

VALVE MATERIAL SELECTION GUIDE



IMPORTANT

THESE RATINGS HAVE BEEN DEVELOPED FROM TECHNICAL PUBLICATIONS AND ARE HERE AS A GUIDE AND NOT AS A GUARANTEE.

- ✓ **WARNING:** Failure, improper selection, or improper use of the products and/or systems referred to and described in this guide or related items can cause death, personal injury or property damage.
- ✓ This document provides product and/or system options but should include further investigation by users having technical expertise.
- ✓ It is essential that you analyze all aspects of your application and review the information concerning the product or system.
- ✓ The user, through own analysis and testing, is solely responsible for making the final selection of the products and systems assuring that all performance, safety and warning requirements are met.
- ✓ The materials described and referred to in this guide are subject to change at any time without notice.
- ✓ Unless otherwise stated, all recommendations are based on room temperature (72 F) exposure. Compatibility results may deviate from these recommendations at elevated temperatures. Recommendations are based on presence of listed chemical only.
- ✓ Mixtures containing more than one chemical can greatly affect chemical compatibility.
- ✓ Polypropylene products and components should not be used with low flash point chemicals, regardless of chemical compatibility results.
- ✓ **KZValve** is not liable for any misuse of valve material selection

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E - EXCELLENT
G - GOOD
F - FAIR
U - UNSATISFACTORY

CHEMICALS	NI PLATED DUCTILE IRON	416 SS	316 SS	MONEL	MANGANESEBRONZE	ALUMINUMBRONZE	LEAD	ALLOY 20	HASTELLOY C	PVDF	BUNA-N	NEOPRENE	HYTALON	VTON	EPT	NATURAL RUBBER	PTFE	BRASS	NYLON	CAST IRON	POLYPRO	ALUMINUM	EPDM
	Acetaldehyde	U	U	E	E	U	U	E	E	E	G	G	F	U	F	E	U	E	E	E	F	F	U
Acetic Acid - Crude	U	U	E	F	U	U	F	E	E	E	G	E	E			E	E	E	U	U	U	U	E
Acetic Acid - Pure	U	U	E	F	F	F	F	E	E	E	E	E				E	E	U	U	U	U	U	E
Acetic Acid - 10%	U	U	E	F	U	U	F	E	E	E	G	E	E			E	E	U	U	F	F	U	E
Acetic Acid - 80%	U	U	E	F	U	U	F	E	E	E	G	E	E			E	E	U	U	F	F	U	E
Acetic Acid - Anhydride	U	U	E	F	U	U	F	E	E	E	U	U	U	U	F	F	E	U	U	F	F	U	E
Acetone	G	G	E	E	E	E	G	E	E	U	U	U	U	U	E	F	E	E	U	U	U	U	E
Acetylene	G	E	E	E	E	E	G	E	U	G	F	F	F	U	E	F	E	G	E	G	G	E	E
Acrylonitrile	G	G	E	E	E	E	E			U	U	F	F	U	U	U	E	E	E	G	E	E	U
Air (Dry)	E	E	E	E	E	E	E			E	E	E	E	E	E	E	E	E	E	E	E	E	E
Alcohol - Amyl	F	G	E	E	E	E	G	E	E	E	F	F	G	G	E	G	E	E	E	F	G	E	E
Alcohol - Butyl	F	G	E	E	E	E	G	E	E	E	F	G	G	E	F	F	E	U	U	F	F	E	E
Alcohol - Ethyl	U	E	E	E	E	E	G	E	E	E	G	G	G	G	G	G	E	U	U	G	E	E	E
Alcohol - Methyl	U	E	E	E	E	E	G	E	E	F	E	E	F	E	E	G	E	E	G	G	E	E	E
Alum - Ammonium	U	G								G	G	F	G		F	E	E	E	U	E	E	E	E
Alumina	G	G	G	G	G	U	E	E		E	F	G	G	E	E	E	E	E	U	U	E	G	E
Aluminum Chloride	U	U	F	G	U	U	U	E		E	G	G	G	E	E	G	E	U	E	U	E	G	E
Aluminum Fluoride	U	G	G				G	E		E	G	G	G	E	E	G	E			U	E	E	E
Aluminum Hydroxide	U	G	G	G	G	G				E	G	G	G	G	G	G	E	G		F	E	E	E
Aluminum Sulphate	U	G	G	U	U	U	G	E		E	E	E	E	E	E	E	E	E	U	U	E	G	E
Amines	U	F	E	G	G			U		U	U	U	U	U	F	E	G	U	U	U	G	E	G
Ammonia Anhydrous	F	E	E	U	U	U	E	E	E	G	G	U	U	U	G	U	E	E	U	F	E	U	E
Ammonia Solutions	F	G	E	G	U	U	E	E		E	G	G	U	U	G	U	E			F	U	U	E
Ammonium Chloride 50% 180 F	U	F	G	G	U	U	F	E	E	E	E	E	E	E	E	E	E	U	G	U	U	E	E
Ammonium Hydroxide	F	G	E	F	U	U	E	E	E	E	E	E	E	E	E	E	E	U	E	F	E	U	E
Ammonium Nitrate 5% 60 F	F	G	E	U	U	U	F	E	E	E	E	E	E	E	E	E	E	U	U	E	U	E	E
Ammonium Phosphate	U	G	E	G	U	U	U	E	E	E	E	E	E	E	E	E	G	E	G	F	U	E	U
Ammonium Sulfate 90% 180 F	U	F	G	G	U	U	G	G	E	E	E	E	E	E	E	E	E	U	U	E	U	E	E
Amyl Acetate	F	G	E	G	G	E	E	E	U	F	U	U	U	U	G	U	E	E	U	G	F	G	E
Amyl Chloride	F	G	E	G	F	E				E	U	U	U	U	U	U	E	F	U	U	E	U	U
Aniline 90% 70 F	F	G	G	G	U	E	E	E	F	U	U	U	F	F	U	E	E	U	E	F	E	E	G
Aniline Dyes	F	G	E	E	F	U	E	E	E	U	F	F	G			E	E	U	F	U	F	F	E
Arsenic Acid	U	G	G	G	U	U	U	E		E	E	E	E	E	G	G	E	U	F	U	E	U	E
ASTM Oil #1	F	E	E	E	E	E	G	E	E	E	G	G	E	U	U	E			F	E	E	E	E
ASTM Oil #3	F	E	E	E	E	E	G	E	E	E	U	U	E	U	U	E			F	E	E	E	
ASTM Ref. Fuel A	F	E	E	E	G	G	G	E	E	E	G	G	E	U	U	E			F	G	E	E	E
ASTM Ref. Fuel B	F	E	E	E	G	G	G	E	E	G	F	F	E	U	U	E			F	G	E	E	E
ASTM Ref. Fuel C	F	E	E	E	G	G	G	E	E	G	F	F	E	U	U	E			F	G	E	E	E
Asphalt	E	E	E	E	E	E	E	E		G			E	U	U	E	E	G	E	G	G	G	U
Barium Carbonate 60 F	U	G	G	G	G			E	E	E	E	E			E	E	E	G	E	U	E	G	E
Barium Chloride	U	G	G	G	F	G		E	E	E	E	E	E	E	E	E	E	G	E	F	E	E	E
Barium Hydroxide	F	E	E	G	U	U		E	E	E	E	E	E	E	E	E	E	G	E	F	G	U	E
Barium Sulphate 60 F	U	E	G	G	G			E	E	E	E			E	E	E	G	E	F	G	G	E	
Barium Sulphide	F	E	G	F	U	U	E		E	E	E	U			U	E	E	G	E	F	G	U	E
Beer (Beverage)	U	E	E	E	U	U	U	E	E	E	G	G	E	E	E	G	E	G	E	U	E	G	E
Beet Sugar Liquors	F	E	E	E	F	F	U	E		E	E	G	E		G	E		E	F	E	E	E	E
Benzaldehyde	F	E	E	G	E	E	U	E		E	U	U	U	U	E	U	E		E	U	E	E	E
Benzene (Benzol) 70 F	F	E	E	G	E	E	E	E	E	G	U	U	U	G	U	U	E		E	F	U	E	U
Benzoic Acid 5% 70 F	U	G	E	G	G	U	E	E		E	U	U	U	E	U	E		U		G	U	U	U
Black Sulphate Liquor	F	G	E		F	F				G	G	G	E	G	F	E			F	F	E	E	E
Bleaching Powder-Wet	U	G	G		U	U				G	E	F			F	E				E	U	E	E

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Borax (Sodium Borate)	U	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Boric Acid 5% 200 F	U	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Brine (Acid)	U	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Brine-Chlorinated	U	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Bromine-Gas	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromine-Water	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Butadiene	F	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Butane-Butylene	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Butyl Acetate	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Butyric Acid 5% 70 F	U	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Calcium Bisulfite	U	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Calcium Carbonate 80 F	F	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Calcium Chlorate 20% 160 F	F	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Calcium Chloride	F	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Calcium Hydroxide 50% 175 F	F	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Calcium Hypochloride	F	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Calcium Sulphate 90% 80 F	F	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Calgon	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Caliche Liquor	U	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Cane Sugar Liquors	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Carbon Dioxide (Dry)	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Carbon Disulfide	U	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Carbon Tetrachloride (Dry)	U	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Carbonic Acid	U	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Castor Oil	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Caustic Solutions 34% 200 F	U	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
China Wood Oil (Tung)	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Chlorine Gas-Dry 70 F	U	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Chlorobenzene 90% 70 F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Chloroform 70 F	F	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Chlorosulfonic Acid 10%	U	U	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Chromic Acid 5% 70 F	U	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Citric Acid 5% 150 F	U	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Coconut Oil (Food)	U	U	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Coffee (Food)	U	U	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Copper Sulfate 80% 175 F	F	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Cottonseed Oil	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Creosol	U	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Creosota	E	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Cresylic Acid	U	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Crude Oil	G	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Cyclonexane	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Dextrose (Food)	U	U	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Diacetone	U	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Diethylamine	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Dichlorethene	U	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Diesel Fuels	E	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Diethyl Amine	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Dowtherms	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Drilling Mud	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Ethers	U	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Ethyl Acetate	F	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Ethyl Chloride 5% 60 F	F	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Ethyl Dichloride	U	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Ethyl Glycol	G	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F

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Ethylene Oxide	G	G	G	G	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Ferric Chloride	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Ferric Nitrate (pH7+) 5% 80 F	U	U	G	F	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Ferric Sulphate 5% 80 F	U	U	E	E	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Ferrous Sulphate	F	G	G	G	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Fluorine 70 F	U	U	F	G	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Fluosilicic Acid	U	F	G	G	F	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Formaldehyde 70 F	U	G	E	G	E	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Formic Acid 5% 150 F	U	G	E	G	G	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Freon 11	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Freon 12	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Freon 22	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Freon 113	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Freon 114	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Fruit Juices (Food) 70 F	U	U	E	E	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Fuel Oil	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Furfural	F	E	E	G	G	E	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Gallic Acid 5% 200 F	U	E	E	G	E	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Gasoline - Regular	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Gelatin (Food)	U	U	E	G	G	E	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Glucose	U	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Glycerin/Glycerol 70 F	F	E	E	G	G	E	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Heptane	F	G	E	G	E	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Hexane	F	G	E	G	E	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Hydraulic Oils	F	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Hydrobromic Acid 200 F	U	U	U	U	U	U	G	U	E	E	U	U	E	E	E	E	U	U	U	U	F	U	E
Hydrochloric Acid 10% 80 F	U	U	U	F	U	U	G	U	E	E	F	U	G	E	E	E	U	U	U	U	F	U	E
Hydrochloric Acid 20% 80 F	U	U	U	U	U	U	G	U	E	E	F	G	G	E	E	E	U	U	U	U	F	U	E
Hydrochloric Acid 35% 80 F	U	U	U	U	U	U	F	U	E	E	F	G	G	E	E	E	U	U	U	U	F	U	E
Hydrocyanic Acid	U	G	F	U	U	U	F	E	E	E	G	G	E	E	E	E	U	G	U	U	F	U	E
Hydrofluoric Acid 48%	U	F	U	F	U	U	F	E	E	U	U	E	E	E	E	E	U	U	U	U	F	U	E
Hydrofluoric Acid 60%	U	U	U	U	U	U	F	E	E	E	G	U	G	E	E	E	U	U	U	U	F	U	E
Hydrofluoric Acid 100%	U	U	U	U	U	U	F	E	E	U	U	F	E	E	E	E	U	U	U	U	F	U	E
Hydrofluosilicic Acid 5% 70 F	U	G	G	G	F	E	E	G	E	G	G	E	E	E	E	E	U	U	U	U	F	U	E
Hydrogen	F	G	E	E	F	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E	F	E	E
Hydrogen Peroxide 90%	U	F	G	G	U	U	G	E	E	U	U	G	G	F	U	E	U	U	U	U	G	U	U
Hydrogen Sulfide - Dry	F	F	E	G	F	F	E	G	E	E	F	G	G	E	E	E	U	F	E	E	F	G	E
Hydrogen Sulfide - Wet	F	F	G	F	F	F	G	E	E	E	E	E	E	G	G	U	E	F	E	F	F	G	E
Iodine Solution	U	U	U	U	U	U	E	U	E	E	F	U	G	E	G	F	E	F	U	U	U	G	E
Iso-Octane	F	E	E	E	E	E	E	E	E	E	E	G	G	E	U	U	E	E	E	F	E	U	E
Isopropyl Alcohol	F	E	E	E	E	E	E	E	E	E	E	F	U	U	U	E	E	E	E	F	E	U	E
Isopropyl Ether	F	E	E	E	E	E	E	E	E	E	G	F	F	U	U	U	E	E	E	F	G	E	U
Kerosene	E	E	E	E	E	E	E	E	E	E	E	G	U	E	U	U	E	E	E	G	G	E	U
Lacquer Solution	F	E	E	E	E	E	E	E	E	U	U	U	U	U	U	E	E	E	E	F	U	U	E
Lactic Acid 5% 70 F	U	F	G	G	U	U	E	E	E	U	G	E	E	E	G	E	U	G	U	U	G	U	E
Lard Oil 70 F	G	E	G	G	G	E	E	E	E	E	F	U	E	U	U	E	E	E	E	G	G	U	U
Lemon Oil	U	F	E	E	G	E	U	E	E	E	G	F	E	E	E	E	E	E	E	U	E	E	E
Linseed Oil	F	E	E	E	E	E	E	E	E	E	E	E	E	E	U	E	G	E	F	E	E	E	E
Lubricating Oil	E	E	E	E	E	E	E	E	E	E	E	E	F	G	E	U	U	E	E	E	E	U	E
Magnesium Chloride 4% 75 F	F	F	G	G	F	F	U	E	E	E	E	E	E	E	E	E	U	E	U	E	F	E	E
Magnesium Hydroxide	F	E	E	G	G	G	E	E	E	E	G	E	E	E	E	E	U	G	F	E	E	G	E
Magnesium Sulphate 5% 120 F	F	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Mercuric Chloride 3% 60 F	U	U	F	U	U	U	F	E	E	E	E	E	E	E	E	E	E	U	U	E	U	E	E
Mercuric Cyanide	U	E	U	U	U	U	E	E	E	F	F	E	E	E	E	E	E	E	U	G	E	E	E
Mercurous Nitrate (pH7+)	U	G	U	U	U	U	E	E	E	F	F	E	E	E	E	E	E	E	U	E	E	E	E
Mercury	E	E	E	E	U	U	F	E	E	E	E	E	E	E	E	E	U	E	E	G	U	E	E
Methyl Acetate	F	G	E	E	E	E	E	E	E	U	U	U	U	G	U	E	E	E	F	U	E	G	E
Methyl Acetone	F	E	E	E	E	E	E	E	E	U	U	U	U	U	U	E	E	E	F	E	E	E	E
Methyl Cellosolve	F	E	E	E	E	E	E	E	E	U	U	U	U	G	U	E	E	E	F	G	E	G	E
Methyl Chloride	G	G	E	G	F	E	E	E	E	U	U	U	U	G	F	U	E	E	G	U	E	U	U

VALVE MATERIAL SELECTION GUIDE



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CHEMICALS	NIPALATED DUCTILE IRON			MONEL	MANGANESE BRONZE	ALUMINUM BRONZE	LEAD	ALLOY 20	HASTELLOY C	PVF	BUNA-N	NEOPRENE	HYDALON	VITON	EPT	NATURAL RUBBER	PTFE	BRASS	NYLON	CAST IRON	POLYPRO	ALUMINUM	EPDM
	416 SS	316 SS																					
Methyl Ethyl Ketone (MEK)	E	E	E																				
Milk (Food)	U	U	E	F	U	C																	
Mineral Oil	F		E	E	G	C																	
Molasses (Food)	U	U	E		U	C																	
Naptha	F	E	E	G	G	C																	
Napthalene	F	E	E	G	G	C																	
Natural Gas (Methane)	G	E	E	G	G	C																	
Nickel Ammonium Sulphate	U		E	F	U	U																	
Nickel Chloride	U		G	G	U	U		G	E	E								U	F	U	E		E
Nickel Sulphate 10% 60 F	U		E	G	G	C												U	E	U	E		E
Nitric Acid 10% 70F	U		G	U	U	U		G	G	U	U							U	U	U	E		E
Nitric Acid 30% 70 F	U		G	U	U	U		G	G	U	U							U	U	U	E		E
Nitric Acid 60% 175 F	U		G	U	U	U		G	G	U	U							U	U	U	E		E
Nitrobenzene	U		E	G						F	U	U											
Oils and Fats	E	E	E	G	E																		
Oils, Fish	U	G	E		F	F					G	E	F	U	U					U	E	F	
Oleic Acid 100 F	U	F	G	G	G	C																	
Oleum (Fuming Sulfuric Acid)	U	U	F					G	G											U	U	U	U
Oxalic Acid	U	F	G	F	F	F		G	G		F		G	G	G	E		U	G	U	E	U	E
Oxygen	E	E	E	E	E	E																	
Ozone	U	G	E									U	F	E	G	E				U	U	G	E
Palmitic Acid	U	G	E	G	G	C														U	U	G	E
Perchloroethylene	F	G	E	G	G	C														F	F	U	U
Petroleum - Refined	G		E	E	E															E	G	G	U
Petroleum - Sour	U	G	G	G	F	F														U	U	F	
Phenol	U		E	E	G	C														U	U	G	G
Phosphoric Acid 10% 70 F	U	F	G	F	U	U		G	E	E		G	G	E	G	F				U	U		
Phosphoric Acid 25% 70 F	U	U	G	F	U	U		G	G	E		F	G	G	E	U				U	U		
Phosphoric Acid 75% 70 F	U	U	G	F	U	U			F	E	U		G	G	E	U			U	G	U	E	G
Phosphorous Oxychloride	U																						
Pickling Sol. (20% Nitric - 4HF)	U		G	G			G					U	U	U	G	F				U			
Picric Acid 80% 70 F	U		G	U																F	U	G	G
Potassium Chloride	U		G	G	F	E														U	E	F	E
Potassium Cyanide	F	G	G	G	U	U														U	E	F	U
Potassium Hydroxide 5% 70 F	F	G	E	E	U	U														U	F	F	U
Potassium Nitrate 6% 68 F	F	G	E	G	F	F														G	G	F	E
Potassium Phosphate	U		G	G	F	F															U		
Potassium Sulphate 7% 180 F	F	G	E	E	G	E														U	E	F	E
Potassium Sulfide	U	G	E	F	U	U														E	U	E	
Potassium Sulfite	U		E																		U		
Propane	F	E	E	E	E															E	E	F	U
Resins and Rosins	U	E	E	G	E																U	E	
SAE #10 oil	G																						
Sea Water 70 F	U	F	G	E	G	E		G	E	E										U	E	G	E
Sewage	U	G	E	G	G	C															U	G	
Skydrol 500	G	E	E																				
Soap Solution (Stearate) 70 F	U	F	E	E	E																		
Sodium Acetate 5% 75 F	U	F	E	G	G	E																	
Sodium Aluminate	U		E	G	G	C																	
Sodium Bisulfate	U	F	E																				
Sodium Carbonate 80% 60 F	U	G	E	E	G	U																	
Sodium Chloride 30% 180 F	U	F	E	E	F	U																	
Sodium Cyanide	U		G	U	U	U																	
Sodium Fluoride 5% 60 F	U		G	G	F	F																	
Sodium Hydroxide 5%	U	G	E	G	F	F																	
Sodium Hydroxide 20%	U	F	E	E	F	F																	
Sodium Hydroxide 50%	U	F	G	G	U	U																	
Sodium Hydroxide 70%	U	U	F	F	U	U																	
Sodium Hypochlorite 5% 80 F	U		G	U	U	E																	
Sodium Nitrate 30% 60 F	U	G	E	G	G	C																	

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CHEMICALS	NI PLATED DUCTILE IRON	416 SS	316 SS	MONEL	MANGANEZE BRONZE	ALUMINUM BRONZE	LEAD	ALLOY 20	HASTELLOY C	PVF	BUNA-N	NEOPRENE	HYPALON	VITON	EPT	NATURAL RUBBER	PTFE	BRASS	NYLON	CAST IRON	POLY PRO	ALUMINUM	EPDM
Sodium Perborate	U	G	G	G	G	G					G	G	G	G	G	G							
Sodium Peroxide	U	G	F	G	U	U																	
Sodium Phosphate 5% 60 F	U	G	F	G	F	F	E	E	E	E	G	G	G	G	G	G							
Sodium Silicate	U	G	F	G	G	G																	
Sodium Sulphate 80% 60 F	U	G	F	G	G	G																	
Sodium Sulphate 70% 70 F	U	G	F	U			F	E	E	E	E	E	E	E	E	E							
Sodium Sulphate 5% 70 F	U	E	G	U	U	E	E	E	E	E	E	E	E	E	E	E							
Steam 225 F	U	U	E	E	E	E	U																
Steam 300 F	U	U	E	E	G	U																	
Stearic Acid 90% 200 F	U	G	F	G	F	F	U	E	E	E	G	G	G	G	G	G							
Sulphur (Molten)	U	F	G	U	U	U	U	E	E	E	U	F	U	G	U	U							
Sulphur Dioxide 60 F	U	G	E	E	F	F	U	E	E	E	U	G	U	F	E	E							
Sulphur Trioxide	U	G	E				U	E	E	E	U	U	F	E	E	E							
Sulfuric Acid 7-7% 70 F	U	F	G	F	U	U	E	E	E	E	U	G	E	E	U	U							
Sulfuric Acid 7-40% 70 F	U	U	U	U	U	U	E	G	G	E	U	U	E	E	U	U							
Sulfuric Acid 40-75% 70 F	U	U	U	U	U	U	E	G	G	E	U	U	G	G	U	U							
Sulfuric Acid 75-95%	U	U	U	U	U	U	G	U	U	E	U	U	G	G	U	U							
Sulfuric Acid 95-100%	U	U	U	U	U	U	G	U	U	E	U	U	G	G	U	U							
Sulphurous Acid 80% 100 F	U	U	G	F	U	U	E	E	E	E	G	U	U	E	U	U							
Tail Oil	G	G	E	G							G	G	G	E	E	E							
Tannic Acid 150 F	U	F	E	G	G	G					G	E	G	E	E	E							
Tar	F	E	E	E	E	E	E	E	E	E	F	F	E	E	E	E							
Tartaric Acid 150 F	U	G	E	G	F	G	E	E	E	E	G	G	E	E	G	E							
Toluol and Toluolene	G	E	E		E	E					G	U	U	U	E	U							
Tributyl Phosphate	G	F	E								U	U	U	U	E	G							
Trichloroacetic Acid	U	U	U	G	U	G					F	G	U	U	F	G							
Trichloroethylene	F	U	E	G	F	G					G	U	U	U	U	E							
Triethanolamine	U	U	E	G							G	F	E	E	U	G							
Trisodium Phosphate	U	U	G	G	F	F	E				E	F	F										
Tung Oil	U	U	E	F	E	E	E	E	E	E	E	G	G	E	U	U							
Turpentine	U	U	E	G	G	G	F				E	U	F	F	E	E							
Vinegar 70 F	U	E	E								G	G	G	E	E	E							
Water, Acid-Nine	U		E	U							G	G	G	E	E	E							
Water - Deionized			E	E	E						E	E	E	E	E	E							
Water - Demineralized	U	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E							
Water - Fresh 180 F	G	E	E	E	E	E	E	E	E	E	G	G	F	U	E	E							
Water - Fresh 225 F	G	E	E	E	E	E	E	E	E	E	U	U	U	E	U	E							
Water - Salt 150 F	U	U	G	E	G	G					G	G	F	U	E	U							
Water - Sewage 80 F	U	G	E	E	G	E	E	E	E	E	E	E	E	E	E	E							
Whiskey and Wines	U	U	E	E	G	G					E	E	G	E	E	E							
White Liquor	U	E									G	U	G		F								
Xylene, Xylol	F	E	E		E	E	E	E	E	E	U	U	E	U	U	E							
Zinc Chloride 5% 160 F	U	U	F	G	U	U	U	G	G	E	E	E	E	E	E	E							
Zinc Sulphate 25% 180 F	U	G	E	G	G	G	E	E	E	E	E	E	E	E	E	G							