

EHS&EM Chemical Guide

							Breakthrough time, totally immersed at room temperature, in minutes							
								<14.9 minutes						
								>15 but <179.9 minutes						
								>180 minutes						
NFPA 704							Gloves				Suits			
Chemical	Fire	Health	Reactivity	Other	DOT Class	Waste Codes	Category	Nitrile	4-H / Silver Shield	Neoprene	Latex	Tychem (TM) 9400	Saranex	
Acetaldehyde	4	2	2	N	3	U001, D001	A	<0.6	>360	10.2	7			
Acetic Acid	2	2	0	N	8	D002	Co-Ac	5	>480	360	21	180	>4000.2	
Acetic Anhydride	2	2	1	N	8	D002	Co		>480	210	3	>480		
Acetone	3	1	0		3	U002, F003, D001	A	3	>1440	2.4	2.4	>480	33	
Acetonitrile (Methyl Cyanide)	3	3	0	N	3	D001	B	<5	>1440	<10.8	<0.6	>480	>480	
Acetophenone	2	1	0	N		U004	A		>480					
Acetyl Chloride	3	3	2	WR	3	U006, D001, D002, D003	Fl					160	37.2	
Acrolein	3	3	3	N	6.1	P003, D001	Fl	4.2	>480			>480		
Acrylamide	2	3	2	N	6.1	U007	P		>240					
Acrylic Acid	2	3	2	N	8	U008, D001	Fl		>240	70	80	79		
Acrylonitrile	3	4	2	N	3	U009, D001	Fl	<5	>480			>480	22.8	
Aldehyde					3	D001	A	4	>360					
Allyl Alcohol	3	3	1	N	6.1	P005	Fl			94.8		>480	>480	
Allylamine	3	3	1	N	6.1	D001	Fl		15		<1.2			
Allyl Chloride	3	3	1	N	3	D001	Fl		>240					
Ammonia	1	3	0	N	2.3	D002	Co-Ba		110			35		
Ammonium Fluoride					6.1		Co	>360	>240	>360	>360			

Ammonium Hydroxide					2.3	D002	Co-Ba	360		360	90	160	
Amyl Acetate (Isoamyl Acetate)	3	1	0	N	3	D001	A	<5		5.4	5.4	>480	
Amyl Alcohol	3	1	0	N	3	D001	A	30		321	7.2		
Amyl Nitrile	2	2	0	Ox	3			175.8		46.8			
Aniline	2	3	0	N	6.1	U012	B	18	>1440	30	25	>480	>480
Benomyl						U271	P		>240				
Benzaldehyde	2	2	0	N	9		A	<5	>480	39	10		
Benzene	3	2	0	N	3	U019, D001, F005, D018	A	4.2	480	1.2	0.6	>480	10.2
Benzenesulfonic Acid							NR		>240	>1200			
Benzethonium Chloride							NR			>480	>480		
Benzonitrile (Phenyl Cyanide)					6.1		NR				<0.6	>480	
Benzophenone Tetracarboxylic Dianhydride							NR		>240				
Benzoyl Chloride	2	3	2	WR	8		FI			15			
Benzyl Alcohol	1	2	0	N			A		>480				
Benzyl Cyanide	1	2	0	N			FI		>240				
Benzyl-dimethylamine (Dimethylbenzylamine)	2	2	0	N	8		FI		>240				
Bisphenol-diglycidyl Ether									>480				
Bisphthalate								259.8		120	>360		
Boric Acid							NR	>480		>480			

Bromine	0	3	0	Ox	8	D002	Co					9	
Bromoacetonitrile											<0.6		
Bromobenzene	2	2	0	N	3	D001	C	13.2					
Bromoethanol											1.2		
Bromoethylethyl-carbonate									>240				
Bromofluorobenzen							C					>480	
Bromopropanol							Co			>480	1.2		
Bromopropionic Acid							Co-Ac			180	190		
Butadiene	4	2	2	N	2.1	D001	Hood			46.8	<1.2	>480	
Butanediol Diglycidyl Ether							Co		>240				
Butanol (Isobutanol)	3	1	0	N	3	D001, U031, F003	A	30	>480	10	1.2	>480	
Butyl Acetate	3	1	0	N	3	D001	A	<5	>480	3.6	1.8		
Butyl Acrylate	2	2	2	N	3	D001	FI	67.8	>480				
Butylamine	3	3	0	N	3	D001	B	19.8		12	1.2		
Butyl Cellosolve (Butoxyethanol)						D001	A	9		90	45		
Butyl Chloride (Chlorobutane)	3	2	0	N	3	D001	C	12					
Butylfluazifop									>480				
Butyl Glycol									>240				
Butyl Hydroperoxide	4	1	4	Ox	N	D001, D003	OP		>240				
Butyl Nitrite	3	1	3	N	3	D001, D003	OP	97.8					
Butyltoluene					6.1		A	>360	>480	73.2			
Butyraldehyde	3	2	2	N	3	D001	A		>480	25.2		>480	
Butyrolactone	1	0	0	N			A		>480	10	60		
Carbon Disulfide	4	2	0	N	3	P022, D001,	FI	1	>1440		<5	>480	

						F005							
Carbon Tetrachloride	0	3	0	N	6.1	U211, D019	C	5	>480	4.8	3.6	>480	
Cellosolve (Ethoxyethanol)						D001, F005, U359	A		>360	45	25		
Cellosolve Acetate (Ethoxyethyl Acetate)						D001	A	<5		25	10		
Chlorine	0	3	0	Ox	2.3		Hood		>240	>480		>480	>480
Chloroacetic Acid	1	3	0	N	6.1	D002	Co-Ac						60
Chloroacetone					6.1	D001	Fl		>240				
Chloroaceto-nitrile											<0.6		
Chloroaniline					6.1		C					323	
Chlorobenzene	3	2	0	N	3	U037, D021, D001, F002	C	<5		10.8	<5	>480	
Chlorobutadiene (Chlorophrene)	3	2	0	N		D001	C	3.6		3			
Chloroethanol (Ethylene Chlorohydrin)	2	3	0	N	6.1	D001	Hood		>240	298.8		>480	
Chloroform	0	2	0	N	6.1	U044, D022	C	2.4	10	0.6	0.6	>480	
Chloromethyl Methyl Ether						U046	Fl					305	
Chloronaphthalene	1	1	0	N		U047	P	174	>480		<5		
Chloronitropropane											1.2		
Chloropropanol											<0.6		
Chloropropene	4	2	2	N	3	D001	C		>240				
Chlorosulfonic Acid	0	3	2	WR	8		NR						349.8
Chlorotoluene (Benzyl Chloride)	2	2	1	N	3	P028	Fl	15	>480			>480	

Chromic Acid	0	3	1	Ox	8	D001, D002, D007	Ox	240	>240	75	70.2		
Citric Acid						N	Keep			>360	>360		
Cleaning Agent	2	0	0	N					>480				
Copper										>360			
Creosote	2	2	0	N		U051	FI		>240	270			
Cresol	2	3	0	N	6.1	U052	FI	<5	>240	>60	13.8		>180
Crotonaldehyde	3	3	2	N	6.1	D001, U053	FI			21			
Cyclohexane	3	1	0	N	3	U056, D001	A	360	>480	6	1.8	>480	
Cyclohexanol	2	1	0	N			A	360	>480	150	10		
Cyclohexanone	2	1	0	N	3	U051, D001, F003	A	<5	>480				
Cyclohexylamine	3	2	0	N	8	D001	B		>240	36	1.2		
Cyclopentanone	3	2	0	N	3	D001	A		>240				
Cypermethrin							NR		>240				
Decanal (Decyl Aldehyde)							NR			240			>480
Deep Woods Off (R)									>240				
Diacetone Alcohol (Hydroxy Methyl Pentanone)	2	1	0	N	3	D001	A		>240	300	15		
Diaminodiphenyl- methane (Methylene- dianiline)					6.1		NR		>1440			>480	
Diamylamine	2	3	0	N		D001	B	>480		129			
Dibromoethane (Ethylene Dibromide)	0	3	0	N	6.1	U067	FI	27	>480	4.8	<1.2	>480	7.8
Dibutylamine	2	3	0	N		D001	B	>480					
Dibutyl Ether	3	2	1	N	3	D001	A		>480			396	

(Butyl Ether)														
Dibutyl Phthalate (Butyl Phthalate)							A	30	>480	120	16.8	>480		
Dichloroaniline	1	3	0	N	6.1		NR					216		
Dichlorobenzene	2	2	0	N	6.1	D027, U072, F002, U070, U071	P	<5	>240					
Dichlorobutene					8	D001	C	2.4	>240	10.2				>1440
Dichloroethane (Ethylene Dichloride)					3	D028, U076, D001, U077	C	2.4	144	1.8	0.6	>480		
Dichloroethylene	3	2	2	N	3	D001, D029, U078	C	7.2	>420					
Dichloromethane					6.1	U080, F002	C		>480				318	
Dichloropropene	3	3	0	N	3	D001	C					>480		
Diesel					3	D001	A	>240					195	
Diethanolamine							B	>480	>240	>480				
Diethylacetamide							NR		>480					
Diethylamine	3	3	0	N	3	D001	B	<5	60		<5	>480	43.8	
Diethylamino- ethanol					3	D001	B	>480						
Diethylenedioxi- de (Dioxane)	3	2	1	N	3	D001, U108	A	<5	>480	6.4	2.4		49.6	
Diethylenetriamine	1	3	0	N	8		B		>240	>480				
Diethyl- nitrosoamine							NR		>240					
Diethylphthalate						U088	A		>240					
Diisobutylamine					3	D001	B	>480		52.2				
Diisobutyl Ketone					3	D001	A	120	>360	15	15			
Diisopropylamine	3	3	0	N	3	D001	B	195		40.2				
Dimercapto-									>240					

thiodiazole														
Dimethylacetamide							B	<5	>240		15	>480	64.2	
Dimethylamine	4	3	0	N	2.1	D001	Hood			>480	1.8			
Dimethylamino -propylamine						D001	B			28.8	0.6			
Dimethylaniline					6.1		B		>240					
Dimethylbutylamine					3			81						
Dimethylcyclo- hexylamine					8	D001	B		>480					
Dimethyl- ethanolamine (Dimethyl- aminoethanol)					8	D001	B	>480	350	235.2	4.8			
Dimethylethylamine									9					
Dimethylformamide					3	D001	B	<5	>1440	1.2	25	226		
Dimethylhydrazine	3	3	1	N	6.1	D001, U099, U098	FI	6		37.8	3.6	>480		
Dimethylmercury									60		0.25			
Dimethyl Sulfate	2	4	0	N		U103	FI		>240			>480		
Dimethylsulfoxide						U103	FI	28.2	>480	60	79.8	374		
Dimethyl- vinylchloride								9						
Dinol									>240					
Dinoseb						P020	P		>240					
Diethylphthalate						U107	A			>360	<5			
Dipentene					3	D001	A		>480					
Diphenyl- cyclopropenone									>240					
Diphenylmethane- Diisocyanate					6.1		NR					>480		
Diphthalate									>240					

Diquat Dibromide							NR		>240				
Divinylbenzene	2	2	2	N			FI	60	>480				
Dodecane							A		>480				
Dynasylan									>480				
Epichlorohydrin	3	3	2	N	6.1	U041, D001	FI	19.8	>240	15	<1.2	>480	57
Epoxybutane (Butylene Oxide)					3	D001	A			4.2			
Ethanol					3	D001	A	240	>480	49.2	12		
Ethanolamine					8		B	360	>480	360	210		
Ether (Ethyl Ether Diethyl Ether)	4	2	1	N	3	U117, F003, D001	A	13.8	>480	10	10.2	>480	
Ethidium Bromide							NR		>480				
Ethoxypropanol									>240				
Ethyl Acetate					3	U112, D001, F003	A	<5	>1440	12	4.8;	72	36
Ethyl Acrylate	3	2	2	N	3	U113, D001	FI		>240	48			79.8
Ethylamine					2.1	D001	B	66	28.2				
Ethylbenzene	3	2	0	N	3	F003, D001	A	<5	>480			>480	
Ethylbromide					6.1	D001	C			4.2			
Ethylbutylamine						D001	B			73.2			
Ethyl Cellosolve (Ethoxyethanol)								91.8	>240	244.8	<0.6	>480	
Ethyl Cellosolve Acetate												>480	
Ethyl Cyanide											<0.6		
Ethylenediamine	3	3	0	N		D001	B		92	399	4.8		>480
Ethylene Glycol							A	360	>240	360	360		
Ethyleneimine					6.1	P054, D001	FI			<4.8			
Ethylene Oxide	4	2	3	N	2.3	U115, D001	FI		>240			>480	

Ethylglycol										>240				
Ethylglycol Acetate										>240				
Ethylglycol Ether											45	25		
Ethylhexanoic Acid							NR	>240		>240				
Ethylhexanol							A			>480				
Ethyl Methacrylate						U118, D001	Fl	22.8						
Fluorobenzene					3	D001	C						>480	
Fluoroboric Acid	0	3	0	N	8	D002	Co-Ac		>240					
Formaldehyde	4	3	0	N	8	U122	A	>1260	>360	120	6	>480		
Formic Acid	2	3	0	N	8	D002	Co-Ac	5	120	>360	120	>480		
Freon (Dichlorodifluoromethane)					2.2	U075	C	10.2	>240	3	2.4	>480		
Furaldehyde (Furfural)	2	2	0	N	3	D001, U125	Fl	<5	>480	19.8	15	>480		
Furfuryl Alcohol					6.1	D001	A		>480					
Gasohol					3	D001	A						170	
Gasoline					3	D001	A	30	>240		<5	>480		
Glutaraldehyde							A	>240	>240	>480				
Glycerol (Glycerin)							NR		>240					
Glycerolmonothio-glycolate									>240					
Glycerolpropoxy-triacrylate									>240					
Glyphosatiso-propylamine									>240					
Heptane					3	D001	A	360	>480	45	1.2			
Hexachlorocyclopentadiene					6.1	U130	Fl	>480						

Hexamethyl- disilazane	3	2	1	N		D001	Fl		>240	50	15		
Hexamethylene Diisocyanate					6.1		Fl					>480	
Hexamethyl- phosphoramidate							NR	90					
Hexane					3	D001	A	78.6	>1440	3.6	4.8	>480	
Hydraulic Fluid						N	MP	>240	>480		<5		
Hydrazine	3	3	3	N	8	U133, D001	Fl	>480	126	>960	150	>480	
Hydrochloric Acid (Muriatic Acid)					8	D002	Co-Ac	360	>360	360	290	>480	300
Hydrocyanic Acid (Hydrogen Cyanide)	4	4	2	N	6.1	P063	Hood		>240			94	
Hydrofluoric Acid					8	U134, D002	Co-Ac	120	15	60	90	67	190.2
Hydrogen Chloride	0	3	0	N	2.3	D002	Hood					>480	
Hydrogen Peroxide	0	2	3	Ox	5.1	D001	Ox	>360	>240	4.8	>480		
Hydrogen Phosphide						P096	Hood			10.2	30		
Hydroquinone					6.1		NR	>360	>240	>360	>360		
Hydroxyethyl- acrylate									>240				
Hydroxyethyl- trimethylammonium Hydroxide									>240				
Hydro- xymethacrylate									>240				
Imino- bispropylamine							B			>480	6		
Isophorone	2	2	0	N					>240				
Isoprene	4	2	2	N	3			52.2		16.2			
Jet Fuel					3	D001	A		>240			>480	
Kerosene					3	D001	A	>360		>360	<5		

Lactic Acid						D002	Co-Ac	>360		>360			
Lauric Acid							NR	>360		>360	>360		
Limonene						D001	A			64.8		>480	
Lubrication Oil						N	MP		>240				
Malathion							NR		>240				
Maleic Acid	1	3	1	N	8		NR	>360		>360	>360		
Mercaptoethanol						D001	Hood		>240				
Mercuric Chloride					6.1	D009	P-Hg					>480	
Mercury					8	U151, D009	P-Hg		>480			>480	
Methacrylic Acid	2	3	2	N	8		NR	10.2	>480				
Methacrylonitrile					3	U152, D001	Fl	7				<1.2	
Methanesulfonic Acid						D002	Co-Ac			>240			
Methanol					3	D001, F003, U154	A	10.8	>480	15	1.8	92	>480
Methoxyethanol									>240				
Methoxyethyl Acetate									>240				
Methoxymethyl-pentanone					3		A			99			
Methoxypropanol					3	D001	A		>240				
Methoxypropyl-acetate									>240				
Methyl acetate					3	D001	A		>480			<1.2	
Methyl Acrylate	3	2	2	N	3	D001	Fl			15	1.2		
Methylamine	4	3	0	N	2.1	D001	Hood	>480	114	270	25.2	105	
Methylamino-propylamine										63	3		
Methyl Bromide	1	3	0	N	2.3	U029	Hood					<5	>480
Methyl Butyl Ether					3	D001	A	5	>480			<5	>480

Methyl Cellosolve						D001	A	40.2	>240	25	20		
Methyl Chloride	4	2	0	N	2.1	U045, D001	C				0.6	>480	
Methyl Chloroacetate					6.1		C						>480
Methylenabls												>480	
Methylenebis									>240				
Methylenebis Diphenylmethane Diisocyanate							NR		>480				
Methylene Dichloride (Methylene Chloride)	1	2	0	N		F002, U080	C	1.8	114	0.6			
Methylethanolamine							B			>480			
Methyl Ethyl Ketone					3	D035, D001, F005, U159		3.6	>1440	2.4	1.2	>480	9
Methyl Ethyl Ketone Peroxide					N	U160, D001, D003	OP			>240	45		
Methylethyl-ketoxime												>480	
Methyl Glycol Ether										25	20		
Methylhexanone (Methyl Isoamyl Ketone)					3	D001	A	<5	>480			120	
Methyl Iodide					6.1		C	0.6	123	0.6	1.8		
Methyl Isobutyl Ketone					3	U061, D001, F003	A	12		15	6		
Methyl Isocyanate					6.1	P064, D001	Fl			0.6	0.6	>480	
Methyl Mercaptan					2.3	U153, D001	Hood					>480	
Methyl Methacrylate	3	2	2	N	3	D001, U062	Fl	<5	>480		<1.2	>480	
Methyl Norbornene					8		NR		>240				

Dicarboxylic Anhydride (Menthyltetrahydrophthalic Anhydride)													
Methyl Pentyl Ketone									>240				
Methylpyrrolidone							B	<5	>240		75		
Methyltrichlorosilane	3	3	2	WR	3	D001	Fl		>240				
Mineral Oil						N	MP	>240					
Mineral Spirits						D001	A	>360		90	<5	>480	>10.2
Monoethanolamine	2	2	0	N	8			360	>480	360	50		
Monoethylamine	4	3	0	N	2.1			66	28.2				
Morpholine	3	2	0	N	3	D002	B	<5	>480		20		
Mustard Gas (Dichlorodiethyl Sulfide)							P		>240				
Naphthalene	2	2	0	N	4.1	U165	Fl		>240				
Naphtha					3	D001	A	>360	>480	15	<5		
Naphthylamine					6.1	U167, U168	P		>240				
Nickel										>360			
Nicotine					6.1	P075	P		>240			>480	
Ninhydrin							NR		>240				
Nitric Acid	0	3	1	Ox	8	D002, D001	Co-Ac	5	34.8	79.8	<5	>480	106.8
Nitrobenzene	2	3	1	N	6.1	F004, D036, U169	B	<5	>1440	40.2	4.8	>480	
Nitrodiphenylamine							NR		>240				
Nitroethane	3	1	3	N	3	D001	B		>480	49.2	1.8		
Nitrogen Tetroxide					2.3	D002	Ox					24	
Nitroglycerol					1.1	P081, D003	Ex		>240				

(Nitroglycerin)													
Nitroglycol									>240				
Nitrohydrochloric Acid (Aqua Regia)					8	D002	Co-Ac			45	<5		
Nitromethane	3	1	4	N	3	D001	B	30	>480	60	<1.2	>480	
Nitropropane	3	1	2	N	3	U171, D001	Fl	12	>480	5	1.8		
Nonylphenol							NR			>1200			
Octane (Isoctane)					3	D001	A	360		60	<5		
Octanol							A	360		360	30		
Oleic Acid							NR	>360		60	30		
Ortho Toluidin									>480				
Osmium Tetroxide					6.1	P087	Hood						
Oxalic Acid	1	2	0	N			NR	360	>480	360	360	>480	
Palmitic Acid							NR	30		>360	4.8		
Parathion					6.1	P089	P		>240				
Pentachlorophenol	0	3	0	N	6.1	F027	P	>780	>480	6	<5		
Pentane					3	D001	A	1.8	>480	6.6	0.6		
Pentylalcohol									176				
Perchloric Acid	0	3	3	Ox	5.1	D001, D002	Ox	360	>240	360	360		
Perchloroethylene					6.1				>480		<5		
Petroleum Ether						D001	A	>240	>480				
Phenol	2	3	0	N	6.1	U188	A	31.8	130	40.2	16.2	>480	
Phenolphthalein							NR	>480		>480	>480		
Phosphoric Acid	0	3	0	N	8	D002	Co-Ac	360	>240	360	360	>480	>840
Phosphorus Oxychloride	0	3	2	WR	8	D002, D003	Co		>240	<0.6			50.4
Phosphorus Trichloride	0	3	2	WR	8	D002, D003	Co					>480	
Phthalic Acid					8		NR		>240				

Picoly Chloride Hydrochloride									>240				
Picric Acid	4	3	4	N	1.1	D001	Fl			150	<5		
Polychlorinated Biphenyl	1	2	0	N	9	PCB, PCB1, PCB2	P		>480	1440	4.8	>480	120
Polyethylene Glycol							NR		>480				
Polyol							NR		>480				
Potassium Acetate							NR					>480	
Potassium Chromate						D001, D007	Ox					>480	
Potassium Hydroxide	0	3	1	N	8	D002	Co-Ba	360	>240	180	79.8		
Potassium Permanganate					5.1	D001	Ox		>240				
Promethazine Hydrochloride							NR	>480					
Propanol (Isopropanol)					3	D001	A	30	>480	90	7.2		
Propanolamine (Monoisopropanolamine)										>480	30		
Propiolactone											19.8		
Propionaldehyde	3	2	2	N	3	D001	A			12			
Propiophenone							A		>240				
Propylacetate					3	D001	A	16.8	>480		4.8		
Propylamine	3	3	0	N	3	U194, D001	B			13.8			
Propylenediamine (Diaminopropane)	3	2	0	N		D001	B			271.9	3		
Propyleneglycol							NR		>240		>360		
Propyleneglycol-monoethylether-acetate									>240				

Propylene Oxide	2	4	2	N	3	D001	A		>240		<0.6	>480	
Propyl Ether (Isopropyl Ether)								>60		42.6	3.6		
Propylmethacrylate								60					
Propyl Nitrate	3	2	3	Ox		D001, D003	OP		>240				
Propyzamide									>240				
Pyridine	3	2	0	N	3	U196, F005, D038	B	5.4	>480	1.8	2.4		
Pyrrolidine					3	D001	B					407	
Quinoline					6.1		NR		>240				
Roundup (R) (Glycophase)							NR		>240				
Rubber Solvent					3					30	<5		
Silicon Etch										>360	<5		
Silver Cyanide					6.1	D003, D011, P104	P-Cn		>240				
Sodium Cyanide	0	3	0	N	6.1	D003, P106	P-Cn					>480	
Sodium Hydroxide	0	3	1	N	8	D002	Co-Ba	360	>480	360	360	>480	>480
Sodium Hypochlorite					5.1	D001	Ox	360	>240	360	360		
Stoddard Solvent	2	0	0	N		D001	A	>240		180	<5	>480	
Stripper									132				
Styrene	3	2	2	N	3	D001	Fl	30	>1440	12	10.2	>480	43.2
Sulfur Dioxide	0	3	0	N	2.3	D001	Ox					>480	
Sulfuric Acid (Oleum)	0	3	2	WR	8	D002	Co-Ac	5	120	70.2	<5	>480	330
Tannic Acid							NR	>360		>360	>360		
Tetrachloroethane					6.1	U208, U209	C	13.2		5.4	1.8		
Tetrachloro- ethylene	0	2	0	N	6.1	U210, F002, D039	C	5	>1440	6	<1.2	>480	1.8

Tetraethylene-pentamine					8		NR			>480	106		
Tetraethylortho-silicate					3				>480				
Tetrafluoroboric Acid									>240				
Tetrafluoro-ethylene	4	2	3	N	2.1	D001	Hood			>480			
Tetrahydrofuran	3	2	1	N	3	D001, U213	A	0.6	>480	1.2	1.2	>480	1.8
Tetramethyl-ammonium Hydroxide					8		NR		>240				
Tetramethylene-diamine							NR	108					
Thinner						D001	A		>240				
Thioglycolic Acid (Mercaptoacetic Acid)					8	D002	Hood		>240				
Thiophene					3	D001	Hood		>360				
Thiourea						U219	P		>240				
Toluene	3	2	0	N	3	D001, F005, U220	A	<5	>1440	1.2	0.6	>480	<4.8
Toluene Diisocyanate	1	3	2	N	6.1	U223	P	222	>480		7	>480	
Toluenesulfonic Acid					8		NR			>480			
Toluidine	2	3	0	N	6.1	U328, U053	P					>480	
Transmission Oil						N	MP		>240				
Triallylamine					3	D001	B	>480			63		
Tributylphosphate							NR		>240				
Trichloro-acetonitrile							C				67.2		

Trichlorobenzene					6.1		C	<5		60	4.8	>480	60
Trichloroethane	1	3	0	N	6.1	U227, F002, U226	C	1.8	>480	2.4	1.2	>480	
Trichloroethanol							C					>480	19.2
Trichloroethylene	2	2	0	N	6.1	U228, D040, F002	C	<5	>1440	1.8	0.6	>480	<1.2
Trichloropropane							C	21					
Tricresylphosphate					6.1		NR	60		>360	45		
Triethanolamine							B	>480	>240	>360	60		
Triethylamine	3	2	0	N	3	U404, D001	B	>480		37.2			
Triethylene Diamine							NR		>240				
Triethylene Tetramine					8		B	>480	>240	>480			
Trifluoroacetic Acid					8	D002	Co-Ac		>240				
Trifluoroethanol								7.2		>60	>60	>480	
Tripropylamine					3	D001	B	>480		>480			
Tripropylene Glycol Diacrylate									>240				
Turpentine					3	D001	A	30			<5		
Valeronitrile										40.8	1.8		
Vinyl Acetate	3	2	2	N	3	D001	Fl		>480			>480	
Vinyl Chloride	4	2	2	N	2.1	D001, D043	Hood	342	>480			>480	
Vinylcyclohexane						D001	Fl	391.8					
Vinylidene fluoride						D001	Hood			<1.2	<1.2		
Vinylpyrrolidone							NR		>240				
Xylene	3	2	0	N	3	U239, D001, F003	A	<5	>1440	3	1.2	>480	
								<14.9 minutes					
								>15 but <179.9 minutes					

DOT Classification	Category	
Explosive 1.1	Mixed CHO Compounds	A
Explosive 1.2	Acid - Heavy Metal	Ac-HM
Explosive 1.3	Nitrogenated Hydrocarbons	B
Explosive 1.4	Halogenated Hydrocarbons	C
Explosive 1.5	Corrosive	Co
Explosive 1.6	Corrosive - Acidic	Co-Ac
Flammable Gas	Corrosive - Basic	Co-Ba
Nonflammable Gas	Explosive	Ex
Poison Gas/Toxic Gas	Flammable	Fl
Flammable Liquid	Keep under Fume Hood	Hood
Flammable Solid	Keep for other uses	Keep
Spontaneously Combustible	Motor Pool Recycling	MP
Dangerous when Wet	None	N
Oxidizer	Non-Regulated	NR
Organic Peroxide	Organic Peroxide	OP
Poison/Toxic	Oxidizer	Ox
Infectious Substance	Poison	P
Radioactive Material	Poison - Cyanide	P - Cn
Corrosive Material	Poison - Mercury	P - Hg
Misc Hazardous Materials	Poison - Heavy Metal	P - HM
	Water Reactive	WR

The permeation times are based on the lowest common denominator and are intended only as a guide. The National Institute for Occupational and Health (NIOSH) Chemical Guide, manufacturer and the product MSDS should always be reviewed for all updates and or changes for the above. See Appendices below for NIOSH Guide requirements.

- [Appendix A - NIOSH Potential Occupational Carcinogens](#)
- [Appendix B - Thirteen OSHA-Regulated Carcinogens](#)
- [Appendix C - Supplementary Exposure Limits](#)
- [Appendix D - Substances with No Established RELs](#)
- [Appendix E - OSHA Respirator Requirements for Selected Chemicals](#)
- [Appendix F - Miscellaneous Notes](#)

- [Appendix G- 1989 Air Contaminants Update Project: Exposure Limits NOT in Effect](#)
- [Type C & CE- Definitions for Type C and Type CE Respirators](#)
- [Personal Protection and Sanitation Codes](#)
- [First Aid Procedures](#)

NIOSH Guide PDF <http://www.cdc.gov/niosh/npg/pdfs/2005-149.pdf>