



**EMSL ANALYTICAL, INC.**  
 200 Route 130 North  
 Cinnaminson, NJ 08077  
 Telephone: (856)858-4800 FAX: (856)858-4571  
[to15lab@EMSL.com](mailto:to15lab@EMSL.com) | <http://www.EMSL.com>

EMSL ORDER ID: 491800115  
 EMSL CUSTOMER ID: EMSL50  
 EMSL SAMPLE ID: 491800115-0001  
 CUSTOMER SAMPLE ID: VOC-01

**Attention:** EMSL Analytical, Inc  
 200 US Route 130 North  
 Cinnaminson, NJ 08077

**Customer PO:**  
**EMSL Project ID:**  
**Project Name:** USEPA TO-15 Sample Report

**Phone:** 856-858-4800  
**Email:** [to15lab@EMSL.com](mailto:to15lab@EMSL.com)

**Collected:** 10/22/2020 10:12  
**Received:** 10/23/2020 8:32  
**Analyzed:** See Results  
**Reported:** 10/23/2020

Analysis Initial	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Dilution1	10/22/2020	KW	K14736.D	HD4365	250 cc	1
	10/22/2020	KW	K14753.D	HD4365	50 cc	5

### NIOSH and OSHA Exposure Limit Comparisons

Target Compounds	Tox. Basis	CAS#	MW	Result ppbv	Q	Result ug/m3	NIOSH REL ug/m3	OSHA PEL ug/m3
Propylene	NC	115-07-1	42.08	ND		ND	N.E.	N.E.
Freon 12(Dichlorodifluoromethane)	NC	75-71-8	120.90	ND		ND	4900000	4900000
Freon 114(1,2-Dichlorotetrafluoroethan	--	76-14-2	170.90	ND		ND	7000000	7000000
Chloromethane	NC	74-87-3	50.49	0.78		1.6	LFC	210000
n-Butane	--	106-97-8	58.12	65	D	160	1900000	N.E.
Vinyl chloride	C	75-01-4	62.50	ND		ND	LFC	2600
1,3-Butadiene	C	106-99-0	54.09	ND		ND	LFC	2200
Bromomethane	NC	74-83-9	94.94	ND		ND	LFC	78000
Chloroethane	NC	75-00-3	64.52	ND		ND	LFC	2600000
Ethanol	--	64-17-5	46.07	450	DE	850	1900000	1900000
Bromoethene(Vinyl bromide)	C	593-60-2	106.90	ND		ND	LFC	N.E.
Freon 11(Trichlorofluoromethane)	--	75-69-4	137.40	ND		ND	5600000	5600000
Isopropyl alcohol(2-Propanol)	NC	67-63-0	60.10	17		41	980000	980000
Freon 113(1,1,2-Trichlorotrifluoroethan	NC	76-13-1	187.40	ND		ND	7700000	7700000
Acetone	NC	67-64-1	58.08	48	D	120	590000	2400000
1,1-Dichloroethene	NC	75-35-4	96.94	ND		ND	790000	N.E.
Acetonitrile	NC	75-05-8	41.00	ND		ND	34000	67000
Tertiary butyl alcohol(TBA)	--	75-65-0	74.12	ND		ND	300000	300000
Bromoethane(Ethyl bromide)	--	74-96-4	108.00	ND		ND	880000	880000
3-Chloropropene(Allyl chloride)	C	107-05-1	76.53	ND		ND	3100	3100
Carbon disulfide	NC	75-15-0	76.14	ND		ND	3100	62000
Methylene chloride	C	75-09-2	84.94	ND		ND	LFC	87000
Acrylonitrile	C	107-13-1	53.00	ND		ND	2200	4300
Methyl-tert-butyl ether(MTBE)	C	1634-04-4	88.15	ND		ND	N.E.	N.E.
trans-1,2-Dichloroethene	--	156-60-5	96.94	ND		ND	790000	790000
n-Hexane	NC	110-54-3	86.17	0.80		2.8	180000	1800000
1,1-Dichloroethane	C	75-34-3	98.96	ND		ND	400000	400000
Vinyl acetate	NC	108-05-4	86.00	ND		ND	14000	N.E.
2-Butanone(MEK)	NC	78-93-3	72.10	1.5		4.4	590000	590000
cis-1,2-Dichloroethene	--	156-59-2	96.94	ND		ND	790000	790000
Ethyl acetate	NC	141-78-6	88.10	4.4		16	1400000	1400000
Chloroform	C	67-66-3	119.40	1.0		5.1	9800	240000
Tetrahydrofuran	NC	109-99-9	72.11	ND		ND	590000	590000
1,1,1-Trichloroethane	NC	71-55-6	133.40	ND		ND	1900000	1900000
Cyclohexane	NC	110-82-7	84.16	ND		ND	1000000	1000000
2,2,4-Trimethylpentane(Isooctane)	--	540-84-1	114.20	0.85		4.0	N.E.	N.E.
Carbon tetrachloride	C	56-23-5	153.80	ND		ND	13000	63000
n-Heptane	NC	142-82-5	100.20	ND		ND	350000	2000000
1,2-Dichloroethane	C	107-06-2	98.96	ND		ND	4000	200000
Benzene	C	71-43-2	78.11	1.7		5.4	320	3200
Trichloroethene	C	79-01-6	131.40	ND		ND	130000	540000
1,2-Dichloropropane	C	78-87-5	113.00	ND		ND	LFC	350000
Methyl Methacrylate	NC	80-62-6	100.12	ND		ND	410000	410000
Bromodichloromethane	C	75-27-4	163.80	ND		ND	N.E.	N.E.
1,4-Dioxane	C	123-91-1	88.12	ND		ND	3600	360000
4-Methyl-2-pentanone(MIBK)	NC	108-10-1	100.20	ND		ND	200000	410000
cis-1,3-Dichloropropene**	C	10061-01-5	111.00	ND		ND	4500	N.E.



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### NIOSH and OSHA Exposure Limit Comparisons

Target Compounds	Tox. Basis	CAS#	MW	Result ppbv	Q	Result ug/m3	NIOSH REL ug/m3	OSHA PEL ug/m3
Toluene	NC	108-88-3	92.14	3.7		14	380000	750000
trans-1,3-Dichloropropene**	C	10061-02-6	111.00	ND		ND	4500	N.E.
1,1,2-Trichloroethane	C	79-00-5	133.40	ND		ND	55000	55000
2-Hexanone(MBK)	NC	591-78-6	100.10	ND		ND	4100	410000
Tetrachloroethene	C	127-18-4	165.80	3.0		20	LFC	680000
Dibromochloromethane	--	124-48-1	208.30	ND		ND	N.E.	N.E.
1,2-Dibromoethane	C	106-93-4	187.80	ND		ND	350	150000
Chlorobenzene	NC	108-90-7	112.60	ND		ND	N.E.	350000
Ethylbenzene	C	100-41-4	106.20	0.63		2.7	430000	430000
Xylene (p,m)	NC	1330-20-7	106.20	1.9		8.3	430000	430000
Xylene (Ortho)	NC	95-47-6	106.20	0.74		3.2	430000	430000
Styrene	NC	100-42-5	104.10	ND		ND	210000	430000
Isopropylbenzene (cumene)	NC	98-82-8	120.19	ND		ND	250000	250000
Bromoform	C	75-25-2	252.80	ND		ND	5200	5200
1,1,2,2-Tetrachloroethane	C	79-34-5	167.90	ND		ND	6900	34000
4-Ethyltoluene	--	622-96-8	120.20	1.3		6.4	N.E.	N.E.
1,3,5-Trimethylbenzene	NC	108-67-8	120.20	ND		ND	120000	N.E.
2-Chlorotoluene	--	95-49-8	126.60	ND		ND	260000	N.E.
1,2,4-Trimethylbenzene	NC	95-63-6	120.20	1.7		8.2	120000	N.E.
1,3-Dichlorobenzene	--	541-73-1	147.00	ND		ND	N.E.	N.E.
1,4-Dichlorobenzene	C	106-46-7	147.00	ND		ND	LFC	450000
Benzyl chloride	C	100-44-7	126.00	ND		ND	5200	5200
1,2-Dichlorobenzene	NC	95-50-1	147.00	ND		ND	300000	300000
1,2,4-Trichlorobenzene	NC	120-82-1	181.50	ND		ND	37000	N.E.
Hexachloro-1,3-butadiene	C	87-68-3	260.80	ND		ND	210	N.E.
Naphthalene	C	91-20-3	128.17	ND		ND	52000	52000

\*\*The concentrations of each isomer should be added if multiple isomers are present and compared to the total screening level.

The > column is used to flag exceedances as marked

**Exposure Limit Definitions**

REL= Recommended Exposure Limit, PEL= Permissible Exposure Limit

**Compound Exposure Definitions**

NE= No Limit Established NS= No Screening Value  
 LFC= Lowest Feasible Concentration

**Agency Definitions**

NIOSH= The National Institute for Occupational Safety and Health  
 OSHA= Occupational Safety and Health Administration

**Reference**

Occupational Safety and Health Administration (OSHA) (2017) Air Contaminants. 29 CFR 1910.1000 [82 FR 2735, January 9, 2017].

**Carcinogenic (C) Exceedance**

Value exceeds the theoretical risk that 1 additional case of cancer will occur in a population of 1 million than statistically expected.  
 Thus is a theoretical risk and not an actual epidemiological one.

**Qualifier Definitions**

B = Compound also found in method blank. ND = Non Detect  
 E= Estimated concentration exceeding upper calibration range.  
 D= Result reported from diluted analysis.  
 J= Concentration estimated between Reporting Limit and MDL.

**NonCarcinogenic (NC) Exceedance**

Value exceeds the theoretical risk that 1 in a population of 100,000 will experience deleterious health effects.  
 Thus is a theoretical risk and not an actual epidemiological one.