

PROPERTIES OF RUBBER COMPOUNDS

This table is provided as a general guide only.

Common Name	ASTM Designation	Composition	General Properties
Neoprene	CR	Chloroprene	Good weather resistance. Flame retarding. Moderate resistance to petroleum based fluids. Good physical properties.
Natural	NR	Isoprene, natural	Excellent physical properties including abrasion and low temperature resistance. Poor resistance to petroleum based fluids.
Polyisoprene	IR	Isoprene, synthetic	Same properties as natural rubber.
Butyl	IIR	Isobutene-isoprene	Very good weathering resistance. Low permeability to air. Good physical properties. Poor resistance to petroleum based fluids.
Nitrile	NBR	Nitrile-butadiene	Excellent resistance to petroleum based fluids. Moderate resistance to aromatics. Good physical properties.
SBR	SBR	Styrene-butadiene	Good physical properties including abrasion resistance. Poor resistance to petroleum based fluids.
Hypalon	CSM	Chloro-sulfonyl-polyethylene	Excellent ozone, weathering and acid resistance. Good abrasion and heat resistance. Poor resistance to petroleum based fluids.
Ethylene Propylene Rubber	EPDM	Ethylene-propylene-diene-terpolymer	Excellent ozone, chemical and ageing characteristics. Poor resistance to petroleum based fluids.
Chlorobutyl	CIIR	Chloro-isobutene-isoprene	Very good weathering resistance. Low permeability to air. Good physical properties. Poor resistance to petroleum based fluids.
	XLPE	Cross Linked Polyethylene	Excellent resistance to chemicals and petroleum based fluids.
Ultra High Molecular Weight Polyethylene	UHMWPE	Ultra High Molecular Weight Polyethylene	Excellent resistance to most solvents, chemicals and hydrocarbons. Excellent abrasion and wear resistance.

CHEMICAL RESISTANCE OF RUBBERS

The information contained in this table is based upon current knowledge and practice. The resistance as listed should be checked with a sample of the intended product as compounds and additives frequently vary. The resistance tabulated is an indication only and we accept no liability to its accuracy. The data given relates to concentrated and saturated solutions at 20°C unless otherwise stated. The table does not indicate what effect the rubber may have on the chemical.

<p>Resistance Rating</p> <p>A – Recommended, little or no effect. The material is unlikely to be destroyed by the indicated chemical.</p> <p>B – Minor to moderate effect. The material will probably give satisfactory results but will sooner or later be destroyed by the indicated chemical.</p> <p>C – Moderate to severe effect. The material may be used to a certain extent in conjunction with the indicated chemical if the contact period is short. Continuous contact will destroy the material.</p> <p>U – Unsuitable and not recommended.</p> <p>For some materials no data is available and thus no value has been entered.</p>	<p>Abbreviations/Rubber Materials</p> <p>NR = Natural Rubber</p> <p>IR = Isoprene Rubber</p> <p>SBR = Styrene Rubber</p> <p>BR = Butadiene Rubber</p> <p>IIR = Butyl Rubber</p> <p>EPDM = Ethylene Propylene Rubber</p> <p>ECO = Epichlorohydrin Rubber</p> <p>NBR = Nitrile Rubber</p> <p>EU = Urethane Rubber (Polyeter)</p> <p>CR = Chloroprene Rubber (Neoprene)</p> <p>CSM = Chlorosulphonyl polyethylene (Hypalon)</p> <p>AU = Urethane Rubber (Polyester)</p> <p>T = Polysulphide Rubber (Thiokol)</p> <p>Si = Silicone Rubber</p> <p>FSi = Fluorosilicone Rubber</p> <p>FPM = Fluorinated Rubber (Viton)</p> <p>ACM = Acrylate Rubber</p> <p>XLPE = Cross Linked Polyethylene</p> <p>UHMWPE = Ultra High Molecular Weight Polyethylene</p>
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Chemical	NR IR	SBR BR	IIR	EPDM EPM	NBR	CO ECO	CR	CSM	AU EU	T	Si	FSi	FPM	ACM	XLPE	UHMWPE
Acetaldehyde	C	U	A	A	U		C	C	U	C	A	U	U	U	A	B
Acetamide	C	C	A	A	A		B	B	U	U	B	A	B	U	A	
Acetic Acid Glacial	B	C	B	A	C	U	C	C	U	B	B	C	C	U	B	A
Acetic Acid 30%	B	B	B	A	B	B	A	A	C	B	A	B	B	U	B	
Acetic Anhydride	B	B	B	B	C	U	A	A	U	B	C	U	U	U	B	B
Acetone	B	B	A	A	U	U	B	B	U	C	B	U	U	U	B	A
Actodhenone, Actodphene	C	U	A	A	U	U	U	U	U	U		U	U	U	B	
Acetyl Chloride							U	U				A	A			B
Acrylonitrile	U	C	U	U	U		C	C		U	U	U	U		B	
Adipic Acid					A							A				
Alkazene				U			U		B			B	B			
Aluminium Acetate	A	B	A	A	B	B	B	A		U	U	U		U	A	A
Aluminium Chloride	A	A	A	A	A	A	A	A		U	B	A	A	A	A	A
Aluminium Fluoride	B	A	A	A	A	A	A	A		U	B	A	A		A	
Aluminium Nitrate	A	A	A	A	A	A	A	A		B					A	
Aluminium Phosphate	A	A	A	A	A	A	A	A			A		A			
Aluminium Sulfate	A	B	A	A	A		A	A		U	A	A	A	U	A	A
Ammonia Gas (Cold)	A	A	A	A	A		A	A		A	A	A				
Ammonia Gas (Hot)			B	B			B	B		U	A	U	U			
Ammonium Carbonate	A	A	A	A	U	B	A								A	
Ammonium Chloride	A	A	A	A	A	A	A	A		A					A	A
Ammonium Hydroxide	U	U	A	A	U	B	A	A	A	U	A	B	B	U	A	A
Ammonium Nitrate	C	A	A	A	A	A	B	A	U					A	A	A
Ammonium Persulfate	A	U	A	A	U		A	A	U					U		
Ammonium Phosphate	B	A	A	A	A		A	A		A	A				A	A
Ammonium Sulfate	A	B	A	A	A		A	A		U				U	A	
Amyl Acetate	B	C	A	A	U	U	U	U	U	U	U	U	U	U	A	A
Amyl Alcohol	B	B	A	A	B	A	A	A	U	B	U	A	B	U	A	A
Amyl Borate	U	U	U	U	A		A	A		A			A		A	
Amyl Chloronaphtalene	U	U	U	U			U	U	U	C	U	B	A	U	A	
Amyl Naphtalene	U	U	U	U	U		U	U	U	C	U	A	A	B	A	
Aniline	U	U	B	B	U	U	C	C	U	C		C	C	U	B	A
Aniline Dyes	B	B	B	B	U		B	B	U	B		B	B	U	A	B
Aniline Hydrochloride	B	C	B	B	B		U	U	U	B	U	B	B	U	A	
Animal Fats	U	U	B	B	A	A	B	B	A	U	B	A	A	A	A	A
Ansul Ether	U	U	C	C	C		U	U	B	A	U	C	U	U		
Aqua Regia	U	U	U	C			U	C	U	U	U	C	B		B	B
Arochlor (S)	U	U	C	C	C		U			U	B	B	A	U		
Arsenic Acid	B	A	A	A	A	A	A	A	C	A	A	A	A	C	A	A
Arsenic Trichloride					A		A			U	B	B	A	U		
Asphalt	U	U	U	U	B	A	C	C	B	A	U	B	A	B	B	U
Astm Oil No. 1	U	U	U	U	A	A	A	A	A	A	C	A	A	A	A	A
Astm Oil No. 2	U	U	U	U	A	A	B	B	B	A	C	A	A	A	A	A
Astm Oil No. 3	U	U	U	U	A	A	B	B	B	A	C	A	A	A	A	A
Barium Chloride	A	A	A	A	A	A	A	A	A	A	A	A	A		A	A
Barium Sulfate	A	A	A	A	A	A	A	A	A	A	A	A	A		A	
Barium Sulfide	A	B	A	A	A	A	A	A	A	B	A	A	A	U	A	A
Beer	A	A	A	A	A	A	A	A			A	A	A	U		
Beet Sugar Liquors	A	A	A	A	A		A	A		U	A	A	A	U	A	
Benzene	U	U	U	U	U	U	U	U	U	C	U	A	A	U	B	B
Benzenesulfonic Acid							A	A				B	A		A	
Benzaldehyde	U	U	A	A	U	U	U	U	U	U	U	U	U	U	A	A
Benzyl Alcohol			B	B	U	U	A	B				B	A		A	A
Benzyl Benzoate			B	B								A	A		A	
Benzyl Chloride					U		U					A	A		A	A
Benzoic Acid											A	B	A			A
Blast Furnace Gas	U	U			U	U				A	B	A		A		
Bleach Solutions	U	U	A	A			C	A			B	B	A			
Borax	B	B	A	A	B		A	A	A		B	B	A	B	A	
Bordeaux Mixture	B	B	A	A			A	A			B	B	A		A	
Boric Acid	A	A	A	A	A	A	A	A	A	U	A	A	A	U	A	
Brine			A	A	A		A	A								A
Bromine Trifluoride	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	
Bromine Water							B	A		B		B	A			
Bromobenzene	U	U	U	U	U	U	U	U	U	C	U	A	A	U		B
Bunker Oil					A				B	A	B	A	A	A	B	B

A = Recommended - little or no effect **B** = Minor to moderate effect **C** = Moderate to severe effect **U** = Not recommended

Chemical	NR IR	SBR BR	IIR	EPDM EPM	NBR	CO ECO	CR	CSM	AU EU	T	Si	FSi	FPM	ACM	XLPE	UHMWPE
Butadiene	U	U	C	C	U	U	B	B	U			B	B		A	
Butter	U	U	B	A	A	A	B	B	A	U	A	A	A	A		
Butyl Acetate			B	B		U	U	U		C	U	U	U	U	B	A
Butyl Acetyl Ricinoleate			A	A			B	B				B	A			
Butyl Acrylate		U	U	U						B			U			B
Butyl Alcohol	A	A	B	B	A		A	A	U	B	B	A	A	U	A	A
Butyl Amine	U	U	U	U	C		U	U	U	U	B	U	U	U	A	
Butyl Benzoate			A	A			U	U				A	A			
Butyl Carbitol			A	A	A		B	B				A	A		A	A
Butyl Cellosolve			A	A	C		B	B				U	U			
Butyl Oleate	U	U	B	B			U	U				B	A			
Butyl Stearate	U	U	B	B	B					A		B	A		A	A
Butylene	U	U	U	U	B		C	C		B		B	A			
Butyraldehyde	C	C	B	B	C		C	C		B	C	U	U	U	B	A
Calcium Acetate	A		A	A	B		B	B				U	U		A	A
Calcium Bisulfite	U	U	U	U	A		A	A	A	U	A	A	A		A	
Calcium Chloride	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Hydroxide	A	A	A	A	A	A	A	A	A	U	A	A	A	U	A	A
Calcium Hypochlorite	U	U	A	A	C	B	C	A			B	A	A		B	B
Calcium Nitrate	A	A	A	A	A	A	A	A	A	A	B	A	A	A	A	A
Calcium Sulfide	B	B	A	A	B	B	A	A	A	U	B	A	A	U	A	A
Cane Sugar Liquors	A	A	A	A	A	A	A	A	U	U	A	A	A	U	A	
Carbamate	U	U	B	B	C		B	B	U	B		A	A	U	A	
Carbitol	B	B	B	B	B		B	B	U	B	B	B	B	U		A
Carbolic Acid	U	U	B	B	U		C	C		U	U	A	A		B	
Carbon Bisulfide			U	U	C	U	U	U		C		A	A			
Carbon Dioxide	B	B	B	B	A	A	B	A	A	A	A	A	A	B	A	A
Carbon Acid	A	B	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Carbon Monoxide	B	B	A	A	A	A	A	A	A	U	A	B	A		B	
Carbon Tetrachloride	U	U	U	U	C	B	U	U	C	C	U	A	A		B	B
Castor Oil	A	A	B	B	A	A	A	A	A	C	A	A	A	A		
Caustic Soda	A	A	A	A	B	B	A	A	B	U	B	B	B	A	B	A
Cellosolve	U	U	B	B				B		B			C		B	
Cellosolve Acetate	U	U	B	B	U				U	B		U	U		A	A
Chlorine Dioxide			C	C	U		U	C				B	A			
Chlorine Trifluoride	U	U	U	U	U	U	U	U	U	U	U	B	U			
Chloroacetone	B		B	A	U		B	B				U	U			A
Chloroacetic Acid			B	B											A	A
Chlorobenzene	U	U	U	U	U	U	U	U	C	U	U	B	A	U	A	B
Chlorobromomethane	U	U	B	B			U	U			U	B	A		B	
Chlorobutadiene	U	U	U	U	U		U					B	A			
Chlorododecane	U	U	U	U	U		U					A	A			
Chloroform	U	U	U	U	U		U	U			U	B	A		B	B
O-Chloronaphthalene	U	U	U	U	U		U				U	B	A		U	
1-Chloro 1-Nitro Ethane	U	U	U	U	U		U	U	U	U			C	U		
Chlorotoluene	U	U	U	U	U		U	U	U			B	A		U	B
Chrome Plating Solutions	U	U	U	U	U		U	C	U	U	B	B	A			
Chromic Acid	U	U	C	C	U		U	B	U		C	C	A			B
Citric Acid	A	A	A	A	A	A	A	A	A	U	A	A	A		A	
Cobalt Chloride	A	A	A	A	A		A		U	B	A	A		U		
Coconut Oil	U	U	A	A	A		B	B	A		A	A		A	A	
Cod Liver Oil	U	U	A	A	A		B	B	A		B	A	A	A	A	
Coke Oven Gas	U	U									B	B	A		A	
Copper Acetate			A	A	B		B	B								
Copper Chloride	A	A	A	A	A		A	A	A		A	A	A	A	A	A
Copper Cyanide	A	A	A	A	A		A	A	A		A	A	A	A	A	A
Copper Sulfate	B	B	A	A	A		A	A	A	U	A	A	A	U	A	A
Corn Oil	U	U	B	C	A	A	B	B	A	U	A	A	A	A	A	
Cottonseed Oil	U	U	C	A	A	A	B	B	A	U	A	A	A	A	A	B
Creosote	U	U	U	U	B	U	C	C	B	C	U	A	A	A	B	A
Cresol	U	U	U	U	C		C	C	U			B	A		B	A
Cresylic Acid	U	U	U	U	C		C	C	U			B	A		B	A
Cumene							U	U		B		B	A		A	A
Cyclohexane	U	U	U	U	A		U	U	B	A	U	A	A	B	A	A
Cyclohexanol	B	U	U	U	B		A	A		B		A	A			A
Cyclohexanone		B	B	U	U	U	U		B		U	U		A		A
P-Cymene							U	U		B		B	A		B	
Decalin	U	U					U	U		B		A	A		A	U
Decane	U	U			B		U	U	B		B	A	A	A		
Denatured Alcohol	A	A	A	A	A	A	A	A	C	A	A	A	A	U	A	
Detergent Solutions	B	B	A	A	A	A	A	A	U		A	A	A	U	A	
Developing Fluids	A	B	B	B	A		A	A		A	A	A	A		A	
Diacetone			A	A					B			U	U		A	
Diacetone Alcohol	U	U	A	A	U	U	A	A	B		A				A	A
Dibenzyl Ether	U	U	B	B	U	U	B		B	B					A	A
Dibenzyl Sebacate			B	B			U		B	B	C	C	B		A	
Dibutyl Amine	U	U	U	U	U		U	U			C	U	U			A
Dibutyl Ether	U	U	C	C	C		C	C	B	A	U	C	C	C	A	A
Dibutyl Phthalate	C	U	B	A	U	B	U	U	C	A	B	B	B		A	A
Dibutyl Sebacate	U	U	B	B	U		U	U	U	B	B	B	B	U	A	A
O-Dichlorobenzene	U	U	U	U	U		U	U	U	A	U	B	A		B	
Dichloro-Isopropyl Ether	U	U	C	C	U		U	U	B	A	U	C	C	B		

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Chemical	NR IR	SBR BR	IIR	EPDM EPM	NBR	CO ECO	CR	CSM	AU EU	T	Si	FSi	FPM	ACM	XLPE	UHMWPE
Dicyclohexylamine	U	U			C					C						
Diesel Oil	U	U	U	U	A	A	B	B	B	A	U	A	A	A	A	A
Diethylamine	B	B	B	B	C		C	C	C	B	B	U	U	U	A	A
Diethyl Benzene	U	U	U	U	U		U	U	U	B	U	A	A		A	
Diethyl Ether	U	U	U	U	U		C	C	A	A	U	C	U	C		
Diethylene Glycol	A	A	A	A	A	A	A	A	U	U	B	A	A	U	A	A
Diethyl Sebacate			B	B	U		U	U		B	B	B	B		A	A
Diisobutylene					B		C	C		A	U	C	A		A	
Diisopropyl Benzene	U	U	U	U	U		U	U		B		B	A			
Diisopropyl Ketone			A	A	U		U	U		B		U	U		A	
Dimethyl Aniline	U	U	U	B			U					U	U		A	
Dimethyl Formamide					B		C	C			B		U		B	
Dimethyl Phtalate	U	U	B	B	U		U	U		B		B	B		A	A
Dinitroluene	U	U	U	U	U		U	U					C			
Dioctyl Phtalate			B	B		B	U	U		B	C	B	B		A	A
Dioctyl Sebacate	U	U	B	B	U	C	U	U	B	C	C	C	B	U	A	A
Dioxane			B	B								C			A	A
Dioxalane	U	U	C	B	U											A
Dipentene					B					A		C	A		A	
Diphenyl										B		B	A			
Dipgenyl Oxides				A							C	B	A			
Dry Cleaning Fluids	U	U	U	U	C		U	U				B	A			
Epichlorohydrin	U	U	B	B								U	U		B	
Ethane	U	U	U	U	A		B	B	B	A	U	A	A	A		
Ethanolamine	B	B	B	B	B	B	B	B	C	B	B	U	U	U	A	A
Ethyl Acetate	U	U	B	B	U	U	C	C	U	B	B	U	U		A	A
Ethyl Acetoacetate	C	C	B	B	U		C			B	B	U	U		A	A
Ethyl Acrylate			B	B		U				B	B	U	U		B	A
Ethyl Alcohol - Ethanol	A	A	A	A	B	A	A	A	B	A	A	A	A	U	A	A
Ethyl Benzene	U	U	U	U	U	U	U	U	U	C		A	A		B	A
Ethyl Benzoate			B	B						B		A	A			
Ethyl Cellosolve			B	B						B		U	U			
Ethyl Cellulose	B	B	B	B			B	B	B	U	C	U	U	U	A	
Ethyl Chlorine	B	B	A	A	A	B	B	C	B	U	U	A	A	C		
Ethyl Chlorocarbonate	U	U					C	C				B	A			
Ethyl Chloroformate	U						C	C				B	A			
Ethyl Ether			C	C	C	B	U	U	B	A		C	U	U	B	A
Ethyl Formate	U	U	B	B	U	U	B	B				A	A			A
Ethyl Mercaptan	U	U	U	U	U	U				U			A		A	
Ethyl Oxalate	A	A	A	A	U	U	C		A	A			A		A	A
Ethyl Pentochlorobenzene	U	U	U	U	C	C	U	U	C	B		B	A		A	A
Ethyl Silicate	B	B	A	A	A	A	A	A				A	A		A	A
Ethylene					A							A	A			
Ethylene Chloride			C	C								C	A		B	
Ethylene Chlorohydrin	B	B			U		B	B		B	C	B	A		A	B
Ethylene Diamine	B	B	A	A	A	A	A	A			A	U	U		A	A
Ethylene Dichloride	U	U	C	C	U	U	U	U	U	U	C	C	A		B	B
Ethylene Glycol	A	A	A	A	A	A	A	A	B	C	A	A	A	U	A	A
Ethylene Oxide			C	C	U		U	U			C	U	U			A
Ethylene Trichloride			C	C	U		U	U			C	C	A			
Fatty Acids	C	C	U	U	B		B	B		U	C		A		B	B
Ferric Chloride	A	A	A	A	A	A	A	A	A		A	A	A		A	A
Ferric Nitrate	A	A	A	A	A	A	A	A		A	C	A	A	A	A	A
Ferric Sulfate	A	A	A	A	A	A	A	A		A	B	A	A	A	A	A
Fish Oil					A						A	A	A			
Fluoroboric Acid	A	A	A	A	A	A	A	A							A	A
Fluorobenzene	U	U	U	U	U		U	U			U	B	A			
Fluorocarbon Oils			A	A												
Fluorinated Cyclic Ethers			A	A												
Fluosilic Acid	A				A		A	A							A	
Formaldehyde			A	A	B	B	A	A	U				A		B	A
Formic Acid	A	A	A	A	B	B	A	A	U		B	C	C		A	A
Freon 11	U	U	U	U	A		B	A	U	A	U	B	A			
Freon 13	A	A	A	A	A	A	A	A		A			A			
Freon 21	U		U	U	U	B	B	U		U	U		U			
Freon 22	A	A	A	A	U	A	A	A	U	A	U	U	U			A
Freon 31	B	B	A	A	U		A	B		B			U			
Freon 32	A	A	A	A	A		A	A		A			C			
Freon 112	U		U	U	B		B	B		A			A			
Freon 113	C	B	U	U	A	A	A	A	B	A	U	U	B			
Freon 115	A	A	A	A	A		A	A		A			B			
Freon 142b	A	A	A	A	A		A	A		A			U			
Freon 152a	A	A	A	A	A		A	C		A			U			
Freon 218	A	A	A	A	A		A	A		A			A			
Freon C 316	A	A	A	A	A		A	A								
Freon C 318	A	A	A	A	A		A	A		A			A			
Freon 13 B 1	A	A	A	A	A		A	A	A		U		A			
Freon 114 B 2	U	C	U	U	B		A	A		A			B			
Freon 502	A	A			B		A						B			
Freon TF	C	B	U	U	A	A	A	A	A	A	U		A			
Freon T-WD 602	C	B	A	B	B		B	B	A	A	U		A			
Freon TMC	B	C	B	B	B		B	B	B	A	C		A			

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Chemical	NR IR	SBR BR	IIR	EPDM EPM	NBR	CO ECO	CR	CSM	AU EU	T	Si	FSi	FPM	ACM	XLPE	UHMWPE
Freon T-P35	A	A	A	A	A		A	A	A	A	A		A			
Freon TA	A	A	A	A	A		A	A	A	A	A		C			
Freon TC	U	B	A	B	A		A	A	A	A	U		A			
Freon MF	U	B	U		A		C	U	C	A						
Freon BF	U	U	U		B		B	B		A						
Fuel Oil	U	U	U	U	A	A	B	B	B	A	U	A	A	A	A	A
Fumaric Acid	A	A	U		A		B	B			B	A	A	U	A	
Furan, Furfuran	U	U	C	C	U		U	U		B					A	
Furfural	C	C	B	B	U	U	B	B		C			U		A	A
Gallic Acid	A	B	B	B	B		B	B	U			A	A	U	A	A
Gasoline	U	U	U	U	A	A	B	B	A	A	U	A	A		A	B
Gelatin	A	A	A	A	A	A	A	A	A	U	A	A	A	U		
Glaubers Salt		U	B	B						U		A	A	U	U	
Glucose	A	A	A	A	A	A	A	A	A	U	A	A	A		A	B
Glue	A	A	A	A	A	A	A	A	A	U	A	A	A		A	
Glycerin	A	A	A	A	A	A	A	A	A	B	A	A	A	U	A	
Glycols	A	A	A	A	A	A	A	A	B	A	A	A	A	U	A	B
Halowax Oil	U	U	U	U	U		U	U		A	U	A	A		U	
n-Hexaldehyde	U	U	B	A	U		A		B		B				A	
Hexane	U	U	U	U	A	A	B	B	B	A	U	A	A	A	A	B
Hexyl Alcohol	A	A	C	C	A		B	B	U	A	B	A	A	U	A	A
Hydrazine			A	A	B		B	B	U		C				U	
Hydraulic Oil (Petroleum)	U	U	U	U	A	A	B	B	A	A	C	A	A	A	A	
Hydrobromic Acid	A	C	A	A	U		A	A	U		U	C	A	U	A	B
Hydrochloric Acid (Hot 37%)	U	U	C	C	U	U	U	C	U	U	U	U	A	U	A	
Hydrochloric Acid (Cold 37%)	B	B	A	A	B	U	B	A	U	U	B	B	A	U	A	
Hydrofluoric Acid (Conc) Hot	U	U	U	U	U		U	C	U	U	U	U	B	U	A	
Hydrofluoric Acid (Conc) Cold	U	U	B	B	U		B	A	U	U	U	U	A	U	A	
Hydrofluoric Acid (Anhydrous)	U	U	B	B				A			U					
Hydrofluorosilic Acid	A	B	A	A	B		B	A		U	U		A			
Hydrogen Peroxide (90%)	U	U	C	C	U			C		U	A	B	B		U	
Hydrogen Sulfide Wet Cold	U	U	A	A	U	B	A	B		A	C	C	U	U		
Hydrogen Sulfide Wet Hot	U	U	A	A	U	B	B	C		A	C	C	U	U		
Hydroquinone	B	B			C					C		B	U		A	
Hypochlorous Acid	B	B	B	B	U	B							A		A	
Iodine Pentafluoride	U	U	U	U	U	U	U	U	U	U	U	U	U	U		
Iodoform			A	A												
Isobutyl Alcohol	A	B	A	A	B		A	A	U		A	B	A	U	A	
Isooctane	U	U	U	U	A	A	B	B	B	A	U	A	A	A	A	B
Isopropyl Acetate			A	A	U		U	U	A				U	U	A	A
Isopropyl Alcohol	A	B	A	A	B	A	A	A		A	A	B	A	U	A	A
Isopropyl Chloride	U	U	U	U	U					U		B	A			
Isopropyl Ether	U	U	U	U	B		B	B	B	A			U	C	A	A
Kerosene	U	U	U	U	A	A	C	C	B	B	U	A	A	A	A	A
Lacquers	U	U	U	U	U	U	U	U	U	A	U	U	U	U	A	
Lacquer Solvents	U	U	U	U	U	U	U	U	U	A	U	U	U	U	A	
Lactic Acid	A	A	A	A	A		A	A		U	A	A	A		A	
Lard	U	U	U	U	A	A	C	C	A	U	B	A	A	A	A	
Lavender Oil	U	U	U	U	B		C			B		B	A	B		
Lead Acetate	A		A	A	B	B	B			U	U				A	A
Lead Nitrate	A	A	A	A	A		A	A			B	A			A	
Lead Sulfamate	B	B	A	A	B		A	A		U	B	A	A	U	A	
Lime Bleach	A	A	A	A	A		B	B		U	B	A	A	U	A	
Lime Sulfur	U	U	A	A	U		A	A		U	A	A	A	U		
Lindol			A	A			C	C			C	C	B			
Linoleic Acid			U	U	B		U				B		B		A	
Linseed Oil	U	U	B	B	A		B	B	B	A		A	A	A	A	A
Lubricating Oils (Petroleum)	U	U	U	U	A	A	B	B	B	C	U	A	A	A	A	A
Lye	B	B	A	A	B		B	A	B	C	B	A	B	U		
Magnesium Chloride	A	A	A	A	A	A	A	A	A	C	A	A	A		A	A
Magnesium Hydroxide	B	B	A	A	B	A	A	A	A	C			A	U	A	A
Magnesium Sulfate	B	B	A	A	A	A	A	A		B	A	A	A	U	A	A
Maleic Acid	B	B	C	C						B			A			A
Maleic Anhydride	B	B	C	C									A			
Malic Acid		B	U	U	A		B	B			B	A	A	U	A	B
Mercuric Chloride	A	A	A	A	A	A	A	A					A		A	
Mercury	A	A	A	A	A	A	A	A	A				A		A	
Mesityl Oxide	U	U	B	B	U		U	U		B	U	U	U		A	A
Methane	U	U	U	U	A	A	B	B	B	A	U	B	A	A		
Methyl Acetate	U	U	B	B	U	U	B					U	U		B	A
Methyl Acrylate	U	U	B	B	U		B					U	U	U	B	
Methylacrylic Acid	U	U	B	B			B					U	B	U		
Methyl Alcohol	A	A	A	A	A	B	A	A	U	B	A	A	C	U	A	
Methyl Bromide					B		U	U				A	A		A	
Methyl Butyl Ketone	U	U	A	A	U		U	U		A	B	U	U		A	A
Methyl Cellosolve	U	U	B	B			B	B					U		A	A
Methyl Chloride	U	U	C	C	U		U	U			U	B	A	U	B	A
Methyl Cyclopentane	U	U	U	U			C			B		B	A			
Methylene Chloride	U	U	U	B	U		U	U	U			B	B		A	B
Methyl Ethyl Ketone	U	U	A	A	U	U	U	U	U	A		U	U	U	B	A
Methyl Formate	U	U	B	B	U	U	B	B		B	B				A	
Methyl Isobutyl Ketone	U	U	C	B	U	U	U	U		B	C	U	U	U	B	A

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Chemical	NR IR	SBR BR	IIR	EPDM EPM	NBR	CO ECO	CR	CSM	AU EU	T	Si	FSi	FPM	ACM	XLPE	UHMWPE
Methyl Methacrylate	U	U	U	U	U	U	U			B	C	U	U	U	B	
Methyl Oleate	U	U	B	B	U		U					B	A			
Methyl Salicylate			B	B			U								A	
Milk	A	A	A	A	A		A	A	U	B	A	A	A	U		
Mineral Oil	U	U	U	U	A	A	B	B	A	B	B	A	A	A	A	
Monochlorobenzene	U	U	U	U	U	U	U	U		B	U	B	A		B	B
Monomethyl Aniline	U	U			U		U	U					B			
Monoethanolamine	B	B	B	B	U		U	U			B	U	U		B	A
Monomethylether	B	B	A	A	A		A			B						
Monovinyl Acetylene	B	B	A	A	A		B	B		C	B		A			
Mustard Gas	A		A	A			A	A			A					
Naphtha	U	U	U	U	C	A	C	U	C	B	U	B	A	B	A	A
Naphthalene	U	U	U	U	U		U	U	B	B	U	A	A		B	A
Naphthenic Acid	U	U	U	U	B					B		A	A			
Nickel Acetate	A		A	A	A		B					U	U		A	
Nickel Chloride	A	A	A	A	A		A	A		A	A	A	A		A	A
Nickel Sulfate	B	B	A	A	A		A	A	A		A	A	A	U	A	A
Nitric Acid Conc.	U	U	C	C	U	U	C	B	U	U	U	U	A	U	B	
Nitric Acid Dilute	U	U	B	B	U	U	A	A	C	U	B	B	A	U	A	
Nitric Acid Red Fuming	U	U	U	U	U	U	U	U	U	U	U	U	C	U	C	U
Nitrobenzene	U	U	U	B	U	U	U	U	U	U	U	U	B	U	B	A
Nitrobenzine			C	C			U	U				A	A			
Nitroethane	B	B	B	B	U		C	C			U	U	U	U	A	
Nitromethane	B	B	B	B	U		C	C			U	U	U	U	A	
Nitrogen	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Octadecane	U	U	U	U	A		B	B	A	A	U	A	A	B		
n-Octane	U	U	U	U						B	U	B	A		B	
Octyl Alcohol	B	B	A	A	B		A	A	U	B	B	B	A	U	A	A
Oleic Acid	C	C	B	B	C		C	C	B				B		A	A
Oleum Spirits					B		C	B	C			B	A		U	
Olive Oil	U	U	B	B	A	B	B	B	A		U		A	A	A	
O-Dichlorobenzene					U		U	U		B		B	A		B	
Oxalic Acid	B	B	A	A	B	C	B	B		U	B	A	A		B	A
Oxygen - Cold	B	B	A	A	B	B	B	B	A	B	A	A	A	A	U	
Oxygen - 100-200°C	U	U	U	U	U	U	U	U	U	U	B	U	B			
Ozone	U	U	B	A	U	A	B	A	A	A	A	U	A	B	B	A
Paint Thinner (Duco)	U	U	B	A	U	A	B	A	A	A	A	U	A	B	B	
Palmitic Acid	B	B	B	B	A	B	B	B	A	U		A	A		A	A
Peanut Oil	U	U	C	C	A	A	B	B	B	U	A	A	A	A	A	
Perchloric Acid			B	B		C	A	A		A	U	A	A		B	
Perchloroethylene	U	U	U	U	C	B	U	U	U	A	B	B	A		A	B
Petroleum - Below 250	U	U	U	U	A	A	B	B	B	U	B	B	A	A		
Petroleum - Above 250	U	U	U	U	C	B	U	U	U	U	U	U	B	C		
Phenol	C	C	B	B	U		C	C	U		C	B	A		B	A
Phenylbenzene	U	U	U	U	U		U	U		B		B	A			
Phenyl Ethyl Ether	U	U	U	U	U		U	U		B						
Phenyl Hydrazine	A	B	C	C	U		C	C					A			
Phorone			B	B						C					A	
Phosphoric Acid 20%	B	C	A	A	B		B	A	A	U		B	A		A	A
Phosphoric Acid 45%	U	U	B	B	U		B	B	A	U	U	B	A		A	A
Phosphorus Trichloride	U	U	A	A	U		U	U				A	A			
Pickling Solution			C	C		U		C					B			
Picric Acid	B	B	B	B	B		A	B	B		U	B	A		B	
Pinene	U	U	U	U	B		B	B	B	B	U	B	A		A	A
Pine Oil	U	U	U	U	B		U	U		B		A	A		A	A
Piperidine	U	U	U	U	U		U	U				U	U			
Plating Solution - Chrome	U	U	A	A				C			U		A		A	
Plating Solution - Others			A	A	A			A			U		A			
Polyvinylacetate Emulsion			A	A			B	B								
Potassium Acetate	A		A	A	B		B	B				U	U		A	A
Potassium Chloride	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Cupro Cyanide	A	A	A	A	A		A	A	A	A	A	A	A	A	A	
Potassium Cyanide	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	
Potassium Carbonate	B	B	B	B	B		B								A	A
Potassium Dichromate	B	B	A	A	A		A	A	A	A	A	A	A	A	A	B
Potassium Hydroxide	B	B	A	A	B	A	A	A	B	B	C	C	B	U	A	
Potassium Nitrate	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Sulfate	B	B	A	A	A	A	A	A	A	B	A	A	A	U	A	A
Producer Gas	U	U	U	U	A		B	B	A	U	B	B	A	B		
Propyl Acetate	U	U	B	B	U	U	U	U	U	B		U	U	U	A	A
Propyl Alcohol	A	A	A	A	A	A	A	A	U	A	A	A	A	U	A	A
Propyl Nitrate			B	B							C	U	U			
Propylene Oxide			B	B			U	U			U					
Pyridine	U	U	B	B	U	U	U	U					U		B	
Pyroligeneous Acid			B	B			B	B		B						
Pyrrole	C	C	C	C	U		U			U	B	B		U		
Radiation	B	B	U	B	B		B	B	A	U	C	U	U	B		
Rapeseed Oil	U	U	A	A	B	A	B	B	B	U	U	A	A	B	A	
Sal Ammoniac	A	A	A	A	A		A	A	A	A	B	A	A	A		
Salicylic Acid	A	B	A	A	A							A	A		A	
Salt Water	A	A	A	A	A		A	A		C		A	A		A	A
Sewage	B	B	B	B	A		A	A	U	U	B	A	A	U	A	A

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Chemical	NR IR	SBR BR	IIR	EPDM EPM	NBR	CO ECO	CR	CSM	AU EU	T	Si	FSi	FPM	ACM	XLPE	UHMWPE
Silicate Esters	U	U	U	U	B		A	A	A		U	A	A			
Silicone Greases	A	A	A	A	A	A	A	A	A	A	C	A	A	A	B	
Silicone Oils	A	A	A	A	A	A	A	A	A	A	C	A	A	A	B	
Silver Nitrate	A	A	A	A	B		A	A	A	B	A	A	A	A	A	
Skydrol 500	U	U	B	A	U	U	U	U	U		C	C	U	U	A	
Skydrol 7000	U	U	A	A	U	U	U	U	U	U	B	C	B	U	A	
Soap Solutions	B	B	A	A	A	A	A	A	A	U	A	A	A	U	A	A
Soda Ash	A	A	A	A	A	A	A	A		U	A	A	A		A	A
Sodium Acetate	A	C	A	A	B		B	B	U	U		U	U	U	A	A
Sodium Bicarbonate	A	A	A	A	A	A	A	A		C	A	A	A		A	
Sodium Bisulfite	A	B	A	A	A	A	A	A		C	A	A	A	U	A	A
Sodium Borate	A	A	A	A	A	A	A	A		A	A	A	A		A	
Sodium Chloride	A	A	A	A	A	A	A	A	A	C	A	A	A		A	A
Sodium Cyanide	A	A	A	A	A	A	A	A		A	A	A	A		A	
Sodium Hydroxide	A	A	A	A	B	B	A	A	B	U	B	B	B	A	A	A
Sodium Hypochlorite	C	C	B	B	B	A	B	B	U	U	B	B	A	U	B	B
Sodium Metaphosphate	A	A	A	A	A		B	B				A	A		A	
Sodium Nitrate	B	B	A	A	B	A	A	A			U				A	A
Sodium Perborate	B	B	A	A	B		B	B		B	B	A	A		A	
Sodium Peroxide	B	B	A	A	B		B	B	U		U	A	A	U	A	
Sodium Phosphate	A	A	A	A	A			A	A		U		A	A	A	
Sodium Silicate	A	A	A	A	A		A	A					A			A
Sodium Sulfate	B	B	A	A	A	A	A	A	A	B	A	A	A	U		A
Sodium Thiosulfate	B	B	A	A	B		A	A	A	B	A	A	A	U	A	A
Soybean Oil	U	U	C	C	A	A	B	B	B	U	A	A	A	A	A	B
Stannic Chloride	A	A	B	B	A		A	A			B	A	A		A	
Stearic Acid	B	B	B	B	B	B	B	B	A		A				A	A
Styrene	U	U	U	U	U		U	U			U	C	B		B	B
Sucrose Solution	A	A	A	A	A		A	A		U					A	
Sulfite Liquors	B	B	B	B	B	B	B	B		U	U	B	A	U		
Sulphur	U	U	A	A	U	C	A	A		U	A	A	A	U		
Sulphur Chloride	U	U	U	U	C		C	B				A	A		B	
Sulphur Dioxide	C	C	B	A	U		C	C		U	A	B	A	U	B	B
Sulphur Hexafluoride		A	A	A	A	A	A	A			A	A	A			
Sulphur Trioxide	B	U	B	B	U		U	U		U	B	B	A	U	A	
Sulphuric Acid (Dilute)	C	C	B	B	U	B	B	A	B	U	U	C	A	U	A	
Sulphuric Acid (Conc)	U	U	B	B	U	U	U	B	U	U	U	U	A	U	B	
Sulphuric Acid (20% oleum)	U	U	U	U	U	U	U	U	U	U	U	U	A	U		
Sulfurous Acid 10% to 80%	B	B	B	B	B		B	A	U	U	U		A	U	A	A
Tannic Acid	A	B	A	A	A		A	A	A	A	B		A	U	A	A
Tar - Bituminous	U	U	U	U	B	B	C	C			B	A	A	U	A	
Tartaric Acid	A	B	B	B	A	B	B	A	A	U	A	A	A		A	A
Terpineol	U	U	C	C	B		U	U	B	A		A	A		A	
Tertiary Butyl Alcohol	B	B	B	B	B		B	B	U	B	B	B	A	U		A
Tertiary Butyl Catechol	U	C	B	B	U		B	B	U	U		A	A	U		
Tertiary Butyl Mercaptan	U	U	U	U	U		U	U	U				A			
Tetrabromomethane	U	U	U	U	U							B	A			
Tetrachloroethylene	U	U	U	U	U				B	U		B	A	U		A
Tetraethyl Lead	U	U	U	U	B		C	C				B	A		B	
Tetrahydrofuran	U	U	B	B						A			U		A	B
Tetralin	U	U	U	U	U		U	U				A	A			
Thionyl Chloride	U	U	U	U			U						A			
Titanium Tetrachloride	U	U	U	U	C		U	U		C		B	A		U	B
Toluene	U	U	U	U	U	U	U	U	C	U	U	B	A		A	A
Toluene Diisocyanate	C	C	A	A			U	U							A	
Transformer Oil	U	U	U	U	A		B	B			B	A	A	B	A	
Transmission Fluid Type A	U	U	U	U	A	A	B	B	A	A	B	A	A	A	A	B
Triacetin	B	C	A	A	B		B	B	U	B		U	U	U		
Tributoxy Ethyl Phosphate	B	B	A	A	U		U	U	U	A		B	A		A	
Tributyl Phosphate	B	U	A	A	U		U	C	U	A		U	U	U	A	A
Tributyl Merkaptan	U	U	U	U	U		U	U					A			
Trichloroethane	U	U	U	U	U		U	U	U	U	U	B	A	U		A
Trichloroacetic Acid	C	B	B	B	B		B	B				C	U			
Trichloroethylene	U	U	U	U	C	B	U	U	U		B	B	A		A	
Tricresyl Phosphate	U	U	A	A	U	U	C	C	C	B	C	B	B		U	A
Triethanol Amine	B	B	B	B	C		A	A	U	U		U	U	U	A	
Triethyl Aluminium													B			
Triethyl Borane													A			
Trinitrotoluene	U	U	U	U	U		B	B		B		B	B			
Trioctyl Phosphate	U	U	A	A	U		U	U		B	C	B	B	U		
Triaryl Phosphate	U	U	A	A	U		C	C	B	B	C	B	A	U		
Tung Oil	U	U	C	U	A		B	B	B	B		B	A		B	
Turbine Oil	U	U	U	U	B	A	B	B		A		B	A	B		
Turpentine	U	U	U	U	A	A	U	U	U	B	U	B	A	A	U	A
Urea Solution	A	A	B		B										A	
Varnish													B		B	
Vinegar	B	B	B			U	B						U		A	
Vinyl Chloride (Monomer)	U	U	U	U	U	U	U	U	U	U	U	U	B	U	B	
Vinyl Fluoride													A		A	
Water	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Xylene	U	U	U	U	U			U					B		A	B
Zinc Acetate	B	B	B	B	U		U	U					U		A	
Zinc Chloride Solutions	B	B	B		A		A		A				A		A	
Zinc Chromate								A							A	A
Zinc Sulfate Solutions	U	U	B	B	B			B	B						A	

A = Recommended - little or no effect B = Minor to moderate effect C = Moderate to severe effect U = Not recommended