

Use only "A" rated material/fluid combinations



DANGER

Variations in chemical behavior during handling due to factors such as temperature, pressure and concentration can cause equipment to fail even though it passed an initial test.
SERIOUS INJURY MAY RESULT!
 Use suitable guards and/or personal protection when handling chemicals.



WARNING

The information in this chart has been supplied by reputable sources and is to be used ONLY as a guide in selecting equipment for appropriate compatibility. Before permanent installation test the equipment with the chemicals and under the specific conditions of your application.
 Ratings of chemical behavior listed in this chart apply to a 48-hr exposed period. There is no knowledge of possible effects beyond this period. This does not warrant (neither express nor implied) that the information in this chart is accurate or complete or that any material is suitable for any purpose.

CHEMICALS	PLASTICS			METALS		ELASTOMERS								
	Nylon	Polypropylene	PVDF	316 Stainless Steel	Aluminum	Nitrile (Buna-N)	EPDM	Geolast®	Hytrel®	Neoprene	Santoprene®	Polyurethane	PTFE	Viton®
CHEMICAL COMPATIBILITY REFERENCE ONLY														
Acetaldehyde	B	X	X	A	B	X	B	X		X	B	X	A	X
Acetamide	A	A ¹	A ¹	A	A	A	A	A		B	A	X	A	B
Acetate Solvent	A	B ¹	A	A	A	X	B	X		X	B	X	A	X
Acetic Acid 20%	X	B	A	A	B	X	A	X		B	A	X	A	X
Acetic Acid 80%	X	B	A150F	B	B	X		X		X	A	X	A	X
Acetic Acid, Glacial	X	B	A ²	A	B	X	B	B	A ¹	X	A	X	A	X
Acetic Anhydride	B	B ¹	B ¹	A	B	X	B	X		B	A	X	A	X
Acetone	A ¹	X	X	A	A	X	A	X	B	X	A	X	A	X
Acetone Cyanohydrin				B	A	X	X	X		B	B		A	X
Acetonitrile (Methyl Cyanide)	A	B	A125F	A	A	X	A	X		A	B	X	A	X
Acetophenone (Phenyl Methyl Ketone)	A	A ¹	A	B	B	X	B	X		X	B	X	A	X
Acetyl Acetone (2,4-Pentanedione)				B	X	X	A	X	X	X	B		A	X
Acetyl Chloride	X	X	A ²	B	X	X	X	X		X	B	X	A	B
Acetyl Salicylic Acid (Aspirin)				B	A		B			X			A	
Acetylene	A	B ¹	A	A	A	B	A	B		B	A	X	A	A
Acetylene (Ethyne)	B	X	A	A	A	A	A	A	A	X	X		A	A
Acetylene Tetrabromide (Tetra Bromoethane)				A	X	X		X		X			A	A
Acrolein (Acrylaldehyde)				B	A	B		B					A	A
Acrylonitrile	A ¹	B	A ¹	A	B	X	X	X		X	B	X	A	X
Adipic Acid		B ²	A ²	B	B	X	B	A		X	B	A	A	A ²
Alcohols: Amyl	A ¹	B ¹	A	A	B	B	A	B		B	A	X	A	B
Benzyl	X	A	A	A	B	X	B	X		X	A		A	A
Butyl	B	A	A	A	B	A	B	A		B	A	B	A	A
Capryl (Octanol)				A	A	A	X			B			A	B
Diacetone	A	B ²	A ¹	A	A	X	B	X		X	X	B	A	X
Ethyl (Liquor)	B	A	A	A	B	A	B	A		A	A	X	A	A
Hexyl (Hexanol)	A	A ¹	A	A	A	A		A		B	B		A	B
Furfuryl			A ¹	A	A	X	B	X			B		A	X
Isobutyl	B ¹	X	A	A	B	X	A	B		A	A	X	A ²	A
Isopropyl	B ¹	A ²	A140F	A	B	B	A	A		B	B	X	A ²	A
Methyl	B ¹	A ²	A	A	B	A	A	A	B	A	A	X	A	X
Octyl	A			A	A	B	B	B		B	B	X	A	A
Propyl	B	A	A ²	A	A	A	A	A		A	A	X	A	A
Allyl Chloride (3-Chloropropene)		A	A	B	X	X	X	X		X			A	B
Aluminum Acetate (Burow's Solution)	A	A	A	B	A	X	A	X		X	A	B	A	X
Aluminum Bromide			X			A		A		A			A	
Aluminum Chloride	X	A	A	B	X	A	A	A		A	A	B	A	A
Aluminum Fluoride	B	A	A	X	B ¹	A	A	A		A	A	X	A	A
Aluminum Hydroxide	B	A	A	B	B ¹	A	A	A		A	A		A	A
Aluminum Nitrate	B	A ²	A	A	X	A ²	A	A		A	A	X	A	A
Aluminum Potassium Sulfate	X	A	A	B	X	A	A	A		A	A		A	A
Aluminum Sulfate	A ²	A	A	A50%	B30%	A	A	A	B ¹	A	A	X	A	A

Footnotes:

1. Safe to 72 deg F (22 deg.C)
2. Safe to 120 deg F (48 deg.C)

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CHEMICALS	PLASTICS			METALS		ELASTOMERS								
	Nylon	Polypropylene	PVDF	316 Stainless Steel	Aluminum	Nitrile (Buna-N)	EPDM	Geolast®	Hytrel®	Neoprene	Santoprene®	Polyurethane	PTFE	Viton®
CHEMICAL COMPATIBILITY REFERENCE ONLY														
Alums	A	A		A	A	A	A ¹	A		B	A ¹		A	A
Amines	X	B ²		A	B	X	B	X	A ¹	B	A	X	A ²	X
Ammonia 10%	A	A ²	A	A	A ²	B	A	A		A	A	B	A	X
Ammonia Nitrate	X	A	A	A	X	X	A	X		X	A	B	A	X
Ammonia, anhydrous	A ¹	A	A	A ²	B	B	A	B		A	A	X	A	X
Ammonia, liquid	B ¹	A ²	A	A ²	X	X	A	X		A	A	B	A	A
Ammonium Acetate	A	A	A ¹	A	A	B	A	B		A		X	A	A
DO NOT USE GLASS FILLED POLYPROPYLENE PUMPS WITH AMMONIUM BIFLOURIDE (1", 1-1/2", 2" CLAMPED MODELS)														
Ammonium Bifluoride			A150F	B ¹	X	B	A ²	B		X	A		X	A
Ammonium Carbonate	A	A	A	B	B	X	A	X		A	A	B	A	A
Ammonium Caseinate				A						A	A			
Ammonium Chloride	B	A	A	B ²	X	B	A	B	A ¹	B	A	B	A	A
Ammonium Dichromate			X	X	A	A	A	A		A	A		A	
Ammonium Hydroxide	B	A	A	A ¹	B	B	A	B		A	A	X	A	B
Ammonium Nitrate	B	A	A	A	B ¹	A	A	A	B ¹	B	A	X	A	B
Ammonium Oxalate				A		A	A	A		A	A			
Ammonium Persulfate	X	A	A ¹	A	X	X	B	X		A	A	X	A	A
Ammonium Phosphate, Dibasic	X	A	A	A	B	A	A	A		A	A		A	A
Ammonium Phosphate, Monobasic	B	A	A	A	B	A		A		A	A		A	A
Ammonium Phosphate, Tribasic	B	A	A	A	B	A		A		A	A		A	A
Ammonium Sulfate	B	A	A	B	B	A	A	A	B ¹	A	A	A	A	X
Ammonium Sulfide			A ²	B	B	A		A		A		B	A	A
Ammonium Sulfite	A ¹	A ²		B	X	A ¹		A ¹	B ¹				A ²	X
Ammonium Thiosulfate				A	X	A	A ¹	A		A	A		A	A
Amyl Acetate (Banana Oil) (See Oils)														
Amyl Alcohol (See Alcohols)														
Amyl Chloride	X	X	A	A	X	X	X	X		X	X		A	A
Aniline (See Oils)														
Aniline Dyes				B	B	X	X	X		X	B	X	A	B
Aniline Hydrochloride	X	X	A ¹	X	X	X	B	X		X	A	X	A	B
Anisole (Methylphenyl Ether)				B	B					X			A	X
Antifreeze(Glycol Base)	X	A ²	A	A	A	A	A	A	A	A	A	B	A	A
Antimony Pentachloride				A	A	X		X					A	
Antimony Trichloride	X	A	A	B	A	B	A	B			A		A	A ²
Aqua Regia (80% HCl, 20% HNO3)	X	X	A ¹	X	X	X	X	X		X		X	A	B
Arochlor 1248	A ¹	X	X	A	A	X	X	X		X		X	A	A
Aromatic Hydrocarbons	A	X	X	A	A	X		X		X	X	X	A	A
Arsenic Acid	X	A	A	A ²	X	A ²	A ²	A ²		A	A	X	A	A ²
Arsenic Trichloride (Arsenic Butter)				X	B	X	B	X		A	B		A	X
Askarel® (Pyranol ®)				A		B	X	B		X	X	X	A	X
Asphalt	A	A	A	A	A	B	X	B	B ¹	X	B	B	A	A ¹
Asphalt Sealer	A	A	A	A	A	X		X		A			A	X
ASTM reference fuel A				A	A	A	X	A		B		A	A	A
ASTM reference fuel B				A	A	A	X	A		X		X	A	A
ASTM reference fuel C				A	A	A	X	B		X		X	A	A
ASTM Ref #1 Oil (High Aniline)				A	A	A	X	A		B	A	A	A	A
ASTM Ref #2 Oil (Medium Aniline)				A	A	A	X	A		B	A	B	A	A
ASTM Ref #3 Oil (Low Aniline)				A	A	A	X	A		X	A	B	A	A
ASTM Ref #4 Oil (High Aniline)				A	A	B	X	B		X	B		A	A
Aviation Gasoline				A	A	A	X	A		X			A	A
Barbeque Sauce (Waters,Oils, Spices)			A	A		A		A		A			A	
Barium Carbonate	A ¹	A	A	A	B	A ²	A	A ²		A	A	B	A	A
Barium Chloride	X	A	A	X	X	A	A	A	A	A	A	A	A	A
Barium Chloride Dihydrate	B	A	A	B	B50%	A	A	A		A			A	A
Barium Cyanide	X	X	X	A	X	X	A	X	A	X	A		X	A
Barium Hydroxide (Barium Hydrate)	X	A	A	A ²	X	A	A	A	B ¹	A	A	A	A	A
Barium Nitrate	B	X	A	A	X	A ²	A	A ²		A	A		A	A
Barium Sulfate	X	A	A	B ¹	B	A	A	A	B ¹	A	A	A	A	A
Barium Sulfide	A ¹	A	A	B ²	X	A	A	A		A	A	A	A	A

Footnotes:

1. Safe to 72 deg F (22 deg C)

2. Safe to 120 deg F (48 deg C)

Geolast, Santoprene TM, Advanced Elastomer Systems

Hytrel TM, E.I. DuPont de Nemours Co.

Viton TM, Dupont Dow Elastomers

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	Nylon	Polypropylene	PVDF	316 Stainless Steel	Aluminum	Nitrile (Buna-N)	EPDM	Geolast®	Hytrel®	Neoprene	Santoprene®	Polyurethane	PTFE	Viton®
Beer	B	B	A	A	A	A	A	A	A ¹	A	A	X	A	A
Beet Sugar Liquids or liquors	A	A ¹	A	A	A	A	A	A	A	A	A	X	A	A
Benzaldehyde	X	X	A ¹	A	B	X	B	X	B	X	B	X	A	X
Benzene	A ¹	X	A ²	A ²	B	X	X	X		X	B	X	A	B
Benzene Sulfonic Acid	X	X	B ²	B	X	X	X	X	B	A	A	X	A	A
Benzoic Acid	X	X	A	A	B	X	B	A		B	A	X	A	A
Benzol (See Benzene)														
Benzyl Acetate				A	A	X		X					A	X
Benzyl Benzoate				B	A	X	B	X		X	X		A	A
Benzyl Chloride (Chlorotoluene)	A ²	X	X	B	X	X	X	X		X	X	X	A	X
Benzyl Dichloride (Benzal Chloride)				A	X	X		X					A	
Biphenyl (Diphenyl)					A	X	X	X		X			A	A
Bismuth Subcarbonate (Bismuth Carbonate)				B10%		A	A	A		A	A		A	A
Black Sulfate Liquor				A	X	B	A	B		A	A	X	A	A
Bleaching solutions	X	B	A	B	X	X	A	X		X	A		A	A
Borax (Sodium Borate)	A	A	A	A	B ¹	B	A	B	A ¹	A	A	A	A	A
Boric Acid	B	A	A	A ¹	A	A	A	A	A ¹	A	A	A	A	A
Brake Fluid (Non-Petroleum Base)	B	X		A	A	X	A	X		A	A		A	
Brewery Slop				A		A		A		A	A		A	A
Brine (See Sodium Chloride)														
Bromine		X	A150°F	X	X	X	X	X		X	X	X	A	A
Bromine Trifluoride		X		B	X	X	X	X		X	X	X	A	X
Bromine Water		X	A	X	X	X	X	X		B	B	X	A	B
Bromobenzene		X	A ²	A	X	X	X	X		X	X	X	A	B
Bromochloromethane				B	X	X	B	X		X			A	X
Bromotoluene				A	X	X		X					A	B
Bronzing Liquid				A		X	B	X		X	A	X	A	X
Bunker Oil (Fuel) #5,#6 & C (Hydrocarbons)				A	A	A	X	A		B	B	B	A	A
Butadiene	X	X	A	A ¹	A	X	X	X		X	X	X	A ²	B
Butane	B ¹	B ¹	A	A ²	A	A	X	A		B	X		A	A
Butanol (See Alcohol, Butyl)														
Butter			A	A	A	A	A	A		X	B		A	A
Buttermilk	B ¹	A	A	A	A	A	A ¹	A		A	A		A	A
Butyl Acetate	A	X	A ¹	A	A	X	B	X	B	X	A	X	A	X
n-Butyl Acetate				A	A	X	X	X		X	A		A	X
Butyl Acetyl Ricinoleate				A	A	X	X	X		X	B	X	A	B
Butyl Acrylate		X	A ²			X	X	X		X	X		A	X
Butyl Amine	A	X	B ¹	A	A	B	X	X		X	A	X	A	X
Butyl Benzoate				B	B		B			X	X	X	A	A
Butyl Butyrate				A	A	X		X					A	X
Butyl Carbitol®						A	A	A		B	B		A	A
Butyl Cellosolve (see Ethylene Glycol Monobutyl Ether)														
Butyl Ether	A ²	X	A ¹	A	A	A	X	A		B			A	X
Butyl Oleate							X			X	X		A	A
Butyl Phthalate	A ²	B ²	B ¹	B ²	B ²	X	X	X		X	X		A ²	X
Butyl Stearate			A	B	B	A	X	A		X	X		A	B
Butylene (Butene)	B ¹	X	A	A	A	B	X	A		X	X	X	A	B
Butyraldehyde	X		A ²	A	A	X	X	X		X	X	X	A	X
Butyric Acid	X	A	A	A	B	X	B	X	B ¹	X	A		A	X
Butyric Anhydride				A	A	X		X					A	
Butyronitrile						X	A	X		X			A	
Calcium Acetate Hydrate				B	X	B	A	B		X			A	X
Calcium Bisulfate			A	B		A	A	A		A			A	
Calcium Bisulfide	A	A	A	B	X	A ¹	X	A ¹	B ¹	A	X	A	A	A
Calcium Bisulfite	B	A	A	A	X	A	X	A	B ¹	A		A	A	A
Calcium Carbonate (Chalk)	A	A	A	B	X	A	A	A		A	A	X	A	A
Calcium Chlorate				B30%	B30%	A	A	A		A			A	A
Calcium Chloride	B	A	A	X	X	A	A	A	A ¹	A	A	A	A	A
Calcium Hydroxide (Slaked Lime)	A ²	A	A	B	X	A	A	A	B ¹	A	A	A	A	A

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	Nylon	Polypropylene	PVDF	316 Stainless Steel	Aluminum	Nitrile (Buna-N)	EPDM	Geolast®	Hytre®	Neoprene	Santoprene®	Polyurethane	PTFE	Viton®
Calcium Hypochlorite, 20%(Calcium Oxichloride)	X	A	A	B	X	X	B ¹	X		X	A	X	A	B
Calcium Nitrate	X	A	A	B40%	B40%	A	A	A		A	A	A	A ²	A ²
Calcium Oxide	B	A	A	A	X	A	A	A	A	A	A		A	B
Calcium Silicate				A	A	A		A					A	A
Calcium Sulfate	X	A	A	A10%	X	A	A	A		B	A		A	A
Calcium Sulfide		A ²	A	B	A	A	A	A		B	A	A	A	A
Calcium Sulfite				A10%	B10%	A		A					A	A
Calgon®	A	A		A		A		A		A	A			A
Cane Juice	A	X	A	A	B	A	A	A		A	A		A	A
Cane Sugar Liquors		A	A	A	A	A		A		A	A	X	A	A
Capryl Alcohol(Octanol) (See Alcohol - Capryl)														
Caprylic Acid (Octanoic Acid)			A175F	A	A	X		X					A	
Carbamate						X	X	X		B	A	X	A	A
Carbitol®		X	A	B	B	B	X	B		X	B	X	A	X
Carbolic Acid (Phenol)	X	X	A ²	B	B	X	X	X	X	X	B	X	A	A
Carbon Bisulfide	A	X	A	B	B	X	X	X		X	X	X	A	A
Carbon Dioxide (wet)	A ¹	A ²	A	A ¹	A ¹	A	B	A		B	A	A	A	B
Carbon Disulfide	B	X	A ¹	A90%	A	X	X	X		X	X	X	A	A
Carbon Monoxide	A	A	A	A	A	B	A	A	A	A	A	A	A	A
Carbon Tetrachloride (Tetrachloromethane)	X	X	A	A ²	X	X	X	X		X	X		A	A
Carbonated Water	A	A	A	A	A	A		A		A	A	A	A	A
Carbonic Acid	B	A	A	B	A	B		B		A	A	A	A	A
Casein (a phosphoprotein)				B	B	A	A	A		A			A	A
Catsup (Ketchup)	A	A	A	A	X	A		A			A		A	A
Caustic Soda (See Sodium Hydroxide)														
Cellosolve® (Glycol Ethers)	A	A ²	A	B	B	X	X	X		X	X	X	A	B
Cellulose Acetate				A	B	B		B		B			A	X
Cellulube® Hydraulic Fluids (Phosphate Ethers)				A	B	X	X	X		X	X	X	A	B
Chloric Acid	X	B ¹	A	X	X								A	
Chlorinated Glue				A	X	B	B	B		X	B	X	A	A
Chlorinated Lime - 35% Bleach				A		X	A	X		X	A	X	A	A
Chlorine Dioxide		X	A150F	X	X	X	X	X		X	X	X	A	A
Chlorine Trifluoride	X	X		A	X	X	X	X		X	X	X	A	B
Chlorine Water	X	X	B	X	X	X	X	X		X	X	X	A	A
Chlorine, Anhydrous Liquid	X	X	A	X	X	X	X	X		X	X	X	A	A
Chlorine, (wet)	X	X	A	X	X	X	X	X		X	X	X	A	A
Chloroacetic Acid	X	A	X	X	X	X	X	X		X		X	A	X
Chloroacetone (Monochloroacetone)		X		B	X	X	A	X		X	X	X	A	X
Chlorobenzene (Mono)	B ¹	X	A ²	B	X	X	X	X		X	X	X	A	A
Chlorobromomethane		X		B	X	X	X	X		X	X	X	A	A
Chlorobutadiene (Chloroprene)		X		B	X	X	X	X		X	X	X	A	A
Chloroform	X	X	A	A	X	X	X	X		X	X	X	A	A
1-Chloronaphthalene		X		B	X	X	X	X		X	X	X	A	X
0-Chlorophenol	X		A	B	B	X	X	X		X			A	B
Chlorosulfonic Acid	X	X	X	B	B	X	X	X		X	A	X	A	X
Chlorothene® (Chlorinated Solvents)			A	A	X	X		X		X			A	X
Chlorox® (Bleach)		B	A	B	X	X	B	X		B	B	X	A	A
Chocolate Syrup	A	A	A	A	A	A	A	A		A	A		A	A
Chromic Acid to 25%	X	A ¹	A ²	B	X	X	A	A		X	A	X	A	A
Chromic Acid over 25%	X	X	A ²	B	X	X	A	X		X	A	X	A	A
Cider			A ²	A	B	A	A	A	B ¹	A	A		A	A
Citric Acid	B ¹	A	A	A	X	A	A	A	A ¹	A	A	A	A	A
Cobalt Chloride		A			X	A	X	A		A	A	X	A	A
Coffee	A	A	A	A	A	A	A	A		A	A	X	A	A
Copper Acetate			A	B10%	X	B	A	B	C	B	A	X	A	
Copper Chloride	A	A	A	X	X	A	A	A	A ¹	A	A	A	A	A
Copper Cyanide	B ¹	A	A	A	X	A	A	A		A	A	A	A	A
Copper Fluoborate (Fluoroborate)				X	X	B		B		A	A			A
Copper Nitrate	X	A	A	A	X	A	A	A	A	A	A		A	A

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 Hytrei TM, E.I. DuPont de Nemours Co.
 Viton TM, Dupont Dow Elastomers

Use only "A" rated material/fluid combinations

CHEMICALS	PLASTICS			METALS		ELASTOMERS								
	Nylon	Polypropylene	PVDF	316 Stainless Steel	Aluminum	Nitrile (Buna-N)	EPDM	Geolast®	Hytre®	Neoprene	Santoprene®	Polyurethane	PTFE	Viton®
Copper Nitrate Hexahydrate	X	A	A	A	X	A	A	A	A	A	A	A	A	A
Copper Sulfate	X	A	A	A	X	A	A	A	A ¹	A	A	A	A	A
Cream	A	A	A	A	A	A	A	A	A	X	A		A	A
Creosote, Coal-Tar (Tar Oil)	X	X	A ²	B	B	A	X	A		X	B		A	A
Creosote, Wood-Tar	X	X	A ²	B	B	A	X	A		B		X	A	A
Cresylic Acid (Cresol)	X	X	A ²	A	B ²	X	X	X		X	B	X	A	A
Crotonaldehyde				A	A	X		X		A			A	A
Cumene (Isopropylbenzene)				B	B	X	X	X		X			A	A
Cupric Acid	X	A ²		B ²	X	B ²	A ²	B ²		A ²	A ²		A	A ²
Cyanic Acid				A		X		X		X			A	A
Cyclohexane	A	X	A	A	B	B	X	A	A ¹	X	X	B	A	A
Cyclohexanol	B	B	A ²	A	X	B	X	B		A	B		A	A
Cyclohexanone	A	X	A ¹	B	B	X	X	X		X	B	X	A	X
Decahydronaphthalene (Decalin®)			A ²			X	X	X		X		X	A	A
Decane			A			B	X	A		X	X	B	A	A
Detergents	A	A		A	B	A	A	A		B	B	A	A	A
Dextrose				A	A	B	A	B		B		A	A	A
Diacetone Alcohol (See Alcohols)														
Dibenzyl Ether				B	B	X	X	X		X	X	B	A	X
Dibenzyl Sebecate						X	X	X		X	X	X	A	B
Dibutyl Amine		A		X		X	X	X		X	B		A	B
Dibutyl Phthalate	A	X	X	A	A	X	A	X		X	A	X	A	B
Dibutyl Sebecate (DBS)		B ¹	X	A		X	X	X		X	B	X	A	B
Dichlorobenzene		X	A ²	B ¹	X	X	X	X		X	X	X	A	X
o-Dichlorobenzene		B ¹	A150F	B	X	X	X	X		X	X	X	A	A
Dichlorobutane				B	X	X		X				X	A	A
Dichloroethane	A ¹	X	A	B	B ¹	X		X		X			A ¹	X
Dichloro Isopropyl Ether		X				X	X	X		X	X	B	A	X
Diesel Fuel	A	B ¹	A	A	A	A	X	A		X	X	X	A	A
Diethanol Amine	A	A		A		B		B		A		B	A	
Diethyl Carbonate						X		X		X			A	
Diethyl Ether	X	X	A ¹	A	B	B	B	B		X	B	B	A	X
Diethyl Phthalate (DEP)				A	A	X		X				A	B	X
Diethyl Sebecate		A ²	A ²	A	A	X	X	X		X	B	X	A	B
Diethylamine	A	A	A ¹	A	A	X	X	X		X		X	A	X
Diethylbenzene						X	X	X		X	X	X	A	A
Diethylene Ether (Dioxane)	B	X	A ¹	A	B	X	A	X		X			A	X
Diethylene Glycol	A ¹	X	A	A	B	A	A	A		A	A	X	A	A
Diethylene Triamine				A	A	B		B					A	
Diisobutyl Ketone				A	A	X	B	X		X			A	X
Diisobutylene	A	A	A	B	B	B		B		X	X	X	A	A
Diisodecyl Adipate (DIDA)						X		X					A	X
Diisodecyl Phthalate (DIDP)						X	A	X		X		X	A	X
Diisooctyl Adipate (DIOA)				A	A	X		X					A	X
Diisooctyl Phthalate (DIOP)						X		X					A	X
Diisooctyl Sebecate (DIOS)								B					A	A
Diisopropyl Ketone			X	A		X	X	X		X	X		A	X
Dimethyl Aniline	A	X	A	B ²	A ²	X	B ²	X		X	B		A	X
Dimethyl Ether				B	B	A		A		B			A	A
Dimethyl Formamide (DMF)	A	A ²	X	A	A	X	B	X		X	A		A	X
Dimethyl Phthalate	X	A ¹	A ¹	B		X	A	X		X	A		A	X
Dimethyl Sulfate			A ¹			X		X					A	X
Dimethyl Sulfide				A	A	X		X					A	
Dinitrotoluene (DNT)				B		X	X	X		X	B	X	A	B
Diocetyl Sebecate				A	A	X	X	X		X	X	X	A	B
Diocetyl Phthalate (DOP)	A		A ¹	A	A	X	B	X		X	X	X	A	B
Dioxane (See Diethylene Ether)														
Dipentene (Limonene)				A	A	X	X	X		X	X	X	A	A
Diphenyl			A ²	B	B	X	X	X		X	X	X	A	A

Footnotes:

1. Safe to 72 deg F (22 deg.C)
2. Safe to 120 deg F (48 deg.C)

Geolast, Santoprene TM, Advanced Elastomer Systems

HytreI TM, E.I. Dupont de Nemours Co.

Viton TM, Dupont Dow Elastomers

Use only "A" rated material/fluid combinations

CHEMICALS	PLASTICS			METALS		ELASTOMERS								
	Nylon	Polypropylene	PVDF	316 Stainless Steel	Aluminum	Nitrile (Buna-N)	EPDM	Geolast®	Hytrel®	Neoprene	Santoprene®	Polyurethane	PTFE	Viton®
Diphenyl Oxide			B	A	B	X	X	X		X	X	X	A	A
Dipropylene Glycol		A	A			A		A					A	A
Dyes	A			A	B					X	B		A	A
Epichlorohydrin	A	B ¹	X	A	X	X	B	X		X	B	X	A	X
Epsom Salts (Magnesium Sulfate)	B ¹	A	A	A	A	A	A	A		A	A		A	A
Ethane	X	X	X	A ¹	A	A	X	A		B	X	B	A	A
Ethanol (See Alcohols)														
Ethanolamine	A	X	X	A	B	B	B	A		B	A	X	A	X
Ether	A	X	A ¹	A	A	X	X	X		X	X	X	A	X
Ethyl Acetate	B ²	B ¹	X	A	A	X	B	X	B	X	A	X	A	X
Ethyl Acetoacetate (Acetoacetic Ester)		A	A ¹	A	A	X	X	X		X	X	X	A	X
Ethyl Acrylate		X	A ¹	A	A	X	X	X		X	X	X	A	X
Ethyl Alcohols (See Alcohols)														
Ethyl Benzene	X	X	A ²	B	B	X	X	X		X		X	A	A
Ethyl Benzoate	X	B	X	A	A	X	X	X		X		X	A	A
Ethyl Bromide (Bromoethane)				A	A	X	B	X		B			A	
Ethyl Butyrate	A	B		A	B	X	X	X		X			A	X
Ethyl Cellulose (Ethocel®)	B	X		B	B	B	B	B		B	A	B	A	C
Ethyl Chloride	B	X	A	A	X	A	X	B		X	B	X	A	A
Ethyl Ether	A ¹	X	A ²	A	X	X	X	X		X	X	X	A	X
Ethyl Formate			A ¹	B	B	X	X	X		B	B		A	A
Ethyl Mercaptan (Ethanethiol)				B	B	X	X	X		X	X		A	B
Ethyl Propionate				A	A	X	X	X		X			A	
Ethyl Silicate				A	B	A	A	A		A	B		A	A
Ethyl Sulfate	A			X		A		A			B		A	A
Ethylene (Ethene)				A	A	B	X	B		A	X		A	A
Ethylene Chloride	B ¹	X	A	A	B	X	X	X		X	X	X	A	A
Ethylene Chlorohydrin		X	A ¹	A	X	X	A	X		B	X	X	A	B
Ethylene Diamine	B	A	B	A	X	B	A	B		A	A	X	A	X
Ethylene Dibromide (Ethylene Bromide)		X	A	B	X	X	X	X		X			A	B
Ethylene Dichloride	B	X	A	B	X	X	X	B		X	X	X	A	A
Ethylene Glycol (See Antifreeze)														
Ethylene Glycol Monobutyl Ether (Butyl Cellosolve)				A	A	B	B	B		X	B	X	A	X
Ethylene Glycol Monoethyl Ether Acetate				A	A	X	B	X		X		X	A	X
Ethylene Oxide	A ¹	X	A	A	A	X	X	X	A	X	A	X	A	X
Ethylene Trichloride (Trichloroethene)	B ¹	X	A	A	X	X	X	X		X	X	X	A	A
Ethylidene Chloride				A	X	X	X			X			A	
Fatty Acids	A ¹	B	A	A	B	B	X	B		X	B		A	A
Ferric Chloride	X	A	A	X	X	A	A	A		B	A	A	A	A
Ferric Hydroxide				A		B							A	X
Ferric Nitrate	X	A	A	B	X	A	A	A		A	A	A	A	A
Ferric Sulfate	X	A	A	B	X	A	A	A		A	A		A	A
Ferrous Chloride	X	A	A	X	X	A	A	A		A	A	B	A	A
Ferrous Sulfate	X	A	A	B	X	A ²	A	A		A	A	B	A	A
Fluoboric Acid	X	A	A	B	X	B	A ²	A		B	A		A	X
Fluorine	X	X	A ¹	A	X	X	B	X		X	X		A	B
Fluorobenzene	X	X	X			X	X	X		X	X		A	A
Fluorolube (Fluorocarbon Oils)			X	A	A	X	X	X		A	X		A	B
Fluosilicic Acid	X	A	A	B	X	B	B	A		A	A	B	A	A
Formaldehyde (Formalin)	X	A	X	A	A	B	A	B	B	X	A	X	A	A
Formic Acid	X	A ¹	A	A ¹	X	X	B	X	B	B	A	X	A	X
Fruit Juice	X	A	A	A	A	A	A	A		X	A		A	A
Fuel Oils (See Oils)														
Furan (Furfuran)		X	X		X	X	X	X		X	X		A	X
Furfural (Ant Oil)	B	X	A ¹	A	A	X	X	X		B	X	X	A	X
Gallic Acid	B ¹	A	A ¹	B	A20%	B	B	B		B	B	X	A	A
Gasoline (Unleaded)	A	X	A	A	A	X	X	X		X	X		A	A
Gasoline, (Leaded)	A	X	A	A	A	A	X	X		X	X	X	A	A
Gelatin	A ¹	A	A	A	A	A	A	A		A	A	A	A	A

Footnotes:

1. Safe to 72 deg F (22 deg.C)
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Use only "A" rated material/fluid combinations

CHEMICALS	PLASTICS			METALS		ELASTOMERS								
	Nylon	Polypropylene	PVDF	316 Stainless Steel	Aluminum	Nitrile (Buna-N)	EPDM	Geolast®	Hytrel®	Neoprene	Santoprene®	Polyurethane	PTFE	Viton®
Glucose (Corn Syrup)	B ¹	A	A	A	A	A	A	A	A	A	A	A	A	A
Glue, P.V.A. (Water Base)	A ¹	A	A	A ²	B	A	A	A	A	A	A	A	A	A
Glycerin (Glycerol)	A ¹	A	A	A	A	A	A	A	A	A	A	A	A	A
Glycolic Acid		A	A ¹			A	A	A		A	A	B		A
Gold Monocyanide			A	X		A		A		A			X	A
Grape Juice	A	A	A	A	A	A	A	A		X				A
Grease (Petroleum Base)	A		A	A	A	A	B	A		X	B	A	A	A
Heptanal		A		A	A	A		A						A
Heptane	A	X	A	A	A	A	X	A		X	X	A	A	A
Hexanal				A	A	X	B	X		A		B	A	X
Hexane	B	X	A	A	A	A	X	A	A	B		A	A	A
Honey	A	A	A	A	A	A	A	A		A	A	B	A	A
Hydraulic Oil (Petroleum Base)	A ¹	X	A	A	A	A	X	A		B	X	A	A	A
Hydraulic Oil (Synthetic)	A ¹	X	A	A	A	X		X			B		A	A
Hydrazine (Diamine)		X	A	A		B	A	B		X	X	A	A	A
Hydrobromic Acid	X	A ²	A50%	X	X	X	A	X		X	B	A	A	A
Hydrochloric Acid 20%	X	A	A	X	X	B	A	B	B	X	A	X	A	A
Hydrochloric Acid 37%	X	B	A	X	X	X	B	X		X	A	X	A	A
Hydrocyanic Acid (Formonitrile)	X	A	A	A	A10%	B	A	B		X	A ¹	X	A	A
DO NOT USE GLASS FILLED POLYPROPYLENE PUMPS WITH HYDROFLUORIC ACID (1", 1-1/2", 2" CLAMPED MODELS)														
Hydrofluoric Acid 20%	X	A	A	X	X	X	X	X		X	A		A	A
Hydrofluoric Acid 50%	X	A ²	A	X	X	X	X	X		X	A	X	A	A
Hydrofluoric Acid 75%	X	B ¹	A	X	X	X	X	X		X	A	X	A	A
Hydrofluoric Acid 100%	X	X	A	X	X	X	X	X		X	X	X	A	B
DO NOT USE GLASS FILLED POLYPROPYLENE PUMPS WITH HYDROFLUOSILICIC ACID (1", 1-1/2", 2" CLAMPED MODELS)														
Hydrofluosilicic Acid 20%	X	X	A	B ¹	X	B	A	B		B	X		A	A
Hydrofluosilicic Acid 100%	X	X	A ¹	X	X	B	A	B		B	X		A	A
Hydrogen Gas	X	A	A	A	A	A	A	A	A	A	A	A	A	A
Hydrogen Peroxide 30%	X	A	A	A	A	X	B	X		X		X	A	A
Hydrogen Peroxide 50%	X	A ¹	A ¹	A	A	X	B	X		X		X	A	A
Hydrogen Peroxide 100%	X	A ¹	A ¹	A	A	X	X	X		X		X	A	A
Hydrogen Sulfide (aqua)	X	A	A	A	X	X	A	X		X	A	X	A	X
Hydroquinone		A	A	B	A	X	X	X		X	A		A	X
Hydroxyacetic Acid 70%				B	B	X	X	A		X	A		A	X
Hypochlorous Acid	X	A	A	X	X	X	B	X		X	A		A	A
Iodine (in alcohol)	X	A ¹	A ²	X	X	B	B	B	B	X	A		A	A
Iodoform			A	B	B	X	A	X		X	B		A	
Isoamyl Acetate				A	A	X	B	X		X		X	A	X
Isoamyl Butyrate				A	A	X		X					A	X
Isobutyl Acetate				A	A	X	X	X		X			A	X
Isobutyl Chloride				B	X	X		X					A	B
Isobutyric Acid					A	X	A	X					A	
Isododecane				B	B	B	X	B				B	A	A
Isooctane (Trimethylpentane)	B ¹	A	A	A	A	A	X	A	A		X	X	A	A
Isophorone			A ²	A	A	X	X	X		X	X	B	A	X
Isopropyl Acetate	B ¹	B		A	X	X	B	X		X	X	A	A	X
Isopropyl (See Alcohol)														
Isopropyl Amine				A		X		X					A	X
Isopropyl Chloride		X	A ¹	A	X	X	X	X		X	X	X	A	B
Isopropyl Ether	A ¹	B ¹	A ²	A	A	B	X	B		X	X	B	A	X
Isotane	X	X	A		A	A		A		X				A
Jet Fuel (JP1 TO JP6)	A ¹	X	A	A	A	A	X	A		X	X	X	A	A
Kerosene	A ¹	B ¹	A	A	A	A	X	A		X	X	X	A	A
Ketones	A ²	X	X	A	B	X	X	X		X	X	A	A	X
Lacquer Thinners	A ¹	X	X	A	A	X	X	X		X	X	X	A	X
Lacquers	A ¹	X	X	A	A	X	X	X		X	X	X	A	X
Lactic Acid	X	A	A ²	A	X	B	A	B		B	A	B	A	A
Lard	A ¹	A	A	A	A	A	X	A		X	B	A	A	A
Latex	A ¹	A	X	A	A	A		A		B	A		A	A

Footnotes:

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Geolast, Santoprene TM, Advanced Elastomer Systems

Hytrel TM, E.I. Dupont de Nemours Co.

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Use only "A" rated material/fluid combinations

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	Nylon	Polypropylene	PVDF	316 Stainless Steel	Aluminum	Nitrile (Buna-N)	EPDM	Geolast®	Hytrel®	Neoprene	Santoprene®	Polyurethane	PTFE	Viton®
Lead Acetate	B ¹	A	A	B	X	B	A	B		A	A	B	A	X
Lead Chloride				B	X					B			A	
Lead Nitrate		A		B	X	B	A	B		A			A	A
Lead Sulfamate	B ¹	A	A	X	X	B	A	B		A	A		A	A
Ligroin	X	X	A	A		A	X	A		B	B	B	A	A
Lime, Soda (Slaked Lime & Soda Ash)	A ¹	A	A	A	X	B ¹	A	B ¹		B	A		A	A
Linoleic Acid		A ¹	A	A	A	B	X	B		X	B		A	B
Lithium Chloride		A ²	A ²	A ²	X	A ²	A ¹	A ²		A ¹	A		A	A ¹
Lithium Hydroxide				B	X	X		X					A	
Lubricants (Petroleum)	A	B	A	A	A	A	X	A	A	B	X	B	A	A
Lye: KOH Potassium Hydroxide	A ¹	A	X	A		X	A ²	X		B	A	X	A	B
Lye: NaOH (See Sodium Hydroxide)														
Lye: Ca(OH) ₂ (See Calcium Hydroxide)														
Magnesium Bisulfate	A ¹	A ²		A ¹	X	B		B		B			A	
Magnesium Carbonate	X	A	A	B	B	A	A	A		A	A		A	A
Magnesium Chloride	A ¹	A	A	A ¹	A ²	A	A	A		A	A	A	A	A
Magnesium Hydroxide (Milk of Magnesia)	B ¹	A	A	A	X	B	A	B		B	A	A	A	A
Magnesium Nitrate	A ¹	A	A	A	X	A	A	A		A	A		A	X
Magnesium Oxide				A	B	A		A		A	A		A	X
Magnesium Sulfate (See Epsom Salts)														
Maleic Acid	X	A	A	B	X	X	X	X		X	A	X	A	A
Maleic Anhydride			A ¹	A	X	X	X	X		X	A		A	A
Malic Acid (Apple Acid)	X	B	A	A	B	B	X	B		X	A		A	A
Manganese Sulfate	A ²	B	A	B ²	B ¹	A ²	A ²	A ²		A ²	A ²		A	A ²
Maple Sugar Liquors (Sucrose)				A		A	A	A		A	A		A	A
Mash	A			A	A	A	A	A		A	A			A
Mayonnaise	A	A	A	A	X	A		A		A	A		A	X
Melamine	A	A		X		X	A	X		X	A		A	A
Mercuric Chloride	X	A	A	X	X	A	A ¹	A	B	A	A		A	A
Mercuric Cyanide	A ²	A	A	B	X	A	A ¹	A		B	A		A	A
Mercurous Nitrate		A	A	B	X	B ¹	A ¹	B ¹		B ¹	A ¹		B	A
Mercury	A	A	A	A	X	A	A	A	B	A	A	A	A	A
Mesityl Oxide				A	A	X	X	X		X	X	X	A	X
Methane	A ²	B	A	A	A	A	X	A		B	X	B	A	A
Methyl Acetate	A ²	X	B	A	A	X	B	X		B	B	X	A	X
Methyl Acetone	A	X	X	A	A	X	B	X		X	B		A	X
Methyl Acrylate			B ¹	X		X	X	X		B	B		A	X
Methyl Alcohol (See Alcohol)														
Methyl Amine (Monomethylamine)	A	X	X	A	B	B	A	B		A			A	A90%
Methyl Amyl Acetate				A	A	A		A					A	X
Methyl Bromide	X	X	A	A	X	X	X	B ¹		X	X		A	A
Methyl Butyl Ketone	X	X	X	A	A	X	B	X		X	X		A	X
Methyl Butyrate				A	A	X	X	X		X			A	
Methyl Cellosolve	X	B	A		A	X	B ²	X		X	B	X	A	X
Methyl Chloride	X	X	A	A	X	X	X	X		X	X	X	A	A
Methyl Dichloride	X	X	X		X	X	X	X		X	X	X		A
Methyl Ethyl Ketone (MEK)	A ¹	X	X	A	A	X	A ²	X	B	X	A	X	A	X
Methyl Formate				A	A	X	X	X		B	B	X	A	X
Methyl Isobutyl Ketone (MIBK)	A ¹	B ¹	X	A	B	X	X	X	B	X	X	X	A	X
Methyl Iodide				A	X	X	A	X		X	A		A	
Methyl Isopropyl Ketone	X	X		A	A	X	X	X		X	X		A	X
Methyl Methacrylate	X	A	A ²	X	X	X	X	X		X	B		A	X
Methyl Salicylate (Betula Oil)		B	A150F		A	X	X	X		X	B		A	B
Methylene Bromide				A	X	X		X		X			A	B
Methylene Chloride	X	X	A ²	A	X	X	X	X		X	X	X	A	B
Milk	A	A	A	A	A	A	A	A		A	A	X	A	A
Mine Water (See, Water, Acid, Mine)														
Mineral Spirits	A	B		A	A	A	X	A		X	X		A	A
Molasses	A	A	A	A	A	A	A	A		A	A	X	A	A

Footnotes:

1. Safe to 72 deg F (22 deg.C)
2. Safe to 120 deg F (48 deg.C)

Use only "A" rated material/fluid combinations

CHEMICALS	PLASTICS			METALS		ELASTOMERS								
	Nylon	Polypropylene	PVDF	316 Stainless Steel	Aluminum	Nitrile (Buna-N)	EPDM	Geolast®	Hytrel®	Neoprene	Santoprene®	Polyurethane	PTFE	Viton®
CHEMICAL COMPATIBILITY REFERENCE ONLY														
Monochloroacetic Acid (See Chloroacetic Acid)														
Monoethanolamine	A	X	X	A	B	B	B	B		X	A	X	A	X
Morpholine	A ²	B ²	A ²	A ¹	A ¹	X	X	X		X			A ²	
Motor oil (Petroleum Base)	A	A ¹	B	A	A	A	X	A	B	B ¹	X		A	A
Motor oil (Synthetic Base)	A	B	B	A	A	X							A	A
Mustard	X	A	A	A	B	X		B	X	A	A		A	A
Naphtha (Petroleum spirits-thinner)	A	X	A	A	A	A	X	A	B	X	X	X	A	A
Naphthalene (Tar Camphor)	A	A	A	A	B	X	X	X	B	X	X	B	A	A
Naphthoic Acid				A	B	B	X	B			X	X	A	A
Natural Gas		A		A	A	A	X	A	X	A	X	B	A	A
Nickel Acetate				A	B10%	B	A	B		B	A		A	X
Nickel Chloride	X	A	A	B	X	A	A	A	X	A	A		A	A
Nickel Nitrate	A	A	A	A	X	A	A	A		A			A	A
Nickel Sulfate	A ¹	A	A	A	X	A	A	A		A	A	A	A	A
Nitric Acid (10%)	X	A	A	A	A	X	B	X		B	A	X	A	A
Nitric Acid (20%)	X	A	A ²	A	X	X	B	X		X	A	X	A	A
Nitric Acid (30%)	X	B	A ²	A	X	X	X	X		X	B	X	A	A
Nitric Acid (50%)	X	B	A ²	A	X	X	X	X		X	X	X	A	A
Nitric Acid (70%)	X	X		A		X	X	X		X	X	X	A	A
Nitric Acid (Concentrated)	X	X	A ¹	A	X	X	X	X		X	X	X	A	A
Nitric Acid (Red Fuming)	X	X	X	A	X	X	X	X		X	X	X	A	B
Nitrobenzene	B ¹	B ¹	A ¹	B	X	X	B	X		X	B	X	A	B
Nitroethane			X	A	A	X	X	X		X	A		A	X
Nitrogen Tetroxide		X	X	A	A	X	X	X		X			A	X
Nitromethane	B ¹	X	A ²	A	A	X	X	X		X	A	X	A	X
1-Nitropropane				A	A	X	A	X		X	A		A	X
Nitrous Acid		A	B	B	X		A			X	A		A	B
Nitrous Oxide	X	X	X	B	B		A			A	A		A	B
n-Octane	A	X	A			A	X	A			B		A	A
Oils:														
Aniline	X	B ¹	A100°F	A	B	X	B	X		X	B	X	A	X
Animal Fats & Oils				A	A	A	B	A		X	B	B	A	A
Anise				A						X	X		A	
Bay			A	A						X	X	X		A
Bone		A	A	A		A		A		X	X	X	A	A
Castor			A	A	A	A	B	A	B ¹	A	B	A	A	A
Cinnamon				A						X	X		A	
Citric		A	A	A	A	X	X	X		X	X		A	A
Clove		B		A				A		X	X		A	A
Coconut		A	A	A	B	B	A	A		B	B	A	A	A
Cod Liver				A	A	B	A	A		B	X	A	A	A
Corn		A	A	A	B	A	X	A	A	X	B	A	A	A
Cottonseed	A	A	A	A	A	A	A	B	A ¹	X	B	A	A	A
Creosote (Coal Tar)	X	X		A	A	A	X	A		X	B	B	A	A
Diesel Fuel (20, 30, 40, 50)	A	B ¹	A	A	A	B	X	B	A ¹	X	X	X	A	A
Fish				A	A	A		B			B		A	A
Fuel (1, 2, 3, 5A, 5B, 6)	A ¹	B ¹	A	A	A	X	X	X	A	X	X	B	A	A
Ginger			A	A		A		A		A	X	X	A	A
Hydraulic (Petroleum) See Hydraulic														
Hydraulic (Synthetic) See Hydraulic														
Oils Continued:														
Lavender				A		B	X	B		X	B		A	B
Lemon			A	A	A					X	X		A	A
Linseed	A ¹	A	A	A	A	A	X	A	B ¹	A	B	B	A	A
Mineral	A	B	A	A	A	A	X	A	A	B	X	A	A	A
Neatsfoot				A		A	X	B					A	A
Olive	A	A	A	A	A	A	X	A		X	B	A	A	A
Orange		A	A	A	A	A		A		X	X	X	A	A
Palm			A	A	A	A		A		X	B		A	A

Footnotes:

1. Safe to 72 deg F (22 deg.C)
2. Safe to 120 deg F (48 deg.C)

Use only "A" rated material/fluid combinations

CHEMICALS	PLASTICS			METALS		ELASTOMERS								
	Nylon	Polypropylene	PVDF	316 Stainless Steel	Aluminum	Nitrile (Buna-N)	EPDM	Geolast®	Hytrel®	Neoprene	Santoprene®	Polyurethane	PTFE	Viton®
Peanut			A	A	A	A	X	A		B	B	B	A	A
Peppermint			A	A	X	X		X		X	X		A	A
Petroleum (Crude Oil)	A	B	A	A	A	A	X	A		X	X	X	A	A
Pine	A		A	A	A	B	X	B		X	X	A	A	A
Rapeseed			A	A		B	A	A		X	B	B	A	A
Rosin	A ¹	A	A	A	A	A		A			A		A	A
Sesame Seed			A	A	A	A		A		X	B		A	A
Silicone	A ¹	A	A	A		A	X	A	A	X	X	A	A	A
Soybean	B ¹	A	A	A	A	A	X	A	B	X	B	B	A	A
Sperm (whale)			A	A		A		A		X	B		A	A
Tall (Liquid Rosin)		A	A	B	X	A	X	A		B	A		A	A
Tanning			A	A		A		A		X	B		A	A
Transformer	A ¹	B	A	A	A	B	X	B		X	X	X	A	A
Tung (Wood Oil)				A	A	A	X	A		X	B	X	A	A
Turbine	A	B ¹	A	A	A	B	X	B		X	X		A	A
Vegetable	A ²	A ²	A	A	A	A	B	B		X	A	A	A	A
Oleic Acid	B ²	B	A	A	B	X	X	B		X	B	B	A	B
Oleum 100% (Fuming Sulfuric)		X	X	A	X	X		X		X	X	X	A	A
Oxalic Acid (cold)	B ²	B	A ²	A	X	X	A	X	A	B	A	A 5%	A	A
Ozone	X	X	A	A	B	X	A	X		B	A	A	A	A
Palmitic Acid	X	A	A	A	X	A ²	B ¹	A ²	A	X	B	A	A	A
Paraffin	A ¹	A	A	A	A	A	A	A			A		A	B
Paraformaldehyde				A	A10%	B		B		B			A	X
Pentachloroethane (Pentalin)				A	X	X		X		X			A	A
Pentachlorophenol (PCP)				A	A	X	X	X		X			A	A
Pentane	A		A	X	A	A	X	A		X	A	X	A	A
Perchloric Acid	X	X	A	X	X	X	X	X		A	X	X	A	A
Perchloroethylene (Tetrachlorethylene)	X	X	A	A	X	X	X	X		X	X	X	A	A
Petrolatum	X	X	A	A	B	A	B	A		B	B		A	A
Petroleum (See Oils) (See Crude)														
Phenol (See Carboic Acid)														
Phenyl Sulfonic Acid				B	B	X		X					A	X
Phenyl Hydrazine		X	A ²		A	X	X	X		X	B	X	A	A
Phosphoric Acid - 20%	X	A ²	A	A	X	X	A	X		X	A	X	A	A
Phosphoric Acid - 50%	X	A ²	A	A	X	X	B	X		X	A		A	A
Phosphoric Acid (Concentrated)	X	A ²	A	B	X	X	B	X		X	B		A	A
Phosphorus		A	A ¹	A ²	B								A ²	
Phosphorus Trichloride		X	A	A	X	X	A ¹	X		X	A		A	A
Photographic Developer	X	A	A	A	X	A		A		A	A		A	A
Phthalic Acid	B ¹	A	A	A	B ²	X	A ¹	X		A	A ¹		A ²	A ¹
Phthalic Anhydride		X	A	A	A	X	A	X		A	A		A	A
Pickling Solution (20% nitric acid, 4% HF)							X			X	A	X	A	B
Pickling Solution (17% nitric acid, 4% HF)							X			X	A	X	A	B
Picric Acid (Carbozoatic Acid)	X	B ¹	A ¹	X	X	B	B	B		B	B	B	A	A
Plating Solutions														
Antimony	X	A	A ¹	A		A				A	A		A	A
Arsenic	X	A		A		A				A	A		A	A
Brass	A	A	A	A		A				A	A		A	A
Bronze	A	A		A		A				A	A			A
Plating Solutions continued														
Cadmium	A	A	A			A				A	A		A	A
Chrome	X	A	A	A						X	A		A	A
Copper	A	A	A			A				A			A	A
Gold	A ¹	A	A	A		A				A			A	A
Iron		A	A	A		A				A			A	A
Lead		A	A			A				A			A	A
Nickel	A	A	A			A				A			A	A
Silver	A ²	A	A	A		A				A			A	A
Tin		A	A	A		A				A			A	A

Footnotes:

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Use only "A" rated material/fluid combinations

CHEMICALS	PLASTICS			METALS		ELASTOMERS								
	Nylon	Polypropylene	PVDF	316 Stainless Steel	Aluminum	Nitrile (Buna-N)	EPDM	Geolast®	Hytre®	Neoprene	Santoprene®	Polyurethane	PTFE	Viton®
Zinc		A	A	A		A				A			A	A
Polyvinyl Acetate Emulsion (See Glue PVA)														
Potash (Potassium Carbonate)	A	A	A	B	X	A	A ¹	A		A	A	X	A	A
Potassium Acetate		A	A	B	X	B	A	A		B	A		A	X
Potassium Bicarbonate	A ¹	A	A	B	X	A	A	A		A	A		A	A
Potassium Bisulfate		A	A	A 10%	A 10%	A		A		A			A	A
Potassium Bisulfite				B 10%	B 10%	A		A		A			A	A
Potassium Bromide	A ¹	A	A	B 90%	X	A	A	A		A	A		A	A
Potassium Carbonate (See Potash)														
Potassium Chlorate	X	A	A	B	X	A	A	A		A	A		A	A
Potassium Chloride	B	A	A	X	X	A	A	A	B	A	A	A	A	A
Potassium Chromate	A	A	A	B	A	A	A ²	A		A	A		A	A
Potassium Cyanide Solutions	A ¹	A	A	B	X	A	A ¹	A	B	A	A	A	A	A
Potassium Dichromate	X	A	A	A	A	A	A ¹	A		A	A	A	A	A
Potassium Ferricyanide	B ¹	A ²	A	B ¹	B ²	X	A	X		A ¹	A		A	A
Potassium Ferrocyanide	B ¹	A	A	B	B ¹	X	A	X		A	A		A	A
Potassium Hydroxide (Caustic Potash)(See Lye)														
Potassium Hypochlorite	B ¹		A	B	X	A ¹	A ¹	A ¹		B ²	A		A	
Potassium Iodide		A	A	B ¹	B ¹	A ¹	A	A ¹		A	A		A	A
Potassium Nitrate	B ¹	A	A	B	B	A	A	A	B	A	A	A	A	A
Potassium Oxalate				B ¹	B ¹								A ²	
Potassium Permanganate	X	B	A	B	B ¹	X	A	X		X	A		A	A
Potassium Sulfate	A ¹	A	A	A	B	A	A ¹	A	B	A	A	A	A	A ²
Potassium Sulfide	A	A	A	B	X	A	A	A		A	A	A	A	A
Propane (liquefied) (LPG)	A ¹	X	A	A	A	A	X	A	A	B	X	X	A	A
n-Propyl Acetate		X	A	A	A	X	A	X		X	A		A	X
n-Propyl Nitrate (NPN)						A	A	B	A		B		A	X
Propylene				A	A	X	X	X		X	B		A	A
Pyridine	X	X	X	B	A	X	X	X		X	X		A	X
Pyrogalllic Acid		A	A	B	B		B			A	A		A	A
Pyroigneous Acid (Wood Vinegar)	X	A	A	A10%	B	X	X	X		X	B		A	A
Resorcinol	X	A ²					B ¹			X	B		A ²	A ¹
Rosins	A ¹	A ²		A	A	A		A			A		A	
Rubber Latex Emulsions				A	A			A					A	A
Rum	A	A		A		A	A	A		A	A	X	A	A
Rust Inhibitors		A		A		A		A		X	B		A	A
Salad Dressings	A	A	A	A	B	A	A	A			A			A
Salicylic Acid	A	A	A	B	A	B	A	B		B	A		A	A
Salt Brine (See Sodium Chloride)														
Sea Water	A	B	A	A	B	A	A ²	A	A	B	A	A	A	A
Shellac (Bleached or Orange)	A ¹	A		A	A	A ²	A ²	A ²			B		A	A
Silicone	A ¹	A	A	A	B	A	B	A	A	A	B		A	A
Silicone Grease						A		A		A	B	A	A	A
Silver Bromide				B	X						A		A	
Silver Cyanide		A	A	A	X					A			A	
Silver Nitrate	A ¹	A	A	A	X	B	A	B		A	A	A	A	A
SKYDROL 500	X			A		X	A	X		X	B	X	A	X
Skydrol Hydraulic Fluid® (Phosphate Ester)	X			A		X	A	X		X	B	X	A	X
Soap Solutions	A	A	A	A	X	A	A	A	A	B	A	A	A	A
Sodium Acetate	B ¹	A	A	A	A	B	A	A		C	A	B	A	X
Sodium Aluminate	A ¹	A	A	A		A	A	A		A	A		A	A
Sodium Benzoate	B ¹	A ²	A ²		A ¹	B	A	B		A ¹	A		A ²	A ¹
Sodium Bicarbonate	A	A	A	A	B	A	A ²	A		A	A	B	A	A
Sodium Bisulfate	B	A	A	B	B	A	A ²	A		A	A	B	A	A
Sodium Bisulfite	X	A	A	B	B	A ²	A ²	A ²	B	A	A		A	A
Sodium Borate (See Borax)														
Sodium Bromide	A	A	A	B	X		A				A		A	
Sodium Carbonate (Soda Ash)	B ¹	A	A	A	X	A	A ²	A	B	A	A	B	A	A
Sodium Chlorate	X	A	A	B	B	A	A	A		B	A	B	A	A

Footnotes:

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Use only "A" rated material/fluid combinations

CHEMICALS	PLASTICS			METALS		ELASTOMERS								
	Nylon	Polypropylene	PVDF	316 Stainless Steel	Aluminum	Nitrile (Buna-N)	EPDM	Geolast®	Hytrel®	Neoprene	Santoprene®	Polyurethane	PTFE	Viton®
Sodium Chloride	A ¹	A	A	A	B	A	A	A	A	A	A	A	A	A
Sodium Chromate	X	A	A	A50%	X	A		A		A	A		A	A
Sodium Cyanide	A ¹	A	A	A	X	A	A ²	A	B	A	A	B	A	A
Sodium Dichromate	X	A	A				A			B	A	B	A	A
Sodium Ferrocyanide		A	A	B	A	A	A	A		A	A	B	A	A
Sodium Fluoride	A	A	A	X	B30%	A	A	A		A	A	B	A	A
Sodium Hydrosulfite	A				A	X	B	X		B	B	B	A	A
Sodium Hydroxide (< 10%) (Caustic Soda)	B	A	A150F	A	X	B	A	A	B	B ²	A	B	A	A
Sodium Hydroxide (< 50%) (Caustic Soda)	X	A	A120F	B	X	X	B	X	X	X	A	X	A	A
Sodium Hypochlorite	X	X	A	X	X	B	B	B	A	X	A	X	A	A
Sodium Hyposulfate				A	X					X			A	
Sodium Metaphosphate	A ¹	X		A	X	A	A	A		B	A	B	A	A
Sodium Metasilicate		A	A	A	B	A	A	A		A	A		A	A
Sodium Nitrate		A	A	A	A	X	A	X		B	A	B	A	A
Sodium Perborate	B ¹	A	A	A	X	B	A	B		B	A		A	A
Sodium Peroxide	A ¹	B	A	B	X	B	B	B		B	B	X	A	A
Sodium Phosphate (Tribasic) (TSP)	A ¹	A	A	B	X	B	A	B		B	A	A	A	A
Sodium Polyphosphate	A ¹	A	A	B	X	A	A	A		X	A	A	A	A
Sodium Silicate	A ¹	A	A	A	X	A	A	A		A	A	B	A	A
Sodium Sulfate	A	A	A	A	B	A	A	A		A	A	A	A	A
Sodium Sulfide	A ¹	A	A	A	X	A	A ²	A		A	A	A	A	A
Sodium Sulfite	B	A	A	A30%	A30%	A	A	A		A	A	A	A	A ²
Sodium Tetraborate	A	X		A	X	A		A			A		A	A
Sodium Thiosulfate (hypo) (Antichlor)	B	A	A	A	B	B	A	A		A	A	A	A	A
Sorghum	A			A		A		A		A	A			A
Stannic Chloride (Tin Chloride)	B	A	A	X	X	A	B	A		X	A	B	A	A
Stannic Fluoborate				A		A		A		A	A			A
Stannous Chloride	B	A	A	B	X	A	B	A		A ¹	B	B	A	A
Starch	A	A		A	A	A	B	A		A	A	A	A	A
Stearic Acid	A	B	A	A	X	B	B	B		B	A	A	A	A
Stoddard Solvent	A	B ²	A	A	A	B	X	B		X	X	B	A	X
Styrene (Vinyl Benzene)	A	X	X	A	A	X	X	X		X	X	B	A	B
Sugar (Liquids) (Sucrose Solutions)	A ¹	A		A	A	A	A	A		A	A	X	A	A
Sulfate (Liquors)	B ¹	A	A	X	B		A				A		A	A ¹
Sulfur Chloride	A ¹	X	A ¹	X	X	X	X	X		X	X	X	A	A
Sulfur Dioxide	X	X	A	A	X	X	B	X			A	B	A	A
Sulfur Hexafluoride						B	A	B		A	B	B	A	A
Sulfur Trioxide	A	X	X	B	X	X	X	X		X	X	X	A	A
Sulfuric Acid, fuming (20% Oleum) (See Olium)														
Sulfuric Acid (<10%)	X	A ²	A	X	X	X	A	B	A	B ²	A	X	A	A
Sulfuric Acid (10-75%)	X	A ¹	A ²	X	X	X	B ²	X		X	A	X	A	A
Sulfuric Acid (98%) (66° Baume')	X	X	A150F	X	X	X	X	X		X	A	X	A	A
Sulfurous Acid	X	A	A	B	X	X	X	A		X	A	X	A	A
Sulfuryl Chloride	X	X	A	B	B	X	A			X	A		A	A
Tallow	A ¹	B	A	A	A	A	B	B			B	A	A	A
Tannic Acid	X	A	A	A	X	X	X	X	A	B	A	A	A	A
Tanning Liquors	A ¹	A		A	X	B ¹	B	B ¹		B	A		A	A
Tartaric Acid	B ¹	A	A	A	X	A	B	A		A ²	A	A	A	A
Terpineol (Terpilenol)		X	B ²	A	A	X	X	X		X	B	B	A	A
Tetra Bromomethane		X			X	X		X		X	X	X	A	A
Tetrachloroethane	X	X	A	A	X	X	X	X			X		A	A
Tetrachloroethylene	A ¹	X	A	A	X	X	X	X		X	X	X	A	A
Tetrahydrofuran (THF)	A	X	B ¹	A		X	X	X	B	X	B	X	A	X
Tetrahydronaphthalene (Tetralin)	A	X		A	A	X	X			X	X		A	A
Thionyl Chloride	X	X	X	A	X	X	X	X		X	B		A	B
Tin Salts		A	A	X	X	A	B	A			B	B	A	A
Titanium Tetrachloride	A	B	A150F	B	X	X	X	X		X	X	X	A	A
Toluene (Toluol)	A ¹	X	A	A	A	X	X	X	B	X	X	X	A	X
Toluene Diisocyanate							B	B		X			A	

Footnotes:

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Use only "A" rated material/fluid combinations

CHEMICALS	PLASTICS			METALS		ELASTOMERS								
	Nylon	Polypropylene	PVDF	316 Stainless Steel	Aluminum	Nitrile (Buna-N)	EPDM	Geolast®	Hytrel®	Neoprene	Santoprene®	Polyurethane	PTFE	Viton®
CHEMICAL COMPATIBILITY REFERENCE ONLY														
Toluidine				A	A	X		X					A	B
Tomato Juice	A	A	A	A	B	A	A	A			A		A	A
Transmission Fluid, automatic (Type A)				A	A	A	X	A		X	X	A	A	A
Triacetin					B	A	A	A		B	A	X	A	X
Tributyl Phosphate (TBP)		A ¹	A ¹	A	A	X	X	X		X	B	X	A	X
Trichloroacetic Acid (TCA)	X	B	A ¹	X	X	X	X	X		B	B	X	A	B
Trichlorobenzenes	X	B	X	A	X	X		X		X			A	B
Trichloroethane	X	X	A	A	X	X	X	X		X	X	X	A	B
Trichloroethylene	X	X	A	A	X	X	X	X		X	X	X	A	X
Trichloropropane		X		A	X	X		X		A	X		A	B
Tricresylphosphate	A ²	B	X	B		X	A	X		X	B	X	A	B
Triethanol Amine (TEA)	A ¹	A ¹	A ¹	A	B	X	B	X		B	A	B	A	X
Triethylamine		X	A ²	A		X	A	A		B	A		A	
Trimethylene Glycol				A	A	A	A	A			A		A	A
Trisodium Phosphate	A	A	A	B	X	A	A	A	A	A	A	B	A	A
Turpentine	B	X	A	A	A	A	X	A		X	X	X	A	A
Urea	A	A	A	X	B	B		B		B		B	A	A
Uric Acid	A			B	X					A			A	
Urine	A ¹	A	A	A	A	A		A		X	A		A	A
Valeric Acid					A	X	A	X		X	A		A	
Vanilla Extract (Vanillin)				A		A		A		X		X	A	X
Varnish	X	A	A	A	A	B	X	B		X	B	B	A	A
Vegetable Juice				A	X	A	A	A		X	A	A	A	A
Vinegar	X	A	A	A	X	X	A	X		B	A	B	A	A
Vinyl Acetate		B	A	A	B	X		X		B			A	X
Vinyl Chloride (Chlorethylene)	A ¹	X	B	A	X	X	X	X		X	X		A	A
Water, Deionized	A ¹	A	A	A	A	A	A	A		B	A	A	A	A
Water, Acid, Mine	B	A	A	B	X	A	A	A		X	A	A	A	A
Water, Distilled	A ¹	A	A	A	A	A	A	A		B	A	A	A	A
Water, Fresh	A ¹	A	A	A	A	A	A	A	A	B	A	A	A	A
Water, Salt, (See Brine)														
Weed Killers	A			A	X	B		B		X	B		A	A
Whey			A	A	B	A		A			A		A	A
Whiskey & Wines	A ¹	A	A	A	A	A	A	A		A	A	X	A	A
White Liquor (Pulp Mill)		A	A	A	B	B	A			A	A		A	B
White Water (Paper Mill)	A	A	A	A						A	A		A	A
Xylene	A ²	X	A	B	A	X	X	X	B	X	X	X	A	A
Zinc Acetate, aqueous				A	X	X	X	A		X	A	X	A	X
Zinc Carbonate				B	B	A		A					A	A
Zinc Chloride	X	A	A	X	X	A	A	A	A	A	A	A	A	A
Zinc Hydrosulfite		A	A	A	X	A		A		A			A	A
Zinc Sulfate		A	A	A	X	A	A	A		A	A	B	A	B

Footnotes:

1. Safe to 72 deg F (22 deg.C)
 2. Safe to 120 deg F (48 deg.C)