

**EMSL Analytical**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (856)858-4800 / (856)858-4571

<http://www.EMSL.com> to15lab@EMSL.com

EMSL Order #: **491700000**
 EMSL Sample #: **491700000-1**
 Customer ID: **EMSL50A**
 Customer PO: **Not Available**

Attn: **Lance H**
EMSL Analytical, Inc.
200 Route 130 N
Cinnaminson, NJ, 08077

Phone: **888-887-8876**
 Fax:
 Date Collected: **4/18/2017**
 Date Received: **4/19/2017**

Project: **Manufacturing Floor**

Sample ID: 0711-Langley

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	04/28/2017	KW	K12304.D	ME0711	276 cc	5
Dilution1	04/28/2017	KW	K12312.D	ME0711	28 cc	50
Dilution2	05/01/2017	KW	K12327.D	ME0711	21 cc	600

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	5.0		ND	8.6	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	2.5		ND	12	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	2.5		ND	17	
Chloromethane	74-87-3	50.49	ND	2.5		ND	5.2	
n-Butane	106-97-8	58.12	24	2.5		56	5.9	
Vinyl chloride	75-01-4	62.50	ND	2.5		ND	6.4	
1,3-Butadiene	106-99-0	54.09	ND	2.5		ND	5.5	
Bromomethane	74-83-9	94.94	ND	2.5		ND	10	
Chloroethane	75-00-3	64.52	ND	2.5		ND	6.6	
Ethanol	64-17-5	46.07	400	25	D	760	47	Reported Dilution #1
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	2.5		ND	11	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	2.5		ND	14	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	49	2.5		120	6.1	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	2.5		ND	19	
Acetone	67-64-1	58.08	21000	300	D	49000	710	Reported Dilution #2
1,1-Dichloroethene	75-35-4	96.94	ND	2.5		ND	10	
Acetonitrile	75-05-8	41.00	ND	2.5		ND	4.2	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	2.5		ND	7.6	
Bromoethane(Ethyl bromide)	74-96-4	108.0	ND	2.5		ND	11	
3-Chloropropene(Allyl chloride)	107-05-1	76.53	ND	2.5		ND	7.8	
Carbon disulfide	75-15-0	76.14	ND	2.5		ND	7.8	
Methylene chloride	75-09-2	84.94	ND	2.5		ND	8.7	
Acrylonitrile	107-13-1	53.00	ND	2.5		ND	5.4	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	2.5		ND	9.0	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	2.5		ND	10	
n-Hexane	110-54-3	86.17	27	2.5		94	8.8	
1,1-Dichloroethane	75-34-3	98.96	ND	2.5		ND	10	
Vinyl acetate	108-05-4	86.00	ND	2.5		ND	8.8	
2-Butanone(MEK)	78-93-3	72.10	4.4	2.5		13	7.4	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	2.5		ND	10	
Ethyl acetate	141-78-6	88.10	35	2.5		130	9.0	
Chloroform	67-66-3	119.4	ND	2.5		ND	12	
Tetrahydrofuran	109-99-9	72.11	ND	2.5		ND	7.4	
1,1,1-Trichloroethane	71-55-6	133.4	ND	2.5		ND	14	
Cyclohexane	110-82-7	84.16	ND	2.5		ND	8.6	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	2.5		ND	12	
Carbon tetrachloride	56-23-5	153.8	ND	2.5		ND	16	
n-Heptane	142-82-5	100.2	7.4	2.5		30	10	
1,2-Dichloroethane	107-06-2	98.96	ND	2.5		ND	10	
Benzene	71-43-2	78.11	ND	2.5		ND	8.0	
Trichloroethene	79-01-6	131.4	29	2.5		150	13	
1,2-Dichloropropane	78-87-5	113.0	ND	2.5		ND	12	
Methyl Methacrylate	80-62-6	100.12	11	2.5		45	10	
Bromodichloromethane	75-27-4	163.8	ND	2.5		ND	17	
1,4-Dioxane	123-91-1	88.12	ND	2.5		ND	9.0	
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	2.5		ND	10	

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Dilution1	04/28/2017	KW	K12312.D	ME0711	28 cc	50
Dilution2	05/01/2017	KW	K12327.D	ME0711	21 cc	600

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	2.5		ND	11	
Toluene	108-88-3	92.14	25	2.5		100	9.4	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	2.5		ND	11	
1,1,2-Trichloroethane	79-00-5	133.4	ND	2.5		ND	14	
2-Hexanone(MBK)	591-78-6	100.1	ND	2.5		ND	10	
Tetrachloroethene	127-18-4	165.8	ND	2.5		ND	17	
Dibromochloromethane	124-48-1	208.3	ND	2.5		ND	21	
1,2-Dibromoethane	106-93-4	187.8	ND	2.5		ND	19	
Chlorobenzene	108-90-7	112.6	68	2.5		310	12	
Ethylbenzene	100-41-4	106.2	110	2.5		460	11	
Xylene (p,m)	1330-20-7	106.2	440	50	D	1900	220	Reported Dilution #1
Xylene (Ortho)	95-47-6	106.2	170	2.5		750	11	
Styrene	100-42-5	104.1	ND	2.5		ND	11	
Isopropylbenzene (cumene)	98-82-8	120.19	23	2.5		120	12	
Bromoform	75-25-2	252.8	ND	2.5		ND	26	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	2.5		ND	17	
4-Ethyltoluene	622-96-8	120.2	460	25	D	2200	120	Reported Dilution #1
1,3,5-Trimethylbenzene	108-67-8	120.2	170	2.5		820	12	
2-Chlorotoluene	95-49-8	126.6	ND	2.5		ND	13	
1,2,4-Trimethylbenzene	95-63-6	120.2	500	25	D	2500	120	Reported Dilution #1
1,3-Dichlorobenzene	541-73-1	147.0	ND	2.5		ND	15	
1,4-Dichlorobenzene	106-46-7	147.0	ND	2.5		ND	15	
Benzyl chloride	100-44-7	126.0	ND	2.5		ND	13	
1,2-Dichlorobenzene	95-50-1	147.0	ND	2.5		ND	15	
1,2,4-Trichlorobenzene	120-82-1	181.5	ND	2.5		ND	19	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	2.5		ND	27	
Naphthalene	91-20-3	128.17	9.0	2.5		47	13	
Total Target Compound Concentrations:			24000	ppbv		60000	ug/m3	

Surrogate

4-Bromofluorobenzene

Result

11

Spike

10

Recovery

110%

Qualifier Definitions**ND = Non Detect**

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

Method Reference

USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air..." Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).



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Project: Manufacturing Floor	Sample ID: 0711-Langley

<u>Analysis</u>	<u>Analysis Date</u>	<u>Analyst Init.</u>	<u>Lab File ID</u>	<u>Canister ID</u>	<u>Sample Vol.</u>	<u>Dil. Factor</u>
Initial	04/28/2017	KW	K12304.D	ME0711	276 cc	5
Dilution1	04/28/2017	KW	K12312.D	ME0711	28 cc	50
Dilution2	05/01/2017	KW	K12327.D	ME0711	21 cc	600

Tentatively Identified Compound Results Summary

Tentatively Identified Compounds	CAS#	MW(1)	Result ppbv	Q	Result ug/m3	Retention Time	Comments
Cyclohexanone	000108-94-1	98	87	JN	350	26.11	
Benzene, propyl-	000103-65-1	120	110	JN	530	26.66	
Unknown Substituted Benzene		92	160	JN	580	27.39	
D-Limonene	005989-27-5	136	100	JN	570	28.01	
Benzene, 1,2,3-trimethyl-	000526-73-8	120	140	JN	690	28.46	
Unknown Substituted Benzene		92	150	JN	550	28.69	
Unknown Substituted Benzene		92	190	JN	730	28.81	
Indane	000496-11-7	118	52	JN	250	29.05	
Unknown Substituted Benzene		92	68	JN	260	29.17	
Unknown Substituted Benzene		92	89	JN	340	29.31	
Unknown Substituted Benzene		92	77	JN	290	29.39	
Unknown Substituted Benzene		92	120	JN	450	29.53	
Unknown Substituted Benzene		92	42	JN	160	30.15	
Unknown Substituted Benzene		92	53	JN	200	30.20	
Unknown Substituted Benzene		92	110	JN	410	30.33	
Unknown Substituted Benzene		92	40	JN	150	31.38	
Total TIC Concentrations:			1600	ppbv	6500	ug/m3	

Qualifier Definitions

- (1) = If unknown, MW is assigned as equivalent Toluene (92) for ug/m3 conversion purposes.
- B = Compound also found in method blank.
- J= Estimated value based on a 1:1 response to internal standard.
- N= Presumptive evidence of compound based on library match.

Method Reference

USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air..." Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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Dilution2	05/01/2017	KW	K12327.D	ME0711	21 cc	600

Total Volatile Organic Compounds (TVOC) Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
n-Butane	106-97-8	58.12	24	2.5		56	5.9	
Ethanol	64-17-5	46.07	400	25	D	760	47	Reported Dilution #1
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	49	2.5		120	6.1	
Acetone	67-64-1	58.08	21000	300	D	49000	710	Reported Dilution #2
n-Hexane	110-54-3	86.17	27	2.5		94	8.8	
2-Butanone(MEK)	78-93-3	72.10	4.4	2.5		13	7.4	
Ethyl acetate	141-78-6	88.10	35	2.5		130	9.0	
n-Heptane	142-82-5	100.20	7.4	2.5		30	10	
Trichloroethene	79-01-6	131.40	29	2.5		150	13	
Methyl Methacrylate	80-62-6	100.1	11	2.5		45	10	
Toluene	108-88-3	92.14	25	2.5		100	9.4	
Chlorobenzene	108-90-7	112.60	68	2.5		310	12	
Ethylbenzene	100-41-4	106.20	110	2.5		460	11	
Xylene (p,m)	1330-20-7	106.20	440	50	D	1900	220	Reported Dilution #1
Xylene (Ortho)	95-47-6	106.20	170	2.5		750	11	
Isopropylbenzene (cumene)	98-82-8	120.19	23	2.5		120	12	
4-Ethyltoluene	622-96-8	120.2	460	25	D	2200	120	Reported Dilution #1
1,3,5-Trimethylbenzene	108-67-8	120.2	170	2.5		820	12	
1,2,4-Trimethylbenzene	95-63-6	120.20	500	25	D	2500	120	Reported Dilution #1
Naphthalene	91-20-3	128.17	9.0	2.5		47	13	
Total Target Compound Concentrations:			24000	ppbv		60000	ug/m3	

Qualifier Definitions

B = Compound also found in method blank.

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Unknown Substituted Benzene		92	160	JN	580	27.39	
D-Limonene	005989-27-5	136	100	JN	570	28.01	
Benzene, 1,2,3-trimethyl-	000526-73-8	120	140	JN	690	28.46	
Unknown Substituted Benzene		92	150	JN	550	28.69	
Unknown Substituted Benzene		92	190	JN	730	28.81	
Indane	000496-11-7	118	52	JN	250	29.05	
Unknown Substituted Benzene		92	68	JN	260	29.17	
Unknown Substituted Benzene		92	89	JN	340	29.31	
Unknown Substituted Benzene		92	77	JN	290	29.39	
Unknown Substituted Benzene		92	120	JN	450	29.53	
Unknown Substituted Benzene		92	42	JN	160	30.15	
Unknown Substituted Benzene		92	53	JN	200	30.2	
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Dilution2	05/01/2017	KW	K12327.D	ME0711	21 cc	600

Total Volatile Organic Compounds (TVOC) Summary

Unknown Substituted Benzene	92	40	JN	150	31.38
Total TIC Concentrations:		1600 ppbv		6500 ug/m3	

Qualifier Definitions

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Total Volatile Organic Compounds (TVOCs): **26000 ppbv** **67000 ug/m3**