Residential Volatilization to Indoor Air Pathway (VIAP) Screening Levels

Table 1. Residential volatilization to indoor air pathway (VIAP) screening levels. The VIAP screening levels are calculated based on unrestricted residential use. The building construction input parameters include those associated with a residential structure that has a basement and contains less than 6 floors. The basement must have poured slab and poured or concrete black walls for these VIAP screening levels to be applicable.
The shallow groundwater VIAP screening levels must be used when the depth to first encountered groundwater is 10 feet below ground surface or less. The groundwater not in contact VIAP screening levels apply when the depth to first encountered groundwater is greater than 10 feet below ground surface.
The United States Department of Agriculture (USDA) inputs for the soil type of sand and system temperature of 10 °C were used during screening level development.
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CAS No.	Hazardous Substance	Residential Shallow Groundwater µg/L	Residential Groundwater Not In Contact µg/L	Residential Soil µg/kg	Residential Soil Vapor µg/m^3
83329	Acenaphthene	3,900 (S) sol	3,900 (S) sol	2.0E+05 nc	7,300 nc
208968	Acenaphthylene	65 nc	65 (CC) nc	DATA	7,300 nc
75070	Acetaldehyde	190 nc	5,700 nc	34 (M) nc	310 nc
71501	Acetate	NA	NA	NA	NA
64197	Acetic acid	3.6E+06 nc	1.1E+08 nc	6.5E+05 nc	8,700 nc
67641	Acetone	50,000 (FF) st	4.0E+07 (EE) st	2.6E+05 (EE) st	1.0E+06 (EE) st
75058	Acetonitrile	2,800 nc	86,000 nc	620 (M) nc	2,100 nc
98862	Acetophenone	8,700 (DD) dev	6.1E+06 (S) (DD) sol	6.2E+05 (DD) dev	1.1E+05 (DD) dev
107028	Acrolein	0.25 (M) nc	7.6 (M) nc	4.6E-02 (M) nc	0.70 nc
79061	Acrylamide	NA	NA	NA	NA
79107	Acrylic acid	1,400 nc	43,000 nc	260 nc	7.0 nc
107131	Acrylonitrile	4.6 ca	140 ca	1.2 (M) ca	12 ca
15972608	Alachlor	NA	NA	NA	NA
116063	Aldicarb	NA	NA	NA	NA
1646884	Aldicarb sulfone	NA	NA	NA	NA

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1646873	Aldicarb sulfoxide	NA	NA	NA	NA
309002	Aldrin	0.61 ca	17 (S) sol	520 ca	0.17 ca
7429905	Aluminum	NA	NA	NA	NA
7664417	Ammonia	1,900 (FF) st	1.2E+06 nc	DATA	17,000 nc
994058	t-Amyl methyl ether (TAME)	82 nc	2,400 nc	34 (M) nc	2,200 nc
62533	Aniline	NA	NA	NA	NA
120127	Anthracene	43 (S) sol	43 (S) sol	1.3E+07 nc	35,000 nc
7440360	Antimony	NA	NA	NA	NA
7440382	Arsenic	NA	NA	NA	NA
1332214	Asbestos	NA	NA	NA	NA
1912249	Atrazine	NA	NA	NA	NA
103333	Azobenzene	1.8 (M) ca	1.8 (M) (CC) ca	DATA	27 ca
7440393	Barium	NA	NA	NA	NA
71432	Benzene	1.0 ca	28 ca	1.7 (M) ca	110 ca
92875	Benzidine	NA	NA	NA	NA
56553	Benzo(a)anthracene	9.4 (S) (MM) sol	9.4 (S) (MM) sol	1.6E+05 (MM) mut	5.8 (MM) mut

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205992	Benzo(b)fluoranthene	NA	NA	NA	NA
207089	Benzo(k)fluoranthene	NA	NA	NA	NA
191242	Benzo(g,h,i)perylene	NA	NA	NA	NA
50328	Benzo(a)pyrene	NA	NA	NA	NA
65850	Benzoic acid	NA	NA	NA	NA
100516	Benzyl alcohol	NA	NA	NA	NA
100447	Benzyl chloride	2.5 (M) ca	75 ca	12 (M) ca	17 ca
7440417	Beryllium	NA	NA	NA	NA
112265	bis(2-Chloroethoxy)ethane	NA	NA	NA	NA
111444	bis-2-Chloroethylether	6.8 ca	200 ca	3.4 (M) ca	2.6 ca
117817	bis(2-Ethylhexyl) phthalate	NA	NA	NA	NA
7440428	Boron	NA	NA	NA	NA
15541454	Bromate	NA	NA	NA	NA
108861	Bromobenzene	62 nc	1,800 nc	160 nc	2,100 nc
75274	Bromodichloromethane	1.2 ca	34 ca	0.61 (M) ca	48 ca
75252	Bromoform	89 ca	2,700 ca	45 (M) ca	770 ca

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74839	Bromomethane	2.1 (M) nc	55 nc	0.90 (M) nc	350 nc
71363	n-Butanol	98,000 nc	3.0E+06 nc	20,000 nc	12,000 nc
78933	2-Butanone (MEK)	2,600 (DD) dev	4.3E+06 (DD) dev	31,000 (DD) dev	1.7E+05 (DD) dev
123864	n-Butyl acetate	2,900 nc	89,000 nc	1,100 nc	14,000 nc
75650	t-Butyl alcohol	17,000 nc	5.1E+05 nc	3,200 nc	2,500 nc
85687	Butyl benzyl phthalate	NA	NA	NA	NA
104518	n-Butylbenzene	44 nc	1,100 nc	550 nc	7,000 nc
135988	sec-Butylbenzene	270 nc	8,100 nc	3,800 nc	14 nc
98066	t-Butylbenzene	7.7E-02 (M) nc	1.8 nc	0.64 (M) nc	14 nc
7440439	Cadmium	NA	NA	NA	NA
79925	Camphene	4.2 nc	31 nc	14 nc	2,800 nc
105602	Caprolactam	NA	NA	NA	NA
63252	Carbaryl	NA	NA	NA	NA
86748	Carbazole	NA	NA	NA	NA
1563662	Carbofuran	NA	NA	NA	NA
75150	Carbon disulfide	92 nc	2,100 nc	52 (M) nc	24,000 nc

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56235	Carbon tetrachloride	0.41 (M) ca	7.7 ca	0.31 (M) ca	150 ca
57749	Chlordane	18 (EE) st	56 (S) (EE) sol	13,000 (EE) st	6.7 (EE) st
16887006	Chloride	NA	NA	NA	NA
95512	2-Chloroaniline	NA	NA	NA	NA
106478	4-Chloroaniline	NA	NA	NA	NA
108907	Chlorobenzene	33 nc	940 nc	82 nc	1,700 nc
98668	p-Chlorobenzene sulfonic acid	NA	NA	NA	NA
75683	1-Chloro-1,1-difluoroethane	2,800 nc	32,000 nc	2,400 nc	1.7E+06 nc
75003	Chloroethane	620 nc	15,000 nc	330 nc	1.4E+05 nc
110758	2-Chloroethyl vinyl ether	TX	TX	TX	TX
67663	Chloroform	0.49 (M) ca	14 ca	0.26 (M) ca	37 ca
74873	Chloromethane	15 nc	380 nc	6.9 (M) nc	3,100 nc
59507	4-Chloro-3-methylphenol	NA	NA	NA	NA
91587	beta-Chloronaphthalene	TX	TX	TX	TX
95578	2-Chlorophenol	45 (DD) dev	1.1E+05 (DD) dev	12,000 (DD) dev	600 (DD) dev
95498	o-Chlorotoluene	50 nc	1,400 nc	200 nc	2,800 nc

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2921882	Chlorpyrifos	NA	NA	NA	NA
16065831	Chromium (III)	NA	NA	NA	NA
18540299	Chromium (VI)	NA	NA	NA	NA
218019	Chrysene	NA	NA	NA	NA
7440484	Cobalt	NA	NA	NA	NA
7440508	Copper	NA	NA	NA	NA
21725462	Cyanazine	NA	NA	NA	NA
74908	Cyanide, Hydrogen	9.0 nc	270 nc	1.8 (M) nc	28 nc
110827	Cyclohexane	290 nc	2,000 nc	320 (M) nc	2.1E+05 nc
108941	Cyclohexanone	2.0E+05 nc	5.9E+06 nc	68,000 nc	24,000 nc
1861321	Dacthal	NA	NA	NA	NA
75990	Dalapon	NA	NA	NA	NA
72548	4-4`-DDD	NA	NA	NA	NA
72559	4-4`-DDE	32 ca	40 (S) sol	39,000 ca	8.7 ca
50293	4-4`-DDT	NA	NA	NA	NA
1163195	Decabromodiphenyl ether	NA	NA	NA	NA

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CAS No.	Hazardous Substance	Residential Shallow Groundwater µg/L	Residential Groundwater Not In Contact µg/L	Residential Soil µg/kg	Residential Soil Vapor µg/m^3
84742	Di-n-butyl phthalate	NA	NA	NA	NA
103231	Di(2-ethylhexyl) adipate	NA	NA	NA	NA
117840	Di-n-octyl phthalate	22 (S) sol	22 (S) (CC) sol	DATA	16,000 nc
123422	Diacetone alcohol	2.9E+07 nc	8.8E+08 nc	5.2E+06 nc	83,000 nc
333415	Diazinon	NA	NA	NA	NA
53703	Dibenzo(a,h)anthracene	NA	NA	NA	NA
132649	Dibenzofuran	3,100 (S) sol	3,100 (S) sol	7.1E+06 nc	140 nc
124481	Dibromochloromethane	0.78 (MM) (M) mut	23 (MM) mut	0.40 (MM) (M) mut	14 (MM) mut
96128	Dibromochloropropane	4.5E-04 (MM) (M) mut	4.5E-04 (MM) (M) (CC) mut	DATA	6.2E-02 (MM) mut
74953	Dibromomethane	8.8 nc	260 nc	3.5 (M) nc	140 nc
1918009	Dicamba	NA	NA	NA	NA
95501	1,2-Dichlorobenzene	370 nc	11,000 nc	1,500 nc	10,000 nc
541731	1,3-Dichlorobenzene	2.6 nc	75 nc	10 (M) nc	100 nc
106467	1,4-Dichlorobenzene	5.9 ca	170 ca	23 (M) ca	220 ca
91941	3,3`-Dichlorobenzidine	NA	NA	NA	NA
75718	Dichlorodifluoromethane	13 nc	49 nc	12 (M) nc	11,000 nc

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CAS No.	Hazardous Substance	Residential Shallow Groundwater µg/L	Residential Groundwater Not In Contact µg/L	Residential Soil µg/kg	Residential Soil Vapor µg/m³
75343	1,1-Dichloroethane	4.7 ca	130 ca	2.6 (M) ca	530 ca
107062	1,2-Dichloroethane	1.4 ca	41 ca	0.82 (M) ca	33 ca
75354	1,1-Dichloroethylene	18 nc	330 nc	12 (M) nc	7,000 nc
156592	cis-1,2-Dichloroethylene	3.4 nc	95 nc	2.1 (M) nc	280 nc
156605	trans-1,2-Dichloroethylene	16 nc	390 nc	12 (M) nc	2,800 nc
99309	2,6-Dichloro-4-nitroaniline	NA	NA	NA	NA
120832	2,4-Dichlorophenol	NA	NA	NA	NA
94757	2,4-Dichlorophenoxyacetic acid	NA	NA	NA	NA
78875	1,2-Dichloropropane	2.6 nc	74 nc	2.1 (M) nc	140 nc
542756	1,3-Dichloropropene	3.3 (J) ca	95 (J) ca	3.1 (M) (J) ca	210 (J) ca
62737	Dichlorvos	NA	NA	NA	NA
84617	Dicyclohexyl phthalate	NA	NA	NA	NA
60571	Dieldrin	3.7 ca	110 ca	770 ca	0.18 ca
60297	Diethyl ether	1,200 nc	36,000 nc	350 nc	35,000 nc
84662	Diethyl phthalate	NA	NA	NA	NA
112345	Diethylene glycol monobutyl ether	NA	NA	NA	NA

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108203	Diisopropyl ether	36 (DD) dev	13,000 (DD) dev	190 (M) (DD) dev	23,000 (DD) dev
108189	Diisopropylamine	3,500 nc	1.1E+05 nc	2,900 nc	7,000 nc
131113	Dimethyl phthalate	NA	NA	NA	NA
127195	N,N-Dimethylacetamide	1.9E+07 nc	5.7E+08 nc	3.8E+06 nc	3,500 nc
121697	N,N-Dimethylaniline	120 ca	3,600 ca	120 ca	71 ca
68122	Dimethylformamide	2.6E+05 nc	7.8E+06 nc	46,000 nc	240 nc
105679	2,4-Dimethylphenol	NA	NA	NA	NA
576261	2,6-Dimethylphenol	NA	NA	NA	NA
95658	3,4-Dimethylphenol	NA	NA	NA	NA
67685	Dimethylsulfoxide	NA	NA	NA	NA
51285	2,4-Dinitrophenol	NA	NA	NA	NA
121142	2,4-Dinitrotoluene	NA	NA	NA	NA
88857	Dinoseb	NA	NA	NA	NA
123911	1,4-Dioxane	1,900 ca	56,000 ca	360 (M) ca	170 ca
85007	Diquat	NA	NA	NA	NA
330541	Diuron	NA	NA	NA	NA

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115297	Endosulfan	TX	TX	TX	TX
145733	Endothall	NA	NA	NA	NA
72208	Endrin	NA	NA	NA	NA
106898	Epichlorohydrin	69 nc	2,100 nc	19 (M) nc	35 nc
64175	Ethanol	1.0E+05 (FF) st	2.3E+08 (EE) st	1.3E+06 (EE) st	6.3E+05 (EE) st
141786	Ethyl acetate	910 nc	27,000 nc	210 nc	2,400 nc
637923	Ethyl-tert-butyl ether (ETBE)	22 nc	22 (CC) nc	DATA	13,000 nc
100414	Ethylbenzene	2.8 ca	74 ca	12 (M) ca	340 ca
106934	Ethylene dibromide	0.13 ca	3.8 ca	7.4E-02 (M) ca	1.4 ca
107211	Ethylene glycol	NA	NA	NA	NA
111762	Ethylene glycol monobutyl ether	NA	NA	NA	NA
60004	Ethylenediaminetetraacetic acid (EDTA)	NA	NA	NA	NA
206440	Fluoranthene	NA	NA	NA	NA
86737	Fluorene	1,700 (S) sol	1,700 (S) sol	4.7E+05 nc	4,900 nc
7782414	Fluorine (soluble fluoride)	NA	NA	NA	NA
50000	Formaldehyde	3,000 (MM) mut	91,000 (MM) mut	530 (MM) (M) mut	27 (MM) mut

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64186	Formic acid	2,500 nc	75,000 nc	440 (M) nc	10 nc
2591868	1-Formylpiperidine	NA	NA	NA	NA
548629	Gentian violet	NA	NA	NA	NA
1071836	Glyphosate	NA	NA	NA	NA
76448	Heptachlor	0.25 ca	7.4 ca	3,600 ca	0.65 ca
1024573	Heptachlor epoxide	1.4E-02 ca	1.4E-02 (CC) ca	DATA	0.33 ca
142825	n-Heptane	150 nc	150 (GW) nc	130 nc	1.2E+05 nc
87821	Hexabromobenzene	TX	TX	TX	TX
118741	Hexachlorobenzene (C-66)	0.11 (M) nc	3.1 nc	6.7 (M) nc	1.2 nc
87683	Hexachlorobutadiene (C-46)	0.32 ca	8.2 ca	2.5 (M) ca	39 ca
319846	alpha-Hexachlorocyclohexane	NA	NA	NA	NA
319857	beta-Hexachlorocyclohexane	NA	NA	NA	NA
77474	Hexachlorocyclopentadiene (C-56)	3.0E-02 (M) nc	0.64 (M) nc	0.32 (M) nc	7.0 nc
67721	Hexachloroethane	1.5 (M) ca	43 ca	3.2 (M) ca	85 ca
110543	n-Hexane	29 nc	29 (GW) nc	25 nc	24,000 nc
591786	2-Hexanone	660 nc	20,000 nc	210 (M) nc	1,000 nc

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193395	Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA
7439896	Iron	NA	NA	NA	NA
78831	Isobutyl alcohol	4.0E+05 nc	1.2E+07 nc	79,000 nc	52,000 nc
78591	Isophorone	NA	NA	NA	NA
67630	Isopropyl alcohol	53,000 nc	1.6E+06 nc	9,800 nc	7,000 nc
98828	Isopropyl benzene	0.60 (M) ca	15 ca	3.8 (M) ca	81 ca
7439921	Lead	NA	NA	NA	NA
58899	Lindane	TX	TX	TX	TX
7439932	Lithium	NA	NA	NA	NA
7439954	Magnesium	NA	NA	NA	NA
7439965	Manganese	NA	NA	NA	NA
Varies	Mercury (Total)	8.8E-02 nc	2.5 nc	22 nc	10 nc
74828	Methane	10,000 (AA)	10,000 (AA)	DATA	8.4E+06 (GG)
67561	Methanol	1.2E+05 (DD) dev	2.3E+08 (DD) dev	1.4E+06 (DD) dev	6.7E+05 (DD) dev
72435	Methoxychlor	NA	NA	NA	NA
109864	2-Methoxyethanol	8,400 nc	2.5E+05 nc	1,500 nc	38 nc

Table 1. Residential volatilization to indoor air pathway (VIAP) screening levels. The VIAP screening levels are calculated based on unrestricted residential use. The building construction input parameters include those associated with a residential structure that has a basement and contains less than 6 floors. The basement must have poured slab and poured or concrete black walls for these VIAP screening levels to be applicable.
The shallow groundwater VIAP screening levels must be used when the depth to first encountered groundwater is 10 feet below ground surface or less. The groundwater not in contact VIAP screening levels apply when the depth to first encountered groundwater is greater than 10 feet below ground surface.
The United States Department of Agriculture (USDA) inputs for the soil type of sand and system temperature of 10 °C were used during screening level development.
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CAS No.	Hazardous Substance	Residential Shallow Groundwater µg/L	Residential Groundwater Not In Contact µg/L	Residential Soil µg/kg	Residential Soil Vapor µg/m³
94746	2-Methyl-4-chlorophenoxyacetic acid	NA	NA	NA	NA
534521	2-Methyl-4,6-dinitrophenol	NA	NA	NA	NA
109024	N-Methyl-morpholine	TX	TX	TX	TX
298000	Methyl parathion	NA	NA	NA	NA
108101	4-Methyl-2-pentanone (MIBK)	200 st	3.3E+05 st	3,300 st	27,000 st
1634044	Methyl-tert-butyl ether (MTBE)	250 ca	7,400 ca	74 (M) ca	3,300 ca
100618	N-methylaniline	NA	NA	NA	NA
96377	Methylcyclopentane	30 (M) nc	93 nc	29 (M) nc	24,000 nc
101144	4,4`-Methylene-bis-2- chloroaniline (MBOCA)	NA	NA	NA	NA
75092	Methylene chloride	79 (FF) st	8,400 nc	130 nc	21,000 nc
91576	2-Methylnaphthalene	66 nc	2,000 nc	1,700 nc	350 nc
1319773	Methylphenols	NA	NA	NA	NA
95487	2-Methylphenol	NA	NA	NA	NA
51218452	Metolachlor	NA	NA	NA	NA
21087649	Metribuzin	NA	NA	NA	NA
2385855	Mirex	TX	TX	TX	TX

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CAS No.	Hazardous Substance	Residential Shallow Groundwater µg/L	Residential Groundwater Not In Contact µg/L	Residential Soil µg/kg	Residential Soil Vapor µg/m^3
7439987	Molybdenum	NA	NA	NA	NA
91203	Naphthalene	4.2 (M) ca	130 ca	67 (M) ca	25 ca
7440020	Nickel	NA	NA	NA	NA
14797558	Nitrate	NA	NA	NA	NA
14797650	Nitrite	NA	NA	NA	NA
98953	Nitrobenzene	68 ca	2,000 ca	170 (M) ca	21 ca
88755	2-Nitrophenol	0.12 (M) nc	0.12 (M) (CC) nc	DATA	1.7 nc
621647	n-Nitroso-di-n-propylamine	NA	NA	NA	NA
86306	N-Nitrosodiphenylamine	NA	NA	NA	NA
23135220	Oxamyl	NA	NA	NA	NA
88230357	Oxo-hexyl acetate	NA	NA	NA	NA
40487421	Pendimethalin	NA	NA	NA	NA
608935	Pentachlorobenzene	8.6E-03 (M) nc	8.6E-03 (M) (CC) nc	DATA	3.5 nc
82688	Pentachloronitrobenzene	8.5 (M) nc	8.5 (M) (CC) nc	DATA	380 nc
87865	Pentachlorophenol	NA	NA	NA	NA
109660	Pentane	40 (M) nc	40 (M) (GW) nc	40 (M) (GW) nc	35,000 nc

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CAS No.	Hazardous Substance	Residential Shallow Groundwater µg/L	Residential Groundwater Not In Contact µg/L	Residential Soil µg/kg	Residential Soil Vapor µg/m³
109682	2-Pentene	TX	TX	TX	TX
14797730	Perchlorate	NA	NA	NA	NA
335671	Perfluorooctanoic acid	TX	TX	TX	TX
1763231	Perfluorooctane sulfonic acid	NA	NA	NA	NA
85018	Phenanthrene	9.5 nc	290 nc	1,700 nc	3.5 nc
108952	Phenol	NA	NA	NA	NA
57410	Phenytoin	NA	NA	NA	NA
7723140	Phosphorus, White	NA	NA	NA	NA
88993	o-Phthalic acid	NA	NA	NA	NA
85449	Phthalic anhydride	NA	NA	NA	NA
1918021	Picloram	NA	NA	NA	NA
110894	Piperidine	2.9E+06 nc	8.6E+07 nc	2.1E+06 nc	2.4E+05 nc
67774327	Polybrominated biphenyls	NA	NA	NA	NA
1336363	Polychlorinated biphenyls (PCBs)	3.1E-02 (M) (J) ca	3.1E-02 (M) (CC) (J) ca	DATA	8.5 (J) ca
1610180	Prometon	NA	NA	NA	NA
1918167	Propachlor	NA	NA	NA	NA

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CAS No.	Hazardous Substance	Residential Shallow Groundwater µg/L	Residential Groundwater Not In Contact µg/L	Residential Soil µg/kg	Residential Soil Vapor µg/m^3
139402	Propazine	NA	NA	NA	NA
79094	Propionic acid	1.2E+06 nc	3.7E+07 nc	2.2E+05 nc	10,000 nc
71238	Propyl alcohol	9,200 st	2.2E+07 st	1.4E+05 st	83,000 st
103651	n-Propylbenzene	43 (DD) dev	6,100 (DD) dev	1,800 (DD) dev	33,000 (DD) dev
57556	Propylene glycol	NA	NA	NA	NA
129000	Pyrene	140 (S) sol	140 (S) sol	2.5E+07 nc	3,500 nc
110861	Pyridine	600 nc	18,000 nc	540 nc	120 nc
7782492	Selenium	NA	NA	NA	NA
7440224	Silver	NA	NA	NA	NA
93721	Silvex (2,4,5-TP)	NA	NA	NA	NA
122349	Simazine	NA	NA	NA	NA
17341252	Sodium	NA	NA	NA	NA
26628228	Sodium azide	NA	NA	NA	NA
7647156	Sodium bromide	NA	NA	NA	NA
7440246	Strontium (B,DD)	NA	NA	NA	NA
100425	Styrene	33 ca	960 ca	150 ca	1,500 ca

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CAS No.	Hazardous Substance	Residential Shallow Groundwater µg/L	Residential Groundwater Not In Contact µg/L	Residential Soil µg/kg	Residential Soil Vapor µg/m³
14808798	Sulfate	NA	NA	NA	NA
126330	Sulfolane	NA	NA	NA	NA
34014181	Tebuthiuron	NA	NA	NA	NA
50585416	2,3,7,8-Tetrabromodibenzo-p-dioxin	NA	NA	NA	NA
95943	1,2,4,5-Tetrachlorobenzene	3.1 nc	91 nc	70 (M) nc	35 nc
1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA
630206	1,1,1,2-Tetrachloroethane	3.1 ca	89 ca	3.2 (M) ca	110 ca
79345	1,1,2,2-Tetrachloroethane	2.4 ca	71 ca	2.7 (M) ca	15 ca
127184	Tetrachloroethylene	1.5 (FF) st	130 (EE) st	6.2 (M) (EE) st	1,400 (EE) st
109999	Tetrahydrofuran	45,000 nc	1.4E+06 nc	13,000 nc	70,000 nc
632224	1,1,3,3-Tetramethylurea	2,700 nc	2,700 (CC) nc	DATA	28 nc
509148	Tetranitromethane	1.7E-02 (M) ca	0.50 (M) ca	7.6E-02 (M) ca	5.6E-02 ca
7440280	Thallium	NA	NA	NA	NA
108883	Toluene	300 (FF) st	41,000 nc	3,700 nc	1.7E+05 nc
106490	p-Toluidine	NA	NA	NA	NA
8001352	Toxaphene	NA	NA	NA	NA

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2303175	Triallate	530 (DD) dev	530 (DD) (CC) dev	DATA	6,700 (DD) dev
102829	Tributylamine	170 nc	5,200 nc	3,300 nc	240 nc
87616	1,2,3-Trichlorobenzene	58 nc	1,700 nc	830 nc	940 nc
120821	1,2,4-Trichlorobenzene	3.8 (M) nc	110 nc	53 (M) nc	70 nc
71556	1,1,1-Trichloroethane	180 (FF) st	14,000 (EE) st	450 (EE) st	1.7E+05 (EE) st
79005	1,1,2-Trichloroethane	0.47 (M) nc	14 nc	0.37 (M) nc	7.0 nc
79016	Trichloroethylene	7.3E-02 (M) (DD) dev	10 (DD) dev	0.33 (M) (DD) dev	67 (DD) dev
75694	Trichlorofluoromethane	22 nc	190 nc	19 (M) nc	15,000 nc
95954	2,4,5-Trichlorophenol	NA	NA	NA	NA
88062	2,4,6-Trichlorophenol	NA	NA	NA	NA
96184	1,2,3-Trichloropropane	1.9 nc	57 nc	2.6 (M) nc	10 nc
76131	1,1,2-Trichloro-1,2,2-trifluoroethane	840 nc	2,700 nc	860 nc	6.6E+05 nc
102716	Triethanolamine	NA	NA	NA	NA
112276	Triethylene glycol	NA	NA	NA	NA
88302	3-Trifluoromethyl-4-nitrophenol	NA	NA	NA	NA
1582098	Trifluralin	180 (S) sol	180 (S) (CC) sol	DATA	1.0E+05 nc

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CAS No.	Hazardous Substance	Residential Shallow Groundwater µg/L	Residential Groundwater Not In Contact µg/L	Residential Soil µg/kg	Residential Soil Vapor µg/m^3
540841	2,2,4-Trimethyl pentane	160 nc	160 (GW) nc	130 (M) nc	1.2E+05 nc
107404	2,4,4-Trimethyl-2-pentene	TX	TX	TX	TX
526738	1,2,3-Trimethylbenzene	43 (JT) nc	1,200 (JT) nc	270 (JT) nc	2,100 (JT) nc
95636	1,2,4-Trimethylbenzene	25 (JT) nc	670 (JT) nc	150 (JT) nc	2,100 (JT) nc
108678	1,3,5-Trimethylbenzene	18 (JT) nc	470 (JT) nc	100 (JT) nc	2,100 (JT) nc
115866	Triphenyl phosphate	NA	NA	NA	NA
126727	tris(2,3-Dibromopropyl)phosphate	7.4E-02 (M) ca	7.4E-02 (M) (CC) ca	DATA	1.6 ca
57136	Urea	NA	NA	NA	NA
7440622	Vanadium	NA	NA	NA	NA
108054	Vinyl acetate	690 nc	21,000 nc	160 (M) nc	7,000 nc
75014	Vinyl chloride	0.12 (MM) (M) mut	2.1 (MM) mut	8.2E-02 (MM) (M) mut	54 (MM) mut
1330207	Xylenes	75 (J) nc	2,000 (J) nc	280 (J) nc	7,600 (J) nc
7440666	Zinc	NA	NA	NA	NA

Table 2. Nonresidential volatilization to indoor air pathway (VIAP) screening levels. The VIAP screening levels are calculated based on restricted nonresidential use. The building construction input parameters includes those associated with a nonresidential structure that has a slab-on-grade and contains portions of the structure that are < 50,000 ft^2 of continuously open space.
The shallow groundwater VIAP screening levels must be used when the depth to first encountered groundwater is 5 feet below ground surface or less. The groundwater not in contact VIAP screening levels apply when the depth to first encountered groundwater is greater than 5 feet below ground surface.
The United States Department of Agriculture (USDA) soil type of sand and system temperature of 10 °C were used during screening level development.
The nonresidential acceptable air concentrations were not adjusted to account for nonresidential workday exposures.
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CAS No.	Hazardous Substance	Nonresidential Shallow Groundwater µg/L	Nonresidential Groundwater Not In Contact µg/L	Nonresidential Soil µg/kg	Nonresidential Soil Vapor µg/m^3
83329	Acenaphthene	3,900 (S) sol	3,900 (S) sol	3.6E+06 nc	11,000 nc
208968	Acenaphthylene	710 nc	710 (CC) nc	DATA	11,000 nc
75070	Acetaldehyde	300 nc	8,400 nc	600 (M) nc	460 nc
71501	Acetate	NA	NA	NA	NA
64197	Acetic acid	5.5E+06 nc	1.6E+08 nc	1.1E+07 nc	13,000 nc
67641	Acetone	2.0E+05 (FF) st	4.0E+07 (EE) st	3.1E+06 (EE) st	1.0E+06 (EE) st
75058	Acetonitrile	4,400 nc	1.3E+05 nc	11,000 nc	3,100 nc
98862	Acetophenone	36,000 (DD) dev	6.1E+06 (S) (DD) sol	7.4E+06 (C) (DD) dev (8.4E+05)	1.1E+05 (DD) dev
107028	Acrolein	0.41 (M) nc	11 (M) nc	0.80 (M) nc	1.0 nc
79061	Acrylamide	NA	NA	NA	NA
79107	Acrylic acid	2,100 nc	63,000 nc	4,600 nc	10 nc
107131	Acrylonitrile	12 ca	330 ca	34 (M) ca	29 ca
15972608	Alachlor	NA	NA	NA	NA
116063	Aldicarb	NA	NA	NA	NA
1646884	Aldicarb sulfone	NA	NA	NA	NA

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CAS No.	Hazardous Substance	Nonresidential Shallow Groundwater µg/L	Nonresidential Groundwater Not In Contact µg/L	Nonresidential Soil µg/kg	Nonresidential Soil Vapor µg/m^3
1646873	Aldicarb sulfoxide	NA	NA	NA	NA
309002	Aldrin	1.5 ca	17 (S) sol	15,000 ca	0.41 ca
7429905	Aluminum	NA	NA	NA	NA
7664417	Ammonia	4,600 (FF) st	2.7E+06 (EE) st	DATA	40,000 (EE) st
994058	t-Amyl methyl ether (TAME)	210 nc	3,500 nc	600 nc	3,200 nc
62533	Aniline	NA	NA	NA	NA
120127	Anthracene	43 (S) sol	43 (S) sol	2.2E+08 nc	51,000 nc
7440360	Antimony	NA	NA	NA	NA
7440382	Arsenic	NA	NA	NA	NA
1332214	Asbestos	NA	NA	NA	NA
1912249	Atrazine	NA	NA	NA	NA
103333	Azobenzene	23 ca	23 (CC) ca	DATA	64 ca
7440393	Barium	NA	NA	NA	NA
71432	Benzene	8.4 ca	66 ca	47 (M) ca	260 ca
92875	Benzidine	NA	NA	NA	NA
56553	Benzo(a)anthracene	9.4 (S) sol	9.4 (S) sol	1.1E+07 ca	33 ca

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205992	Benzo(b)fluoranthene	NA	NA	NA	NA
207089	Benzo(k)fluoranthene	NA	NA	NA	NA
191242	Benzo(g,h,i)perylene	NA	NA	NA	NA
50328	Benzo(a)pyrene	NA	NA	NA	NA
65850	Benzoic acid	NA	NA	NA	NA
100516	Benzyl alcohol	NA	NA	NA	NA
100447	Benzyl chloride	7.1 ca	180 ca	340 ca	40 ca
7440417	Beryllium	NA	NA	NA	NA
112265	bis(2-Chloroethoxy)ethane	NA	NA	NA	NA
111444	bis-2-Chloroethylether	17 ca	480 ca	96 (M) ca	6.0 ca
117817	bis(2-Ethylhexyl) phthalate	NA	NA	NA	NA
7440428	Boron	NA	NA	NA	NA
15541454	Bromate	NA	NA	NA	NA
108861	Bromobenzene	170 nc	2,700 nc	2,800 nc	3,100 nc
75274	Bromodichloromethane	4.9 nc	73 nc	16 (M) nc	100 nc
75252	Bromoform	260 ca	6,200 ca	1,300 ca	1,800 ca

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74839	Bromomethane	13 nc	80 nc	16 (M) nc	510 nc
71363	n-Butanol	1.5E+05 nc	4.3E+06 nc	3.5E+05 nc	18,000 nc
78933	2-Butanone (MEK)	12,000 (DD) dev	4.3E+06 (DD) dev	3.7E+05 (DD) dev	1.7E+05 (DD) dev
123864	n-Butyl acetate	5,100 nc	1.3E+05 nc	19,000 nc	20,000 nc
75650	t-Butyl alcohol	26,000 nc	7.5E+05 nc	57,000 nc	3,700 nc
85687	Butyl benzyl phthalate	NA	NA	NA	NA
104518	n-Butylbenzene	360 nc	1,600 nc	9,800 nc	10,000 nc
135988	sec-Butylbenzene	400 nc	12,000 nc	66,000 (C) nc (49,000)	20 nc
98066	t-Butylbenzene	0.71 (M) nc	2.6 nc	11 (M) nc	20 nc
7440439	Cadmium	NA	NA	NA	NA
79925	Camphene	110 nc	110 (GW) nc	250 nc	4,100 nc
105602	Caprolactam	NA	NA	NA	NA
63252	Carbaryl	NA	NA	NA	NA
86748	Carbazole	NA	NA	NA	NA
1563662	Carbofuran	NA	NA	NA	NA
75150	Carbon disulfide	840 nc	3,100 nc	920 nc	36,000 nc

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56235	Carbon tetrachloride	9.5 ca	18 ca	8.7 (M) ca	360 ca
57749	Chlordane	27 (EE) st	56 (S) (EE) sol	2.2E+05 (EE) st	9.3 (EE) st
16887006	Chloride	NA	NA	NA	NA
95512	2-Chloroaniline	NA	NA	NA	NA
106478	4-Chloroaniline	NA	NA	NA	NA
108907	Chlorobenzene	110 nc	1,400 nc	1,400 nc	2,600 nc
98668	p-Chlorobenzene sulfonic acid	NA	NA	NA	NA
75683	1-Chloro-1,1-difluoroethane	64,000 nc	64,000 (GW) nc	42,000 nc	2.6E+06 nc
75003	Chloroethane	5,200 nc	22,000 nc	5,800 nc	2.0E+05 nc
110758	2-Chloroethyl vinyl ether	TX	TX	TX	TX
67663	Chloroform	3.1 ca	32 ca	7.4 (M) ca	87 ca
74873	Chloromethane	110 nc	560 nc	120 (M) nc	4,600 nc
59507	4-Chloro-3-methylphenol	NA	NA	NA	NA
91587	beta-Chloronaphthalene	TX	TX	TX	TX
95578	2-Chlorophenol	190 (DD) dev	1.1E+05 (DD) dev	1.4E+05 (DD) dev	600 (DD) dev
95498	o-Chlorotoluene	180 nc	2,100 nc	3,500 nc	4,100 nc

Table 2. Nonresidential volatilization to indoor air pathway (VIAP) screening levels. The VIAP screening levels are calculated based on restricted nonresidential use. The building construction input parameters includes those associated with a nonresidential structure that has a slab-on-grade and contains portions of the structure that are < 50,000 ft^2 of continuously open space.
The shallow groundwater VIAP screening levels must be used when the depth to first encountered groundwater is 5 feet below ground surface or less. The groundwater not in contact VIAP screening levels apply when the depth to first encountered groundwater is greater than 5 feet below ground surface.
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The nonresidential acceptable air concentrations were not adjusted to account for nonresidential workday exposures.
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CAS No.	Hazardous Substance	Nonresidential Shallow Groundwater µg/L	Nonresidential Groundwater Not In Contact µg/L	Nonresidential Soil µg/kg	Nonresidential Soil Vapor µg/m^3
2921882	Chlorpyrifos	NA	NA	NA	NA
16065831	Chromium (III)	NA	NA	NA	NA
18540299	Chromium (VI)	NA	NA	NA	NA
218019	Chrysene	NA	NA	NA	NA
7440484	Cobalt	NA	NA	NA	NA
7440508	Copper	NA	NA	NA	NA
21725462	Cyanazine	NA	NA	NA	NA
74908	Cyanide, Hydrogen	14 nc	400 nc	32 (M) nc	41 nc
110827	Cyclohexane	8,100 nc	8,100 (GW) nc	5,600 nc	3.1E+05 nc
108941	Cyclohexanone	3.0E+05 nc	8.7E+06 nc	1.2E+06 nc	36,000 nc
1861321	Dacthal	NA	NA	NA	NA
75990	Dalapon	NA	NA	NA	NA
72548	4-4`-DDD	NA	NA	NA	NA
72559	4-4`-DDE	40 (S) sol	40 (S) sol	1.1E+06 ca	21 ca
50293	4-4`-DDT	NA	NA	NA	NA
1163195	Decabromodiphenyl ether	NA	NA	NA	NA

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CAS No.	Hazardous Substance	Nonresidential Shallow Groundwater µg/L	Nonresidential Groundwater Not In Contact µg/L	Nonresidential Soil µg/kg	Nonresidential Soil Vapor µg/m^3
84742	Di-n-butyl phthalate	NA	NA	NA	NA
103231	Di(2-ethylhexyl) adipate	NA	NA	NA	NA
117840	Di-n-octyl phthalate	22 (S) sol	22 (S) (CC) sol	DATA	24,000 nc
123422	Diacetone alcohol	4.4E+07 nc	1.0E+09 (S) sol	9.2E+07 (C) nc (3.5E+07)	1.2E+05 nc
333415	Diazinon	NA	NA	NA	NA
53703	Dibenzo(a,h)anthracene	NA	NA	NA	NA
132649	Dibenzofuran	3,100 (S) sol	3,100 (S) sol	1.3E+08 nc	200 nc
124481	Dibromochloromethane	6.7 ca	130 ca	27 (M) ca	83 ca
96128	Dibromochloropropane	2.1E-02 (M) ca	2.1E-02 (M) (CC) ca	DATA	0.36 ca
74953	Dibromomethane	18 nc	380 nc	62 (M) nc	200 nc
1918009	Dicamba	NA	NA	NA	NA
95501	1,2-Dichlorobenzene	950 nc	16,000 nc	26,000 nc	15,000 nc
541731	1,3-Dichlorobenzene	7.9 nc	110 nc	180 nc	150 nc
106467	1,4-Dichlorobenzene	28 ca	400 ca	660 ca	510 ca
91941	3,3`-Dichlorobenzidine	NA	NA	NA	NA
75718	Dichlorodifluoromethane	410 nc	410 (GW) nc	220 (M) nc	17,000 nc

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CAS No.	Hazardous Substance	Nonresidential Shallow Groundwater µg/L	Nonresidential Groundwater Not In Contact µg/L	Nonresidential Soil µg/kg	Nonresidential Soil Vapor µg/m^3
75343	1,1-Dichloroethane	40 ca	300 ca	74 ca	1,200 ca
107062	1,2-Dichloroethane	5.1 ca	97 ca	23 (M) ca	77 ca
75354	1,1-Dichloroethylene	250 nc	480 nc	220 nc	10,000 nc
156592	cis-1,2-Dichloroethylene	14 nc	140 nc	37 (M) nc	410 nc
156605	trans-1,2-Dichloroethylene	110 nc	580 nc	210 nc	4,100 nc
99309	2,6-Dichloro-4-nitroaniline	NA	NA	NA	NA
120832	2,4-Dichlorophenol	NA	NA	NA	NA
94757	2,4-Dichlorophenoxyacetic acid	NA	NA	NA	NA
78875	1,2-Dichloropropane	8.9 nc	110 nc	37 (M) nc	200 nc
542756	1,3-Dichloropropene	20 (J) ca	220 (J) ca	87 (M) (J) ca	500 (J) ca
62737	Dichlorvos	NA	NA	NA	NA
84617	Dicyclohexyl phthalate	NA	NA	NA	NA
60571	Dieldrin	8.8 ca	200 (S) sol	22,000 ca	0.43 ca
60297	Diethyl ether	3,100 nc	53,000 nc	6,200 nc	51,000 nc
84662	Diethyl phthalate	NA	NA	NA	NA
112345	Diethylene glycol monobutyl ether	NA	NA	NA	NA

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CAS No.	Hazardous Substance	Nonresidential Shallow Groundwater µg/L	Nonresidential Groundwater Not In Contact µg/L	Nonresidential Soil µg/kg	Nonresidential Soil Vapor µg/m^3
108203	Diisopropyl ether	710 (DD) dev	13,000 (DD) dev	2,300 (DD) dev	23,000 (DD) dev
108189	Diisopropylamine	5,700 nc	1.6E+05 nc	52,000 nc	10,000 nc
131113	Dimethyl phthalate	NA	NA	NA	NA
127195	N,N-Dimethylacetamide	2.9E+07 nc	8.4E+08 nc	6.8E+07 (C) nc (3.9E+07)	5,100 nc
121697	N,N-Dimethylaniline	290 ca	8,500 ca	3,300 ca	170 ca
68122	Dimethylformamide	3.9E+05 nc	1.1E+07 nc	8.1E+05 nc	360 nc
105679	2,4-Dimethylphenol	NA	NA	NA	NA
576261	2,6-Dimethylphenol	NA	NA	NA	NA
95658	3,4-Dimethylphenol	NA	NA	NA	NA
67685	Dimethylsulfoxide	NA	NA	NA	NA
51285	2,4-Dinitrophenol	NA	NA	NA	NA
121142	2,4-Dinitrotoluene	NA	NA	NA	NA
88857	Dinoseb	NA	NA	NA	NA
123911	1,4-Dioxane	4,600 ca	1.3E+05 ca	10,000 ca	400 ca
85007	Diquat	NA	NA	NA	NA
330541	Diuron	NA	NA	NA	NA

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115297	Endosulfan	TX	TX	TX	TX
145733	Endothall	NA	NA	NA	NA
72208	Endrin	NA	NA	NA	NA
106898	Epichlorohydrin	110 nc	3,100 nc	330 nc	51 nc
64175	Ethanol	3.1E+05 (FF) st	2.3E+08 (EE) st	1.6E+07 (EE) st	6.3E+05 (EE) st
141786	Ethyl acetate	1,500 nc	40,000 nc	3,700 nc	3,600 nc
637923	Ethyl-tert-butyl ether (ETBE)	580 nc	580 (CC) nc	DATA	19,000 nc
100414	Ethylbenzene	28 ca	170 ca	340 ca	800 ca
106934	Ethylene dibromide	0.39 ca	8.9 ca	2.1 (M) ca	3.3 ca
107211	Ethylene glycol	NA	NA	NA	NA
111762	Ethylene glycol monobutyl ether	NA	NA	NA	NA
60004	Ethylenediaminetetraacetic acid (EDTA)	NA	NA	NA	NA
206440	Fluoranthene	NA	NA	NA	NA
86737	Fluorene	1,700 (S) sol	1,700 (S) sol	8.3E+06 nc	7,200 nc
7782414	Fluorine (soluble fluoride)	NA	NA	NA	NA
50000	Formaldehyde	18,000 ca	5.2E+05 ca	37,000 ca	150 ca

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CAS No.	Hazardous Substance	Nonresidential Shallow Groundwater µg/L	Nonresidential Groundwater Not In Contact µg/L	Nonresidential Soil µg/kg	Nonresidential Soil Vapor µg/m^3
64186	Formic acid	3,800 nc	1.1E+05 nc	7,800 (M) nc	15 nc
2591868	1-Formylpiperidine	NA	NA	NA	NA
548629	Gentian violet	NA	NA	NA	NA
1071836	Glyphosate	NA	NA	NA	NA
76448	Heptachlor	0.66 ca	17 ca	1.0E+05 ca	1.5 ca
1024573	Heptachlor epoxide	0.20 ca	0.20 (CC) ca	DATA	0.77 ca
142825	n-Heptane	3,400 (S) sol	3,400 (S) sol	2,300 nc	1.8E+05 nc
87821	Hexabromobenzene	TX	TX	TX	TX
118741	Hexachlorobenzene (C-66)	0.21 nc	4.6 nc	120 (M) nc	1.8 nc
87683	Hexachlorobutadiene (C-46)	3.5 ca	19 ca	69 ca	91 ca
319846	alpha-Hexachlorocyclohexane	NA	NA	NA	NA
319857	beta-Hexachlorocyclohexane	NA	NA	NA	NA
77474	Hexachlorocyclopentadiene (C-56)	0.34 (M) nc	0.94 (M) nc	5.7 (M) nc	10 nc
67721	Hexachloroethane	8.8 ca	100 ca	92 (M) ca	200 ca
110543	n-Hexane	1,000 nc	1,000 (GW) nc	440 nc	36,000 nc
591786	2-Hexanone	1,100 nc	29,000 nc	3,800 nc	1,500 nc

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193395	Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA
7439896	Iron	NA	NA	NA	NA
78831	Isobutyl alcohol	6.0E+05 nc	1.8E+07 nc	1.4E+06 nc	77,000 nc
78591	Isophorone	NA	NA	NA	NA
67630	Isopropyl alcohol	81,000 nc	2.4E+06 nc	1.7E+05 nc	10,000 nc
98828	Isopropyl benzene	6.7 ca	36 ca	110 (M) ca	190 ca
7439921	Lead	NA	NA	NA	NA
58899	Lindane	TX	TX	TX	TX
7439932	Lithium	NA	NA	NA	NA
7439954	Magnesium	NA	NA	NA	NA
7439965	Manganese	NA	NA	NA	NA
Varies	Mercury (Total)	0.30 nc	3.7 nc	390 nc	15 nc
74828	Methane	10,000 (AA)	10,000 (AA)	DATA	8.4E+06 (GG)
67561	Methanol	3.2E+05 (DD) dev	2.3E+08 (DD) dev	1.7E+07 (DD) dev	6.7E+05 (DD) dev
72435	Methoxychlor	NA	NA	NA	NA
109864	2-Methoxyethanol	13,000 nc	3.7E+05 nc	26,000 nc	56 nc

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CAS No.	Hazardous Substance	Nonresidential Shallow Groundwater µg/L	Nonresidential Groundwater Not In Contact µg/L	Nonresidential Soil µg/kg	Nonresidential Soil Vapor µg/m^3
94746	2-Methyl-4-chlorophenoxyacetic acid	NA	NA	NA	NA
534521	2-Methyl-4,6-dinitrophenol	NA	NA	NA	NA
109024	N-Methyl-morpholine	TX	TX	TX	TX
298000	Methyl parathion	NA	NA	NA	NA
108101	4-Methyl-2-pentanone (MIBK)	1,400 st	3.3E+05 st	40,000 st	27,000 st
1634044	Methyl-tert-butyl ether (MTBE)	810 ca	17,000 ca	2,100 ca	7,700 ca
100618	N-methylaniline	NA	NA	NA	NA
96377	Methylcyclopentane	950 nc	950 (GW) nc	510 (M) nc	36,000 nc
101144	4,4`-Methylene-bis-2- chloroaniline (MBOCA)	NA	NA	NA	NA
75092	Methylene chloride	1,100 nc	12,000 nc	2,300 nc	31,000 nc
91576	2-Methylnaphthalene	110 nc	2,900 nc	30,000 nc	510 nc
1319773	Methylphenols	NA	NA	NA	NA
95487	2-Methylphenol	NA	NA	NA	NA
51218452	Metolachlor	NA	NA	NA	NA
21087649	Metribuzin	NA	NA	NA	NA
2385855	Mirex	TX	TX	TX	TX

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7439987	Molybdenum	NA	NA	NA	NA
91203	Naphthalene	12 ca	300 ca	1,900 ca	59 ca
7440020	Nickel	NA	NA	NA	NA
14797558	Nitrate	NA	NA	NA	NA
14797650	Nitrite	NA	NA	NA	NA
98953	Nitrobenzene	160 ca	4,800 ca	4,800 ca	50 ca
88755	2-Nitrophenol	0.71 (M) nc	0.71 (M) (CC) nc	DATA	2.6 nc
621647	n-Nitroso-di-n-propylamine	NA	NA	NA	NA
86306	N-Nitrosodiphenylamine	NA	NA	NA	NA
23135220	Oxamyl	NA	NA	NA	NA
88230357	Oxo-hexyl acetate	NA	NA	NA	NA
40487421	Pendimethalin	NA	NA	NA	NA
608935	Pentachlorobenzene	0.18 (M) nc	0.18 (M) (CC) nc	DATA	5.1 nc
82688	Pentachloronitrobenzene	86 nc	86 (CC) nc	DATA	560 nc
87865	Pentachlorophenol	NA	NA	NA	NA
109660	Pentane	1,400 nc	1,400 (GW) nc	630 (M) nc	51,000 nc

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109682	2-Pentene	TX	TX	TX	TX
14797730	Perchlorate	NA	NA	NA	NA
335671	Perfluorooctanoic acid	TX	TX	TX	TX
1763231	Perfluorooctane sulfonic acid	NA	NA	NA	NA
85018	Phenanthrene	15 nc	420 nc	29,000 nc	5.1 nc
108952	Phenol	NA	NA	NA	NA
57410	Phenytoin	NA	NA	NA	NA
7723140	Phosphorus, White	NA	NA	NA	NA
88993	o-Phthalic acid	NA	NA	NA	NA
85449	Phthalic anhydride	NA	NA	NA	NA
1918021	Picloram	NA	NA	NA	NA
110894	Piperidine	4.4E+06 nc	1.3E+08 nc	3.7E+07 nc	3.6E+05 nc
67774327	Polybrominated biphenyls	NA	NA	NA	NA
1336363	Polychlorinated biphenyls (PCBs)	0.97 (J) ca	0.97 (CC) (J) ca	DATA	20 (J) ca
1610180	Prometon	NA	NA	NA	NA
1918167	Propachlor	NA	NA	NA	NA

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139402	Propazine	NA	NA	NA	NA
79094	Propionic acid	1.9E+06 nc	5.4E+07 nc	3.9E+06 nc	15,000 nc
71238	Propyl alcohol	31,000 st	2.2E+07 st	1.7E+06 st	83,000 st
103651	n-Propylbenzene	970 (DD) dev	6,100 (DD) dev	21,000 (DD) dev	33,000 (DD) dev
57556	Propylene glycol	NA	NA	NA	NA
129000	Pyrene	140 (S) sol	140 (S) sol	4.4E+08 nc	5,100 nc
110861	Pyridine	920 nc	27,000 nc	9,600 nc	180 nc
7782492	Selenium	NA	NA	NA	NA
7440224	Silver	NA	NA	NA	NA
93721	Silvex (2,4,5-TP)	NA	NA	NA	NA
122349	Simazine	NA	NA	NA	NA
17341252	Sodium	NA	NA	NA	NA
26628228	Sodium azide	NA	NA	NA	NA
7647156	Sodium bromide	NA	NA	NA	NA
7440246	Strontium (B,DD)	NA	NA	NA	NA
100425	Styrene	170 ca	2,300 ca	4,300 ca	3,500 ca

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14808798	Sulfate	NA	NA	NA	NA
126330	Sulfolane	NA	NA	NA	NA
34014181	Tebuthiuron	NA	NA	NA	NA
50585416	2,3,7,8-Tetrabromodibenzo-p-dioxin	NA	NA	NA	NA
95943	1,2,4,5-Tetrachlorobenzene	6.0 nc	130 nc	1,200 nc	51 nc
1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxin	NA	NA	NA	NA
630206	1,1,1,2-Tetrachloroethane	14 ca	210 ca	91 (M) ca	270 ca
79345	1,1,2,2-Tetrachloroethane	6.7 ca	170 ca	77 ca	34 ca
127184	Tetrachloroethylene	35 (FF) st	130 (EE) st	74 (EE) st	1,400 (EE) st
109999	Tetrahydrofuran	72,000 nc	2.0E+06 nc	2.2E+05 nc	1.0E+05 nc
632224	1,1,3,3-Tetramethylurea	16,000 nc	16,000 (CC) nc	DATA	41 nc
509148	Tetranitromethane	4.5E-02 (M) ca	1.2 (M) ca	2.2 (M) ca	0.13 ca
7440280	Thallium	NA	NA	NA	NA
108883	Toluene	6,600 (FF) st	59,000 (EE) st	64,000 (EE) st	2.5E+05 (EE) st
106490	p-Toluidine	NA	NA	NA	NA
8001352	Toxaphene	NA	NA	NA	NA

Table 2. Nonresidential volatilization to indoor air pathway (VIAP) screening levels. The VIAP screening levels are calculated based on restricted nonresidential use. The building construction input parameters includes those associated with a nonresidential structure that has a slab-on-grade and contains portions of the structure that are < 50,000 ft^2 of continuously open space.
The shallow groundwater VIAP screening levels must be used when the depth to first encountered groundwater is 5 feet below ground surface or less. The groundwater not in contact VIAP screening levels apply when the depth to first encountered groundwater is greater than 5 feet below ground surface.
The United States Department of Agriculture (USDA) soil type of sand and system temperature of 10 °C were used during screening level development.
The nonresidential acceptable air concentrations were not adjusted to account for nonresidential workday exposures.
Refer to the Appendix C.7 checklist for other precluding factors.

CAS No.	Hazardous Substance	Nonresidential Shallow Groundwater µg/L	Nonresidential Groundwater Not In Contact µg/L	Nonresidential Soil µg/kg	Nonresidential Soil Vapor µg/m^3
2303175	Triallate	3,500 (DD) dev	3,500 (DD) (CC) dev	DATA	6,700 (DD) dev
102829	Tributylamine	270 nc	7,600 nc	59,000 nc	360 nc
87616	1,2,3-Trichlorobenzene	130 nc	2,600 nc	15,000 nc	1,400 nc
120821	1,2,4-Trichlorobenzene	8.5 nc	160 nc	930 nc	100 nc
71556	1,1,1-Trichloroethane	5,900 (FF) st	19,000 (EE) st	7,500 (EE) st	2.3E+05 (EE) st
79005	1,1,2-Trichloroethane	0.95 (M) nc	20 nc	6.6 (M) nc	10 nc
79016	Trichloroethylene	1.6 (DD) dev	10 (DD) dev	4.0 (M) (DD) dev	67 (DD) dev
75694	Trichlorofluoromethane	560 nc	560 (GW) nc	340 nc	22,000 nc
95954	2,4,5-Trichlorophenol	NA	NA	NA	NA
88062	2,4,6-Trichlorophenol	NA	NA	NA	NA
96184	1,2,3-Trichloropropane	3.3 nc	84 nc	46 (M) nc	15 nc
76131	1,1,2-Trichloro-1,2,2-trifluoroethane	26,000 nc	26,000 (GW) nc	15,000 nc	9.7E+05 nc
102716	Triethanolamine	NA	NA	NA	NA
112276	Triethylene glycol	NA	NA	NA	NA
88302	3-Trifluoromethyl-4-nitrophenol	NA	NA	NA	NA
1582098	Trifluralin	180 (S) sol	180 (S) (CC) sol	DATA	1.5E+05 nc

Table 2. Nonresidential volatilization to indoor air pathway (VIAP) screening levels. The VIAP screening levels are calculated based on restricted nonresidential use. The building construction input parameters includes those associated with a nonresidential structure that has a slab-on-grade and contains portions of the structure that are < 50,000 ft^2 of continuously open space.
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CAS No.	Hazardous Substance	Nonresidential Shallow Groundwater µg/L	Nonresidential Groundwater Not In Contact µg/L	Nonresidential Soil µg/kg	Nonresidential Soil Vapor µg/m^3
540841	2,2,4-Trimethyl pentane	2,400 (S) sol	2,400 (S) sol	2,200 (M) nc	1.8E+05 nc
107404	2,4,4-Trimethyl-2-pentene	TX	TX	TX	TX
526738	1,2,3-Trimethylbenzene	150 (JT) nc	1,800 (JT) nc	4,800 (JT) nc	3,100 (JT) nc
95636	1,2,4-Trimethylbenzene	120 (JT) nc	990 (JT) nc	2,600 (JT) nc	3,100 (JT) nc
108678	1,3,5-Trimethylbenzene	110 (JT) nc	690 (JT) nc	1,800 (JT) nc	3,100 (JT) nc
115866	Triphenyl phosphate	NA	NA	NA	NA
126727	tris(2,3-Dibromopropyl)phosphate	1.2 (M) ca	1.2 (M) (CC) ca	DATA	3.8 ca
57136	Urea	NA	NA	NA	NA
7440622	Vanadium	NA	NA	NA	NA
108054	Vinyl acetate	1,300 nc	31,000 nc	2,900 (M) nc	10,000 nc
75014	Vinyl chloride	10 ca	18 ca	8.2 (M) ca	450 ca
1330207	Xylenes	410 (J) nc	3,000 (J) nc	5,000 (J) nc	11,000 (J) nc
7440666	Zinc	NA	NA	NA	NA

FOOTNOTES

- Acceptable Air Values (AAV) endpoint basis used for VIAP screening levels: (**ca**) = Carcinogenetic; (**nc**) = Non-Carcinogenetic; (**dev**) = Developmental; (**mut**) = Mutagenic cancer; (**st**) = Short-term (i.e., less than chronic exposure).
- Footnote **AA**: VIAP groundwater screening levels are not available due to insufficient toxicological data. Dissolved-phase methane in groundwater is not explosive; however, if liberated and allowed to accumulate in an enclosed structure the principle health and safety concerns are explosive, flammable, and asphyxiant properties of gas phase methane. The acceptable groundwater concentration is the flammability and explosivity screening level (**FESL**) is 10,000 µg/L.
- Footnote **C**: The VIAP screening level exceeds the chemical-specific soil saturation screening level (**Csat**). The person proposing or implementing response activity must document whether additional response activity is required to control non aqueous phase liquid (**NAPL**) to protect against risks associated with NAPL by using methods appropriate for the NAPL present.
- Footnote **CC**: Insufficient chemical-physical input parameters have been identified to allow the development of a VIAP screening level using standard equations. The VIAP screening level for groundwater is developed based solely on the approach that the department uses for shallow groundwater. If groundwater detections are present, soil vapor may be the most appropriate media to evaluate risk posed from the VIAP.
- Footnote **DATA**: Insufficient physical chemical parameters to calculate a VIAP screening level for specified media. If detections are present in specified media, health-based soil vapor value should be used to evaluate risk.
- Footnote **DD**: Hazardous substance causes developmental effects. Residential VIAP screening levels are protective of both prenatal exposure using a pregnant female receptor and postnatal exposure using a child receptor. Nonresidential VIAP screening levels are protective of prenatal exposure using a pregnant female receptor. Prenatal developmental effects may occur after an acute (i.e. short-term) or full-term exposure.
- Footnote **EE**: The acceptable air concentration (**AAC**) for the volatile hazardous substances is not derived using standard equations. The hazardous substance may cause adverse human health effects for less than chronic exposures (i.e. short-term or acute). The AAC for these hazardous substances is the acute or intermediate minimum risk level (MRL) developed by the Agency for Toxic Substances and Disease Registry (ATSDR), a United States Environmental Protection Agency Integrated Risk Information System (IRIS) acute reference concentration, or an acute initial threshold screening level (ITSL) by the EGLE's Air Quality Division.
- Footnote **FF**: The AAC for the volatile hazardous substances are based on toxicity values that have been identified to have the potential to cause adverse human health effects for less than chronic exposures (i.e. short-term or acute). The short-term exposure for shallow groundwater VIAP screening levels are based on modification of the standard equations by the department to develop applicable shallow groundwater VIAP screening levels.

- Footnote **GG**: VIAP screening levels for soil vapor are not available due to insufficient toxicological data. The soil vapor value addresses the health and safety concerns of explosive, flammable, and asphyxiant properties of gas phase methane. The acceptable soil vapor concentration is derived based on 25% of the lower explosive level (**LEL**) for methane.
- Footnote **GW**: The calculated VIAP screening level for a hazardous substance based upon shallow groundwater is considered protective when it is greater than the calculated value for groundwater.
- Footnote **ID**: Requires further evaluation to determine the appropriate media to sample.
- Footnote **J**: Hazardous substance may be present in several isomer forms. Isomer-specific concentrations must be added together for comparison to criteria.
- Footnote **JT**: Hazardous substance may be present in several isomer forms. The VIAP screening level may be used for the individual isomer provided that it is the sole isomer detected; however, when multiple isomers are detected in a medium, the isomer-specific concentrations must be added together and compared to the most restrictive VIAP screening level of the detected isomers.
- Footnote **M**: The VIAP screening level may be below target detection limits (**TDL**). In accordance with Sec. 20120a(10) when the TDL for a hazardous substance is greater than the developed VIAP screening level, the TDL is used to evaluate the risk posed from the pathway.
- Footnote **MM**: Hazardous substance is a carcinogen with a mutagenic mode of action. The cancer potency values used in calculating VIAP screening levels are modified using age-dependent adjustment factors for those carcinogenic chemicals identified as mutagenic.
- Footnote **NA**: The hazardous substance does not meet the department's definition of a volatile; therefore, no VIAP screening levels were developed.
- Footnote **S**: Calculated VIAP screening level exceeds the hazardous substance-specific water solubility limit; therefore, the water solubility limit is used to evaluate the risk posed from the pathway.
- Footnote **TX**: The Remediation and Redevelopment Division Toxicology Unit has not identified an inhalation toxicity value for the hazardous substance at the date of publication of these values.