

**RATINGS - CHEMICAL EFFECT**

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

**FOOTNOTES**

1. PVC. - 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 <sup>5</sup>	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. <sup>2</sup>	A	B	A	B	B	-	-	A	C	B	A	-	B	D	A	-	-	A	-	B	D	-	A	A	-	D	D	-	D	-	-	A
Acetic Acid, Glacia <sup>1</sup>	-	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 <sup>6</sup>	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 <sup>2</sup>	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	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 <sup>2</sup>	-	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 <sup>6</sup>	-	A	A	A	B	A	A	A	C	A	A	-	B	-	A	A	C	A	D	B	A	-	A	A	C	B	-	A	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

**RATINGS - CHEMICAL EFFECT**  
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	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	
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	A	-	D	-	-	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 <sup>6</sup>	-	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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
Arochlor 1248	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	D	-	-	-	-	-	-	A	-	-	A	D	-	D	B	D	A	
Aromatic Hydrocarbons	-	-	A	-	A	-	-	A	-	A	A	-	D	-	-	D	A	-	-	C	-	-	A	-	-	A	D	-	D	D	D	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	
Asphalt	-	B	A	-	C	-	-	A	-	C	-	-	A	-	-	-	A	A	-	-	A	A	-	A	A	A	B	C	B	D	D	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
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	
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	
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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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 <sup>3</sup>	A	A	A	-	B	A	A	A	-	B	A	C	D	D	A	D	A	C	D	D	D	A	A	A	-	D	D	B	D	A	D	A
Benzene <sup>2</sup>	B	A	A	A	B	A	B	B	A	B	C	B	D	C	A	D	A	A	D	D	D	A	A	A	A	A	D	-	D	D	D	A
Benzoic Acid <sup>2</sup>	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	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	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
Brewery Slop	-	-	A	-	-	-	-	A	-	A	-	-	-	-	-	-	A	-	-	-	-	-	A	A	-	A	A	-	A	-	-	A
Bromine <sup>2</sup> (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	C
Butadiene	A	A	A	-	A	-	-	C	A	C	C	A	A	-	A	-	A	A	-	-	-	B	A	A	-	A	A	-	B	A	-	A
Butane <sup>2 1</sup>	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
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 <sup>1</sup>	-	-	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 <sup>1</sup>	B	B	A	A	B	A	A	C	-	D	-	A	B	-	A	A	C	D	D	-	A	-	A	D	-	D	D	-	D	B	-	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
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
Calcium Chlorate	-	B	A	-	-	B	B	C	-	-	-	-	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
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
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
Calcium Sulfate	B	A	A	A	B	A	B	B	-	-	-	A	A	A	A	A	A	A	C	B	A	A	A	A	-	A	A	-	D	-	C	A
Calgon	-	A	A	-	-	-	-	C	-	D	-	-	-	-	-	A	B	-	-	-	A	-	A	A	-	A	A	-	A	-	-	A
Cane Juice <sup>2</sup>	-	A	A	-	B	-	-	B	C	A	-	-	A	-	-	-	A	A	-	-	D	-	A	A	-	A	-	A	-	A	A	
Carbolic Acid (See Phenol)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Bisulfide <sup>2</sup>	B	A	A	A	A	-	-	C	-	B	-	-	D	D	-	-	A	A	-	-	D	-	A	A	A	D	-	D	D	D	A	
Carbon Dioxide (wet)	-	A	A	-	C	-	A	C	C	C	-	-	-	-	A	-	-	-	-	-	-	-	-	A	A	-	-	-	-	-	-	-
Carbon Disulfide <sup>2</sup>	-	B	A	-	C	-	-	C	C	B	C	-	D	C	A	D	A	A	-	D	D	A	A	B	-	A	D	-	D	D	A	
Carbon Monoxide	-	A	A	-	A	-	-	-	-	-	-	-	A	-	-	B	A	A	-	B	A	-	A	A	-	A	A	B	B	A	C	A
Carbon Tetrachloride <sup>2 1</sup>	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
Carbonated Water	B	A	A	A	A	-	-	B	-	D	-	-	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
Catsup	-	A	A	A	D	-	-	C	-	D	-	-	A	-	-	A	B	A	B	-	A	-	A	A	-	A	A	-	C	-	-	A
Chloroacetic Acid <sup>2</sup>	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
Chloric Acid	-	D	D	-	-	-	-	-	-	-	-	-	D	-	A	-	-	-	-	-	-	-	-	-	-	-	D	-	D	-	-	D
Chlorinated Glue	-	A	A	-	D	-	-	C	-	D	-	-	-	-	-	C	-	C	D	-	-	-	-	A	-	A	C	-	D	B	D	A
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
Chlorine (dry)	B	A	A	-	D	D	A	A	B	A	-	-	-	-	A	-	-	-	-	-	-	C	A	A	-	D	-	-	D	-	D	D
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

**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.

**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
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 <sup>1</sup>	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	-	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 <sup>2</sup>	-	A	A	-	B	-	-	D	C	-	-	-	D	D	-	-	D	-	D	D	C	A	A	A	-	D	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	D	A
Cyclohexane	-	A	-	-	A	A	-	A	-	-	A	-	-	D	-	D	A	-	-	-	D	A	A	A	-	A	A	D	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	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 <sup>3</sup>	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 <sup>2</sup>	-	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 <sup>2</sup>	-	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 <sup>4</sup>	-	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

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Ferrous Sulfate	B	A	C	-	D	A	B	C	-	D	D	A	A	B	A	A	B	D	-	B	A	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 <sup>6</sup>	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 <sup>1</sup>	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) <sup>2</sup>	-	-	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. <sup>4</sup>	-	-	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 <sup>1</sup>	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 <sup>1 4</sup>	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	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	A				
Glue P.V.A. <sup>1</sup>	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	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 <sup>4</sup>	A	A	A	-	A	-	-	B	-	A	A	-	-	-	A	-	A	A	-	-	-	-	-	A	A	-	A	A	-	D	-	-	-	A			
Heptane <sup>1</sup>	A	-	A	-	A	-	A	A	-	-	B	A	A	-	A	D	A	A	C	D	D	A	A	A	-	A	A	-	B	D	-	-	-	A			
Hexane <sup>1</sup>	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	A				
Honey	-	A	A	-	A	-	-	A	-	A	-	-	A	-	-	A	A	A	B	-	A	-	A	A	-	A	A	-	A	A	-	-	-	-	A		
Hydraulic Oils (Petroleum) <sup>1</sup>	A	A	A	-	A	-	-	B	-	A	A	-	-	-	A	-	A	A	-	-	D	-	A	A	-	A	A	-	B	D	D	A	A				
Hydraulic Oils (Synthetic) <sup>1</sup>	-	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 <sup>4</sup>	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	A	A			
Hydrochloric Acid (Dry Gas)	D	C	A	-	D	-	A	-	-	-	D	-	A	-	A	-	-	-	-	-	-	-	-	A	-	-	-	-	-	-	-	-	-	-	A		
Hydrochloric Acid 20% <sup>4</sup>	-	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	A	A			
Hydrochloric Acid 37% <sup>4</sup>	-	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	A	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	
Hydrofluoric Acid 20% <sup>1</sup>	-	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	B	B	B		
Hydrofluoric Acid 75% <sup>1 2</sup>	-	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	C	C		
Hydrofluoric Acid 100%	D	D	D	-	D	D	B	D	-	D	-	-	C	D	A	-	-	-	-	D	-	C	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	A	A	A	A	C	
Hydrofluosilicic Acid	-	D	D	-	C	-	C	D	-	-	-	-	-	C	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**FOOTNOTES**

- P.V.C. - Satisfactory to 72° F.
- Polypropylene - Satisfactory to 72° F.
- Polypropylene - Satisfactory to 120° F.
- Buna-N - Satisfactory for "O" Rings
- Polyacetal - Satisfactory to 72° F.
- Ceramag - Satisfactory to 72° F.

**RATINGS - CHEMICAL EFFECT**  
**A:** No effect - Excellent  
**B:** Minor effect - Good  
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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			
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	A		
Ink	A	A	A	-	C	-	-	C	-	D	D	-	-	-	-	B	A	A	-	B	-	-	-	A	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	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 <sup>2</sup>	-	-	-	-	A	-	-	-	-	-	-	-	-	-	-	D	A	-	-	-	D	-	-	A	-	A	A	-	-	-	-	D	A		
Isopropyl Acetate	-	-	B	-	C	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	-	-	A	A	-	D	D	-	D	B	D	A		
Isopropyl Ether <sup>2</sup>	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	A		
Kerosene <sup>2</sup>	A	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	C		
Lacquers	A	A	A	-	A	-	-	A	C	C	C	-	-	D	-	C	A	A	-	-	A	-	A	A	-	D	D	-	D	-	D	A	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	A		
Lard	B	A	A	A	A	-	-	A	-	A	C	-	A	-	-	-	A	A	C	-	A	-	A	A	-	A	A	C	B	-	D	A	A		
Latex	-	A	A	-	A	-	-	A	-	-	-	-	-	-	-	A	A	A	-	B	-	-	-	A	-	A	A	-	C	A	-	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	A		
Lead Sulfamate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	A	-	-	-	-	A	B	C	A	D	C	A	A		
Ligroin <sup>3</sup>	-	-	A	-	-	-	-	A	-	-	-	-	-	-	-	D	A	-	-	-	D	-	-	A	-	A	A	-	B	A	D	A	A		
Lime	-	A	A	-	C	A	-	A	-	A	-	-	A	-	-	A	D	-	C	-	-	-	A	A	-	A	A	C	B	D	-	A	A		
Lubricants	-	A	A	-	A	A	A	B	-	-	-	-	A	-	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	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	A		
Magnesium Nitrate	-	A	A	A	-	A	A	-	-	-	-	-	A	-	A	A	A	A	-	B	A	-	-	A	-	A	A	-	A	-	-	A	A		
Magnesium Oxide	-	A	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	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	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	A	
Mayonnaise	A	A	A	-	D	-	-	D	-	D	D	-	-	-	A	A	A	A	B	-	A	-	A	A	-	A	A	-	-	-	-	-	A	A	
Melamine	-	D	D	-	-	-	-	D	-	-	-	-	-	-	-	-	D	-	-	-	-	-	-	A	A	-	-	C	-	-	-	-	A	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	A	
Mercuric Cyanide	A	A	A	-	D	A	-	D	-	-	D	-	A	-	A	A	A	A	-	B	A	-	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	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	-	-	-	-	-	-	A	A	-	D	D	-	B	B	D	A	A	

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	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	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 <sup>2</sup>	-	-	A	-	-	A	A	-	-	-	-	D	D	-	A	D	B	A	D	-	C	A	A	A	-	D	D	C	D	C	D	B	
Methyl Isopropyl Ketone	-	-	A	-	-	-	-	-	-	-	-	-	-	-	D	B	A	-	-	-	-	-	A	A	-	D	D	B	D	B	D	B	
Methyl Methacrylate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	-	A	A	-	D	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 <sup>2</sup>	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	A	-	D	-	-	D	-	-	A	
Citric	-	A	A	-	-	-	-	D	-	D	-	-	-	-	-	-	A	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	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		
Cresote <sup>2</sup>	-	A	A	-	A	-	-	-	-	-	-	-	-	-	-	-	D	-	-	-	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	A	-	D	D	D	A		
Fuel (1,2,3,5A, 5B, 6)	-	A	A	-	A	A	A	-	-	-	-	-	-	-	A	-	A	-	-	-	B	-	A	A	-	A	B	-	D	D	D	A	

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Oils (Cont.)																																	
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	-	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 <sup>3</sup>	-	A	A	-	A	-	-	A	-	A	-	-	A	-	-	-	A	-	-	-	D	-	A	A	-	A	A	-	D	-	D	A	
Peppermint <sup>2</sup>	-	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
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 <sup>2</sup>	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	-	-	-	-	A	-	-	-	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	-	-	-	-	-	-	-	-	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.



**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		
<b>Platings (Cont.)</b>																																		
Copper-Zinc Bronze Bath 100°F	-	-	A	-	-	A	A	-	-	-	-	-	A	-	A	A	-	A	-	-	A	-	-	C	-	A	A	-	A	-	-	-	B	
<b>Cadmium Plating</b>																																		
Cyanide Bath 90°F	-	-	A	-	-	A	A	-	-	-	-	-	A	-	A	A	-	A	-	-	A	-	-	C	-	A	A	-	A	-	-	-	B	
Fluoborate Bath 100°F	-	-	A	-	-	D	A	-	-	-	-	-	A	-	A	A	-	D	-	-	A	-	-	D	-	A	B	-	C	-	-	-	B	
<b>Chromium Plating</b>																																		
Chromic-Sulfuric Bath 130°F	-	-	C	-	-	A	A	-	-	-	-	-	A	-	A	D	-	D	-	-	A	-	-	A	-	C	D	-	D	-	-	-	D	
Fluosilicate Bath 95°F	-	-	C	-	-	C	A	-	-	-	-	-	A	-	A	D	-	D	-	-	A	-	-	B	-	C	D	-	D	-	-	-	D	
Fluoride Bath 130°F	-	-	D	-	-	C	A	-	-	-	-	-	A	-	A	D	-	D	-	-	A	-	-	B	-	C	D	-	D	-	-	-	D	
Black Chrome Bath 115°F	-	-	C	-	-	A	A	-	-	-	-	-	A	-	A	D	-	D	-	-	A	-	-	A	-	C	D	-	D	-	-	-	D	
Barrel Chrome Bath 95°F	-	-	D	-	-	C	A	-	-	-	-	-	A	-	A	D	-	D	-	-	A	-	-	A	-	C	D	-	D	-	-	-	D	
<b>Copper Plating (Cyanide)</b>																																		
Copper Strike Bath 120°F					A	A	A	-	-	-	-	-	-	A	A	-	-	-	-	-	-	-	-	C	-	B	-	-	A	-	-	-	-	
Rochelle Salt Bath 150°F	-	-	A	-	-	A	A	-	-	-	-	-	D	-	A	A	-	A	-	-	A	-	-	D	-	A	A	-	B	-	-	-	C	
High Speed Bath 180°F	-	-	A	-	-	A	A	-	-	-	-	-	D	-	A	A	-	A	-	-	A	-	-	D	-	A	A	-	B	-	-	-	C	
<b>Copper Plating (Acid)</b>																																		
Copper Sulfate Bath R.T.	-	-	D	-	-	A	A	-	-	-	-	-	A	-	A	A	-	D	-	-	A	-	-	D	-	A	A	-	A	-	-	-	D	
Copper Fluoborate Bath 120°F	-	-	D	-	-	D	A	-	-	-	-	-	A	-	A	A	-	D	-	-	A	-	-	D	-	A	B	-	C	-	-	-	D	
<b>Copper (Misc.)</b>																																		
Copper Pyrophosphate 140°F	-	-	A	-	-	A	A	-	-	-	-	-	A	-	A	A	-	A	-	-	A	-	-	B	-	A	A	-	A	-	-	-	B	
Copper (Electroless) 140°F	-	-	-	-	-	-	-	D	-	-	-	-	A	-	A	A	-	A	-	-	A	-	-	D	-	A	D	-	D	-	-	-	B	
<b>Gold Plating</b>																																		
Cyanide 150°F	-	-	A	-	-	A	A	C	-	-	-	-	D	-	A	A	-	A	-	-	A	-	-	B	-	A	A	-	A	-	-	-	D	
Neutral 75°F	-	-	C	-	-	A	A	-	-	-	-	-	A	-	A	A	-	A	-	-	A	-	-	A	-	A	A	-	A	-	-	-	A	
Acid 75°F	-	-	C	-	-	A	A	-	-	-	-	-	A	-	A	A	-	A	-	-	A	-	-	A	-	A	A	-	A	-	-	-	A	
Indium Sulfamate Plating R.T.	-	-	C	-	-	A	A	-	-	-	-	-	A	-	A	A	-	D	-	-	A	-	-	A	-	A	A	-	A	-	-	-	A	
<b>Iron Plating</b>																																		
Ferrous Chloride Bath 190°F	-	-	D	-	-	A	D	-	-	-	-	-	D	-	A	A	-	D	-	-	C	-	-	A	-	A	B	-	D	-	-	-	D	
Ferrous Sulfate Bath 150°F	-	-	C	-	-	A	A	-	-	-	-	-	D	-	A	A	-	D	-	-	A	-	-	A	-	A	A	-	B	-	-	-	D	
Ferrous Am. Sulfate Bath 150°F	-	-	C	-	-	A	A	-	-	-	-	-	D	-	A	A	-	D	-	-	A	-	-	A	-	A	A	-	B	-	-	-	D	
Sulfate-Chloride Bath 160°F	-	-	D	-	-	A	D	-	-	-	-	-	D	-	A	A	-	D	-	-	A	-	-	A	-	A	B	-	C	-	-	-	D	
Fluoborate Bath 145°F	-	-	D	-	-	D	B	-	-	-	-	-	D	-	A	A	-	D	-	-	A	-	-	D	-	A	B	-	C	-	-	-	D	
Sulfamate 140°F	-	-	D	-	-	A	B	-	-	-	-	-	A	-	A	A	-	D	-	-	A	-	-	A	-	A	A	-	A	-	-	-	A	
<b>Lead Fluoborate Plating</b>																																		
Nickel Plating																																		
Watts Type 115-160°F	-	-	C	-	-	A	A	-	-	-	-	-	D	-	A	A	-	A	-	-	A	-	-	A	-	A	A	-	A	-	-	-	D	
High Chloride 130-160°F	-	-	C	-	-	A	A	-	-	-	-	-	D	-	A	A	-	D	-	-	A	-	-	A	-	A	A	-	B	-	-	-	D	
Fluoborate 100-170°F	-	-	C	-	-	D	A	D	-	-	-	-	D	-	A	A	-	D	-	-	A	-	-	D	-	A	B	-	C	-	-	-	D	
Sulfamate 100-140°F	-	-	C	-	-	A	A	-	-	-	-	-	A	-	A	A	-	A	-	-	A	-	-	A	-	A	A	-	A	-	-	-	A	
Electroless 200°F	-	-	-	-	-	-	-	-	-	-	-	-	D	-	A	D	-	D	-	-	D	-	-	A	-	A	D	-	D	-	-	-	B	
<b>Rhodium Plating 120°F</b>																																		
Silver Plating 80-120°F	-	-	A	-	-	A	A	-	-	-	-	-	A	-	A	A	-	A	-	-	A	-	-	B	-	A	A	-	A	-	-	-	A	
Tin-Fluoborate Plating 100°F	-	-	C	-	-	D	A	-	-	-	-	-	A	-	A	A	-	D	-	-	A	-	-	D	-	A	B	-	C	-	-	-	A	
Tine-Lead Plating 100°F	-	-	C	-	-	D	A	-	-	-	-	-	A	-	A	A	-	D	-	-	A	-	-	D	-	A	B	-	C	-	-	-	A	
<b>Zinc Plating</b>																																		
Acid Chloride 140°F	-	-	D	-	-	A	D	-	-	-	-	-	A	-	A	A	-	D	-	-	A	-	-	A	-	A	A	-	A	-	-	-	A	
Acid Sulfate Bath 150°F	-	-	C	-	-	A	A	-	-	-	-	-	D	-	A	A	-	D	-	-	A	-	-	A	-	A	A	-	B	-	-	-	D	

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	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	
<b>Platings (Cont'd)</b>																																	
Acid Fluoborate Bath R.T.	-	-	-	C	-	D	-	-	-	-	-	-	A	-	A	A	-	D	-	-	A	-	-	D	-	A	B	-	C	-	-	A	
Alkaline Cyanide Bath R.T.	-	-	-	A	-	A	A	-	-	-	-	-	A	-	A	A	-	A	-	-	A	-	-	D	-	A	A	-	A	-	-	A	
Potash	-	A	-	A	C	-	A	C	-	B	-	-	A	B	-	A	B	A	-	B	A	-	A	A	A	A	A	-	B	-	B	A	
Potassium Bicarbonate	-	A	-	B	C	A	B	B	-	D	-	A	A	-	A	A	C	A	C	B	A	A	A	A	-	A	A	-	A	-	B	A	
Potassium Bromide	A	A	-	B	C	A	B	C	-	D	D	A	A	-	A	A	A	C	-	B	A	C	A	A	-	A	A	-	A	A	B	A	
Potassium Carbonate	B	A	-	A	C	A	A	C	-	B	B	A	A	B	A	A	B	A	-	B	A	A	A	A	A	A	B	-	A	-	B	A	
Potassium Chlorate	B	A	A	A	B	A	B	B	-	B	B	A	A	B	A	A	B	D	-	B	A	A	A	A	-	A	A	-	A	A	A	A	
Potassium Chloride	C	A	A	B	B	A	A	C	C	B	B	A	A	A	A	A	B	C	B	A	A	A	A	-	A	A	-	A	A	A	A	A	
Potassium Chromate	-	-	B	B	A	-	B	A	-	A	-	-	A	-	-	A	C	-	-	B	-	A	A	D	-	A	A	-	A	-	B	C	
Potassium Cyanide Solutions	B	A	B	A	D	A	A	D	-	B	B	A	A	-	A	A	C	A	-	B	A	A	C	A	-	B	A	-	A	A	A	A	
Potassium Dichromate	B	A	A	A	A	A	B	C	-	B	C	A	A	-	A	A	C	D	-	B	A	A	A	A	-	B	A	-	A	A	A	A	
Potassium Ferrocyanide	B	A	-	A	C	-	B	A	-	-	C	-	A	-	A	-	-	A	-	A	-	-	-	-	-	-	D	-	-	-	A	A	
Potassium Hydroxide (50%)	A	B	B	B	D	C	A	D	D	C	A	D	A	B	A	A	D	A	C	B	A	A	-	D	A	D	B	C	A	A	C	A	
Potassium Nitrate	B	A	B	A	B	A	B	B	-	-	B	A	A	C	A	A	B	C	-	B	A	C	A	A	-	B	A	-	A	A	A	A	
Potassium Permanganate	B	A	B	B	B	B	B	B	-	B	B	A	A	-	A	A	C	D	C	B	B	A	A	A	-	B	A	-	A	-	B	B	
Potassium Sulfate	B	A	B	B	A	A	A	B	B	B	B	A	A	A	A	A	B	C	-	B	A	A	A	A	-	A	A	C	A	A	C	A	
Potassium Sulfide	A	A	-	A	B	-	B	B	-	B	B	-	A	-	A	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	-	
Propane (Liquified) <sup>1 2</sup>	A	A	-	A	A	-	-	A	A	-	B	-	D	-	A	D	A	A	-	-	D	-	A	A	-	A	A	D	B	D	D	A	
Propylene Glycol	B	B	-	A	A	-	-	B	-	B	B	-	-	-	A	-	B	B	B	B	-	-	A	A	-	A	A	-	C	-	-	A	
Pyridine	-	C	-	B	B	-	-	-	-	B	A	D	-	D	A	D	D	-	-	C	B	A	A	A	-	D	D	-	D	B	D	A	
Pyrogalllic Acid	B	A	A	A	B	-	A	B	-	B	B	-	A	-	A	-	D	A	-	-	-	-	A	A	-	A	A	-	-	-	-	A	
Rosins	A	A	A	A	A	-	B	A	C	-	C	-	-	-	A	-	B	A	-	-	A	-	A	A	-	A	-	-	-	-	-	A	
Rum	-	A	-	A	-	-	-	-	-	-	-	-	A	-	-	A	A	A	-	-	A	-	A	A	-	A	A	-	A	-	-	A	
Rust Inhibitors	-	A	-	A	-	-	-	A	-	A	-	-	-	-	-	-	A	-	-	-	A	-	A	A	-	A	A	-	C	-	-	A	
Salad Dressing	-	A	-	A	B	-	-	B	-	D	-	-	A	-	-	A	A	A	-	-	A	-	A	A	-	A	A	-	-	-	-	A	
Sea Water	A	A	C	A	C	A	-	C	-	-	D	-	A	-	A	A	A	A	-	B	A	-	A	A	A	A	A	B	B	A	A	A	
Shellac (Bleached)	A	A	-	A	A	-	-	A	B	B	A	-	-	-	A	-	A	A	-	-	A	-	-	A	-	-	A	-	-	-	-	A	
Shellac (Orange)	A	A	-	A	A	-	-	A	C	C	A	-	-	-	A	-	A	A	-	-	A	-	-	A	-	-	A	-	-	-	-	A	
Silicone	-	B	-	A	B	-	-	A	-	-	-	-	-	-	A	A	A	-	-	A	-	A	A	-	A	A	B	A	A	A	A	A	
Silver Bromide	-	C	C	B	D	-	-	-	-	-	-	-	-	-	A	C	-	-	-	-	-	-	A	-	-	-	-	-	-	-	-	A	
Silver Nitrate	B	A	B	A	D	A	A	D	-	D	D	A	A	B	A	A	C	A	-	B	A	-	A	A	-	A	C	-	A	C	A	A	
Soap Solutions	A	A	A	A	C	A	B	B	-	B	A	-	B	B	A	A	A	A	-	B	A	A	A	A	A	A	A	B	B	-	C	A	
<b>Soda Ash (See Sodium Carbonate)</b>																																	
Sodium Acetate	B	A	A	B	B	A	A	B	-	C	C	A	A	-	A	A	B	A	-	B	A	-	A	A	-	D	D	-	C	-	A	A	
Sodium Aluminate	B	-	-	A	C	B	B	B	-	-	C	-	-	-	A	A	B	A	-	-	-	A	A	A	-	A	A	-	A	A	B	A	
Sodium Bicarbonate	B	A	A	A	A	A	-	B	A	C	C	A	A	B	A	A	B	A	B	B	A	A	A	A	A	A	A	C	A	A	A	A	
Sodium Bisulfate	A	A	-	A	D	B	B	C	C	D	D	A	A	B	A	A	B	C	C	B	A	A	A	A	-	B	A	C	A	-	A	A	
Sodium Bisulfate	-	A	-	A	A	A	B	C	-	D	-	A	A	B	A	A	B	D	B	B	A	A	A	A	-	A	A	C	A	-	A	A	
Sodium Borate	B	A	-	A	C	-	A	A	-	C	C	-	C	-	A	-	-	A	-	A	-	-	-	-	-	-	A	-	B	A	-	-	
Sodium Carbonate	B	A	B	B	C	A	A	B	B	B	B	A	A	B	A	A	A	A	C	B	A	A	B	A	-	A	A	-	A	A	A	A	
Sodium Chlorate	B	A	-	A	B	A	B	B	-	-	C	A	A	B	A	A	D	A	-	B	A	A	A	A	-	A	D	-	A	-	A	A	
Sodium Chloride	B	A	C	B	C	A	A	B	C	B	C	A	A	B	A	A	A	A	B	B	A	A	A	A	A	A	A	C	A	A	B	A	
Sodium Chromate	A	A	A	-	D	-	B	B	-	B	B	-	-	-	A	A	D	A	-	-	A	A	A	B	-	B	A	-	A	-	-	C	
Sodium Cyanide	B	A	-	A	D	A	-	D	D	B	B	A	A	-	A	A	D	C	-	B	A	A	A	A	-	A	A	D	A	A	A	A	
Sodium Fluoride	B	C	-	C	C	A	A	C	-	D	D	-	D	D	A	-	-	A	-	C	-	-	-	-	-	B	D	-	D	-	D	A	
Sodium Hydrosulfite	-	-	-	-	A	-	A	C	-	-	-	-	C	A	A	-	-	A	-	-	-	-	-	-	A	-	A	-	-	A	-	A	-

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	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
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 <sup>2</sup>	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	-	-	-	-	-	A	-	-	A	A	D	A	-	-	A
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	-	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
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
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
Sodium Sulfide	-	C	C	-	C	A	A	C	-	A	-	-	A	A	A	-	-	D	-	A	-	-	A	A	-	A	A	-	A	-	A	A
Sodium Tetraborate	-	-	A	-	-	-	-	-	-	-	-	-	A	-	-	A	B	-	-	-	-	-	A	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
Sorghum	-	A	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
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
Stannic Fluoborate	-	-	A	-	-	-	-	-	-	D	-	-	-	-	-	A	C	-	-	-	-	-	-	A	-	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
Starch	B	A	A	-	A	-	-	B	-	C	C	-	A	-	A	A	A	A	-	B	-	-	A	A	-	A	A	-	A	-	-	A
Stearic Acid <sup>2</sup>	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
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	A
Styrene	A	A	A	-	A	-	-	A	-	-	A	-	-	-	A	A	A	-	-	-	-	-	A	A	-	B	D	D	D	D	D	A
Sugar (Liquids)	A	A	A	A	A	-	A	A	-	B	B	-	-	-	A	A	A	A	B	-	A	-	A	A	A	A	A	-	B	-	A	A
Sulfate Liquors	-	C	C	-	B	-	A	C	-	-	-	-	-	-	-	-	D	-	-	-	A	-	A	A	-	-	-	-	C	-	-	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
Sulfur Dioxide <sup>2</sup>	-	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
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
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
Sulfuric Acid 10%-75% <sup>2</sup>	-	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
Sulfuric Acid 75%-100%	-	-	D	-	-	D	B	-	D	-	-	A	B	-	A	A	-	D	-	-	B	C	-	A	-	A	D	-	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
Sulfuryl Chloride	-	-	-	-	-	-	-	-	-	-	-	-	A	-	A	-	-	-	-	-	-	-	-	A	-	-	-	-	-	-	-	A
Syrup	-	A	A	A	A	-	-	D	-	-	-	-	A	-	-	A	A	A	B	-	A	-	A	A	A	A	A	-	B	-	A	A
Tallow	-	A	A	-	A	-	-	-	-	-	-	-	-	-	-	A	A	A	-	C	-	-	A	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
Tanning Liquors	-	A	A	-	C	A	A	A	-	-	-	-	A	B	A	-	B	-	-	-	A	-	A	A	-	A	C	-	-	-	-	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	-	A	D	C	A	-	A	A

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	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 <sup>3</sup>	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	D	A	
Trichlorethylene <sup>2</sup>	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	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 <sup>3</sup>	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	-	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	-	-	-	-	-	A	
Xylene <sup>2</sup>	A	A	A	-	A	-	A	A	A	B	A	D	-	A	D	A	A	D	D	D	A	A	A	A	A	D	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	

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