

# Thermoid®



## CHEMICAL RESISTANCE TABLES

The following charts are designed to help you select the correct hose or hoses to conduct the many types of materials found in industry. It should be used only as a guide because the ability of a particular tube compound to resist a material depends on many variables — temperature, concentration, pressure, velocity, duration of exposure, aeration, stability of the fluid, etc. The special variations in elastomer types and their compounding for specific service conditions play an important part in the service life of the hose.

The most commonly used chemicals, materials, oil, solvents, etc., are listed here. Ratings are for concentrated or saturated solutions at room temperature. (70°F) unless otherwise specified. The rating code indicates the degree or range of serviceability for each type of hose listed under the group headings.

## RATING CODES\*

A	B	C	D
<p><b>EXCELLENT</b> Suitable for continuous service.</p>	<p><b>GOOD</b> Generally suitable for continuous service and for intermittent service.</p>	<p><b>FAIR or CONDITIONAL</b> NOT recommended for continuous service, but generally suitable for intermittent service.</p>	<p><b>UNSATISFACTORY</b> Not recommended.</p>

BLANK – Insufficient data at the time of publishing – please contact Customer Service for current resistance information.

\*These ratings are to be used only as a guide.

## PHYSICAL PROPERTIES AFTER EXPOSURE TO OIL

In this Association for Rubber Products Manufacturers (ARPM) Classification, the rubber samples are immersed in IRM 903 oil at 100°C (212°F) for 70 hours.

Oil Resistance Class	Maximum Volume Change	Tensile Strength Retained
Class A (High oil resistance)	+25%	80%
Class B (Medium oil resistance)	+65%	50%
Class C (Limited oil resistance)	+100%	40%

WARNING: The following data has been compiled from generally available sources and should not be relied upon without consulting and following the hose manufacturer’s specific chemical recommendations. Neglecting to do so might result in failure of the hose to fulfill its intended purpose, and may result in possible damage to property and serious bodily injury.

	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Acetal	C	C	G	D	C	C	B	D	D	A		A
Acetaldehyde	D	D	A	D	D	D	A	D	D	A		B
Acetamide	C	C	A	A	B	B	A	C	B	A		A
Acetate Solvents	C	D	C	D	D	D	A	D	D	A	B	A
Acetic Acid 10%	B	B	B	B	B	A	A	B	A	A	A	A
Acetic Acid 30%	D	D	B	D	C	B	A	C	C	A	A	A
Acetic Acid 50%	D	D	B	C	C	B	A	C	C	B	A	A
Acetic Acid, Glacial	D	D	B	D	C	C	B	D	D	B	A	A
Acetic Anhydride	C	D	B	D	C	A	B	D	D	A	A	B
Acetic Ester (Ethyl Acetate)	D	D	B	D	D	D	B	D	D	A	B	A
Acetic Ether (Ethyl Acetate)	D	D	B	D	D	D	B	D	D	A	B	A
Acetic Oxide (Acetic Anhydride)	C	D	B	D	C	A	B	D	D	A	A	B
Acetone	D	C	A	D	C	C	A	D	D	B	B	A
Acetophenone	C	D	A	D	D	D	A	D	D	B		B
Acetyl Acetone	D	D	A	D	D	D	A	D	D	A	B	A
Acetyl Chloride	D	D	C	D	D	D	C	D	B	B	A	B
Acetylene	B	C	A	A	B	C	A	B	A	A	B	A
Acrylonitrile	C	C	D	D	D	C	B	D	D	B	A	B
Air	A	A	A	A	A	A	A	A	A	A	A	A
Alcohols (Aliphatic)	A	B	A	A	A	A	A	A	C	A	A	A
Alcohols (Aromatic)	C	D	D	C	C	D	D	B	A	A	C	A
Alk-Tri (Trichloroethylene)	D	D	D	C	D	D	D	C	B	C	C	C
Allyl Alcohol	A	B	A	A	A	A	A	A	B	A	A	A
Allyl Bromide	D	D	D	D	D	D	D	D	B	B		B
Allyl Chloride	D	B	C	C	D	D	D	B	B	B	B	B
Alums (Ammonium Potassium Sulfate)	B	B	A	A	A	A	A	A	A	A	B	A
Aluminum Acetate	A	C	B	B	B	C	A	B	C	A	B	A
Aluminum Chloride	A	A	A	A	A	A	A	B	A	A	B	A
Aluminum Fluoride	A	A	A	A	A	A	A	A	A	A	C	A
Aluminum Hydroxide	A	B	A	A	A	A	A		A	A		A
Aluminum Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Aluminum Phosphate	A	A	A	A	A	A	A	A	A	A		A
Aluminum Sulfate	B	A	A	A	A	A	A		A	A	A	A
Ammonia, Anhydrous	D	D	C	B	A	B	A	C	D	A	C	A
Ammonia, Liquid	B	B	B	B	A	A	A	B	D	A	A	A
Ammonia, In Water	B	C	A	B	B	B	A	B	B	A	A	A
Ammonia Gas (Cold)	Anhydrous Ammonia Hose Only											1
Ammonia Gas (150°F)	Anhydrous Ammonia Hose Only											1
Ammonium Carbonate	A	A	A	C	A	A	A	B	A	A		A
Ammonium Chloride	A	A	A	A	A	A	A	A	A	A	B	A
Ammonium Hydroxide	C	D	A	A	A	A	A	B	B	A	B	A
Ammonium Metaphosphate	A	B	A	A	A	A	A	B	A	A		A
Ammonium Nitrate	A	A	A	A	A	A	A	A	A	A	B	A
Ammonium Nitrite	A	A	A	A	A	A	A	A	A	A	B	A
Ammonium Persulfate	A	D	A	D	A	A	B		A	A		A
Ammonium Phosphate	A	A	A	A	A	A	A	A	A	A	B	A
Ammonium Sulfate	A	B	A	A	A	A	A		A	A	A	A
Ammonium Sulfide	A	B	A	A	A	A	A		B	A	A	A

	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Ammonium Sulfite	A	A	A	A	A	A	A		A	B	A	C
Ammonium Thiocyanate	A	A	A	A	A	A	A		A	A		A
Ammonium Thiosulfate	A	A	A	A	A	A	A		A	A		B
Amyl Acetate	C	D	B	D	D	D	A	D	D	B	C	B
Amyl Acetone	D	D	B	D	D	D	B	D	D	A		B
Amyl Alcohol	A	B	A	A	A	A	A	A	A	A	A	A
Amylamine	C	B	B	C	D	C	D	C	D			A
Amyl Borate	D	D	D	A	B	C	D	A	A	B		A
Amyl Chloride	D	D	D	D	D	D	D	D	A	D	C	D
Amyl Chloronaphthalene	D	D	D	B	D	D	D	C	A	A	D	B
Amyl Naphthalene	D	D	D	D	D	D	D	C	A	A		A
Amyl Oleate	D	D	B	D	D	D	B	C	C	A		A
Amyl Phenol	D	D	D	D	D	D	D	C	A	A		A
Anethole	D	D	D	D	D	D	D	D	B	B	D	B
Aniline	D	D	B	D	C	C	B	D	B	B	B	B
Aniline Dyes	C	C	B	C	C	C	B	C	B	A		A
Aniline Hydrochloride	A	C	C	C	D	D	B	C	B	A		A
Animal Fats	D	D	B	A	B	B	B	A	A	A	A	A
Animal Grease	D	D	C	B	B	C	B	B	A	A	B	A
Animal Oils	D	D	B	A	D	D	C	B	A	A	A	A
Ansul Ether	D	D	C	C	D	D	C	D	D	A		A
Antifreeze (Ethylene Glycol)	A	A	A	A	A	A	A	A	A	A	A	A
Antimony Trichloride	D	D	A	B	B	B	B	C	A	A		B
Antimony Pentachloride	D	D	C	D	D	D	C	C	A	B		B
Aqua Regia	D	D	D	D	D	C	C	D	B	D	B	B
Aromatic Hydrocarbons	D	D	D	C	D	D	D	B	A	A	C	A
Arguad	A	A	A	A	A	A	A	A	A	A		A
Arsenic Acid	A	A	A	A	A	A	A	A	A	A	A	A
Arsenic Chloride	D	D	D	C	A	D	B	C	D	D		D
Arsenic Trichloride	D	D	D	C	A	D	B	C	D	D		D
Asphalt	D	D	D	A	B	D	B	A	A	B		B
Astm #1 Oil (IRM 901 Oil)	D	D	D	A	A	B	D	A	A	A	A	A
Astm #2 Oil (IRM 902 Oil)	D	D	D	A	B	C	D	A	A	A	A	A
Astm #3 Oil (IRM 903 Oil)	D	D	D	A	B	C	D	A	A	A	A	A
Aviation Gasoline	D	D	D	A	C	D	D	A	A	A	B	A
Barium Carbonate	A	A	A	A	A	A	A	A	A	A	A	A
Barium Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Barium Hydroxide	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
Barium Sulfide	A	A	A	A	A	A	A	A	A	A	A	A
Beer	(F.D.A. Tube Required)											2
Beet Sugar Liquors	A	A	A	A	A	A	A	A	A	A	A	A
Benzaldehyde	D	D	B	D	D	D	B	D	D	A	C	A
Benzene (Benzol)	D	D	D	C	D	D	D	C	A	A	C	A
Benzene Sulfonic Acid	D	D	D	C	A	A	C	B	A	A		A
Benzine Solvent (Ligroin)	D	D	D	A	B	D	D	B	A	A		A
Benzoic Acid	B	D	A	D	A	B	B	C	A	A	A	A
Benzoic Aldehyde	D	D	D	D	D	D	D	C	D	A		A
Benzotrichloride	D	D	D	D	D	D	D	D	B	B	D	B

	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Benzoyl Chloride	D	D	D	D	D	D	D	D	B	B	D	B
Benzyl Acetate	D	D	B	D	D	B	B	D	D	A	A	A
Benzyl Alcohol	B	B	B	D	B	B	B	D	A	A	A	A
Benzyl Chloride	D	D	C	D	D	D	D	D	A	A	D	A
Bichromate of Soda (Sodium Dichromate)	D	D	A	D	B	B	C	C	A	A	A	A
Black Sulfate Liquor	B	B	A	B	A	B	A	A	A	A		A
Blast Furnace Gas	D	D	C	C	B	B	C	C	A	A		A
Bleach Solutions	D	D	B	D	D	C	B	D	B	B	A	B
Borax	B	B	A	B	A	A	A	A	A	A	A	A
Bordeaux Mixture	B	B	A	A	A	A	A	A	A	A		A
Boric Acid	A	A	A	A	A	A	A	A	A	A	A	A
Brandy	(F.D.A. Tube Required)											2
Brine	A	A	A	A	A	A	A	B	A	A	A	A
Bromine	D	D	D	D	D	C	D	D	C	D		D
Bromine Water	D	D	C	C	B	A	C	C	A	A		A
Bromobenzene	D	D	D	D	D	D	D	D	B	C	D	C
Bunker Oil	D	D	D	A	B	D	D	A	A	A	A	A
Butanol (Butyl Alcohol)	A	A	A	B	A	A	A	A	A	A	A	A
Butadiene	D	D	D	D	C	B	D	D	A	C		C
Butane	Use Butane-Propane Hose Only											3
Butter (Non F.D.A.)	C	C	A	A	B	A	B	A	A	A	A	A
Butyl Acetate	D	D	B	D	D	D	C	D	D	A	B	A
Butyl Acrylate	D	D	D	D	D	D	D	D	D	B	B	B
Butylamine	B	C	C	C	D	C	C	C	D	A	B	A
Butyl Benzene	D	D	D	D	D	D	D	D	A	A	C	A
Butyl Bromide	D	D	D	D	D	D	D	D	B	B	C	B
Butyl Butyrate	D	D	C	D	D	D	B	C	C	B	C	B
Butyl Carbitol	D	D	A	B	B	B	A	A	A	A	A	A
Butyl Cellosolve	D	D	A	B	B	B	A	A	D	A	B	A
Butyl Chloride	D	D	C	D	D	D	D	C	A	B	C	B
Butyl Ether	D	D	C	B	B	B	C	B	D	A	A	A
Butyl Ethyl Acetaldehyde	D	D	C	D	D	D	D	C	D	A		A
Butyl Ethyl Ether	D	D	C	D	D	B	C	C	C	A	A	A
Butyl Oleate	D	D	B	D	D	D	B	C	A	A		A
Butyl Phthalate	D	D	C	D	D	D	C	C	C	A	C	A
Butyl Stearate	D	D	C	B	D	D	C	C	A	A	B	A
Butyraldehyde	C	D	D	D	D	D	D	D	D	A	B	A
Butyric Acid	C	D	C	C	C	B	C	B	C	A	A	A
Butyric Anhydride	C	D	C	C	D	B	C	B	C	A		A
Calcium Acetate	C	D	A	D	D	D	A	C	D	A	B	A
Calcium Bisulfate	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Bisulfite	C	A	B	A	A	A	C	A	A	A	A	A
Calcium Carbonate	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Hydroxide	A	B	A	B	A	B	A	A	C	A	A	A
Calcium Hypochlorite	D	D	B	D	D	C	B	C	A	B	A	B
Calcium Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Sulfate	A	A	A	A	A	A	A	A	A	A	A	A

	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Calcium Sulfide	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Sulfite	A	A	A	A	A	A	A	A	A	A	A	A
Caliche Liquor (Crude Sodium Nitrate)	A	A	A	C	B	A	A	A	A	A	A	A
Cane Sugar Liquors (Non F.D.A.)	A	A	A	A	A	A	A	A	A	A	A	A
Carbitol	D	D	A	B	B	B	B	C	A	A	A	A
Carbitol Acetate	D	D	B	D	D	D	B	C	D	A		A
Carbolic Acid (Phenol)	D	D	B	D	C	C	C	D	A	A	A	A
Carbon Bisulfide (Carbon Disulfide)	D	D	D	D	D	D	D	D	A	A	C	C
Carbon Dioxide	A	A	A	A	A	A	A	A	A	A	A	A
Carbon Disulfide	D	D	D	D	D	D	D	D	A	A	C	C
Carbonic Acid	A	A	A	A	A	A	A	A	A	A	A	A
Carbon Monoxide	A	A	A	A	A	A	A	A	A	A	A	A
Carbon Tetrachloride	D	D	B	C	D	D	B	D	A	C	C	C
Carbon Tetrafluoride	D	D	D	C	D	D	D	C	A	C		C
Castor Oil	C	D	B	A	B	C	B	A	A	A	A	A
Caustic Potash (Potassium Hydroxide)	A	B	A	A	B	A	A	A	C	A	A	A
Caustic Soda (Sodium Hydroxide)	A	B	A	B	B	B	A	A	C	A	A	A
Cellosolve	D	D	B	B	A	B	B	B	C	A	A	A
Cellulose Acetate	C	D	B	D	C	C	B	C	D	B		B
Cellulube	C	D	B	D	D	D	A	D	C	A		A
China Wood Oil (Tung Oil)	D	D	B	A	B	B	B	B	A	A	A	A
Chlorine Dioxide	D	D	D	D	D	C	D	D	A	B		B
Chlorine Gas (Dry)	C	C	C	C	D	B	C	B	A	B		B
Chlorine, Water Solns. (2%)	C	D	C	D	D	B	C	C	A	A		A
Chloroacetic Acid	B	D	C	D	D	D	C	D	C	A		D
Chloroacetone	D	D	B	D	D	B	D	D	D	A	D	A
Chlorobenzene	D	D	D	D	D	D	D	D	A	B	D	B
Chlorobutane	D	D	D	D	D	D	D	D	A	B	C	B
Chlorobutadiene	D	D	D	D	D	D	D	D	A	B		B
Chloroform	D	D	D	D	D	D	D	D	A	B	C	B
Chlorinated Hydrocarbons	D	D	D	D	D	D	D	D	A	B	D	B
Chloropentane	D	D	D	D	C	D	D	C	A	A	C	A
Chlorophenol	D	D	D	D	D	D	D	D	B	B	C	B
Chloropropanone	D	D	C	D	D	D	C	D	D	A	D	A
Chlorosulfonic Acid	D	D	D	D	D	C	D	C	D	B		B
Chloroethene (Trichloroethane)	D	D	D	D	D	D	D	C	A	B	C	B
Chlorotoluene	D	D	D	D	D	D	D	D	A	B	B	B
Chromic Acid	D	D	D	D	D	A	C	C	A	A	A	A
Citric Acid	A	A	A	B	B	A	A	A	A	A	A	A
Coal Oil	D	D	D	A	B	D	D	B	A	A	A	A
Coal Tar	D	D	D	A	B	B	B	A	A	A	A	A
Coal Tar Naptha	D	D	D	C	C	D	D	C	A	A	A	A
Cobalt Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Coconut Oil	D	D	B	A	B	B	A	A	A	A	A	A
Cod Liver Oil	D	D	A	A	B	B	A	A	A	A	A	A

	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Coke Oven Gas	D	D	C	D	D	B	D	C	A	A		A
Copper Arsenate	A	A	A	A	A	A	A	A	A	A	A	A
Copper Chloride	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
Copper Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Copper Nitrite	A	A	A	A	A	A	A	A	A	A	A	A
Copper Sulfate	C	A	A	A	A	A	A	A	A	A	A	A
Copper Sulfide	C	A	A	A	A	A	A	A	A	A	A	A
Corn Oil	D	D	B	A	B	B	B	A	A	A	A	A
Cottonseed Oil	D	D	A	A	B	B	A	A	A	A	A	A
Creosote (Wood)	D	D	D	B	C	C	D	B	A	A		A
Creosote Cresols (Coal Tar)	D	D	D	B	C	C	D	B	A	A		A
Cresols	D	D	D	B	C	C	D	C	A	A	A	A
Cresylic Acid	D	D	D	B	C	C	D	C	A	A		A
Crotonaldehyde	D	D	A	D	D	D	C	D	D	A	A	A
Crude Oil	D	D	D	A	C	D	D	A	A	A	A	A
Cumene	D	D	D	C	C	D	D	C	A	A	C	A
Cupric Carbonate	C	C	A	B	B	B	A	B	A	A		A
Cupric Chloride	C	C	A	A	B	A	A	B	A	A		A
Cupric Nitrate	C	C	A	A	B	A	A	B	A	A		A
Cupric Nitrite	C	C	A	A	B	A	A	B	A	A		A
Cupric Sulfate	C	B	A	A	B	B	A	A	A	A		A
Cyclohexane	D	D	D	B	D	D	D	B	A	A	A	A
Cyclohexanone	D	D	D	D	D	D	D	D	C	A	C	A
Cyclohexanol	D	D	D	B	B	D	D	B	B	A	A	A
Cyclopentane	D	D	D	C	D	D	D	B	A	A	C	A
P-Cymene	D	D	D	C	D	D	D	B	A	A	C	A
DDT In Kerosene	D	D	D	A	B	C	D	A	A	A	A	A
Decaline	D	D	D	D	D	D	D	D	A	A	C	A
Decane	D	D	D	B	D	D	D	B	A	A		A
Detergent Solutions	B	B	A	A	B	A	A	A	A	A	A	A
Diacetone Alcohol	D	D	A	D	B	B	B	D	D	A	A	A
Diamylamine	B	C	A	B	A	C	C	B	B	A	A	A
Dibenzyl Ether	D	D	B	D	D	D	D	D	C	A	C	A
Dibenzyl Sebacate	C	D	B	D	D	D	B	D	B	A		A
Dibromobenzene	D	D	D	D	D	D	D	D	A	B		B
Dibutylamine	B	C	C	B	A	C	B	B	D	A	A	A
Dibutylether	D	D	D	D	D	D	B	C	C	A	A	A
Dibutylphthalate	D	D	B	D	D	D	A	D	D	A	C	A
Dibutyl Sebacate	D	D	B	D	D	D	B	D	B	B	B	B
Dicalcium Phosphate	A	A	A	A	A	A	A	A	A	A	A	A
Dichloroacetic Acid	D	D	C	D	D	D	C	D	C	A	B	A
P-Dichlorobenzene	D	D	D	D	D	D	D	D	A	A	D	B
Dichlorobutane	D	D	D	D	D	D	D	D	A	A	C	A
Dichloroisopropyl Ether	D	D	C	D	D	D	C	D	C	A		A
Dicyclohexylamine	D	D	D	D	D	B	D	D	A	B		B
Dichlorodifluoromethane (Freon 12)	D	D	D	A	B	D	D	B	A	A		A
Dichloroethane	D	D	C	D	D	D	D	D	A	A	C	C

	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Dichloroethylene	D	D	C	D	D	D	D	D	A	A		D
Dichloroethyl Ether	D	D	D	D	D	D	D	D	C	A	B	A
Dichlorohexane	D	D	D	D	D	D	D	D	A	A	C	A
Dichloromethane	D	D	D	D	D	D	D	D	A	A	C	A
Dichloropentane	D	D	D	D	D	D	D	D	A	A	C	A
Dieldrin in Xylene	D	D	D	D	D	D	D	D	A	A		A
Dieldrin in Xylene and Water Spray	D	D	D	B	B	D	D	B	A	A		A
Diesel Oil	D	D	D	A	B	C	D	A	A	A	A	A
Diethanolamine	B	C	B	B	B	C	C	B	B	A	A	A
Diethylamine	B	C	B	B	B	C	C	B	D	A	B	A
Diethyl Benzene	D	D	D	D	D	D	D	D	A	A	C	A
Diethyl Ether	D	D	D	B	C	D	D	D	D	A	A	A
Diethylene Dioxide	D	D	B	D	D	D	B	C	D	A	B	A
Diethylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Diethylenetriamine	B	B	A	B	C	C	A	B	C	A	A	A
Diethyl Oxalate	C	D	C	D	D	D	A	D	C	A	A	A
Diethyl Phthalate	D	D	A	D	D	D	C	D	C	A	B	A
Diethyl Sebacate	D	D	A	D	D	D	C	D	B	A	B	A
Diethyl Sulfate	D	D	B	D	D	D	B	D	A	A	A	A
Diethyl Triamine	B	C	A	B	B	C	B	B	C	A	A	A
Dihydroxyethyl Amine	B	C	A	B	B	C	B	B	C	A		A
Dihydroxyethyl Ether	A	A	A	A	B	A	B	A	A	A	A	A
Diisobutylene	D	D	D	A	B	D	D	A	A	A	C	A
Diisobutyl Ketone	D	D	B	D	D	D	B	D	D	A		A
Diisodecyl Adipate	D	D	A	D	D	C	A	D	C	A		A
Diisodecyl Phthalate	D	D	A	D	D	C	A	D	C	A		A
Diisooctyl Adipate	D	D	A	D	D	D	A	D	C	A		A
Diisooctyl Phthalate	D	D	A	D	D	C	A	D	C	A		A
Diisopropanol Amine	B	C	A	B	D	C	A	B	C	A		A
Diisopropyl Benzene	D	D	D	C	D	D	D	C	A	A		A
Diisopropyl Ether	D	D	D	B	D	D	D	B	B	A	A	A
Diisopropyl Ketone	D	D	A	D	D	D	A	D	D	A	C	A
Dilauryl Ether	D	D	D	C	D	C	D	D	C	A		A
Dimethylamine	B	C	A	B	B	C	A	B	C	A	A	A
Dimethyl Benzene	D	D	D	D	D	D	D	D	A	A	D	A
Dimethylaniline	D	D	D	D	D	D	C	D	D	B	C	B
Dimethylformamide (DMF)	C	C	C	D	C	C	C	D	D	A		A
Dimethyl Ketone (Acetone)	B	C	A	D	C	C	A	D	D	A	A	A
Dimethyl Phthalate	D	D	A	D	D	D	B	D	C	A	A	A
Dimethyl Sulfate	D	D	B	D	D	D	D	D	D	A	A	A
Dimethyl Sulfide	D	D	C	D	D	D	D	D	C	B	B	B
Dinitrobenzene	D	D	C	D	C	D	C	D	A	A		A
Dinitrotoluene	D	D	D	D	D	D	D	D	B	A		A
Diocetyl Adipate (DOA)	D	D	A	D	D	D	B	D	C	A	C	A
Diocetylamine	B	B	A	B	D	C	B	B	C	A		A
Diocetyl Phthalate (DOP)	D	D	B	D	D	D	B	B	A	A	C	A
Diocetyl Sebacate (DOS)	D	D	B	D	D	D	B	D	B	A	C	A
Dioxane	D	D	B	D	D	D	B	D	D	A	B	A



	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Dioxolane	D	D	C	D	D	D	B	D	C	A	B	A
Dipentene (Limonene)	D	D	D	C	D	D	D	C	A	A	B	A
Diphenyl (Biphenyl)	D	D	D	D	D	D	D	D	A	A		A
Diphenyl Oxide (Phenyl Ether)	D	D	D	D	D	C	D	D	A	A		A
Dipropylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Dipropyl Ketone	D	D	B	D	D	D	B	D	D	A	C	A
Dipropylamine	B	B	A	B	B	C	A	B	C	A	B	A
Disodium Phosphate	A	A	A	A	A	A	A	A	A	A	A	A
Divinyl Benzene	D	D	D	D	D	D	D	D	A	A	D	A
D.M.P. (Dimethyl Phenols)	D	D	D	D	D	D	D	D	D	C	A	C
Dodecyl Benzene	D	D	D	D	D	D	D	D	A	A		A
Dodecyl Toluene	D	D	D	D	D	D	D	D	A	A		A
Dowfume W 40, 100%	D	D	D	D	C	C	C	D	C	B		B
Dow-Per (Perchloroethylene)	D	D	D	C	D	D	D	C	A	A	C	A
Dowtherm Oil, A and E	D	D	D	D	D	C	D	D	A	A	C	A
Dowtherm S.R.I.	A	A	A	A	A	A	A	A	A	A		A
Dry Cleaning Fluids	D	D	D	C	D	D	D	C	A	B		B
Epichlorohydrin	D	D	C	D	D	C	B	D	D	B		B
Ethanol (Ethyl Alcohol)	A	A	A	A	A	A	A	A	C	A	A	A
Ethanolamine	B	C	B	B	B	C	B	B	D	A	A	A
Ethers	D	D	C	D	D	C	D	D	C	A	A	A
Ethyl Acetate	D	D	B	D	D	C	B	D	D	A	B	A
Ethyl Acetoacetate	D	D	B	D	D	D	B	D	D	A	A	A
Ethyl Acrylate	D	D	C	D	D	D	D	D	D	B	B	B
Ethyl Benzene	D	D	D	C	D	D	D	C	A	A	C	A
Ethyl Benzoate	D	D	B	B	C	C	B	B	C	A		A
Ethyl Butyl Alcohol	A	A	A	A	A	A	A	A	B	A	A	A
Ethyl Butyl Amine	B	C	A	B	B	C	B	B	B	A		A
Ethyl Butyl Ketone	D	D	B	D	D	D	B	D	D	A	C	A
Ethyl Cellulose	B	B	B	B	B	B	B	B	D	A		A
Ethyl Chloride	C	C	D	C	C	D	D	B	A	A		B
Ethyl Dichloride	D	D	D	D	D	D	D	D	B	B	C	B
Ethylene	D	D	D	A	B	C	D	A	A	A		A
Ethylene Bromide	D	D	D	D	D	D	D	D	A	B		B
Ethylene Chloride	D	D	D	D	D	D	D	D	A	B		B
Ethylene Diamine	B	C	A	B	A	C	A	A	D	A	A	A
Ethylene Dibromide	D	D	D	D	D	D	D	D	B	B	C	B
Ethylene Dichloride	D	D	D	D	D	D	D	D	B	B	C	B
Ethylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Ethylene Oxide	D	D	C	D	D	D	C	D	D	C		C
Ethylene Trichloride (Trichloroethylene)	D	D	D	C	D	D	D	C	B	C	C	C
Ethyl Ether	D	D	D	C	D	D	D	B	D	A	A	D
Ethyl Formate	D	D	B	D	D	D	C	D	D	A	A	A
Ethyl Hexanol	A	A	A	A	A	A	A	A	B	A	A	A
Ethyl Methyl Ketone	C	D	B	D	D	D	B	D	D	A	C	A
Ethyl Oxalate	A	A	A	D	D	D	B	D	C	A	A	A
Ethyl Phthalate	D	D	A	D	D	D	B	D	C	A	B	A

	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Ethyl Propyl Ether	D	D	D	D	D	D	D	D	C	A	A	A
Ethyl Propyl Ketone	D	D	B	D	D	D	B	D	D	A	C	A
Ethyl Silicate	C	C	A	A	A	A	A	A	A	A	A	A
Ethyl Sulfate	D	D	B	D	D	D	B	D	D	A		A
Ex. TRI (Trichloroethylene)	D	D	D	C	D	D	D	C	B	C	C	C
Fatty Acids	D	D	D	B	B	B	C	A	A	A		A
Ferric Bromide	A	A	A	A	A	A	A	A	A	A	A	A
Ferric Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Ferric Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Ferric Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Ferrous Acetate	D	D	A	D	D	D	B	D	D	A		A
Ferrous Ammonium Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Ferrous Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Ferrous Hydroxide	B	C	A	B	A	B	A	A	C	A		A
Ferrous Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Fish Oil	D	D	A	A	A	A	A	A	A	A	A	A
Fluoroboric Acid	A	C	A	A	B	A	A	A	C	A	A	A
Fluorine	D	D	D	D	D	D	D	D	D	D		D
Fluosilicic Acid	B	B	A	B	B	A	B	C	A	A	A	A
Formaldehyde (Formalin)	C	C	A	B	B	B	B	B	A	A	A	A
Formamide	A	A	A	A	A	A	A	A	D	A		A
Formic Acid	B	B	A	C	C	C	C	C	D	B		B
Freon 11	D	D	D	A	B	A	D	A	A	A		A
Freon 12	D	D	D	B	C	D	C	A	B	B		B
Freon 13	A	A	A	A	A	A	A	A	A	A	A	A
Freon 21	D	D	D	D	B	D	D	B	D	A		A
Freon 22	D	D	A	D	A	D	A	A	D	A		A
Freon 31	B	B	A	D	A	B	A	D	D	A		A
Freon 32	A	A	A	A	A	A	A	A	C	A		A
Freon 112	D	D	D	B	B	B	D	B	A	A		A
Freon 113	C	B	D	A	A	A	D	A	B	A		A
Freon 114	A	A	A	A	A	A	A	A	B	A	A	A
Freon 115	A	A	A	A	A	A	A	A	B	A		A
Freon 142b	A	A	A	A	A	A	A	A	D	A		A
Freon 152a	A	A	A	A	A	C	A	A	D	A		A
Freon 218	A	A	A	A	A	A	A	A	A	A	A	A
Freon C316	A	A	A	A	A	A	A	A	A	A		A
Freon C318	A	A	A	A	A	A	A	A	A	A	A	A
Freon 13B1	A	A	A	A	A	A	A	A	A	A	A	A
Freon 114B2	D	C	D	B	A	A	D	B	B	A		A
Freon 502	A	A	A	B	A	A	A	B	B	A		A
Freon TF	C	B	A	A	A	A	A	A	A	A		A
Freon T-WD602	C	B	A	A	B	B	B	A	A	A		A
Freon TMC	B	C	B	B	B	B	B	B	A	A		A
Freon T-P35	A	A	A	A	A	A	A	A	A	A	A	A
Freon TA	A	A	A	A	A	A	A	A	C	A		A
Freon TC	D	B	A	A	A	A	B	A	A	A		A
Freon MF	D	B	D	A	C	B	D	A	A	A		A
Freon BF	D	D	D	B	B	B	D	B	A	A		A
Fuel Oil	D	D	D	A	B	C	D	A	A	A	A	A

	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Fuel, ASTM A	D	D	D	A	A	C	D	A	A	A	A	A
Fuel, ASTM B	D	D	D	A	B	C	D	A	A	A	B	A
Fuel, ASTM C	D	D	D	B	C	D	D	B	A	B	C	B
Fumaric Acid	A	A	D	A	B	B	D	A	A	A	A	A
Furan	D	D	C	D	D	D	C	D	D	A	A	A
Furfural	D	D	B	D	C	B	B	D	D	A	A	A
Furfuryl Alcohol	D	D	C	D	C	C	C	D	D	A	A	A
Gallic Acid	A	A	B	B	B	B	B	B	B	A	A	A
Gasoline, Reg	D	D	D	A	A	C	D	A	A	A	B	A
Gasoline, Hi-Test	D	D	D	A	B	D	D	A	A	A	A	A
Gasoline, Lead Free	D	D	D	B	B	D	D	A	A	A		A
Gelatin	A	A	A	A	A	A	A	A	A	A	A	A
Gluconic Acid	D	D	C	C	C	B	C	C	A	A	A	A
Glucose	A	A	A	A	A	A	A	A	A	A	A	A
Glue	A	A	A	A	A	A	A	A	A	A	A	A
Glycerine (Glycerol)	A	A	A	A	A	A	A	A	A	A	A	A
Glycols	A	A	A	A	A	A	A	A	A	A	A	A
Grease	D	D	D	A	B	C	D	A	A	A		A
Green Sulfate Liquor	A	A	A	A	B	A	A	A	B	A	A	A
Halowax Oil	D	D	D	D	D	D	D	D	A	A		A
Heptachlor in Petroleum Solvents	D	D	D	B	B	D	D	B	A	A		A
Heptachlor in Petroleum Solvents, Water Spray	D	D	D	B	B	D	D	B	A	A		A
Heptanal (Heptaldehyde)	D	D	D	D	D	D	B	D	D	A	C	A
Heptane	D	D	D	A	A	B	D	A	A	A	A	A
Heptane Carboxylic Acid	D	D	C	C	B	B	C	A	A	A	A	A
Hexaldehyde	D	D	B	D	B	C	B	D	D	A		A
Hexane	D	D	D	A	A	C	D	A	A	A	A	A
Hexene	D	D	D	B	B	C	D	B	A	A	A	A
Hexanol (Hexyl Alcohol)	A	A	A	A	A	A	A	A	A	A	A	A
Hexylamine	B	C	B	B	B	C	B	B	D	A	B	A
Hexylene	D	D	D	A	B	D	C	A	A	B		B
Hexylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Hexyl Methyl Ketone	D	D	B	D	D	D	B	D	D	A	C	A
Hi-Tri (Trichloroethylene)	D	D	D	C	D	D	D	C	A	B	C	B
Hydraulic Fluid (Petroleum)	D	D	D	A	B	B	D	A	A	A		A
Hydraulic Fluid (Phosphate Ester Base)	D	D	A	D	D	D	A	D	D	A		A
Hydraulic Fluid (Poly Alkylene Glycol Base)	B	B	A	A	A	A	A	A	A	A	A	A
Hydrobromic Acid	A	D	A	D	C	A	B	C	A	A	A	A
Hydrochloric Acid, 37%	A	B	A	C	C	A	B	D	A	A	A	A
Hydrochloric Acid, 50%	A	C	B	D	D	A	C	D	A	A	A	A
Hydrochloric Acid, 100%	B	C	C	D	D	B	C	D	C	A	A	A
Hydrocyanic Acid	B	C	A	B	C	A	B	C	B	A		A
Hydrofluoric Acid	B	D	B	D	C	A	B	D	B	A	A	A
Hydrofluosilic Acid	A	D	A	D	C	A	B	C	B	A	A	A
Hydrogen Gas	B	B	A	A	A	A	B	A	A	A		A
Hydrogen Peroxide, 3%	A	B	A	B	C	A	B	B	A	A	A	A
Hydrogen Peroxide, 10%	D	D	C	D	C	C	C	C	A	A	A	A

	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Hydrogen Peroxide, 30%	D	D	D	D	D	D	C	D	A	A	A	A
Hydrogen Peroxide, 90%	D	D	D	D	D	D	C	D	B	B		B
Hydrogen Sulfide	D	D	A	D	A	B	A	C	A	A		A
Hydroquinone	B	B	B	D	D	C	B	D	D	A		A
Hypochlorous Acid	B	B	B	D	B	A	B	B	A	A		A
Ink Oil (Linseed Oil Base)	D	D	B	B	B	B	B	A	A	A	A	A
Insulating Oil	D	D	D	A	B	D	D	A	A	A	A	A
Iodine	D	D	D	D	D	C	D	D	C	A	A	A
Iron Acetate	D	D	A	D	D	D	B	D	D	A		A
Iron Hydroxide	C	C	A	B	A	B	B	B	C	A		A
Iron Salts	A	A	A	A	A	A	A	A	A	A	A	A
Iron Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Iron Sulfide	A	A	A	A	A	A	A	A	A	A	A	A
Isoamyl Acetate	D	D	A	D	D	D	B	D	D	A	C	A
Isoamyl Alcohol	A	A	A	A	A	A	A	A	A	A	A	B
Isoamyl Bromide	D	D	D	D	D	D	D	D	B	B	C	B
Isoamyl Butyrate	D	D	C	D	D	D	C	D	D	B		B
Isoamyl Chloride	D	D	C	D	D	D	D	D	B	B	C	B
Isoamyl Ether	D	D	D	D	D	D	D	D	D	A	A	A
Isoamyl Phthalate	D	D	A	D	D	D	B	D	C	A	C	A
Isobutane	D	D	D	A	A	D	D	A	A	A		A
Isobutanol (Isobutyl Alcohol)	A	A	A	A	A	A	A	A	A	A	A	A
Isobutyl Acetate	D	D	A	D	D	D	B	D	D	A	B	A
Isobutyl Aldehyde	C	D	B	D	D	D	B	D	D	A	B	A
Isobutyl Amine	B	C	B	D	D	C	B	D	D	A	B	A
Isobutyl Bromide	D	D	D	D	D	D	D	D	B	B	C	B
Isobutyl Carbinol	A	A	A	A	B	A	A	A	B	A	A	A
Isobutyl Chloride	D	D	D	D	D	D	D	D	B	B	C	B
Isobutylene	D	D	D	A	D	D	D	B	A	A		A
Isobutyl Ether	D	D	D	D	D	D	D	D	D	A	A	A
Isocyanates	C	D	B	D	D	C	B	C	C	B		B
Isocotane	D	D	D	A	A	B	D	A	A	A	A	A
Isopentane	D	D	D	A	A	D	D	A	A	B	A	B
Isopropyl Amine	B	C	A	B	A	C	B	B	D	A		A
Isopropyl Acetate	D	D	A	D	D	C	B	D	D	A	B	A
Isopropyl Alcohol (Iso-propanol)	A	A	A	A	A	A	B	A	B	B	A	B
Isopropyl Amine	B	D	B	C	A	C	B	C	D	A		A
Isopropyl Benzene	D	D	D	D	D	D	D	D	A	A	C	A
Isopropyl Chloride	D	D	D	D	D	D	D	D	B	B	C	B
Isopropyl Ether	D	D	D	C	D	C	D	C	D	A	A	A
Isopropyl Toluene	D	D	D	D	D	D	D	D	A	A	C	A
Jet Fuels (JP 1-JP 6)	D	D	D	A	B	C	D	A	A	A		A
Kerosene	D	D	D	A	B	C	D	A	A	A	A	A
Ketones	B	B	B	D	D	D	B	D	D	A	C	A
Lactic Acid	B	B	B	A	A	A	B	A	A	A		A
Lacquers	D	D	D	D	D	D	D	D	D	A		A
Lacquer Solvents	D	D	D	D	D	D	D	D	D	A		A
Lard	D	D	D	A	B	D	C	A	A	A	A	A
Lauryl Alcohol	A	A	A	A	A	A	A	A	B	A	A	A

	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Lead Acetate	D	D	A	C	C	D	B	B	C	A	A	A
Lead Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Lead Sulfamate	B	B	A	B	A	B	A	B	A	A		A
Lead Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Ligroin	D	D	D	A	A	D	D	A	A	A		A
Lime Water	D	D	A	C	A	A	A	C	A	A	A	A
Linseed Oil	D	D	A	A	B	B	B	A	A	A	A	A
Lindol (Tricresyl Phosphate)	D	D	A	D	D	B	A	D	A	A	A	A
Liquid Soap	A	A	A	A	A	A	A	A	A	A	A	A
Liquified Petroleum Gas	D	D	D	A	B	B	D	A	A	A		A
Lubricating Oils	D	D	D	A	B	C	D	A	A	A	A	A
Lye (Sodium Hydroxide)	A	B	A	B	A	A	A	B	D	A	A	A
Magnesium Acetate	D	D	A	D	D	D	B	D	D	A	A	A
Magnesium Carbonate	A	A	A	A	A	A	A	A	A	A	A	A
Magnesium Chloride	A	A	A	A	A	A	B	A	A	A	A	A
Magnesium Hydrate	A	B	A	B	A	B	A	C	B	A		A
Magnesium Hydroxide	A	A	A	A	A	A	B	A	A	A	A	A
Magnesium Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Magnesium Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Malathion 50 in Aromatic Solvents	D	D	D	C	C	D	D	D	A	A		A
Malathion 50 in Water Spray	D	D	D	A	A	D	D	A	A	A		A
Maleic Acid	D	D	C	D	C	D	C	C	A	B		B
Maleic Anhydride	D	D	C	D	C	D	C	C	A	A		A
Malic Acid	A	B	D	B	C	B	D	C	A	A		A
Manganese Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Manganese Sulfide	C	A	A	A	B	A	B	C	A	A	A	A
Manganese Sulfite	C	A	A	A	B	A	B	C	A	A	A	A
Mercuric Chloride	B	B	B	C	C	B	C	A	A	A		A
Mercury	B	B	A	A	B	A	A	A	A	A	A	A
Methane	D	D	D	A	B	B	D	A	A	A	A	A
Methyl Acetate	C	D	B	D	D	D	B	D	D	A	A	A
Methyl Acrylate	C	D	B	D	C	D	B	D	D	A		A
Methacrylic Acid	D	D	B	D	B	C	B	D	B	A		A
Methyl Alcohol (Methanol)	A	A	A	A	A	A	A	B	C	A	A	A
Methyl Benzene (Toluene)	D	D	D	D	D	D	D	D	A	A	C	A
Methyl Bromide	D	D	B	B	D	D	B	C	A	A		A
Methyl Butyl Ketone	D	D	B	D	D	D	B	D	D	A	C	A
Methyl Cellosolve	D	D	B	C	B	C	B	C	D	A	A	A
Methyl Chloride	D	D	D	C	D	D	D	C	B	B		C
Methyl Cyclohexane	D	D	D	D	D	D	D	C	B	B	B	B
Methylene Bromide	D	D	D	D	D	D	D	D	B	B	C	C
Methylene Chloride	D	D	D	D	D	D	D	D	B	A	C	B
Methyl Ethyl Ketone (MEK)	B	D	B	D	D	D	B	D	D	A	C	A
Methyl Formate	C	C	B	D	B	C	B	D	C	B		B
Methyl Hexanol	A	A	A	A	A	A	A	A	B	A		A
Methyl Hexyl Ketone	D	D	B	D	D	D	B	D	D	A	C	A
Methyl Isobutyl Carbinol	B	C	A	B	B	B	A	C	B	A	A	A
Methyl Isobutyl Ketone (MIBK)	D	D	B	D	D	D	B	D	D	A	C	A

	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Methyl Isopropyl Ketone	D	D	B	D	D	D	B	D	D	A	C	A
Methyl Propyl Ether	D	D	D	D	D	D	D	D	D	A		A
Methyl Propyl Ketone	D	D	B	D	D	D	B	D	D	A	C	A
Methyl Methacrylate	D	D	D	D	D	B	D	D	D	B	C	B
Methyl Salicylate	D	D	B	D	D	D	B	D	C	B		B
Mineral Oil	D	D	D	A	B	B	D	A	A	A	A	A
Mineral Spirits	D	D	D	A	B	D	D	A	A	A		A
Monochlorobenzene	D	D	D	D	D	D	D	D	A	A		A
Monochlorodifluoromethane (Freon 22)	D	D	A	D	A	D	A	A	D	A		A
Monoethanolamine	B	C	B	C	B	B	B	C	D	A		A
Monomethylether	B	B	A	A	A	C	A	A	C	A	A	A
Monovinyl Acetate	D	D	B	D	D	C	C	C	A	A		A
Motor Oil	D	D	D	A	A	D	D	A	A	A	A	A
Muriatic Acid	(See HCL 37%)											4
Naphtha	D	D	D	A	B	D	D	A	A	A	A	A
Napthalene	D	D	D	D	D	D	D	D	A	A		A
Napthenic Acid	D	D	D	C	D	D	D	C	A	A	A	A
Natural Gas	Contact HBD Customer Service											5
Neatsfoot Oil	D	D	B	A	B	B	B	A	A	A	A	A
Neu-Tri (Trichloroethylene)	D	D	D	C	D	D	D	C	A	B	C	B
Nickel Acetate	D	D	A	D	D	D	B	D	D	A		A
Nickel Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Nickel Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Nickel Plating Solution	A	D	B	B	C	B	B	B	A	A	A	A
Nickel Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Niter Cake	A	A	A	A	A	A	A	A	A	A	A	A
Nitric Acid, 10%	D	D	B	D	C	B	B	D	A	A	A	A
Nitric Acid, 20%	D	D	B	D	D	B	C	D	A	A	A	A
Nitric Acid, 30%	D	D	B	D	D	C	C	D	A	B	C	B
Nitric Acid, 30-70%	D	D	C	D	D	D	D	D	C	C	D	C
Nitric Acid, Red Fuming	D	D	D	D	D	D	D	D	D	D	D	D
Nitrobenzene	D	D	D	D	D	D	D	D	B	A	C	A
Nitrogen Gas	A	A	A	A	A	A	A	A	A	A	A	A
Nitrogen Tetraoxide	D	D	D	D	D	D	D	D	D	D		D
Nitromethane	B	B	B	D	C	C	B	C	D	A	A	A
Nitropropane	D	D	B	D	D	D	B	C	D	A		A
Nitrous Oxide	A	A	A	A	A	A	A	A	A	A	A	A
Octadecanoic Acid	D	D	B	A	B	D	C	A	C	A	A	A
Octane	D	D	D	A	B	D	D	A	A	B	A	B
Octanol (Octyl Alcohol)	B	B	B	A	B	B	A	A	A	A	A	A
Octyl Acetate	D	D	A	D	D	D	B	D	D	A	C	A
Octyl Amine	C	C	B	C	B	C	B	C	D	A	B	A
Octyl Carbinol	A	A	A	A	A	A	A	A	B	A	A	A
Octylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Oil, Petroleum	D	D	D	A	C	C	D	A	A	A	A	A
Oil, Astm #1	D	D	D	A	A	B	D	A	A	A	A	A
Oil, Astm #2	D	D	D	A	A	C	D	A	A	A	A	A
Oil, Astm #3	D	D	D	A	B	C	D	A	A	A	A	A
Oleic Acid	D	D	B	B	C	C	B	B	C	A	A	A



	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Oleum (Fuming Sulfuric Acid)	D	D	D	D	D	D	D	D	D	D	D	D
Olive Oil (Non F.D.A.)	D	D	B	A	B	B	B	B	A	A		A
Orthodichlorobenzene	D	D	D	D	D	D	D	D	A	B		B
Oxalic Acid	C	C	A	C	B	B	A	C	C	A	B	A
Oxygen, Cold	B	B	A	B	B	B	B	B	A	A		A
Oxygen, Hot	D	D	D	D	D	D	D	D	B	A		A
Ozone	D	C	B	D	B	A	A	A	A	A	A	A
Paint Thinner (Duco)	D	D	D	D	D	D	D	D	C	A		A
Palmitic Acid	D	D	B	A	B	B	B	B	A	B	A	B
Palm Oil	D	D	A	A	B	B	B	A	A	A		A
Papermaker's Alum	A	A	A	A	A	A	A	A	A	A	A	A
Paradichlorobenzene	D	D	D	D	D	D	D	D	A	B	D	B
Paraffin	D	D	D	A	A	D	D	A	A	D	A	D
Paraformaldehyde	D	D	B	B	B	B	B	B	C	A		A
Peanut Oil	D	D	C	A	B	B	D	A	A	A	A	A
Pentane	D	D	D	A	A	B	D	A	A	A	C	A
Perchloroethylene	D	D	D	D	D	D	D	C	A	B	C	B
Perchloric Acid	B	B	B	D	A	A	B	C	A	A		A
Petrolatum	D	D	D	A	A	C	D	A	A	A		A
Petroleum, Crude	D	D	D	A	B	D	D	A	A	A		A
Petroleum Ether (Naphtha)	D	D	D	A	A	D	D	A	A	A	A	A
Petroleum Oils	D	D	D	A	A	C	D	A	A	A		A
Phenol	C	C	B	D	C	C	C	C	A	A	A	A
Phenolsulfonic Acid	D	D	C	D	C	D	C	C	A	B	A	B
Phenyl Chloride	D	D	D	D	D	D	D	D	A	A	D	A
Phenylhydrazine	C	D	B	D	D	C	C	D	A	A		A
Phorone	D	D	A	D	D	D	B	D	C	A		A
Phosphate Esters	D	D	A	D	D	D	A	D	C	A		A
Phosphoric Acid, 10%	A	A	A	A	A	A	A	A	A	A	A	A
Phosphoric Acid, 10-85%	C	C	A	C	B	A	A	C	A	A	A	A
Phosphorous Trichloride	D	D	A	D	D	D	A	C	A	A		A
Pickling Solution	C	C	C	C	C	C	C	C	C	B	A	A
Picric Acid, Molten	C	C	C	C	C	B	C	C	C	D		D
Picric Acid, Water Soln.	A	C	A	B	B	A	B	B	C	A		A
Pinene	D	D	D	A	D	D	D	A	A	A	B	A
Pine Oil	D	D	D	C	C	D	D	C	B	A	B	A
Piperidine	B	D	D	D	D	D	D	D	D	B		B
Pitch	D	D	D	B	B	C	D	B	C	A		A
Plating Solutions, Chrome	D	D	A	B	B	C	A	B	A	A		A
Plating Solutions, Others	A	A	A	B	B	C	A	B	B	A	A	A
Polyvinyl Acetate Emulsion (PVA)	C	C	A	C	B	B	A	C	C	A		A
Polyethylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Polypropylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Acetate	D	D	A	D	D	D	B	D	D	A	A	A
Potassium Bicarbonate	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Bisulfate	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Bisulfite	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Carbonate	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Chromate	D	D	A	D	C	C	B	C	A	B	A	B

	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Potassium Cyanide	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Dichromate	D	D	A	D	B	C	B	C	A	A	A	A
Potassium Hydrate	A	B	A	B	B	B	A	B	C	A		A
Potassium Hydroxide	A	A	A	A	B	A	A	A	D	A	A	A
Potassium Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Permanganate	D	D	A	D	D	D	A	D	A	A		A
Potassium Silicate	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Sulfide	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Sulfite	A	A	A	A	A	A	A	A	A	A	A	A
Producer Gas	D	D	D	A	B	B	D	A	A	A		A
Propane Gas												
Propanediol												
Propyl Actetate	A	A	A	A	B	A	A	A	A	A	A	A
Propyl Alcohol (Propanol)	D	D	B	D	D	D	B	D	D	A	B	A
Propyl Alcohol (Propanol)	A	A	A	A	A	A	A	A	A	A	A	A
Propyl Aldehyde	C	D	B	D	D	D	B	D	D	A		A
Propyl Chloride	D	D	C	D	C	D	C	C	B	B	C	B
Propylene Diamine	B	B	A	B	B	C	B	B	C	A	A	A
Propylene Dichloride	D	D	D	D	D	D	D	D	B	B		B
Propylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Pydraul Hydraulic Fluids	D	D	B	D	D	D	B	D	C	B		B
Pyranol	D	D	D	C	D	D	D	C	A	A		A
Pyridine	D	D	B	D	D	D	B	D	D	A		A
Pyroigneous Acid	C	C	B	C	B	B	B	C	A	A		A
Pyrrole	C	B	B	D	D	D	C	D	C	A		A
Rape Seed Oil	D	D	A	B	B	B	B	A	A	B	A	B
Red Oil (Crude Oleic Acid)	D	D	B	B	B	B	B	B	A	A	A	A
Richfield A Weed Killer, 100%	D	D	D	D	D	D	D	D	C	B		B
Richfield B Weed Killer, 33%	D	D	B	B	B	C	D	C	C	B		B
Rosin Oil	D	D	D	A	A	B	D	A	A	A		A
Rotenone (Water Soln.)	A	A	A	A	A	A	A	A	A	A	A	A
Rum												
Sal Ammoniac (Ammonium Chloride)	A	A	A	A	A	A	A	A	A	A	A	A
Salicylic Acid	A	B	A	D	D	A	A	C	A	A	A	A
Salt Water (Sea Water)	A	A	A	A	A	A	A	A	A	A	A	A
Sewage	C	C	C	A	B	A	B	A	A	A		A
Silicate of Soda (Sodium Silicate)	A	A	A	A	A	A	A	A	A	A	A	A
Silicate Esters	D	D	D	B	A	A	D	C	A	A		A
Silicone Greases	A	A	A	A	A	A	A	A	A	A	A	A
Silicone Oils	A	A	A	A	A	A	A	A	A	A	A	A
Silver Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Skelly-Solv (Naphtha)	D	D	D	A	B	D	D	A	A	A		A
Skydrol Hydraulic Fluids	D	D	A	D	D	D	A	D	D	A	B	A
Soap Solutions	A	A	A	A	A	A	A	A	A	A	A	A
Soda Ash ( Sodium Carbonate)	A	A	A	A	A	A	A	A	A	A	A	A
Soda, Caustic ( Sodium Hydroxide)	A	B	A	B	A	A	A	B	D	A	B	A
Soda Lime	A	B	A	B	B	B	A	B	C	A	A	A
Soda Niter (Sodium Nitrate)	A	A	A	A	A	A	A	A	A	A	A	A

	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Sodium Acetate	D	D	A	D	D	D	B	D	D	A	A	A
Sodium Aluminate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Bicarbonate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Bisulfate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Bisulfite	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Borate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Carbonate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Chromate	D	D	A	D	C	C	B	C	C	B	A	B
Sodium Cyanide	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Dichromate	D	D	A	D	C	C	B	C	C	A	A	A
Sodium Fluoride	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Hydroxide	A	B	A	B	A	A	A	B	D	A	A	A
Sodium Hypochlorite	C	D	B	D	D	C	B	C	A	B	A	B
Sodium Metaphosphate	A	A	A	A	B	B	A	A	A	A	A	A
Sodium Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Nitrite	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Perborate	C	D	A	D	B	D	B	C	A	A		A
Sodium Peroxide	B	B	A	B	B	B	A	B	A	B		B
Sodium Phosphate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Silicate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Sulfide	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Sulfite	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Thiosulfate	A	A	A	A	A	A	A	A	A	A	A	A
Soybean Oil	D	D	B	B	B	B	B	B	A	A	A	A
Stannic Chloride	A	A	B	A	A	A	A	A	A	A	A	A
Stannic Sulfide	A	A	A	A	A	A	A	A	A	A	A	A
Stannous Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Stannous Sulfide	A	A	A	A	A	A	A	A	A	A	A	A
Steam, under 300°F	Steam Hose Only											
Steam, over 300°F	Steam Hose Only											
Stearic Acid	D	D	B	A	B	B	C	B	A	A		A
Stoddards Solvent	D	D	D	A	C	D	D	A	A	A	A	A
Styrene	D	D	D	D	D	D	D	D	B	D	C	D
Sugar Solutions (Sucrose) (Non F.D.A.)	A	A	A	A	A	A	A	A	A	A	A	A
Sulfamic Acid	B	C	A	B	B	A	C	C	A	A	A	A
Sulfite Liquors	B	B	A	B	B	A	B	B	A	A		A
Sulfonic Acid	D	D	D	D	C	C	D	C	D	B		B
Sulfur (Molten)	D	D	B	C	C	C	C	B	A	D		D
Sulfur Chloride	D	D	D	D	D	B	D	C	A	B		B
Sulfur Dioxide	C	C	B	D	B	B	C	C	A	A		A
Sulfur Hexafluoride	A	A	A	A	A	A	A	A	A	A		A
Sulfur Trioxide	D	D	B	D	D	D	C	D	A	B		B
Sulfuric Acid, 25%	B	B	B	B	A	A	B	C	A	A	A	A
Sulfuric Acid, 25-50%	B	D	A	D	C	A	B	D	A	A	A	A
Sulfuric Acid, 50-93%	D	D	C	D	C	B	B	D	A	A	C	A
Sulfuric Acid, Fuming	D	D	D	D	D	D	D	D	D	D	D	D
Sulfurous Acid	B	C	B	C	B	A	B	C	A	A	A	A

	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Tall Oil	D	D	D	A	B	B	D	B	A	A		A
Tallow	D	D	D	A	A	D	D	A	A	A		A
Tannic Acid	A	B	A	C	B	B	A	C	A	A	A	A
Tar	D	D	D	B	B	D	D	B	A	D		D
Tartaric Acid	A	A	B	B	B	A	A	B	A	A	A	A
Terpineol	D	D	C	D	D	D	C	D	A	B	A	B
Tertiary Butyl Alcohol	A	A	A	A	A	A	A	A	A	A	A	A
Tetrachlorobenzene	D	D	D	D	D	D	D	D	B	B	D	B
Tetrachloroethane	D	D	D	D	D	D	D	D	A	B		B
Tetrachloroethylene	D	D	D	D	D	D	D	D	A	B	C	B
Tetraethylene Glycol	A	A	A	A	A	A	A	A	A	A		A
Tetrachloromethane	D	D	D	D	D	D	D	D	A	B		B
Tetrachloronaphthalene	D	D	D	D	D	D	D	D	B	B		B
Tetraethyl Lead	D	D	D	B	C	D	D	C	A	A		A
Tetrahydrofuran (THF)	D	D	D	D	D	D	D	D	D	A	C	A
Thionyl Chloride	D	D	D	D	D	D	D	D	B	A		A
Tin Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Tin Tetrachloride	A	A	A	A	A	A	A	A	A	A	A	A
Titanium Tetrachloride	D	D	D	B	C	C	C	C	A	A	C	A
Toluene (Toluol)	D	D	D	D	D	D	D	D	A	A	C	A
Toluene Diisocyanate (TDI)	C	C	A	C	D	D	A	C	B	A		A
Toxaphene	D	D	D	B	B	D	D	B	A	A		A
Transformer Oils (Petroleum Base)	D	D	D	A	B	B	D	A	A	A	A	A
Transformer Oils (Chlorinated Phenyl Base Askarels)	D	D	D	D	D	D	D	D	A	B	A	B
Transmission Fluids, A	D	D	D	B	C	D	D	A	A	A		A
Transmission Fluids, B	D	D	D	C	D	D	D	C	A	A		A
Tricetin	A	B	A	B	B	B	A	B	D	A		A
Tributyl Amine	B	B	A	B	B	C	A	B	D	A	A	A
Tributyl Phosphate	D	D	B	D	D	D	B	D	D	A	C	A
Trichlorobenzene	D	D	D	D	D	D	D	D	B	B	D	B
Trichloroethane	D	D	D	D	D	D	D	D	A	A	C	A
Trichloroethylene	D	D	D	C	D	D	D	C	B	C	C	C
Trichloropropane	D	D	D	D	D	D	D	D	A	A	C	A
Tricresyl Phosphate (TCP)	D	D	A	D	D	D	B	D	B	A	A	A
Triethanolamine (TEA)	B	B	A	B	A	A	B	B	D	A	A	A
Triethylamine	B	B	B	B	A	A	B	B	B	A	A	A
Triethylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Trinitrotoluene (TNT)	D	D	D	D	B	B	D	D	B	D		D
Triphenyl Phosphate	D	D	A	D	C	C	B	D	C	A		A
Trisodium Phosphate	A	A	A	A	A	A	A	A	A	A	A	A
Tung Oil	D	D	C	A	B	B	D	A	A	A	A	A
Turbine Oil	D	D	D	B	B	B	D	A	A	A		A
Turpentine	D	D	D	B	B	D	D	A	A	A	B	A
2,4 D with 10% Fuel Oil	D	D	D	A	A	D	D	A	A	A		A
Ucon Hydrolube Oils	D	D	A	A	B	D	A	A	A	A		A
Undecanol	A	A	A	A	A	A	A	A	B	A	A	A
Unsymmetrical Dimethyl - Hydrazine (UDMH)	D	D	A	D	D	A	A	D	D	C		C

	NR/IR	SR	BUTYL	NITRILE	CR	CSM	EPDM	ECO	FKM	XLPE	CPE	UHMWPE
Urea	A	C	A	C	A	C	A	C	C	A	A	A
Urine	B	C	B	B	B	A	B	B	C	A		A
Undecanol	A	A	A	A	A	A	A	A	B	A	A	B
Varnish	D	D	D	B	B	C	D	B	A	A		A
Vegetable Oils	D	D	A	A	B	B	A	A	A	A	A	A
Versilube	C	C	A	A	C	A	A	A	A	A	A	A
Vinegar	A	C	A	C	A	A	B	C	B	A	A	A
Vinyl Acetate	D	D	A	D	D	C	C	D	D	B	A	D
Vinyl Benzene	D	D	D	D	D	D	D	D	A	B	C	B
Vinyl Chloride (Monomer)	C	D	D	D	D	D	D	D	A	A		A
Vinyl Ether	D	D	D	D	D	C	C	D	D	A		A
Vinyl Toluene	D	D	D	D	D	D	D	D	A	B	C	B
Vinyl Trichloride	D	D	D	D	D	D	D	D	A	A	C	A
VM & P Naptha	D	D	D	A	A	D	D	A	A	A	A	A
Water, Fresh (Non F.D.A.)	A	A	A	A	A	A	A	A	A	A	A	A
Water, Salt	A	A	A	B	A	A	A	C	A	A	A	A
Whiskey/ Wines	(F.D.A. Tube Required)											2
White Liquor	A	A	B	A	A	A	C	A	A	A		A
White Oil	D	D	D	A	B	D	D	A	A	A	A	A
Wood Alcohol (Methanol)	A	A	A	A	A	A	A	A	D	A	A	A
Xylene (Xylol)	D	D	D	D	D	D	D	D	A	C	D	C
Xylidine	D	D	D	D	D	D	D	D	C	B	C	B
Zeolites	B	A	C	C	A	A	A	A	A	A	A	A
Zinc Acetate	C	D	A	C	C	C	B	C	D	A		A
Zinc Carbonate	A	A	A	A	A	A	A	A	A	A	A	A
Zinc Chloride	A	A	A	A	A	A	B	B	A	A	D	A
Zinc Chromate	A	C	A	A	A	C	A	A	A	B		B
Zinc Sulfate	A	A	A	A	A	A	A	A	A	A	D	A



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