



GUIDE* FOR

Chemical Resistance

*These ratings have been developed from technical publications, material suppliers and laboratory tests, and are presented for your evaluation and not as a guarantee.

- Failure, improper selection, or improper use of the products and / or systems referred to and described herein or related items can cause death, personal injury or property damage.
- This document and other information provides product and / or system options for further investigation by users having technical expertise.
- It is important that you analyze all aspects of your application and review the information concerning the product or system.
- Due to the variety of operating conditions and applications for these products or systems, the user, through his or her own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements are met.
- The materials described and referred to herein 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.

RATING CODES (A) Excellent (B) Good (C) Fair (X) Unsuitable () Insufficient Data	ELASTOMERS				METALS				PLASTICS		
	BUNA N (NITRILE)	EPDM	NEOPRENE®	VITON®/FLUORELASTOMER	STAINLESS STEEL (302-305, 630)	STAINLESS STEEL (316)	STAINLESS STEEL (403-416)	ALUMINUM	NYLON	POLYPROPYLENE* (PPB)	TEFLON® (TFE)
CHEMICAL NAME											
A											
ACETATE SOLVENTS	X	X	X	X	A	A		B	B	X	A
ACETIC ACID	C	C	X	X	B	A		B	X	B	A
ACETIC ACID 95%					B	X				A	
ACETONE	X	C	X	X	C	A	A	A	A	A	A
ALCOHOL	B	X	X	X	A	A	A	B	B	X	A
ALUM	C	B	B	B	X	C	X		C	A	A
ALUMINUM CHLORIDE	X	B	B	B	X	C		B	B	A	A
AMMONIA	X	C	A	X					A		A
AMMONIA-AQUEOUS 30%	X	B			B	A				A	
AMMONIA, ANHYDROUS	C		A	X	A	A		B			
AMMONIUM, CHLORIDE	X		B	B	X	B	C	C	B	A	A
AMMONIUM DIHYDROGEN PHOSPHATE										A	
AMMONIUM HYDROXIDE	C	B	C	X	A	A	A	C	C	A	A
AMMONIUM SULFATE	X		B	B	B	B	C	B	B	A	A
B											
BARIUM CHLORIDE	B	X	A	B	A	B		X	B	A	A
BARIUM FLUORIDE	X	X	B	C					C	X	A
BARIUM NITRATE	B	B	A	B	B	B		B	B	A	A
BARIUM SULFATE	X	C	B	B	C	B		X		A	A
BENZENE	X		C	B	A	A	C	B	B	X	A
BENZOIC ACID	X	C	X	C	C	C		B	X	A	A
BORIC ACID	X	C	C	C	C	B	C	B	X	A	A
BRAKE FLUID	B	A	B	X					B	X	A
BUTYL ALCOHOL	X	X	X	A		A			B	A	A

RATING CODES (A) Excellent (B) Good (C) Fair (X) Unsuitable () Insufficient Data	ELASTOMERS				METALS				PLASTICS		
	BUNA N (NITRILE)	EPDM	NEOPRENE®	VITON®/FLUOROELASTOMER	STAINLESS STEEL (302-305, 630)	STAINLESS STEEL (316)	STAINLESS STEEL (403-416)	ALUMINUM	NYLON	POLYPROPYLENE* (PPR)	TEFLON® (TFE)
CHEMICAL NAME											
C											
CALCIUM BISULFITE	B	B	B	C	C	C	X	C	B	A	A
CALCIUM CHLORIDE	B	B	B	X	C	B		C	B	A	A
CALCIUM HYDROXIDE	B	B	X	X	C	A		C	B	A	A
CALCIUM HYDROXIDE 30%, BOILING					X	C				A	
CALCIUM HYPOCHLORITE, 5%, 70°			C	A	C	B		C		A	
CARBON BISULFIDE	A	X	X	B		B		A	B	X	A
CARBON DISULFIDE	X	X	X	B	A	C	B	C	B	X	A
CARBON TETRACHLORIDE	X	X	X	B	A	B	A	X	B	X	A
CAUSTIC LIQUID	B	B		A						A	
CAUSTIC SODA, ALL CONC., 72° & 140°	B	C	C	X	A	A			B	C	A
CHLORINATED SOLVENTS	X	X	X	B					C		A
CHLORINATED WATER, SATURATE	C		B	B	B	C			C	B	A
CHLORINE	X	X	X	X	X	X			C	X	A
CHLORINE TRIFLUORIDE	X	X	X	C				X	X	X	A
CHLOROACETIC ACID	X	C	X	X	B	X			X	A	A
CHROMIC ACID	X	C	X	B	X	C	C	C	X	B	A
CHROMIC ACID, 10%, 70° F			X					C		A	
CITRIC ACID	X	C	C	C	C	A	C	C	X	A	A
CITRIC ACID, HOT, CONC.					X	X				A	
COPPER SULFATE	X	B	B	B	C	A	A	X		A	A
CORN OIL	A	B	X	X		A			A	A	A
CYCLOHEXANE	C	X	X	A	A	A		A		X	A
D											
DETERGENT SOLUTIONS	C	C	C	C	A	A		A	A	B	A
E											
ETHYL ACETATE	X	X	X	X	B	B		B	B	A	A
ETHYL ALCOHOL	A		A	A		A				A	
ETHYLCELLULOSE	X	X	X	C				B	B	C	A
ETHYL CHLORIDE	X	X	X	C	A	A		X	B	X	A
ETHYLENE GLYCOL	A	A	B	A	A	A	A	A	B	C	A
F											
FERRIC CHLORIDE	X	X	B	C	X	X	X	X	B	A	A
FERRIC SULFATE	X	B	B	B	B	A	A	X	B	A	C
FERROUS CHLORIDE	X	B	B	B	X	X		X	B	A	A
FERROUS SULFATE	X	B	B	B	C	C		X	B	A	A
FLUORINE	X	X	X	X	A	B		X	X	X	X
FORMALDEHYDE	C	B	X	B	A	A	A	A	C	A	A



RATING CODES (A) Excellent (B) Good (C) Fair (X) Unsuitable () Insufficient Data	ELASTOMERS				METALS				PLASTICS		
	BUNA N (NITRILE)	EPDM	NEOPRENE®	VITON®/FLUOROELASTOMER	STAINLESS STEEL (302-305, 630)	STAINLESS STEEL (316)	STAINLESS STEEL (403-416)	ALUMINUM	NYLON	POLYPROPYLENE* (PPR)	TEFLON® (TFE)
CHEMICAL NAME											
FORMALDEHYDE, 40%			A		A	B				A	
FREON	X	B	X	B	B	A	A	X	X	B	A
FRUIT JUICES	A	B	X	B		A		B	X	A	A
FUEL OIL, NORMAL	C	X	X	A	A	A		A	A	A	A
G											
GASOLINE	C	X	X	B	A	B		A	A	X	A
GLYCERINE OR GLYCEROL	X	X	B	B	A	A	A	A	B	A	A
H											
HYDRAULIC OILS	C	X	A	C	A			A		A	
HYDROCARBONS, PURE		X		B						A	
HYDROCHLORIC ACID	C	B	B	C	X	X	X	X	X	A	A
HYDROCHLORIC ACID, 20%	C		A	A	X	X		X		A	
HYDROFLUORIC ACID	X	C	C	X	X	X	X	X	X	A	A
HYDROFLUORIC ACID, 50%	C		C	A	X	X		X		A	
HYDROFLUOROSILICIC ACID	X	C	C	X	X	X		X	X	A	B
HYDROGEN PEROXIDE	A	X	X	X	C	A	A	A	X	X	A
HYDROGEN PEROXIDE, 50%		A		A	C			A		A	
HYDROGEN SULFIDE	B	B	X	C	X	B	X	X	C	A	A
I											
IODINE	X	X	X	X	C	X		X		C	A
ISOPAR G		X		A						A	
ISOPROPYL ALCOHOL	B		A	A	A	B				A	
L											
LACQUER SOLVENTS	X	X	X	B	A	A	A	A	B	X	A
LIME, 30%					A	A		C		A	
LUBRICATING OIL	A	B	B	A	A	A		A	A	X	A
M											
MAGNESIUM CHLORIDE	X	B	B	C	C	A	C	X	B	A	A
MAGNESIUM HYDROXIDE	X	C	C	X	C	A	A	X	B	A	A
MAGNESIUM SULFIDE	X	C	B	X					B	A	A
MANGANESE CHLORIDE	X	C	B	X	X	X			B	A	A
MANGANESE SULFATE	X	C	B	X					B	A	A
MERCURIC SULFATE	X	C	B	X					B	A	A
METHYL CHLORIDE	C	X	X	X	A	A		X	B	X	A
METHYL ETHYL KETONE	X	A	X	X	A	A		A		A	
MINERAL OILS	C	X	B	B	A	A			A	B	A
MUSTARD	C	B	X	C	A	A		B	A	A	A



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	BUNA N (NITRILE)	EPDM	NEOPRENE®	VITON®/FLUOROELASTOMER	STAINLESS STEEL (302-305, 630)	STAINLESS STEEL (316)	STAINLESS STEEL (403-416)	ALUMINUM	NYLON	POLYPROPYLENE* (PPR)	TEFLON® (TFE)
CHEMICAL NAME											
N											
NICKEL CHLORIDE	X	C	C	X	C	X	X	X	B	A	A
NICKEL SULFATE	X	C	C	X	C	B	X	X	B	A	A
NITRIC ACID	X	X	X	X	C	B	C	X	X	X	A
NITRIC ACID, 20%	X	B	X	B	A	A		X		A	
NITRIC OXIDE	X	C	C	X					C	X	A
O											
OIL - NO. 1 ASTM	B	X	B	A					A	X	A
OIL - NO. 3 ASTM	B	X	B	A					A	X	A
P											
PHOSPHORIC ACID	X	C	C	C	A			X	X	A	A
PHOSPHORIC ACID, 10%					A	B		X		A	
PHOTO CHEMICALS - STANDARD TYPES										A	
PHOTOGRAPHIC - DEVELOPERS	X	B	C	C	C	A		C	B	A	A
PHOTOGRAPHIC - FIXER	C	A	B	B	C	B				A	
POTASSIUM BICARBONATE	A		A	A	B	C		C		A	
POTASSIUM CARBONATE	C	B	B	B	C	C		C	C	A	A
POTASSIUM CHLORATE	X	B	B	C	A	C		B	B	A	A
POTASSIUM CHLORIDE	X	B	B	C	C	B	C	B	B	A	A
POTASSIUM DICHROMATE, 40%					A	A		A		A	
POTASSIUM HYDROXIDE	C	B	X	X	B	B	A	X	B	B	A
POTASSIUM NITRATE	X	B	B	C	A	C		B	B	A	A
POTASSIUM SULFATE	X	B	B	C	C	B	A	A	B	A	A
PROPYLENE GLYCOL	A	A	C	A	C	B		A	B	C	A
S											
SALINE SOLUTION - ALL CONC.										A	
SILICONE OILS & GREASES	X	C	C	B	B	A			A	A	A
SODIUM BICARBONATE	X	B	B	X	A	A	A	A	B	A	A
SODIUM BISULFATE	X	B	C	B	X	A	X	X	B	A	A
SODIUM CARBONATE	X	X	B	X	C	A		C	B	A	A
SODIUM CHLORATE	X	B	B	B	C	C		B	B	A	A
SODIUM CYANIDE	X	B	B	B	C	A	A	X	B	A	A
SODIUM HYDROSULFITE	X	B	B	B					C	A	A
SODIUM HYDROXIDE	B	A	B	A	C	X	A	X	C	A	A
SODIUM HYDROXIDE, 40-80%, 175 °F	A		A		X	C		X		A	
SODIUM HYPOCHLORITE	X	B	X	B	X	X	X	X	C	B	A
SODIUM HYPOCHLORITE, 5%		A		A	B	A		X		B	
SODIUM IODIDE	C	B	B	X					B	C	A



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	BUNA N (NITRILE)	EPDM	NEOPRENE®	VITON®/FLUOROELASTOMER	STAINLESS STEEL (302-305, 630)	STAINLESS STEEL (316)	STAINLESS STEEL (403-416)	ALUMINUM	NYLON	POLYPROPYLENE* (PPR)	TEFLON® (TFE)
CHEMICAL NAME											
SODIUM NITRATE	X	B	C	B	C	C	A	A	B	A	A
SODIUM PEROXIDE	X	X	X	X	A	A	A	X	X	X	A
SODIUM PHOSPHATE	X	B	B	B	B	B		X	B	A	A
SODIUM SULFATE	X	B	B	B	A	B	A	B	B	A	A
SODIUM SULFIDE	X	B	B	B	X	B	A	X	B	A	A
SODIUM SULFITE	X	B	B	B	A	A			B	A	A
SODIUM THIOSULFATE	X	B	B	B	B	A	A	B	B	A	A
SOFT DRINK SYRUPS										A	
SOLVENT - TONER KEROSENE BASE										A	
SOYBEAN OIL	A	B	X	A	A	A			A	B	A
STANNIC CHLORIDE	X	B	C	B	X	X		X	B	A	A
STANNOUS CHLORIDE	X	B	B	B	X				B	A	A
SULFUR CHLORIDE	X	X	X	A	C	X	X	X	C	B	A
SULFUR DIOXIDE	X	X	X	A	A	B		X	C	B	A
SULFUR TRIOXIDE	X	X	X	A	C	C		X			A
SULFURIC ACID	X	C	X	B	C	B		X	X	C	A
SULFUROUS ACID	X	C	X	C	C	C	X	X	X	A	A
T											
TOLUENE OR TOLUOL	X	X	X	X	A	A	C	A		X	A
TRIBUTYL PHOSPHATE	X	X	X	X	A	A			B	B	A
TRICHLOROETHYLENE	X	X	X	C	A	C	A	X	C	X	A
TURPENTINE	C	X	X	B	C	A	C	A	C	X	A
V											
VEGETABLE OILS	B	B	C	A	C	C	C	A	A	X	A
VINEGAR	C	C	C	C	C	B	C	X	C	A	A
W											
WATER, DEIONIZED	C	A	C	A	A	A			B	A	A
WATER, FRESH	C	A	B	A	A	A	A	A	B	A	A
WATER, GLYCOL	C	B	B	B					B	A	A
WETTING AGENTS		A		A						A	
Z											
ZINC CHLORIDE	X	B	B	B	X	X	X	X	B	A	A
ZINC SULFATE	X	B	B	B	C	A	C	X	B	A	A

