Integrated Analytical Laboratories LLC

Volatile Organic Compounds by EPA Method TO-15

Pennsylvania DEP Lists and Limits

Summa Canister Size Recommendation

				6L only		*6L only*	
Compound	**Synonyms**	**CAS #**	**MW**	**PADEP TO-15 RLs (ppbv) Indoor/ Ambient Air**	**PADEP TO-15 RLs (ug/m3) Indoor/ Ambient Air**	**PADEP TO-15 RLs (ppbv) Soil Gas/ Sub-Slab**	**PADEP TO-15 RLs (ug/m3) Soil Gas/ Sub-Slab**
Acetone	2-propanone, dimethyl ketone, propanone	67-64-1	58.08	0.20	0.48	0.20	0.48
Acrolein	2-Propenal, acraldehyde, acrylic aldehyde, allyl aldehyde	107-02-8	56.06	0.20	0.46	0.20	0.46
Allyl Chloride	3-chloropropene, chloroallylene	107-05-1	76.53	0.20	0.63	0.20	0.63
Benzene	Benzol	71-43-2	78.11	0.20	0.64	0.20	0.64
Benzyl Chloride	Chloromethylbenzene, α-chlorotoluene	100-44-7	126.6	0.20	1.0	0.20	1.0
Bromodichloromethane	Methane-bromodichloro, BDCM	75-27-4	163.8	0.13	0.87	0.13	0.87
Bromoform	Tribromomethane, methyl tribromide	75-25-2	252.8	0.20	2.1	0.20	2.1
Bromomethane	Methyl bromide	74-83-9	94.94	0.20	0.78	0.20	0.78
1,3-Butadiene		106-99-0	54.09	0.20	0.44	0.20	0.44
n-Butane	Methylethylmethane, butyl hydride or diethyl	106-97-8	74.12	0.20	0.61	0.20	0.61
Carbon disulfide	Carbon bisulfide, dithiocarbonic anhydride	75-15-0	76.14	0.20	0.62	0.20	0.62
Carbon tetrachloride	Tetrachloromethane, perchloromethane, methane tetrachloride	56-23-5	153.8	0.20	1.3	0.20	1.3
Chlorobenzene	Chlorobenzol, Phenyl chloride, benzene chloride	108-90-7	112.6	0.20	0.92	0.20	0.92
Chloroethane	Ethyl chloride, hydrochloric ether	75-00-3	64.52	0.20	0.5	0.20	0.5
Chloroform	Trichloromethane, Methyl trichloride, Freon 20	67-66-3	119.4	0.20	0.98	0.20	0.98
Chloromethane	Methyl chloride	74-87-3	50.49	0.20	0.41	0.20	0.41
2-Chlorotoluene	1-Chloro-2-methylbenzene, o-chlorotoluene	95-49-8	126.6	0.20	1.0	0.20	1.0
Cumene	Isopropylbenzene, cumol, 2-phenyl propane	98-82-8	120.2	0.20	0.98	0.20	0.98
Cyclohexane	Hexahydrobenzene, hexamethylene, hexanaphthane, benzene hexahydride	110-82-7	84.16	0.20	0.69	0.20	0.69
Dibromochloromethane	Chlorodibromomethane	124-48-1	208.3	0.20	1.7	0.20	1.7
1,2-Dibromoethane	o-dichlorobenzene dizene, o-dichlor benzol, chloroben, ethylene dibromide	106-93-4	187.9	0.20	1.5	0.20	1.5
1,2-Dichlorobenzene	o-dichlorobenzene, o-dichlorobenzol	95-50-1	147.0	0.20	1.2	0.20	1.2
1,3-Dichlorobenzene	m-dichlorobenzene, m-dichlorobenzol	541-73-1	147.0	0.20	1.2	0.20	1.2
1,4-Dichlorobenzene	p-dichlorobenzene, p-dichlorobenzol	106-46-7	147.0	0.20	1.2	0.20	1.2
Dichlorodifluoromethane	Freon 12	75-71-8	120.9	0.20	0.99	0.20	0.99

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1,1-Dichloroethane	Ethylidene chloride	75-34-3	98.96	0.20	0.81	0.20	0.81
1,2-Dichloroethane	Ethylene dichloride	107-06-2	98.96	0.20	0.81	0.20	0.81
1,1-Dichloroethene	Vinylidene chloride	75-35-4	96.94	0.20	0.79	0.20	0.79
1,2-Dichloroethene (cis)	cis-Dichloroethylene, cis-1,2-DCE	156-59-2	96.94	0.20	0.79	0.20	0.79
1,2-Dichloroethene (trans)	trans-Acetylene dichloride, trans-1,2-DCE	156-60-5	96.94	0.20	0.79	0.20	0.79
1,2-Dichloropropane	Propylene dichloride	78-87-5	113.0	0.20	0.92	0.20	0.92
1,3-Dichloropropene (cis)		10061-01-5	111.0	0.20	0.91	0.20	0.91
1,3-Dichloropropene (trans)		10061-02-6	111.0	0.20	0.91	0.20	0.91
1,2-Dichlorotetrafluoroethane	Freon 114, Genetron 114	76-14-2	170.9	0.20	1.4	0.20	1.4
1,4-Dioxane	Dioxane, p-dioxane, diethylene dioxide, diethylene ether	123-91-1	88.10	0.20	0.72	0.20	0.72
Ethanol	Ethyl alcohol, anhydrol, methyl carbinol	64-17-5	46.07	0.20	0.38	0.20	0.38
Ethyl Acetate	Acetic ether, ethyl acetate, acetoxyethane, ethyl ethanoate, ethyl acetic ester	141-78-6	88.10	0.20	0.72	0.20	0.72
Ethylbenzene	Ethylbenzol, phenylethane	100-41-4	106.2	0.20	0.87	0.20	0.87
4-Ethyltoluene	p-Ethyl toluene, 1-ethyl-4-methyl benzene, p-methylethylbenzene	622-96-8	120.2	0.20	0.98	0.20	0.98
n-Heptane	Heptane, Dipropylmethane	142-82-5	100.2	0.20	0.82	0.20	0.82
1,3-Hexachlorobutadiene	Hexachloro-1,3-butadiene, perchlorobutadiane	87-68-3	260.8	0.20	2.1	0.20	2.1
n-Hexane	Hexane	110-54-3	86.17	0.20	0.70	0.20	0.70
Isopropyl alcohol	Isopropanol, IPA, 2-propanol, dimethyl carbinol, SEC-propyl alcohol, 2-hydroxypropane, Isohol, Lutosos, rubbing alcohol	67-63-0	60.10	0.20	0.5	0.20	0.5
Methyl n-butyl ketone	2-Hexanone, propylacetone	591-78-6	100.2	0.20	0.8	0.20	0.8
Methyl ethyl ketone	2-Butanone, MEK, methyl acetone, butanone, methyl-2-propanone	78-93-3	72.11	0.20	0.59	0.20	0.59
Methyl isobutyl ketone	4-Methyl-2-pentanone, MIBK, hexone, isopropylacetone, isobutyl methyl ketone	108-10-1	100.2	0.20	0.82	0.20	0.82
Methyl methacrylate	MMA, 2-(methoxycarbonyl)-1-propene	80-62-6	100.1	0.20	0.82	0.20	0.82

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Methyl tert-butyl ether	Methyl tertiary-butyl ether, MTBE, methyl 1,1-dimehtylethyl ether, 2-methoxy 2-methylpropane	1634-04-4	88.15	0.20	0.72	0.20	0.72
Methylene chloride	Dichloromethane, methylene dichloride	75-09-2	84.94	0.20	0.69	0.20	0.69
n-Nonane	Nonane, nonyl hydride	111-84-2	128.6	0.20	1.1	0.20	1.1
n-Pentane	Amyl hydride	109-66-0	72.15	0.20	0.6	0.20	0.6
n-Propyl benzene	1-Phenylpropane, Isocumene	103-65-1	120.0	0.18	0.88	0.18	0.88
Propene	Propylene, methylethylene	115-07-1	42.08	0.20	0.34	0.20	0.34
Styrene	Vinyl benzene, phenyl ethylene, ethenyl benzene	100-42-5	104.1	0.20	0.85	0.20	0.85
tert-Butyl alcohol	Tertiary butanol, 1,1-dimethylethanol, 2-methyl-2-propanol, trimethylcarbinol	75-65-0	74.12	0.20	0.61	0.20	0.61
1,1,2,2-Tetrachloroethane	Acetylene tratrachloride, tetrachloroethane, TCA	79-34-5	167.9	0.20	1.4	0.20	1.4
Tetrachloroethene	Perchloroethylene, ethylene tetrachloride, PCE	127-18-4	165.8	0.20	1.4	0.20	1.4
Tetrahydrofuran	Butylene oxide, 1,4-epoxybutane, cyclotetramethylene oxide, furanidine, THF	100-99-9	72.11	0.20	0.59	0.20	0.59
Toluene	Methylbenzene, Phenylmethane, toluol	108-88-3	92.14	0.20	0.75	0.20	0.75
1,2,4-Trichlorobenzene	uns-trichlorobenzene	120-82-1	181.5	0.20	1.5	0.20	1.5
1,1,1-Trichloroethane	Methyl chloroform, MC, alpha-trichloroethane	71-55-6	133.4	0.20	1.1	0.20	1.1
1,1,2-Trichloroethane	Ethane trichloride, B-trichloroethane, vinyl trichloride	79-00-5	133.4	0.20	1.1	0.20	1.1
Trichloroethene	Trichloroethylene, ethylene trichloride, TCE	79-01-6	131.4	0.20	1.1	0.20	1.1
Trichlorofluoromethane	Freon 11, Halocarbon 11	75-69-4	137.4	0.20	1.1	0.20	1.1
1,1,2-Trichloro-1,2,2-trifluoroethane	Trichlorotrifluoroethane, Freon 113	76-13-1	187.4	0.20	1.5	0.20	1.5
1,2,4-Trimethylbenzene	Pseudocumene, pseudocumol, psi-Cumene	95-63-6	120.2	0.20	0.98	0.20	0.98
1,3,5-Trimethylbenzene	Trimethyl benzol, mesitylene	108-67-8	120.2	0.20	0.98	0.20	0.98
2,2,4-Trimethylpentane	Isooctane, isobutyltrimethylpentane	540-84-1	114.2	0.20	0.93	0.20	0.93
Vinyl acetate	Acetic acid vinyl ester, ethenyl ethanoate, acetic acid ethenyl ester	108-05-4	86.09	0.20	0.70	0.20	0.70
Vinyl bromide	Bromoethene	593-60-2	106.9	0.20	0.87	0.20	0.87

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Vinyl chloride	VCM, Chloroethylene, chloroethane	75-01-4	62.50	0.20	0.51	0.20	0.51
Xylenes (m&p)	m- or p-Xylol, 1,3-dimethylbenzene (m-xylene); 1-4-dimethylbenzene (p-xylene)	179601-23-1	106.2	0.20	0.87	0.20	0.87
Xylene (o)	o-Xylol, 1,2-dimethylbenzene	95-47-6	106.2	0.20	0.87	0.20	0.87

[#] Naphthalene may be added to most TO-15 analysis. Please contact laboratory in advance with request (and quote information) for naphthalene analysis.

[1] - Optional Library Search for 10 (or more) compounds may be added. The library search finds "tentatively identified compounds" or TICs from a database of over possible 50,000 compounds.

[2] - Library Search for 30 compounds (or less if the sample does not contain 30) is included. The library search finds TICs from a database of over possible 50,000 compounds. TICs are reported with full chemical nomenclature and with a secondary list containing total alkanes/alkenes.

[3] - PADEP does not allow naphtalene analysis by Method TO-15. Other methods (e.g. EPA TO-13A, NIOSH 1550) must be used to analyze naphthalene levels.