
x: Amount[ug/ml]
y: Area



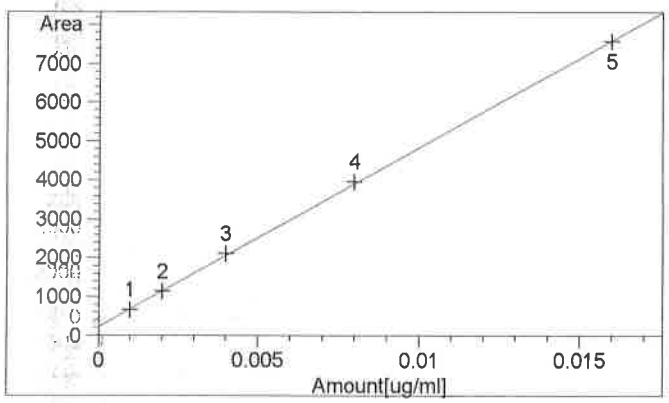
2,2,3,5-TETRA at exp. RT: 6.128
ECD1 A,
Correlation: 0.99958
Residual Std. Dev.: 258.53371
Formula: y = mx + b
m: 316833.80283
b: 713.27638
x: Amount[ug/ml]
y: Area



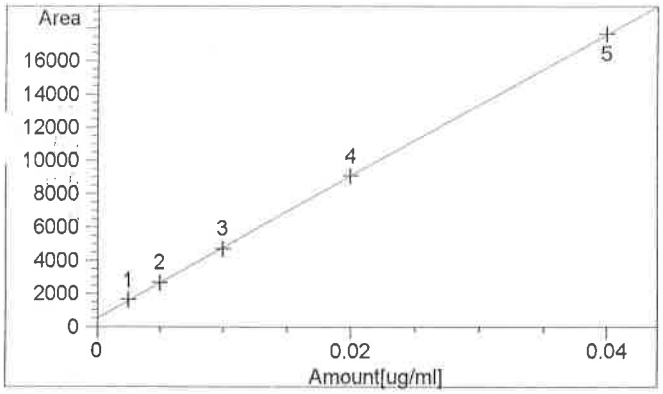
2,3,4,4-TETRA at exp. RT: 6.555
ECD1 A,
Correlation: 0.99997
Residual Std. Dev.: 58.08997
Formula: y = mx + b
m: 395907.14033
b: 326.46945
x: Amount[ug/ml]
y: Area



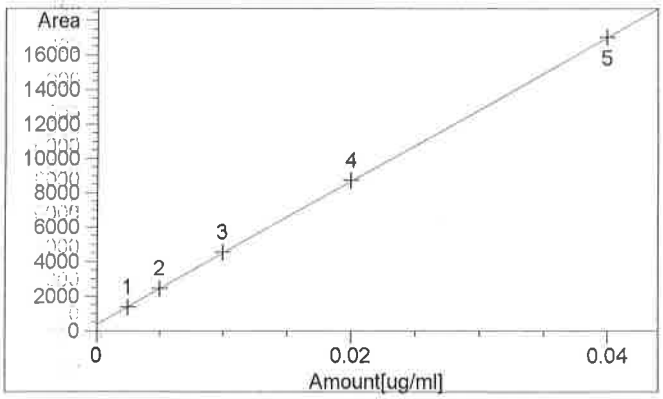
2,2,4,5,5-PENTA at exp. RT: 6.780
ECD1 A,
Correlation: 0.99992
Residual Std. Dev.: 72.21616
Formula: y = mx + b
m: 321335.34126
b: 353.56820
x: Amount[ug/ml]
y: Area



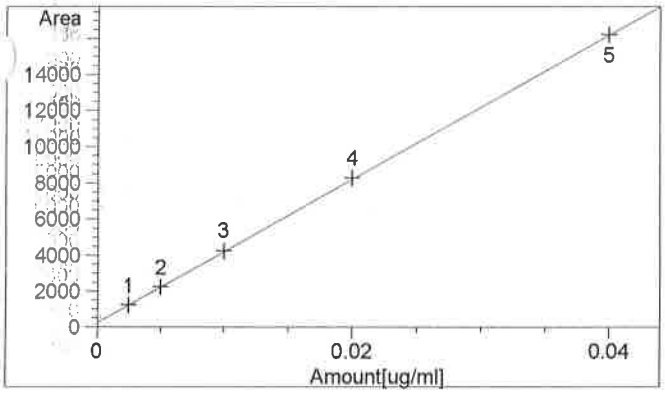
2,2,3,4,5-PENTA at exp. RT: 7.024
ECD1 A,
Correlation: 0.99991
Residual Std. Dev.: 43.96407
Formula: y = mx + b
m: 461196.55289
b: 225.66333
x: Amount[ug/ml]
y: Area



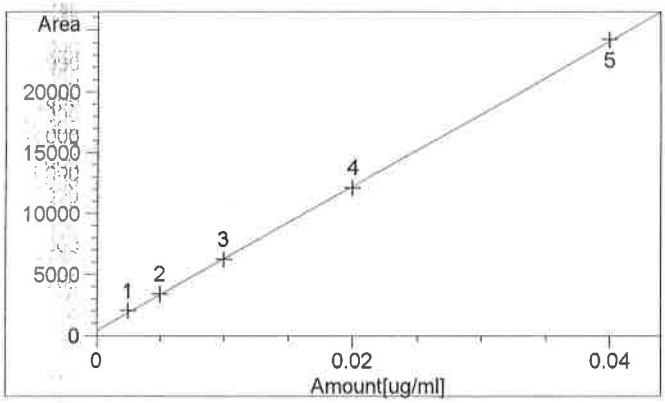
2,3,3,4,6-PENTA at exp. RT: 7.107
ECD1 A,
Correlation: 0.99997
Residual Std. Dev.: 59.23175
Formula: y = mx + b
m: 428751.39068
b: 505.76665
x: Amount[ug/ml]
y: Area



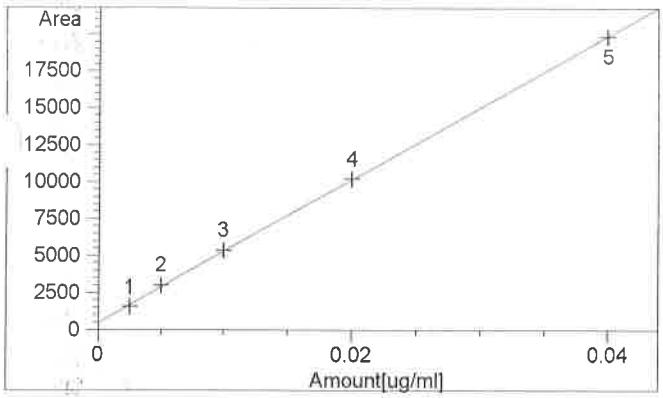
2,2,3,5,5,6-HEXA at exp. RT: 7.211
ECD1 A,
Correlation: 0.99999
Residual Std. Dev.: 30.09422
Formula: y = mx + b
m: 417773.72272
b: 342.43757
x: Amount[ug/ml]
y: Area



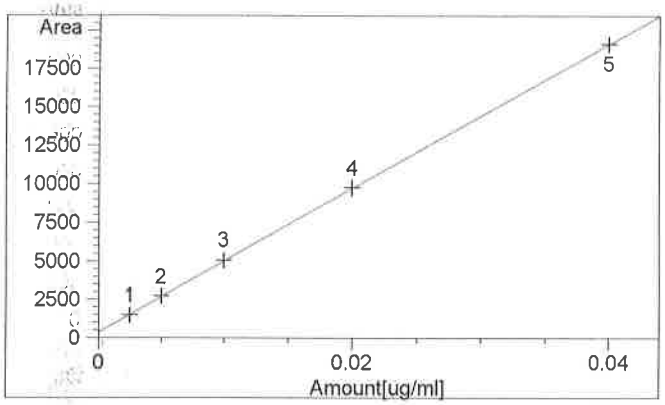
2,2,4,4,5,5-HEXA at exp. RT: 7.565
ECD1 A,
Correlation: 0.99999
Residual Std. Dev.: 33.92701
Formula: y = mx + b
m: 399515.63786
b: 240.40590
x: Amount[ug/ml]
y: Area



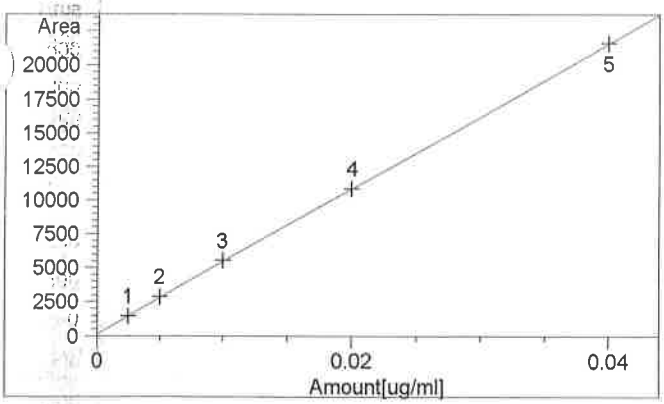
2,2,3,4,5,5-HEXA at exp. RT: 7.679
ECD1 A,
Correlation: 0.99991
Residual Std. Dev.: 137.89633
Formula: y = mx + b
m: 593939.40863
b: 387.54459
x: Amount[ug/ml]
y: Area



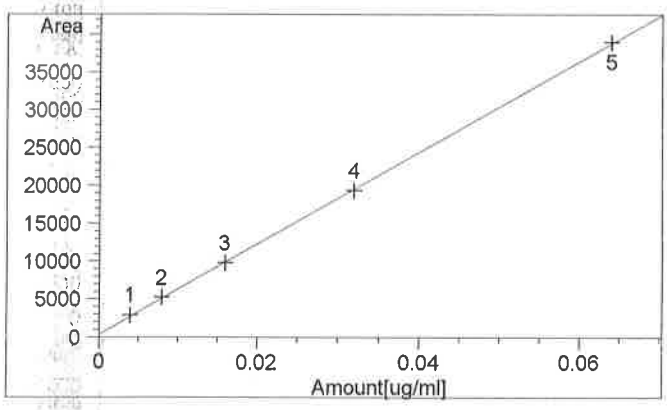
2,2,3,4,4,5-HEXA at exp. RT: 7.807
ECD1 A,
Correlation: 0.99992
Residual Std. Dev.: 107.11940
Formula: y = mx + b
m: 485457.77850
b: 442.34691
x: Amount[ug/ml]
y: Area



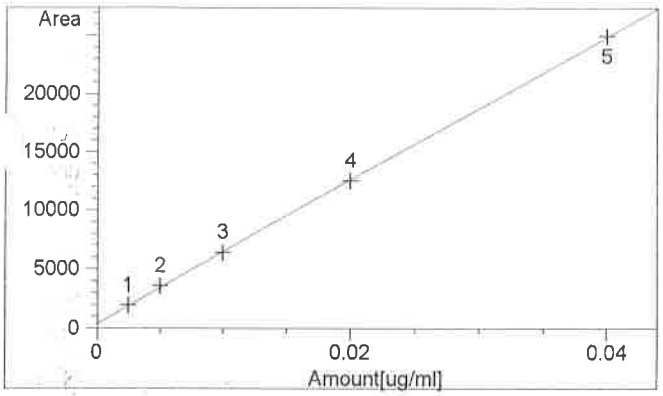
2,2,3,4,5,5,6-HEPTA at exp. RT: 7.943
ECD1 A,
Correlation: 0.99999
Residual Std. Dev.: 34.46517
Formula: y = mx + b
m: 469856.90800
b: 342.90286
x: Amount[ug/ml]
y: Area



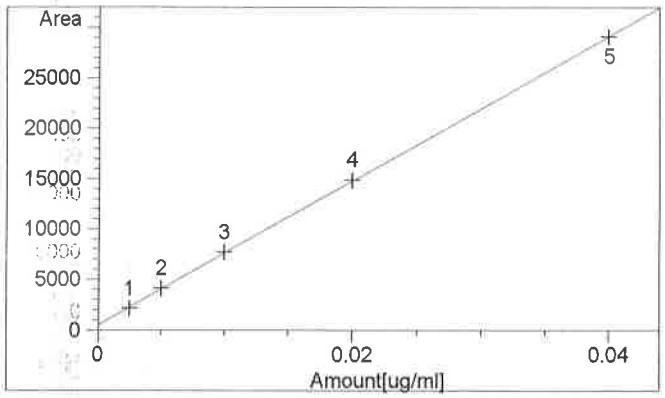
2,2,3,4,4,5,6-HEPTA at exp. RT: 7.994
ECD1 A,
Correlation: 0.99999
Residual Std. Dev.: 41.55273
Formula: y = mx + b
m: 537140.82241
b: 126.95500
x: Amount[ug/ml]
y: Area



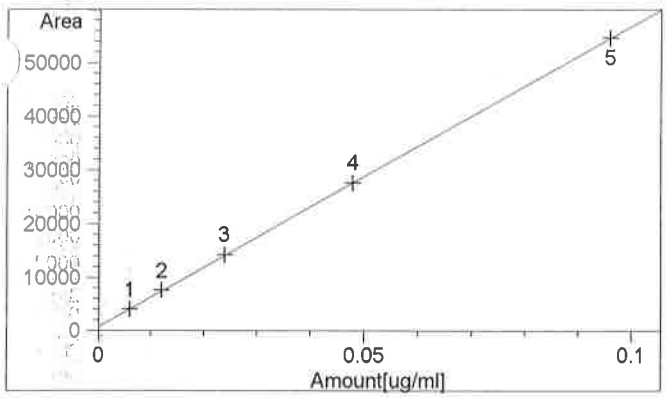
2,2,3,4,4,5,5-HEPTA at exp. RT: 8.431
ECD1 A,
Correlation: 0.99994
Residual Std. Dev.: 188.07085
Formula: y = mx + b
m: 603230.62478
b: 283.09222
x: Amount[ug/ml]
y: Area



2,2,3,3,4,4,5-HEPTA at exp. RT: 8.677
ECD1 A,
Correlation: 0.99994
Residual Std. Dev.: 117.57363
Formula: y = mx + b
m: 614391.22472
b: 351.88760
x: Amount[ug/ml]
y: Area



2,2,3,3,4,4,5,5,6-NONA at exp. RT: 9.634
ECD1 A,
Correlation: 0.99997
Residual Std. Dev.: 105.45897
Formula: y = mx + b
m: 718226.58179
b: 453.52646
x: Amount[ug/ml]
y: Area



DECACHLOROBIPHENYL at exp. RT: 9.973
ECD1 A,
Correlation: 0.99999
Residual Std. Dev.: 123.56762
Formula: y = mx + b
m: 563184.87735
b: 655.75083
x: Amount[ug/ml]
y: Area

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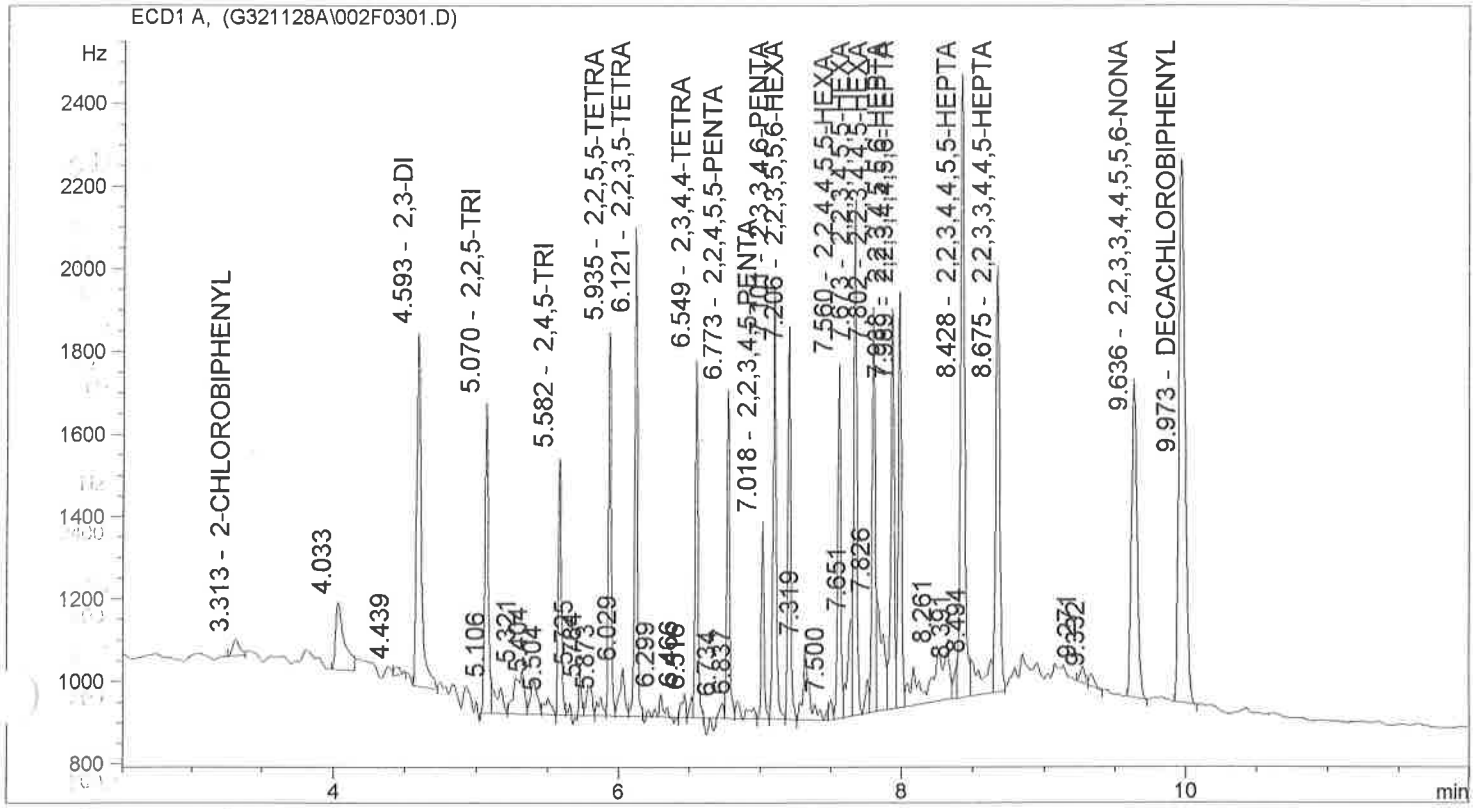
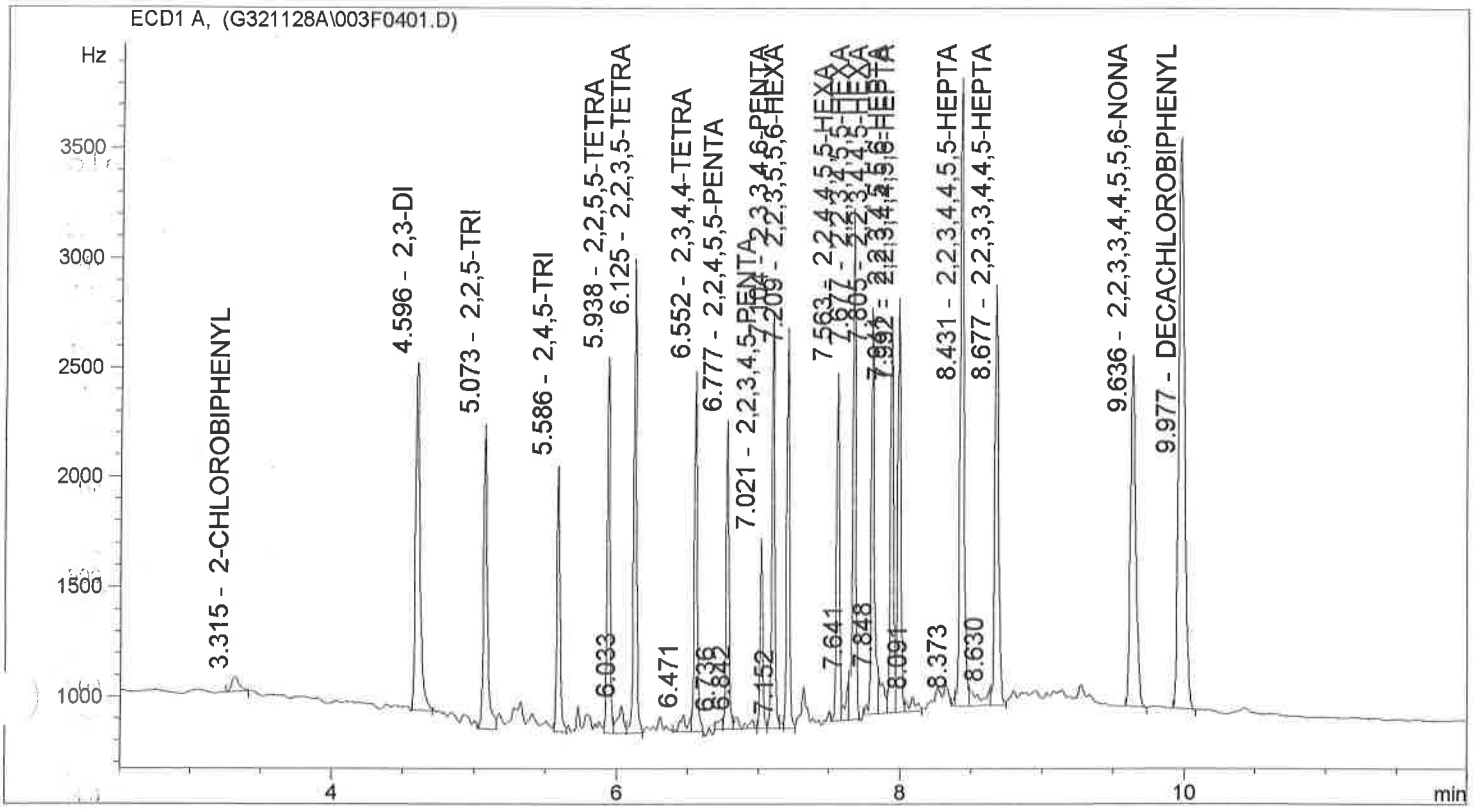
Sample Name : LEVEL 1 Inst. GC #32Could not execute ->
2PCBS-789 10PERCENT 120HTS ->
Data File : C:\HPCHEM\1\DATA\2018\G321128A\002F0301.D
Injection Date : 11/28/2018 10:49:-> Analyst ID. : NK ML AH
Report Created : 11/28/2018 1:05:01 PM Vial No. : 2
Eq. Method : CONF18B.M Sample Amt. : 0.0000
Analysis Method: C:\HPCHEM\1\METHODS\CONF18C.M Dilution : 1.0000
Method Modified: 11/28/201801:05:01 PM Multiplier : 1.0000



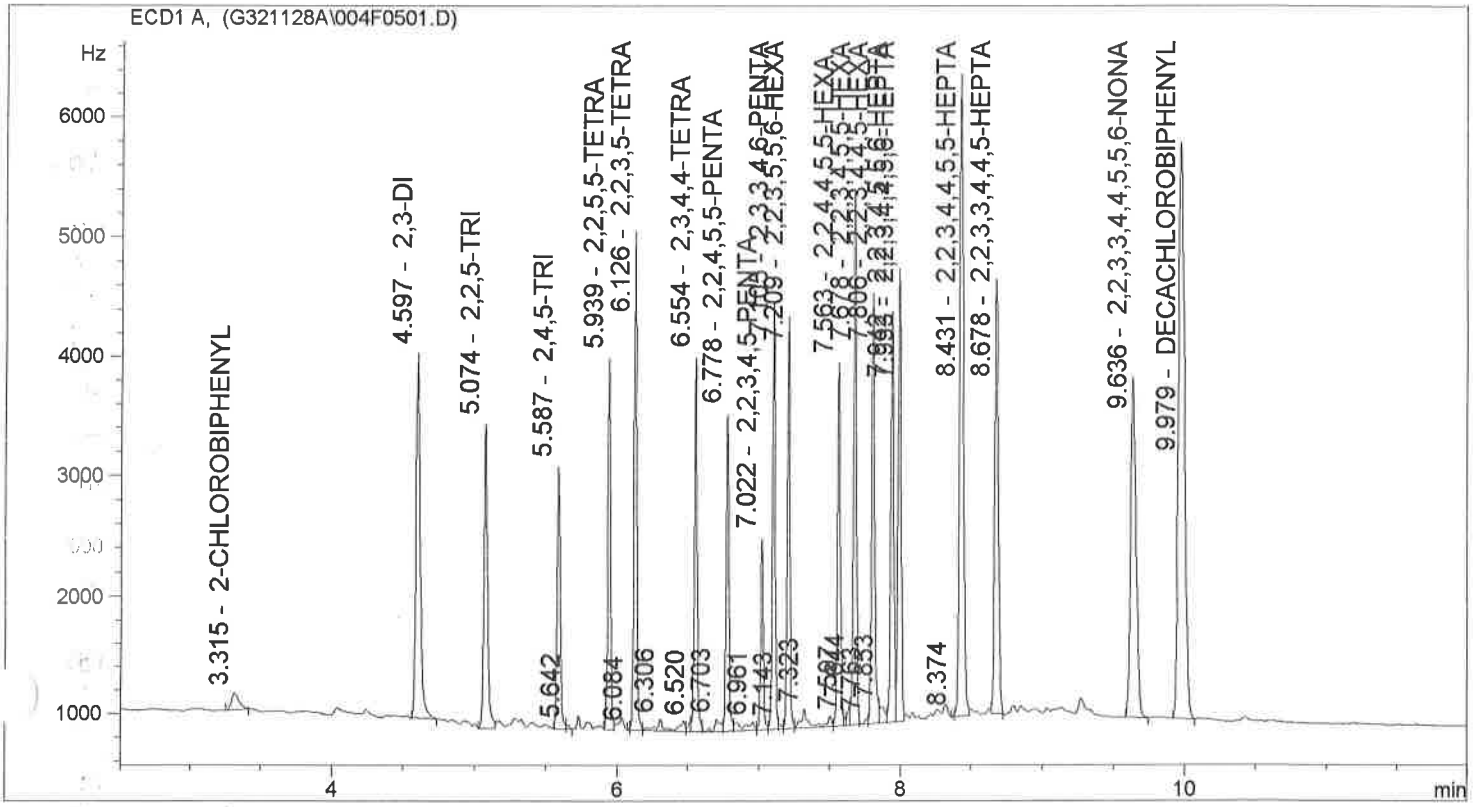
CalTbl R.T.	Congener Name	Amount ug/mL	Actual R.T.
3.313	2-CHLOROBIPHENYL	0.0050	3.313
4.593	2,3-DI	0.0050	4.593
5.070	2,2,5-TRI	0.0050	5.070
5.582	2,4,5-TRI	0.0025	5.582
5.935	2,2,5,5-TETRA	0.0040	5.935
6.121	2,2,3,5-TETRA	0.0040	6.121
6.549	2,3,4,4-TETRA	0.0025	6.549
6.773	2,2,4,5,5-PENTA	0.0025	6.773
7.018	2,2,3,4,5-PENTA	0.0010	7.018
7.101	2,3,3,4,6-PENTA	0.0025	7.101
7.206	2,2,3,5,5,6-HEXA	0.0025	7.206
7.560	2,2,4,4,5,5-HEXA	0.0025	7.560
7.673	2,2,3,4,5,5-HEXA	0.0025	7.673
7.802	2,2,3,4,4,5-HEXA	0.0025	7.802
7.938	2,2,3,4,5,5,6-HEPTA	0.0025	7.938
7.989	2,2,3,4,4,5,6-HEPTA	0.0025	7.989
8.428	2,2,3,4,4,5,5-HEPTA	0.0040	8.428
8.675	2,2,3,4,4,5-HEPTA	0.0025	8.675
9.636	2,2,3,3,4,4,5,5,6-NONA	0.0025	9.636
9.973	DECACHLOROBIPHENYL	0.0060	9.973
		0.0640	

Sample Name : LEVEL 2 Inst. GC #32Could not execute ->
2PCBS-790 10PERCENT 120HTS ->
Data File : C:\HPCHEM\1\DATA\2018\G321128A\003F0401.D
Injection Date : 11/28/2018 11:04:-> Analyst ID. : NK ML AH
Report Created : 11/28/201812:09:25 PM Vial No. : 3
Eq. Method : CONF18B.M Sample Amt. : 0.0000
Analysis Method: C:\HPCHEM\1\METHODS\CONF18B.M Dilution : 1.0000
Method Modified: 11/28/201800:09:25 PM Multiplier : 1.0000



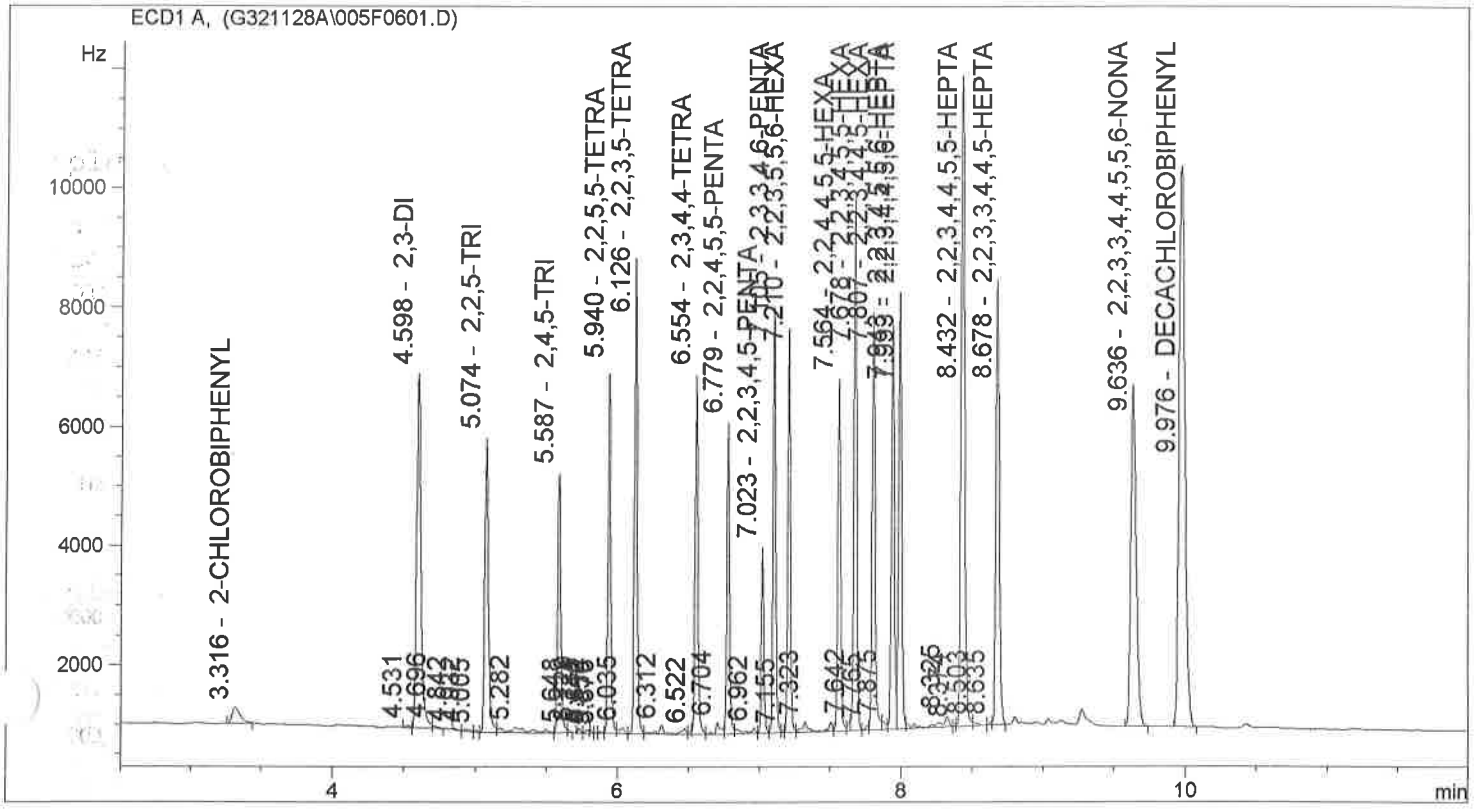
CalTbl R.T.	Congener Name	Amount ug/mL	Actual R.T.
3.315	2-CHLOROBIPHENYL	0.0100	3.315
4.596	2,3-DI	0.0100	4.596
5.073	2,2,5-TRI	0.0100	5.073
5.586	2,4,5-TRI	0.0050	5.586
5.938	2,2,5,5-TETRA	0.0080	5.938
6.125	2,2,3,5-TETRA	0.0080	6.125
6.552	2,3,4,4-TETRA	0.0050	6.552
6.777	2,2,4,5,5-PENTA	0.0050	6.777
7.021	2,2,3,4,5-PENTA	0.0020	7.021
7.104	2,3,3,4,6-PENTA	0.0050	7.104
7.209	2,2,3,5,5,6-HEXA	0.0050	7.209
7.563	2,2,4,4,5,5-HEXA	0.0050	7.563
7.677	2,2,3,4,5,5-HEXA	0.0050	7.677
7.805	2,2,3,4,4,5-HEXA	0.0050	7.805
7.941	2,2,3,4,5,5,6-HEPTA	0.0050	7.941
7.992	2,2,3,4,4,5,6-HEPTA	0.0050	7.992
8.431	2,2,3,4,4,5,5-HEPTA	0.0080	8.431
8.677	2,2,3,3,4,4,5-HEPTA	0.0050	8.677
9.636	2,2,3,3,4,4,5,5,6-NONA	0.0050	9.636
9.977	DECACHLOROBIPHENYL	0.0120	9.977
		0.1280	

Sample Name : LEVEL 3 Inst. GC #32Could not execute ->
2PCBS-791 10PERCENT 120HTS ->
Data File : C:\HPCHEM\1\DATA\2018\G321128A\004F0501.D
Injection Date : 11/28/2018 11:19:-> Analyst ID. : NK ML AH
Report Created : 11/28/201812:23:33 PM Vial No. : 4
Eq. Method : CONF18B.M Sample Amt. : 0.0000
Analysis Method: C:\HPCHEM\1\METHODS\CONF18B.M Dilution : 1.0000
Method Modified: 11/28/201800:23:33 PM Multiplier : 1.0000



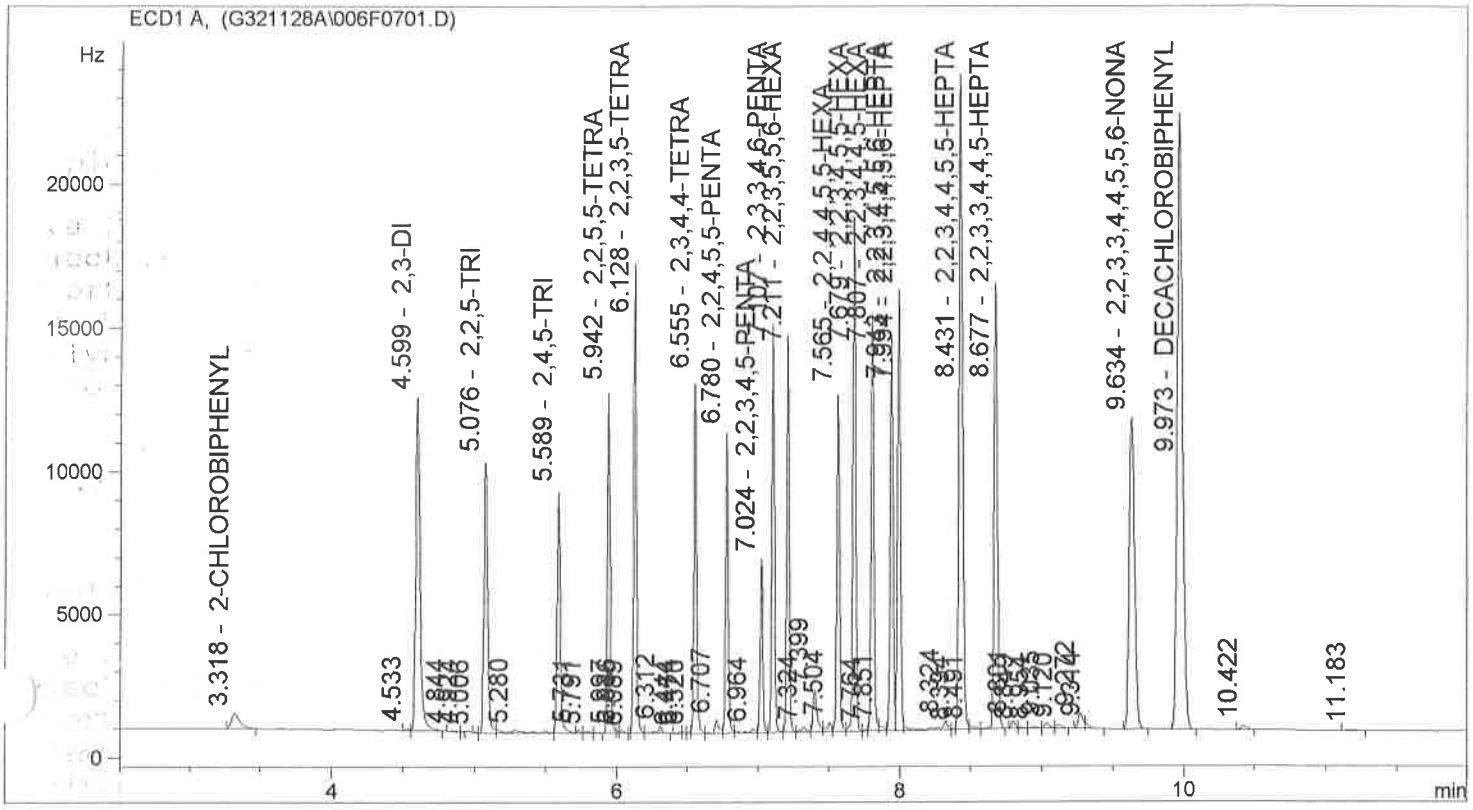
CalTbl R.T.	Congener Name	Amount ug/mL	Actual R.T.
3.315	2-CHLOROBIPHENYL	0.0199	3.315
4.597	2,3-DI	0.0200	4.597
5.074	2,2,5-TRI	0.0200	5.074
5.587	2,4,5-TRI	0.0100	5.587
5.939	2,2,5,5-TETRA	0.0159	5.939
6.126	2,2,3,5-TETRA	0.0163	6.126
6.554	2,3,4,4-TETRA	0.0100	6.554
6.778	2,2,4,5,5-PENTA	0.0100	6.778
7.022	2,2,3,4,5-PENTA	0.0040	7.022
7.105	2,3,3,4,6-PENTA	0.0100	7.105
7.209	2,2,3,5,5,6-HEXA	0.0100	7.209
7.563	2,2,4,4,5,5-HEXA	0.0100	7.563
7.678	2,2,3,4,5,5-HEXA	0.0100	7.678
7.806	2,2,3,4,4,5-HEXA	0.0099	7.806
7.942	2,2,3,4,5,5,6-HEPTA	0.0100	7.942
7.993	2,2,3,4,4,5,6-HEPTA	0.0100	7.993
8.431	2,2,3,4,4,5,5-HEPTA	0.0160	8.431
8.678	2,2,3,3,4,4,5-HEPTA	0.0100	8.678
9.636	2,2,3,3,4,4,5,5,6-NONA	0.0100	9.636
9.979	DECACHLOROBIPHENYL	0.0239	9.979
		0.2557	

Sample Name : LEVEL 4 Inst. GC #32Could not execute ->
2PCBS-792 10PERCENT 120HTS ->
Data File : C:\HPCHEM\1\DATA\2018\G321128A\005F0601.D
Injection Date : 11/28/2018 11:34:-> Analyst ID. : NK ML AH
Report Created : 11/28/201812:28:15 PM Vial No. : 5
Eq. Method : CONF18B.M Sample Amt. : 0.0000
Analysis Method: C:\HPCHEM\1\METHODS\CONF18B.M Dilution : 1.0000
Method Modified: 11/28/201800:28:15 PM Multiplier : 1.0000



CalTbl R.T.	Congener Name	Amount ug/mL	Actual R.T.
3.316	2-CHLOROBIPHENYL	0.0400	3.316
4.598	2,3-DI	0.0400	4.598
5.074	2,2,5-TRI	0.0400	5.074
5.587	2,4,5-TRI	0.0200	5.587
5.940	2,2,5,5-TETRA	0.0320	5.940
6.126	2,2,3,5-TETRA	0.0323	6.126
6.554	2,3,4,4-TETRA	0.0200	6.554
6.779	2,2,4,5,5-PENTA	0.0199	6.779
7.023	2,2,3,4,5-PENTA	0.0080	7.023
7.105	2,3,3,4,6-PENTA	0.0201	7.105
7.210	2,2,3,5,5,6-HEXA	0.0200	7.210
7.564	2,2,4,4,5,5-HEXA	0.0200	7.564
7.678	2,2,3,4,5,5-HEXA	0.0201	7.678
7.807	2,2,3,4,4,5-HEXA	0.0199	7.807
7.943	2,2,3,4,5,5,6-HEPTA	0.0200	7.943
7.993	2,2,3,4,4,5,6-HEPTA	0.0200	7.993
8.432	2,2,3,4,4,5,5-HEPTA	0.0320	8.432
8.678	2,2,3,3,4,4,5-HEPTA	0.0200	8.678
9.636	2,2,3,3,4,4,5,5,6-NONA	0.0200	9.636
9.976	DECACHLOROBIPHENYL	0.0479	9.976
		0.5121	

Sample Name : LEVEL 5 Inst. GC #32Could not execute ->
2PCBS-793 10PERCENT 120HTS ->
Data File : C:\HPCHEM\1\DATA\2018\G321128A\006F0701.D
Injection Date : 11/28/2018 11:49:-> Analyst ID. : NK ML AH
Report Created : 11/28/201812:50:19 PM Vial No. : 6
Eq. Method : CONF18B.M Sample Amt. : 0.0000
Analysis Method: C:\HPCHEM\1\METHODS\CONF18C.M Dilution : 1.0000
Method Modified: 11/28/201800:46:04 PM Multiplier : 1.0000



CalTbl R.T.	Congener Name	Amount ug/mL	Actual R.T.
3.318	2-CHLOROBIPHENYL	0.0799	3.318
4.599	2,3-DI	0.0803	4.599
5.076	2,2,5-TRI	0.0799	5.076
5.589	2,4,5-TRI	0.0407	5.589
5.942	2,2,5,5-TETRA	0.0642	5.942
6.128	2,2,3,5-TETRA	0.0646	6.128
6.555	2,3,4,4-TETRA	0.0400	6.555
6.780	2,2,4,5,5-PENTA	0.0399	6.780
7.024	2,2,3,4,5-PENTA	0.0159	7.024
7.107	2,3,3,4,6-PENTA	0.0401	7.107
7.211	2,2,3,5,5,6-HEXA	0.0400	7.211
7.565	2,2,4,4,5,5-HEXA	0.0399	7.565
7.679	2,2,3,4,5,5-HEXA	0.0405	7.679
7.807	2,2,3,4,4,5-HEXA	0.0397	7.807
7.943	2,2,3,4,5,5,6-HEPTA	0.0400	7.943
7.994	2,2,3,4,4,5,6-HEPTA	0.0399	7.994
8.431	2,2,3,4,4,5,5-HEPTA	0.0641	8.431
8.677	2,2,3,3,4,4,5-HEPTA	0.0402	8.677
9.634	2,2,3,3,4,4,5,5,6-NONA	0.0399	9.634
9.973	DECACHLOROBIPHENYL	0.0961	9.973
		1.0259	