

The information contained in this Drum Pump Chemical Resistance Guide is to be used only as a general guide for proper drum pump tube selection. No warranty is implied nor is any guarantee provided. When compatibility data are inconclusive, field testing is recommended. An asterisk indicates the material is flammable and may only be handled with a stainless steel pump tube and appropriate drive motor which are properly grounded and bonded according to Operating Instructions. Always consult with a safety engineer for proper drive motor selection when pumping flammables. All test data listed is at room temperature (72°F, 22°C) unless otherwise stated.

- R** = Recommended
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CPVC / PVDF - MAX 175°F (80°C)
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* Acetaldehyde	X	X	R	X	Ammonium persulfate	R	R	R	R
Acetamide (PVDF, R to 75°F/24°C)	—	R	R	—	Ammonium phosphate, dibasic	R	R	R	R
* Acetate solvents	X	X	R	X	Ammonium phosphate, monobasic	R	R	R	R
Acetic acid (10% -80%)	R	R	M	R	Ammonium phosphate, tribasic	R	R	R	R
Acetic acid (80%)	—	R	M	X	Ammonium sulfate	R	R	R	R
Acetic acid, glacial (PVDF, R to 120°F/49°C) (PP, R to 100°F/38°C)	R	R	M	X	Ammonium sulfide (PVDF & CPVC / PVDF, R to 125°F/52°C)	—	R	—	R
Acetic anhydride	X	X	R	X	Ammonium thiocyanate	—	R	—	R
* Acetone	X	X	R	X	Ammonium thiosulfate	—	R	R	R
* Acetyl chloride	X	X	M	X	* Amyl acetate	X	X	R	X
* Acetylene	X	X	R	X	* Amyl chloride	X	X	R	X
* Alcohols	X	X	R	X	Aniline (PVDF, R to 75°F/24°C)	M	R	R	X
Aluminum chloride	R	R	X	R	Aniline dyes	—	—	M	—
Aluminum fluoride	R	R	X	R	Aniline hydrochloride (PVDF, R to 75°F/24°C)	—	R	X	X
Aluminum hydroxide	R	R	R	R	Anisole	—	—	R	—
Aluminum nitrate	R	R	R	R	Aqua regia (80%) (PVDF, R to 75°F/24°C)	X	R	X	X
Aluminum potassium sulfate	R	R	R	R	Arsenic acid	R	R	R	R
Aluminum sulfate	R	R	R	R	Barium carbonate	R	R	R	R
Amines	—	—	R	X	Barium chloride	R	R	M	R
* Ammonia, aqua (10%)	X	X	R	X	Barium hydroxide	R	R	R	R
* Ammonia, aqueous	X	X	R	X	* Barium nitrate	X	X	R	X
* Ammonia, (concentrated)	X	X	R	X	Barium sulfate	R	R	R	R
Ammonium bifluoride (PP, R to 70°F/21°C)	R	R	R	R	Barium sulfide	R	R	R	R
Ammonium carbonate	R	R	R	R	Benzaldehyde (PVDF, R to 75°F/24°C)	X	R	R	X
Ammonium chloride	R	R	M	R	Benzene, benzol	X	X	R	X
Ammonium fluoride (10%)	—	R	—	R	Benzene sulfonic acid (PVDF, R to 75°F/24°C)	—	R	M	X
Ammonium fluoride (25%)	R	R	—	R	Benzoic acid	M	R	R	R
Ammonium hydroxide	R	R	R	X	Bismuth carbonate	R	R	—	R
Ammonium nitrate	R	R	R	R	Black liquors	R	R	—	—
Ammonium nitrite (PP, R to 70°F/21°C)	R	—	—	—	Boric acid	R	R	R	R
Ammonium oxalate	R	—	R	—	Brine acid	—	R	—	—

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Bromic acid	R	R	—	R	Cresylic acid (PVDF, R to 150°F/66°C)	—	R	R	M
Bromine liquid (PVDF, R to 150°F/66°C)	—	R	X	X	* Cyclohexane	X	X	R	X
Bromine water	—	R	M	X	* Cyclohexanol	X	X	M	X
* Butane	X	X	R	X	* Cyclohexanone	X	X	M	X
* Butyl acetate	X	X	M	X	Diacetone alcohol	X	X	R	X
Butyl phenol	—	—	—	—	* Dichloroethylene	X	X	X	X
* Butylene	X	X	R	X	Diesel fuels	X	R	R	X
Butyric acid	R	R	R	X	* Diethyl ether	X	X	M	X
Calcium bisulfide	R	R	M	R	* Diisobutylene	X	X	M	X
Calcium bisulfite	R	R	M	R	Dimethyl formamide	—	X	R	X
Calcium chlorate	R	R	R	R	Diethyl phthalate	—	—	R	—
Calcium chloride	R	R	M	R	Dyes	—	—	R	—
Calcium hydroxide	R	R	R	R	* Epichlorohydrine	X	X	R	X
Calcium hypochlorite	R	R	R	R	* Ethanolamine	X	X	R	X
(PVDF & CPVC / PVDF, R to 70°F/21°C)					* Ether	X	X	R	X
Calcium nitrate	R	R	M	R	* Ethyl acetate	X	X	R	X
Calcium sulfate	R	R	R	R	* Ethyl chloride	X	X	R	X
Calcium sulfite	R	—	M	—	* Ethyl ether	X	X	R	X
* Carbon disulfide	X	X	R	X	* Ethylene chloride	X	X	R	X
Carbonic acid	R	R	R	R	* Ethylene dichloride	X	X	R	X
Carbon tetrachloride	X	R	R	X	Ethylene glycol	R	R	R	R
Cellosolve®	R	R	M	X	* Ethylene oxide	X	X	—	X
* Cetyl alcohol	X	X	R	X	Fatty acids	M	M	R	M
Chlorine liquid	X	R	X	X	Ferric chloride	R	R	M	R
Chloroacetic acid	X	X	X	X	Ferric nitrate	R	R	R	R
* Chlorobenzene	X	X	R	X	Ferric sulfate	R	R	R	R
Chlorobenzyl chloride (PVDF, R to 125°F/52°C)	—	R	—	X	Ferrous chloride	R	R	X	R
Chloroform (PVDF, R to 125°F/52°C)	X	R	R	X	Ferrous sulfate	R	R	M	R
Chlorosulfonic acid (100%)	X	X	X	X	Fluoboric acid (CPVC / PVDF, R to 140°F/60°C)	R	R	M	R
Chromic/sulfuric acid	X	X	X	X	Fluosilicic acid	R	M	—	M
Chromic acid (10%)	R	R	R	R	Formaldehyde (PVDF, R to 120°F/49°C)	R	R	R	X
(PVDF & CPVC / PVDF, R to 120°F/49°C)					Formic acid	R	R	R	X
Chromic acid (50%) (PVDF, R to 120°F/49°C)	R	R	M	R	Furfural	X	M	R	X
(CPVC / PVDF, R to 70°F/21°C)					Gallic acid (PVDF & CPVC / PVDF, R to 75°F/24°C)	M	R	M	R
Citric acid	R	R	R	R	Gelatin	X	R	R	R
Citric oils	R	—	R	—	Glue P. V. A.	M	R	R	R
Copper chloride	R	R	X	R	Glycerin	R	R	R	R
Copper cyanide	R	R	R	R	Glycolic acid (PP, R to 70°F/21°C)	R	R	—	R
Copper nitrate	R	R	R	R	(PVDF & CPVC / PVDF, R to 75°F/24°C)				
* Copper sulfate	R	R	R	R	Glycols	—	R	M	R

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POLYPROPYLENE - MAX. 130°F (54°C)	PVDF (KYNAR®) - MAX. 175°F (80°C)	CPVC / PVDF - MAX. 175°F (80°C)	STAINLESS STEEL 316 - MAX. 175°F (80°C)	CPVC / PVDF - MAX. 175°F (80°C)	STAINLESS STEEL 316 - MAX. 175°F (80°C)	PVDF (KYNAR®) - MAX. 175°F (80°C)	POLYPROPYLENE - MAX. 130°F (54°C)
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* Heptane	X	X	R	X	Muriatic acid (37%) (hot)	—	R	X	R
* Hexane	X	X	R	X	* Naptha	X	X	R	X
Hydrobromic acid	M	R	X	R	* Napthalene	X	X	M	X
Hydrochloric acid (20%)	R	R	X	R	Nickel chloride	R	R	R	R
Hydrochloric acid (37%) (cold)	R	R	X	R	Nickel sulfate	R	R	R	R
Hydrochloric acid (37%) (hot)	—	R	X	R	Nitric acid (5-10%)	R	R	R	R
Hydrofluoric acid (20%)	R	R	X	X	Nitric acid (20%)	R	R	R	R
Hydrofluoric acid (50%)	X	R	X	X	Nitric acid, (conc.) (PVDF, R to 120°F/49°C)	X	X	R	X
Hydrofluoric acid (75%)	X	R	X	X	Nitric acid, red fuming	—	X	R	X
Hydrofluoric acid (conc.) (cold)	—	R	—	X	Nitrobenzene (PVDF, R to 75°F/24°C)	M	R	M	X
Hydrofluosilicic acid (20%)	R	R	X	R	Oleic acid	R	R	R	X
Hydrogen fluoride	R	—	R	—	Oleum	X	X	R	X
* Hydrogen peroxide	X	X	R	X	Oxalic acid (cold) (PVDF, R to 125°F/52°C)	R	R	R	R
* Hydrogen sulfide (cold)	X	X	R	X	Palmitic acid	M	R	R	R
* Hydrogen sulfide (hot)	X	X	R	X	Perchloric acid (PVDF, R to 125°F/52°C)	—	R	X	M
Hypochlorous acid	—	R	X	R	Perchloroethylene	X	R	R	X
Iodine (PVDF, R to 150°F/66°C)	M	R	X	M	Petrolatum	—	R	R	R
* Isopropyl ether	X	X	R	X	Phenol (carbolic acid)	R	R	R	R
* Jet fuel (JP3, JP4, JP5)	X	X	R	X	Phosphoric acid (20%)	R	R	M	R
* Lacquer solvents	X	X	R	X	Phosphoric acid (20%-40%)	R	R	R	R
Lactic acid (PVDF & CPVC / PVDF, R to 120°F/49°C)	R	R	R	R	Phosphoric acid (45%)	R	R	M	R
Lead acetate	R	R	M	R	Phosphorus, red	—	—	R	—
Lead sulfamate	R	—	—	—	Phosphorus, yellow	—	—	R	—
* Ligroin	X	X	R	X	Photographic solutions	R	—	R	—
Magnesium carbonate	R	R	R	R	Plating solutions, chrome 40	R	R	R	R
Magnesium chloride	R	R	R	R	Plating solutions, copper	R	R	R	R
Magnesium hydroxide	R	R	R	R	Plating solutions, gold	R	—	R	—
Magnesium sulfate	R	R	R	R	Plating solutions, iron	R	R	R	R
Maleic acid	M	R	R	R	Plating solutions, lead	R	R	—	R
Mercuric chloride (dilute solution)	R	R	X	R	Plating solutions, nickel	R	R	—	R
Mercuric cyanide	R	R	R	R	Plating solutions, silver	R	R	R	R
* Methyl acetone	X	X	R	X	Plating solutions, tin	R	R	R	R
Methyl chloride	X	R	R	X	Plating solutions, zinc	R	R	R	R
* Methyl ethyl ketone	X	X	R	X	Potassium bicarbonate	R	R	M	R
* Methyl isobutyl ketone	X	X	R	X	Potassium bromide	R	R	R	R
Methylene chloride	X	X	R	X	Potassium carbonate	R	R	R	R
Milk	R	R	R	R	Potassium chlorate	R	R	R	R
* Monoethanolamine	X	X	R	X	Potassium chloride	R	R	R	R
Muriatic acid (20%)	R	R	X	R	Potassium chromate	R	R	M	R
Muriatic acid (37%) (cold)	R	R	X	R	Potassium dichromate	R	R	R	R

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Potassium hydroxide (PVDF & CPVC / PVDF, R to 150°F/66°C)	R	R	R	R	Sodium thiosulfate	R	R	R	R
Potassium nitrate	R	R	R	R	Stannic chloride	R	R	X	R
Potassium permanganate	M	R	M	R	Stearic acid	X	R	R	R
Potassium sulfate	R	R	M	R	Sulfate liquors	R	—	X	—
Propionic acid (CPVC / PVDF, R to 140°F/60°C)	—	R	M	R	Sulfur	R	R	R	R
Silicone oil	R	R	R	R	Sulfur chloride (PVDF, R to 75°F/24°C)	X	R	X	R
Silver nitrate	R	R	R	R	Sulfur dioxide	X	R	R	X
Soap solutions	R	R	R	R	Sulfuric acid (10%)	R	R	M	R
Sodium acetate	X	X	R	X	Sulfuric acid (10%-75%)	R	R	M	R
Sodium bicarbonate	R	R	R	R	Sulfuric acid (66° Baumè)	X	R	M	R
Sodium bisulfate	R	R	R	R	(PVDF & CPVC / PVDF, R to 120°F/49°C)				
Sodium bisulfite	R	R	R	R	Sulfurous acid	R	R	M	R
Sodium borate	—	R	M	R	Tannic acid	R	R	R	R
Sodium bromide	R	R	R	R	Tartaric acid	R	R	R	R
Sodium carbonate	R	R	R	R	* Tetrahydrofuran	X	X	R	X
Sodium chlorate (50%)	R	R	R	R	Tetralin	—	—	R	—
Sodium chloride	R	R	R	R	Titanium tetrachloride (PVDF, R to 150°F/66°C)	—	R	M	X
Sodium cyanide	R	R	R	R	* Toluene (toluol)	X	X	R	X
Sodium hydroxide (20%)	R	R	R	R	Transformer oil	R	—	R	—
Sodium hydroxide (50%)	R	X	M	X	Trichloroacetic acid	—	R	X	R
Sodium hydroxide (80%)	R	X	X	R	(PVDF & CPVC/PVDF, R to 75°F/24°C)				
Sodium hypochlorite to 20%	X	R	X	R	1, 1, 1, Trichloroethane	—	—	X	—
Sodium metaphosphate	X	—	R	—	Trichloroethylene	X	R	R	X
Sodium nitrate	R	R	R	R	Tricresylphosphate	—	X	R	X
Sodium perborate	R	—	X	—	Triethylamine (PVDF, R to 125°F/52°C)	—	R	—	X
Sodium phosphate	R	R	M	R	* Vinyl chloride	X	X	—	X
Sodium silicate	R	R	R	R	* Wood oil	X	X	R	X
Sodium sulfate	R	R	R	R	* Xylene (xylol)	X	X	R	X
Sodium sulfide	R	R	R	R	Zinc hydrosulfite	—	R	R	R

Information subject to change without notice.

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