

Chemical Resistance Chart

Acetaldehyde - Alcohols (Propyl)

Chemical Resistance Data

These recommendations are based upon information from material suppliers and careful examination of available published information and are believed to be accurate. However, since the resistance of metals, plastics and elastomers can be affected by concentration, temperature, presence of other chemicals and other factors, this information should be considered as a general guide rather than an unqualified guarantee. Ultimately, the customer must determine the suitability of the pump used in various solutions.

All recommendations assume ambient temperatures unless otherwise noted.

RATINGS - CHEMICAL EFFECT

- A:** No effect - Excellent
- B:** Minor effect - Good
- C:** Moderate effect - Fair
- D:** Severe effect - Not Recommended

FOOTNOTES

1. P.V.C. - Satisfactory to 72° F.
2. Polypropylene - Satisfactory to 72° F.
3. Polypropylene - Satisfactory to 120° F.
4. Buna-N - Satisfactory for "O" Rings
5. Polyacetal - Satisfactory to 72° F.
6. Ceramag - Satisfactory to 72° F.

The ratings for these materials are based upon the chemical resistance only. Added consideration must be given to pump selections when the chemical is abrasive, viscous in nature, or has a Specific Gravity greater than 1.1

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	TITANIUM	HASTELLOY C	Cast Bronze	Brass	Cast Iron	Carbon Steel	KYNAR	PVC (Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cyclac (ABS)	Polyethylene	POLYPROPYLENE	RYTON	CARBON	CERAMIC	CERAMAGNET "A"	VITON	BUNA N (NITRILE)	Silicon	Neoprene	Ethylene Propylene (EPM)	Rubber (Natural)	Epoxy
Acetaldehyde ⁵	A	A	A	-	B	A	A	D	-	-	C	-	D	D	A	-	A	A	D	C	B	A	A	A	-	D	B	B	D	B	C	A
Acetamide	-	B	A	-	-	-	-	-	-	-	C	-	-	-	-	-	B	-	-	-	-	-	-	A	-	A	A	-	A	A	D	A
Acetate Solv. ²	A	B	A	B	B	-	-	A	C	B	A	-	B	D	A	-	-	A	-	B	D	-	A	A	-	D	D	-	D	-	-	A
Acetic Acid, Glacia ¹	-	B	A	A	B	A	A	C	C	D	A	-	C	B	A	C	D	D	D	B	B	A	A	A	-	D	D	B	C	B	C	B
Acetic Acid 20%	-	B	A	-	-	A	A	-	C	-	-	A	B	-	A	A	-	D	-	-	A	A	-	A	-	A	C	-	C	-	-	B
Acetic Acid 80%	-	B	A	-	-	A	A	-	C	-	-	A	D	-	A	B	-	D	-	-	B	-	-	A	-	A	C	-	D	-	-	B
Acetic Acid	-	B	A	B	B	A	A	C	C	D	C	B	A	B	A	A	D	D	C	B	A	A	A	A	-	C	C	-	C	B	C	A
Acetic Anhydride	B	A	A	B	B	A	A	C	D	B	D	D	D	D	A	D	D	D	D	A	A	A	A	A	-	D	A	C	B	B	C	A
Acetone ⁶	A	A	A	B	A	A	A	A	A	A	A	D	D	D	A	D	B	A	D	C	B	A	A	A	A	D	D	B	C	A	D	B
Acetyl Chloride	-	C	A	-	-	-	-	D	-	-	-	-	-	-	A	-	-	-	-	-	-	-	A	-	-	A	-	-	-	-	A	A
Acetylene ²	A	A	A	A	A	B	-	B	-	A	A	-	B	-	-	-	A	A	-	-	D	A	A	A	-	A	A	C	B	A	C	A
Acrylonitrile	A	A	C	-	B	B	B	A	-	C	-	-	-	-	-	-	B	-	D	-	B	A	A	A	-	C	D	-	D	-	-	A
Alcohols																																
Amyl	A	A	A	-	C	A	A	A	B	C	C	A	A	B	A	C	A	A	B	B	B	A	A	A	-	A	A	D	A	A	C	A
Benzyl	-	A	A	-	B	A	A	A	C	-	-	-	D	B	-	A	A	A	D	D	A	-	A	A	-	A	D	-	B	B	D	A
Butyl	A	A	A	-	B	B	A	B	C	C	C	A	A	B	A	A	A	A	-	B	B	A	A	A	-	A	A	D	A	A	A	A
Diacetone ²	-	A	A	-	A	A	A	A	C	-	A	-	D	-	-	A	A	A	-	-	D	-	A	A	-	D	D	-	D	A	D	A
Ethyl	-	A	A	A	B	A	A	A	C	A	A	-	A	C	-	A	B	A	B	B	A	-	A	A	A	A	A	B	A	B	A	A
Hexyl	-	A	A	-	A	A	A	A	C	-	A	-	-	-	-	A	A	A	-	-	A	-	A	A	-	A	A	D	B	A	A	A
Isobutyl	-	A	A	-	B	A	A	A	C	-	A	-	-	-	-	A	A	A	B	-	A	-	A	A	-	A	C	B	A	A	A	A
Isopropyl	-	A	A	-	B	A	A	A	C	C	A	-	-	-	-	A	A	A	-	-	A	-	A	A	-	A	C	C	B	A	A	A
Methyl ⁶	-	A	A	A	B	A	A	A	C	A	A	-	B	-	A	A	C	A	D	B	A	-	A	A	A	C	B	-	A	A	A	A
Octyl	-	A	A	-	A	A	A	A	C	-	A	-	-	-	-	A	A	A	-	-	-	-	A	A	-	A	B	-	B	A	C	A
Propyl	-	A	A	-	A	A	A	A	-	-	A	B	A	-	A	A	A	A	-	-	A	-	A	A	-	A	A	B	A	A	A	A

Chemical Resistance Chart

Aluminum Chloride - Beer

RATINGS - CHEMICAL EFFECT
A: No effect - Excellent
B: Minor effect - Good
C: Moderate effect - Fair
D: Severe effect - Not Recommended

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	TITANIUM	HASTELLOY C	Cast Bronze	Brass	Cast Iron	Carbon Steel	KYNAR	PVC (Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cycloc (ABS)	Polyethylene	POLYPROPYLENE	RYTON	CARBON	CERAMIC	CERAMAGNET "A"	VITON	BUNA N (NITRILE)	Silicon	Neoprene	Ethylene Propylene (EPM)	Rubber (Natural)	Epoxy			
Aluminum Chloride 20%	-	D	C	D	B	A	A	D	-	D	A	-	A	B	-	A	C	A	-	B	A	A	A	A	-	A	A	-	A	A	A	A			
Aluminum Chloride	C	D	C	-	D	C	A	C	-	D	B	A	A	A	A	-	D	-	-	A	A	A	A	A	-	A	A	C	A	-	-	A			
Aluminum Fluoride	-	D	C	D	-	D	B	-	-	-	A	A	A	-	A	A	C	D	-	B	A	-	A	-	-	A	A	C	A	-	C	A			
Aluminum Hydroxide ⁶	-	A	A	A	A	-	-	A	-	D	A	-	A	-	A	A	B	A	-	-	A	-	A	A	A	A	A	A	-	A	-	A	A		
Alum Potassium Sulfate (Alum), 10%	-	A	-	-	A	-	B	-	-	D	A	-	A	-	A	-	-	A	-	A	-	-	A	A	-	A	-	-	A	-	A	A			
Alum Potassium Sulfate (Alum), 100%	-	D	A	B	B	-	B	C	-	-	A	-	A	B	A	A	C	D	-	B	A	-	A	A	-	A	A	-	A	-	A	A			
Aluminum Sulfate	-	C	C	A	A	A	A	C	C	D	A	A	A	B	A	A	C	A	-	B	A	A	A	A	-	A	A	-	A	A	A	A			
Amines	A	A	A	-	A	B	A	B	-	A	B	-	C	A	A	B	D	A	-	-	-	-	A	A	-	D	D	C	B	B	C	A			
Ammonia 10%	-	-	A	-	-	A	A	-	-	-	-	D	A	-	A	A	-	A	-	-	A	A	-	A	-	A	D	-	A	-	-	B			
Ammonia, Anhydrous	A	B	A	A	B	B	A	D	-	D	B	D	A	B	A	A	D	A	-	B	A	B	C	A	-	D	B	B	A	A	D	A			
Ammonia, Liquids	-	A	A	A	D	-	B	D	-	A	A	-	A	B	A	A	D	-	-	D	A	-	A	A	-	D	B	B	A	A	D	A			
Ammonia, Nitrate	-	A	A	A	C	-	-	D	-	-	A	-	B	B	-	A	C	-	-	-	A	-	A	A	-	-	A	-	C	-	-	A			
Ammonium Bifluoride	-	C	A	-	D	-	B	-	-	-	-	-	A	-	-	A	D	-	-	-	A	-	-	A	-	A	A	-	A	-	-	A			
Ammonium Carbonate	B	A	A	A	C	A	B	B	-	C	B	-	A	B	A	A	D	A	-	-	A	-	A	A	-	B	D	C	A	A	-	A			
Ammonium Casenite	-	-	A	-	-	-	-	-	-	-	-	-	-	-	-	A	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	A
Ammonium Chloride	C	A	C	A	C	D	A	D	C	D	D	A	A	B	A	A	B	A	-	B	A	A	A	A	-	A	A	C	A	A	A	A	A		
Ammonium Hydroxide	A	A	A	A	C	A	A	D	D	A	C	-	A	B	A	A	D	A	B	B	A	A	A	A	-	B	B	B	A	A	C	A	A		
Ammonium Nitrate	A	A	A	A	B	A	A	D	D	A	D	-	A	B	A	A	C	D	-	B	A	A	A	A	-	D	A	C	A	A	A	A	A		
Ammonium Oxalate	-	A	A	A	-	-	A	-	-	-	A	-	-	-	-	-	B	-	-	-	-	-	A	-	-	-	A	-	A	-	-	A			
Ammonium Persulfate	-	A	A	A	C	C	A	A	-	D	A	D	A	-	A	A	D	D	-	-	A	-	A	A	-	C	A	-	A	A	A	A	A		
Ammonium Phosphate, Dibasic	B	A	A	A	B	A	A	C	-	-	D	-	A	-	A	A	B	A	-	B	A	-	A	A	-	A	A	B	A	A	A	A	A		
Ammonium Phosphate, Monobasic	-	A	A	A	B	A	A	D	-	-	A	-	A	A	A	A	B	A	-	B	A	-	A	A	-	A	A	B	A	A	A	A	A		
Ammonium Phosphate, Tribasic	B	A	A	A	B	A	A	C	-	C	D	-	A	-	A	A	B	A	-	B	A	-	A	A	-	A	A	B	A	A	A	A	A		
Ammonium Sulfate	C	D	B	A	B	A	A	B	C	C	C	A	A	D	A	A	B	D	-	B	A	A	A	A	-	D	A	B	A	A	A	A	A		
Ammonium Thio-Sulfate	-	-	A	-	-	A	-	-	-	D	A	-	-	-	-	-	B	-	-	-	-	-	A	A	-	-	A	-	A	-	-	A			
Amyl-Acetate	B	A	A	C	B	A	A	C	-	-	C	C	D	D	A	D	A	B	-	D	D	A	A	A	-	D	D	D	D	A	D	A	A		
Amyl Alcohol	-	A	A	-	B	A	A	A	-	-	A	A	A	B	A	C	A	A	-	B	A	-	A	A	-	B	B	D	A	A	C	A	A		
Amyl Chloride	-	C	B	-	D	-	A	A	-	-	A	A	D	C	A	D	A	C	-	D	D	-	A	A	-	A	D	-	D	D	D	A	A		
Aniline	B	A	A	A	C	A	B	C	-	-	C	C	D	D	A	D	D	C	D	C	B	A	A	A	-	C	D	C	D	B	D	A	A		
Anti-Freeze	-	A	A	-	A	-	A	B	B	B	C	-	A	B	A	A	A	A	B	B	A	A	A	A	A	A	A	C	A	A	A	A	A		
Antimony Trichloride	-	D	D	-	D	C	A	-	-	-	-	-	A	A	A	-	-	D	-	A	-	-	-	A	-	A	-	-	C	-	-	A	A		
Aqua Regia (80%, HCl, 20%, HNO)	-	D	D	-	D	A	D	D	-	-	-	C	D	D	A	D	D	D	-	D	C	-	-	D	-	C	D	C	D	D	D	D	D		
Arochlor 1248	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	D	-	-	-	-	-	-	A	-	-	A	D	-	D	B	D	A	A		
Aromatic Hydrocarbons	-	-	A	-	A	-	-	A	-	A	A	-	D	-	-	D	A	-	-	C	-	-	A	-	-	A	D	-	D	D	D	A	A		
Arsenic Acid	B	A	A	-	D	-	-	D	B	D	D	A	A	B	A	A	D	A	-	B	A	-	A	A	-	A	A	-	A	-	C	A	A		
Asphalt	-	B	A	-	C	-	-	A	-	C	-	-	A	-	-	-	A	A	-	-	A	A	-	A	A	A	B	C	B	D	D	A	A		
Barium Carbonate	B	A	A	A	B	A	A	B	-	B	B	-	A	A	A	A	A	A	-	B	A	-	A	A	A	A	A	-	A	-	A	A	A	A	
Barium Chloride	C	D	A	A	D	A	A	B	-	-	C	A	A	B	A	A	A	B	-	B	A	A	A	A	-	A	A	B	A	A	A	A	A		
Barium Cyanide	-	-	A	-	-	-	-	C	-	-	A	-	-	-	-	-	B	-	-	B	-	-	A	-	-	A	C	-	A	A	-	-	A		
Barium Hydroxide	B	C	A	A	D	B	B	B	-	C	C	A	A	-	A	A	D	A	-	B	A	A	A	A	A	A	A	C	A	A	A	A	A		
Barium Nitrate	-	A	A	-	-	A	-	D	-	A	A	-	B	-	-	A	A	-	-	-	-	-	-	A	A	-	A	A	-	A	A	-	-	B	
Barium Sulfate	B	A	A	A	D	A	A	C	-	C	C	A	A	-	A	A	A	A	-	B	A	A	A	B	-	A	A	D	A	A	-	-	B		

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Chemical Resistance Chart

Beet Sugar Liquids - Chlorobenzene

RATINGS - CHEMICAL EFFECT	
A:	No effect - Excellent
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D:	Severe effect - Not Recommended

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	TITANIUM	HASTELLOY C	Cast Bronze	Brass	Cast Iron	Carbon Steel	KYNAR	PVC (Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cyclac (ABS)	Polyethylene	POLYPROPYLENE	RYTON	CARBON	CERAMIC	CERAMAGNET "A"	VITON	BUNA N (NITRILE)	Silicon	Neoprene	Ethylene Propylene (EPM)	Rubber (Natural)	Epoxy		
Beet Sugar Liquids	A	A	A	-	A	-	-	A	B	A	-	-	A	-	A	A	B	A	B	-	A	-	A	A	-	A	A	-	B	A	A	A		
Benzaldehyde ³	A	A	A	-	B	A	A	A	-	B	A	C	D	D	A	D	A	C	D	D	D	D	A	A	A	-	D	D	B	D	A	D	A	
Benzene ²	B	A	A	A	B	A	B	B	A	B	C	B	D	C	A	D	A	A	D	D	D	D	A	A	A	A	A	D	-	D	D	D	A	
Benzoic Acid ²	B	A	A	A	B	A	A	B	-	D	-	A	A	B	A	A	B	D	-	B	D	-	A	B	-	A	D	-	D	D	D	A		
Benzol	-	A	A	-	B	A	A	B	A	-	-	-	D	-	A	D	A	A	-	-	A	-	A	A	A	A	D	D	-	D	-	-	A	
Borax (Sodium Borate)	-	A	A	A	C	B	A	A	B	A	C	A	A	A	A	A	A	A	-	B	A	A	A	A	A	A	A	B	C	A	A	C	A	
Boric Acid	B	A	A	A	B	A	A	B	C	D	-	A	A	B	A	A	A	A	-	B	A	-	A	A	A	A	A	-	A	A	A	A	A	
Brewery Slop	-	-	A	-	-	-	-	A	-	A	-	-	-	-	-	-	A	-	-	-	-	-	-	A	A	-	A	A	-	A	-	-	A	
Bromine ² (wet)	D	D	D	D	D	A	A	C	-	D	D	A	B	B	A	D	D	D	D	D	D	D	D	A	D	A	D	D	D	D	D	D	C	
Butadiene	A	A	A	-	A	-	-	C	A	C	C	A	A	-	A	-	A	A	-	-	-	B	A	A	-	A	A	-	B	A	-	A	A	
Butane ^{2 1}	A	A	A	-	A	-	-	A	A	C	C	A	A	C	A	D	A	A	B	C	D	A	A	A	-	A	A	D	B	D	D	A	A	
Butanol	-	A	A	-	A	-	A	A	-	-	-	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Butter	-	B	A	-	A	-	-	D	-	D	-	-	-	B	-	B	A	-	B	-	-	-	-	A	A	-	A	A	-	B	A	D	A	
Buttermilk	A	A	A	A	A	-	-	D	-	D	-	-	-	B	A	A	A	A	B	-	-	-	-	A	A	-	A	A	-	A	-	D	A	
Butylene	A	B	A	-	A	-	-	A	A	A	A	-	B	-	A	-	A	-	-	-	-	-	A	A	A	-	A	B	-	-	D	D	A	
Butyl Acetate ¹	-	-	C	-	A	-	A	A	-	-	A	C	D	D	A	D	A	-	-	C	D	A	A	A	-	D	B	D	D	B	D	A		
Butyric Acid ¹	B	B	A	A	B	A	A	C	-	D	-	A	B	-	A	A	C	D	D	-	A	-	A	D	-	D	D	-	D	B	-	A	A	
Calcium Bisulfate	C	D	A	-	D	-	-	D	D	D	-	-	A	A	A	-	-	A	-	-	-	-	-	-	-	-	A	A	C	C	-	A	A	
Calcium Bisulfide	-	-	B	-	C	A	A	C	-	-	-	-	A	-	A	A	D	A	-	B	A	-	A	A	-	A	A	-	A	D	-	A	A	
Calcium Bisulfite	-	B	A	-	C	A	A	C	-	-	-	A	A	-	A	A	-	A	-	-	A	-	-	A	-	A	A	-	A	-	A	-	-	
Calcium Carbonate	B	A	A	A	C	A	A	C	-	D	-	-	A	A	A	A	A	A	-	B	A	-	A	A	-	A	A	-	A	-	A	A	A	
Calcium Chlorate	-	B	A	-	-	B	B	C	-	-	-	-	A	A	A	-	-	A	-	A	-	-	A	-	-	A	-	-	A	-	A	A	A	
Calcium Chloride	C	A	D	C	C	A	A	B	-	C	-	A	A	A	A	A	D	A	B	B	A	A	A	A	B	A	A	B	D	A	A	A	A	
Calcium Hydroxide	B	A	A	-	C	A	A	B	-	-	-	-	A	A	A	A	B	A	-	B	A	-	A	A	A	A	A	C	A	A	A	A	A	
Calcium Hypochlorite	D	D	C	C	C	A	B	D	-	D	-	A	D	-	A	A	D	D	-	B	A	-	A	A	-	A	B	C	D	A	C	A	A	
Calcium Sulfate	B	A	A	A	B	A	B	B	-	-	-	A	A	A	A	A	A	C	B	A	A	A	A	A	-	A	A	-	D	-	C	A	A	
Calgon	-	A	A	-	-	-	-	C	-	D	-	-	-	-	-	A	B	-	-	-	-	-	A	-	A	A	-	A	A	-	A	-	-	A
Cane Juice ²	-	A	A	-	B	-	-	B	C	A	-	-	A	-	-	-	A	A	-	-	D	-	A	A	-	-	A	-	A	-	A	A	A	
Carbolic Acid (See Phenol)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Carbon Bisulfide ²	B	A	A	A	A	-	-	C	-	B	-	-	D	D	-	-	A	A	-	-	D	-	A	A	A	A	D	-	D	D	D	A	A	
Carbon Dioxide (wet)	-	A	A	-	C	-	A	C	C	C	-	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Carbon Disulfide ²	-	B	A	-	C	-	-	C	C	B	C	-	D	C	A	D	A	A	-	D	D	A	A	B	-	A	D	-	D	D	D	A	A	
Carbon Monoxide	-	A	A	-	A	-	-	-	-	-	-	-	A	-	-	B	A	A	-	B	A	-	A	A	-	A	A	B	B	A	C	A	A	
Carbon Tetrachloride ^{2 1}	B	B	B	A	C	A	A	C	A	C	D	A	C	C	A	D	A	A	D	D	D	C	A	A	A	A	C	C	D	-	D	C	A	
Carbonated Water	B	A	A	A	A	-	-	B	-	D	-	-	A	-	-	A	A	A	-	-	A	-	A	A	-	A	A	-	A	A	-	A	A	A
Carbonic Acid	B	A	B	A	A	-	A	B	-	D	-	A	A	-	A	A	A	A	-	B	A	-	A	A	-	A	B	B	A	A	A	A	A	
Catsup	-	A	A	A	D	-	-	C	-	D	-	-	A	-	-	A	B	A	B	-	A	-	A	A	-	A	A	-	C	-	-	A	A	
Chloroacetic Acid ²	D	D	D	D	C	A	A	D	-	D	-	D	A	D	A	-	D	D	-	D	D	-	A	A	-	D	D	-	D	B	D	B	B	
Chloric Acid	-	D	D	-	-	-	-	-	-	-	-	-	D	-	A	-	-	-	-	-	-	-	-	-	-	-	D	-	D	-	-	D	D	
Chlorinated Glue	-	A	A	-	D	-	-	C	-	D	-	-	-	-	C	-	C	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chlorine, Anhydrous Liquid	-	D	D	D	D	D	A	D	-	C	-	-	D	B	A	A	D	D	-	D	D	C	A	D	-	A	D	-	D	B	D	B	B	
Chlorine (dry)	B	A	A	-	D	D	A	A	B	A	-	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chlorine Water	D	-	D	-	D	A	B	D	D	D	-	A	A	-	A	C	-	D	-	-	D	C	C	A	-	A	D	C	D	-	-	-	-	
Chlorobenzene (Mono)	A	A	A	-	B	-	A	B	-	B	C	A	D	D	A	D	A	A	D	D	D	A	A	A	-	A	D	-	D	D	D	A	A	

FOOTNOTES

1. P.V.C. - Satisfactory to 72° F.

2. Polypropylene - Satisfactory to 72° F.

3. Polypropylene - Satisfactory to 120° F.

4. Buna-N - Satisfactory for "O" Rings

5. Polyacetal - Satisfactory to 72° F.

6. Ceramag - Satisfactory to 72° F.

Chemical Resistance Chart

Chloroform - Ferrous Chloride

RATINGS - CHEMICAL EFFECT
A: No effect - Excellent
B: Minor effect - Good
C: Moderate effect - Fair
D: Severe effect - Not Recommended

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	TITANIUM	HASTELLOY C	Cast Bronze	Brass	Cast Iron	Carbon Steel	KYNAR	PVC (Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cyclocac (ABS)	Polyethylene	POLYPROPYLENE	RYTON	CARBON	CERAMIC	CERAMAGNET "A"	VITON	BUNA N (NITRILE)	Silicon	Neoprene	Ethylene Propylene (EPDM)	Rubber (Natural)	Epoxy	
Chloroform	A	A	A	A	D	A	A	B	-	D	C	C	D	C	A	D	A	C	D	D	D	C	A	A	A	A	D	D	D	D	D	A	
Chlorosulfonic Acid ¹	D	D	-	D	D	A	B	D	-	-	D	D	C	C	A	D	D	D	-	D	D	D	-	C	-	D	D	D	D	D	D	C	
Chlorox (Bleach)	-	A	A	-	C	-	A	A	-	D	C	-	A	B	A	A	D	D	B	-	D	C	A	A	-	A	C	-	B	B	D	A	
Chocolate Syrup	-	A	A	-	A	-	-	-	-	D	-	-	-	-	A	A	A	A	-	-	A	-	-	A	-	A	A	-	A	-	D	A	
Chromic Acid 5%	-	A	A	B	C	A	A	D	D	D	-	-	A	B	-	C	D	D	B	B	A	A	D	C	-	A	D	C	D	A	B	B	
Chromic Acid 10%	-	B	-	-	-	A	A	-	D	-	-	A	A	-	A	A	-	D	-	-	A	-	-	A	-	A	D	-	D	-	-	C	
Chromic Acid 30%	-	B	-	-	-	A	A	-	D	-	-	B	A	-	A	D	-	D	-	-	A	-	-	A	-	A	D	-	D	-	-	D	
Chromic Acid 50%	C	B	B	-	C	A	A	D	D	D	-	C	B	B	A	D	D	D	C	C	B	B	D	A	-	A	D	-	D	A	D	C	
Cider	-	A	A	A	B	-	-	A	-	D	-	-	A	-	-	A	B	-	-	B	-	-	A	A	-	A	A	-	A	-	-	A	
Citric Acid	-	A	A	A	C	A	A	D	C	D	-	A	A	-	A	A	B	C	C	B	B	-	A	A	B	A	D	C	A	A	A	A	
Citric Oils	-	A	A	-	C	-	-	B	-	-	-	-	-	-	-	A	B	-	-	-	A	-	A	A	-	A	A	C	D	-	-	A	
Coffee	A	A	A	A	A	-	-	B	-	C	-	-	-	-	A	A	A	A	-	-	A	-	A	A	-	A	A	-	A	-	A	A	
Copper Chloride	C	D	D	B	D	A	A	D	-	D	-	A	A	B	A	A	B	D	-	B	A	A	-	A	-	A	A	-	A	A	A	A	
Copper Cyanide	-	A	A	A	D	A	A	C	-	D	-	A	A	-	A	A	B	A	-	B	A	A	A	A	-	B	B	-	A	A	A	C	
Copper Florobate	-	D	D	-	D	-	B	D	-	D	-	-	A	A	-	B	-	-	A	-	-	A	-	-	A	B	-	A	-	A	A		
Copper Nitrate	B	A	A	B	D	A	A	D	-	-	-	A	A	-	A	A	B	D	-	B	A	-	A	A	-	A	A	-	A	-	-	A	
Copper Sulfate (5% Sol)	-	A	A	A	D	A	A	D	D	D	-	-	A	-	A	A	B	D	-	B	A	A	A	A	-	A	A	C	A	-	C	A	
Copper Sulfate	B	B	-	-	-	A	A	C	D	-	-	A	A	-	A	A	-	C	-	-	A	-	-	A	-	B	B	-	A	A	-	A	
Cream	-	A	A	-	A	-	-	C	-	D	-	-	-	-	-	A	A	A	-	-	A	-	A	A	-	A	A	-	C	-	-	A	
Cresols ²	-	A	A	-	B	-	-	D	C	-	-	-	D	D	-	-	D	-	D	D	C	A	A	A	-	D	D	D	D	D	A		
Cresylic Acid	B	A	A	-	C	A	B	C	-	-	-	B	B	D	A	-	D	D	-	C	-	-	A	A	-	A	D	-	D	D	A		
Cyclohexane	-	A	-	-	A	A	-	A	-	-	A	-	-	D	-	D	A	-	-	-	D	A	A	A	-	A	A	D	D	D	A		
Cyanic Acid	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	D	-	-	-	-	-	-	-	-	-	-	C	-	D	-	-	A	
Detergents	-	A	A	-	A	-	-	A	-	-	A	-	A	-	-	A	B	A	B	B	A	A	A	A	-	A	A	-	B	A	C	A	
Dichlorethane	-	A	A	-	-	-	A	-	-	-	-	-	D	D	A	-	-	A	-	D	-	-	-	-	-	B	-	-	D	-	D	A	
Diesel Fuel	A	A	A	-	A	-	-	A	-	A	A	-	-	-	-	D	A	-	-	-	D	A	A	A	-	A	A	-	D	D	D	A	
Diethylamine	A	A	-	-	A	-	-	A	-	-	-	-	D	-	A	B	D	-	-	-	C	-	A	A	-	D	B	-	B	B	C	A	
Diethylene Glycol	-	A	-	-	-	-	-	A	-	-	-	-	-	-	-	A	A	A	B	B	-	-	A	A	-	A	A	C	A	A	A	A	
Diphenyl Oxide	-	A	-	-	-	-	-	A	-	-	-	-	-	-	-	A	-	-	-	-	-	-	A	A	-	A	D	-	D	D	A		
Dyes	-	A	A	-	B	-	-	C	-	-	-	-	-	-	-	A	A	-	-	-	-	-	-	-	-	A	-	-	C	-	-	A	
Epsom Salts (Magnesium Sulfate)	B	A	A	A	A	A	B	B	-	-	-	-	A	-	-	A	A	-	-	-	A	-	A	A	-	A	A	-	A	-	C	A	
Ethane	A	A	-	-	A	-	-	A	-	-	-	-	-	-	-	D	A	-	-	-	-	-	A	A	-	A	A	-	B	D	D	A	
Ethanolamine	-	A	A	-	-	-	-	-	-	C	-	-	-	-	-	D	-	-	-	-	-	A	A	A	-	D	B	C	B	-	C	A	
Ether ³	A	A	A	A	A	-	B	B	A	-	B	-	D	C	-	D	A	C	-	-	-	A	A	A	A	C	D	-	D	C	D	A	
Ethyl Acetate ²	-	A	A	-	B	-	B	B	-	-	C	D	D	D	A	D	A	A	D	C	C	A	A	A	-	D	D	C	D	B	D	A	
Ethyl Chloride	-	A	A	A	B	A	B	B	-	C	D	A	D	D	A	D	A	A	-	D	D	A	A	A	-	A	D	D	C	A	A	A	
Ethyl Sulfate	-	D	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-	A	A	-	A	A	-	-	-	-	A	
Ethylene Chloride ²	-	A	A	-	C	B	B	A	-	C	C	-	D	-	A	D	A	-	D	-	D	A	A	A	-	A	D	D	D	C	D	A	
Ethylene Dichloride	-	A	A	-	D	A	B	C	-	-	C	-	D	D	A	D	A	A	-	D	A	A	C	A	-	A	D	D	D	C	D	A	
Ethylene Glycol ⁴	-	A	A	-	A	-	A	B	B	B	C	A	A	B	A	A	A	A	B	B	A	A	A	A	A	A	A	C	A	A	A	A	
Ethylene Oxide	-	-	A	-	A	-	-	A	-	-	-	-	D	-	A	A	A	A	-	-	-	-	-	A	A	-	D	D	D	D	C	D	A
Fatty Acids	-	A	A	-	B	A	A	C	-	D	-	A	A	B	A	B	A	A	-	B	A	-	A	A	-	A	C	C	B	C	C	A	
Ferric Acid	-	D	D	D	D	A	B	D	D	D	-	A	A	B	A	A	B	D	-	B	A	A	A	A	-	A	D	C	B	A	A	A	
Ferric Nitrate	-	A	A	A	D	A	A	D	-	-	-	A	A	-	A	A	B	D	-	B	A	A	A	A	-	A	A	D	A	A	A	A	
Ferric Sulfate	-	A	C	A	D	A	A	D	D	D	-	A	A	B	A	A	B	A	C	-	A	A	C	A	-	A	B	C	A	-	A	A	
Ferrous Chloride	-	D	D	-	D	A	B	C	-	D	-	A	A	B	A	A	B	D	-	B	A	A	A	A	-	A	B	C	A	-	A	A	

FOOTNOTES

- 1. P.V.C. - Satisfactory to 72° F.
- 2. Polypropylene - Satisfactory to 72° F.
- 3. Polypropylene - Satisfactory to 120° F.
- 4. Buna-N - Satisfactory for "O" Rings
- 5. Polyacetal - Satisfactory to 72° F.
- 6. Ceramag - Satisfactory to 72° F.

Chemical Resistance Chart

Ferrous Sulfate - Hydrofluosilicic Acid

RATINGS - CHEMICAL EFFECT
A: No effect - Excellent
B: Minor effect - Good
C: Moderate effect - Fair
D: Severe effect - Not Recommended

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	TITANIUM	HASTELLOY C	Cast Bronze	Brass	Cast Iron	Carbon Steel	KYNAR	PVC (Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cycloc (ABS)	Polyethylene	POLYPROPYLENE	RYTON	CARBON	CERAMIC	CERAMAGNET "A"	VITON	BUNA N (NITRILE)	Silicon	Neoprene	Ethylene Propylene (EPM)	Rubber (Natural)	Epoxy			
Ferrous Sulfate	B	A	C	-	D	A	B	C	-	D	D	A	A	B	A	A	B	D	-	B	A	A	A	-	A	B	-	A	-	A	A				
Fluoboric Acid	-	D	B	-	-	D	A	-	-	D	-	A	A	B	A	B	B	C	-	B	A	-	A	D	-	A	B	-	A	-	A				
Fluorine	D	D	D	-	D	D	A	D	-	D	D	-	C	-	C	-	-	D	-	C	-	-	D	-	-	-	-	-	-	-	-	D			
Fluosilicic Acid	-	-	B	-	D	D	B	-	-	D	-	A	A	B	A	A	B	D	-	B	A	-	A	D	-	B	A	-	A	-	-	C			
Formaldehyde 40%	-	-	A	-	-	A	A	-	-	-	-	B	B	-	A	A	-	D	-	-	A	A	-	A	-	D	B	B	A	-	-	A			
Formaldehyde	A	A	A	-	A	A	B	A	B	D	A	-	A	B	A	D	A	A	-	B	A	A	A	A	-	D	C	B	D	B	C	A			
Formic Acid ⁶	C	A	B	B	D	C	A	C	C	D	D	A	D	B	A	A	D	D	-	B	A	A	A	A	B	B	D	C	D	A	C	B			
Freon 11 ¹	A	-	A	-	B	-	-	B	-	C	B	-	B	D	A	D	A	A	D	C	-	A	A	A	A	B	C	D	D	D	D	A			
Freon 12 (wet) ²	-	-	D	-	B	-	-	B	-	-	-	-	B	D	A	D	A	A	B	C	A	A	A	A	A	A	A	D	B	B	D	A			
Freon 22	-	-	A	-	B	-	-	B	-	-	-	-	D	D	-	B	A	A	-	-	-	A	A	A	A	D	D	D	A	A	A	A			
Freon 113	-	-	A	-	B	-	-	B	-	-	-	-	C	D	-	-	A	A	-	-	-	A	A	A	A	C	A	D	A	-	D	A			
Freon T.F. ⁴	-	-	A	-	B	-	-	B	-	-	-	-	B	D	-	D	A	A	-	-	D	A	A	A	A	B	A	D	A	D	D	A			
Fruit Juice	A	A	A	A	B	-	-	B	-	D	D	-	A	-	D	A	B	A	-	B	A	-	A	A	A	A	A	-	A	-	-	A			
Fuel Oils	A	A	A	-	A	A	A	B	-	C	B	A	A	-	A	A	A	A	-	D	B	A	A	A	-	A	A	C	B	D	D	A			
Furan Resin	-	A	A	-	A	-	-	A	-	A	A	-	-	-	A	-	A	-	-	-	-	A	-	A	-	A	D	-	D	-	D	A			
Furfural ¹	A	A	A	-	A	-	B	A	-	-	A	D	D	-	A	D	B	A	D	D	D	A	A	A	-	D	D	D	D	B	D	A			
Gallic Acid	B	A	A	-	A	-	A	A	-	D	D	-	A	A	A	-	-	A	-	-	-	-	-	-	-	B	A	-	-	-	-	-			
Gasoline ^{1 4}	A	A	A	A	A	D	A	A	-	A	A	A	C	-	A	D	A	A	D	D	C	A	A	A	A	A	A	D	D	C	D	A			
Gelatin	A	A	A	A	A	-	A	A	C	D	D	-	A	-	A	A	A	A	-	-	A	-	A	A	-	A	A	-	A	A	A	A			
Glucose	A	-	A	-	A	-	-	A	A	B	B	-	A	B	A	B	A	A	B	B	A	-	A	A	-	A	A	B	A	A	A	A			
Glue P.V.A. ¹	B	B	A	-	B	A	-	A	-	-	A	-	A	B	A	-	A	A	-	-	-	-	A	A	-	A	A	-	A	-	-	A			
Glycerine	A	A	A	A	A	A	A	A	B	B	B	A	A	B	A	A	A	A	C	-	A	-	A	A	-	A	A	B	A	A	A	A			
Glycolic Acid	-	-	-	-	-	-	A	-	-	-	-	-	-	A	-	A	C	-	-	B	A	A	A	-	-	A	A	-	A	-	-	A			
Gold Monocyanide	-	-	A	-	-	-	-	A	-	D	-	-	-	-	-	-	A	-	-	-	-	-	A	A	-	A	A	-	A	-	-	A			
Grape Juice	-	A	A	-	B	-	-	B	-	D	-	-	A	-	-	A	B	-	B	B	-	-	A	A	-	A	A	-	A	-	-	A			
Grease ⁴	A	A	A	-	A	-	-	B	-	A	A	-	-	-	A	-	A	A	-	-	-	-	A	A	-	A	A	-	D	-	-	A			
Heptane ¹	A	-	A	-	A	-	A	A	-	-	B	A	A	-	A	D	A	A	C	D	D	A	A	A	-	A	A	-	B	D	-	A			
Hexane ¹	A	A	A	-	A	-	A	B	-	-	B	A	C	-	A	D	A	A	D	-	C	A	A	A	-	A	A	B	B	D	D	A			
Honey	-	A	A	-	A	-	-	A	-	A	-	-	A	-	-	A	A	A	B	-	A	-	A	A	-	A	A	-	A	A	-	A			
Hydraulic Oils (Petroleum) ¹	A	A	A	-	A	-	-	B	-	A	A	-	-	-	A	-	A	A	-	-	D	-	A	A	-	A	A	-	B	D	D	A			
Hydraulic Oils (Synthetic) ¹	-	A	A	-	A	-	-	A	-	A	-	-	-	-	-	-	A	A	-	-	D	-	A	A	-	A	C	D	-	-	-	A			
Hydrazine	-	A	A	-	-	-	-	-	-	C	-	-	-	-	-	-	D	-	-	-	-	-	A	-	-	A	B	D	B	A	C	A			
Hydrobromic Acid 20%	-	-	D	-	-	A	A	-	-	-	-	A	A	-	A	A	-	D	-	-	A	-	-	B	-	A	D	-	C	-	-	B			
Hydrobromic Acid ⁴	D	D	D	D	D	A	A	D	-	D	D	A	A	B	A	C	D	D	-	B	B	-	A	A	-	A	D	D	D	A	A	A			
Hydrochloric Acid (Dry Gas)	D	C	A	-	D	-	A	-	-	-	D	-	A	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A			
Hydrochloric Acid 20% ⁴	-	D	D	D	D	C	B	D	-	D	-	A	A	B	A	A	D	D	B	A	A	D	A	A	D	A	C	-	C	A	C	A			
Hydrochloric Acid 37% ⁴	-	D	D	D	D	C	B	D	-	D	-	A	A	B	A	A	D	D	C	A	A	D	A	C	D	A	C	C	C	C	D	A			
Hydrochloric Acid 100%	-	D	D	-	D	D	C	D	-	D	-	-	A	A	A	-	-	D	-	A	-	-	A	C	-	C	D	-	C	-	-	A			
Hydrocyanic Acid	A	A	A	C	A	A	A	D	D	-	C	-	A	B	A	A	B	A	-	B	A	-	A	A	-	A	C	-	B	-	-	A			
Hydrocyanic Acid (Gas 10%)	-	D	D	-	-	-	-	-	-	-	-	-	A	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	A	C	A
Hydrofluoric Acid 20% ¹	-	D	D	D	D	D	B	D	-	D	-	-	D	B	A	A	D	D	-	C	A	C	B	C	D	A	D	-	C	A	C	B			
Hydrofluoric Acid 75% ^{1 2}	-	C	D	-	D	D	C	D	-	D	-	A	C	B	A	D	D	D	-	C	B	C	D	D	D	A	D	D	D	C	C	C			
Hydrofluoric Acid 100%	D	D	D	-	D	D	B	D	-	D	D	-	C	D	A	-	-	-	-	D	-	C	D	D	-	-	D	-	D	-	-	D	A		
Hydrofluosilicic Acid 20%	-	D	D	-	D	D	B	A	-	D	-	-	D	-	A	B	D	D	-	-	A	-	A	D	-	A	B	-	B	A	A	C			
Hydrofluosilicic Acid	-	D	D	-	C	-	C	D	-	-	-	-	-	C	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

FOOTNOTES

- 1. P.V.C. - Satisfactory to 72° F.
- 2. Polypropylene - Satisfactory to 72° F.
- 3. Polypropylene - Satisfactory to 120° F.
- 4. Buna-N - Satisfactory for "O" Rings
- 5. Polyacetal - Satisfactory to 72° F.
- 6. Ceramag - Satisfactory to 72° F.

Chemical Resistance Chart

Hydrogen Gas - Methyl Acrylate

RATINGS - CHEMICAL EFFECT
A: No effect - Excellent
B: Minor effect - Good
C: Moderate effect - Fair
D: Severe effect - Not Recommended

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	TITANIUM	HASTELLOY C	Cast Bronze	Brass	Cast Iron	Carbon Steel	KYNAR	PVC (Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cyclocac (ABS)	Polyethylene	POLYPROPYLENE	RYTON	CARBON	CERAMIC	CERAMAGNET "A"	VITON	BUNA N (NITRILE)	Silicon	Neoprene	Ethylene Propylene (EPM)	Rubber (Natural)	Epoxy	
Hydrogen Gas	A	A	A	-	A	-	-	A	-	B	B	A	A	-	A	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	-	A	
Hydrogen Peroxide 10%	-	C	C	-	A	C	A	D	D	D	-	-	A	A	A	-	-	D	-	A	-	B	A	A	-	-	A	-	-	D	-	C	D
Hydrogen Peroxide 30%	-	-	B	-	-	B	A	-	D	-	-	-	A	-	A	-	-	D	-	-	A	C	-	-	-	A	D	-	C	-	-	B	
Hydrogen Peroxide	-	A	B	A	A	B	A	D	D	D	D	C	A	C	A	B	D	D	-	B	A	C	-	A	A	A	D	C	D	C	C	A	
Hydrogen Sulfide, Aqueous Solution	-	D	A	C	C	A	A	D	C	D	-	A	A	B	A	A	D	D	-	B	A	A	A	A	A	D	C	-	B	A	D	A	
Hydrogen Sulfide (dry)	A	C	A	-	D	-	A	D	C	B	B	-	A	-	A	-	-	D	-	-	-	A	-	A	-	D	-	-	-	-	A	A	
Hydroxyacetic Acid (70%)	-	-	-	-	D	B	-	-	-	-	-	-	A	-	-	-	D	-	-	-	-	-	A	A	-	A	A	-	A	A	-	A	
Ink	A	A	A	-	C	-	-	C	-	D	D	-	-	-	-	B	A	A	-	B	-	-	-	A	A	A	A	A	-	A	-	-	A
Iodine	-	D	D	D	D	A	B	D	-	D	-	-	D	B	A	A	C	D	D	D	D	-	D	A	-	A	B	-	D	B	D	A	
Iodine (in Alcohol)	-	-	B	-	-	D	A	-	-	-	-	-	D	-	A	C	-	D	-	-	B	-	-	A	-	A	D	-	D	-	-	-	
Iodoform	B	C	A	-	A	-	-	C	-	C	B	-	-	-	A	-	-	A	-	-	-	-	-	-	-	A	-	-	-	-	-	-	
Isotane ²	-	-	-	-	A	-	-	-	-	-	-	-	-	-	-	D	A	-	-	-	D	-	-	A	-	A	A	-	-	-	D	A	
Isopropyl Acetate	-	-	B	-	C	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	-	-	A	A	-	D	D	-	D	B	D	A
Isopropyl Ether ²	A	-	A	-	A	-	-	A	-	-	A	-	-	-	A	D	A	-	-	-	D	-	A	A	-	D	B	-	D	D	D	-	
Jet Fuel (JP#, JP4, JP5)	A	A	A	-	A	-	-	A	-	A	A	A	A	-	A	D	A	A	-	-	D	A	A	A	-	A	A	D	D	D	D	A	
Kerosene ²	A	A	A	A	A	A	A	A	A	B	A	A	D	A	D	A	A	B	D	D	A	A	A	A	A	A	D	D	A	D	A	A	
Ketones	A	A	A	-	B	A	A	A	-	A	A	D	D	D	A	D	B	A	-	D	D	A	C	A	-	D	D	-	D	D	C	C	
Lacquers	A	A	A	-	A	-	-	A	C	C	C	-	-	D	-	C	A	A	-	-	A	-	A	A	-	D	D	-	D	-	D	A	
Lacquer Thinners	-	-	A	-	-	A	A	-	C	-	-	-	C	-	A	D	-	A	-	-	B	-	-	A	-	-	D	-	D	A	-	-	
Lactic Acid	A	A	B	C	C	A	A	D	-	D	D	C	A	B	A	A	B	C	-	B	A	A	A	A	-	B	B	-	A	B	A	A	
Lard	B	A	A	A	A	-	-	A	-	A	C	-	A	-	-	-	A	A	C	-	A	-	A	A	-	A	A	C	B	-	D	A	
Latex	-	A	A	-	A	-	-	A	-	-	-	-	-	-	-	A	A	A	-	B	-	-	-	A	-	A	A	-	C	A	-	A	
Lead Acetate	B	A	A	-	D	A	A	C	-	-	D	-	A	B	A	A	A	A	-	B	A	-	A	A	-	D	B	-	D	A	A	A	
Lead Sulfamate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	A	-	-	-	-	A	B	C	A	D	C	A	
Ligroin ³	-	-	A	-	-	-	-	A	-	-	-	-	-	-	-	D	A	-	-	-	D	-	-	A	-	A	A	-	B	A	D	A	
Lime	-	A	A	-	C	A	-	A	-	A	-	-	A	-	-	A	D	-	C	-	-	-	A	A	-	A	A	C	B	D	-	A	
Lubricants	-	A	A	-	A	A	A	B	-	-	-	-	A	-	-	A	A	B	-	A	A	A	A	-	A	A	C	D	-	D	A	A	
Magnesium Carbonate	-	A	A	A	-	-	B	-	-	-	-	-	A	-	-	A	A	-	-	B	A	-	-	A	-	A	-	A	A	-	A	A	
Magnesium Chloride	B	B	B	A	D	A	A	B	C	D	C	-	A	B	A	A	A	A	-	B	A	A	-	A	-	A	A	-	A	A	A	A	
Magnesium Hydroxide	A	A	A	-	D	A	A	C	B	B	B	A	A	-	A	A	A	A	-	B	A	A	A	A	-	A	B	-	B	-	C	A	
Magnesium Nitrate	-	A	A	A	-	A	A	-	-	-	-	-	A	-	A	A	A	A	-	B	A	-	-	A	-	A	A	-	A	-	-	A	
Magnesium Oxide	-	A	A	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	-	-	-	A	-	-	A	-	A	A	-	A
Magnesium Sulfate	B	B	A	-	B	A	B	B	B	C	B	-	A	B	A	A	A	A	-	B	A	A	A	A	-	A	A	-	A	D	C	A	
Maleic Acid	C	A	A	A	B	A	A	C	-	-	B	-	A	B	A	A	C	A	-	-	C	-	A	A	-	A	D	-	A	D	D	A	
Maleic Anhydride	-	-	-	-	-	-	A	-	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	A	A	-	A	D	-	D	-	D	A
Malic Acid	B	A	A	-	C	-	A	D	-	-	D	-	A	-	A	-	-	A	-	-	-	-	-	-	A	-	B	-	-	A	-	A	-
Mash	-	A	A	-	-	-	-	A	-	-	-	-	-	-	-	-	A	A	-	-	-	-	-	A	A	-	-	A	-	A	-	-	A
Mayonnaise	A	A	A	-	D	-	-	D	-	D	D	-	-	-	-	A	A	A	A	B	-	A	-	A	A	-	A	A	-	-	-	-	A
Melamine	-	D	D	-	-	-	-	D	-	-	-	-	-	-	-	-	D	-	-	-	-	-	-	A	A	-	-	C	-	-	-	-	A
Mercuric Chloride (Dilute Solution)	D	D	D	D	D	A	B	D	D	D	D	-	A	A	A	A	A	A	-	B	A	-	A	A	-	A	A	-	A	A	A	A	A
Mercuric Cyanide	A	A	A	-	D	A	-	D	-	-	D	-	A	-	A	A	A	-	-	B	A	-	A	A	-	-	A	-	-	-	-	-	A
Mercury	A	A	A	A	C	C	A	D	D	A	A	-	A	-	A	A	A	A	-	B	A	-	A	A	-	A	A	-	A	A	A	A	A
Methanol (See Alcohol Methyl)																																	
Methyl Acetate	A	-	A	-	A	-	A	A	-	-	B	-	-	-	A	-	A	-	D	-	-	-	-	A	A	-	D	D	D	B	B	D	-
Methyl Acrylate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	-	-	-	-	-	D	D	-	B	B	D	A

FOOTNOTES

- 1. P.V.C. - Satisfactory to 72° F.
- 2. Polypropylene - Satisfactory to 72° F.
- 3. Polypropylene - Satisfactory to 120° F.
- 4. Buna-N - Satisfactory for "O" Rings
- 5. Polyacetal - Satisfactory to 72° F.
- 6. Ceramag - Satisfactory to 72° F.

Chemical Resistance Chart

Methyl Acetone - Oils

RATINGS - CHEMICAL EFFECT
A: No effect - Excellent
B: Minor effect - Good
C: Moderate effect - Fair
D: Severe effect - Not Recommended

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	TITANIUM	HASTELLOY C	Cast Bronze	Brass	Cast Iron	Carbon Steel	KYNAR	PVC (Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cyclac (ABS)	Polyethylene	POLYPROPYLENE	RYTON	CARBON	CERAMIC	CERAMAGNET "A"	VITON	BUNA N (NITRILE)	Silicon	Neoprene	Ethylene Propylene (EPM)	Rubber (Natural)	Epoxy	
Methyl Acetone	A	-	A	-	A	-	-	A	-	A	A	-	-	-	A	D	A	-	-	-	-	-	-	A	-	D	D	-	D	-	-	C	
Methyl Alcohol 10%	A	-	A	-	C	-	A	C	-	-	B	-	A	-	A	-	-	A	-	-	-	-	-	-	-	-	B	-	-	-	A	A	
Methyl Bromide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	D	-	-	A	A	-	A	B	-	D	D	D	B	
Methyl Butyl Ketone	-	-	A	-	A	-	-	-	-	-	-	-	-	-	-	D	B	-	-	-	-	-	-	A	A	-	D	D	C	D	A	D	B
Methyl Cellosolve	-	-	-	-	A	-	-	A	-	-	-	-	-	-	-	C	B	-	-	-	A	-	A	A	-	D	D	-	D	B	D	C	
Methyl Chloride	-	A	A	-	D	A	A	A	-	-	-	A	D	-	A	D	A	A	-	D	D	-	A	A	-	A	D	D	D	C	D	A	
Methyl Dichloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	A	-	-	-	-	-	-	A	A	-	A	D	-	D	D	A	
Methyl Ethyl Ketone	-	A	A	-	A	A	A	A	-	-	-	D	D	-	A	D	B	A	D	D	A	A	A	A	-	D	D	C	D	A	D	B	
Methyl Isobutyl Ketone ²	-	-	A	-	-	A	A	-	-	-	-	D	D	-	A	D	B	A	D	-	C	A	A	-	D	D	C	D	C	D	B		
Methyl Isopropyl Ketone	-	-	A	-	-	-	-	-	-	-	-	-	-	-	-	D	B	A	-	-	-	-	-	A	A	-	D	D	B	D	B	B	
Methyl Methacrylate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	-	-	A	A	-	D	D	-	D	D	A	
Methylamine	A	-	A	-	A	-	-	D	-	B	B	-	-	-	-	B	D	-	-	-	-	-	-	A	A	-	-	B	-	-	-	A	
Methylene Chloride	A	A	A	-	A	A	A	A	C	-	B	D	D	-	A	D	A	D	-	D	D	-	A	A	-	D	D	-	D	D	D	A	
Milk	A	A	A	A	A	-	-	C	C	D	D	-	A	-	-	A	A	A	B	B	A	-	A	A	A	A	A	A	B	A	A	A	A
Molasses	A	A	A	A	A	-	-	A	B	A	A	-	A	-	-	B	A	A	-	B	A	-	A	A	A	A	A	A	-	A	-	-	A
Mustard	A	A	A	A	B	-	-	B	-	C	B	-	A	-	-	B	B	A	B	-	A	-	A	A	-	A	B	C	C	-	-	A	
Naptha	A	A	A	A	A	A	A	B	-	B	B	A	A	C	A	D	A	A	C	D	A	A	A	A	-	A	B	D	D	D	D	A	
Napthalene	B	A	B	-	B	A	A	C	-	B	A	A	D	-	A	D	A	-	-	D	B	A	A	A	-	B	D	-	D	D	D	A	
Nickel Chloride	-	A	B	-	D	A	A	D	-	D	-	A	A	B	A	A	B	A	-	B	A	-	A	A	-	A	A	-	A	A	A	A	
Nickel Sulfate	B	A	B	-	D	A	B	C	C	D	D	A	A	A	A	A	B	A	-	B	A	-	A	A	-	A	A	-	A	A	C	A	
Nitric Acid (10% Solution)	A	A	A	A	D	A	A	D	-	D	D	A	A	B	A	A	D	D	C	B	A	D	C	B	D	A	D	-	D	B	D	A	
Nitric Acid (20% Solution)	-	A	A	A	D	A	A	D	-	D	-	B	A	B	A	A	D	D	D	B	A	C	D	C	D	A	D	-	D	D	D	B	
Nitric Acid (50% Solution)	-	A	A	A	D	A	A	D	-	D	-	B	A	B	A	A	D	D	D	C	D	C	D	A	-	A	D	-	D	D	D	D	
Nitric Acid (Concentrated Solution)	-	D	B	A	B	A	B	D	D	D	-	-	D	C	A	D	D	D	D	D	D	C	D	A	C	B	D	-	D	D	D	D	
Nitrobenzene ²	B	A	B	-	C	A	B	D	-	B	B	D	D	D	A	D	B	C	D	D	C	B	A	A	-	D	D	D	D	D	D	B	
Oils																																	
Aniline	-	A	A	-	C	A	D	A	-	A	-	-	D	-	A	D	D	C	D	-	A	-	A	A	-	A	D	-	D	B	D	A	
Anise	-	A	A	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	-	-	A	A	-	-	-	-	D	-	-	A
Bay	-	A	A	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	-	-	A	A	-	A	-	-	D	-	-	A
Bone	-	A	A	-	-	-	-	A	-	-	-	-	-	-	-	-	A	-	-	-	-	-	-	A	A	-	A	A	-	D	-	-	A
Castor	-	A	A	-	A	-	-	A	-	A	-	-	A	-	-	-	A	-	-	-	-	-	-	A	A	A	A	A	-	A	B	A	A
Cinnamon	-	A	A	-	-	-	-	-	-	-	-	-	-	-	-	A	-	A	-	-	-	-	A	A	-	D	-	-	D	-	-	A	
Citric	-	A	A	-	-	-	-	D	-	D	-	-	-	-	-	-	A	A	-	-	-	-	A	A	-	A	A	-	D	-	-	A	
Clove	-	A	A	-	-	-	-	-	-	-	-	-	-	-	-	-	A	A	-	-	B	-	A	A	-	-	A	-	-	-	-	A	
Coconut	-	A	A	-	B	-	-	A	-	A	-	-	-	-	-	-	A	A	-	-	-	-	A	A	-	A	A	-	A	A	D	A	
Cod Liver	-	A	A	-	B	-	-	-	-	-	-	-	-	-	-	-	A	A	C	-	A	-	A	A	-	A	A	-	B	A	D	A	
Corn	-	A	A	A	B	-	-	B	-	A	-	-	-	-	-	-	A	A	C	-	A	-	A	A	-	A	A	-	D	C	D	A	
Cotton Seed	B	A	A	A	B	-	-	B	-	A	C	-	A	-	A	-	A	A	C	-	A	A	A	-	A	A	-	D	C	D	A	A	
Cresote ²	-	A	A	-	A	-	-	-	-	-	-	-	-	-	-	-	D	-	-	-	-	-	-	A	A	-	A	A	-	B	D	D	A
Diesel Fuel (2D, 3D, 4D, 5D)	-	A	A	-	A	-	-	A	-	-	-	-	-	-	-	-	D	A	A	-	-	-	A	A	-	A	A	-	D	D	D	A	
Fuel (1,2,3,5A, 5B, 6)	-	A	A	-	A	A	A	A	-	-	-	-	A	-	A	D	A	-	-	-	-	-	B	-	A	A	-	A	B	-	D	D	A

FOOTNOTES

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- 2. Polypropylene - Satisfactory to 72° F.
- 3. Polypropylene - Satisfactory to 120° F.
- 4. Buna-N - Satisfactory for "O" Rings
- 5. Polyacetal - Satisfactory to 72° F.
- 6. Ceramag - Satisfactory to 72° F.

Chemical Resistance Chart

Oils (Cont'd) - Bronze Plating

RATINGS - CHEMICAL EFFECT
A: No effect - Excellent
B: Minor effect - Good
C: Moderate effect - Fair
D: Severe effect - Not Recommended

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	TITANIUM	HASTELLOY C	Cast Bronze	Brass	Cast Iron	Carbon Steel	KYNAR	PVC (Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cycloc (ABS)	Polyethylene	POLYPROPYLENE	RYTON	CARBON	CERAMIC	CERAMAGNET "A"	VITON	BUNA N (NITRILE)	Silicon	Neoprene	Ethylene Propylene (EPM)	Rubber (Natural)	Epoxy	
Oils (Cont.)	-	A	A	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	-	-	A	A	-	A	A	-	A	-	-	A	
Ginger	-	A	A	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	-	-	A	A	-	A	A	-	A	-	-	A	
Hydraulic (See Hydraulic)																																	
Lemon	-	A	A	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	D	-	A	A	-	A	-	-	-	D	-	-	A	
Linseed	-	A	A	A	A	-	-	A	-	A	-	-	A	B	-	-	A	A	C	-	A	-	A	A	A	A	A	-	D	D	D	A	
Mineral	A	A	A	A	A	-	-	A	-	A	B	-	A	-	-	B	A	A	-	B	A	A	A	A	A	A	A	-	B	D	D	A	
Olive	A	A	A	-	A	-	-	B	-	A	B	-	A	-	A	-	A	A	-	-	A	-	A	A	-	A	A	C	B	-	D	A	
Orange	-	A	A	-	-	-	-	-	-	-	-	-	-	-	A	-	A	A	-	-	A	-	A	A	-	A	A	-	D	-	-	A	
Palm	-	A	A	-	A	-	-	B	-	-	-	-	A	-	-	-	A	A	-	-	-	-	-	A	A	-	A	A	-	D	-	-	A
Peanut ³	-	A	A	-	A	-	-	A	-	A	-	-	A	-	-	-	A	-	-	-	D	-	A	A	-	A	A	-	D	-	D	A	
Peppermint ²	-	A	A	-	-	-	-	A	-	-	-	-	-	-	-	-	A	-	-	-	D	-	A	A	-	A	D	-	D	-	-	A	
Pine	A	A	A	-	A	-	-	D	-	C	B	-	A	-	A	-	A	-	-	-	-	-	-	A	A	-	A	A	-	D	-	D	A
Rape Seed	-	A	A	-	-	-	-	A	-	-	-	-	A	-	-	-	A	-	-	-	-	-	-	A	A	-	A	B	-	D	-	D	A
Rosin	-	A	A	-	A	-	-	-	-	-	-	-	-	-	-	-	A	A	-	-	A	-	A	A	-	A	A	-	-	-	-	-	A
Sesame Seed	-	A	A	-	A	-	-	A	-	A	-	-	A	-	-	-	A	-	-	-	-	-	-	A	A	-	A	A	-	D	-	-	A
Silicone	-	A	A	-	-	-	-	A	-	A	-	-	-	-	-	A	A	A	-	-	A	-	A	A	A	A	A	-	A	-	A	A	A
Soybean	-	A	A	-	A	-	-	B	-	A	-	-	A	-	-	-	A	A	-	-	A	-	A	A	-	A	A	-	D	-	D	A	
Sperm	-	A	A	-	-	-	-	A	-	-	-	-	A	-	-	-	A	-	-	-	-	-	-	A	A	-	A	A	-	D	-	-	A
Tanning	-	A	A	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	-	-	A	A	-	A	A	-	D	-	-	A
Turbine	-	A	A	-	A	-	-	A	-	A	-	-	A	-	-	-	A	-	C	-	-	-	-	A	A	-	A	A	-	D	-	D	A
Oleic Acid	B	A	A	B	B	-	B	B	C	C	C	-	A	C	A	C	B	A	B	D	C	-	A	A	-	D	B	D	D	D	D	A	
Oleum 25%	-	-	-	-	-	-	A	-	-	-	-	B	D	-	A	D	-	-	-	-	-	-	-	-	A	-	A	D	D	D	D	-	D
Oleum	B	-	A	-	B	-	-	C	C	-	B	D	D	-	A	-	D	-	-	-	D	-	-	A	-	A	C	D	D	D	D	A	
Oxalic Acid (Cold)	C	A	B	A	C	C	B	B	C	D	D	-	A	B	A	C	C	D	-	A	A	-	A	A	-	A	B	C	B	A	C	A	
Paraffin	A	A	A	A	A	-	-	A	-	B	B	A	A	-	A	B	A	A	B	-	A	-	A	A	-	A	A	-	-	-	-	-	A
Pentane	A	C	C	-	A	-	B	A	-	B	B	-	-	-	A	D	A	A	D	-	-	-	-	A	A	-	A	A	-	B	D	D	A
Perchloroethylene ²	B	A	A	-	A	-	-	C	-	B	B	A	-	-	A	D	A	-	D	-	D	A	A	A	-	A	C	D	D	D	D	A	
Petrolatum	A	-	A	-	B	-	-	B	-	C	C	-	-	-	A	D	A	A	B	-	-	-	-	A	A	-	A	A	-	B	A	D	A
Phenol 10%	B	A	A	-	A	-	B	C	-	B	D	-	A	C	A	-	-	D	-	-	-	-	-	-	-	B	D	-	C	D	C	C	
Phenol (Carbolic Acid)	B	A	A	A	B	C	A	B	D	D	D	A	A	C	A	C	D	D	-	D	B	A	A	D	A	A	D	-	D	D	D	B	
Phosphoric Acid (to 40% Solution)	-	B	A	A	D	A	A	D	D	D	-	-	A	B	A	A	D	D	C	B	A	A	B	C	D	A	D	-	D	B	C	A	
Phosphoric Acid (40-100% Solution)	-	C	B	B	D	B	A	D	D	D	-	-	A	B	A	A	D	D	D	C	A	A	B	D	D	A	D	-	D	B	C	C	
Phosphoric Acid (Crude)	-	D	C	C	D	C	A	D	D	D	D	A	-	-	A	-	D	D	D	C	-	A	C	D	-	A	D	-	D	B	-	A	
Phosphoric Anhydride (Dry or Moist)	-	A	A	-	-	-	-	-	D	-	-	-	D	D	A	-	-	-	-	-	-	-	-	-	-	D	D	-	D	-	-	A	-
Phosphoric Anhydride (Molten)	-	A	A	-	D	-	-	D	D	-	-	-	D	-	A	-	-	A	-	D	-	-	-	-	-	-	D	C	-	D	-	D	A
Photographic (Developer)	-	C	A	C	C	A	A	-	-	D	-	-	A	-	-	A	C	-	-	B	A	-	A	A	-	A	A	-	A	-	-	-	A
Phthalic Anhydride	B	A	B	-	B	-	A	B	-	C	C	-	-	-	A	-	-	A	-	-	-	-	-	-	-	-	A	C	-	-	-	-	
Picric Acid	B	A	A	-	C	-	A	D	D	D	D	-	A	A	A	-	-	A	-	A	-	-	-	-	-	-	A	A	D	A	-	A	A
Plating Solutions																																	
Antimony Plating 130°F	-	-	A	-	-	A	A	-	-	-	-	-	A	-	A	A	-	D	-	-	A	-	-	A	-	A	A	D	A	-	-	B	
Arsenic Plating 110°F	-	-	A	-	-	A	A	-	-	-	-	-	A	-	A	A	-	A	-	-	A	-	-	C	-	A	A	D	A	-	-	B	
Brass Plating																																	
Regular Brass Bath 100°F	-	-	A	-	-	A	A	-	-	-	-	-	A	-	A	A	-	A	-	-	A	-	-	C	-	A	A	D	A	-	-	B	
High Speed Brass Bath 110°F	-	-	A	-	-	A	A	-	-	-	-	-	A	-	A	A	-	A	-	-	A	-	-	D	-	A	A	D	A	-	-	B	
Bronze Plating																																	
Copper-Cadmium Bronze Bath R.T.	-	-	A	-	-	A	A	-	-	-	-	-	A	-	A	A	-	A	-	-	A	-	-	C	-	A	A	D	A	-	-	B	
Copper-Tin Bronze Bath 160°F	-	-	A	-	-	A	A	-	-	-	-	-	D	-	A	A	-	A	-	-	A	-	-	D	-	A	A	D	B	-	-	C	

FOOTNOTES

1. P.V.C. - Satisfactory to 72° F.
2. Polypropylene - Satisfactory to 72° F.
3. Polypropylene - Satisfactory to 120° F.
4. Buna-N - Satisfactory for "O" Rings
5. Polyacetal - Satisfactory to 72° F.
6. Ceramag - Satisfactory to 72° F.

Chemical Resistance Chart

Sodium Hydroxide - Tartaric Acid

RATINGS - CHEMICAL EFFECT
A: No effect - Excellent
B: Minor effect - Good
C: Moderate effect - Fair
D: Severe effect - Not Recommended

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	TITANIUM	HASTELLOY C	Cast Bronze	Brass	Cast Iron	Carbon Steel	KYNAR	PVC (Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cyclocac (ABS)	Polyethylene	POLYPROPYLENE	RYTON	CARBON	CERAMIC	CERAMAGNET "A"	VITON	BUNA N (NITRILE)	Silicon	Neoprene	Ethylene Propylene (EPM)	Rubber (Natural)	Epoxy			
Sodium Hydroxide (20%)	-	A	A	A	D	A	A	C	D	A	-	A	A	B	A	A	D	C	C	B	A	A	C	D	A	A	A	D	B	A	A	A			
Sodium Hydroxide (50% Solution)	-	A	B	-	D	A	A	C	D	B	-	D	A	B	A	A	D	C	C	C	A	B	C	D	A	D	D	D	C	-	A	A			
Sodium Hydroxide (80% Solution)	-	A	D	-	D	A	B	C	D	C	-	-	A	B	A	A	D	C	C	C	A	B	C	D	A	B	D	D	C	-	B	A			
Sodium Hypochlorite (to 20%)	-	C	C	C	C	A	A	D	D	D	-	-	A	B	A	A	D	A	-	B	D	C	D	A	B	A	C	D	D	B	C	B			
Sodium Hypochlorite	D	-	A	-	D	A	A	D	-	D	D	A	A	-	A	A	-	A	-	-	A	C	-	D	-	B	B	C	A	-	-	A			
Sodium Hyposulfate	-	A	A	-	D	-	-	D	-	-	-	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	-	C	C		
Sodium Metaphosphate ²	A	-	A	-	A	-	-	C	C	B	B	-	-	-	A	-	B	A	-	-	D	-	A	A	-	A	A	-	B	A	A	A			
Sodium Metasilicate	A	-	A	-	B	-	-	B	-	C	C	-	-	-	A	-	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Sodium Nitrate	B	A	A	A	A	A	B	B	C	A	B	A	A	B	A	A	B	A	-	B	A	-	A	A	A	D	C	D	B	A	C	A			
Sodium Perborate	B	-	C	-	B	-	-	C	C	B	B	-	-	-	A	A	B	A	-	-	A	-	A	A	-	A	B	D	B	A	C	A			
Sodium Peroxide	B	A	A	-	C	-	B	C	C	D	C	-	A	-	A	-	D	D	-	-	-	-	-	A	-	A	C	D	B	A	C	A			
Sodium Polyphosphate (Mono, Di, Tribasic)	-	A	A	-	D	A	A	C	-	-	-	-	-	-	A	A	B	-	-	-	-	-	-	A	A	-	A	A	-	D	A	A	A		
Sodium Silicate	B	A	B	A	C	A	B	C	C	-	B	-	A	B	A	A	C	A	-	-	A	-	A	A	-	A	A	-	A	A	A	A	A		
Sodium Sulfate	B	A	A	C	B	A	B	B	B	A	B	-	A	-	A	A	B	A	-	B	A	A	A	A	-	A	A	-	A	A	C	A	A		
Sodium Sulfide	B	A	B	-	D	A	B	D	D	A	B	-	A	B	A	A	B	A	-	B	A	A	A	A	-	A	C	-	A	A	C	A	A		
Sodium Sulfide	-	C	C	-	C	A	A	C	-	A	-	-	A	A	A	-	-	D	-	A	-	-	-	A	A	-	A	A	-	A	-	-	-	-	
Sodium Tetraborate	-	-	A	-	-	-	-	-	-	-	-	-	A	-	-	A	B	-	-	-	-	-	-	A	A	-	A	A	-	-	-	-	-	-	
Sodium Thiosulphate ("Hypo")	A	A	A	-	B	A	-	D	D	C	B	-	A	-	A	A	C	A	-	-	A	A	A	A	-	A	B	-	A	A	C	A	A		
Sorghum	-	A	A	-	-	-	-	-	-	A	-	-	-	-	-	-	A	A	-	-	-	-	-	A	A	-	A	A	-	A	-	-	-	-	
Soy Sauce	-	A	A	-	A	-	-	A	-	D	-	-	-	-	-	-	A	A	A	-	-	-	-	A	A	-	A	A	-	A	-	D	A	A	
Stannic Chloride	D	D	D	-	D	A	B	D	-	D	D	A	A	-	A	A	C	A	-	B	A	-	-	A	-	A	A	D	A	A	A	A	A		
Stannic Fluoborate	-	-	A	-	-	-	-	-	-	D	-	-	-	-	-	-	A	C	-	-	-	-	-	-	A	-	A	A	-	A	-	-	-	-	
Stannous Chloride	D	D	C	-	D	A	A	D	-	D	D	-	A	A	A	-	-	D	-	A	-	-	-	-	-	B	C	D	D	-	A	A	A		
Starch	B	A	A	-	A	-	-	B	-	C	C	-	A	-	A	A	A	A	-	B	-	-	-	A	A	-	A	A	-	A	-	-	-	-	
Stearic Acid ²	B	A	A	A	B	A	A	C	C	C	C	A	A	B	A	A	A	A	-	B	D	-	A	A	A	A	B	D	B	B	C	A	A		
Stoddard Solvent	A	A	A	A	A	A	A	A	A	B	B	A	A	D	A	D	A	A	B	D	D	A	A	A	-	A	B	D	D	D	D	D	A	A	
Styrene	A	A	A	-	A	-	-	A	-	-	A	-	-	-	A	A	A	-	-	-	-	-	-	A	A	-	B	D	D	D	D	D	A	A	
Sugar (Liquids)	A	A	A	A	A	-	A	A	-	B	B	-	-	-	A	A	A	A	B	-	A	-	-	A	A	A	A	-	B	-	A	A	A		
Sulfate Liquors	-	C	C	-	B	-	A	C	-	-	-	-	-	-	-	-	D	-	-	-	-	-	A	-	A	A	-	-	-	-	-	-	-	-	
Sulfur Chloride	-	D	D	D	D	-	-	C	D	-	-	-	A	C	A	A	D	A	-	A	D	-	A	C	-	A	D	-	D	D	D	C	A	A	
Sulfur Dioxide ²	-	A	A	C	A	A	B	B	-	-	-	B	D	B	A	D	B	D	D	C	D	A	A	A	-	D	D	C	B	A	D	A	A		
Sulfur Dioxide (dry)	A	A	A	-	A	-	A	A	C	A	B	-	D	-	A	-	-	A	-	D	-	-	-	A	A	-	D	-	-	D	-	D	D		
Sulfur Trioxide (dry)	A	A	C	-	A	-	-	B	-	B	B	-	A	B	A	D	D	D	-	-	-	-	-	B	A	-	A	D	-	D	B	C	A	A	
Sulfuric Acid (to 10%)	-	D	C	C	C	A	A	D	D	D	-	A	A	B	A	A	D	D	B	B	A	A	A	A	-	A	C	-	D	D	C	A	A		
Sulfuric Acid 10%-75% ²	-	D	D	D	D	C	B	D	D	D	-	A	A	B	A	B	D	D	B	C	A	B	A	D	C	A	D	-	D	D	D	B	B		
Sulfuric Acid 75%-100%	-	-	D	-	-	D	B	-	D	-	-	-	A	B	-	A	A	-	D	-	-	-	B	C	-	A	-	A	D	-	D	-	-	-	
Sulfurous Acid	C	C	B	C	C	A	B	D	-	D	D	-	A	B	A	A	D	D	-	B	A	-	B	A	-	A	C	D	B	B	C	A	A		
Sulfuryl Chloride	-	-	-	-	-	-	-	-	-	-	-	-	A	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Syrup	-	A	A	A	A	-	-	D	-	-	-	-	A	-	-	-	A	A	A	B	-	A	-	-	A	A	A	-	B	-	A	A	A		
Tallow	-	A	A	-	A	-	-	-	-	-	-	-	-	-	-	-	A	A	A	-	C	-	-	-	A	A	-	A	A	-	-	-	-	-	-
Tannic Acid	B	A	A	A	C	A	B	B	-	C	C	A	A	B	A	A	B	D	-	B	A	-	-	A	A	A	A	D	C	A	A	A	A	A	
Tanning Liquors	-	A	A	-	C	A	A	A	-	-	-	-	A	B	A	-	B	-	-	-	-	-	-	A	-	A	A	-	A	-	-	-	-	-	-
Tartaric Acid	B	A	B	B	C	A	B	A	C	D	D	A	A	B	A	A	B	A	-	B	A	-	-	A	-	A	D	C	A	-	-	-	-	-	-

FOOTNOTES

- 1. P.V.C. - Satisfactory to 72° F.
- 2. Polypropylene - Satisfactory to 72° F.
- 3. Polypropylene - Satisfactory to 120° F.
- 4. Buna-N - Satisfactory for "O" Rings
- 5. Polyacetal - Satisfactory to 72° F.
- 6. Ceramag - Satisfactory to 72° F.

Chemical Resistance Chart

Tetrachlorethane - Zinc Sulfate

RATINGS - CHEMICAL EFFECT
A: No effect - Excellent
B: Minor effect - Good
C: Moderate effect - Fair
D: Severe effect - Not Recommended

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	TITANIUM	HASTELLOY C	Cast Bronze	Brass	Cast Iron	Carbon Steel	KYNAR	PVC (Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cyclac (ABS)	Polyethylene	POLYPROPYLENE	RYTON	CARBON	CERAMIC	CERAMAGNET "A"	VITON	BUNA N (NITRILE)	Silicon	Neoprene	Ethylene Propylene (EPM)	Rubber (Natural)	Epoxy	
Tetrachlorethane	-	-	A	-	-	A	A	-	-	-	-	-	D	-	A	D	A	A	-	-	A	-	A	A	-	A	D	-	-	D	D	A	
Tetrahydrofuran	-	A	A	-	D	-	-	D	-	D	A	D	D	-	A	D	A	A	-	D	C	A	A	A	-	D	D	-	D	B	D	A	
Toluene, Toluol ³	A	A	A	-	A	A	A	A	A	A	A	A	D	D	A	D	A	A	D	D	D	A	A	A	A	C	D	D	D	D	D	A	
Tomato Juice	A	A	A	-	A	-	-	C	-	C	C	-	-	-	A	A	B	A	B	-	A	A	A	A	-	A	A	-	A	-	-	A	
Trichlorethane	-	C	A	-	C	A	A	C	-	C	-	-	-	-	A	D	A	-	-	-	-	-	A	A	-	A	D	D	D	D	A		
Trichlorethylene ²	B	A	A	-	B	A	A	B	A	C	B	A	D	-	A	D	A	C	D	D	D	C	A	A	C	A	D	D	D	D	A		
Trichloropropane	-	-	A	-	-	-	-	A	-	-	-	-	-	-	-	D	A	-	D	-	-	-	A	A	-	A	A	-	A	-	-	A	
Tricresylphosphate	-	-	A	-	-	B	A	A	-	-	-	-	D	-	A	A	C	-	-	-	-	-	A	A	-	B	D	-	D	A	-	A	
Triethylamine	-	-	-	-	-	-	-	A	-	-	-	-	A	-	-	B	D	-	-	-	-	-	A	A	-	A	A	D	B	-	-	A	
Turpentine ³	B	A	A	-	C	-	A	B	C	B	B	A	A	B	A	D	A	A	-	D	B	A	A	A	-	A	D	-	D	D	D	A	
Urine	-	A	A	-	B	-	-	C	-	B	-	-	A	-	-	A	A	A	-	B	A	-	A	A	-	A	A	-	D	A	-	A	
Vegetable Juice	-	A	A	-	A	-	-	C	-	D	-	-	-	-	-	A	A	A	-	-	-	-	-	A	A	-	A	A	B	D	-	D	A
Vinegar	A	A	A	A	D	A	A	B	B	C	D	A	A	-	A	A	B	A	B	B			C	-	B	A	C	A					
Varnish (Use Viton for Aromatic)	A	A	A	A	A	-	-	A	B	-	C	-	-	-	A	D	A	A	-	-	A	-	A	A	A	A	B	C	D	-	D	A	
Water, Acid, Mine	-	A	A	-	C	-	-	C	D	C	-	-	A	B	-	A	D	A	B	-	A	B	A	A	-	A	A	-	B	-	B	A	
Water, Distilled, Lab Grade 7	-	A	A	-	B	-	-	A	-	D	-	-	A	B	A	A	A	A	A	-	A	A	A	A	A	A	A	-	B	A	A	A	
Water, Fresh	A	A	A	-	A	-	-	A	C	B	D	-	A	B	A	A	A	A	A	D	A	A	A	A	A	A	A	A	-	B	A	A	A
Water, Salt	-	A	A	-	B	-	-	B	C	D	-	-	A	B	-	A	A	A	-	-	A	A	A	A	A	A	A	-	B	A	A	A	
Weed Killers	-	A	A	-	C	-	-	C	-	-	-	-	-	-	-	-	A	A	-	-	-	-	A	A	-	A	B	-	C	-	-	A	
Whey	-	A	A	-	B	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	-	-	A	A	-	A	A	-	-	-	-	A	
Whiskey & Wines	A	A	A	A	D	-	-	B	B	D	D	-	A	-	A	A	A	A	-	B	A	-	A	A	-	A	A	B	A	A	A	A	
White Liquor (Pulp Mill)	-	A	A	-	-	-	A	D	-	C	-	-	A	-	A	A	D	A	-	-	A	-	A	A	-	A	A	-	-	-	-	A	
White Water (Paper Mill)	-	A	A	-	-	-	-	A	-	-	-	-	-	-	-	B	A	-	-	-	-	A	A	-	A	-	-	-	-	-	-	A	
Xylene ²	A	A	A	-	A	-	A	A	A	B	A	D	-	A	D	A	A	D	D	D	D	A	A	A	A	A	D	D	D	D	D	A	
Zinc Chloride	D	D	B	B	D	A	B	D	D	D	D	A	A	-	A	A	C	A	-	B	A	A	A	A	-	A	A	-	A	A	A	A	
Zinc Hydrosulphite	-	-	A	-	D	-	-	D	-	D	-	-	-	-	-	A	C	-	-	-	-	-	A	A	-	-	A	-	A	A	-	A	
Zinc Sulfate	B	A	A	A	D	A	B	B	C	C	D	A	C	B	A	A	C	A	-	B	A	A	A	A	-	A	A	-	A	A	C	A	

FOOTNOTES

- 1. P.V.C. - Satisfactory to 72° F.
- 2. Polypropylene - Satisfactory to 72° F.
- 3. Polypropylene - Satisfactory to 120° F.
- 4. Buna-N - Satisfactory for "O" Rings
- 5. Polyacetal - Satisfactory to 72° F.
- 6. Ceramag - Satisfactory to 72° F.