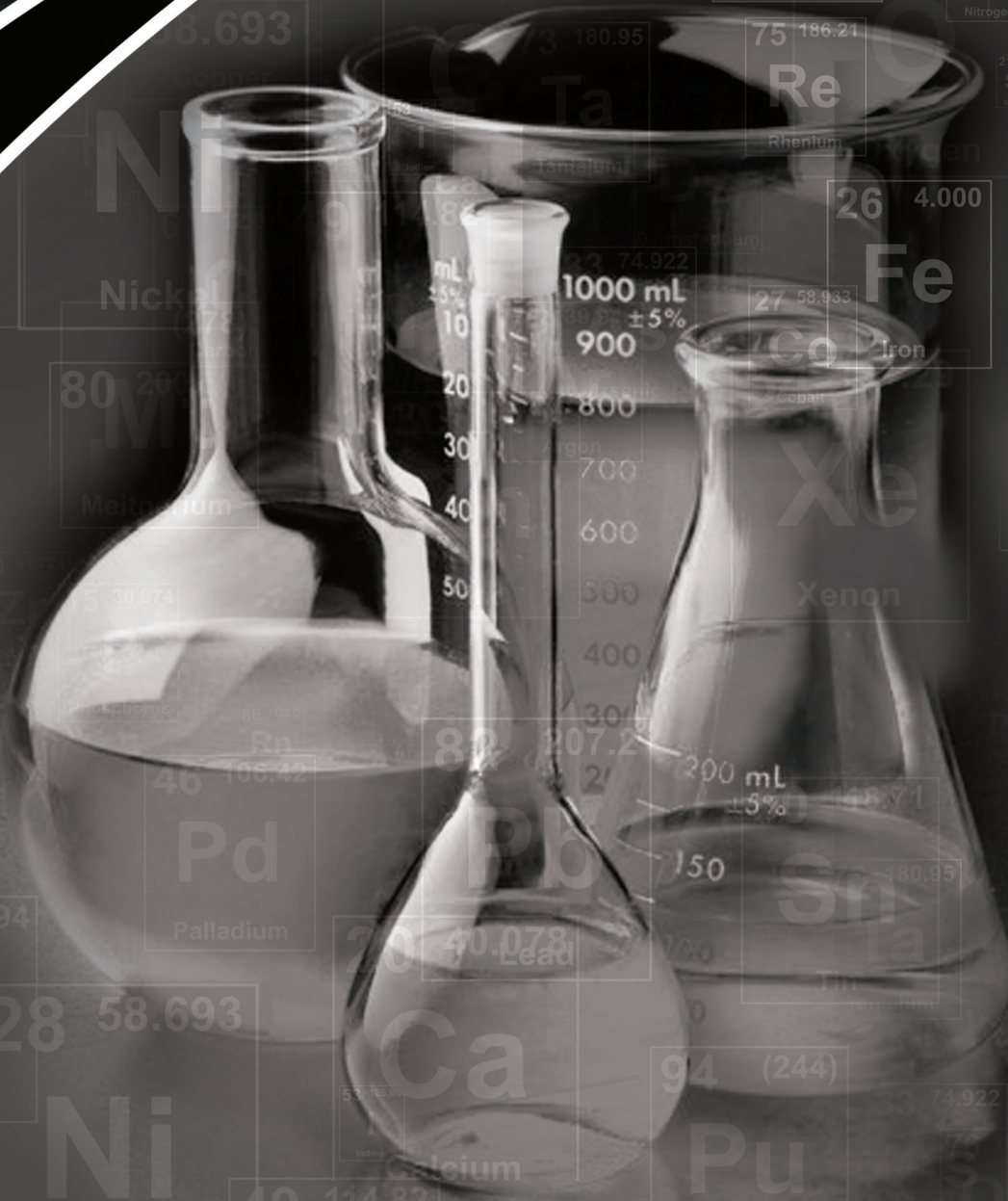


STANDARD
Pump, Inc.



DRUM PUMP CHEMICAL RESISTANCE GUIDE & APPLICATION WORKSHEET

The information in this Chemical Resistance Guide is to be used only as a general guide for proper Drum Pump selection. No warranty is implied or is any guarantee provided. Corrosion rates may vary considerably due to concentration, temperature and the presence of abrasives. Impurities as well as other trace elements commonly found in industrial chemicals may also affect chemical resistance. When compatibility is inconclusive, field testing is highly recommended.


Always consult with a factory certified safety engineer if you have any questions regarding proper pump selection. All testing was conducted at 72° F (22° C) unless stated otherwise.

R = Recommended

M = Minor to moderate, should be field tested

X = Not recommended

- = No data

 = Flammable or explosive




WARNING: Flammable and/or combustible liquids are highlighted in yellow. Only use Explosion Proof motors, suitable metallic pump tubes, discharge hose and nozzles when pumping flammable and/or combustible liquids. The container and pump must be properly grounded and bonded (with the use of ground wire kits) to prevent static discharge and sparking, which could cause electric shock, fire or an explosion. Consult Standard Pump's Operating Instructions for proper grounding and bonding procedures. Always operate the pump in accordance with federal and local safety regulations.

CHEMICAL	POLYPROPYLENE HIGH TEMP Max 170°F (77°C)	POLYPROPYLENE HASTELLOY SHAFT Max 130°F (54°C)	POLYPROPYLENE STAINLESS SHAFT Max 130°F (54°C)	PVDF (KYNAR®) MAX 175°F (80°C)	STAINLESS STEEL 316 MAX 175°F (80°C)	CPVC MAX 175°F (80°C)	ALUMINUM MAX 175°F (80°C)
Acetaldehyde	X	X	X	X	R	X	X
Acetamide	R	R	R	R	R	-	X
Acetate Solvents	X	X	X	X	R	X	-
Acetic Acid (10%–50%)	R	R	R	R	R	M	X
Acetic Acid (80%)	R	R	R	R	R	M	X
Acetic Acid (100%)	X	X	X	X	R	X	X
Acetic Anhydride	X	X	X	X	R	X	X
Acetone	X	X	X	X	R	X	X
Acetyl Chloride	X	X	X	X	-	X	X
Acetylene	X	X	X	X	R	X	X
Alcohols	X	X	X	X	R	X	X
Aluminum Chloride	R	R	X	R	X	R	X
Aluminum Fluoride	R	R	X	R	X	R	-
Aluminum Hydroxide	R	R	R	R	R	X	-
Aluminum Nitrate (concentrated)	R	R	R	R	R	R	X
Aluminum Potassium Sulfate	R	R	R	R	R	M	-
Aluminum Sulfate (concentrated)	R	R	R	R	R	R	X
Amines	-	-	-	-	R	X	-
Ammonia, Aqueous	R	R	R	R	R	X	X
Ammonia, (concentrated)	R	R	R	R	R	X	X
Ammonium Bifluoride	70°F R 21°C	70°F R 21°C	70°F R 21°C	R	R	R	-
Ammonium Carbonate	R	R	R	R	R	R	R
Ammonium Chloride	R	R	X	R	X	R	X
Ammonium Fluoride (10% – 25%)	R	R	X	R	X	R	X
Ammonium Hydroxide	R	R	R	R	R	X	X
Ammonium Nitrate (concentrated)	R	R	R	R	R	R	X
Ammonium Nitrite	70°F R 21°C	70°F R 21°C	-	-	-	-	-
Ammonium Oxalate	R	R	R	-	R	-	-
Ammonium Persulfate	R	R	R	R	R	R	-
Ammonium Phosphate, Dibasic	R	R	R	R	R	R	-
Ammonium Phosphate, Monobasic	R	R	R	R	R	R	-
Ammonium Phosphate, Tribasic	R	R	R	R	R	R	-
Ammonium Sulfate (concentrated)	R	R	R	R	R	R	X








DRUM PUMP CHEMICAL RESISTANCE GUIDE & APPLICATION WORKSHEET

(Cont'd.)

- R = Recommended
- M = Minor to moderate, should be field tested
- X = Not recommended
- = No data
-  = Flammable or explosive




WARNING: Flammable and/or combustible liquids are highlighted in yellow. Only use Explosion Proof motors, suitable metallic pump tubes, discharge hose and nozzles when pumping flammable and/or combustible liquids. The container and pump must be properly grounded and bonded (with the use of ground wire kits) to prevent static discharge and sparking, which could cause electric shock, fire or an explosion. Consult Standard Pump's Operating Instructions for proper grounding and bonding procedures. Always operate the pump in accordance with federal and local safety regulations.

CHEMICAL	POLYPROPYLENE HIGH TEMP MAX 170°F (77°C)	POLYPROPYLENE HASTELLOY SHAFT MAX 130°F (54°C)	POLYPROPYLENE STAINLESS SHAFT MAX 130°F (54°C)	PVDF (KYNAR®) MAX 175°F (80°C)	STAINLESS STEEL 316 MAX 175°F (80°C)	CPVC MAX 175°F (80°C)	ALUMINUM MAX 175°F (80°C)
Ammonium Sulfide (10%)	R	R	R	R	R	-	X
Ammonium Thiocyanate	-	-	-	R	-	-	-
Ammonium Thiosulfate	-	-	-	R	R	-	-
Amyl Acetate 	X	X	X	X	R	X	-
Amyl Chloride 	X	X	X	X	R	X	-
Aniline (concentrated)	X	X	X	X	R	X	X
Aniline Dyes	-	-	-	-	M	-	-
Aniline Hydrochloride	-	-	-	-	X	X	-
Anisole	-	-	-	-	R	-	-
Aqua Regia (80%)	X	X	X	-	X	X	-
Arsenic Acid (10%)	R	R	R	R	R	R	X
Barium Carbonate	R	R	R	R	R	R	-
Barium Chloride (25%)	R	R	X	R	X	R	X
Barium Hydroxide (concentrated)	R	R	R	R	R	R	X
Barium Nitrate 	X	X	X	X	R	X	-
Barium Sulfate	R	R	R	R	R	R	-
Barium Sulfide	R	R	R	R	R	R	-
Benzaldehyde (concentrated)	X	X	X	X	R	X	R
Benzene (concentrated) 	X	X	X	X	R	X	X
Benzene Sulfonic acid	-	-	-	75°F R 24°C	M	X	-
Benzoic Acid (10%)	R	R	R	R	R	R	R
Bismuth Carbonate	R	R	-	R	-	-	-
Boric Acid (concentrated)	R	R	R	R	R	R	X
Brine Acid	-	-	-	R	-	-	-
Bromic Acid (10%)	X	X	X	X	-	X	-
Bromine Liquid (concentrated)	X	X	X	X	X	X	X
Bromine Water	-	-	-	R	M	70°F R 21°C	-
Butane 	X	X	X	X	R	X	X
Butyl Acetate 	X	X	X	X	M	X	X
Butyl Phenol (concentrated)	R	R	R	R	R	-	X
Butylene 	X	X	X	X	R	X	X
Butyric Acid (concentrated)	R	R	R	R	R	X	X
Calcium Bisulfide	R	R	M	R	M	-	-
Calcium Bisulfite	R	R	M	R	M	R	-
Calcium Chlorate (10%)	R	R	R	R	R	-	X
Calcium Chloride (concentrated)	R	R	R	R	R	R	X
Calcium Hydroxide	R	R	R	R	R	R	-
Calcium Hypochlorite (10%)	R	R	X	R	X	R	X


















DRUM PUMP CHEMICAL RESISTANCE GUIDE & APPLICATION WORKSHEET

(Cont'd.)

- R = Recommended
- M = Minor to moderate, should be field tested
- X = Not recommended
- = No data
-  = Flammable or explosive




WARNING: Flammable and/or combustible liquids are highlighted in yellow. Only use Explosion Proof motors, suitable metallic pump tubes, discharge hose and nozzles when pumping flammable and/or combustible liquids. The container and pump must be properly grounded and bonded (with the use of ground wire kits) to prevent static discharge and sparking, which could cause electric shock, fire or an explosion. Consult Standard Pump's Operating Instructions for proper grounding and bonding procedures. Always operate the pump in accordance with federal and local safety regulations.

CHEMICAL	POLYPROPYLENE HIGH TEMP Max 170°F (77°C)	POLYPROPYLENE HASTELLOY SHAFT Max 130°F (54°C)	POLYPROPYLENE STAINLESS SHAFT Max 130°F (54°C)	PVDF (KYNAR®) MAX 175°F (80°C)	STAINLESS STEEL 316 MAX 175°F (80°C)	CPVC MAX 175°F (80°C)	ALUMINUM MAX 175°F (80°C)
Calcium Nitrate (50%)	R	R	R	R	R	R	R
Calcium Sulfate	R	R	R	R	R	R	-
Calcium Sulfite	R	R	M	-	M	-	-
Carbon Disulfide 	X	X	X	X	R	X	-
Carbonic Acid	R	R	R	R	R	R	X
Carbon Tetrachloride (concentrated)	X	X	X	R	R	X	X
Cellosolve®	R	R	M	R	M	X	-
Cetyl Alcohol 	X	X	X	X	R	X	-
Chlorine Liquid (concentrated)	X	X	X	R	X	R	X
Chloroacetic Acid (98%)	R	R	X	R	X	X	X
Chlorobenzene 	X	X	X	X	R	X	-
Chlorobenzyl Chloride	-	-	-	125°F R 52°C	-	X	-
Chloroform (100%)	X	X	X	R	R	X	X
Chlorosulfonic Acid (concentrated)	X	X	X	X	X	X	X
Chromic Acid (30%)	X	X	X	R	X	140°F R 60°C	X
Chromic Acid (50%)	R	R	X	R	X	70°F R 21°C	X
Citric Acid (50%)	R	R	R	R	R	R	X
Citric Oils	R	R	R	-	R	-	-
Copper Chloride	X	X	X	X	X	X	X
Copper Cyanide	R	R	R	R	R	R	-
Copper Nitrate (25%)	R	R	R	R	R	R	X
Copper Sulfate (concentrated)	R	R	R	R	R	R	X
Cresylic Acid	-	-	-	150°F R 66°C	R	X	-
Cyclohexane 	X	X	X	X	R	X	-
Cyclohexanol 	X	X	X	X	M	X	-
Cyclohexanone (concentrated) 	X	X	X	X	M	X	-
Diacetone Alcohol 	X	X	X	X	R	X	-
Dichloro-Ethylene 	X	X	X	X	R	X	-
Diesel Fuels 	X	X	X	X	R	X	R
Diethyl Ether (concentrated) 	X	X	X	X	R	X	-
Diisobutylene 	X	X	X	X	M	X	-
Dimethyl Formamide	X	X	X	X	R	X	X
Diocetyl Phthalate	-	-	-	-	R	-	-
Epichlorohydrine 	X	X	X	X	R	X	-
Ethanolamine 	X	X	X	X	R	X	-
Ether 	X	X	X	X	R	X	X
Ethyl Acetate 	X	X	X	X	R	X	X
Ethyl Chloride 	X	X	X	X	R	X	X
Ethyl Ether 	X	X	X	X	R	X	-













DRUM PUMP CHEMICAL RESISTANCE GUIDE & APPLICATION WORKSHEET

(Cont'd.)

- R = Recommended
- M = Minor to moderate, should be field tested
- X = Not recommended
- = No data
-  = Flammable or explosive




WARNING: Flammable and/or combustible liquids are highlighted in yellow. Only use Explosion Proof motors, suitable metallic pump tubes, discharge hose and nozzles when pumping flammable and/or combustible liquids. The container and pump must be properly grounded and bonded (with the use of ground wire kits) to prevent static discharge and sparking, which could cause electric shock, fire or an explosion. Consult Standard Pump's Operating Instructions for proper grounding and bonding procedures. Always operate the pump in accordance with federal and local safety regulations.

CHEMICAL	POLYPROPYLENE HIGH TEMP Max 170°F (77°C)	POLYPROPYLENE HASTELLOY SHAFT Max 130°F (54°C)	POLYPROPYLENE STAINLESS SHAFT Max 130°F (54°C)	PVDF (KYNAR®) MAX 175°F (80°C)	STAINLESS STEEL 316 MAX 175°F (80°C)	CPVC MAX 175°F (80°C)	ALUMINUM MAX 175°F (80°C)
Ethyl Acetate	 X	X	X	X	R	X	-
Ethyl Chloride	 X	X	X	X	R	X	-
Ethyl Ether	 X	X	X	X	R	X	-
Ethylene Chloride	 X	X	X	X	R	X	-
Ethylene Dichloride	 X	X	X	X	R	X	-
Ethylene Glycol	R	R	R	R	R	M	R
Ethylene Oxide	 X	X	X	X	R	X	-
Fatty Acids (100%)	R	R	R	R	R	R	X
Ferric Chloride (50%)	R	R	X	R	X	R	X
Ferric Nitrate	R	R	R	R	R	R	-
Ferric Sulfate (20%)	-	-	-	-	-	-	-
Ferrous Chloride (50%)	R	R	X	R	X	R	X
Ferrous Sulfate (20%)	R	R	R	R	R	R	X
Fluoboric Acid	R	R	M	140°F R 60°C	M	140°F R 60°C	-
Fluosilicic Acid	R	R	-	M	-	140°F R 60°C	-
Formaldehyde (40%)	 X	X	X	X	R	X	-
Formic Acid (concentrated)	 X	X	X	X	R	X	-
Furfural	X	X	X	X	R	X	R
Gallic Acid (50%)	R	R	R	R	R	M	R
Glue P. V. A.	M	M	M	R	R	R	-
Glycerin	R	R	R	R	R	R	R
Glycolic Acid (37%)	R	R	R	R	R	R	X
Glycolic Acid (70%)	R	R	X	R	X	R	X
Glycols	R	R	R	R	R	R	R
Heptane	 X	X	X	X	R	X	-
Hexane	 X	X	X	X	R	X	-
Hydrobromic Acid (10% – 48%)	X	X	X	X	X	X	X
Hydrochloric Acid (10% – 100%)	R	R	X	R	X	R	X
Hydrofluoric Acid (40% – 70%)	R	R	X	R	X	X	-
Hydrofluosilicic Acid (32%)	R	R	X	R	X	R	X
Hydrogen Fluoride	R	R	R	-	R	-	-
Hydrogen Peroxide (3% – 30%)	R	R	R	R	R	70°F R 21°C	R
Hydrogen Peroxide (90%)	 X	X	X	X	R	X	R
Hydrogen Sulfide	 X	X	X	X	R	X	-
Hypochlorous Acid	-	-	-	R	X	R	-











DRUM PUMP CHEMICAL RESISTANCE GUIDE & APPLICATION WORKSHEET

(Cont'd.)

- R = Recommended
- M = Minor to moderate, should be field tested
- X = Not recommended
- = No data
-  = Flammable or explosive




WARNING: Flammable and/or combustible liquids are highlighted in yellow. Only use Explosion Proof motors, suitable metallic pump tubes, discharge hose and nozzles when pumping flammable and/or combustible liquids. The container and pump must be properly grounded and bonded (with the use of ground wire kits) to prevent static discharge and sparking, which could cause electric shock, fire or an explosion. Consult Standard Pump's Operating Instructions for proper grounding and bonding procedures. Always operate the pump in accordance with federal and local safety regulations.

CHEMICAL	POLYPROPYLENE HIGH TEMP Max 170°F (77°C)	POLYPROPYLENE HASTELLOLOY SHAFT Max 130°F (54°C)	POLYPROPYLENE STAINLESS SHAFT Max 130°F (54°C)	PVDF (KYNAR®) MAX 175°F (80°C)	STAINLESS STEEL 316 MAX 175°F (80°C)	CPVC MAX 175°F (80°C)	ALUMINUM MAX 175°F (80°C)
Iodine	M	M	X	150°F R 66°C	X	X	X
Isopropyl Ether 	X	X	X	X	R	X	X
Jet Fuel (JP3, JP4, JP5) 	X	X	X	X	R	X	X
Lacquer Solvents 	X	X	X	X	R	X	X
Lactic Acid (90%)	R	R	R	R	R	70°F R 21°C	X
Lead Acetate (concentrated)	R	R	R	R	R	R	X
Lead Sulfamate	R	R	-	-	-	-	-
Ligroin 	X	X	X	X	R	X	X
Magnesium Carbonate	R	R	R	R	R	R	X
Magnesium Chloride (concentrated)	R	R	X	R	X	R	X
Magnesium Hydroxide	R	R	R	R	R	R	-
Magnesium Sulfate (concentrated)	R	R	R	R	R	R	R
Maleic Acid (concentrated)	R	R	R	R	R	R	R
Mercuric Chloride	R	R	X	R	X	R	-
Mercuric Cyanide (concentrated)	R	R	R	R	R	R	X
Methyl Acetone 	X	X	X	X	R	X	X
Methyl Chloride	X	X	X	R	R	X	-
Methyl Ethyl Ketone 	X	X	X	X	R	X	X
Methyl Isobutyl Ketone 	X	X	X	X	R	X	X
Methylene Chloride	X	X	X	X	R	X	X
Monoethanolamine 	X	X	X	X	R	X	-
Muriatic Acid (10% – 100%)	R	R	X	R	X	R	X
Naptha 	X	X	X	X	R	X	-
Napthalene 	X	X	X	X	M	X	-
Nickel Chloride (20%)	R	R	X	R	X	R	X
Nickel Sulfate (10%)	R	R	R	R	R	R	X
Nitric Acid (10%)	R	R	R	R	R	R	X
Nitric Acid (30%)	X	X	X	R	R	140°F R 60°C	X
Nitric Acid, (concentrated)	X	X	X	R	R	X	X
Nitric Acid (red fuming)	X	X	X	X	R	X	X
Nitrobenzene (concentrated)	X	X	X	X	R	X	R
Oleic Acid (concentrated)	X	X	X	R	R	M	R
Oleum	X	X	X	R	R	X	X
Oxalic Acid (concentrated)	R	R	X	R	X	R	X
Palmitic Acid	M	M	M	R	R	R	-
Perchloric Acid (70%)	X	X	X	R	X	R	X
Perchloroethylene (concentrated)	X	X	X	R	R	X	X
Petrolatum	-	-	-	R	R	R	-


DRUM PUMP CHEMICAL RESISTANCE GUIDE & APPLICATION WORKSHEET

(Cont'd.)

- R = Recommended
- M = Minor to moderate, should be field tested
- X = Not recommended
- = No data
-  = Flammable or explosive



WARNING: Flammable and/or combustible liquids are highlighted in yellow. Only use Explosion Proof motors, suitable metallic pump tubes, discharge hose and nozzles when pumping flammable and/or combustible liquids. The container and pump must be properly grounded and bonded (with the use of ground wire kits) to prevent static discharge and sparking, which could cause electric shock, fire or an explosion. Consult Standard Pump's Operating Instructions for proper grounding and bonding procedures. Always operate the pump in accordance with federal and local safety regulations.

CHEMICAL	POLYPROPYLENE HIGH TEMP Max 170°F (77°C)	POLYPROPYLENE HASTELLOY SHAFT Max 130°F (54°C)	POLYPROPYLENE STAINLESS SHAFT Max 130°F (54°C)	PVDF (KYNAR®) MAX 175°F (80°C)	STAINLESS STEEL 316 MAX 175°F (80°C)	CPVC MAX 175°F (80°C)	ALUMINUM MAX 175°F (80°C)
Phenol (90%)	X	X	X	X	R	X	R
Phosphoric Acid (30%)	R	R	R	R	R	R	X
Phosphoric Acid (50%)	R	R	R	R	R	R	X
Phosphoric Acid (95%)	X	X	X	R	R	R	X
Plating Solutions, Chrome 40	R	R	R	R	R	R	-
Plating Solutions, Copper	R	R	R	R	R	R	-
Plating Solutions, Gold	R	R	R	-	R	-	-
Plating Solutions, Iron	R	R	R	R	R	R	-
Plating Solutions, Lead	R	R	-	R	-	R	-
Plating Solutions, Nickel	R	R	-	R	-	R	-
Plating Solutions, Silver	R	R	R	R	R	R	-
Plating Solutions, Tin	R	R	R	R	R	R	-
Plating Solutions, Zinc	R	R	R	R	R	R	-
Potassium Bicarbonate	R	R	M	R	M	R	-
Potassium Bromide (concentrated)	R	R	R	R	R	R	X
Potassium Carbonate (concentrated)	R	R	X	R	X	R	X
Potassium Chlorate (50%)	R	R	R	R	R	R	R
Potassium Chloride (concentrated)	R	R	X	R	X	R	X
Potassium Chromate (40%)	R	R	R	R	R	R	R
Potassium Dichromate (40%)	R	R	R	R	R	R	X
Potassium Hydroxide (60%)	R	R	R	R	R	R	X
Potassium Nitrate (24%)	R	R	R	R	R	R	R
Potassium Permanganate (18%)	R	R	R	R	R	R	R
Potassium Sulfate (10%)	R	R	R	R	R	R	R
Propionic Acid (concentrated)	 X	X	X	X	R	X	X
Silicone Oil	R	R	R	R	R	R	R
Silver Nitrate (8%)	R	R	R	R	R	R	X
Soap Solutions	R	R	R	R	R	R	X
Sodium Acetate (10%)	R	R	R	R	R	R	X
Sodium Bicarbonate (10%)	R	R	R	R	R	R	R
Sodium Bisulfate	R	R	R	R	R	R	-
Sodium Bisulfite	R	R	R	R	R	R	-
Sodium Borate	-	-	-	R	M	R	-
Sodium Bromide	R	R	R	R	R	120°F R 48°C	-
Sodium Carbonate (25%)	R	R	R	R	R	R	X
Sodium Chlorate (25%)	R	R	R	R	R	R	X
Sodium Chloride (20%)	R	R	X	R	X	R	X

DRUM PUMP CHEMICAL RESISTANCE GUIDE & APPLICATION WORKSHEET

(Cont'd.)

- R = Recommended
- M = Minor to moderate, should be field tested
- X = Not recommended
- = No data
- = Flammable or explosive



WARNING: Flammable and/or combustible liquids are highlighted in yellow. Only use Explosion Proof motors, suitable metallic pump tubes, discharge hose and nozzles when pumping flammable and/or combustible liquids. The container and pump must be properly grounded and bonded (with the use of ground wire kits) to prevent static discharge and sparking, which could cause electric shock, fire or an explosion. Consult Standard Pump's Operating Instructions for proper grounding and bonding procedures. Always operate the pump in accordance with federal and local safety regulations.

CHEMICAL	POLYPROPYLENE HIGH TEMP Max 170°F (77°C)	POLYPROPYLENE HASTELLOY SHAFT Max 130°F (54°C)	POLYPROPYLENE STAINLESS SHAFT Max 130°F (54°C)	PVDF (KYNAR®) MAX 175°F (80°C)	STAINLESS STEEL 316 MAX 175°F (80°C)	CPVC MAX 175°F (80°C)	ALUMINUM MAX 175°F (80°C)
Sodium Cyanide	R	R	R	R	R	R	-
Sodium Hydroxide (10%)	R	R	R	R	R	R	X
Sodium Hydroxide (30%)	R	R	R	R	R	R	X
Sodium Hydroxide (50%)	R	R	R	R	R	R	X
Sodium Hypochlorite (20%)	X	X	X	R	X	R	X
Sodium Metaphosphate	X	X	X	-	R	-	-
Sodium Nitrate (45%)	R	R	R	R	R	R	R
Sodium Perborate	R	R	X	-	X	-	-
Sodium Phosphate (10%)	R	R	R	R	R	R	R
Sodium Silicate (20%)	R	R	R	R	R	R	X
Sodium Sulfate (50%)	R	R	R	R	R	R	R
Sodium Sulfide (16%)	R	R	R	R	R	R	X
Sodium Thiosulfate (40%)	R	R	R	R	R	R	R
Stannic Chloride	R	R	X	R	X	R	-
Stearic Acid (concentrated)	R	R	R	R	R	M	R
Sulfite Liquors (concentrated)	R	R	R	R	R	-	X
Sulfur Chloride (10%)	X	X	X	R	X	M	X
Sulfur Dioxide	X	X	X	R	R	120°F R 48°C	-
Sulfuric Acid (40%)	R	R	X	R	X	R	X
Sulfuric Acid (80%)	R	R	X	R	X	R	X
Sulfuric Acid (98%)	X	X	X	R	X	R	X
Sulfurous Acid (50%)	R	R	R	R	R	R	X
Tannic Acid (50%)	R	R	R	R	R	R	X
Tartaric Acid (concentrated)	R	R	R	R	R	R	X
Tetrahydrofuran		X	X	X	R	X	X
Tetralin (concentrated)	X	X	X	X	R	-	R
Titanium Tetrachloride	-	-	-	150°F R 66°C	M	X	-
Toluene		X	X	X	R	X	X
Transformer Oil	X	X	X	X	R	-	R
Trichloroacetic Acid (concentrated)	R	R	X	R	X	-	X
Trichloroethane (concentrated)	X	X	X	R	R	M	X
Trichloroethylene (50%)	X	X	X	R	R	X	X
Tricresyl Phosphate (concentrated)	R	R	R	R	R	X	X
Triethylamine		X	X	X	R	X	X
Vinyl Chloride		X	X	X	R	X	X
Xylene (xylol)		X	X	X	R	X	X
Zinc Hydrosulfite	-	-	-	R	R	-	-

DRUM PUMP CHEMICAL RESISTANCE GUIDE & APPLICATION WORKSHEET

(Cont'd.)

TECHNICAL DATA

Standard Formulas

PRESSURE AND HEAD

$$\text{Pressure (lbs. per sq. in.)} = \frac{\text{Head in feet} \times \text{Specific Gravity}}{2.31}$$

$$= \text{Head in feet} \times \text{Specific Gravity} \times .434$$

$$\text{Head in feet} = \frac{\text{Head in feet} \times \text{Specific Gravity}}{\text{Specific Gravity}}$$

TEMPERATURE

$$(1.8 \text{ } ^\circ\text{C}) + 32 = \text{ } ^\circ\text{F}$$

$$.555 (\text{ } ^\circ\text{F} - 32) = \text{ } ^\circ\text{C}$$

$$\text{Degrees Kelvin} - 273.2 = \text{Degrees Centigrade}$$

VELOCITY

$$\text{Pipe Velocity (ft. / sec.)} = \frac{.408 \times \text{GPM}}{(\text{pipe diameter})^2} = \frac{.321 \times \text{GPM}}{\text{pipe area}}$$

$$\text{Velocity Head (feet)} = \frac{(\text{pipe velocity ft./sec.})^2}{64.4}$$

CONVERSION TABLE

PRESSURE IN POUNDS PER SQUARE INCH TO FEET OF HEAD

Pounds Pressure	Ft. of Head	Pounds Pressure	Ft. of Head
1.....	2.31	19.....	43.9
2.....	4.62	20.....	46.2
3.....	6.93	25.....	57.7
4.....	9.24	30.....	69.3
5.....	11.6	35.....	80.8
6.....	13.9	40.....	92.4
7.....	16.2	45.....	103.9
8.....	18.5	50.....	115.5
9.....	20.8	55.....	127
10.....	23.1	60.....	138.6
11.....	25.4	65.....	150.1
12.....	27.7	70.....	161.7
13.....	30	75.....	173.2
14.....	32.3	80.....	184.8
15.....	34.6	85.....	196.3
16.....	37	90.....	207.9
17.....	39.3	95.....	219.4
18.....	41.6	100.....	230.9

CONVERSION FACTORS

FLOW

Lbs of Water / Hr x .002	=	Gal Min
Gal / Min x 500	=	Lbs of Water / Hr
Lbs of Fluid / Hr	=	Gal Min
Specific Gravity		
Liters / Min x .264 x .002	=	Gal / Min (US)
GPM x 3.785	=	Liters / Min
Cu Meters / Hr x 4.4	=	Gal / Min (US)
Gal / Min x .227	=	Cu Meters / Hr
Kg of Water / Min x .264	=	Gal / Min (US)
Gal / Min x 3.8	=	Kg of Water / Min

VOLUME

Lbs of Water x .119	=	Gal
Gal (Brit) x 1.2	=	Gal (US)
Gal x 128	=	Fluid Ounces
Cubic Ft x 7.48	=	Gal
Cubic In x .00433	=	Gal
Gal x 3.785	=	Liters
Liter x .264	=	Gal
Cubic Meters x 264.2	=	Gallons
Cubic Meter x 1000	=	Liter
Liters x 1000	=	Cubic Centimeters
Cubic Centimeters x .0338	=	Fluid Ounces
Fluid Ounces x 29.57	=	Cubic Centimeters

PRESSURE

Ft of Water x .433	=	PSI
PSI x 2.31	=	Ft of Water
Inches Hg x .491	=	PSI
Inches Hg x 1.133	=	Ft of Water
ATM x 14.7	=	PSI
ATM x 33.9	=	Ft of Water
Kg / Sq cm x 14.22	=	PSI
Meters of Water x 1.42	=	PSI
ATM x 760	=	mm Hg
mm Hg x .039	=	Inches Hg
Bar x 14.5	=	PSI
Newton / Meter ² x 1	=	Pascal
PSI x 6.9	=	kPa (Kilopascal)
kPa x .145	=	PSI

LENGTH

Mils x .001	=	Inches
Meters x 3.281	=	Feet
Centi. x .394	=	Inches
Millimeters x .0394	=	Inches
Microns x .00394	=	Inches

MASS

Gal of Water x 8.336	=	Lbs
Cubic Ft of Water x 62.4	=	Lbs
Ounces x .0625	=	Lbs
Kilograms x 2.2	=	Lbs
Lbs x .454 Metric	=	Kilo
Ton x 2205	=	Lbs

METRIC PREFIXES

Mega	=	1,000,000
Kilo	=	1,000
Hecto	=	Inches
Deca	=	100
Deci	=	10
Centi	=	.1
Milli	=	.01
Micro	=	000,001

APPLICATION WORKSHEET

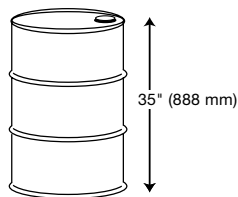
Contact Name: _____ E-mail address: _____
 Company Name: _____ Telephone: _____

Application Info

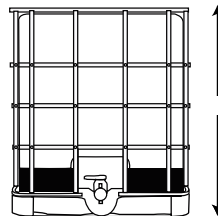
What type of application is this? Sanitary Industrial
 What type of fluid is the customer pumping? _____
 What is the temperature of the fluid? _____ C° F°
 Is this fluid considered to be flammable? No Yes
 What is the viscosity of liquid being pumped (in centipoises)? _____ cps
 Are there any solids present? No Yes If yes, what size? _____

Total Dynamic Info

Vertical: _____ Feet Horizontal: _____ Feet
 Elbows? No Yes If yes, how many? _____
 Valves? No Yes If yes, how many? _____
 Flow Meters? No Yes If yes, how many? _____
 Are you interested in metering? No Yes
 If yes, what type? Totalizer Batch Control System
 If you are batching how many batches per day? _____
 Size per batch? _____
 Is this a continuous flow or intermittent duty application? Continuous Intermittent
 Intended duty cycle (Amount per use, uses per day)? _____
 What type of container is the customer pumping out of?



55 (200L) Gallon Drum



Tote® Tank

Other (Please provide required pump immersion length) _____ Inches Or _____ Millimeters
 Does the container have a hygienic bag liner? (Sanitary applications only) No Yes

Pump Info

Desired Flow Rate? _____ GPM (Gallons Per Minute)
 Type of motor required? Air Electric-115V Electric-230V
 Type of motor enclosure? (electric motors only) Open Drip Proof (IP44) TEFC (IP54) Explosion Proof
 Type of pump? Drum AODD
 Is 3A Certification required? (sanitary applications only) No Yes

Toll Free: 866-558-8611
 Phone: 770-307-1003
 Fax: 770-307-1009

E-mail: info@standardpump.com
 Web: www.standardpump.com

1610 Satellite Blvd., Suite D.
 Duluth, GA 30097