



VERSA-MATIC[®]

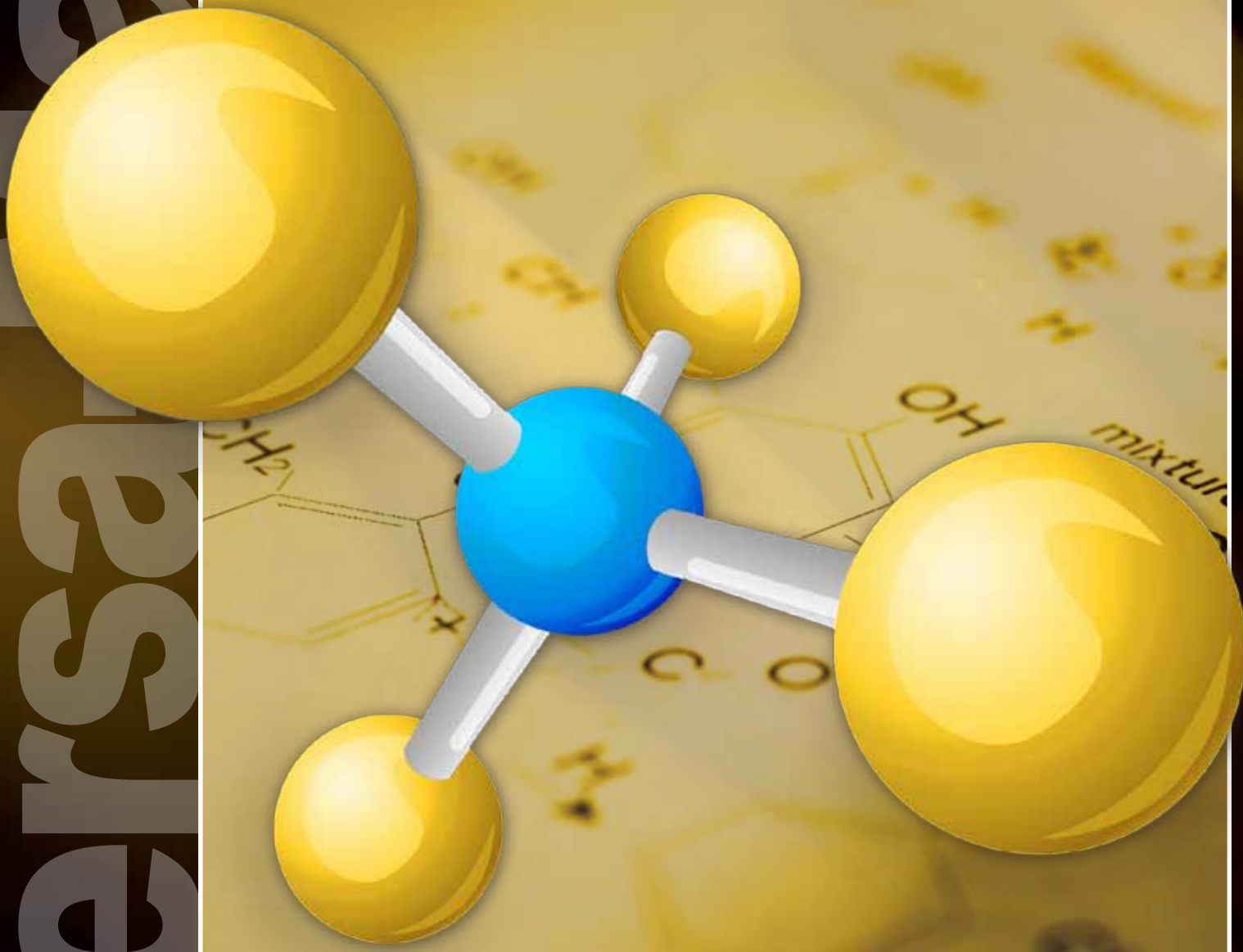
Chemical Resistance

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CHEM GUIDE

CHEM GUIDE

CHEMICAL COMPATIBILITY GUIDE



Versa

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Versa-Matic® Pump Materials of Compatibility Guide

This publication is intended as a general guide for **pump material selection**. It includes many common liquids used in chemical, paint, industrial and food processing applications.

This chart has been compiled using many sources, all believed to be reliable. However, the information accuracy of these ratings cannot be guaranteed. Due to the extensive scope of this field, the tabulation is not complete, nor is it conclusive.

Corrosion is the destructive attack of metals by chemical or electrochemical reaction with its environment. Corrosion rates vary widely with concentration, temperature and the presence

of abrasives. Impurities or other trace elements common in industrial liquids may inhibit or accelerate corrosion. Aeration or deaeration of the substance being pumped can also affect the rate of corrosion. Materials used in the pump and pumping systems must be chemically compatible.

Elastomers are subject to destructive attack by chemicals or solvents. Attack may be evident as hardening, swelling, loss of elasticity, increased permeability, or more subtle changes.

CAUTION: Plastic pumps and components are not UV stabilized. Ultraviolet radiation can damage these parts and negatively affect material properties. Do not expose to UV light for extended periods of time.

In general, destructive reaction on all materials of construction increases as temperatures increase. Temperature limitations are listed here.

Halogenated Solvents Warning

The corrosive action of halogenated solvents which come in contact with aluminum or galvanized wetted parts can, in certain situations, cause an explosion. Solvent manufacturers typically add inhibitors to prevent this corrosive action, but there is no guarantee that the inhibitors will work in all circumstances. This is especially true of reclaimed or used solvents in which the inhibitors are degraded. Versa-Matic® advises that stainless steel or PVDF pumps be used to pump halogenated solvents.

Consult your material supplier for compatibility with aluminum.

Typical examples of halogenated hydrocarbon solvents include, but are not limited to, the following:

- | | |
|-----------------------------|---------------------------|
| Carbon Tetrachloride | Methylene Chloride |
| Chloroform | Trichloroethane |
| Dichlorethylene | Trichloroethylene |
| Methyl Chloride | |

Elastomer Material Color Code

NITRILE.....	Black w/ Red Dot
FDA HYTREL®	Cream
NEOPRENE	Black w/ Green Dot
E.P.D.M.....	Black w/ Blue Dot
PTFE	White
POLYURETHANE	Pale Yellow
PFA.....	White
FLUOROCARBON (VT)	Black w/ Silver Dot
XL TPE (Santoprene®).....	Tan or Bright Yellow
XL TPE (FDA Santoprene®).....	Tan

These colors are used for Versa-Matic® manufactured elastomer products. The color codes of products made by other manufacturers may differ from those made by Versa-Matic.

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available.

Materials of Construction, Temperature Limits & Compatibility

Materials of Construction — Pumps

MODEL	Acetal®	Aluminum	Cast Iron	Hastelloy C	Polypropylene	PVDF	Stainless Steel
E6 (1/4")	■				■	■	
E8 (3/8")					●	●	
E5 (1/2")	●	●		●	●▲	●▲	●
E7 (3/4")		●					
E1 (1")		●		●	●▲	●▲	●
E4 (1-1/4" – 1-1/2")		■	■	●■	●	●	●■
E40 (1-1/2")		●	●				●
E2 (2")		●■	●■	●■	●	●	●■▲▼
E2-FV (2")		■					
E3 (3")		●■	■	●■	●	●	●■

● Bolted Construction ■ Clamped Construction ▲ Split Manifold Model Available ▼ High Pressure Model Available

Diaphragms, Valve Balls, Valve Seats & Valve Seat O-rings

	Aluminum	Nitrile	PVDF	Neoprene	EPDM	Polypropylene	Polyurethane	316 Stainless Steel	PTFE			Encapsulated Silicone	Thermoplastics		(FKM) Fluorocarbon
									Tet-Matic™	Versa-Tuff™	FUSION™		Santoprene® (TPE XL)	FDA Hytrel®	
ELASTOMERS															
DIAPHRAGMS			●		●	●				●	●		●	●	●
VALVE BALLS			●		●	●		●	●				●	●	●
VALVE SEATS		●	●	●	●	●	●	●	●				●	●	●
VALVE SEAT O-RINGS			●			●					●		●		●

Temperature Limits

NEOPRENE	-10°F (-23°C) to +200°F (93°C)
NITRILE	-10°F (-23°C) to +190°F (88°C)
E.P.D.M.	-40°F (-40°C) to +280°F (138°C)
(FKM) FLUOROCARBON	-40°F (-40°C) to +350°F (176°C)
PTFE	-35°F (-37°C) to +220°F (105°C)
POLYURETHANE	+32°F (0°C) to +150°F (66°C)
SANTOPRENE® (XL TPE)	-40°F (-40°C) to +275°F (135°C)
PFA	-20°F (-29°C) to +300°F (149°C)
FDA HYTREL	-20°F (-29°C) to +220°F (104°C)

METALLIC PUMPS can operate past 212°F (100°C). However, if you are operating above these limits, consult the factory for assistance.

PLASTIC PUMPS can operate to the following temperature limits:

• ACETAL	-20°F (-29°C) to 190°F (88°C)
• POLYPROPYLENE	32°F (0°C) to 180°F (82°C)
• PVDF	0°F (-18°C) to 250°F (121°C)

NOTE: These are average temperatures. Chemicals and solvents can have an effect on temperature limit.

Wetted Material Compatibility

Fluid Solutions	Numeric pH Level	Wetted Section Construction Metals
ALKALINE	14	STAINLESS STEEL
	13	
CAUSTIC	12	CAST IRON
	11	
BASIC	10	ALUMINUM
	9	
NEUTRAL	8	CAST IRON
	7	
ACID	6	STAINLESS STEEL
	5	
ACID	4	STAINLESS STEEL
	3	
ACID	2	STAINLESS STEEL
	1	
ACID	0	

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Acetaldehyde (Ethanal) CH ₃ CHO	X	X	X	A	B	X	A	B	A	B	A	A	C	A	A ^{150°}
Acetamide (Acetic Acid Amide) CH ₃ CONH ₂	X	B	B	A		B	A	A	A	X	X	A	A		A ^{140°}
Acetate Solvents CH ₃ COOR		X	X			X	A	B	A		A		X	A	A
Acetic Acid — 20%	B	B	C	A	A	C	A	B		A	A	C	B	A	B
Acetic Acid — 30%	X	B	C	A	A	X	A	B	X	A	A	C	B	B	B
Acetic Acid — 50% CH ₃ COOH	C	C	C	A		C	A	B	X	A	A	C	B	B	B
Acetic Acid — Glacial CH ₃ COOH	X	X	C	B	A	X	A	B	B	X	A	A	C	B	A ^{120°}
Acetic Anhydride (Acetic Oxide) (CH ₃ CO) ₂ O	X	B	C	B	C	X	A	A	B	90%B ^{212°}	A	A	X	X	B ^{70°}
Acetone (Dimethylketone) CH ₃ COCH ₃	X	X	X	A	C	X	A	B	B	A	A	A	X	B ^{120°}	X
Acetone Cyanohydrin (CH ₃) ₂ C(OH)CN	X	B	X	X		X	A	A	B	B	B				
Acetonitrile (Methyl Cyanide) CH ₃ CN		A	C	A		X	A	A	A	A	A	B ^{100°}		A	A
Acetophenone (Phenyl Methyl Ketone) C ₆ H ₅ COCH ₃	X	X	X	A		X	A	B	B	A	A	B	A ^{70°}		A
Acetyl Acetone (2,4-Pentanedione) CH ₃ COCH ₂ COCH ₃	B	X	X	A		X	A	B	X	B	B				
Acetyl Chloride CH ₃ COCl		X	X	C	X	B	A	B	X	A	B	A	X		A
Acetylene (Ethyne) HC ^o CH		C	A	A	A	A	A	C	A	A	A	A	X	A	A
Acetyl Salicylic Acid (Aspirin) (CH ₃ OCO) • C ₆ H ₄ COOH		X		B			A	A	X	B	B				
Acetylene Tetrabromide (Tetra Bromoethane) (CHBr ₂) ₂		X	X			A	A	X	X	A					
Acrolein (Acrylaldehyde) H ₂ C = CHCHO			B			A	A	A	B	B	B				
Acrylonitrile (Vinyl Cyanide) CH ₂ =CHCN		X	X	X		X	A	B	A	A	A	A	B		A
Adipic Acid (1,4-Butanedicarboxylic Acid)		X	B			A	A	B	B	B	B	A	A		A
Allyl Alcohol (2-Propen-1-ol) CH ₂ CHCH ₂ OH		A	A	A		B	A	B	A	A	A				A
Alcohols R-OH					B							A	A	A	A
Amyl (1-Pentanol) C ₄ H ₉ CH ₂ OH		B	B			B	A	A	B		A	A	B	A	A
Benzyl (Phenylcarbinol) C ₆ H ₅ CH ₂ OH		B	X			A	A	A	B		A	A	A		A
Butyl (Butanol) C ₃ H ₇ CH ₂ OH		A	A			A	A	A	B		A	A	B	A	A

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Diacetone (Tyranton) (CH ₃) ₂ C(OH) CH ₂ COCH ₃	C	X	X	B		X	A	C	A	A	A	A	X	A	A
Ethyl (Ethanol) CH ₃ CH ₂ OH	X	A	A		X	B	A	B	B	B	A	A	A ^{100°}		A
Hexyl (1-Hexanol) C ₆ H ₁₃ CH ₂ OH			B	A			A	A	B	A	A	A	A ^{70°}		A
Isobutyl (2-Methyl-1-Propanol) C ₄ H ₉ CH ₂ OH	X	A	C				A	A	A	B		A	A		A
Isopropyl (2-Propanol) H ₃ CCH(OH)CH ₃			B	C			A	A	B	B	C	A	A	A	A ^{150°}
Methyl (Methanol) CH ₃ OH			A	A	X		X	A	A	B	A	A	A	A ^{120°}	A
Octyl (Caprylic Alcohol) C ₇ H ₁₅ • CH ₂ OH			B	B			A	A	B	A		A	A		
Propyl (Propanol) C ₂ H ₅ CH ₂ OH			A	A			A	A	A	A		A	A	A	A ^{120°}
Allyl Bromide (3-Bromopropene) H ₂ C=CHCH ₂ Br			X	X	X		B	A		X	A				
Allyl Chloride (3-Chloropropene) CH ₂ =CHCH ₂ Cl			X	X	X		B	A		X	C	B		A ^{70°}	A
Alkazene® (Chlorethyl or Polyisopropyl benzenes)			X	X			A	A	X						
Almond Oil (Artificial)	X	X	X	B		X	A								
Alum (Aluminum Potassium Sulfate Dodecahydrate) KAl(SO ₄) ₂ • 12H ₂ O			A	A	A		X	A	A			B	B	A	A
Aluminum Acetate (Burow's Solution)			C	C	A		X	A	A		B	C	A	A	A ^{100°}
Aluminum Bromide AlBr ₃			A	A				A							A
Aluminum Chloride AlCl ₃	B	A	A	A	B	A	A	20%A	X	C	B	25%A	A	B	A
Aluminum Fluoride AlF ₃			A	A	B		A	A	A	50%A	C	C	20%A	A	X
Aluminum Hydroxide (Alumina Trihydrate) Al(OH) ₃			A	B	A		C	A	A	10%B	30%B	B	10%B	A	A
Aluminum Nitrate Al(NO ₃) ₃ • 9H ₂ O			A	A	A		A	A	A	X		0%A	0%B	A	A
Aluminum Phosphate AlPO ₄			A	A	A		A	A	A						
Aluminum Potassium Sulfate (Potash Alum) KAl(SO ₄) ₂			A	A	A		A	A	A	10%A	X	A	B	A	A
Aluminum Sodium Sulfate (Soda Alum) NaAl(SO ₄) ₂	A	A	A	A			A	A							

Rating specific to % of concentration. Temperature shown is °F. Where not shown, temperature is 70°F (21°C) Ambient.

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Aluminum Sulfate (Cake Alum) $Al_2(SO_4)_3$	A	A	A	A	B	A	A	A	30%B	X	50%A ^{167°}	90%A ^{212°}	A	B	A
Amines $R-NH_2$		B	X		A ^{70°}	X		A	A		A		B	C	
Ammonia Anhydrous, Liquid NH_3	X	B	B	A	X	X	A	A	A	A	A	A	A	X	A
Ammonia Gas — Cold		A	A			A	A	A							
Ammonia Gas — Hot		B	C			X	A	A							
Ammonia Liquors		A				X	A	A	A	A	A				
Ammonium Nitrate NH_4NO_3		B	A	A	B	A	A	A	B	B	A	A	A	B	A
Ammonium Cupric Sulfate $(NH_4)_2Cu(SO_4)_2$			A			A	A								
Ammonium Acetate $CH_3CO_2NH_4$		A				A	A	A	50%B	50%A					
Ammonium Bicarbonate NH_4HCO_3		A	A	A		A	A	B	B	90%B					
Ammonium Bifluoride — 10% NH_4HF_2		X	B				A	A	C	X	B	B	A		A
Ammonium Carbonate $(NH_4)_2CO_3$		B	X	A		A	A	A	B	B	70%B ^{212°}	70%B ^{212°}	A		A
Ammonium Casenite		A						A			A				
Ammonium Chloride (Sal Ammoniac) NH_4Cl	A	A	A	A	A	A	A	A	X	X	B	A	A	X	A
Ammonium Dichromate $(NH_4)_2Cr_2O_7$		A	A	A			A	A	A	30%A					
Ammonium Fluoride NH_4F		B	B			20%A	A		10%B	20%B	B	40%A	B		A
Ammonium Hydroxide (Aqua Ammonia) NH_4OH	A	B	B	A		B	A	A	30%A	30%B	50%A	80%A	A	B	A
Ammonium Metaphosphate		A	A	A		A	A		90%B	B	B	A	A		A
Ammonium Nitrite NH_4NO_2		A	A				A	A					70%A		A
Ammonium Oxalate $(NH_4OOC)_2$		A	A					A			A	A			
Ammonium Persulfate $(NH_4)_2S_2O_8$	X	A	C	B		A	A	A	C	X	A		A		A
Ammonium Phosphate, Monobasic $(NH_4)H_2PO_4$		A	A	A	B	A	A	A	X	X	B	5%A	A		A
Ammonium Phosphate, Di-Basic $(NH_4)_2HPO_4$		A	A			A	A	A	B		A	A	A	B	A
Ammonium Phosphate, Tri-Basic $(NH_4)_3PO_4 \cdot 3H_2O$		A	A			A	A	A	X		B	B	A		A
Ammonium Sulfate $(NH_4)_2SO_4$	A	A	A	A	C	A	A	A	X	B	80%A ^{212°}	40%B	A	B	A
Ammonium Sulfide $(NH_4)_2S$		A	A			A	A		B		B	10%A			

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Ammonium Sulfite (NH ₄) ₂ SO ₃ ·H ₂ O			A			A	A		C	X	B	A ^{212°}	A	X	
Ammonium Thiocyanate NH ₄ SCN		A	A	A		A	A		C	C	50%A	50%A			
Ammonium Thiosulfate (NH ₄) ₂ S ₂ O ₃		A	A	A		A	A	A	40%A	X	10%A				
Amyl Acetate (Banana Oil) CH ₃ CO ₂ C ₅ H ₁₁	X	X	X	A	C	X	A	B	A	B	A	B	X	X	A ^{120°}
Amyl Alcohol (Pentyl Alcohol) CH ₃ (CH ₂) ₄ OH	X	A	B	A	A	A	A	B	A	A	A	B	A		A
n-Amyl Amine (1-Aminopentane) CH ₃ (CH ₂) ₄ NH ₂		X	C	X		X	A								
Amyl Borate C ₅ H ₁₁ BO ₃		B	A			A	A	B							
Amyl Chloride (Chloropentane) CH ₃ (CH ₂) ₄ Cl		X	X	X		A	A	C	X	A	A	B	X	A	A
Amyl Chloronaphthalene		X	B			A	A	C							
Amyl Naphthalene C ₁₅ H ₁₈		X	X	X		A	A	C							
Amyl Phenol C ₆ H ₄ (OH)C ₅ H ₁₁			X			A	A		A	A	A	A			
Aniline (Aniline Oil) (Amino Benzene) C ₆ H ₅ NH ₂	X	X	X	C	X	B	A	B	B	A	A	B	A	A	A
Aniline Dyes	X	C	C	C		B	A	B	B	C	B				
Aniline Hydrochloride C ₆ H ₅ NH ₂ ·HCl		X	C			B	A	A	X	X	X		X		A
Animal Fats & Oils	A	C	A	B	B	A	A	C	A	X	A	A			A
Animal Gelatin	A	A	A	A		A	A				A				
Anisole (Methylphenyl Ether) C ₆ H ₅ OCH ₃		X				X	A		B	B	B	B			
Ansul Ether		X	C			X	A	X							
Anthraquinone C ₁₄ H ₈ O ₂							A		B	B	B	A			
Anti-Freeze (Alcohol Base)	X	A	A	A		A	A		A	A	A	A			
Anti-Freeze (Glycol Base) (Prestone® Etc.)	B	B	A	A		A	A	A	A	A	A	A			
Antimony Pentachloride SbCl ₅			X				A		A	A	A	A			
Antimony Trichloride SbCl ₃			B	A		A	A		B	A	A	B	A		A
Aqua Regia (Nitric & Hydrochloric Acid)	X	X	X	X		B	A	X	X	X	X	C	C	X	A
Aroclor® PCB mixtures		X	C	X		A	A		A	B	A	90%A	X		
Aromatic Hydrocarbons C ₆ H ₅ R		X	X		C	A	A	C	A	A	A				
Aromatic Solvents (Benzene Etc.)	X	X	C	X		B	A		A	B	A	B			

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	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Arsenic Acid AsH ₃ O ₄	X	A	B	A		A	A	A	A	X	B	B	A		A
Arsenic Trichloride (Arsenic Butter) AsCl ₃		A	C	X		X	A	B	B	B	X	B			
Ascorbic Acid C ₆ H ₈ O ₆						A	A		A	X	A				
Askarel® (Pyranol®) PCB mixtures	X	X	B	X		C	A	X			A				
Asphalt Hydrocarbons	B	C	B	X	B	A	A	B	A	B	A		A	B	A
Asphalt Topping Hydrocarbons		A	C		B	C	A			A	A				
ASTM — Ref Motor Fuel A (Aliphatic) Hydrocarbons	A	B	A	X	A	A	A		A	A	A	A			
ASTM — Ref Motor Fuel B (30% Aromatic) Hydrocarbons	B	X	A	X	A	A	A		A	A	A	A			
ASTM — Ref Motor Fuel C (50% Aromatic) Hydrocarbons	X	X	B	X	C	A	A		A	A	A	A			
ASTM — Ref #1 Oil (High Aniline) Hydrocarbons	A	B	A	X	A	A	A	A	A	A	A	A			
ASTM — Ref #2 Oil (Medium Aniline) Hydrocarbons	B	B	A	X	A	A	A	A	A	A	A	A			
ASTM — Ref #3 Oil (Low Aniline) Hydrocarbons	B	C	A	X	A	A	A	B	A	A	A	A			
ASTM — Ref #4 Oil (High Aniline) Hydrocarbons	X	X	B	X		A	A		A	A	A	A			
Aviation Gasoline Hydrocarbons		C	A	X		A	A		A	A	A	A			
Barbeque Sauce Water, oils, spices		A	A				A			X	A				
Barium Carbonate BaCO ₃		A	A	A		A	A	A	X	B	B	B	A		A
Barium Chloride Dihydrate BaCl ₂ • 2H ₂ O	A	A	A	A		A	A		50%B	B	B ^{212°}	B		A	A
Barium Cyanide Ba(CN) ₂		A	C		X	A		A			A		X		
Barium Hydroxide (Barium Hydrate) Ba(OH) ₂	A	A	A	A	B	A	A	A	X	B	50%A ^{122°}	B	A		A
Barium Nitrate Ba(NO ₃) ₂		A	A						B	A	A	A	A	B	A
Barium Sulfate (Blanc Fixe) BaSO ₄	A	A	A	A	X	A	A	A	B	B	B		A	B	A
Barium Sulfide BaS	A	A	A	A		A	A	A	X		B	A	A		A
Beef Extract		A	A							X	A				
Beer Water, carbonate	X	A	C	A	B	A	A	A	A	X	A	A	A ^{75°}	A	A ^{175°}
Beet Sugar Liquors (Sucrose)	X	A	A	A		A	A	A	A	B	A		A	B	A

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(N) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Benzaldehyde C ₆ H ₅ CHO	X	X	X	B	B	X	A	B	A	A	A	A	X		A
Benzene (Benzol) C ₆ H ₆	X	X	X	X	C ^{70°}	B	A	C	B	B	A ^{167°}	B	X	A	B
Benzene Sulfonic Acid C ₆ H ₅ SO ₃ H		A	C	C		A	A		C	A	A	90%A	X		B ^{100°}
Benzoic Acid (Benzene Carboxylic Acid) C ₆ H ₅ COOH		B	X	B		A	A		B	X	B	70%A	X	B	A
Benzoyl Chloride C ₆ H ₅ COCl	X	X	X	X		B	A		X	A	B	B			A
Benzyl Acetate CH ₃ CO ₂ • H ₂ C ₆ H ₅			X			X	A		A	A	A	B			
Benzyl Alcohol C ₆ H ₅ CH ₂ OH		C	X	C		A	A		A	A	A	B	A		A
Benzyl Benzoate C ₆ H ₅ CO ₂ CH ₂ C ₆ H ₅		X	X	B		A	A	C	A	B	B	B			
Benzyl Chloride (Chlorotoluene) C ₆ H ₅ CH ₂ Cl	X	X	X	X		A	A	C	X	A	B	A	X	A	A
Benzyl Dichloride (Benzal Chloride) C ₆ H ₅ CHCl ₂			X				A		X	B	A	B			
Biphenyl (Diphenyl) C ₆ H ₅ C ₆ H ₅		X	X	X		A	A		A	A					
Bismuth Subcarbonate (Bismuth Carbonate) (BiO) ₂ CO ₃		A	A	A		A	A				10%B				
Black Sulfate Liquor	X	A	B	A	B	A	A		C	B	A	B			
Blast Furnace Gas CO, H ₂ , CH ₄ , CO ₂ , N ₂		A	C		B	A	A	A							
Bleach Solutions Water, chlorine, oxygen		X	X	A	C	B	A	B	X		B	A ^{125°}	X		
Borax (Sodium Borate) B ₄ Na ₂ O ₇	A	A	B	A	A	A	A	A	B	B	A	A	A	B	A
Bordeaux Mixture Copper sulfate salts		A	A	A	B	B	A	A			A	A			
Boric Acid (Boracic Acid) H ₃ BO ₃	A	A	A	A	A	A	A	A	A	X	30%A	80%A ^{167°}	A	C	A
Brake Fluid (Non-Petroleum Base) Silicones or glycols		A	X	A			A	A	A	A	A	A	X		
Brewery Slop		A	A			A	A	A		A	A				
Brine (Sodium Chloride) Salt water	A	B	A	A	B	A	A			X	A	A	A		A
Bromine — Anhydrous Br ₂ X	X	X	C	X	A	A	C	B	C	X	A	X		A ^{150°}	
Bromine Trifluoride BrF ₃	X	X	X	X		X	A	C	A		B		X		
Bromine Water		B	X	X		B	A	B	X	X	X	A	X		A

Rating specific to % of concentration. Temperature shown is °F. Where not shown, temperature is 70°F (21°C) Ambient.

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Bromobenzene C ₆ H ₅ Br	X	X	X	X		B	A	X	X	B	A	B	X		
Bromochloromethane BrCH ₂ Cl		X	X	B		C	A		X	B	B	B			
Bromotoluene C ₆ H ₄ BrCH ₃			X			B	A		X	A	A	A			
Bronzing Liquid	X	X	X	B		X	A	A			A	A			
Bunker Oil (Fuel) #5, #6 & C Hydrocarbons	C	B	A	X		A	A	B	A	A	A	A			
Butadiene C ₄ H ₆	X	C	X	C		C	A	C	A	A	A		X		A
Butane (LPG) (Butyl Hydride) C ₄ H ₁₀	B	B	A	X	A	A	A	C	A	A	A	A	X	B	A
Butter Fats	A	C	A	A	B	A	A	B	A	X	A				
Buttermilk Fats, water		A	A			A		A	A		A		A		A
Butyl Acetate CH ₃ CO ₂ (CH ₂) ₃ CH ₃	C	X	X	B	C	X	A	B	A	A	A	A	X	B	A ^{100°}
n-Butyl Acetate CH ₃ CO ₂ (CH ₂) ₃ CH ₃		X	X	X		X	A	A	A	A	A	A			
Butyl Acetyl Ricinoleate C ₂₄ H ₄₄ O ₅		X	C	C		B	A	B				A			
Butyl Acrylate CH ₂ CHCO ₂ C ₄ H ₉		X	X	X		X	A	C							C
Butyl Alcohol (Butanol) CH ₃ (CH ₂) ₃ OH	X	A	A	B	B	A	A	A	A	B	A	A	A		A
Butyl Amine (Aminobutane) CH ₃ (CH ₂) ₂ CH ₂ NH ₂	X	X	B	X		X	A	A	A	A	A		X	C	B ^{70°}
Butyl Benzoate C ₆ H ₅ COO • (CH ₂) ₃ CH ₃		X		B		A	A	C	B	B	B	B			
Butyl Bromide CH ₃ (CH ₂) ₂ CH ₂ Br			X			B	A								A
Butyl Butyrate CH ₃ (CH ₂) ₂ • CH ₂ CO ₂ C ₄ H ₉			X			X	A		A	A	A	A			
Butyl Carbitol® CH ₃ (CH ₂) ₃ OCH ₂ CH ₂ OCH ₂ CH ₂ OH		B	A	A		A	A	B							
Butyl Cellosolve® HOCH ₂ CH ₂ OC ₄ H ₉		C	B			C	A	A							B
Butyl Chloride (Chlorobutane) CH ₃ (CH ₂) ₃ Cl			X			A	A		X	B	B	B	X		A
Butyl Ether (Dibutyl Ether) (CH ₃ (CH ₂) ₃) ₂ O		B	A			C	A		A	B	A	A	X		A ^{100°}
Butyl Oleate C ₂₂ H ₄₂ O ₂		X		C		A	A	C							
Butyl Stearate CH ₃ (CH ₂) ₁₆ CO ₂ (CH ₂) ₃ CH ₃		X	A	C		B	A	C	B	B	B	B			A
Butylene (Butene) C ₄ H ₈	X	X	B	X		B	A	X	A		A		X		A

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Butyraldehyde CH ₃ (CH ₂) ₂ CHO	C	X	X	C		X	A	C	A	A	A	A			
Butyric Acid CH ₃ (CH ₂) ₂ CO ₂ H		X	C	C	B	C	A	A	A	X	B	A	A	X	A
Butyronitrile CH ₃ CH ₂ CH ₂ CN		X	X	A			A								
Calcium Acetate Hydrate Ca(CH ₃ COO) ₂ • H ₂ O		C	B	A		X	A		C	C	B	B			
Calcium Bisulfite Ca(HSO ₃) ₂	A	A	A	X	X	A	A		X	X	90%A	A		A	X
Calcium Carbonate (Chalk) CaCO ₃		A	A	A		A	A	A	C	B	B	B	A	A	A
Calcium Chlorate Ca(ClO ₃) ₂		A	A	A		A	A		30%B	B	0%B	70%B	A		A
Calcium Chloride (Brine) CaCl ₂ • 6H ₂ O	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A
Calcium Hydrosulfide (Calcium Sulfhydrate) Ca(HS) ₂ • 6H ₂ O			A			A	A								
Calcium Hydroxide (Slaked Lime) Ca(OH) ₂	A	A	A	A	B	A	A	A	X	B	50%B	50%A	A	X	A
Calcium Hypochlorite 20% (Calcium Oxichloride) Ca(ClO) ₂	X	X	C	B	5%A	B	A	A	X	X	B	B ^{125°}	A	A	A
Calcium Nitrate Ca(NO ₃) ₂	A	A	A	A		A	A	A	40%B ^{212°}	30%B ^{212°}	50%B ^{212°}	10%B	A	X	A
Calcium Oxide (Unslaked Lime) • CaO		A	A	A	B		A		A	A	A	A			
Calcium Silicate Ca ₂ SiO ₄			A			A	A		A	B	A	A			
Calcium Sulfate (Gypsum) CaSO ₄	B	A	A	A		A	A		A	C	10%B	10%A	A	A	X
Calcium Sulfide CaS	A	B	A	A		A	A	A	20%A	B	B	A	A ^{120°}		A
Calcium Sulfite CaSO ₃ • 2H ₂ O			A			A	A		10%B	B	10%A				
Calgon® (NaPO ₃) ₆		A	A			A		A		X	A		A		
Cane Juice, Sucrose, water		A	A					A	B	A	A		X		
Cane Sugar Liquors Sucrose, water	X	A	A	A	B	A	A	A	A	A	A		A		A
Capryl Alcohol (Octanol) CH ₃ (CH ₂) ₆ CH ₂ OH	X	B	A	C		B	A		A	A	A	A			
Caprylic Acid (Octanoic Acid) CH ₃ (CH ₂) ₆ COOH			C				A		A		A	A			A
Carbamate H ₂ NCO ₂ R	X	C	C	C		A	A	A							
Carbitol® CH ₃ CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₂ OH	X	C	B	C		C	A	B	A	A	A	A			

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CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Carbolic Acid (see Phenol) C ₆ H ₅ OH	X	C	X	C		A	A	A	B	A	B	A	C	X	A ^{150*}
Carbon Dioxide (Carbonic Acid Gas) CO ₂	A	A	A	B	A	A	A	A	A	A	A	A	A	A	A
Carbon Disulfide (Carbon Bisulfide) CS ₂	C	X	X	X	C	A	A	X	A	B	90%A		X	B	A
Carbon Monoxide CO	A	A	C	C	A	C	A	A	A	A	A	A	A	B	A
Carbon Tetrachloride (Tetrachloromethane) CCl ₄	X	X	C	X	X	A	A	X	X	C	B	A	X	B	A
Carbonated Beverages CO ₂ /H ₂ O	A	A	A				A	A	C		A	A	A		A
Carbonic Acid (liquid) H ₂ CO ₃		A	B		C	A	A	A	A	X	B	A	A	A	A
Casein a phosphoprotein		A	A	A		A	A		B		B	B			
Castor Oil a mixture of fatty acids	A	A	A	B	B	A	A	B	A	B	A	A			
Catsup (Ketchup)		C	A			A	A	A	B	X	A	A	A		
Cellosolve® (Glycol Ethers) HOCH ₂ CH ₂ OR		C	C	C	X	B	A	C	A		A	A	A ^{100*}	A	A
Cellulose Acetate C ₈ H ₁₂ O ₅		B	B			C	A		B	B	A	A			
Cellulube® Hydraulic Fluids (Phosphate Esters)		X	X	A	C	B	A	X	A	A	A	A			
Chlorinated Lime—35% Bleach CA(ClO) ₂	X	X	C	A	6%A	A	A	X		X	A				
Chlorinated Water		C	C		X	A	A		C		B	A	B	X	A
Chlorine, Dry Cl ₂		C	C		X	A	A	C	X	X			X	X	A
Chlorine, Wet Cl ₂ /H ₂ O	X	X	C	X	X	A	A	C	B	C	A	A	X	X	A
Chlorine, Anhydrous Liquid Cl ₂	X	X				A	A	X	X	X	A	X		A	
Chlorine Dioxide ClO ₂		X	X	C		B	A	X	B		X	B	X		A
Chlorine Trifluoride ClF ₃	X	X	X	X		B	A	X	A		A		X		
Chloroacetic Acid (Monochloroacetic Acid) ClCH ₂ COOH	X	C	X	B	X	C	A		X	X	X	A	A	X	A
Chloroacetone (Monochloroacetone) ClCH ₂ COCH ₃		C	X	A		C	A	C	X	B	B	B	X		
Chlorobenzene (Monochlorobenzene) C ₆ H ₅ Cl	X	X	X	X	X	A	A	C	X	B	B	B	X	A	A ^{150*}

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS							METAL PARTS				PLASTICS			
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(VT) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Chlorobutadiene (Chloroprene) C ₄ H ₃ Cl		X	X	X		A	A	C	X	B	B	B	X		
Chlorobromomethane ClCH ₂ Br		X	X			A	A	X	X	B	B		X		
Chloroform CHCl ₃	X	X	X	X	X	A	A	X	X	A	A	A	X	B	A
1-Chloronaphthalene C ₁₀ H ₇ Cl		X	X	X		C	A	X	X	B	B	A	X		
Chlorosulfonic Acid HSO ₃ Cl	X	X	X	X	X	X	A	A	B	B	B	A	X	X	X
o-Chlorophenol C ₆ H ₅ ClO		X	X	X		B	A		B	B	B	B		B	A
Chlorothene® (Chlorinated Solvents) CH ₃ CCL ₃		X	X			C	A	A	X	X	A	A			
Chlorotrifluoroethylene C ₂ H ₂ ClF ₃			X				A		B	B	B	B			
Chlorox®		B	C			A	A	B		X	A	B	B		
Chocolate Syrup Corn syrup, water, sugar		A	A				A	A		X	A		A		
Chromic Acid — To 10% H ₂ CrO ₄		X	X	A	X	A	A	X	10%B	B	X	B	X	X	A ^{120°}
Chromic Acid — 25%-50% H ₂ CrO ₄	X	X	X	C	X	A	A	X	X	B	X	B	A	X	A ^{120°}
Chromic Acid — Over 50% H ₂ CrO ₄	X	X	X	C	X	A	A	X	X	B	X	B	X	X	A ^{120°}
Cider (Apple Juice) Sucrose, water		A	A		B	A	A	A	B	X	A	A			
Cinnamon Oil Cinnamic acid esters		C					A	C		X	A				
Citric Acid C ₆ H ₈ O ₇ • H ₂ O	A	A	B	A	A	A	A	A	B	X	30%A	A	B	B	A ^{250°}
Citric Oils Citric acid esters		X	C	B		A	A	C		X	A		A		
Citrus Pectin Liquor		A	A			A	A				A				
Clove Oil (Eugenol) C ₁₀ H ₁₂ O ₂		C					A	C		X	A				
Cobalt Chloride CoCl ₂ • 6H ₂ O	X	A	A	C		A	A	A	X				A		
Coconut Oil (Coconut Butter) Fatty acid mixture	A	B	B	A		A	A	B	B	A	A				
Cod Liver Oil (Fish Oil) Glycerides, acids, esters	A	B	B	A		A	A	C	A	X	A				
Coffee Fatty oils, acids, cellulose, water		A	A				A	A	A		A	A	A		
Coke Oven Gas H ₂ (53%), CH ₄ (26%) N ₂ (11%), CO(7%)& hydrocarbons (3%)		C	C			A	A	B							A

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CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Copper Acetate Cu(C ₂ H ₃ O ₂) ₂ • CuO • 6H ₂ O		C	B	A			A	A	X	90%A	10%B	10%B			A
Copper Chloride CuCl ₂ • 2H ₂ O	A	A	A	A	A	A	A	A	X	X	X	40%B	A		A
Copper Cyanide CuCN	A	A	A	A		A	A	A	X	A	10%A	A ^{170°}	A		A
Copper Fluoroborate			A	B					A	X	X	X	B		
Copper Nitrate Hexahydrate Cu(NO ₃) ₂ • 6H ₂ O		A	A	A		A	A		X	X	A	B	A	A	A
Copper Sulfate (Blue Copperas) CuSO ₄ • 5H ₂ O	A	A	A	A	A	A	A	5%A	X	X	10%A	A	A	A	A
Copper Sulfide CuS			A			A	A								
Corn Oil (Maize oil) Glycerides of fatty acids	A	C	A	C	A	A	A	B	B	C	B		A		A
Cotton Seed Oil		A	C	A	A	A	A	A	B	A	C	A		A	B
Cream			C	A				A	A		X	A		A	
Creosote, Coal-Tar (Tar Oil) Hydrocarbon mixture	B	C	A	X	X	A	A	B	B	B	B	B	X	X	
Creosote, Wood-Tar Mixture of phenols		B	A	X	X	A	A				B		X	X	
Cresylic Acid (Cresol) C ₈ H ₁₀ O ₂	X	X	C	X		A	A	B	B	C	A	B	X	X	A ^{150°}
Crotonaldehyde CH ₃ CHCHCHO		A	X			A	A		A	A	A	A			
Cumene (Isopropylbenzene) C ₆ H ₅ CH(CH ₃) ₂		X	X	X		A	A		B	B	B	B			
Cutting Oil (Water Soluble)		X	C			A	A		A	A	A	A			
Cutting Oil (Sulfur Base)		C	A				A		A	A	A	A			
Cyclohexane C ₆ H ₁₂	C	X	B	X	A	A	A	C	B	B	B	B	X	A	A
Cyclohexanol C ₆ H ₁₁ OH		A	B	X		A	A	B	C	B	A	A	B	A	A ^{150°}
Cyclohexanone C ₆ H ₁₀ O		X	X	C		X	A	C	B	B	B	B	X	A	A
Cyclopentane C ₅ H ₁₀		A	B	X		A	A		B	B	B	B			
Cymene (Isopropyltoluene) C ₁₀ H ₁₄		X	C	X		A	A								
Decahydronaphthalene (Decalin®) C ₁₀ H ₁₈	X	X	X	X		A	A								
Decanal CH ₃ (CH ₂) ₈ CHO			X	X		X	A								
Decane CH ₃ (CH ₂) ₈ CH ₃	C	X	B	C		A	A	C					A ^{70°}		A
Decyl Alcohol (Decanol) C ₁₀ H ₂₁ OH		X	A			B	A								

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Denatured Alcohol Ethanol and denaturant	X	B	A	A		B	A	B	B	B	A	A	A		A
Detergent Solutions	X	A	A	A	B	A	A	B	B		A		A	A	
Developing Fluids & Solutions	X	A	A	C	X	A	A	A		X	A	A			
Dextrose C ₆ H ₁₂ O ₆	A	B	B	A	B ^{140°}	A	A		A	X	A	A	A		A
Diacetone Alcohol (Diacetone) (CH ₃) ₂ COHCH ₂ •COCH ₃	C	X	X	B	C	X	A	B	A	A	A	A	X	A	C
Dibenzyl Ether (C ₆ H ₅ CH ₂) ₂ O	C	X	X	C		C	A	C	B	B	B	B			C
Dibenzyl Sebecate C ₂₄ H ₃₀ O ₄	X	X	X	C	A	B	A	C							
Dibutyl Amine (C ₄ H ₉) ₂ NH		X	C	X		X	A	B		A	A	A	X		B ^{70°}
Dibutyl Phthalate (DBP) C ₆ H ₄ (CO ₂ C ₄ H ₉) ₂	C	X	X	A	A	B	A	B	A	A	A	A	X		X
Dibutyl Sebecate (DBS) C ₁₈ H ₃₄ O ₄	X	X	X	C		C	A	B		A	A		C		
Dichloroacetic Acid Cl ₂ CHCOOH		X	X			X	A								
o-Dichlorobenzene C ₆ H ₄ Cl ₂	X	X	X	X	X	A	A	X	X	B	B	A	B		A ^{150°}
Dichlorobutane C ₄ H ₈ Cl ₂			X			A	A		X	B	B				
Dichloroethyl Ether [ClCH ₂ CH ₂] ₂ O			X				A		B						
Dichloro Isopropyl Ether C ₆ H ₁₂ OCl ₂	C	X	X	X		X	A	X					X		
Dicyclohexylamine (C ₆ H ₁₁) ₂ NH		X	X	X		B	A	B							
Diesel Oil (Fuel ASTM #2) Hydrocarbons	C	C	A	X	B	A	A	C	A	A	A	A	B		A
Diester Synthetic Oils	X	X	B	X		A	A		A	A	A	A			
Diethano Amine (HOCH ₂ CH ₂) ₂ NH	C	A	B				A			A	A	A	A		
Diethyl Amine (CH ₃ CH ₂) ₂ NH	C	C	C	C		X	A		B	B	A	A	A		A
Diethyl Benzene C ₆ H ₄ (C ₂ H ₅) ₂	X	X	X	X		A	A	C							
Diethyl Carbonate (C ₂ H ₅ O) ₂ CO		X	X				A			A					
Diethyl Ether (Ether) (CH ₃ CH ₂) ₂ O	A	C	B	X	C	X	A	B	B	A	A	A	X	A	A
Diethyl Phthalate (DEP) C ₆ H ₄ (CO ₂ C ₂ H ₅) ₂			X			C	A		A	A	A	A			
Diethyl Sebecate C ₁₄ H ₂₆ O ₄		X	X	C	A	B	A	B	A	A	A	A	A ^{120°}		A ^{120°}
Diethylene Ether (Dioxane) C ₄ H ₈ O ₂		X	X	A		X	A		A	A	A				

Rating specific to % of concentration. Temperature shown is °F. Where not shown, temperature is 70°F (21°C) Ambient.

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Diethylene Glycol (DEG) HOCH ₂ CH ₂ OCH ₂ •CH ₂ OH	X	A	A	A	A	A	A	A	A	A	A	A	A		
Diethylene Triamine (NH ₂ C ₂ H ₄) ₂ NH			B				A		A	A	A				
Diisobutyl Ketone C ₄ H ₉ COC ₄ H ₉		X	X	B		X	A		A	A	A				
Diisobutylene [HC=C(CH ₃) ₂] ₂		C	B			C	A	C				A		A	
Diisodecyl Adipate (DIDA) C ₂₆ H ₅₀ O ₄			X			C	A								
Diisodecyl Phthalate (DIDP) C ₂₆ H ₄₇ O ₄		X	X	A		C	A								
Diisooctyl Adipate (DIOA) C ₂₂ H ₄₂ O ₄			X			C	A		A	A	A				
Diisooctyl Phthalate (DIOP) C ₂₄ H ₃₉ O ₄			X			C	A								
Diisooctyl Sebecate (DIOS) C ₂₆ H ₄₆ O ₄				B		A	A								
Diisopropyl Amine [(CH ₃) ₂ CH] ₂ NH			B				A								
Diisopropyl Benzene C ₆ H ₄ •[CH(CH ₃) ₂] ₂		X	X	X		A	A	C							
Diisopropyl Ketone [(CH ₃) ₂ CH] ₂ CO		X	X	A		X	A	C			A				
N,N-Dimethylaniline C ₆ H ₅ N(CH ₃) ₂		X	X	C		X	A	B	B	B		X		A	
Dimethyl Ether CH ₃ OCH ₃		B	A			A	A		B	B	B	B			
N,N-Dimethyl Formamide (DMF) HCON(CH ₃) ₂		X	C		C	X	A	A	A		A	A	A ^{120°}	B	A ^{120°}
Dimethyl Phthalate C ₆ H ₄ (CO ₂ CH ₃) ₂		X	X	C	A	C	A	A							A ^{70°}
Dimethyl Sulfate (CH ₃) ₂ SO ₄			X			X	A			A					
Dimethyl Sulfide (CH ₃) ₂ S			X				A		A	A	A				
Dinitrotoluene (DNT)CH ₃ C ₆ H ₃ (NO ₂) ₂		X	X	X		C	A	B			A				
Diethyl Phthalate (DOP) C ₂₄ H ₃₈ O ₄	X	X	X	B	A	B	A	C	A	A	A	A			
Diethyl Sebecate C ₂₆ H ₅₀ O ₄	C	X	X	C		C	A	C	A	A	A	A			
Dioxolanes (Dioxolans) Glycol ethers		X	X	B		C	A	C							
Dipentene (Limonene) C ₁₀ H ₁₆		X	C	X		A	A	C	A	A	A	A			
Diphenyl Oxides (Phenyl Ether) C ₆ H ₅ OC ₆ H ₅	C	X	X	C		A	A	C	B	A	A	A			A
Dipropylamine (CH ₃ CH ₂ CH ₂) ₂ NH			B				A								

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS							METAL PARTS				PLASTICS			
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Dipropylene Glycol (C ₃ H ₆ OH) ₂ O			A			A	A					A		A	
Dipropyl Ketone (Butyrene) (C ₃ H ₇) ₂ CO			X				A								
Dispersing Oil #10		X	X	X		C	A		A	A	A				
Divinyl Benzene (DVB) C ₆ H ₄ (CH=CH ₂) ₂			X			A	A								
Dodecyl Benzene (Alkane) C ₆ H ₅ (CH ₂) ₁₁ CH ₃			X			A	A		A	A	A				
Dow Corning® (Silicones) [(CH ₃) ₂ SiO] ₂	A	A	A			A	A		A						
Dowtherm®(Biphenyl & Phenyl Ether) (C ₆ H ₅) ₂ and (C ₆ H ₅) ₂ O	C	X	X	X		A	A	X	A	B	A	A			
Drycleaning Fluids Chlorinated hydrocarbons		X	C			A	A	X	A	A	A		X		
Dyes			C						B	B	A				
Epichlorohydrin C ₃ H ₅ ClO		X	X	B	X	X	A	B	X	A	A	A	A	A	X
Epsom Salts (Magnesium Sulfate) MgSO ₄ • 7H ₂ O		A	A			A	A	A	A		A	B	A	A	
Ethane C ₂ H ₆	C	C	A	X		A	A	C	A	A	A	A	C	A	
Ethanolamine (Aminoethanol) H ₂ NCH ₂ • CH ₂ OH	X	C	B	B		X	A	A	B	A	A		X	X	C
Ethyl Acetate CH ₃ COOC • H ₂ CH ₃	X	X	X	B	C	X	A	C	A	A	A	A	C	A	A
Ethyl Acetoacetate (Acetoacetic Ester) CH ₃ COCH ₂ • COOCH ₂ CH ₃	C	X	X	C		X	A	C	A	A	A	A			A ^{70°}
Ethyl Acrylate CH ₂ CHCO ₂ • CH ₂ CH ₃	X	X	X	C		X	A	C	A	A	A	A	B		B ^{70°}
Ethyl Alcohol (Ethanol) CH ₃ CH ₂ OH	X	A	A		X	B	A		B	B	A	A	A ^{100°}		A
Ethyl Aluminum Dichloride CH ₃ CH ₂ AlCl ₂			X			B	A								
Ethyl Amine (Monoethylamine) CH ₃ CH ₂ NH ₂		C	X	A		X	A		B	B	A				
Ethyl Benzene CH ₃ CH ₂ C ₆ H ₅	X	X	X	X		A	A	C	B	B	B	A	X	A	A
Ethyl Benzoate C ₆ H ₅ CO ₂ CH ₂ CH ₃		X	X	C		A	A	C	A	A	A	A	B		
Ethyl Bromide (Bromoethane) CH ₃ CH ₂ Br		B	X	B			A	X	A	A	A				
Ethyl Butyl Acetate CH ₃ CO ₂ CH ₂ • CH(C ₂ H ₅) ₂			X			X	A								
Ethyl Butyl Alcohol CH ₃ CH(C ₂ H ₅) • (CH ₂) ₂ OH			A			B	A								
Ethyl Butyl Ketone CH ₃ CH ₂ COC ₄ H ₉			X			X	A								

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CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Ethyl Butyraldehyde C ₆ H ₁₂ O			X			X	A								
Ethyl Butyrate CH ₃ CH ₂ CH ₂ • C ^{140°} CO ₂ C ₂ H ₅		X	X	X		C	A		B	A	A	B			
Ethyl Caprylate CH ₃ (CH ₂) ₆ • CO ₂ C ₂ H ₅			X	X	X										
Ethyl Cellosolve® C ₂ H ₅ O(CH ₂) ₂ OH		C	C	B		X	A	B							
Ethyl Cellulose (Ethocel®)	B	B	B	B	B	C	A	A	B	A	B	B	C		
Ethyl Chloride (Chloroethane) C ₂ H ₅ Cl	C	C	A	A	X	A	A	C	X	B	A	B	X	A	A
Ethyl Chlorocarbonate (Ethyl Chloroformate) ClCO ₂ C ₂ H ₅		C				A	A	A							
Ethyl Cyanide (Propionitrile) C ₂ H ₅ CN		B	X	A		X	A								
Ethyl Formate HCOOCH ₂ CH ₃		B	X	C		A	A	B	B	A	B	B			
Ethylhexyl Acetate CH ₃ CO ₂ CH ₂ • CH(C ₂ H ₅)C ₄ H ₉			X			X	A								
Ethylhexyl Alcohol (Ethylhexanol) C ₈ H ₁₇ OH			A			B	A		A	A	A	A			
Ethyl Iodide CH ₃ CH ₂ I		X	X	C		B	A								
Ethyl Isobutyrate (CH ₃) ₂ • CHCOOCH ₂ CH ₃		X	X	X			A								
Ethyl Mercaptan (Ethanethiol) CH ₃ CH ₂ SH		C	X	X		B	A	C	B	A	B	B			
Ethyl Oxalate C ₂ H ₅ O ₂ C • CO ₂ C ₂ H ₅	A	X	X	A		B	A	B							
Ethyl Pentachlorobenzene C ₂ H ₅ C ₆ Cl ₅		X	X			A	A	X	X				X		
Ethyl Propionate CH ₃ CH ₂ • COOCH ₂ CH ₃		X	X	X			A		A	A	A	A			
Ethyl Silicate Si(OCH ₂ CH ₃) ₄		A	A	A		A	A	B	B	A	A	A			
Ethyl Sulfate C ₂ H ₅ OSO ₂ OH			A			A	A	B			X				
Ethylene (Ethene) C ₂ H ₄		A	B	C		A	A	C	A	A	A				
Ethylene Chlorohydrin ClCH ₂ CH ₂ OH	X	B	X	A	X	B	A	C		B	A	A	X		A ^{70°}
Ethylene Diamine (CH ₂) ₂ (NH ₂) ₂		A	B	A		X	A	A	C	A	A	A	A	A	B
Ethylene Dibromide (Ethylene Bromide) Br(CH ₂) ₂ Br		X	X	C		B	A		X	X	B	B	X		A
Ethylene Dichloride (Dutch Oil) Cl(CH ₂) ₂ Cl	X	X	X	X	X	B	A	X	X	B	B	B	X	B	A

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(N) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Ethylene Glycol (Ethylene Alcohol) (Glycol) (CH ₂ OH) ₂	B	A	A	A	A	A ^{70°}	A	A	A	A	A	A	A ^{120°}	A	A
Ethylene Glycol Monobutyl Ether (Butyl Cellosolve®) C ₄ H ₉ OCH ₂ CH ₂ OH	X	X	B	B		C	A		A	A	A				
Ethylene Glycol Monoethyl Ether Acetate (Cellosolve Acetate®) C ₂ H ₅ O(CH ₂) ₂ • O ₂ CCH ₃	X	X	C	B		C	A		A	A	A				
Ethylene Glycol Monomethyl Ether (Methyl Cellosolve®) CH ₃ O(CH ₂) ₂ OH	X	C	C	B		X	A		B	B	A	A			
Ethylene Oxide (CH ₂) ₂ O	X	X	X	X	A	C	A	A	A	B	A	A	C		A
Ethylene Trichloride (Trichloroethene) ClCHCCl ₂		X	X	X		A	A	X	X	A	A		X		
Ethylidene Chloride CH ₃ CHCl ₂		X	X	X			A		X	B	A	B			
Fatty Acids C _n H _{2n+1} COOH		C	B	X	B	A	A	B	90%A	X	A	A	B	A	A
Ferric Chloride FeCl ₃	A	A	A	A	X	A	A	A	X	X	X	10%A	A	A	A
Ferric Hydroxide FeHO ₂			B			C	A				A	10%B			
Ferric Nitrate Fe(NO ₃) ₃	A	A	A	A		A	A	A	X	X	B	10%A	A	A	A
Ferric Sulfate Fe ₂ (SO ₄) ₃		A	A	A		A	A	A	C	X	B	30%A	A	B	A
Ferrous Chloride FeCl ₂		A	A	A	X	A	A	A	X	X	30%B	50%B	A	B	A
Ferrous Sulfate FeSO ₄		A	A	A	A	A	A	A	10%A	C	B	30%A	A	B	A
Fish Oil			A			A	A	B							
Fluoboric Acid (Fluoroboric Acid) HBF ₄		B	A	A	X	C	A	A	X	X	30%A		A		A
Fluorine (Liquid) F ₂	C	X	C	X	B	A	X	A		A		X		A ^{70°}	
Fluorobenzene FC ₆ H ₅		X	X	X		A	A	C					X		
Fluorolube (Fluorocarbon Oils) F _x C _y H _z		A	C	A		B	A	X	A	A	A	A	X		
Fluosilicic Acid (Sand Acid) H ₂ SiF ₆	B	A	B	B	B	A	A	A	X	X	A ^{212°}	B	A		A
Formaldehyde (Formalin) HCHO	X	C	B	A	40°C	A	A	B	A	C	90%A	70%A	A	A	A ^{120°}
Formamide HCONH ₂		A	A	A		X	A		A	B	B	B			
Formic Acid HCOOH	X	B	C	B	C	C	A	A	X	X	C	A	A ^{70°}	X	A

Rating specific to % of concentration. Temperature shown is °F. Where not shown, temperature is 70°F (21°C) Ambient.

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Freon 11 (Trichlorofluoromethane) CCl ₃ F	X	C	C	X	A	B	A	X	B	A	A		B		A
Freon 12 (Dichlorodifluoromethane) Cl ₂ CF ₂	A	B	B	B	A	B	A	X	A	A	A				A
Freon 13 (Chlorotrifluoromethane) ClCF ₃		A	A	A	C	A	A	X	A	A	A	A			
Freon 13B1 (Bromotrifluoromethane) BrCF ₃	A	A	A	A		A	A								
Freon 14 (Tetrafluoromethane) CF ₄		X	X	B			A								
Freon 21 (Dichlorofluoromethane) FCHCl ₂		B	X	X		X	A	X	A						A
Freon 22 (Chlorodifluoromethane) HCClF ₂	X	B	X	C	X	X	A	X	A	A	A	A			A
Freon 113 (Trichlorotrifluoroethane) (TF) Cl ₃ CCF ₃	C	A	B	X	A	B	A	X	B		A				A
Freon 114 (Dichlorotetrafluoroethane) C ₂ Cl ₂ F ₄	A	A	A	C	A	A	A	X	B		A				A
Freon 114B2 (Dibromotetrafluoroethane) C ₂ Br ₂ F ₄		A	B	X		B	A	X							
Freon 115 (Chloropentafluoroethane) C ₂ ClF ₅		A	A	A		B	A	X	A						
Fruit Juices Water, sucrose		A	A	A	B	A	A	A	0%A	X	A	A	A		A
Fuel Oils (ASTM #1 thru #9) Hydrocarbons	C	C	A	X	B	A	A	C	A	A	A	A	C	C	A
Fumaric Acid (Boletic Acid) HOOCCH = CHCOOH		B	C			A	A	A							
Furan (Furfuran) C ₄ H ₄ O		X	X	X	X	C	A	C					C		X
Furfural (Ant Oil) C ₅ H ₄ O ₂	X	B	X	B		C	A	C	A	B	20%A	B	X	B	B ^{120°}
Furfuryl Alcohol C ₅ H ₆ O ₂	X		X	B	B	X	A		A	A	A	A			B ^{100°}
Fusel Oil (Grain Oil) (CH ₃) ₂ • CHCH ₂ CH ₂ OH	C	A	A	A		A	A								
Gallic Acid C ₆ H ₂ (OH) ₃ • COOH	X	C	B	B	X	A	A	B	20%A	X	B	B	A ^{70°}		A ^{70°}
Gasoline (Unleaded) C ₄ to C ₁₂ • Hydrocarbons	X	X	X	X		A	A	C	A	A	A	A	C	A	A
Gasoline (Petrol) Hydrocarbons	B	C	A	X	A	A	A	C	A	A	A	A	C	A	A
Gelatin Water soluble Proteins	A	A	A	A	B	B	A	A	A	A	A		A	B	A
Ginger Oil C ₁₇ H ₂₆ O ₄		A				A	A	C		X	A				

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(N) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Glauber's Salt (Sodium Sulfate Decahydrate) Na ₂ SO ₄ •10H ₂ O	A	A	A	B	B	A	A								
Gluconic Acid C ₆ H ₁₂ O ₇			C			A	A		B	C	50%A		A		
Glucose (Corn Syrup) C ₆ H ₁₂ O ₆	A	A	A	A	B	A	A	A	A	A	A		A	A	A
Glue (PVA)	A	A	A	B	B	A	A	A	A	A	B	A	A	B	
Glycerol (Glycerine) C ₃ H ₈ O ₃	A	A	A	A	A	A	A	A	A	B	A	A	A	A	A
Glycolic Acid HOCH ₂ COOH		A	A			A		A				A	A		A
Glycols		A	A			A	A	A	B	B	B		A	A	A
Gold Monocyanide AuCN		A	A			A		A			X	A			
Grape Juice Water, sucrose		X	C			A	A	A		X	A		A		A
Grapefruit Oil	A	X	X				A			X	A				
Grease Hydrocarbons		X	A		A	A	A	B	A		A				
Green Sulfate Liquor		B	B	A	X	A	A	A	B	C	A	B	A		
Halowax Oil Chlorinated naphthalenes		X	X	X		A	A	X	X						
Heptanal CH ₃ (CH ₂) ₅ CHO			A			A			A	A	A	A	A		
Heptane C ₇ H ₁₆	B	C	A	X		A	A	C	A	A	A	A	C ^{140°}	A	A
Hexanal CH ₃ (CH ₂) ₄ CHO	C	A	X	B		C	A		A	B	A	B			
Hexalin (Cyclohexanol) C ₆ H ₁₁ OH		A	B	C		A	A								
n-Hexane C ₆ H ₁₄	B	B	A	X	A	A	A	A	A	A	A	A	C ^{140°}	C	A
n-Hexane 1 (Hexylene) H ₂ CCH(CH ₂) ₃ CH ₃	A	B	A	X		A	A	C							
Hexyl Alcohol (1-Hexanol) C ₆ H ₁₃ OH	X	B	A	C		A	A		A	A	A				A
Hexylene Glycol (Brake Fluid) C ₆ H ₁₂ (OH) ₂		A	A	C		A	A		A	A	A	A			
Honey		A					A	A	A	A	A		A		
Hydraulic Oil (Petroleum Base) Hydrocarbons	A	B	A	X	X	A	A	X	A	A	A	A	X	C	
Hydrazine (Diamine) H ₂ NNH ₂	X	C	C	A	X	X	A	A	A	X	A	A	X	B	X
Hydrobromic Acid HBr	X	C	X	A		A	A	B	A	A	A		B	X	A
Hydrochloric Acid 10% (Muratic) HCl	B	B	B	A		A	A	A	X	C	X	B	A	X	A
Hydrochloric Acid 20% (Muratic) HCl	B	B	B	A	C	A	A	A	X	C	X	A	A	X	A

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CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Hydrochloric Acid 30% (Conc.) HCl	X	C	C	A	X	B	A		X	X	X	A	B	X	A
Hydrocyanic Acid (Formonitrile) HCN	C	C	B	A	X	A	A	B	10%A	X	A	B	A	X	A
Hydrogen Fluoride — Anhydrous HFC	C	X	C		A	A		X		X	A	A		A	
Hydrofluoric Acid (Conc.) Cold HF *SEE NOTE BELOW	X	C		C	X	B	A	X	C	X	X	B	40%A	X	A
Hydrogen Peroxide — 3% H ₂ O ₂		B	B	B	X	A	A	A	A				A		A
Hydrogen Peroxide — 10% H ₂ O ₂		C	C	B	X	A	A		A	B	A	A	A		A
Hydrogen Peroxide — 30% H ₂ O ₂		X	C	B	X	A	A		A	X	B	A	A		A
Hydrogen Peroxide — 90% H ₂ O ₂	C	B	X	C	X	A	A		A	X	A				
Hydrogen Sulfide (Wet) H ₂ S		C	X	A	A	X	A	A	90%A	X	A ^{167*}	A ^{167*}	A	C	A
Hydroquinone C ₆ H ₄ (OH) ₂		X	C			C	A	A	90%A	B	10%A	B			A
Hydroxyacetic Acid — 10% HOCH ₂ COOH		X	X				A	70%A	B		B				
Hypochlorous Acid HClO		X	X	B		A	A	A	X	X	X	A	A		A
InkA	A			A			C	X	A	A					
Iodine I ₂	B	B	B	B	A	A	A	A	X	X	A	A		A ^{150*}	
Iodoform CHI ₃				A			A	B	A	A	A	A			A
Isoamyl Acetate CH ₃ CO ₂ CH ₂ CH ₂ CH • (CH ₃) ₂	X	X	X	B		X	A		A	A	A	A			
Isoamyl Alcohol (CH ₃) ₂ CHCH ₂ CH ₂ OH	C	A	A	A		A	A								
Isoamyl Butyrate C ₉ H ₁₈ O ₂			X			X	A		A	A	A	A			
Isoamyl Chloride (CH ₃) ₂ CHCH ₂ CH ₂ Cl		X	X	X		A	A		X						
Isobutyl Acetate CH ₃ CO ₂ CH ₂ CH(CH ₃) ₂		X	X	C		X	A		A	A	A	A			
Isobutyl Alcohol (Isobutanol) (CH ₃) ₂ CHCH ₂ OH	X	B	B	A		A	A		A				A	A	A
Isobutyl Amine (CH ₃) ₂ CHCH ₂ NH ₂			X			X	A								
Isobutyl Chloride (CH ₃) ₂ CHCH ₂ Cl			X			B	A		X	B	B	90%A			
Isobutyric Acid (CH ₃) ₂ CHCOOH		B	X	A			A		A						
Isododecane (CH ₃) ₂ CH(CH ₂) ₈ CH ₃	B	A	B	X		A	A		B	B	B	B			

*NOTE: Glass-filled Polypropylene pump components are not compatible with Hydrofluoric Acid. Please consult factory for specific details..

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Isooctane (Trimethylpentane) C ₈ H ₁₈	B	B	A	X	A	A	A	C	A	A	A	A	A		A
Isopentane (CH ₃) ₂ CHCH ₂ CH ₃			A			A	A								
Isophorone C ₉ H ₁₄ O	C	X	X	C		X	A	B	A	A	A	A			
Isopropyl Acetate CH ₃ COOCH ₂ (CH ₃) ₂	A	X	X	B		X	A	B	A	A	A	B			
Isopropyl Alcohol (Isopropanol) CH ₃ CH(OH)CH ₃	X	A	B	B	A	A	A		90%A	A	A	A	A	A	A
Isopropyl Amine C ₃ H ₇ NH ₂			X			X	A			A	A				
Isopropyl Chloride (CH ₃) ₂ CHCl	X	X	X	X		B	A	C	X	A	A	A	X		
Isopropyl Ether (CH ₃) ₂ CHOCH • (CH ₃) ₂	C	C	C	X		C	A	C	B		A		X		A ^{70°}
Jet Fuels (JP1 to JP6) (ASTM-A, A1 & B)	C	C	A	X	A	A	A	C	A	A	A	A	X	A	A
Kerosine (Kerosene) Hydrocarbons	C	C	A	X	A	A	A	C	A	A	A	A	X	A	A
Lacquers	X	X	X	X	X	X	A	C	A	B	A	A		B	
Lacquer Solvents	X	X	X	X	C	X	A	C	A	B	A	A	C	B	X
Lactic Acid CH ₃ CHOH • COOH		B	B	A	X	A	A	A	A	X	70%A	60%A	A	C	A
Lactol (Aliphatic Naptha Solvent) CH ₃ CHOH • CO ₂ C ₁₀ H ₇		X	C			A	A		A	A	A	A			
Lard (Lard Oil) Olein, stearin	A	C	A	X	B	A	A	B	A	A	B	A	A	B	A
Latex Rubber emulsion		A	A				A		A		A		A	C	
Lauryl Alcohol (n-Dodecanol) CH ₃ (CH ₂) ₁₀ • CH ₂ OH			A			B		A	A	A	A	A			
Lavender Oil Ester mixture		X	B	X		B	A	B							
Lead Acetate (Sugar of Lead) Pb(CH ₃ CO ₂) ₂	X	A	B	A		X	A	A	X		B	B	A	A	A
Lead Chloride PbCl ₂		B					A		X		B	B	A		A
Lead Nitrate Pb(NO ₃) ₂		A	B	A		A	A		X	B	B	B	A		A
Lead Sulfamate			A	B					A					A	
Lemon Oil (Cedro Oil) Hydrocarbons			C						C	A		A			
Ligroin (Ligroine) (Benzene) Petroleum fraction		B	A	X		A	A	B		A	A		X		
Lignin Liquor Blend of natural aromatic oils		A	A			A	A				A				

Rating specific to % of concentration. Temperature shown is °F. Where not shown, temperature is 70°F (21°C) Ambient.

CHEMICAL Formula	ELASTOMERS							METAL PARTS				PLASTICS			
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Lime, Soda (Slaked Lime & Soda Ash) CaO	C	B	B	A		B	A	A							
Lime Bleach		C	A	A		A	A	A	X				B		
Lime Slurries		A	B		C	B	A		B		B				
Lime Sulfur CaS+CaSO ₄		A	A	A		A	A	B	X		A		A		
Limonene C ₁₀ H ₁₆		X	C	X		A	A								
Linoleic Acid C ₁₈ H ₃₂ O ₂		X	B	X		B	A	B	A		A	A	A		A
Linseed Oil (Flaxseed Oil) Glycerides	B	A	A	C	B	A	A	B	A	A	A	A	A	A	A
Lindol (Tritolyl Phosphate) C ₂₁ H ₂₁ O ₄ P		C	X			B	A	A							
Lithium Bromide LiBrH ₂ O		X	A			A	A			A					A
Lubricating Oils (Petroleum) Hydrocarbons	C	B ^{150°}	A	X	A	A	A	X	A	A	A	A	C	A	A
Lye (Potassium Hydroxide) KOH		B	C		C	B	A	A			A		A	X	A ^{150°}
Magnesium Carbonate MgCO ₃		A	A	C	A	A	A	A	A	B	B	B	A	A	A
Magnesium Chloride MgCl ₂ O	A	A	A	A	A	A	A	A	20%A	30%B	50%B	A	A	B	A
Magnesium Hydroxide (Milk of Magnesia) Mg(OH) ₂	A	B	B	A	C	A	A	A	10%A	A	A	A	A	A	A
Magnesium Nitrate Mg(NO ₃) ₂ • 6H ₂ O		A	A	A		A	A	A	50%B	B	A	B	A		A
Magnesium Oxide MgO		A	A			B	A	A	10%A	A	A	A			
Magnesium Sulfate (Epsom Salts) MgSO ₄ • 7H ₂ O		A	A	A	B	A	A	A	70%A	A	50%A	A	A	A	A
Maleic Acid (CHCOOH) ₂		A	X	X		A	A	A	20%A	60%B	B	A	A		A
Maleic Anhydride C ₄ H ₂ O ₃				X		A	A	A	20%A	B	A	A			
Malic Acid (Apple Acid) C ₄ H ₆ O ₅		C	B	X		A	A	A	B		A	B ^{212°}			
Maple Sugar Liquors (Sucrose) Water, sucrose	X	A	A	A		A	A				A				
Mayonnaise Water, fats, oils		A	A				A	A	X	X	A	A	A		
Mercuric Chloride HgCl ₂		B	A	A		A	A	A	X	X	X	30%B	A	B	A
Mercuric Cyanide Hg(CN) ₂		B	B	A		A	A	A	X	B	B	B	A		A
Mercurous Nitrate Hg ₂ (NO ₃) ₂ • 2H ₂ O		B	B	A		A	A		X	B	B ^{212°}	B	A		A

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V7) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Mercury HgA	A	A	A	A	A	A	A	X	A	A	A	A	C	A	
Mesityl Oxide (CH ₃) ₂ C = CHCOCH ₃		X	X	B		X	A	C	A	A	A	A			
Methane CH ₄	C	B	A	X	B	A	A	C	A	A	A	A	B	A	A
Methyl Acetate CH ₃ CO ₂ CH ₃		C	X	C	C	X	A	B	A	A	A	A	C	B	
Methyl Acetoacetate CH ₃ COCH ₂ • COOCH ₃			X			X	A			A	A	A			
Methyl Acrylate CH ₂ CHCO ₂ CH ₃		C		C		X	A	B		A	A				A ^{70°}
Methyl Acrylic Acid (Crotonic Acid) CH ₃ (CH) ₂ COOH		C		C		X	A								
Methyl Alcohol (Methanol) CH ₃ OH	X	A	A	A	A	B	A	A	B	A	A	A	A	A	A
Methyl Amine (Monomethylamine) CH ₃ NH ₂		A	B	A		^{90%} A	A		B	B	A	B	X		C
Methyl Amyl Acetate C ₈ H ₁₆ O ₂			A			X	A		A	A	A	A			
Methyl Amyl Alcohol C ₆ H ₁₃ OH			A			X	A		A	A	A	A			
Methyl Aniline C ₆ H ₅ NH(CH ₃)		A	A	A			A								
Methyl Bromide (Bromo Methane) CH ₃ Br		X	C	A	X	A	A	X	X	A	A	B	X		A
Methyl Butyl Ketone (2-hexanone) CH ₃ COC ₄ H ₉		X	X	B		X	A	C			A		X		
Methyl Butyrate CH ₃ (CH ₂) ₂ • CO ₂ CH ₃		X	X	X			A		A	A	A	A			
Methyl Cellosolve® CH ₃ OCH ₂ • CH ₂ OH		X	X			X	A	B	A				A		A
Methyl Chloride CH ₃ Cl	X	X	X	C	X	B	A	X	X	A	A	A	X	B	A
Methyl Cyclopentane C ₆ H ₁₂		X	B	X		A	A	C			A				
Methyl Dichloride CH ₂ Cl ₂		X	X			A		X	X				X		
Methyl Ethyl Ketone (Butanone) CH ₃ CO • CH ₂ CH ₃	X	X	X	A	C	X	A	B	A	A	A	A	X	B	X
Methyl Formate HCOOCH ₃		B	X	C		X	A	B	A	A	A				
Methyl Hexane C ₇ H ₁₆		A	A	X		A	A								
Methyl Iodide CH ₃ I		X	X	A			A		X	A	A	A			

Rating specific to % of concentration. Temperature shown is °F. Where not shown, temperature is 70°F (21°C) Ambient.

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Methyl Isobutyl Ketone (Hexone) CH ₃ COCH ₂ CH • (CH ₃) ₂		X	X	C	X	X	A	C	A	B	B	A	C ^{70°}	A	A ^{70°}
Methyl Isopropyl Ketone CH ₃ COCH(CH ₃) ₂		X	X	C	X	X	A	C			A		C		A ^{70°}
Methyl Methacrylate CH ₂ C(CH ₃) • CO ₂ CH ₃		X	X	X		C	A	B	B		A				A ^{70°}
Methyl Oleate C ₁₉ H ₃₆ O ₂		X	X	C		B	A	C							
Methyl Propyl Ketone CH ₃ CH ₂ • CH ₂ COCH ₃		X	X	B		X	A								
Methyl Salicylate (Betula Oil) HOC ₆ H ₄ • COOCH ₃		X	X	C		B	A	B	A	A					
Methylacrylic Acid CH ₃ CHCHCO ₂ H		B				B	A	A							
Methylamine CH ₃ NH ₂		A	B	A		^{90%} A	A	A	B	B	A	B	A		
Methylene Bromide CH ₂ Br ₂		X	X			B	A		X	A	A	A			A
Methylene Chloride CH ₂ Cl ₂	X	X	X	X	X	B	A	X	X	B	^{90%} A	A	X		B ^{100°}
Milk	X	A	B	A	B	A	A	A	A	X	A	A	A	A	A
Mine Water			A				A		B		B	A			
Mineral Oil (Petroleum) Hydrocarbons	A	B	A	X	A	A	A	C	A	A	A	A	B	A	A
Mixed Acids (Sulfuric & Nitric) H ₂ SO ₄ , HNO ₃	X	X	X	B		A	A		X	X	B	B	X		A
Molasses	X	A	A	A	B	A	A	A	A	A	A	A	A	B	A
Monochlorobenzene C ₆ H ₅ Cl		X	X		C	A	A	C	X	A	A		X	A	A ^{100°}
N-Methyl Aniline C ₆ H ₅ NHCH ₃		X	X			C	A						C		
Monoethanolamine NH ₂ C ₂ H ₄ OH		C	B			C	A	A	B	A	A		X	X	X
Mustard		A	C		B	X	A	A	B	X	A	A	A	A	
Naphtha (Petroleum Spirits) (Thinner) Petroleum fractions	C	X	A	X	A	A	A	C	A	B	A	A	X	A	A
Naphtha Coal Tar (Benzol) Hydrocarbons	X	X	X	X		A	A	A	A	B	A	A			
Naphthalene (Tar Camphor) C ₁₀ H ₈	C	X	X	X	C	A	A	C	B	A	A	A	A	A	A
Naphthoic Acid C ₁₁ H ₈ O ₂			B	X		A	A		B	B	A	B			
Neatsfoot Oil			A	C		A	A	B			A				
Neohexane (2,2-dimethylbutane) C ₆ H ₁₄			A			A	A								
Neosol	X	A	A	B		C	A		B	B	A	A			
Neville Acid		C	C	C		B	A	A							

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Nickel Acetate Ni(CH ₃ CO ₂) ₂		B	B	A		X	A	A	10%B		A		A		A
Nickel Chloride NiCl ₂	A	A	A	A	X	A	A	A	X	X	B	80%A ^{200°}	A	B	A
Nickel Nitrate Ni(NO ₃) ₂ • 6H ₂ O		A	A	A		A	A		X		A	B	A		A
Nickel Sulfate NiSO ₄	A	A	A	A		A	A	A	X	X	40%A	B	A	A	A
Nitrana (Ammonia Fertilizer)		B	B			C	A				A				
Nitric Acid — 10% HNO ₃	C	B	X	B	C	A	A	A	A	X	A	A	A		A
Nitric Acid — 25% HNO ₃	C	C	X	B	X	A	A	20%B	X	X	30%A	30%A	A		A
Nitric Acid — 35% HNO ₃	C	X	X	C	X	A	A		X	X	50%A	50%A	B		A
Nitric Acid —50% HNO ₃	C	X	X	X	X	A	A	C	X	X	A	X	C		A
Nitric Acid — 70% HNO ₃	X	X	X	X	X	A	A			X	A	X			A
Nitric Acid (Conc.) HNO ₃	X	X	X	X	X	B	A	C	A	X	A	40%A	X		A ^{120°}
Nitric Acid (Red Fuming)	X	X	X	X	X	B	A	X	A	X	A	B	X		C
Nitrobenzene C ₆ H ₅ NO ₂	X	X	X	X	X	B	A	B	A	A	A	55%B ^{212°}	B	B	A ^{70°}
Nitroethane C ₂ H ₅ NO ₂		C	X	C		X	A	A	A	A	A	A	C		A ^{70°}
Nitrogen Tetroxide N ₂ O ₄		X	X	X	50%B	C	A		A	B	A	A	X		C
Nitromethane CH ₃ NO ₂		C	X	C	X	X	A	A	A	A	A	A	C	A ^{120°}	B
1-Nitropropane CH ₃ (CH ₂) ₂ NO ₂		C	X	A		X	A		A	A	A	A			
Octadecane CH ₃ (CH ₂) ₁₆ CH ₃	A	B	A	X		A	A	B							
n-Octane C ₈ H ₁₈			A	X		A	A	B					X		A
Octyl Acetate CH ₃ COO • (CH ₂) ₇ CH ₃			X			X	A		A		A				
Oleic Acid (Red Oil) C ₁₈ H ₃₄ O ₂	X	X	C	C	A	B	A		A	C	B	A	B	B	A
Octachlorotoluene C ₇ Cl ₈		X	X			A	A		X				X		
Oleum (Fuming Sulfuric Acid) H ₂ SO ₄ /SO ₃		X	C		20-25% X	A	A	X	X	X	A		X		X
Olein (Trioleine) C ₅₇ H ₁₀₄ O ₆		C	B				A								
o-Dichlorobenzene C ₆ H ₄ Cl ₂		X	X			A	A	X	X	A	A		X		
Olive Oil Mixed glycerides of acids	A	C	A	C		A	A	B	A	A	A	A	A	A	A

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CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Oxalic Acid (COOH) ₂		B	C	A	X	C	A	A	B	X	90%B	B	A	X	A ^{120°}
Ozone O ₃ A	B	X	A	C	A	A	A	10%A	0%A	A	A	X	C	A	
Paints & Solvents		X	X				A		X		A	A			
Paint Thinner, DUCO Hydrocarbons	X	C	A	X		B	A	C	X		A	A	X		
Palm Oil Mixture of terpenes		C	A			A	A	B		A	A	A			
Palmitic Acid CH ₃ (CH ₂) ₁₄ COOH	A	C	B	B	A	B	A	B	B	B	A		A		A
Paraffins (Paraffin Oil) Hydrocarbons			A				A	A	A		A	A	A	A	
Paraformaldehyde (CH ₂ O) _n		B	B			C	A		10%A	A	A	A			
Paraldehyde C ₆ H ₁₂ O ₃		B	C	A		X	A		A	A	A	A			
Peanut Oil Glycerides of fatty acids	C	B	A	X		A	A	B		A	A	A	A ^{70°}		A
Pentachloroethane (Pentalin) Cl ₂ • CHCl ₃		X	X			A	A		X	A	A	A			
Pentachlorophenol (PCP) C ₆ Cl ₅ OH		X	X	X		A	A		A	A	A	A			
Pentane (Amyl Hydride) C ₅ H ₁₂		B	A	X	B	A	A	A	A	B	B				
Peppermint Oil		X	X			A	A	C			A				
Perchloric Acid HClO ₄		B	X	B	X	A	70%A	C	X	X	B			C	A
Perchloroethylene (Tetrachloroethylene) C ₂ Cl ₄	X	X	X	X	X	A	A	X	X	B	90%A	B	X	A	A
Petroleum (Crude Oil) (Sour) Hydrocarbons	C	C	B	X	C	A	A		B	B	A	A	X	A	A
Phenethyl Alcohol (Benzyl Carbinol) C ₆ H ₅ (CH ₂) ₂ OH	X	X	X	B		X	A		A	A	A	A			
Phenol (Carbolic Acid) C ₆ H ₅ OH	X	C	X	C	X	A	A	A	B	A	B	A	C	X	A ^{100°}
Phenyl Sulfonic Acid C ₆ H ₄ (OH)SO ₃ H			X			X	A		B	B	B				
Phenyl Acetate CH ₃ COOC ₆ H ₅	X	X	X	B		X	A								
Phenylbenzene C ₆ H ₅		X	X			A	A	C							
Phenyl Ethyl Ether (Phenetole) C ₆ H ₅ OC ₂ H ₅		X	X	X		C	A	C							
Phenyl Hydrazine C ₆ H ₅ NHNH ₂		X	X	X		A	A	B	A	X			X		A ^{120°}

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Phorone (Diisopropylidene Acetone) C ₉ H ₁₄ O		X	X	C		A	A	B							
Phosphoric Acid — 10% H ₃ PO ₄	A	B	A	A		A	A	A	X	X	A		A ^{120*}		A
Phosphoric Acid — 20% H ₃ PO ₄	A	B	C	A		A	A	A	X	X	A ^{212*}	A	A ^{120*}		A
Phosphoric Acid — 50% H ₃ PO ₄	A	B	X	B		A	A	45%B	X	X	A	C	A ^{120*}		A
Phosphoric Acid (Conc.) H ₃ PO ₄	C	B	X	B	X	A	A		X	X	A ^{212*}		A ^{120*}		A
Phosphorus Oxychloride POCl ₃		X							B	B	B	B			
Phosphorus Trichloride PCl ₃		X	X	A		A	A	B	C	B	A	A	X		A
Photographic Developer		A	A		X	A		A	C	X	A	A	A	C	A
Pickling Solution (NO ₂) ₃ • C ₆ H ₂ OH	C	X		X		B	A	A							
(NO ₂) ₃ • C ₆ H ₂ OH	B	B	B	B	X	A	A	B	A	C	A	B	B		A
Pine Oil (Yarmor) Cyclic terpene alcohols		X	B	X		A	A	C	A	B	A				
Pinene C ₁₀ H ₁₆	C	X	B	X		A	A	C							
Piperidine C ₅ H ₁₁ N		X	X	X		X	A	B							
Plating Solution — Cadmium			B	B					A			A		X	
Plating Solution — Chrome	X	X	X	C		A	A	A					A ^{131*}	X	
Plating Solution — Lead		B	B			A	A							A	
Plating Solution — Others		C	A	A		B	A	A			A				
Polyvinyl Acetate Emulsion PVAc + H ₂ O		C		A			A	A		B					A
Potassium Acetate CH ₃ CO ₂ K		B	B	A		X	A	A	10%B	A	B	B	A		A
Potassium Bicarbonate KHCO ₃		A	A			A	A	A	B	50%B	30%A	50%B	A		A
Potassium Bisulfate KHSO ₄		A	A			A	A		10%A	X	10%A		A		A
Potassium Bisulfite KHSO ₃		A	A			A	A		10%B		10%B	90%B			
Potassium Bromide KBr		A	A	A		A	A	A	A	80%B ^{212*}	90%B ^{212*}	70%A ^{167*}	A		A
Potassium Carbonate (Potash) K ₂ CO ₃	C	A	A	A		A	A	A	X	B	B	90%A	A	B	A
Potassium Chlorate KClO ₃		A	A	A		A	A	A	X	B	60%A	20%A	A	B	A
Potassium Chloride KCl	A	A	A	A		A	A	A	X	B	A	30%A ^{167*}	A	B	A
Potassium Chromate K ₂ CrO ₄		A	A			50%A	A	A	A	A	A		A		A

Rating specific to % of concentration. Temperature shown is °F. Where not shown, temperature is 70°F (21°C) Ambient.

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Potassium Copper Cyanide $K_3[Cu(CN)_4]$	A	A	A	A		A	A					A		A	
Potassium Cyanide KCN	A	A	A	A		A	A	A	C	B	90%B ^{212°}	30%B	A	C	A
Potassium Dichromate $K_2Cr_2O_7$	A	A	A	A		A	A	A	A	A	A	25%B	A	C	A
Potassium Hydroxide (Caustic Potash) (Lye) KOH	B	B	B	A	C	B	A	A	X	B	A	50%B	A	C	A ^{150°}
Potassium Iodide KI	A	A	A		A	A		10%B		B	B	A		A	
Potassium Nitrate (Saltpeter) KNO_3	A	A	A	A		A	A	A	80%A	B	80%B ^{212°}	80%B ^{212°}	A	B	A
Potassium Nitrite KNO_2	A	A	A	A	B	A	A		B	B	B	B			
Potassium Permanganate (Purple Salt) $KMnO_4$			C	C	A	X	B	A	A	10%A	B	30%B ^{212°}	A	B	A
Potassium Phosphate KH_2PO_4		A	A	A		A	A		X	X	30%B	10%B			
Potassium Silicate $K_2Si_2O_5$		A	A	A		A	A		B	B	B	B			
Potassium Sulfate K_2SO_4	A	A	A	A	B	A	A	A	B	B	A	A	A	B	A
Potassium Sulfide K_2S	A	A	A	A		A	A		X	B	B	10%B	A		A
Potassium Sulfite $K_2SO_3 \cdot 2H_2O$		A	A	A		A	A		A	X	50%B		A		A
Propane (LPG) C_3H_8	B	B	A	X	B	A	A	C	A	A	A	A	X	A	A
Propionaldehyde (Propanal) C_2H_5CHO			X			X	A		A	A	A	A			
Propionic Acid (Methylacetic Acid) $CH_3CH_2CO_2H$		X	X	A		A	A		A	X	B	90%A			
n-Propyl Acetate $CH_3COO \cdot (CH_2)_2CH_3$		X	X	A		X	A	B	A		A	A	C		A
Propyl Alcohol (1-Propanol) $CH_3CH_2CH_2OH$	X	B	B	A		A	A		A	A	A	A	A	A	A
n-Propyl Nitrate (NPN) $CH_3(CH_2)_2NO_3$			A	B		C	A	B	A	X					
Propylene C_3H_6		X	X	X		A	A	B	A	A	A	A			
Propylene Dichloride $CH_3CH(Cl)CH_2Cl$		X	X	X		B	A		X	A	A	B			
Propylene Glycol (Methyl Glycol) $C_3H_8(OH)_2$		C	A	A		A	A	A	A	A	A	A	A	A	A
Propylene Oxide C_3H_6O		X		C		X	A	A	B	B	A		X		X
Pydraul (Phosphate Eser Base Fluid)	X	X	X	B	A	A	A	A		A	A	A			

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(N) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Pyranol		X	A			A	A								
Pyridine N(CH ₂) ₂ CH	X	X	X	C	X	X	A	A	A	B	A	50%A ^{100°}	C	A	X
Pyroligneous Acid (Wood Vinegar)		C	C	C		A	A		B	X	10%A		A	X	A
Pyrrole (Azole) C ₄ H ₅ N		X	X	X		C	A	C							
Quaternary Ammonium Salts NH ₄ (X)		A	A			A	A			X	A				
Quench Oil		B	B			A	A		A		A	A			
Rape-Seed Oil (Colza Oil)	C	C	B	A		A	A	B		A	A	A			
Rose Oil Geraniol, citronellol		C				A	A	A			A				
Rosin C ₂₀ H ₃₀ O ₂		C	A				A	A	A		A	A	A	B	
Rosin Oil (Rosinol)		A	A			A	A								
Rotenone C ₂₃ H ₂₂ O ₆		A	A	A		A	A								
Rubber Latex Emulsions (C ₅ H ₈) _n /H ₂ O						A	A		A		A	A			
Rubber Solvents (Petroleum Distillate) Hydrocarbons		C	X			X	A		A		A	A			
Rum Alcoholic liquor from molasses	X	A	A	A		B	A	A			A	A			
Rust Inhibitors		C	A			A		B			A		A		
Salad Dressing Fats, oils, water			A			A		A	B	X	A		A		
Sal Ammoniac (Ammonium Chloride) NH ₄ Cl	A	A	A	A	A	A	A	A	X	X	B	A	A	X	A
Sal Soda (Sodium Carbonate) NaCO ₃		A	A	A		A	A		X	A	A	A			
Salicylic Acid HOC ₆ • H ₄ COOH		B	B	A		B	A		A	X	B	A	A		A
Salt Water (Brine) NaCl/H ₂ O	A	B	A	A	A	A	A	A	B	X	A	A	A		A
Sea Water (Brine)	A	B	A	A	X	A	A	A	A	C	A	A	A	A	A
Sesame Seed Oil Olein, stearin, palmitin		C	A			A	A	B		A	A				
Sewage	X	B	A	C	B	A	A	A	B	B	A	A	A		A
Silicate Esters Si(OR) ₄	A	A	B	X	C	A	A	B							
Silicone Oils (Versilube Etc.) (CH ₃) ₂ SiO ₂ _n	A	C	A	A	A	A	A	C	B	B	A	A	A		A
Silver Cyanide AgCN		A					A		X	A	A	A	A		A

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CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Silver Nitrate AgNO ₃	A	A	B	A		A	A	A	X	X	60%A	60%A	A	A	A
Skydrol Hydraulic Fluid® (Phosphate Ester Base)		X	X	A	A	C	A	B			A	A			
Soap Solutions Salt of fatty acid in H ₂ O	A	B	A	A	A	A	A	A	C	X	A	A	A	A	A
Soda Ash (Sodium Carbonate) Na ₂ CO ₃		A	A	A	B	A	A	A	X	A	A	A			
Sodium Acetate CH ₃ COONa	X	C	C	A		X	A	A	A	A	A	A	A	A	
Sodium Aluminate Na ₂ Al ₂ O ₄		A	A			A	A	A		50%A	50%A	10%B	A		A
Sodium Bicarbonate (Baking Soda) NaHCO ₃		A	A	A	B	A	A	A	B	C	20%A	20%A	A	X	A
Sodium Bisulfite (Niter Cake) NaHSO ₄		A	A	A	B	A	A	A	50%B	C	50%B	B	A	C	A
Sodium Bisulfite (Cream of Tartar) NaHSO ₃		A	C	A	B	A	A	A	B	20%B	50%A	B	A	X	A
Sodium Borate Na ₂ B ₄ O ₇		A	A	A	B	A	A	A	B		A	A	A ^{140°}	C	A
Sodium Bromide NaBr							A		C	C	30%B	50%B	A		A
Sodium Chlorate NaClO ₃		B	A	A		A	A	A	70%B ^{212°}	B	B	70%B ^{212°}	A	B	A
Sodium Chloride (Table Salt) NaCl	A	A	A	A	A	A	A	A	B	30%B	A	A	A	A	A
Sodium Chromate Na ₂ CrO ₄		A	A		A	A	A	80%A ^{212°}	60%A	60%A	60%A	A		A	A
Sodium Cyanide NaCN		A	A	A	A	A	A	A	X	A	A		A	C	A
Sodium Dichromate (Sodium Bichromate) Na ₂ Cr ₂ O ₇ • 2H ₂ O	A	B		A	20%X	A	A						A		A
Sodium Fluoride NaF		A	A	A		A	A		30%B		10%B	10%B	A		A
Sodium Hexametaphosphate (Calgon) (NaPO ₃) ₆	B	B	B	B		A	A		C	B	B	A			
Sodium Hydroxide (Caustic Soda) (Lye) NaOH	C	B	B	A	X	X	A	50%A	X	50%B	50%A	70%B ^{212°}	A	X	A
Sodium Hypochlorite NaClO	X	B	X	C	5%A	B	A	20%A	X	X	X	10%B	X	X	A
Sodium Metaphosphate (Kurrol's Salt) Na(PO ₃)H	B	C	B	A		A	A	A	X		B	A	X	B	
Sodium Metasilicate Na ₂ SiO ₃		A	A			A		A	B		A	A	A	B	A
Sodium Nitrate (Chile Saltpeter) NaNO ₃		B	C	A	B	A	A	A	90%A	90%A	90%A	30%A	A	A	A

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Sodium Nitrite NaNO ₂		X	A			A	A		A	A	A	A			A
Sodium Perborate NaBO ₃		B	C	A	B	A	A	A	X	10%B	A	10%B	A	B	A
Sodium Peroxide (Sodium Dioxide) Na ₂ O ₂	X	B	B	B	B	A	A	B	10%B	90%A	0%B	10%B	B	X	A
Sodium Phosphate (Tribasic) (TSP) Na ₃ PO ₄	A	B	B	A	B	A	A	A	X	B ^{167*}	B	A	A		A
Sodium Silicates (Water Glass) Na ₂ O • SiO ₂		A	A	A	A	A	A	A	A	A	A	B	A		A
Sodium Sulfate (Salt Cake) (Thenardite) Na ₂ SO ₄	A	B	A	A	A	A	A	A	30%B	B	A	A	A		A
Sodium Sulfide (Pentahydrate) Na ₂ S • 5H ₂ O	A	A	A	A	A	A	A	A	30%A ^{212*}	B	30%A ^{167*}	50%B ^{212*}	A	A	A
Sodium Sulfite Na ₂ SO ₃	A	A	A	A	A	A	A		30%A	X	30%A	30%B ^{212*}	A	A	A
Sodium Tetraborate Na ₂ B ₄ O ₇ • 10H ₂ O				A		B			A			A		C	
Sodium Thiosulfate (Antichlor) Na ₂ S ₂ O ₃	A	A	A	A		A	A		A	C	A ^{122*}	B ^{122*}	A	B	A
Sorgum			A	A					A		A	A	A		
Soybean Oil Triglycerides of acids		C	A	A	C	A	A	A	B	A	A	A	A	B	B
Soy Sauce Fermented soya bean/wheat			A	A					A		X	A			
Sperm Oil (Whale Oil) Fatty acid esters		X	A			A	A	B		A	A	A			
Stannic Chloride (Tin Chloride) SnCl ₄	B	B	A	B	B	A	A	A	X	C	10%A	B	A		A
Stannous Chloride (Tin Chloride) SnCl ₂	B	A	A	B	15%B	A	A		X	B	10%A	A	A		A
Starch C ₆ H ₁₀ O ₅		A	A	B	B	C	A	A	A	C	A	A	A	B	
Stearic Acid CH ₃ (CH ₂) ₁₆ CO ₂ H	A	158*B	B	B	B	A	A	B	C	C	A	B	A	C	A
Stoddard Solvent Petroleum distillate	A	C	A	X	A		A	C	A	A	A	X	A	A	X
Styrene (Vinylbenzene) C ₆ H ₅ CHCH ₂	C	X	X	X	X	A	A	C	A	A	A	A			A
Sucrose Solution (Sugar) C ₁₂ H ₂₂ O ₁₁ /H ₂ O	X	A	A	A	A	A	A	A	A	A	A	A			
Sulfamic Acid H ₂ NSO ₃ H		A	B		A		A		10%A	X	X		X		X
Sulfite Liquors			B	A	C	B			A				A		
Sulfur	S	B	B	X	A	A	A		A	A	A	A	B	A	A
Sulfur Chloride S ₂ Cl ₂		X	C	X	C	A	A	X	B	X	B	A	X		A

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CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Sulfur Dioxide SO ₂	B	A	X	B	X	A	A	A	A	B	10%A	80%A	A	B	A
Sulfur Hexafluoride SF ₆		A	B	A	A	A	A	B							
Sulfur Trioxide SO ₃	B	C	C	C	X	A	A	C	B	B	B	B	X		X
Sulfuric Acid 10% H ₂ SO ₄	B	A	B	A	A	A	A	A	X	X	A	A	A		A
Sulfuric Acid 25% H ₂ SO ₄	X	B	C	B	A	A	A	A	X	X	B	A	A		A ^{150°}
Sulfuric Acid 50% H ₂ SO ₄	X	B	C	B	A	A	A	A	X	X	X	A	A		A ^{150°}
Sulfuric Acid 60% H ₂ SO ₄	X	C	X	B	X	A	A	A	X	X	X	A	A		A ^{150°}
Sulfuric Acid 75% H ₂ SO ₄	X	X	X	C	X	A	A	A	X	C	C	A	A		A ^{150°}
Sulfuric Acid 95% H ₂ SO ₄	X	X	X	C	X	A	A	A	X	B	A	A	X		A ^{120°}
Sulfuric Acid (Conc.) H ₂ SO ₄	X	X	X	C		A	A	98%B	X	B	B	A	X		A ^{120°}
Sulfuric Acid (Fuming) H ₂ SO ₄	X	X	X	X	20%X	B	A		C	X	B	B			
Sulfurous Acid H ₂ SO ₃	X	X	B	C	C	A	A	A	B	X	B	B	A	X	A
Tall Oil (Liquid Rosin) Rosin acids		B	A	X		A	A	A	X	B ^{212°}	B	A	A		A
Tallow Fat from cattle, sheep			A			A	A	B	A		A		B	C	
Tannic Acid C ₇₆ H ₅₂ O ₄₆	A	B	C	C	10%A	A	A	A	A	A	A	10%B	A	X	A
Tanning Liquors Tannic acid		B	A				A	A	A		A	A	A	X	
Tar, Bituminous(Coal Tar) (Pitch) Mixture of aromatic & phenolic hydrocarbons		C	B	X	X	A	A	B	A		A	A	A	A	
Tartaric Acid C ₄ H ₆ O ₆	A	A	B	B	B	A	A	A	20%A	X	A	90%A	A	X	A
Terpenes C ₁₀ hydrocarbons	C	X	C	X		A	A		A	X					
Terpineol (Terpilenol) C ₁₀ H ₁₈ O	X	X	C	C		A	A	B	A	A	A	A	X		B ^{120°}
Tertiary Butyl Alcohol (CH ₃) ₃ COH		A	A			B	A	B					B		
Tertiary Butyl Catechol C ₉ H ₁₄ O ₂		B	X			A	A	B	C	B	B				
Tertiary Butyl Mercaptan C ₄ H ₁₀ S		X	X			A	A	B							
Tetra Bromomethane CBr ₄		X	X			A	A	X	X				X		
Tetrabutyl Titanate Ti(C ₂ H ₅) ₄		A	B	B		A	A	B							

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS							METAL PARTS				PLASTICS			
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(N) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Tetrachloroethylene $Cl_2C = CCl_2$							X						A		
Tetrachlorodifluoroethane $(Cl_2FC)_2$		X	X				A								
Tetrachloroethane (Acetylene Tetrachloride) $(Cl_2HC)_2$		X	X	X		A	A	X	X	A	C	90%A ^{212°}	X	A	A
Tetraethyl Lead $Pb(C_2H_5)_4$		X	B	X		B	A	C	B	A	A		A		A
Tetraethylene Glycol (TEG) $HOCH_2(CH_2OCH_2)_3CH_2OH$						A	A								
Tetrahydrofuran (THF) C_4H_8O	C	X	X	C	C	X	A	B					C ^{100°}	A	B ^{70°}
Tetrahydronaphthalene (Tetralin) $C_{10}H_{12}$		X	X	X		A	A		A	A	A	A	C		
Thionyl Chloride $SOCl_2$		X	X	X		B	A	B	C	A	A	10%A	B	B	X
Thiophene C_4H_4S		X	X	X		C	A								
Titanium Tetrachloride $TiCl_4$		X	C	X		A	A	X	X	A	B	B	B		B
Toluene (Toluol) C_7H_8	X	X	C	X	C	B	A	C	A	A	A	A	X	B	A
Toluene Diisocyanate $CH_3C_6H_3(NCO)_2$		X		A	B		A	B							
Toluidine $CH_3C_6H_4NH_2$			X			B	A		A	A	A	A			
Tomato Pulp & Juice			A				A	A	B		A	A	A		A
Toothpaste		C	A			A	A			X	A	A			
Transformer Oil (Petroleum) Hydrocarbons	X	C	B	X		A	A	X	A	A	A	A	B	C	
Transmission Fluid (Type A)	A	C	A	X	B	A	A	C	A	A	A	A			
Triacetin $C_9H_{18}O_6$	X	B	A	A		X	A	A	B						
Triallyl Phosphate $P(OC_3H_5)_3$	C	C	X	A		A	A						B		A
Triaryl Phosphate $(C_6H_5O)_3PO$		C	X			A	A								
Tributoxyl Ethyl Phosphate $(C_4H_9O)_3P(C_2H_5)$	X	X	X	A		B	A	B							
Tributyl Phosphate (TBP) $(C_4H_9)_3PO_4$	X	X	X	C	C	X	A	B	A	A	A		B ^{100°}		A ^{100°}
Dibutyl Mercaptan $(C_4H_9)_2S$		X	X			A	A	B							
Trichloroacetic Acid (TCA) CCl_3COOH		B	C	C	X	B	A	B	X	X	X	B	B		B
Trichlorobenzenes $C_6H_3Cl_3$		X	X			B	A		X	A	A	B			
Trichloroethane $C_2H_3Cl_3$	X	X	X	X		B	A	X	X	A	A	A	X		A

Rating specific to % of concentration. Temperature shown is °F. Where not shown, temperature is 70°F (21°C) Ambient.

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Trichloroethylene (Ex-Trn) (Hi-Trn)® C ₂ HCl ₃	X	X	X	X	X	C	A	X	X	B	90%A ^{167*}	A	X	B	A
Trichloropropane CH ₂ ClCHClCH ₂ Cl		A	X			B	A	X	X	A	A	A	X		
Tricresyl Phosphate (Lindol) (TCP)® (CH ₃ C ₆ H ₄ O) ₃ • PO	X	C	X	A	C	C	A	B		A	B	A	B		X
Tricresyl Alcohol (Tridecanol) C ₁₂ H ₂₅ • CH ₂ OH			A			B	A								
Triethanol Amine (TEA) N(C ₂ H ₄ OH) ₃	X	A	X	B	X	C	A	A	A	A	A	A	A	B	X
Triethyl Aluminum (ATE) Al(C ₂ H ₅) ₃		X	X			B	A	B							
Triethyl Amine (CH ₃ CH ₂) ₃ N		B	A				A			A	A	A	C		A ^{120*}
Triethyl Borane (C ₂ H ₅) ₃ B		X	X			A	A	B							
Triethylene Glycol (TEG) (CH ₂ OCH ₂ CH ₂ OH) ₂			A			A	A						A		
Trimethylene Glycol HO(CH ₂) ₃ OH			A	A		A	A		A	A	A	A			
Trinitrotoluene (TNT) CH ₃ C ₆ H ₂ (NO ₂) ₃		B	X	X		C	A	A							
Trioctyl Phosphate (C ₈ H ₁₇ O) ₃ PO		X	X	A		B	A	B							
Tung Oil (Wood Oil) Fatty acids	C	C	A	X	B	A	A	B	A		A	A	A		
Turpentine C ₁₀ H ₁₆	X	X	A	X	B	A	A	C	A	A	A	A	X	A	A
Unsymmetrical Dimethyl Hydrazine (UDMN) H ₂ NN(CH ₃) ₂		C	C	A		X	A	B							A
Urea (Carbamide) CO(NH ₂) ₂		B	B		B	A	A		B		50%B		A	A	A
Urine		X	A			A	A	A	A	A	A	A	A	C	A
Valeric Acid CH ₃ (CH ₂) ₃ COOH		X	X	A			A		A						
Vanilla Extract (Vanillin) C ₆ H ₃ (CHO) • (OCH ₃) ₃ (OH)		X	A			X	A				A				
Varnish Oil, gum resins, oil of turpentine		C	B	X		A	A		A		A	A	A		A
Vegetable Juices		C	A				A	A	C		A				
Vegetable Oils	A	C	B	A		A	A	B	A	B	A	A	X		
Vinegar Dilute acetic acid	X	B	C	A	C	A	A	A	C	X	A	A	A	C	A
Vinyl Acetate CH ₃ COOC, HCH ₂		B	X			X	A		B	A	A	A	B		A
Vinyl Chloride (Chloroethylene) CH ₂ CHCl		X	X	C		A	A	X	X	A	A	A	X		B

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

CHEMICAL Formula	ELASTOMERS								METAL PARTS				PLASTICS		
	POLYURETHANE	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(V) FKM FLUOROCARBON	PTFE, PFA	(TPE XL) SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	HASTELLOY	POLYPROPYLENE	ACETAL	PVDF
Walnut Oil		B	A			A	A								
Water, Distilled (Also Deionized) H ₂ O	A	C	A	A		A ^{72°}	A	A	A	C	A	A	A	A	A
Water, Fresh H ₂ O	A	B	A	A	A ^{72°}	A ^{72°}	A	A	A	A	A	A	A	A	A
Waxes Hydrocarbons		A	A	X			A		A		A	A		A	
Weed Killers		C	B			A		B	X		A				
Whiskey Ethanol, esters, acids	A	A	B	A	B	A	A	A	A	X	A	A	A	B	A
White Oil (Mineral) (Petroleum) Mixture of liquid hydrocarbons		C	A	X		A	A	C			A	A			
White Sulfate Liquor		A	B	A		B	A		B	C	A	B	A		A
Wines	X	A	A	A	A	B	A	A	C	X	A	A	A	B	A
Wort, Distillery Sugar solution from malt		A				A	A		A	B	A	A			
Xylene (Xylol) C ₆ H ₄ (CH ₃) ₂	X	X	X	X	C	A	A	C	A	B	B	A	X	A	A
Xylidines (Xylidin) (CH ₃) ₂ C ₆ H ₃ NH ₂		X		X		X	A	C	B	B					
Zeolite Hydrated alkali aluminum silicates		C	C	A		A	A	A			A	A			
Zinc Acetate Zn(C ₂ H ₃ O ₂) ₂		B	C	A		X	A	A	C				A		A
Zinc Carbonate ZnCO ₃			A			A	A		B	B	B	B			
Zinc Chloride ZnCl ₂	A	B	B	A	A	A	A	A	10%A	B	10%A	A	A	B	A
Zinc Hydrosulfite ZnHSO ₃		A	A			A	A	A	X		A				
Zinc Sulfate ZnSO ₄		A	A	A	X	B	A	A	20%B	X	B	90%B	A	B	A

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended No Data Available

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