

temperature sensor solutions

Chemical Resistance Material Data



thermo-electra

measurement and control technics

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CHEMICAL RESISTANCE DATA

- All recommendations assume ambient temperatures 20°C / 68 °F, unless otherwise noted.
- These recommendations are based upon information from material suppliers / manufacturers and careful examination of available published information and are believed to be accurate.
- The ratings for these materials are based upon the chemical resistance only.
- However, since the resistance can be affected by concentration, temperature, presence of other chemicals and other factors, this information should be considered as a general guide and never as an unqualified guarantee.
- Added consideration must be given to switch selections when the medium is abrasive, viscosity is to be accounted for, permeating properties, has tendency to clogging , etc.
- Wetted parts are not guaranteed against corrosion or permeation since processes vary from plant to plant and concentration of harmful fluids, gasses or solids vary from time to time in a given process.

Empirical experience by users should be the final guide to determine the suitability and use

Notes:

- Teflon, Kalrez and Viton are ® registered trademarks of DuPont corporation
- Hastelloy C is a ® registered trademark of Haynes International
- Monel is a ® registered trademark of Special metals

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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 22°C.(72° F)
2. Polypropylene - Satisfactory to 22°C.(72° F)
3. Polypropylene - Satisfactory to 48°C.(120° F)
4. Buna-N - Satisfactory for "O" Rings
5. Polyacetal - Satisfactory to 22°C.(72° F)
6. Ceramic - Satisfactory to 22°C.(72° F)

Disclaimer:

The use of this document does not include acceptance of any form of liability, warranty or guarantee from Thermo-Electra B.V., their staff or appointed representatives or other non specified users, for accuracy, completeness and usefulness regarding the selection of wetted parts based on information incorporated or included in this document. © Thermo-Electra B.V. P.O. Box 73, 2640 AB Pijnacker The Netherlands



Metals

Chemical Resistance Data

	Aluminum	Cast Bronze	Brass	Cast Iron	Carbon Steel	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Monel	Hastelloy C	Titanium
Acetaldehyde ⁵	B	D		C	A	A	A			A	A	
Acetamide				C		B	A					
Acetate Solvent ²	B	A	C	B	A	B	A	B				
Acetic Acid, Glacia ¹	B	C	C	D	A	B	A	A		A	A	
Acetic Acid 20%			C			B	A		A	A	A	
Acetic Acid 80%			C			B	A			A	A	
Acetic Acid	B	C	C	D	C	B	A	B		A	A	
Acetic Anhydride	B	C	D	B	D	B	A	A	B	C	A	A
Acetone ⁶	A	A	A	A	A	A	A	A	B	A	A	A
Acetyl Chloride		D				C	A			A		
Acetylene ²	A	B		A	A	A	A	A	A			B
Acrylonitrile	B	A		C		A	A	C			B	B
Alcohols: Amyl	C	A	B	C	C	A	A	A			A	A
Benzyl	B	A	C			A	A		A	A	A	
Butyl	B	B	C	C	C	A	A	A		A	A	B
Diacetone ²	A	A	C		A	A	A		A	A	A	
Ethyl	B	A	C	A	A	A	A	A		A	A	A
Hexyl	A	A	C		A	A	A			A	A	A
Isobutyl	B	A	C		A	A	A		A	A	A	
Isopropyl	B	A	C	C	A	A	A		A	A	A	
Methyl ⁶	B	A	C	A	A	A	A	A		A	A	A
Octyl	A	A	C		A	A	A			A	A	
Propyl	A	A			A	A	A		A	A	A	
Aluminum Chloride 20%	B	D		D	A	D	C	D	C	A	A	
Aluminum Chloride	D	C		D	B	C	D	C		A	C	
Aluminum Fluoride					A	D	C	D	A	B	D	
Aluminum Hydroxide ⁶	A	A		D	A	A	A	A	C			
Aluminum Potassium Sulfate (Alum), 10%	A			D	A	A					B	
Aluminum Potassium Sulfate (Alum), 100%	B	C			A	D	A	B			B	
Aluminum Sulfate	A	C	C	D	A	C	C	A		A	A	
Amines	A	B		A	B	A	A	A		A	B	
Ammonia 10%							A				A	A
Ammonia, Anhydrous	B	D		D	B	A	B	A	A	A	A	B
Ammonia, Liquids	D	D		A	A		A	A	A	A	B	
Ammonia, Nitrate	C	D			A		A	A	A			
Ammonium Bifluoride	D						C	A		C	B	
Ammonium Carbonate	C	B		C	B	B	A	A	A	C	B	A
Ammonium Casenite								A				
Ammonium Chloride	C	D	C	D	D	C	A	C	A	C	A	D
Ammonium Hydroxide	C	D	D	A	C	A	A	A	A	C	A	A
Ammonium Nitrate	B	D	D	A	D	A	A	A	A	A	A	A
Ammonium Oxalate					A		A	A	A		A	
Ammonium Persulfate	C	A		D	A		A	A	A		A	C
Ammonium Phosphate, Dibasic	B	C			D	B	A	A	A		A	A
Ammonium Phosphate, Monobasic	B	D			A		A	A	A		A	A
Ammonium Phosphate, Tribasic	B	C		C	D	B	A	A	A		A	A
Ammonium Sulfate	B	B	C	C	C	C	D	B	A	C	A	A
Ammonium Thio-Sulfate				D	A			A				A
Amyl-Acetate	B	C			C	B	A	A	C		A	A
Amyl Alcohol	B	A			A		A	A			A	A
Amyl Chloride	D	A			A		C	B			A	
Aniline	C	C			C	B	A	A	A	C	B	A
Antifreeze	A	B	B	B	C		A	A			A	



Chemical Resistance Data

	Aluminium	Cast Bronze	Brass	Cast Iron	Carbon Steel	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Monel	Hastelloy C	Titanium
Antimony Trichloride	D					D	D			A	C	
Aqua Regia (80%, HCL, 20%, HNO)	D	D				D	D			D	A	
Arochlor 1248				A								
Aromatic Hydrocarbons	A	A	A	A			A					
Arsenic Acid	D	D	B	D	D	B	A	A		A		
Asphalt	C	A		C		B	A					
Barium Carbonate	B	B		B	B	B	A	A	A	A	A	A
Barium Chloride	D	B			C	C	D	A	A	A	A	A
Barium Cyanide		C			A		A					
Barium Hydroxide	D	B		C	C	B	C	A	A	A	B	B
Barium Nitrate		D		A	A		A	A		C		A
Barium Sulfate	D	C		C	C	B	A	A	A	A	A	A
Barium Sulfide	D	C		C	C	B	A	A		A		B
Beer ²	A	A	B	D	D	A	A	A		A	A	A
Beet Sugar Liquids	A	A	B	A		A	A	A		A		
Benzaldehyde ³	B	A		B	A	A	A	A			A	A
Benzene ²	B	B	A	B	C	B	A	A	A	A	B	A
Benzoic Acid ²	B	B		D		B	A	A	A		A	A
Benzol	B	B	A			A	A				A	A
Borax (Sodium Borate)	C	A	B	A	C		A	A	A	A	A	B
Boric Acid	B	B	C	D		B	A	A	A	A	A	A
Brewery Slop		A		A			A					
Bromine ² (wet)	D	C		D	D	D	D	D	D	D	A	A
Butadiene	A	C	A	C	C	A	A	A		A		
Butane ^{1 2}	A	A	A	C	C	A	A	A				
Butanol	A	A				A	A				A	
Butter	A	D		D		B	A					
Buttermilk	A	D		D		A	A	A	A			
Butylene	A	A	A	A	A	A	B	A		A		
Butyl Acetate ¹	A	A			A		C			A	A	
Butyric Acid ¹	B	C		D		B	B	A	A	A	A	A
Calcium Bisulfate	D	D	D	D		C	D	A				
Calcium Bisulfide	C	C					B				A	A
Calcium Bisulfite	C	C					B	A		D	A	A
Calcium Carbonate	C	C		D		B	A	A	A	A	A	A
Calcium Chlorate		C					B	A		A	B	B
Calcium Chloride	C	B		C		C	A	D	C	A	A	A
Calcium Hydroxide	C	B				B	A	A		A	A	A
Calcium Hypochlorite	C	D		D		D	D	C	C	D	B	A
Calcium Sulfate	B	B				B	A	A	A	A	B	A
Calgon		C		D			A	A				
Cane Juice ²	B	B	C	A			A	A				
Carbolic Acid (See Phenol)												
Carbon Bisulfide ²	A	C		B		B	A	A	A			
Carbon Dioxide (wet)	C	C	C	C			A	A		A	A	
Carbon Disulfide ²	C	C	C	B	C		B	A				
Carbon Monoxide	A						A	A		A		
Carbon Tetrachloride ^{1 2}	C	C	A	C	D	B	B	B	A	A	A	A
Carbonated Water	A	B		D		B	A	A	A			
Carbonic Acid	A	B		D		B	A	B	A	A	A	
Catsup	D	C		D			A	A	A			
Chloracetic Acid ²	C	D		D		D	D	D	D		A	A
Chloric Acid							D	D		D		
Chlorinated Glue	D	C		D			A	A				



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Chlorine, Anhydrous Liquid	D	D		C		D	D	D		A	D	D
Chlorine (dry)	D	A	B	A		B	A	A		A	A	D
Chlorine Water	D	D	D	D		D	D			B	A	
Chlorobenzene (Mono)	B	B		B	C	A	A	A		A	A	
Chloroform	D	B		D	C	A	A	A	A	A	A	A
Chlorosulfonic Acid ¹	D	D			D	D	D		D	A	B	A
Chlorox (Bleach)	C	A		D	C		A	A			A	
Chocolate Syrup	A			D			A	A				
Chromic Acid 5%	C	D	D	D			A	A	B		A	A
Chromic Acid 10%			D				B			C	A	A
Chromic Acid 30%			D				B				A	A
Chromic Acid 50%	C	D	D	D		C	B	B			A	A
Cider	B	A		D			A	A	A			
Citric Acid	C	D	C	D			A	A	A	C	A	A
Citric Oils	C	B					A	A		C		
Coffee	A	B		C		A	A	A	A	A		
Copper Chloride	D	D		D		C	D	D	B	C	A	A
Copper Cyanide	D	C		D			A	A	A	C	A	A
Copper Fluoborate	D	D		D			D	D			B	
Copper Nitrate	D	D				B	A	A	B	D	A	A
Copper Sulfate (5% Solution)	D	D	D	D			A	A	A	D	A	A
Copper Sulfate		C	D			B	B				A	A
Cream	A	C		D			A	A				
Cresols ²	B	D	C				A	A				
Cresylic Acid	C	C				B	A	A		A	B	A
Cyclohexane	A	A			A		A			A		A
Cyanic Acid							A					
Detergents	A	A			A		A	A		A		
Dichlorethane							A	A			A	
Diesel Fuel	A	A		A	A	A	A	A		A		
Diethylamine	A	A				A	A			C		
Diethylene Glycol		A					A					
Diphenyl Oxide		A					A					
Dyes	B	C					A	A				
Epsom Salts (Magnesium Sulfate)	A	B				B	A	A	A		B	A
Ethane	A	A				A	A					
Ethanolamine					C		A	A				
Ether ³	A	B	A		B	A	A	A	A	A	B	
Ethyl Acetate ²	B	B			C		A	A		A	B	
Ethyl Chloride	B	B		C	D		A	A	A	A	B	A
Ethyl Sulfate							D					
Ethylene Chloride ²	C	A		C	C		A	A		A	B	B
Ethylene Dichloride	D	C			C		A	A		A	B	A
Ethylene Glycol ⁴	A	B	B	B	C		A	A		A	A	
Ethylene Oxide	A	A					A			C		
Fatty Acids	B	C		D			A	A		A	A	A
Ferric Chloride	D	D	D	D			D	D	D	D	B	A
Ferric Nitrate	D	D					A	A	A	D	A	A
Ferric Sulfate	D	D	D	D			A	C	A	D	A	A
Ferrous Chloride	D	C		D			D	D		D	B	A
Ferrous Sulfate	D	C		D	D	B	A	C		A	B	A
Fluoboric Acid				D			D	B		A	A	D
Fluorine	D	D		D	D	D	D	D		A	A	D
Fluosilicic Acid 25%	D			D				B		A	B	D
Formaldehyde 40%								A		A	A	A



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Formaldehyde	A	A	B	D	A	A	A	A			B	A
Formic Acid ⁶	D	C	C	D	D	C	A	B	B	A	A	C
Fruit Juice	B	B		D	D	A	A	A	A			
Fuel Oils	A	B		C	B	A	A	A			A	A
Furan Resin	A	A		A	A		A	A				
Furfural ¹	A	A			A	A	A	A		A	B	
Gallic Acid	A	A		D	D	B	A	A		A	A	
Gasoline ^{1 4}	A	A		A	A	A	A	A	A	A	A	D
Gelatin	A	A	C	D	D	A	A	A	A		A	
Glucose	A	A	A	B	B	A		A		A		
Glue P.V.A. ¹	B	A			A	B	B	A		A		A
Glycerine	A	A	B	B	B	A	A	A	A	A	A	A
Gycolic Acid										C	A	
Gold Monocyanide		A		D				A				
Grape Juice	B	B		D			A	A				
Grease ⁴	A	B		A	A	A	A	A		A		
Heptane ¹	A	A			B	A	A	A		A	A	
Hexane ¹	A	B			B	A	A	A			A	
Honey	A	A		A		A	A	A				
Hydraulic Oils (Petroleum) ¹	A	B		A	A	A	A	A		A		
Hydraulic Oils (Synthetic) ¹	A	A		A		A	A	A		A		
Hydrazine				C			A	A		A		
Hydrobromic Acid 20%								D		D	A	A
Hydrobromic Acid ⁴	D	D		D	D	D	D	D	D	D	A	A
Hydrochloric/Muratic Acid (Dry gas)	D				D	D	C	A			A	
Hydrochloric/Muratic Acid (20%) ⁴	D	D		D			D	D	D		B	C
Hydrochloric/Muratic Acid (37%) ⁴	D	D		D			D	D	D		B	C
Hydrochloric/Muratic Acid (100%)	D	D		D			D	D			C	D
Hydrocyanic Acid	A	D	D		C	A	A	A	C		A	A
Hydrocyanic Acid (Gas 10%)							D	D		A		
Hydrofluoric Acid (20%) ¹	D	D		D			D	D	D	A	B	D
Hydrofluoric Acid (75%) ^{1 2}	D	D		D			C	D			C	D
Hydrofluoric Acid 100%	D	D		D	D	D	D	D			B	D
Hydrofluosilicic Acid (20%)	D	A		D			D	D			B	D
Hydrofluosilicic Acid	C	D					D	D			C	
Hydrogen Gas	A	A		B	B	A	A	A		A		
Hydrogen Peroxide 10%	A	D	D	D			C	C		A	A	C
Hydrogen Peroxide 30%			D					B		A	A	B
Hydrogen Peroxide	A	D	D	D	D		A	B	A	A	A	B
Hydrogen Sulfide, Aqueous Solution	C	D	C	D			D	A	C		A	A
Hydrogen Sulfide (dry)	D	D	C	B	B	A	C	A			A	
Hydroxyacetic Acid (70%)	D											B
Ink	C	C		D	D	A	A	A		A		
Iodine	D	D		D			D	D	D	A	B	A
Iodine (In Alcohol)								B			A	D
Iodoform	A	C		C	B	B	C	A				
Isotane ²	A											
Isopropyl Acetate	C							B		A		
Isopropyl Ether ²	A	A			A	A		A		A		
Jet Fuel (JP#, JP4, JP5)	A	A		A	A	A	A	A		A		
Kerosene ²	A	A	A	A	B	A	A	A	A	A	A	A
Ketones	B	A		A	A	A	A	A		A	A	A
Lacquers	A	A	C	C	C	A	A	A				
Lacquer Thinners			C					A			A	A
Lactic Acid	C	D		D	D	A	A	B	C	A	A	A



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	Aluminium	Cast Bronze	Brass	Cast Iron	Carbon Steel	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Monel	Hastelloy C	Titanium
Lard (oil)	A	A		A	C	B	A	A	A	C		
Latex	A	A					A	A		A		
Lead Acetate	D	C		D	B		A	A		A	A	A
Lead Sulfamate												
Ligroin ³		A						A				
Lime (slurry)	C	A		A			A	A		A		A
Lubricants	A	B					A	A		A	A	A
Magnesium Carbonate							A	A	A	A	B	
Magnesium Chloride	D	B	C	D	C	B	B	B	A	A	A	A
Magnesium Hydroxide	D	C	B	B	B	A	A	A		A	A	A
Magnesium Nitrate							A	A	A	C	A	A
Magnesium Oxide							A	A				
Magnesium Sulfate	B	B	B	C	B	B	B	A		A	B	A
Maleic Acid	B	C			B	C	A	A	A	C	A	A
Maleic Anhydride											A	
Malic Acid	C	D			D	B	A	A		A	A	
Mash		A					A	A				
Mayonnaise	D	D		D	D	A	A	A				
Melamine		D					D	D				
Mercuric Chloride (Dilute Solution)	D	D	D	D	D	D	D	D	D	D	B	A
Mercuric Cyanide	D	D			D	A	A	A				A
Mercury	C	D	D	A	A	A	A	A	A	A	A	C
Methanol (See Alcohol Methyl)												
Methyl Acetate	A	A			B	A		A		A	A	
Methyl Acrylate												
Methyl Acetone	A	A		A	A	A		A				
Methyl Alcohol 10%	C	C			B	A		A			A	
Methyl Bromide										C		
Methyl Butyl Ketone	A							A				
Methyl Cellosolve	A	A										
Methyl Chloride	D	A					A	A		A	A	A
Methyl Dichloride												
Methyl Ethyl Ketone	A	A					A	A		A	A	A
Methyl Isobutyl Ketone ²								A			A	A
Methyl Isopropyl Ketone								A				
Methyl Methacrylate												
Methylamine	A	D		B	B	A		A				
Methylene Chloride	A	A	C		B	A	A	A		A	A	A
Milk	A	C	C	D	D	A	A	A	A	A		
Molasses	A	A	B	A	A	A	A	A	A	A		
Mustard	B	B		C	B	A	A	A	A			
Naphtha	A	B		B	B	A	A	A	A	A	A	A
Naphthalene	B	C		B	A	B	A	B		A	A	A
Nickel Chloride	D	D		D			A	B		D	A	A
Nickel Sulfate	D	C	C	D	D	B	A	B		C	B	A
Nitric Acid (10% Solution)	D	D		D	D	A	A	A	A	D	A	A
Nitric Acid (20% Solution)	D	D		D			A	A	A		A	A
Nitric Acid (50% Solution)	D	D		D			A	A	A		A	A
Nitric Acid (Concentrated Solution)	B	D	D	D			D	B	A		B	A
Nitrobenzene ²	C	D		B	B	B	A	B		A	B	A
Oils: Aniline	C	A		A			A	A		C	D	A
Anise							A	A				
Bay							A	A				
Bone		A					A	A				
Castor	A	A		A			A	A		A		
Cinnamon							A	A				



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	Aluminum	Cast Bronze	Brass	Cast Iron	Carbon Steel	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Monel	Hastelloy C	Titanium
Citric		D	D			A	A					
Clove						A	A					
Coconut	B	A	A			A	A		C			
Cod Liver	B					A	A					
Corn	B	B	A			A	A	A	C			
Cotton Seed	B	B	A	C	B	A	A	A	C			
Creosote ²	A					A	A		A			
Diesel Fuel (2D, 3D, 4D, 5D)	A	A				A	A		A			
Fuel (1, 2, 3, 5A, 5B, 6)	A	A				A	A			A	A	
Ginger						A	A					
Hydraulic (See Hydraulic)												
Lemon						A	A		A			
Linseed	A	A	A			A	A	A	A			
Mineral	A	A	A	B	A	A	A	A	A			
Olive	A	B	A	B	A	A	A		A			
Orange						A	A					
Palm	A	B				A	A		A			
Peanut ³	A	A	A			A	A		A			
Peppermint ²		A				A	A					
Pine	A	D	C	B	A	A	A					
Rape Seed		A				A	A					
Rosin	A					A	A		A			
Sesame Seed	A	A	A			A	A					
Silicone		A	A			A	A		A			
Soybean	A	B	A			A	A		A			
Sperm		A				A	A					
Tanning						A	A					
Turbine	A	A	A			A	A					
Oleic Acid	B	B	C	C	C	B	A	A	B	A	B	
Oleum 25%											A	
Oleum	B	C	C		B	B		A		D		
Oxalic Acid (cold)	C	B	C	D	D	C	A	B	A	A	B	C
Paraffin	A	A		B	B	A	A	A	A			
Pentane	A	A		B	B	A	C	C			B	
Perchloroethylene ²	A	C		B	B	B	A	A		A		
Petrolatum	B	B		C	C	A		A				
Phenol 10%	A	C		B	D	B	A	A			B	
Phenol (Carbolic Acid)	B	B	D	D	D	B	A	A	A	D	A	C
Phosphoric Acid (40% Solution)	D	D	D	D			B	A	A	D	A	A
Phosphoric Acid (40% -100% Solution)	D	D	D	D			C	B	B	D	A	B
Phosphoric Acid (Crude)	D	D	D	D	D		D	C	C	D	A	C
Phosphoric Anhydride (Dry or Moist)			D				A	A		D		
Phosphoric Anhydride (Molten)	D	D	D				A	A		D		
Photographic (Developer)	C			D			C	A	C		A	A
Phthalic Anhydride	B	B		C	C	B	A	B			A	
Picric Acid	C	D	D	D	D	B	A	A		D	A	
Plating Solutions:												
Antimony Plating 130°F / 55°C								A			A	A
Arsenic Plating 110°F / 43°C								A			A	A
Brass Plating:								A			A	A
Regular Brass Bath 100°F / 38°C												
High Speed Brass Bath 110°F / 43°C								A			A	A
Bronze Plating												
Copper Cadmium Bronze Bath R.T.								A			A	A
Copper-Tin Bronze Bath 160°F / 71°C								A			A	A
Copper-Zinc Bronze Bath 100°F / 38°C								A			A	A



Chemical Resistance Data

	Aluminum	Cast Bronze	Brass	Cast Iron	Carbon Steel	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Monel	Hastelloy C	Titanium
Cadmium Plating												
Cyanide Bath 90°F / 32°C								A			A	A
Fluoborate Bath 100°F / 38°C								A			A	D
Chromium Plating												
Chromic-Sulfuric Bath 130°F / 54°C								C			A	A
Fluosilicate Bath 95°F / 35°C								C			A	C
Fluoride Bath 130°F / 55°C								D			A	C
Black Chrome Bath 115°F / 46°C								C			A	A
Barrel Chrome Bath 95°F / 35°C								D			A	C
Copper Plating (Cyanide)												
Copper Strike Bath 120°F / 49°C	A										A	A
Rochelle Salt Bath 150°F / 65°C								A			A	A
High Speed Bath 180°F / 82°C								A			A	A
Copper Plating (Acid)												
Copper Sulfate Bath R.T.								D			A	A
Copper Fluoborate Bath 120°F / 49°C								D			A	D
Copper (Misc.)												
Copper Pyrophosphate 140°F / 60°C								A			A	A
Copper (Electroless) 140°F / 60°C		D									A	
Gold Plating												
Cyanide 150°F / 65°C		C						A			A	A
Neutral 75°F / 24°C								C			A	A
Acid 75°F / 24°C								C			A	A
Indium Sulfamate Plating R.T.								C			A	A
Iron Plating												
Ferrous Chloride Bath 190°F / 88°C								D			D	A
Ferrous Sulfate Bath 150°F / 65°C								C			A	A
Ferrous Am. Sulfate Bath 150°F / 65°C								C			A	A
Sulfate-Chloride Bath 160°F / 71°C								D			D	A
Fluoborate Bath 145°F / 63°C								D			B	D
Sulfamate 140°F / 60°C								D			B	A
Lead Fluoborate Plating								C			A	D
Nickel Plating												
Watts Type 115 -160°F / 46 - 71°C								C			A	A
High Chloride 130 -160°F / 54 - 71°C								C			A	A
Fluoborate 100 -170°F / 38 - 77°C		D						C			A	D
Sulfamate 140°F / 60°C								C			A	A
Electroless 200°F / 93°C												
Rhodium Plating 120°F / 49°C								D			D	D
Silver Plating 80 -120°F / 27 - 49°C								A			A	A
Tin-Fluoborate Plating 100°F / 38°C								C			A	D
Tine-Lead Plating 100°F / 38°C								C			A	D
Zinc Plating												
Acid Chloride 140°F / 60°C								D			D	A
Acid Sulfate Bath 150°F / 65°C								C			A	A
Acid Fluoborate Bath R.T.									C			D
Alkaline Cyanide Bath R.T.									A		A	A
Potash	C	C		B				A			A	
Potassium Bicarbonate	C	B		D				A			B	A
Potassium Bromide	C	C		D	A			A			B	A
Potassium Carbonate	C	C		B	B	B		A			A	A
Potassium Chlorate	B	B		B	B	B	A	A	A	A	B	A
Potassium Chloride	B	C	C	B	B	C	A	A	B	A	A	A
Potassium Chromate	A	A		A				B	B	A	B	
Potassium Cyanide Solutions	D	D		B	B	B	A	B	A	A	A	A



Chemical Resistance Data

	Aluminium	Cast Bronze	Brass	Cast Iron	Carbon Steel	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Monel	Hastelloy C	Titanium
Potassium Dichromate	A	C		B	C	B	A	A	A		B	A
Potassium Ferrocyanide	C	A			C	B	A	A	A		B	
Potassium Hydroxide (50%)	D	D	D	C	A	A	B	B	A	A	A	C
Potassium Nitrate	B	B		B	B	A	B	A	A	A	B	A
Potassium Permanganate	B	B		B	B	B	A	B	B	A	B	B
Potassium Sulfate	A	B	B	B	B	B	A	B	B	A	A	A
Potassium Sulfide	B	B		B	B	A	A		A	D	B	
Propane (Liquified) ^{1 2}	A	A	A		B	A	A		A	A		
Propylene Glycol	A	B		B	B	B	B		A			
Pyridine	B			B	A		C		B			
Pyrogallol Acid	B	B		B	B	B	A	A	A		A	
Rosins	A	A	C		C	A	A	A	A	A	B	
Rum						A	A	A	A			
Rust Inhibitors		A		A			A		A			
Salad Dressing	B	B		D			A		A			
Sea Water	C	C			D	A	A	C	A			A
Shellac (Bleached)	A	A	B	B	A	A	A		A			
Shellac (Orange)	A	A	C	C	A	A	A		A			
Silicone	B	A					B		A	A		
Silver Bromide	D						C	C	B			
Silver Nitrate	D	D		D	D	B	A	B	A	D	A	A
Soap Solutions ¹	C	B		B	A	A	A	A	A	C	B	A
Soda Ash (See Sodium Carbonate)												
Sodium Acetate	B	B		C	C	B	A	A	B	A		A
Sodium Aluminate	C	B			C	B			A	A	B	B
Sodium Bicarbonate	A	B	A	C	C	B	A	A	A	A		A
Sodium Bisulfate	D	C	C	D	D	A	A		A	A	B	B
Sodium Bisulfite	A	C		D			A		A	D	B	A
Sodium Borate	C	A		C	C	B	A		A		A	
Sodium Carbonate	C	B	B	B	B	B	A	B	B	C	A	A
Sodium Chlorate	B	B			C	B	A		A		B	A
Sodium Chloride	C	B	C	B	C	B	A	C	B	A	A	A
Sodium Chromate	D	B		B	B	A	A	A			B	
Sodium Cyanide	D	D	D	B	B	B	A		A			A
Sodium Fluoride	C	C		D	D	B	C		C	A	A	A
Sodium Hydrosulfite	A	C									A	
Sodium Hydroxide/Caustic Soda (20%)	D	C	D	A			A	A	A	A	A	A
Sodium Hydroxide/Caustic Soda (50%)	D	C	D	B			A	B			A	A
Sodium Hydroxide/Caustic Soda (80%)	D	C	D	C			A	D			B	A
Sodium Hypochlorite/Bleach ³ (to 20%)	C	D	D	D			C	C	C		A	A
Sodium Hypochlorite/Bleach	D	D		D	D	D		D		A	A	A
Sodium Hyposulfate	D	D					A	A				
Sodium Metaphosphate ²	A	C	C	B	B	A		A		C		
Sodium Metasilicate	B	B		C	C	A		A				
Sodium Nitrate	A	B	C	A	B	B	A	A	A	A	B	A
Sodium Perborate	B	C	C	B	B	B		C		A		
Sodium Peroxide	C	C	C	D	C	B	A	A		A	B	
Sodium Polyphosphate (Mono, Di, Tribasic)	D	C					A	A			A	A
Sodium Silicate	C	C	C		B	B	A	B	A	A	B	A
Sodium Sulfate	B	B	B	A	B	B	A	A	C	A	B	A
Sodium Sulfide	D	D	D	A	B	B	A	B		A	B	A
Sodium Sulfite	C	C		A			C	C		D	A	A
Sodium Tetraborate								A				
Sodium Thiosulphate ("Hypo")	B	D	D	C	B	A	A	A		A		A
Sorghum				A			A	A				
Soy Sauce	A	A		D			A	A				
Stannic Chloride	D	D		D	D	D	D			D	B	A



Chemical Resistance Data

	Aluminum	Cast Bronze	Brass	Cast Iron	Carbon Steel	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Monel	Hastelloy C	Titanium
Stannic Fluoborate				D			A					
Stannous Chloride	D	D		D	D	D	C		D	A	A	
Starch	A	B		C	C	B	A	A		A		
Stearic Acid ²	B	C	C	C	C	B	A	A	A	A	A	A
Stoddard Solvent	A	A	A	B	B	A	A	A	A		A	A
Styrene	A	A			A	A	A	A				
Sugar (Liquids)	A	A		B	B	A	A	A	A	A	A	
Sulfate Liquors	B	C					C	C			A	
Sulfur Chloride	D	C	D				D	D	D	A		
Sulfur Dioxide ²	A	B					A	A	C	A	B	A
Sulfur Dioxide (dry)	A	A	C	A	B	A	A	A			A	
Sulfur Trioxide (dry)	A	B		B	B	A	A	C				
Sulfuric Acid (to 10%)	C	D	D	D			D	C	C	A	A	A
Sulfuric Acid (10% -75%) ²	D	D	D	D			D	D	D		B	C
Sulfuric Acid (75% -100%)			D				D				B	D
Sulfurous Acid	C	D		D	D	C	C	B	C		B	A
Sulfuryl Chloride												
Syrup	A	D					A	A	A			
Tallow	A						A	A				
Tannic Acid	C	B		C	C	B	A	A	A	A	B	A
Tanning Liquors	C	A					A	A			A	A
Tartaric Acid	C	A	C	D	D	B	A	B	B		B	A
Tetrachlorethane								A			A	A
Tetrahydrofuran	D	D		D	A		A	A				
Toluene, Toluol ³	A	A	A	A	A	A	A	A		A	A	A
Tomato Juice	A	C		C	C	A	A	A		A		
Trichlorethane	C	C		C			C	A			A	A
Trichlorethylene ²	B	B	A	C	B	B	A	A		A	A	A
Trichloropropane		A						A				
Tricresylphosphate		A						A			A	B
Triethylamine		A										
Turpentine ³	C	B	C	B	B	B	A	A		A	A	
Urine	B	C		B			A	A		A		
Vegetable Juice	A	C		D			A	A				
Vinegar	D	B	B	C	D	A	A	A	A	A	A	A
Varnish (Use Viton for Aromatic)	A	A	B		C	A	A	A	A			
Water, Acid, Mine	C	C	D	C			A	A		C		
Water, Distilled, Lab Grade 7	B	A		D			A	A		A		
Water, Fresh	A	A	C	B	D	A	A	A		A		
Water, Salt	B	B	C	D			A	A		A		
Weed Killers	C	C					A	A				
Whey	B						A	A				
Whiskey and Wines	D	B	B	D	D	A	A	A	A	A		
White Liquor (Pulp Mill)		D		C			A	A			A	
White Water (Paper Mill)		A					A	A				
Xylene ²	A	A	A	A	B	A	A	A		A	A	
Zinc Chloride	D	D	D	D	D	D	D	B	B	A	B	A
Zinc Hydrosulphite	D	D		D				A				
Zinc Sulfate	D	B	C	C	D	B	A	A	A	A	B	A



Elastomers and Plastics

Chemical Resistance Data

	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene (EPDM)	Rubber (Natural)	PVC (Type 1)	Teflon	Noryl	Polyacetal	Nylon	Cyclocac (ABS)	Polyethylene	Polypropylene	Carbon	Ceramic	Epoxy
Acetaldehyde ⁵	D	B	B	D	B	C	D	A		A	A	D	C	B	A	A	A
Acetamide	A	A		A	A	D			B						A	A	A
Acetate Solvent ²	D	D		D			B	A		A		B	D	A	A	A	A
Acetic Acid, Glacia ¹	D	D	B	C	B	C	C	A	C	D	D	D	B	B	A	A	B
Acetic Acid 20%	A	C		C			B	A	A	D			A		A	B	
Acetic Acid 80%	A	C		D			D	A	B				B		A	B	
Acetic Acid	C	C		C	B	C	A	A	A	D	D	C	B	A	A	A	A
Acetic Anhydride	D	A	C	B	B	C	D	A	D	D	D	D	A	A	A	A	A
Acetone ⁶	D	D	B	C	A	D	D	A	D	B	A	D	C	B	A	A	B
Acetyl Chloride	A					A		A									A
Acetylene ²	A	A	C	B	A	C	B			A	A			D	A	A	A
Acrylonitrile	C	D		D	D				B		D		B	A	A	A	
Alcohols: Amyl	A	A	D	A	A	C	A	A	C	A	A	B	B	B	A	A	A
Benzyl	A	D		B	B	D	D		A	A	A	D	D	A	A	A	A
Butyl	A	A	D	A	A	A	A	A	A	A	A		B	B	A	A	A
Diacetone ²	D	D		D	A	D	D		A	A	A			D	A	A	A
Ethyl	A	A	B	A	B	A	A		A	B	A	B	B	A	A	A	A
Hexyl	A	A	D	B	A	A			A	A	A			A	A	A	A
Isobutyl	A	C	B	A	A	A			A	A	A	B		A	A	A	A
Isopropyl	A	C	C	B	A	A			A	A	A			A	A	A	
Methyl ⁶	C	B		A	A	A	B	A	A	C	A	D	B	A	A	A	
Octyl	A	B		B	A	C			A	A	A			A	A		
Propyl	A	A	B	A	A	A	A	A	A	A	A			A	A	A	
Aluminum Chloride 20%	A	A		A	A	A	A		A	C	A		B	A	A	A	A
Aluminum Chloride	A	A	C	A			A	A	A		D			A	A	A	A
Aluminum Fluoride	A	A	C	A		C	A	A	A	C	D		B	A	A	A	A
Aluminum Hydroxide ⁶	A	A		A	A	A	A	A	A	B	A			A	A	A	A
Aluminum Potassium Sulfate (Alum), 10%	A			A	A	A	A	A	A		A		A	A	A	A	A
Aluminum Potassium Sulfate (Alum), 100%	A	A		A		A	A	A	A	C	D		B	A	A	A	A
Aluminum Sulfate	A	A		A	A	A	A	A	A	C	A		B	A	A	A	A
Amines	D	D	C	B	B	C	C	A	B	D	A			A	A	A	
Ammonia 10%	A	D		A			A	A	A		A			A		A	B
Ammonia, Anhydrous	D	B	B	A	A	D	A	A	A	D	A		B	A	C	A	A
Ammonia, Liquids	D	B	B	A	A	D	A	A	A	D			D	A	A	A	A
Ammonia, Nitrate		A		C			B		A	C				A	A	A	A
Ammonium Bifluoride	A	A		A			A		A	D				A		A	A
Ammonium Carbonate	B	D	C	A	A		A	A	A	D	A			A	A	A	A
Ammonium Casenite				A					A	D							A
Ammonium Chloride	A	A	C	A	A	A	A	A	A	B	A		B	A	A	A	A
Ammonium Hydroxide	B	B	B	A	A	C	A	A	A	D	A	B	B	A	A	A	A
Ammonium Nitrate	D	A	C	A	A	A	A	A	A	C	D		B	A	A	A	A
Ammonium Oxalate		A		A						B				A		A	
Ammonium Persulfate	C	A		A	A	A	A	A	A	D	D			A	A	A	A
Ammonium Phosphate, Dibasic	A	A	B	A	A	A	A	A	A	B	A		B	A	A	A	A
Ammonium Phosphate, Monobasic	A	A	B	A	A	A	A	A	A	B	A		B	A	A	A	A
Ammonium Phosphate, Tribasic	A	A	B	A	A	A	A	A	A	B	A		B	A	A	A	A
Ammonium Sulfate	D	A	B	A	A	A	A	A	A	B	D		B	A	A	A	A
Ammonium Thio-Sulfate		A		A						B				A	A	A	
Amyl-Acetate	D	D	D	D	A	D	D	A	D	A	B		D	D	A	A	A
Amyl Alcohol	B	B	D	A	A	C	A	A	C	A	A		B	A	A	A	A
Amyl Chloride	A	D		D	D	D	D	A	D	A	C		D	D	A	A	A
Aniline	C	D	C	D	B	D	D	A	D	D	C	D	C	B	A	A	A
Antifreeze	A	A	C	A	A	A	A	A	A	A	A	B	B	A	A	A	A



Chemical Resistance Data

	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene	Rubber (Natural)	PVC (Type 1)	Teflon	Noryl	Polyacetal	Nylon	Cyclocac (ABS)	Polyethylene	Polypropylene	Carbon	Ceramic	Epoxy
Antimony Trichloride	A		C		A	A	A			D		A		A	A		
Aqua Regia (80%, HCL, 20%, HNO)	C	D	C	D	D	D	A	D	D	D		D	C	D	D		
Arochlor 1248	A	D		D	D	D		D	A				A		A		
Aromatic Hydrocarbons	A	D		D	D	D		D	A			C		A			
Arsenic Acid	A	A		A	C	A	A	A	D	A		B	A	A	A	A	
Asphalt	A	B	C	B	D	D	A			A	A		A		A	A	
Barium Carbonate	A	A		A	A	A	A	A	A	A		B	A	A	A	A	
Barium Chloride	A	A	B	A	A	A	A	A	A	B		B	A	A	A	A	
Barium Cyanide	A	C		A	A				B			B		A		A	
Barium Hydroxide	A	A	C	A	A	A	A	A	D	A		B	A	A	A	A	
Barium Nitrate	A	A		A	A	B		A	A					A	A	B	
Barium Sulfate	A	A	D	A	A	A	A	A	A	A		B	A	A	A	B	B
Barium Sulfide	A	A	C	A	A	A	A	A	A	A		B	A	A	A	A	
Beer ²	A	D	C	A	A	A	A	A	B	D	B	B	D	A	A	A	
Beet Sugar Liquids	A	A		B	A	A	A	A	B	A	B		A	A	A	A	
Benzaldehyde ³	D	D	B	D	A	D	D	A	D	A	C	D	D	A	A	A	
Benzene ²	A	D		D	D	D	A	D	A	A	D	D	D	A	A	A	
Benzoic Acid ²	A	D		D	D	D	A	A	B	D		B	D	A	B	A	
Benzol	D	D		D		D	A	D	A	A			A	A	A	A	
Borax (Sodium Borate)	A	B	C	A	A	C	A	A	A	A		B	A	A	A	A	
Boric Acid	A	A		A	A	A	A	A	A	A		B	A	A	A	A	
Brewery Slop	A	A		A					A					A	A	A	
Bromine ² (wet)	A	D	D	D	D	D	B	A	D	D	D	D	D	D	A	C	
Butadiene	A	A		B	A		A	A		A	A			A	A	A	
Butane ^{1,2}	A	A	D	B	D	D	A	A	D	A	A	B	C	D	A	A	
Butanol							A										
Butter	A	A		B	A	D		B	A		B			A	A	A	
Buttermilk	A	A		A		D		A	A	A	B			A	A	A	
Butylene	A	B			D	D	B	A		A				A	A	A	
Butyl Acetate ¹	D	B	D	D	B	D	D	A	D	A		C	D	A	A	A	
Butyric Acid ¹	D	D		D	B		B	A	A	C	D	D		A	A	D	A
Calcium Bisulfate	A	A	C	C		A	A	A		A						A	
Calcium Bisulfide	A	A		A	D		A	A	A	D	A		B	A	A	A	
Calcium Bisulfite	A	A		A		A	A	A		A				A		A	
Calcium Carbonate	A	A		A		A	A	A	A	A		B	A	A	A	A	
Calcium Chlorate	A			A		A	A	A		A		A		A		A	
Calcium Chloride	A	A	B	D	A	A	A	A	A	D	A	B	B	A	A	A	
Calcium Hydroxide	A	A	C	A	A	A	A	A	B	A		B	A	A	A	A	
Calcium Hypochlorite	A	B	C	D	A	C	D	A	A	D	D		B	A	A	A	
Calcium Sulfate	A	A		D		C	A	A	A	A	C	B	A	A	A	A	
Calgon	A	A		A				A	B					A	A	A	
Cane Juice ²		A		A		A	A		A	A			D	A	A	A	
Carbolic Acid (See Phenol)																	
Carbon Bisulfide ²	A	D		D	D	D			A	A			D	A	A	A	
Carbon Dioxide (wet)							A							A	A		
Carbon Disulfide ²	A	D		D	D	D	A	D	A	A		D	D	A	B	A	
Carbon Monoxide	A	A	B	B	A	C	A		B	A	A		B	A	A	A	
Carbon Tetrachloride ^{1,2}	A	C	C	D		D	C	A	D	A	A	D	D	D	A	A	C
Carbonated Water	A	A		A	A		A		A	A	A			A	A	A	
Carbonic Acid	A	B	B	A	A	A	A	A	A	A		B	A	A	A	A	
Catsup	A	A		C		A		A	B	A	B			A	A	A	
Chloracetic Acid ²	D	D		D	B	D	A	A		D	D		D	D	A	A	B
Chloric Acid		D		D		D	A									D	
Chlorinated Glue	A	C		D	B	D		C		C	D				A	A	



Chemical Resistance Data

	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene (EPM)	Rubber (Natural)	PVC (Type 1)	Teflon	Nonyl	Polyacetal	Nylon	Cycolac (ABS)	Polyethylene	Polypropylene	Carbon	Ceramic	Epoxy
Chlorine, Anhydrous Liquid	A	D		D	B	D	D	A	A	D	D	D	D	A	D	B	
Chlorine (dry)	D		D	D		D		A						A	A	D	
Chlorine Water	A	D	C	D		D	A	A	C		D		D	C	A		
Chlorobenzene (Mono)	A	D		D	D	D	D	A	D	A	A	D	D	A	A	A	
Chloroform	A	D	D	D	D	D	D	A	D	A	C	D	D	A	A	A	
Chlorosulfonic Acid ¹	D	D	D	D	D	D	C	A	D	D	D		D		C	C	
Chlorox (Bleach)	A	C		B	B	D	A	A	A	D	D	B		D	A	A	
Chocolate Syrup	A	A		A		D		A	A	A			A		A	A	
Chromic Acid 5%	A	D	C	D	A	B	A		C	D	D	B	B	A	D	C	
Chromic Acid 10%	A	D		D			A	A	A		D			A		A	
Chromic Acid 30%	A	D		D			A	A	D		D			A		D	
Chromic Acid 50%	A	D		D	A	D	B	A	D	D	C	C	B	D	A	C	
Cider	A	A		A		A	A	A	B			B		A	A	A	
Citric Acid	A	D	C	A	A	A	A	A	B	C	C	B	B	A	A	A	
Citric Oils	A	A	C	D				A	B				A	A	A	A	
Coffee	A	A		A		A		A	A	A			A	A	A	A	
Copper Chloride	A	A		A	A	A	A	A	B	D		B	A		A	A	
Copper Cyanide	B	B		A	A	A	A	A	B	A		B	A	A	A	C	
Copper Fluoborate	A	B		A		A	A	A	B			A		A		A	
Copper Nitrate	A	A		A		A	A	A	B	D		B	A	A	A	A	
Copper Sulfate (5% Solution)	A	A	C	A		C	A	A	A	B	D		B	A	A	A	
Copper Sulfate	B	B		A		A	A	A	A	C			A	A	A	A	
Cream	A	A		C				A	A	A			A	A	A	A	
Cresols ²	D	D	D	D	D	D	D		D		D	D	C	A	A	A	
Cresylic Acid	A	D		D	D	D	B	A		D	D		C		A	A	
Cyclohexane	A	A	D	D	D	D			D	A				D	A	A	
Cyanoic Acid			C		D				D							A	
Detergents	A	A		B	A	C	A		A	B	A	B	B	A	A	A	
Dichlorethane	B			D		D	D	A		A		B	D			A	
Diesel Fuel	A	A		D	D	D			D	A				D	A	A	
Diethylamine	D	B		B	B	C	D	A	B	D				C	A	A	
Diethylene Glycol	A	A	C	A	A	A			A	A	A	B	B		A	A	
Diphenyl Oxide	A	D		D	D				A	A				A	A	A	
Dyes	A			C					A	A						A	
Epsom Salts (Magnesium Sulfate)	A	A		A		C	A		A	A				A	A	A	
Ethane	A	A		B	D	D			D	A					A	A	
Ethanolamine	D	B	C	B		C				D					A	A	
Ether ³	C	D		D	C	D	D		D	A	C				A	A	
Ethyl Acetate ²	D	D	C	D	B	D	D	A	D	A	A	D	C	C	A	A	
Ethyl Chloride	A	D	D	C	A	A	D	A	D	A	A		D	D	A	A	
Ethyl Sulfate	A	A								B					A	A	
Ethylene Chloride ²	A	D	D	D	C	D	D	A	D	A		D		D	A	A	
Ethylene Dichloride	A	D	D	D	C	D	D	A	D	A	A		D	A	C	A	
Ethylene Glycol ⁴	A	A	C	A	A	A	A	A	A	A	A	B	B	A	A	A	
Ethylene Oxide	D	D	D	D	C	D	D	A	A	A	A				A	A	
Fatty Acids	A	C	C	B	C	C	A	A	B	A	A		B	A	A	A	
Ferric Chloride	A	D	C	B	A	A	A	A	A	B	D		B	A	A	A	
Ferric Nitrate	A	A	D	A	A	A	A	A	A	B	D		B	A	A	A	
Ferric Sulfate	A	B	C	A		A	A	A	A	B	A	C		A	C	A	
Ferrous Chloride	A	B	C	A		A	A	A	A	B	D		B	A	A	A	
Ferrous Sulfate	A	B		A		A	A	A	A	B	D		B	A	A	A	
Fluoboric Acid	A	B		A			A	A	B	B	C		B	A	A	D	
Fluorine							C	C			D		C		D	D	
Fluosilicic Acid 25%	B	A		A			A	A	A	B	D		B	A	A	D	
Formaldehyde 40%	D	B	B	A			B	A	A		D		A		A	A	



Chemical Resistance Data

	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene	Rubber (Natural)	PVC (Type 1)	Teflon	Nonyl	Polyacetal	Nylon	Cycolac (ABS)	Polyethylene	Polypropylene	Carbon	Ceramic	Epoxy
Formaldehyde	D	C	B	D	B	C	A	A	D	A	A		B	A	A	A	A
Formic Acid ⁶	B	D	C	D	A	C	D	A	A	D	D		B	A	A	A	B
Fruit Juice	A	A	A	B	A		A	D	A	B	A		B	A	A	A	A
Fuel Oils	A	A	C	B	D	D	A	A	A	A	A		D	B	A	A	A
Furan Resin	A	D		D		D		A		A						A	A
Furfural ¹	D	D	D	D	B	D	D	A	D	B	A	D	D	D	A	A	A
Gallic Acid	B	A					A	A		A							
Gasoline ¹⁴	A	A	D	D	C	D	C	A	D	A	A	D	D	C	A	A	A
Gelatin	A	A		A	A	A	A	A	A	A	A			A	A	A	A
Glucose	A	A	B	A	A	A	A	A	B	A	A	B	B	A	A	A	A
Glue P.V.A. ¹	A	A		A			A	A		A	A				A	A	A
Glycerine	A	A	B	A	A	A	A	A	A	A	A	C		A	A	A	A
Gycolic Acid	A	A		A				A	C				B	A	A		A
Gold Monocyanide	A	A		A					A						A	A	A
Grape Juice	A	A		A			A		A	B		B	B		A	A	A
Grease ⁴	A	A		D			A		A	A					A	A	A
Heptane ¹	A	A		B	D		A	A	D	A	A	C	D	D	A	A	A
Hexane ¹	A	A	B	B	D	D	C	A	D	A	A	D		C	A	A	A
Honey	A	A		B	A	A	A	A	A	A	B			A	A	A	A
Hydraulic Oils (Petroleum) ¹	A	A		B	D	D		A		A	A			D	A	A	A
Hydraulic Oils (Synthetic) ¹	A	C	D						A	A				D	A	A	A
Hydrazine	A	B	D	B	A	C			D						A		A
Hydrobromic Acid 20%	A	D		C			A	A	A		D			A		B	B
Hydrobromic Acid ⁴	A	D	D	D	A	A	A	A	C	D	D		B	B	A	A	A
Hydrochloric/Muratic Acid (Dry gas)					A		A	A							A		A
Hydrochloric/Muratic Acid (20%) ⁴	A	C		C	A	C	A	A	A	D	D	B	A	A	A	A	A
Hydrochloric/Muratic Acid (37%) ⁴	A	C	C	C	C	D	A	A	A	D	D	C	A	A	A	C	A
Hydrochloric/Muratic Acid (100%)	C	D		C		A	A	A			D		A		A	C	A
Hydrocyanic Acid	A	C		B		A	A	A	A	B	A		B	A	A	A	A
Hydrocyanic Acid (Gas 10%)				C	A	C	A	A									A
Hydrofluoric Acid (20%) ¹	A	D		C	A	C	D	A	A	D	D		C	A	B	C	B
Hydrofluoric Acid (75%) ¹²	A	D	D	D	C	C	C	A	D	D	D		C	B	D	D	C
Hydrofluoric Acid 100%		D		D		D	C	A				D		D	D	A	
Hydrofluosilicic Acid (20%)	A	B		B	A	A	D	A	B	D	D			A	A	D	C
Hydrofluosilicic Acid			D	A				A							A		
Hydrogen Gas	A						A	A									A
Hydrogen Peroxide 10%		A		D		C	A	A			D		A		A	A	D
Hydrogen Peroxide 30%	A	D		C			A	A			D			A			B
Hydrogen Peroxide	A	D	C	D	C	C	A	A	B	D	D		B	A		A	A
Hydrogen Sulfide, Aqueous Solution	D	C		B	A	D	A	A	A	D	D		B	A	A	A	A
Hydrogen Sulfide (dry)	D					A	A	A			D					A	A
Hydroxyacetic Acid (70%)	A	A		A	A		A			D					A	A	A
Ink	A	A		A					B	A	A		B		A	A	A
Iodine	A	B		D	B	D	D	A	A	C	D	D	D	D	A	A	A
Iodine (In Alcohol)	A	D		D			D	A	C		D			B		A	
Iodoform	A							A			A						
Isotane ²	A	A				D			D	A				D		A	A
Isopropyl Acetate	D	D		D	B	D				A					A	A	A
Isopropyl Ether ²	D	B		D	D	D		A	D	A				D	A	A	
Jet Fuel (JP#, JP4, JP5)	A	A	D	D	D	D	A	A	D	A	A			D	A	A	A
Kerosene ²	A	A	D	D	A	D	A	A	D	A	A	B	D	D	A	A	A
Ketones	D	D		D	D	C	D	A	D	B	A		D	D	C	A	C
Lacquers	D	D		D					C	A	A			A	A	A	A



Chemical Resistance Data

	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene (EPM)	Rubber (Natural)	PVC (Type 1)	Teflon	Nonyl	Polyacetal	Nylon	Cycloc (ABS)	Polyethylene	Polypropylene	Carbon	Ceramic	Epoxy
Lacquer Thinners		D		D	A		C	A	D		A		B	A	A	A	A
Lactic Acid	B	B		A	B	A	A	A	A	B	C		B	A	A	A	A
Lard (oil)	A	A	C	A	B	D	A			A	A	C		A	A	A	A
Latex	A	A		C	A				A	A	A		B			A	A
Lead Acetate	D	B		D	A	A	A	A	A	A	A		B	A	A	A	A
Lead Sulfamate	A	B	C	A	D	C				A				A			A
Ligroin ³	A	A		B	A	D			D	A				D		A	A
Lime (slurry)	A	A	C	B	D		A		A	D		C			A	A	A
Lubricants	A	A	C	D		D	A	A		A	A	B		A	A	A	A
Magnesium Carbonate		A		A	A		A		A	A			B	A		A	A
Magnesium Chloride	A	A		A	A	A	A	A	A	A	A		B	A		A	A
Magnesium Hydroxide	A	B		B		C	A	A	A	A	A		B	A	A	A	A
Magnesium Nitrate	A	A		A			A	A	A	A	A		B	A		A	A
Magnesium Oxide		A		A	A				A	A						A	A
Magnesium Sulfate	A	A		A	D	C	A	A	A	A	A		B	A	A	A	A
Maleic Acid	A	D		A	D	D	A	A	A	C	A			C	A	A	A
Maleic Anhydride	A	D		D		D				C					A	A	A
Malic Acid	B			A		A	A	A		A						A	A
Mash		A		A					A	A					A	A	A
Mayonnaise	A	A						A	A	A	A	B		A	A	A	A
Melamine		C							D						A	A	A
Mercuric Chloride (Dilute Solution)	A	A		A	A	A	A	A	A	A	A		B	A	A	A	A
Mercuric Cyanide	A	A					A	A	A	A	A		B	A	A	A	A
Mercury	A	A		A	A	A	A	A	A	A	A		B	A	A	A	A
Methanol (See Alcohol Methyl)																	
Methyl Acetate	D	D	D	B	B	D		A		A		D			A	A	
Methyl Acrylate	D	D		B	B	D				A					A	A	A
Methyl Acetone	D	D		D				A	D	A						A	C
Methyl Alcohol 10%		B				A	A	A			A						A
Methyl Bromide	A	B		D	D	D				A			D		A	A	B
Methyl Butyl Ketone	D	D	C	D	A	D			D	B					A	A	B
Methyl Cellosolve	D	D		D	B	D			C	B				A	A	A	C
Methyl Chloride	A	D	D	D	C	D	D	A	D	A	A		D	D	A	A	A
Methyl Dichloride	A	D		D	D	D			D	A					A	A	A
Methyl Ethyl Ketone	D	D	C	D	A	D	D	A	D	B	A	D	D	A	A	A	B
Methyl Isobutyl Ketone ²	D	D	C	D	C	D	D	A	D	B	A	D		C	A	A	B
Methyl Isopropyl Ketone	D	D	B	D	B	D			D	B	A				A	A	B
Methyl Methacrylate	D	D		D	D	D				A					A	A	A
Methylamine		B							B	D					A	A	A
Methylene Chloride	D	D		D	D	D	D	A	D	A	D		D	D	A	A	A
Milk	A	A	B	A	A	A	A		A	A	A	B	B	A	A	A	A
Molasses	A	A		A				A		B	A	A	B	A	A	A	A
Mustard	A	B	C	C				A	B	B	A	B		A	A	A	A
Naphtha	A	B	D	D	D	D	A	A	D	A	A	C	D	A	A	A	A
Naphthalene	B	D		D	D	D	D	A	D	A			D	B	A	A	A
Nickel Chloride	A	A		A	A	A	A	A	A	B	A		B	A	A	A	A
Nickel Sulfate	A	A		A	A	C	A	A	A	B	A		B	A	A	A	A
Nitric Acid (10% Solution)	A	D		D	B	D	A	A	A	D	D	C	B	A	C	B	A
Nitric Acid (20% Solution)	A	D		D	D	D	A	A	A	D	D	D	D	B	A	D	C
Nitric Acid (50% Solution)	A	D		D	D	D	A	A	A	D	D	D	C	D	D	A	D
Nitric Acid (Concentrated Solution)	B	D		D	D	D	D	A	D	D	D	D	D	D	D	A	D
Nitrobenzene ²	D	D	D	D	D	D	D	A	D	B	C	D	D	C	A	A	B
Oils: Aniline	A	D		D	B	D	D	A	D	D	C	D		A	A	A	A
Anise				D						A					A	A	A
Bay	A			D						A					A	A	A



Chemical Resistance Data

	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene	Rubber (Natural)	PVC (Type 1)	Teflon	Noryl	Polyacetal	Nylon	Cycloc (ABS)	Polyethylene	Polypropylene	Carbon	Ceramic	Epoxy
Bone	A	A		D					A					A	A	A	
Castor	A	A		A	B	A	A		A					A	A	A	
Cinnamon	D			D			A		A				A	A	A	A	
Citric	A	A		D					A	A			A	A	A	A	
Clove		A							A	A			B	A	A	A	
Coconut	A	A		A	A	D			A	A			A	A	A	A	
Cod Liver	A	A		B	A	D			A	A	C		A	A	A	A	
Corn	A	A		D	C	D			A	A	C		A	A	A	A	
Cotton Seed	A	A		D	C	D	A	A	A	A	C		A	A	A	A	
Creosote ²	A	A		B	D	D			D				D	A	A	A	
Diesel Fuel (2D, 3D, 4D, 5D)	A	A		D	D	D		D	A	A			A	A	A	A	
Fuel (1, 2, 3, 5A, 5B, 6)	A	B		D	D	D	A	A	D	A			B	A	A	A	
Ginger	A	A		A					A					A	A	A	
Hydraulic (See Hydraulic)																	
Lemon	A			D					A				D	A	A	A	
Linseed	A	A		D	D	D	A		A	A	C		A	A	A	A	
Mineral	A	A		B	D	D	A		B	A	A		B	A	A	A	
Olive	A	A	C	B		D	A	A	A	A			A	A	A	A	
Orange	A	A		D			A		A	A			A	A	A	A	
Palm	A	A		D			A		A	A				A	A	A	
Peanut ³	A	A		D		D	A		A				D	A	A	A	
Peppermint ²	A	D		D					A				D	A	A	A	
Pine	A	A		D		D	A	A	A					A	A	A	
Rape Seed	A	B		D		D	A		A					A	A	A	
Rosin	A	A							A	A			A	A	A	A	
Sesame Seed	A	A		D			A		A	A			A	A	A	A	
Silicone	A	A		A		A		A	A	A			A	A	A	A	
Soybean	A	A		D		D	A		A	A			A	A	A	A	
Sperm	A	A		D			A		A					A	A	A	
Tanning	A	A		D					A					A	A	A	
Turbine	A	A		D		D	A		A		C			A	A	A	
Oleic Acid	D	B	D	D	D	D	A	A	C	B	A	B	D	C	A	A	A
Oleum 25%	A	D	D	D	D	D	A	D							A	D	
Oleum	A	C	D	D	D	D	A	D	D				D		A	A	
Oxalic Acid (cold)	A	B	C	B	A	C	A	A	C	C	D		A	A	A	A	A
Paraffin	A	A					A	A	B	A	A	B		A	A	A	A
Pentane	A	A		B	D	D		A	D	A	A	D			A	A	A
Perchloroethylene ²	A	C	D	D	D	D		A	D	A		D		D	A	A	A
Petrolatum	A	A		B	A	D		A	D	A	A	B			A	A	A
Phenol 10%	B	D		C	D	C	A	A		D							C
Phenol (Carbolic Acid)	A	D		D	D	D	A	A	C	D	D		D	B	A	D	B
Phosphoric Acid (40% Solution)	A	D		D	B	C	A	A	A	D	D	C	B	A	B	C	A
Phosphoric Acid (40% -100% Solution)	A	D		D	B	C	A	A	A	D	D	D	C	A	B	D	C
Phosphoric Acid (Crude)	A	D		D	B			A		D	D	D	C		C	D	A
Phosphoric Anhydride (Dry or Moist)	D	D		D		A	D	A						A			
Phosphoric Anhydride (Molten)	D	C		D		D	D	A			A		D				A
Photographic (Developer)	A	A		A			A		A	C			B	A	A	A	A
Phthalic Anhydride	A	C					A			A							
Picric Acid	A	A	D	A		A	A	A		A		A					A
Plating Solutions:																	
Antimony Plating 130°F / 55°C	A	A	D	A			A	A	A		D			A		A	B
Arsenic Plating 110°F / 43°C	A	A	D	A			A	A	A		A			A		C	B
Brass Plating:	A	A	D	A			A	A	A		A			A		C	B
Regular Brass Bath 100°F / 38°C																	
High Speed Brass Bath 110°F / 43°C	A	A	D	A			A	A	A		A			A		D	B



Chemical Resistance Data

	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene	Rubber (Natural)	PVC (Type 1)	Teflon	Nonyl	Polyacetal	Nylon	Cycloc (ABS)	Polyethylene	Polypropylene	Carbon	Ceramic	Epoxy
Bronze Plating																	
Copper Cadmium Bronze Bath R.T.	A	A	D	A			A	A	A	A			A		C	B	
Copper-Tin Bronze Bath 160°F / 71°C	A	A	D	B			D	A	A	A			A		D	C	
Copper-Zinc Bronze Bath 100°F / 38°C	A	A		A			A	A	A	A			A		C	B	
Cadmium Plating :																	
Cyanide Bath 90°F / 32°C	A	A		A			A	A	A	A			A		C	B	
Fluoborate Bath 100°F / 38°C	A	B		C			A	A	A	D			A		D	B	
Chromium Plating																	
Chromic-Sulfuric Bath 130°F / 54°C	C	D		D			A	A	D	D			A		A	D	
Fluosilicate Bath 95°F / 35°C	C	D		D		D	A	A	D	D			A		B	D	
Fluoride Bath 130°F / 55°C	C	D		D			A	A	D	D			A		B	D	
Black Chrome Bath 115°F / 46°C	C	D		D			A	A	D	D			A		A	D	
Barrel Chrome Bath 95°F / 35°C	C	D		D			A	A	D	D			A		A	D	
Copper Plating (Cyanide)																	
Copper Strike Bath 120°F / 49°C	B			A				A	A						C		
Rochelle Salt Bath 150°F / 65°C	A	A		B			D	A	A	A			A		D	C	
High Speed Bath 180°F / 82°C	A	A		B			D	A	A	A			A		D	C	
Copper Plating (Acid)																	
Copper Sulfate Bath R.T.	A	A		A			A	A	A	D			A		D	D	
Copper Fluoborate Bath 120°F / 49°C	A	B		C			A	A	A	D			A		D	D	
Copper (Misc.)																	
Copper Pyrophosphate 140°F / 60°C	A	A		A			A	A	A	A			A		B	B	
Copper (Electroless) 140°F / 60°C	A	D		D			A	A	A	A			A		D	B	
Gold Plating																	
Cyanide 150°F / 65°C	A	A		A			D	A	A	A			A		B	D	
Neutral 75°F / 24°C	A	A		A			A	A	A	A			A		A	A	
Acid 75°F / 24°C	A	A		A			A	A	A	A			A		A	A	
Indium Sulfamate Plating R.T.	A	A		A			A	A	A	D			A		A	A	
Iron Plating																	
Ferrous Chloride Bath 190°F / 88°C	A	B		D			D	A	A	D			C		A	D	
Ferrous Sulfate Bath 150°F / 65°C	A	A		B			D	A	A	D			A		A	D	
Ferrous Am. Sulfate Bath 150°F / 65°C	A	A		B			D	A	A	D			A		A	D	
Sulfate-Chloride Bath 160°F / 71°C	A	B		C			D	A	A	D			A		A	D	
Fluoborate Bath 145°F / 63°C	A	B		C			D	A	A	D			A		D	D	
Sulfamate 140°F / 60°C	A	A		A			A	A	A	D			A		A	A	
Lead Fluoborate Plating	A	B		C			A	A	A	D			A		D	A	
Nickel Plating																	
Watts Type 115 -160°F / 46 - 71°C	A	A		A			D	A	A	A			A		A	D	
High Chloride 130 -160°F / 54 - 71°C	A	A		B			D	A	A	D			A		A	D	
Fluoborate 100 -170°F / 38 - 77°C	A	B		C			D	A	A	D			A		D	D	
Sulfamate 140°F / 60°C	A	A		A			A	A	A	A			D		A	A	
Electroless 200°F / 93°C	A	D		D			D	A	D	D			A		A	B	
Rhodium Plating 120°F / 49°C	A	A		B			A	A	A	D			A		A	A	
Silver Plating 80 -120°F / 27 - 49°C	A	A		A			A	A	A	A			A		B	A	
Tin-Fluoborate Plating 100°F / 38°C	A	B		C			A	A	A	D			A		D	A	
Tine-Lead Plating 100°F / 38°C	A	B		C			A	A	A	D			A		D	A	
Zinc Plating																	
Acid Chloride 140°F / 60°C	A	A		A			A	A	A	D			A		A	A	
Acid Sulfate Bath 150°F / 65°C	A	A		B			D	A	A	D			A		A	D	
Acid Fluoborate Bath R.T.	A	B		C			A	A	A	D			A		D	A	
Alkaline Cyanide Bath R.T.	A	A		A			A	A	A	A			A		D	A	
Potash	A	A		B		B	A		A	B	A		B	A	A	A	A
Potassium Bicarbonate	A	A		A		B	A	A	A	C	A	C	B	A	A	A	A
Potassium Bromide	A	A		A	A	B	A	A	A	A	C		B	A	A	A	A
Potassium Carbonate	A	B		A		B	A	A	A	B	A		B	A	A	A	A
Potassium Chlorate	A	A		A		B	A	A	A	B	D		B	A	A	A	A



Chemical Resistance Data

	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene	Rubber (Natural)	PVC (Type 1)	Teflon	Noryl	Polyacetal	Nylon	Cyclocac (ABS)	Polyethylene	Polypropylene	Carbon	Ceramic	Epoxy
Potassium Chloride	A	A		A	A	A	A	A	A	B	C	B	A	A	A	A	A
Potassium Chromate	A	A		A	B	A	A	A	C			B	A	A	D	C	
Potassium Cyanide Solutions	B	A		A	A	A	A	A	C	A		B	A	C	A	A	
Potassium Dichromate	B	A		A	A	A	A	A	C	D		B	A	A	A	A	
Potassium Ferrocyanide		D			A	A	A			A		A					A
Potassium Hydroxide (50%)	D	B	C	A	A	C	A	A	D	A	C	B	A		D	A	
Potassium Nitrate	B	A		A	A	A	A	A	B	C		B	A	A	A	A	
Potassium Permanganate	B	A		A	B	A	A	A	C	D	C	B	B	A	A	B	
Potassium Sulfate	A	A	C	A	A	C	A	A	B	C		B	A	A	A	A	
Potassium Sulfide		A				A	A										
Propane (Liquified) ^{1 2}	A	A	D	B	D	D	D	A	D	A	A		D	A	A	A	
Propylene Glycol	A	A		C				A	B	B	B	B	A	A	A	A	
Pyridine	D	D		D	B	D		A	D	D		C	B	A	A	A	
Pyrogalllic Acid	A	A					A	A	D	A			A	A	A	A	
Rosins		A						A		B	A		A	A	A	A	
Rum	A	A		A			A		A	A	A		A	A	A	A	
Rust Inhibitors	A	A		C					A				A	A	A	A	
Salad Dressing	A	A					A		A	A	A		A	A	A	A	
Sea Water	A	A	B	B	A	A	A	A	A	A		B	A	A	A	A	
Shellac (Bleached)		A						A		A	A		A		A	A	
Shellac (Orange)		A						A		A	A		A		A	A	
Silicone	A	A	B	A	A	A		A	A	A			A	A	A	A	
Silver Bromide								A	C				A	A	A	A	
Silver Nitrate	A	C		A	C	A	A	A	C	A		B	A	A	A	A	
Soap Solutions ¹	A	A	B	B		C	B	A	A	A		B	A	A	A	A	
Soda Ash (See Sodium Carbonate)																	
Sodium Acetate	D	D		C		A	A	A	B	A		B	A	A	A	A	
Sodium Aluminate	A	A		A	A	B		A	A	B	A			A	A	A	
Sodium Bicarbonate	A	A	C	A	A	A	A	A	B	A	B	B	A	A	A	A	
Sodium Bisulfate	B	A	C	A		A	A	A	B	C	C	B	A	A	A	A	
Sodium Bisulfite	A	A	C	A		A	A	A	B	D	B	B	A	A	A	A	
Sodium Borate	A		B	A		C	A			A		A					
Sodium Carbonate	A	A		A	A	A	A	A	A	A	C	B	A	B	A	A	
Sodium Chlorate	A	D		A	A	A	A	A	D	A		B	A	A	A	A	
Sodium Chloride	A	A	C	A	A	B	A	A	A	A	B	B	A	A	A	A	
Sodium Chromate	B	A		A				A	A	D	A		A	A	B	C	
Sodium Cyanide	A	A	D	A	A	A	A	A	D	C		B	A	A	A	A	
Sodium Fluoride	B	D		D		D	D	A		A		C				A	
Sodium Hydrosulfite	A			A		A	C	A		A					A		
Sodium Hydroxide/Caustic Soda (20%)	A	A	D	B	A	A	A	A	D	C	C	B	A	C	D	A	
Sodium Hydroxide/Caustic Soda (50%)	D	D	D	C		A	A	A	D	C	C	C	A	C	D	A	
Sodium Hydroxide/Caustic Soda (80%)	B	D	D	C		B	A	A	D	C	C	C	A	C	D	A	
Sodium Hypochlorite/Bleach ³ (to 20%)	A	C	D	D	B	C	A	A	D	A		B	C	D	A	B	
Sodium Hypochlorite/Bleach	B	B	C	A		A	A	A		A			C		D	A	
Sodium Hyposulfate			C		C		A									C	
Sodium Metaphosphate ²	A	A		B	A	A		A		B	A		D	A	A	A	
Sodium Metasilicate	A	A	D	A				A		D				A	A	A	
Sodium Nitrate	D	C	D	B	A	C	A	A	B	A		B	A	A	A	A	
Sodium Perborate	A	B	D	B	A	C		A	A	B	A		A	A	A	A	
Sodium Peroxide	A	C	D	B	A	C	A	A		D	D			A	A	A	
Sodium Polyphosphate (Mono, Di, Tribasic)	A	A		D	A	A		A	A	B				A	A	A	
Sodium Silicate	A	A		A	A	A	A	A	C	A			A	A	A	A	
Sodium Sulfate	A	A		A	A	C	A	A	B	A		B	A	A	A	A	
Sodium Sulfide	A	C		A	A	C	A	A	A	B	A		B	A	A	A	
Sodium Sulfite	A	A		A	A	A	A	A		D		A		A	A	A	



Chemical Resistance Data

	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene	Rubber (Natural)	PVC (Type 1)	Teflon	Noryl	Polyacetal	Nylon	Cycloc (ABS)	Polyethylene	Polypropylene	Carbon	Ceramic	Epoxy
Sodium Tetraborate	A	A				A		A	B					A	A	A	
Sodium Thiosulphate ("Hypo")	A	B		A	C	A	A	A	C	A			A	A	A	A	
Sorghum	A	A	A					A	A	A				A	A	A	
Soy Sauce	A	A	A		D			A	A	A				A	A	A	
Stannic Chloride	A	A	D	A	A	A	A	A	C	A		B	A		A	A	
Stannic Fluoborate	A	A	A					A	C						A	A	
Stannous Chloride	B	C	D	D		A	A	A		D		A				A	
Starch	A	A	A			A	A	A	A	A		B		A	A	A	
Stearic Acid ²	A	B	D	B	B	C	A	A	A	A		B	D	A	A	A	
Stoddard Solvent	A	B	D	D	D	D	A	A	D	A	A	B	D	D	A	A	A
Styrene	B	D	D	D	D	D		A	A	A				A	A	A	
Sugar (Liquids)	A	A		B		A		A	A	A	B			A	A	A	
Sulfate Liquors				C					D				A	A	A	A	
Sulfur Chloride	A	D		D	D	A	A	A	D	A		A	D	A	A	C	
Sulfur Dioxide ²	D	D	C	B	A	D	D	A	D	B	D	D	C	D	A	C	A
Sulfur Dioxide (dry)	D			D		D	D	A		A		D		A	A	D	
Sulfur Trioxide (dry)	A	D		D	B	C	A	A	D	D	D			B	A	A	
Sulfuric Acid (to 10%)	A	C		D	D	C	A	A	A	D	D	B	B	A	A	A	A
Sulfuric Acid (10% -75%) ²	A	D		D	D	D	A	A	B	D	D	B	C	A	A	A	B
Sulfuric Acid (75% -100%)	A	D		D		B	A	A		D			B		A	D	
Sulfurous Acid	A	C	D	B	B	C	A	A	A	D	D		B	A	B	A	A
Sulfuryl Chloride						A	A								A	A	
Syrup	A	A		B		A	A		A	A	A	B		A	A	A	A
Tallow	A	A						A	A	A		C		A	A	A	A
Tannic Acid	A	A	C	A	A	A	A	A	A	B	D		B	A	A	A	A
Tanning Liquors	A	C				A	A		B					A	A	A	A
Tartaric Acid	A	D	C	A		A	A	A	A	B	A		B	A	A	A	A
Tetrachlorethane	A	D			D	D	D	A	D	A	A			A	A	A	A
Tetrahydrofuran	D	D		D	B	D	D	A	D	A	A		D	C	A	A	A
Toluene, Toluol ³	C	D	D	D	D	D	D	A	D	A	A	D	D	D	A	A	A
Tomato Juice	A	A		A				A	A	B	A	B		A	A	A	A
Trichlorethane	A	D	D	D	D	D		A	D	A				A	A	A	
Trichlorethylene ²	A	D	D	D	D	D	D	A	D	A	C	D	D	D	A	A	A
Trichloropropane	A	A		A				D	A		D			A	A	A	
Tricresylphosphate	B	D		D	A		D	A	C	C				A	A	A	
Triethylamine	A	A	D	B		A		B	D					A	A	A	
Turpentine ³	A	D		D	D	A	A	D	A	A		D	B	A	A	A	A
Urine	A	A		D	A		A	A	A	A		B	A	A	A	A	A
Vegetable Juice	A	A	B	D		D		A	A	A				A	A	A	
Vinegar	A	C		B	A	C	A	A	A	B	A	B	B	A	A	A	A
Varnish (Use Viton for Aromatic)	A	B	C	D		D		A	D	A	A			A	A	A	A
Water, Acid, Mine	A	A		B		B	A		A	D	A	B		A	A	A	A
Water, Distilled, Lab Grade 7	A	A		B	A	A	A	A	A	A	A	A		A	A	A	A
Water, Fresh	A	A		B	A	A	A	A	A	A	A	A	A	A	A	A	A
Water, Salt	A	A		B	A	A	A		A	A	A			A	A	A	A
Weed Killers	A	B		C					A	A				A	A	A	
Whey	A	A							A					A	A	A	
Whiskey and Wines	A	A	B	A	A	A	A	A	A	A		B	A	A	A	A	A
White Liquor (Pulp Mill)	A	A		A			A	A	A	D	A			A	A	A	A
White Water (Paper Mill)	A			A					B	A				A	A	A	A
Xylene ²	A	D	D	D	D	D	D	A	D	A	A	D	D	D	A	A	A
Zinc Chloride	A	A		A	A	A	A	A	C	A		B	A	A	A	A	
Zinc Hydrosulphite		A		A	A			A	C					A	A	A	
Zinc Sulfate	A	A		A	A	C	C	A	A	C	A		B	A	A	A	A



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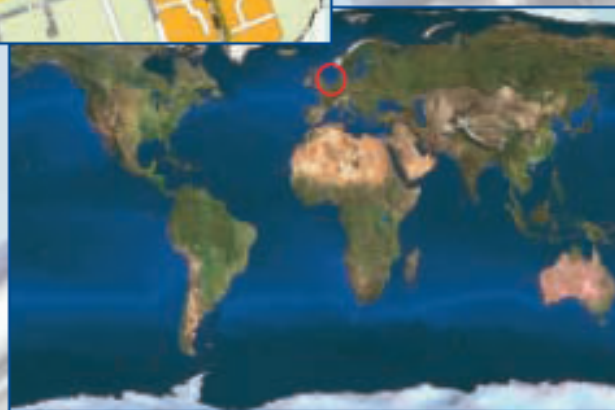
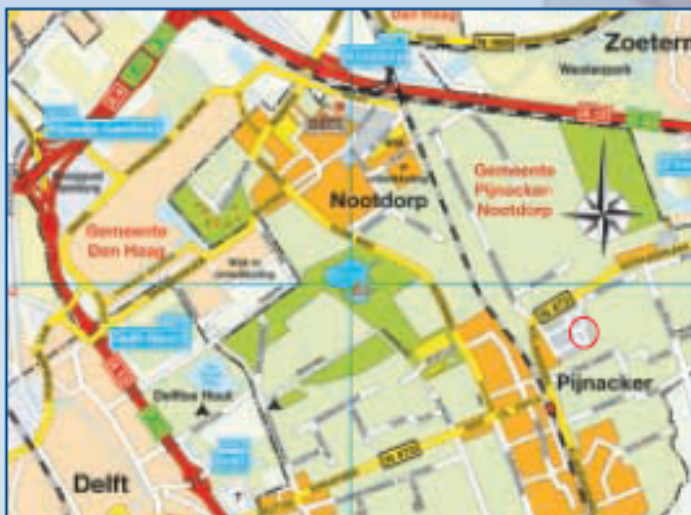
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