CORROSION RESISTANCE CHART

• Self-Priming Centrifugal • End Suction-Centrifugal • Hand Pump • Quick Connect Couplings • Elbows • Strainers

Key to product symbols used in chart heading:

A	Bung adapter
B	Bearing housing (on pedestal model centrifugal pumps), adapter plate (between pump & electric motor on centrifugal pumps close coupled to electric motors)
D	Piston
E	Elbow and Nozzle for Hose Assembly on Hand Pump
F	Fasteners, wetted ('pins' in the quick connect couplings)
G	Gasket
H	Housing
I	Impeller
O	O-rings, check valve, shaft seal bellows
R	Piston rod (in the hand pump), pump shaft sleeve (in the centrifugal pumps)
S	Shaft seal
T	Suction tube
U	Discharge Hose
V	Volute
X	Indicates that entire part is constructed of that material

NOTE: Materials of construction listed for various parts or pumps are those which are available. Materials listed are not necessarily standard. Consult your catalogue, in conjunction with our model numbering chart, to determine materials of construction.

Consult the factory for chemical applications involving temperatures greater than 80° F.

NOTE: The following Corrosion Resistance Chart is only to be used as a guide to selecting the proper pump for your specific application. To the best of our knowledge the information contained herein is correct. However, we do not assume any liability whatsoever for the accuracy or inaccuracy, or the completeness, or incompleteness, of the information contained herein. Final determination of the suitability of any information or material for the use intended, or the manner of use, is the sole responsibility of the user.

serving industry worldwide

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MATERIALS

A — Recommended
C — Not recommended
X — Insufficient data
F — Consult factory

SEE KEY ON PAGE 1 FOR PRODUCT SYMBOL IDENTIFICATION

	PLASTICS					ELASTOMERS					METALS			MECHANICAL SEALS					
PRODUCT	RYTON (FRP)**	Polyester (FRP)**	Polypropylene (FRP)**	Noryl (FRP)** HDPE (High density polyethylene)	PVC	HALAR	UHMW Polyethylene Cross Linked Polyethylene	Buna-N	EPDM	Viton	Cork-Nitrile	Hastelloy C	Titanium	316 Stainless Steel	Carbon	Ceramic	Silconized Graphite		
SELF-PRIMING CENTRIFUGAL	H,I,V	H,I,V	H,I		B					O	O	O		S,F	F,R	S,F,R	S	S	S
END-SUCTION CENTRIFUGAL		H,I,V			H,I,V					O	O	O		S,F	F,R	S,F,R	S	S	S
HAND PUMP	H	HTD AE				T,U	ADE H	U	T		OG	OG	G			R,F			
QUICK CONNECT COUPLINGS			H							G	G	G				F			
ELBOWS			X																
STRAINERS				X			X												
PLASTIC PIPE NIPPLES						X													
CHEMICAL																			
ACETALDEHYDE	A	A	C	C	X	C	A	A	A	C	A	C	X	A	A	A	A	A	A
ACETIC ACID, 20%	A	A	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A
ACETIC ACID, 50%	A	C	X	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A
ACETIC ACID, Glacial	A	C	X	C	A*	C	A	A	A	C	A	C	C	A	A	A	A	A	A
ACETIC ANHYDRIDE	A	C	A	C	C	C	A	X	A	C	A	C	X	A	A	A	A	A	A
ACETONE	A	C	A	A	X	C	A	A	A	C	A	C	C	A	A	A	A	A	A
ALCOHOL, AMYL	A	A*	C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
ALCOHOL, ETHYL	A	A	A	X	A	X	A	A	A	A	A	A	A	A	X	A	A	A	A
ALCOHOL, ISOPROPYL	A	C	A	X	A	A	A	A	A	C	A	A	C	A	A	A	A	A	A
ALCOHOL, METHYL	A	A	A	A	X	A*	A*	A	A	A	A	C	A	A	A	A	A	A	A
ALCOHOL, PROPYL	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
ALUMINUM CHLORIDE	A	C	A	A	A	A	A	A	A	A	A	A	A	A	C	C	A	A	A
ALUMINUM FLUORIDE	A	C	X	A	A	A	A	A	A	A	A	A	A	A	C	A*	A	X	A
ALUMINUM SULFATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
AMMONIA, 30% (cold)	A	C	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A
AMMONIUM CHLORIDE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	C	A	A	A	A
AMMONIUM HYDROXIDE "NOTE 1"	A	C	A	A	A	A	A	A	A	C	A	C	C	A*	A	A*	A	A	A
AMMONIUM NITRATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
AMMONIUM PERSULFATE	A	A	X	A	A	A	A	A	A	C	A	A	X	A	X	A*	A	A	A
AMMONIUM PHOSPHATE	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
AMMONIUM SULFATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A*	A	A	A
AMYL ACETATE	A	A	C	C	C	C	A	A	A	C	A	C	X	A	A	A	A	A	A
AMYL CHLORIDE	A	A	X	C	C	C	A	C	C	X	X	A	X	A	X	A*	A	A	A
ANILINE	A	C	C	C	C	C	A*	A	A	C	A	C	X	A	A	A	A	A	A
AQUA REGIA	X	C	X	C	C	C	A	X	C	C	X	A*	X	A	A	C	C	A	C
ARSENIC ACID	A	C	X	A	A	A	A	A	A	C	A	A	A	X	X	X	C	A	A
BARIUM CHLORIDE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A*	A	A	A
BARIUM SULFATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
BEER	A	A	X	A	A	A	A	A	A	C	A	A	X	A	A	A	A	A	A
BENZALDEHYDE	C	A	A	C	C	A	A*	X	A	C	A	C	X	A	A	A	A	A	A
BENZENE (BENZOL)	A*	A*	C	C	C	C	A	A	A	C	C	A	A	A	A	A	A	A	A
BENZOIC ACID	A	A	A	A	A	A	A	A	A	C	X	A	X	A	A	A	A	A	A
BORAX (SODIUM BORATE)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A
BORIC ACID	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A
BROMINE WATER	C	C	C	C	A	A*	A	A*	A	C	C	A	X	A	A	C	C	A	A
BUTYL ACETATE	A	A	A	C	C	C	A	A	A	X	A	C	C	A	X	A	A	A	A
BUTYRIC ACID	A*	C	X	C	A	A	A	A	A	C	A	A	X	A	A*	A	A	A	A
CALCIUM BISULFITE	A	C	X	A	A	A	A	A	A	A	C	A	A	A	A*	A	A	A	A
CALCIUM CHLORIDE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A*	A	A	A
CALCIUM HYPOCHLORITE 20%	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A*	A	A	A
CALCIUM SULFATE	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A
CARBON TETRACHLORIDE	A*	A*	C	C	C	A*	A*	A	A	C	C	A	A	A	A	A	A	A	A
CARBONIC ACID	A	A	A	A	A	A	A	A	A	A	X	A	A	A	X	A	A	A	A
CHLOROACETIC ACID	A	C	X	C	C	A	A	A	A	C	A	C	X	A	A	C	A	A	A
CHLORINE WATER	C	C	X	A	A	A	A	A*	A	C	A	A	A	A	A	C	A	A	A

Note 1: aqua ammonia

*For use in applications where the temperature does not exceed 80° F.

**FRP = Fiberglass Reinforced Plastic

MATERIALS

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PRODUCT	RYTON (FRP)**	Polyester (FRP)**	Polypropylene (FRP)**	Noryl (FRP)* HDPE (High density polyethylene)	PVC	HALAR	UHMW Polyethylene Cross Linked Polyethylene	Buna-N	EPDM	Viton	Cork-Nitrile	Hastelloy C	Titanium	316 Stainless Steel	Carbon	Ceramic	Siliconized Graphite		
SELF-PRIMING CENTRIFUGAL	H,I,V	H,I,V	H,I		B					O	O	O		S,F	F,R	S,F,R	S	S	S
END-SUCTION CENTRIFUGAL		H,I,V			H,I,V					O	O	O		S,F	F,R	S,F,R	S	S	S
HAND PUMP	H	HTD AE				T,U	ADE H	U	T		OG	OG	G			R,F			
QUICK CONNECT COUPLINGS			H							G	G	G				F			
ELBOWS			X																
STRAINERS				X			X												
PLASTIC PIPE NIPPLES						X													
CHEMICAL																			
CHLOROBENZENE	A	C	C	C	C	C	A	A	A	C	C	A	X	A	X	A	A	A	A
CHLOROFORM (WET)	A	C	A	C	C	C	A	A*	A	C	C	A	X	A	A	A	A	A	A
CHLOROSULFONIC ACID	C	C	A	C	X	A	A	A*	A	C	C	C	C	A	A	A	C	A	A
CHROMIC ACID, 10%	A	C	A	A	A	A	A	A	A	C	C	A	C	A	A	A	A*	A	A
CHROMIC ACID, 50%	A*	C	A*	A	C	A	A	A	A	C	C	A	C	A	A	A	A*	A	A
CHROMIC ACID, 80%	A*	C	A	A	C	C	A	A	A	C	C	A	C	A	A	C	A*	A	A
CITRIC ACID	A	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A
COPPER CHLORIDE	X	C	A*	A	A	A	A	A	A	A	A	A	A	A	A	A	A*	A	A
COPPER CYANIDE	A	C	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A
COPPER NITRATE	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A
COPPER SULFATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
CRESYLIC ACID	X	A	C	C	X	A	A	A	A	A	C	A	A	A	A	A	A	A	A
ETHYL ACETATE	A	A	A*	C	C	C	A	A	A	X	A	C	C	A	X	A	A	A	A
ETHYL CHLORIDE	A	C	C	C	C	C	A	A*	A	A	A	A	A	A	A	A	A	A	A
ETHYLENE GLYCOL	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A
FATTY ACIDS	X	A	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A
FERRIC CHLORIDE	A	A	A	A	A	A	A	A	A	A	A	A	A	A*	A	C	C	A	A
FERRIC NITRATE	A	A*	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
FERRIC SULFATE	A	A*	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
FERROUS CHLORIDE	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	C	A	A	A
FERROUS SULFATE	A	A	A	A	A	A	A	A	A	X	A	A	X	A	A	A	A	A	A
FLUOBORIC ACID	A	A*	A	A	A	A	A	X	A	A	A	A	A	A	C	C	A	A	A
FLUOSILICIC ACID	A	X	A	A	A	A	A	X	A	A	A	A	A	A	C	A	A	C	A
FORMALDEHYDE, 40%	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
FORMIC ACID	A	C	A	A	A	A*	A	A	A	A*	A*	C	A*	A	A	A	A	A	A
FREON 11 (REFR.)	A*	A*	C	A*	C	C	A	C	A	A*	C	A*	A*	X	X	C	A	A	A
FREON 12 (Wet)	A*	A	A	A	C	A*	A	C	A	A	A*	A*	A	X	X	C	A	A	A
FREON 22 (REFR.)	A*	A*	C	A*	C	C	A	C	A	C	C	C	C	X	X	A*	A	A	A
FREON 113 (REFR.)	A*	A*	C	A*	C	C	A	A	A	A*	C	F	A*	A	A	A*	A*	A	A
FREON TF (SOLV)	A*	A*	C	A*	C	C	A	A	A	A*	C	F	A*	A	A	A	A	A	A
FREON TMC (SOLV)	A*	C	C	X	C	C	A	C	C	C	C	A*	C	A	X	A	A	A	A
FUEL OILS	A	A	C	C	C	C	A	A*	A	A	C	A	A	A	A	A	A	A	A
FURFURAL	A	A	C	C	C	C	A	A	A	C	A	C	X	A	X	A	A	A	A
GASOLINE	A	A	C	C	C	A*	A	A*	A	A	C	A	A	A	C	A	A	A	A
GLYCERINE (GLYCEROL)	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A
HEPTANE	A	A	C	C	C	A	A	A*	A	A	C	A	A	A	X	A	A	A	A
HEXANE	A	A	C	X	C	A*	A	A	C	A	C	A	A	A	X	A	A	A	A
HYDROBROMIC ACID, 50%	A	C	A	A	A	A	A	A	A	A	A	A	A	A*	A	C	A	A*	A
HYDROCHLORIC ACID, 0-20%	A	A	A	A	A	A	A	A	A	A*	A	A	A	A*	C	C	A	A*	A
HYDROCHLORIC ACID, 20+	A	C	A	A	A	A	A	A	A	C	A	A	C	A*	C	C	A	A*	A
HYDROCYANIC ACID	X	A	A	A	A	A	A	A	A	A*	A	A	A	A	X	A	A	A*	A
HYDROFLUORIC ACID, 10%	C	C	C	A	C	A*	A	A	A	X	X	A	X	A	X	C	C	C	A
HYDROFLUORIC ACID, 30%	C	C	C	A	C	A*	A	A	A	C	A	A	X	A	X	C	C	C	A
HYDROFLUORIC ACID, 60%	C	C	C	C	C	A	A	A	A	C	A	A	X	A	C	C	C	C	A
HYDROFLUOSILICIC ACID 20%	A	C	A	C	A	A	A	A	A	A	A	A	A	A	C	A	X	C	A

*For use in applications where the temperature does not exceed 80° F.
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	RYTON (FRP)**	Polyester (FRP)**	Polypropylene (FRP)**	Noryl (FRP)** HDPE (High density polyethylene)	PVC	HALAR	UHMW Polyethylene Cross Linked Polyethylene	Buna-N	EPDM	Viton	Cork-Nitrile	Hastelloy C	Titanium	316 Stainless Steel	Carbon	Ceramic	Siliconized Graphite		
SELF-PRIMING CENTRIFUGAL	H,I,V	H,I,V	H,I		B					O	O	O		S,F	F,R	S,F,R	S	S	S
END-SUCTION CENTRIFUGAL		H,I,V			H,I,V					O	O	O		S,F	F,R	S,F,R	S	S	S
HAND PUMP	H	HTD AE				T,U	ADE H	U	T	U	U,OG	OG	G			R,F			
QUICK CONNECT COUPLINGS			H							G	G	G				F			
ELBOWS			X																
STRAINERS				X			X												
PLASTIC PIPE NIPPLES						X													
CHEMICAL																			
HYDROGEN PEROXIDE, 30%	A*	A*	A	A	X	A	A	A	A	C	X	A	A	A	A	A*	A	X	A
HYDROGEN PEROXIDE, 50%	C	C	X	A	X	A*	A	A	A	C	A	A	A	A	X	A*	A	X	A
HYDROGEN PEROXIDE, 90%	X	C	X	A	X	C	A	A	A	C	A	A*	A	A	X	A*	A	X	A
HYDROGEN SULFIDE, AQ. SOL.	A	A	A	A	A	A	A	A	A	C	A	C	A	A	A	A	A	X	A
IODINE (In Alcohol)	C	C	A*	A	A	C	A	A*	A	C	X	A	X	A	C	C	A	A	A
KEROSENE	A	A	C	C	C	A	A	A	A	A	C	A	A	A	A	A	A	A	A
KETONES	A	A	A*	X	C	C	A	X	C	C	A	C	X	A	A	A	A	A	A
LACQUER THINNERS	X	C	C	X	C	C	A	A*	C	C	C	C	C	A	A	A	A	A	A
LACTIC ACID	A	A*	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
LEAD ACETATE	A	A	A	A	A	A	A	A	A	A*	A	A	A	A	A	A	A	A	A
LUBRICATING OIL	A	A	A*	C	X	A*	A	A	A	A	C	A	A	A	A	A	A	A	A
MAGNESIUM CHLORIDE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A*	A	A	A
MAGNESIUM NITRATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
MAGNESIUM SULFATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
MALEIC ACID	X	A	A	A	X	A	A	X	A	X	A	A	X	A	A	A	A	A	A
METHYL CHLORIDE	A*	C	C	C	C	C	C	A*	A	C	A	C	X	A	A	A	A	A	A
METHYL ETHYL KETONE	A	A	A*	C	C	C	A	C	C	C	A	C	X	A	A	A	A	A	A
METHYL ISOBUTYL KETONE	A	A	A*	X	C	C	A	X	C	C	A	C	X	A	A	A	A	A	A
METHYLENE CHLORIDE	A*	C	C	C	C	C	A*	X	C	C	C	C	A	A	A	A	A	A	A
NAPHTHA	A	A	A	C	X	A	A	C	A	A	C	A	A	A	A	A	A	A	A
NAPHTHALENE	A	A	C	A	X	C	A	C	A	C	A	A	X	A	A	A	A	A	A
NICKEL CHLORIDE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
NICKEL SULFATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
NITRIC ACID, 10%	A	A*	A	A	A	A	A	A	A	C	A	A	C	A	A	A	A*	A	A
NITRIC ACID, 20%	A*	C	A*	A	A	A	A*	A	A	C	C	A	C	A	A	A	A*	A	A
NITRIC ACID, 40%	A*	C	A*	A	C	A	A	A	A	C	C	A	C	A	A	A	C	A	A
NITRIC ACID, ANHYDR.	X	C	C	C	C	C	A	A	A	C	C	C	C	A	A	A*	C	A	C
NITRO BENZENE	A	A	A	C	C	C	A	A	A	C	C	C	C	A	A	A	A	A	A
OIL AND FATS	A	A	A	A	X	A	A	X	A	A	C	A	A	A	A	A	A	A	A
OLEIC ACID	A	A	A*	A	A	A	A	X	C	A	A	A*	A	A	X	A	A	A	A
OLEUM	A*	C	C	C	C	C	A	A	A	C	C	A	X	A	X	X	A	A	A
OXALIC ACID	A	C	A	A	A	C	A	A	A	A*	A	A	A	A	A*	A*	A	A	A
PERCHLOROETHYLENE	A*	A*	C	X	C	C	A	X	C	C	C	A	C	A	A	A	A	A	A
PHENOL	A	C	A	X	C	A*	A	A	A	C	A	A	X	A	A	A	A	A	A
PHOSPHORIC ACID, 0-80%	A	A*	A	A	A	A	A	A	A	A*	A	A	A*	A	A*	A	A	A	A
PHOSPHORIC ACID, 80-100%	A	C	A	A	A	A	A	A	A	C	A	A	X	A	A*	A	A	A	A
POTASSIUM BICARBONATE	X	A	A	A	A	A	A	X	A	A	X	A	A	A	A*	A	A	A	A
POTASSIUM BROMIDE	A	A	A	A	A	A	A	X	A	A	X	A	A	A	A	A	A	A	A
POTASSIUM CARBONATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
POTASSIUM CHLORATE	A	A	A	A	A	A	A	A	A	A	X	A	A	X	A	A	A	A	A
POTASSIUM CHLORIDE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
POTASSIUM CYANIDE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
POTASSIUM DICHROMATE	A	C	A*	A	A	A	A	X	A	A	A	A	A	A	A	A	C	A	A*
POTASSIUM HYDROXIDE	A	C	A	A	A	A	A*	A	A	A	A	C	A*	A	A*	A	X	A	A
POTASSIUM NITRATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

*For use in applications where the temperature does not exceed 80° F.
**FRP = Fiberglass Reinforced Plastic

MATERIALS

A — Recommended
C — Not recommended
X — Insufficient data
F — Consult factory

SEE KEY ON PAGE 1 FOR PRODUCT SYMBOL IDENTIFICATION

PRODUCT	RYTON (FRP)**	Polyester (FRP)**	Polypropylene (FRP)**	HDPE (High density polyethylene) (FRP)**	Noryl (FRP)**	PVC	HALAR	UHMW Polyethylene Cross Linked Polyethylene	Buna-N	EPDM	Viton	Cork-Nitrile	Hastelloy C	Titanium	316 Stainless Steel	Carbon	Ceramic	Siliconized Graphite
SELF-PRIMING CENTRIFUGAL	H,I,V	H,I,V					B				O	O	O		S,F	F,R	S,F,R	S	S	S
END-SUCTION CENTRIFUGAL		H,I,V					H,I,V				O	O	O		S,F	F,R	S,F,R	S	S	S
HAND PUMP	H	HTD AE						T,U	ADE H	U	T		OG	OG	G			R,F			
QUICK CONNECT COUPLINGS				H								G	G	G				F			
ELBOWS				X																	
STRAINERS						X			X												
PLASTIC PIPE NIPPLES								X													
CHEMICAL																					
POTASSIUM PERMANGANATE	A	C	A	A	A	A	A	A	X	A	A	X	A	A	A	A	A	A	A	A	A
POTASSIUM SULFATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
SOAPS (NEUTRAL)	A	A	A	A	A	A	A*	A	A	A	A	A	A	A	A	A	A	A	A	A	A
SODIUM ACETATE	A	A	A	A	A	A	A	A	A	A	C	A	C	X	A	A	A	A	A	A	A
SODIUM BICARBONATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
SODIUM BISULFATE	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
SODIUM BISULFITE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
SODIUM CARBONATE, 10%	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
SODIUM CHLORATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
SODIUM CHLORIDE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
SODIUM CYANIDE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
SODIUM HYDROXIDE, 20%	A	C	A	A	A	A	A	A	A	A	A*	A	C	A*	A	A	A	A	C	A	A
SODIUM HYDROXIDE, 50%	A	C	A	A	A	A	A	A	A	A	A*	A	C	A*	A	A	A	A	C	A	A
SODIUM HYPOCHLORITE	A	C	A*	A	A	A	A	A	X	A	C	A	A*	X	A	A	C	C	C	A	A
SODIUM NITRATE	A	A	A	A	A	A	A	A	A	A	A*	A	A	A	A	A	A	A	A	A	A
SODIUM SILICATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A
SODIUM SULFATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A
SODIUM SULFIDE	A	A	A	A	A	A	A	A	A	A	C	A	A	X	A	A	A	A	A	A	A
STANNIC CHLORIDE	A	C	A	A	A	A	A	A	A	A	A*	A	A	A	A	A	C	A	A	A	A
STEARIC ACID	X	A*	A*	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
STODDARDS SOLVENT	A	A	X	A	C	C	A	X	A	A	C	A	A	A	A	A	A	A	X	A	A
SULFURIC ACID 0-29%	A	A*	A	A	A	A*	A	A	A	A	C	A*	A	C	A	A	A*	A*	A	A	A
SULFURIC ACID 30-95%	A*	C	A	A	A	A*	A	A	A	A*	C	C	A	C	A	C	C	C	A	A	A*
SULFURIC ACID 96-100%	C	C	A	X	A	A	A	A	A	A*	C	C	A*	C	A	C	F	X	A	A	A*
TANNIC ACID	A	C	A	A	X	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A
TANNING LIQUORS	X	X	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
TARTARIC ACID	A	A	A	A	A	A	A	A	X	A	C	A	A	X	A	A	A	A	A	A	A
TETRACHLOROETHANE	X	C	C	X	C	C	X	X	X	X	C	C	A	C	A	A*	A	A	A	A	A
TETRAHYDROFURANE	A	A*	A	C	C	C	C	X	X	C	C	A	C	X	A	X	A	A	A	A	A
TOLUENE (TOLUOL)	A	C	A	C	C	C	A	A	A	A	C	C	A	A	A	A	A	A	A	A	A
(I,I,I) TRICHLOROETHANE	A	C	A	C	C	C	X	A*	X	X	C	C	A	C	A	A	A	A	A	A	A
TRICHLOROETHYLENE	A	C	A	C	C	C	A	A*	A	A	C	C	A	C	A	A	A	A	A	A	A
TRICRESYLPHOSPHATE	X	X	X	A	X	C	C	X	A	C	A	A	A	X	A	X	A	A	A	A	A
TURPENTINE	A	A	C	C	X	A	A	A	A	A	C	A	A	A	A	X	A	A	A	A	A
UREA	A	C	A	A	X	A	A	X	A	C	X	C	X	A	A	A	A	A	A	A	A
VINEGAR	A	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	A
WHITE LIQUOR (ACID)	X	X	X	X	A	A	A	X	C	A	X	A	A	A	A	X	A	X	A	X	A
XYLENE (XYLOL)	A	C	C	C	C	C	A	A	A	A	C	C	A	A	A	X	A	A	A	A	A
ZINC CHLORIDE	A	C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
ZINC SULFATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

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**FRP = Fiberglass Reinforced Plastic

An Ounce of Prevention . . .

Static Electricity is Blamed for Explosion

"User of hand pump is burned while transferring gasoline from a 55-gallon drum, which had been slushing around in the back of a pickup truck. Explosion took place when the liquid entered the receiving tank. . . . It is presumed that the potential static electricity in the receiving tank was different from that of the holding tank, which was aggravated due to an extremely dry climate. . . ."

Flammable solvents are often purchased in bulk and transferred manually or with motor driven pumps. Care must be taken to neutralize static electricity which may rest as a potential in the storage tank, as well as that which may rest in the receiving tank. The potential of such would, of course, be greatly increased if the liquid were allowed to splash around during movement of the container. Therefore both containers must be satisfactorily grounded, and then each of the containers must be bonded, that is connecting the ground wire from tank to tank so that the potential static electricity is now equalized.

Sparks from Open Motor Cause Explosion

"User of pump is burned while transferring explosive liquids. Accident was caused by the use of an open motor. . . . Explosion resulted and the employee was burned over many parts of his body."

In addition to the proper use of bonding and grounding cables, when motorized pumps are used to transfer flammables and combustibles those of the explosion-proof or air driven type should be used. Electric or air motors are often wired and/or enclosed in such a way that no sparks can be emitted from the motor casing - otherwise sparks from the motor could cause the flammable liquid to flash or explode.

Splashing of Acid Causes Burns

"Operator working with aggressive acids receives skin burns when pump, which was energized, created pressure in a pressure vessel not closed properly, therefore allowing liquid to escape and splashing the operator."

Operator should have checked the instruction manual and followed procedures as set forth by the manufacturer to ensure that the cover of the pressure vessel was securely tightened. Operator could also have prevented bodily injury if he was protected with adequate clothing, which is fabricated to resist such liquids.

Injuries due to splashing of aggressive liquids or explosion of flammables can be avoided by wearing proper clothing, which may include coveralls, apron, shoes, goggles, gloves, face mask and hat.

Each of the above operators could have avoided some bodily harm by wearing outer garments for protection from skin burns.

Consult a Dealer in Your Area for these Garments

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