

Chemical Protective Materials

Note

The following table contains data on the permeation of materials for chemical protective suits.

These data are based on tests and experiences and are listed to the best of our knowledge under consideration of the interaction between chemical and protective clothing material. Effects resulting from the chemical alone, such as decomposition and danger of explosion and others are not considered.

Therefore these data cannot be directly and exclusively applied to the practical application.

At all events an analysis of hazards at the working place has to be carried out.

According to EN 369 the permeation resistance is classified by breakthrough times [min]:

Class	Breakthrough time [min]
6	> 480
5	> 240
4	> 120
3	> 60
2	> 30
1	> 10

UN-No.	Chemical	Further names of chemical	Suit materials				
			Vautex SL	Vautex Elite	Chempion	Hatex SL	Plastiklos
A 1089	Acetaldehyde	Ethanal	4	5	5	2	1
9103	Acetamide		6	6	6	5	3
2789	Acetic acid, 100%		5	6	6	4	2
1123	Acetic acid butyl ester[s]		3	5	4	4	1
1104	Acetic acid amyl ester[s]	Acetic acid pentyl ester[s]	3	5	4	3	1
1173	Acetic acid ethyl ester	Ethyl acetate	3	6	5	2	1
1220	Acetic acid isopropyl ester	Isopropyl acetate	3	6	5	3	1
1231	Acetic acid methyl ester	Methyl acetate	3	6	5	3	1
1104	Acetic acid pentyl ester[s]		3	5	4	3	1
1276	Acetic acid 1-propyl ester		3	6	5	3	1
1715	Acetic anhydride		4	5	5	4	1
1090	Acetone		5	5	5	4	1
1648	Acetonitrile		4	6	5	5	1
2810	Acetophenone		5	6	5	3	1
1717	Acetyl chloride		3	4	4	3	1
1001	Acetylene	Ethyne	5	6	5	3	3
1092	Acryl aldehyde	Acroleine	5	5	5	2	1
1093	Acrylonitrile		4	5	5	2	1
2348	Acrylic acid butyl ester[s], n-and tert-		3	5	4	3	2
1917	Acrylic acid ethyl ester	Ethyl acrylate	3	5	4	3	1
1919	Acrylic acid methyl ester		3	5	4	3	1
1100	Allyl chloride		4	4	4	1	1
-	Aluminium acetate		6	6	6	6	6
1726	Aluminium chloride, anhydrous		6	6	6	6	5
2581	Aluminium chloride, aqueous solution		6	6	6	6	6
9101	Aluminium fluoride		6	6	6	6	6
1438	Aluminium nitrate		6	6	6	6	6
-	Aluminium phosphate[s]		6	6	6	6	6
9257	Aluminium sulfate		6	6	6	6	6
1005	Ammonia, anhydrous		4	6	5	4	4
2073	Ammonia, aqueous solutions of > 35% NH ₃		4	5	2	4	4
-	Ammonium carbonate[s]		6	6	6	6	6
9095	Ammonium chloride		6	6	6	6	6
-	Ammonium nitrate		6	6	6	6	6
-	Ammonium nitrite		6	6	6	6	6
1444	Ammonium persulfate		6	6	6	6	6
-	Ammonium phosphate[s]		6	6	6	6	6
-	Ammonium sulfate		6	6	6	6	6
1104	Amyl acetate[s]	Pentyl acetate[s]	3	5	4	3	1
1105	Amyl alcohol[s]	Pentyl alcohol[s]	5	6	5	4	3
-	Amyl borate[s]	Pentyl borate[s]	4	5	4	4	2
-	Amyl chloronaphtalene[s]	Pentylchloronaphtalene[s]	4	5	4	2	1
-	Amylnaphtalene[s]	Pentylnaphtalene[s]	5	6	5	3	1
1547	Aniline		5	6	5	4	2
1548	Aniline hydrochloride		6	6	6	6	6
1553	Arsenic acid, liquid		6	6	6	6	5
1560	Arsenic chloride		4	5	4	3	1
1561	Arsenic trioxide		6	6	6	6	6
2188	Arsine		4	4	4	4	1
1999	Asphalt		6	6	6	6	6
B 1564	Barium chloride		6	6	6	6	6
1564	Barium hydroxide		6	6	6	6	6
1564	Barium sulfate		6	6	6	6	6
1564	Barium sulfide		6	6	6	6	6
1989	Benzaldehyde		5	6	5	2	1
9204	Benzoic acid		6	6	6	6	6
9112	Benzoic acid benzyl ester	Benzyl benzoate	5	6	5	4	3
2938	Benzoic acid methyl ester		4	6	5	3	2
1114	Benzene		4	5	4	1	1
-	Benzene sulfonic acid		6	6	6	5	4
1719	Benzyl alcohol	Phenylmethanol	5	6	5	4	2
1738	Benzyl chloride		4	4	4	1	1
-	Biphenol[s]		6	6	6	6	6
3077	Biphenyl		6	6	6	6	6
1999	Bitumen		6	6	6	6	6
2003	Boric acid		6	6	6	6	6
-	Boric acid tripentyl ester[s]	Boric acid triamyl ester[s]	4	5	4	4	2

UN-No.	Chemical	Further names of chemical	Suit materials				
			Vautex SL	Vautex Elite	Chempion	Hatex SL	Plastiklos
B 1744	Bromine		4	2	1	2	1
2514	[Mono]bromobenzene		3	5	4	1	1
1887	Bromochloromethane		3	4	4	1	1
1062	[Mono]bromomethane		3	4	3	1	1
1746	Bromine trifluoride		1	4	2	1	1
1010	Butadiene 1,3		5	6	5	3	1
1129	Butanal, n-	Butyraldehyde, n-	4	5	5	4	1
1011	Butane[s]		5	6	5	3	2
2347	Butanethiol[s]		2	5	4	1	1
1193	Butanone, 2-	Methyl ethyl ketone	3	5	4	3	2
1120	Butanol, tert	Butyl alcohol, tert	5	6	6	5	2
1012	Butene[s]		5	6	5	2	2
2369	Butoxyethanol, 2-, n		4	5	5	4	1
1123	Butyl acetate[s]	Acetic acid butyl ester	3	5	4	4	1
2348	Butyl acrylate[s], n-and tert-		3	5	4	3	2
1120	Butyl alcohol[s][except isobutyl alcohol]		5	6	5	4	3
-	Butyl benzoate, n-		4	6	5	3	2
2733	Butylamine[s], sec-and tert-		2	4	3	1	1
2347	Butyl mercaptane[s]	Butanethiol[s]	2	5	4	1	1
-	Butyl oleate, n-		5	6	6	5	2
-	Butyl stearate, n-		5	6	6	5	2
1129	Butyraldehyde, n-		4	5	5	4	1
C -	Calcium acetate		6	6	6	6	6
2963	Calcium bisulfite aqueous solutions of		6	6	6	6	6
-	Calcium chloride		6	6	6	6	6
1759	Calcium hydroxide		6	6	6	6	6
1748	Calcium hypochlorite, > 39% Cl2		6	6	6	6	6
2208	Calcium hypochlorite, 10%-39% Cl2		6	6	6	6	6
2880	Calcium hypochlorite, hydrated		6	6	6	6	6
1454	Calcium nitrate		6	6	6	6	6
-	Calcium sulfide		6	6	6	6	6
1013	Carbon dioxide	Carbonic acid anhydrid	6	6	6	6	4
1131	Carbon disulfide		5	6	5	1	1
1016	Carbon monoxide		5	6	5	4	3
1846	Carbon tetrachloride		4	5	4	3	1
1076	Carbonyl chloride		4	5	4	4	3
3151	Chlorinated biphenyls, liquid		5	6	5	2	1
3152	Chlorinated biphenyls, solid		6	6	6	3	2
-	Chlorinated dodecanes		5	6	6	3	2
-	Chlorinated naphthalenes		4	5	4	1	1
1017	Chlorine		4	6	5	6	4
-	Chlorine dioxide		4	5	4	2	1
1749	Chlorine trifluoride		1	5	4	1	1
1751	[Mono]chloroacetic acid		4	6	5	3	2
1134	[Mono]chlorobenzene		3	5	4	1	1
1991	Chloro-1,3-butadiene, 2-	Chloroprene	4	5	5	1	1
1182	Chlorocarbonic acid ethyl ester		4	4	4	1	1
1695	[Mono]chloroacetone		3	5	4	2	1
2023	Chloro-2,3-epoxypropane, 1-		4	4	4	4	2
1037	[Mono]chloroethane		4	5	4	1	1
1135	Chloroethanol, 2-	Chloroethyl alcohol, 2-	4	5	4	3	1
1888	Chloroform		4	5	4	1	1
1182	Chloroformic acid ethyl ester		4	4	4	1	1
1063	[Mono]chloromethane		4	5	4	1	1
-	Chloro-1-nitroethane, 1-		4	5	4	1	1
1991	Chloroprene	Chloro-1,3 butadiene, 2-	4	5	5	1	1
1278	Chloropropane, 1-		4	5	4	1	1
2356	Chloropropane, 2-		4	5	4	1	1
1100	Chloropropene, 3-		4	4	4	1	1
1754	Chlorosulfonic acid		2	5	4	1	1
1738	[Mono]chlorotoluene, alpha-	Benzyl chloride	4	4	4	1	1
2238	Chlorotoluene[s], ortho-, meta-, para-		4	6	4	1	1
9206	Citric acid, anhydrous		6	6	6	6	6
-	Cobalt[II]chloride		6	6	6	6	6
-	Copper[II]acetate		6	6	6	6	6
2802	Copper[I]chloride		6	6	6	6	6
1587	Copper[I]cyanide		6	6	6	6	6

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			Vautex SL	Vautex Elite	Chempion	Hatex SL	Plastiklos
C 1154	Copper[II]sulfate		6	6	6	6	6
2076	Cresol[s]		4	6	5	4	2
1918	Cumene		5	6	5	1	1
1145	Cyclohexane		5	6	5	4	1
1719	Cyclohexanol		5	6	5	4	2
1915	Cyclohexanone		5	6	5	3	1
2046	Cymene		6	6	6	6	6
D 1147	Decahydronaphthalene		5	6	5	3	1
2247	Decane[s]		5	6	5	4	1
1148	Diacetone alcohol		5	6	6	4	3
1604	Diaminoethane, 1,2-	Ethylenediamine	4	5	3	4	1
2280	Diamino-n-hexane, 1,6-	Hexamethylenediamine	4	5	4	4	2
–	Dibenzyl ether	Dibenzyl oxide	4	6	5	2	1
–	Dibenzyl sebacate	Sebacinic acid dibenzyl ester	4	6	6	4	2
1605	Dibromomethane, 1,2-	Ethylene dibromide	4	5	4	1	1
1591	Dichlorobenzene, ortho-		4	6	4	1	1
1592	Dichlorobenzene, para-		5	6	4	2	1
1184	Dichloroethane, 1,2-	Ethylene dichloride	4	5	4	1	1
1593	Dichloromethane	Methylene chloride	2	3	4	1	1
2357	Dicyclohexylamine	Aminocyclohexane	2	4	3	1	1
1202	Diesel fuel		5	6	5	3	1
1154	Diethylamine		1	6	3	1	1
2049	Diethylbenzene[s]		5	6	5	1	1
9003	Diethylene glycol		5	6	6	4	3
–	Diethylene glycol monoethyl ether		5	6	5	4	3
9022	Diethylene glycol monomethyl ether		5	6	5	4	3
9023	Diethylene glycol mono-n-butyl ether		5	5	5	4	3
1155	Diethyl ether		1	4	4	1	1
2525	Diethyl oxalate		4	6	6	4	3
–	Diethyl sebacate		4	6	6	4	2
2662	Dihydroxybenzene, 1,4-	Hydroquinone	6	6	6	6	3
9003	Dihydroxydiethyl ether 2,2-	Diethylene glycol	5	6	6	4	3
2050	Diisobutylene[s]		5	6	5	4	1
3082	Diisopropylbenzene[s]		5	6	5	1	1
1159	Diisopropyl ether		1	4	4	1	1
1224	Diisopropyl ketone		4	6	5	3	1
2051	Dimethylaminoethanol, 2-		2	3	3	2	1
2253	Dimethylaniline, N,N-		5	6	5	3	1
2051	Dimethylethanolamine, N,N-		2	3	3	2	1
2265	Dimethylformamide, N,N-		4	6	5	4	1
1163	Dimethylhydrazine, N,N-[1,1-]		2	6	5	1	1
2382	Dimethylhydrazine, N,Ni[1,2-]		2	6	5	1	1
1224	Dimethylpentan-3-one, 2,4-		4	6	5	3	1
–	Dimethyl phthalate		4	6	5	4	1
2248	Di-n-butylamine		2	4	3	1	1
1149	Di-n-butyl ether		1	5	4	2	1
3082	Di-n-butyl phthalate		6	6	6	4	2
–	Di-n-butyl sebacate		4	6	6	4	2
2038	Dinitrotoluene[s]		5	6	5	3	2
9250	Diocetyl phthalate[s]		5	6	6	4	2
–	Diocetyl sebacate[s]		5	6	6	4	3
1165	Dioxane, 1,4		4	6	5	3	1
1166	Dioxolan, 1,3-		2	6	5	2	1
2052	Dipentene		5	6	5	4	1
3082	Diphenyl ether		6	6	6	4	2
3253	Disodium trioxosilicate pentahydrate		6	6	6	6	6
1828	Disulfur dichloride		4	5	4	2	1
E 2023	Epichlorohydrin		4	4	4	4	2
1040	Epoxyethane		3	5	4	3	1
1280	Epoxypropane, 1,2-		3	5	4	3	1
1171	Ethoxyethanol, 2-	Ethoxyethyl alcohol, 2-	4	5	5	4	1
1172	Ethoxyethyl acetate, 2-		4	5	4	4	1
1035	Ethane		5	6	5	3	3
1170	Ethanol		5	6	5	4	2
2491	Ethanolamine		2	3	3	2	1
1173	Ethyl acetate	Acetic acid ethyl ester	3	6	5	2	1

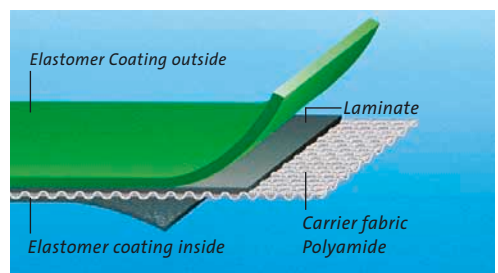
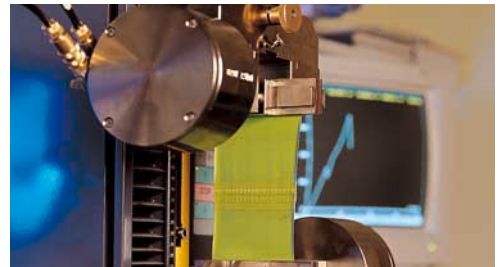
UN-No.	Chemical	Further names of chemical	Suit materials				
			Vautex SL	Vautex Elite	Chempion	Hatex SL	Plastiklos
E 9020	Ethyl acetoacetate		3	6	5	3	1
1917	Ethyl acrylate	Acrylic acid ethyl ester	3	5	4	3	1
1170	Ethyl alcohol		5	6	5	4	2
1175	Ethylbenzene		5	6	5	1	1
–	Ethyl benzoate		4	6	5	3	2
–	Ethyl cellulose		6	6	6	6	6
1182	Ethyl chlorocarbonate		4	4	4	1	1
1182	Ethyl chloroformate		4	4	4	1	1
1037	Ethyl chloride		4	5	4	1	1
1135	Ethylene chlorohydrin		4	5	4	3	1
1604	Ethylenediamine		4	4	3	4	1
1605	Ethylene dibromide	Dibromethane, 1,2	4	5	4	1	1
1184	Ethylene dichloride	Dichlorethane, 1,2	4	5	4	1	1
9164	Ethylene glycol		6	6	6	5	4
–	Ethylene glycol acetate[s]		4	6	5	4	2
1171	Ethylene glycol monoethyl ether		4	5	5	4	1
1188	Ethylene glycol monomethyl ether		4	5	5	4	1
2369	Ethylene glycol mono-n-butyl ether		4	5	5	4	1
1040	Ethylene oxide		3	5	4	3	1
1040	Ethylene oxide	Epoxyethane	3	5	4	3	1
1171	Ethylene glycol monoethyl ether		4	5	5	4	1
1172	Ethylene glycol monoethyl ether acetate		4	5	4	4	1
1190	Ethyl formate	Formic acid ethyl ester	3	6	5	3	1
2363	Ethyl mercaptan		5	6	6	4	1
2275	Ethyl n-butanol, 2-	Ethyl n-butyl alcohol, 2-	5	6	5	4	3
–	Ethylpentachlorobenzene		5	6	5	4	1
1001	Ethyne	Acetylene	5	6	5	3	3
F 1045	Fluorine		3	5	4	2	1
2387	[Mono]fluorobenzene		3	5	4	2	1
1775	Fluoboric acid	Tetrafluoboric acid	3	5	4	2	1
1778	Fluosilicic acid, > 25% H ₂ SiF ₆	Hexafluosilicic acid, > 25% H ₂ SiF ₆	3	5	4	2	1
1198	Formaldehyde, aqueous solutions of	> 30% Methanal	5	6	5	5	4
2209	Formaldehyde, aqueous solutions of	5–30% Methanal	5	6	5	5	4
2209	Formaldehyde, aqueous solutions of	5% Methanal	5	6	5	5	4
1779	Formic acid		5	6	6	4	4
1190	Formic acid ethyl ester		3	6	5	3	1
1243	Formic acid methyl ester		3	6	5	3	1
9212	Fumaric acid		6	6	6	6	6
2389	Furan		2	6	5	2	1
1199	Furfuraldehyde	Furyl methanal, 2-	4	6	5	3	1
G 1203	Gasoline [fuel]		5	6	5	2	1
1115	Gasoline [solvent]		5	6	5	2	1
–		Sodium sulfatedecahydrate	6	6	6	6	6
9041	Glyceryl triacetate		5	6	5	4	4
H 1202	Heating oil		5	6	5	3	1
2280	Hexamethylenediamine	Diamino-n-hexane, 1,6	4	5	4	4	2
1207	Hexanal, n-		5	6	6	4	2
1208	Hexane[s]		5	6	5	2	1
2282	Hexanol, 1-, n-	Hexyl alcohol, 1-, n-	5	6	5	4	2
1788	Hydrobromic acid, > 40% HBr		5	5	4	4	3
1789	Hydrochloric acid, 37% HCl		5	6	5	4	3
1051	Hydrocyanic acid, anhydrous		3	4	4	3	2
–	Hypochloric acid, aqueous solutions of		4	6	4	3	2
1052	Hydrofluoric acid, anhydrous	Hydrogen fluoride, anhydrous	4	5	4	3	3
1790	Hydrofluoric acid, conc.		5	6	4	3	3
9032	Hydrogen		4	6	6	4	3
1050	Hydrogen chloride		4	6	6	6	6
1789	Hydrogen chloride, aqueous solution, > 25% HCl		5	6	5	4	3
1051	Hydrogen cyanide, anhydrous		3	4	4	3	2
1613	Hydrogen cyanide, aqueous solution of, 20% HCN		4	5	4	3	2
2015	Hydrogene peroxide, 90% H ₂ O ₂		6	6	6	6	6
2014	Hydrogene peroxide, aqueous solutions of, 20%–60% H ₂ O ₂		3	6	5	3	3
9014	Hydrogen sulfide		4	5	4	4	1

UN-No.	Chemical	Further names of chemical	Suit materials				
			Vautex SL	Vautex Elite	Chempion	Hatex SL	Plastiklos
I 2495	Iodine pentafluoride		1	5	4	1	1
-	Iodoform	Triiodomethane	4	5	4	4	3
1773	Iron[III]chloride, anhydrous	Ferric chloride, anhydrous	6	6	6	6	6
2582	Iron[III]chloride, aqueous solutions of		6	6	6	6	6
1466	Iron[III]nitrate	Ferric nitrate	6	6	6	6	6
-	Iron[II]sulfate		6	6	6	6	6
1212	Isobutanol	Isobutyl alcohol	5	6	5	4	2
1214	Isobutylamine	Aminoisobutane, 1-	2	4	3	1	1
-	Isooctane[s]		5	6	5	4	1
9018	Isophorone		5	6	5	4	1
1219	Isopropanol	Isopropyl alcohol	5	6	5	4	2
1220	Isopropyl acetate		3	6	5	3	1
1918	Isopropylbenzene		5	6	5	3	1
2356	Isopropyl chloride		4	5	4	1	1
2046	Isopropyltoluene[s]		5	6	5	1	1
K 1223	Kerosene		5	6	5	3	1
L -	Lactic acid	Hydroxypropionic acid, 2-	6	6	6	5	3
1616	Lead[II]acetate		6	6	6	6	6
1469	Lead nitrate		6	6	6	6	6
-	Lead sulfamate		6	6	6	6	6
-	Linolic acid	Octadecadienoic acid	6	6	6	5	3
M -	Magnesium chloride		6	6	6	6	6
-	Magnesium hydroxide		6	6	6	6	6
-	Magnesium sulfate		6	6	6	6	6
3261	Maleic acid		6	6	6	6	6
2215	Maleic anhydride		6	6	6	6	6
-	Malic acid		6	6	6	6	6
1624	Mercuric[II]chloride		6	6	6	6	6
2809	Mercury		6	6	6	6	6
1229	Mesityl oxide		3	5	4	3	1
2531	Methacrylic acid		4	5	5	3	1
1247	Methacrylic acid methyl ester		3	5	4	3	1
1971	Methane		5	6	5	3	3
1230	Methanol	Methyl alcohol	5	6	5	6	1
1188	Methoxyethanol, 2-		4	5	5	4	1
-	Methoxymethylphenol[s]		6	6	6	5	3
1231	Methyl acetate		3	6	5	3	1
1919	Methyl acrylate		3	5	4	3	1
1230	Methyl alcohol	Methanol	5	6	5	6	1
2294	[Mono]methylaniline, N-		5	6	5	3	1
1062	Methyl bromide		3	4	3	1	1
2831	Methylchloroform		4	5	4	1	1
2298	Methylcyclopentane		5	6	5	4	1
1593	Methylene chloride	Dichloromethane	2	3	4	1	1
1193	Methyl ethyl ketone		5	6	5	3	1
1243	Methyl formate	Formic acid methyl ester	3	6	5	3	1
1245	Methyl isobutyl ketone		4	6	5	3	1
1247	Methyl methacrylate		3	5	4	3	1
1224	Methyl n-butyl ketone		4	6	5	3	1
-	Methyl oleate		5	6	6	5	2
1245	Methylpentane-2-one, 4-		4	6	5	3	2
2053	Methyl-2-pentanol, 4-		5	6	5	4	3
1229	Methyl-3-pentene-2-one, 4-		3	5	4	3	1
2810	Methyl phenyl ketone	Acetophenone	5	6	5	3	1
1228	Methyl-2-propanethiol, 2-		2	5	4	1	1
1212	Methyl-1-propanol, 2-		5	6	5	4	3
1248	Methyl propionate	Propionic acid methyl ester	3	6	5	3	1
1214	Methylpropylamine, 2-		2	4	3	1	1
-	Methyl salicylate		3	6	5	3	1
2398	Methyl tert-butyl ether		1	4	4	1	1
N 1334	Naphthalene		5	6	5	2	1
-	Naphtholsulfonic acid[s]		6	6	6	4	3
-	Naphthyl chloride, 1-		4	5	4	1	1

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			Vautex SL	Vautex Elite	Chempion	Hatex SL	Plastiklos
N 1972	Natural gas		5	6	5	3	3
–	Nickel acetate		6	6	6	6	6
–	Nickel chloride		6	6	6	6	6
–	Nickel sulfate		6	6	6	6	6
2031	Nitric acid, l 30% HNO ₃		6	6	5	6	5
2031	Nitric acid, 65% HNO ₃		5	5	3	4	4
1865	Nitric acid 1-propyl ester		3	5	4	3	1
2032	Nitric acid, red fuming		4	4	1	1	1
1262	Nitrobenzene		5	6	5	4	1
2842	Nitroethane		4	5	4	1	1
1067	Nitrogen dioxide, liquid		4	5	4	4	1
1067	Nitrogen peroxide	Dinitrogen tetroxide	4	5	4	4	1
1261	Nitromethane		4	5	4	1	1
O –	Octachlorotoluene		4	5	4	1	1
–	Octadecane[s]		6	6	6	5	3
1262	Octane[s]		5	6	5	4	1
1719	Octanol, 1-, n-	Octyl alcohol, 1-, n-	5	6	5	4	2
–	Oleic acid		6	6	6	5	3
–	Oleic acid methyl ester		5	6	6	5	2
–	Oleic acid n-butyl ester		5	6	6	5	2
–	Oxalic acid		6	6	6	6	6
2525	Oxalic acid diethyl ester		4	6	6	4	3
–	Ozone, < 10 vol% in air		4	5	4	4	2
P 9203	Palmitic acid	Hexadecanoic acid, n-	6	6	6	6	6
1105	Pentanol[s]	Amyl alcohol[s]	5	6	5	4	3
1104	Pentyl acetate[s]	Amyl acetate[s]	3	5	4	3	1
1802	Perchloric acid, 10%–50% HClO ₄		5	6	5	4	4
1873	Perchloric acid, 50%–72% HClO ₄		4	6	5	3	2
1671	Phenol		5	6	5	4	2
2821	Phenol, aqueous solutions of		5	6	6	4	2
3077	Phenylbenzene		6	6	6	6	6
–	Phenyl ethyl ether	Ethoxybenzene	5	6	5	2	1
2572	Phenylhydrazine		5	6	5	2	2
1076	Phosgene		4	5	4	4	3
1805	Phosphoric acid, 20% H ₃ PO ₄		6	6	6	5	3
1805	Phosphoric acid, 45% H ₃ PO ₄		6	6	6	5	3
2574	Phosphoric acid tricresyl ester[s]		5	6	5	4	3
1718	Phosphoric acid tri-n-butyl ester		5	6	5	4	3
–	Phosphoric acid trioctyl ester[s]		5	6	5	4	3
1809	Phosphorous trichloride		4	6	5	4	3
–	Phthalic acid dimethyl ester		4	6	5	4	1
3082	Phthalic acid di-n-butyl ester		6	6	6	4	2
9250	Phthalic acid dioctyl ester[s]		5	6	6	4	2
0154	Picric acid, < 10% H ₂ O		6	6	6	5	3
1344	Picric acid, > 30% H ₂ O		6	6	6	5	3
2368	Pinene[s]		5	6	5	4	1
2401	Piperidine	Pentamethylene imine	2	4	3	1	1
–	Polyethylene glycol monoethyl ether[s]		6	6	6	6	6
–	Polyvinylacetate, emulsion of		6	6	6	6	6
–	Potassium acetate		6	6	6	6	6
–	Potassium chloride		6	6	6	6	6
1679	Potassium cuprocyanide		6	6	6	6	6
1679	Potassium cuprocyanide, aqueous solutions of		6	6	6	6	6
1680	Potassium cyanide		5	5	5	5	3
3288	Potassium dichromate		6	6	6	6	6
1813	Potassium hydroxide		6	6	6	6	6
1814	Potassium hydroxide, aqueous solutions of		5	6	6	5	4
1486	Potassium nitrate		6	6	6	6	6
–	Potassium sulfate		6	6	6	6	6
1978	Propane		5	6	5	3	3
1274	Propanol, 1-	Propyl alcohol, n-	5	6	5	4	2
1219	Propanol, 2-	Propyl alcohol, sec-	5	6	5	4	2
1092	Propenal, 2-		5	5	5	2	1
1077	Propene		5	6	5	3	2

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P	1276	Propyl acetate, 1-	3	6	5	3	1
	1280	Propylene oxide, 1,2-	3	5	4	3	1
	1865	Propyl nitrate, 1-	3	5	4	3	1
	–	Pyrane, 1,4-	3	6	5	2	1
	1282	Pyridine	3	5	4	3	1
R	1956	R11	4	5	4	2	1
	1028	R12	3	5	4	2	1
	1022	R13	3	5	4	2	1
	1009	R13B1	3	5	4	2	1
	1029	R21	3	5	4	2	1
	1018	R22	3	5	4	2	1
	1958	R112	5	5	5	3	1
	1956	R113	4	5	5	3	1
	1958	R114	4	5	5	3	1
	1020	R115	4	5	5	3	1
	2517	R142b	3	5	4	2	1
	1030	R152a	3	5	4	3	1
	2424	R218	4	6	5	3	1
S	2811	Salicylic acid	6	6	6	6	6
	–	Salicylic acid methyl ester	3	6	5	3	1
	–	Sebacinic acid dibenzyl ester	5	6	6	4	3
	–	Sebacinic acid di-n-butyl ester	4	6	6	4	2
	–	Sebacinic acid diethyl ester	4	6	6	4	2
	–	Sebacinic acid dioctylester[s]	5	6	6	4	2
	1292	Silicic acid tetraethyl ester	4	5	4	3	1
	1493	Silver nitrate	6	6	6	6	6
	9246	Sodium acetate, anhydrous	6	6	6	6	6
	–	Sodium bicarbonate	6	6	6	6	6
	–	Sodium bisulfite	6	6	6	6	6
	–	Sodium borate[s]	6	6	6	6	6
	–	Sodium carbonate	6	6	6	6	6
	–	Sodium chloride	6	6	6	6	6
	1496	Sodium chlorite	6	6	6	6	6
	1689	Sodium cyanide	5	5	5	5	3
	1823	Sodium hydroxide	6	6	6	6	6
	1824	Sodium hydroxide, aqueous solution of 40%	5	6	6	6	4
	1791	Sodium hypochlorite, aqueous solutions of, > 10% chlorine	6	6	6	6	5
	–	Sodium metaphosphate[s]	6	6	6	6	6
	1498	Sodium nitrate	6	6	6	6	6
	1504	Sodium peroxide	6	6	6	6	6
	3247	Sodium peroxoborate	6	6	6	6	6
	–	Sodium phosphate[s]	6	6	6	6	6
	–	Sodium sulfate	6	6	6	6	6
	–	Sodium tetraborate	6	6	6	6	6
	–	Sodium thiosulfate	6	6	6	6	6
	–	Soya oil	6	6	6	6	4
	–	Stearic acid	6	6	6	6	6
	–	Stearic acid n-butyl ester	5	6	6	5	2
	2055	Styrene monomer	4	5	4	1	1
	1350	Sulfur, compact or powder	6	6	6	6	6
	1079	Sulfur dioxide	5	6	5	4	1
	1833	Sulfur dioxide, aqueous solutions of	5	6	5	5	1
	1080	Sulfur hexafluoride	5	6	5	5	4
	1829	Sulfur trioxide	3	5	4	2	1
	1830	Sulfuric acid, 96% H ₂ SO ₄	5	6	5	6	4
	2796	Sulfuric acid, 1 50% H ₂ SO ₄	6	6	6	6	4
	1831	Sulfuric acid, fuming, < 20% SO ₃	5	6	5	4	3
	1831	Sulfuric acid, fuming, 20%–65% SO ₃	4	5	4	4	3
	1833	Sulfurous acid	5	6	5	5	1
T	–	Tartaric acid	2	3	2	2	2
	2516	Tetrabromomethane	4	5	4	1	1
	1897	Tetrachloroethene	5	6	5	1	1
	1897	Tetrachloroethylene	5	6	5	1	1
	1846	Tetrachloromethane	4	5	4	2	1

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T 1292	Tetraethyl silicate	Silicic acid tetraethyl ester	4	5	4	3	1
2056	Tetrahydrofuran		1	6	5	1	1
9218	Tetrahydronaphthalene		5	6	5	3	1
–	Tetra-n-butyl titanate		4	6	5	4	3
2850	Tetrapropylene	Isododecene[s]	5	6	5	4	1
1836	Thionyl chloride		4	5	3	3	1
–	Titanic acid tetra-n-butyl ester		4	6	5	4	3
1838	Titanium tetrachloride		4	6	5	2	1
1294	Toluene		4	6	5	1	1
2831	Trichlorethane, 1,1,1-		4	5	4	1	1
1839	Trichloroacetic acid		3	6	5	3	2
2564	Trichloroacetic acid, aqueous solutions of		3	6	5	3	2
2321	Trichlorobenzene, 1,2,4-		5	6	5	3	1
1710	Trichloroethylene	Trichloroethene	5	6	5	1	1
1888	Trichloromethane		4	5	4	1	1
2574	Tricresylphosphate[s]		5	6	5	4	4
9012	Triethanolamine		4	4	3	4	1
1296	Triethylamine		4	4	3	2	1
1176	Triethyl borate		4	4	4	3	1
–	Trihydroxybenzoic acid, 3,4,5-		6	6	6	6	6
–	Triiodomethane		4	5	4	4	3
1120	Trimethyl carbinol		5	6	5	4	3
9018	Trimethyl-2-cyclohexene-1-one, 3,5,5-		5	6	5	4	1
1262	Trimethylpentane, 2,2,4-		5	6	5	4	1
2050	Trimethyl-1-pentene, 2,4,-		5	6	5	4	1
–	Tri-n-butoxyethyl phosphate		4	5	5	4	3
1718	Tri-n-butyl phosphate		5	6	5	4	3
0154	Trinitrophenol, 2,4,6-, < 10% H ₂ O	Picric acid	6	6	6	5	3
1344	Trinitrophenol, 2,4,6- > 30% H ₂ O	Picric acid	6	6	6	5	3
–	Trioctyl phosphate[s]		5	6	5	4	3
2057	Tripropylene		5	6	5	4	1
1299	Turpentine		5	6	5	3	1
V –	Vinylacetylene		5	6	5	3	2
1086	Vinyl chloride		4	5	5	1	1
1093	Vinyl cyanide	Cyanoethylene	4	5	5	2	1
X 1307	Xylene[s]		4	6	4	1	1
Z –	Zinc acetate		6	6	6	6	6
2331	Zinc chloride, anhydrous		6	6	6	6	6
1840	Zinc chloride, aqueous solutions of		6	6	6	6	6
–	Zinc sulfate		6	6	6	6	6



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