

Drum Hand Pump Chemical Compatibility

Morse 26, 27 and 28 series drum hand pumps

Morse drum pumps differ in their materials of construction. They are constructed using specific polymers and elastomers for resistance to certain types of chemicals.

Use with:

- Chemically compatible liquids up to 80° F (26° C)
- Viscosity not exceeding 2,000 SSU (about as thick as 30 weight motor oil at room temperature). Handle effort increases as viscosity approaches this maximum.
- 27 Series and Model 26 are generally useful with compatible liquids in a mild acidity/alkalinity range of pH 4-9. Avoid stronger acids and caustics.
- 28 Series are useful in a wider pH range.
- Many other chemical characteristics effect choice of pumps

CAUTION: Chemical compatibility of a pump should be CHECKED FOR EACH LIQUID BY CHEMICAL NAME

- No one pump can be universally chemical resistant
- Some blends of chemicals may not be suitable for any of these pumps
- Several different models may be necessary for drums of various liquids
- General guide only. Final determination of suitability for use intended or manner of use is responsibility of the user.
- Chemicals may be hazardous. It is the user's responsibility to take appropriate safety and protective measures.

See pages 2-6 for recommended pump model(s) for specific chemicals

General Guide to Morse Drum Hand Pump Applications						
Pump Model #	Construction (All have some T316SS)	O-Ring Mtl.	Gasket Mtl.	Hose Mtl.	Suction Tube	Compatible Liquids* (General Guide)
26	polyester	viton	cork-nitrile	PVC	polyester	petroleum products, lube oils*
27-1AE	polyester	EPDM	EPDM	EPDM	polyester	methyl alcohol, ethyl alcohol*
27-4AV	polyester	viton	viton	cross linked polyeth.	polyester	some naphthas*, some aromatics*
28-5BV	ryton	viton	viton	cross linked polyeth.	teflon	some chlorinated solvents, some acids, aromatics, xylene*
28-6BE	ryton	EPDM	EPDM	EPDM	teflon	some acids, caustics, ketones, acetates*
* NOTE: General guide only. Final determination of suitability for use intended or manner of use is responsibility of the user. Consult Morse for advice on specific liquids if they are not shown here. Please furnish chemical names.						
** NOTE: Chemicals may be hazardous. It is the user's responsibility to take appropriate safety and protective measures. Specifications subject to change without notice.						

Drum Hand Pump Chemical Compatibility

Recommended Pump Model Number(s)					
Chemical	26	27-1AE	27-4AV	28-5BV	28-6BE
Acetaldehyde	-	yes	-	-	yes
Acetic acid, 20%	-	yes	-	-	yes
Acetic acid, 50%	-	-	-	-	yes
Acetic acid, glacial	-	-	-	-	yes
Acetic anhydride	-	-	-	-	yes
Acetone	-	-	-	-	-
Aluminum chloride	-	-	-	yes	yes
Aluminum flouride	-	-	-	yes	yes
Aluminum sulfate	yes	yes	yes	yes	yes
Ammonia, 30% (cold)	-	-	-	-	yes
Ammonium chloride	yes	yes	yes	yes	yes
Ammonium nitrate	-	yes	-	-	yes
Ammonium persulfate	yes	yes	yes	-	-
Ammonium phosphate	yes	yes	yes	yes	yes
Ammonium sulfate	-	yes	-	-	yes
Amyl acetate	-	yes	-	-	yes
Amyl alcohol	yes	yes	yes	yes	yes
Amyl chloride	-	-	-	yes	-
Aniline	-	-	-	-	yes
Aqua regia	-	-	-	-	-
Arsenic acid	-	-	-	yes	yes
Atrazine	-	yes	-	-	-
Barium chloride	yes	yes	yes	yes	yes
Barium sulfate	yes	yes	yes	yes	yes
Beer	yes	yes	yes	yes	yes
Benzaldehyde	-	yes	-	-	-
Benzine (benzol)	-	-	yes	yes	-
Benzoic acid	-	-	yes	yes	-
Bicep	-	yes	-	-	-
Bladex	-	yes	-	-	-
Borax (sodium borate)	yes	yes	yes	yes	yes
Boric acid	yes	yes	yes	yes	yes
Bromine water	-	-	-	-	-
Bronco	-	yes	-	-	-
Bullet	-	yes	-	-	-
Butyl acetate	-	-	-	-	yes
Butyric acid	-	-	-	yes	yes
Calcium bisulfate	-	-	-	yes	-
Calcium chloride	yes	yes	yes	yes	yes
Calcium hypochlorite, 20%	yes	yes	yes	yes	yes
Calcium sulfate	yes	yes	yes	yes	yes
Carbon tetrachloride	yes	-	yes	yes	-

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Chemical	26	27-1AE	27-4AV	28-5BV	28-6BE
Carbonic acid	-	-	-	yes	yes
Chloroacetic acid	-	-	-	-	yes
Chlorine water	-	-	-	-	-
Chlorobenzine	-	-	-	yes	-
Chloroform (wet)	-	yes	yes	yes	-
Chlorosulfonic acid	-	-	-	-	-
Chromic acid, 10%	-	-	-	yes	-
Chromic acid, 50%	-	-	-	yes	-
Chromic acid, 80%	-	-	-	-	-
Citric acid	yes	yes	yes	yes	yes
Copper chloride	-	-	-	yes	yes
Copper cyanide	-	-	-	yes	yes
Copper nitrate	yes	yes	yes	yes	-
Copper sulfate	yes	yes	yes	yes	yes
Cresylic acid, 50%	yes	yes	yes	-	-
Dual	-	yes	-	-	-
Ethyl acetate	-	yes	-	-	yes
Ethyl alcohol (Ethanol)	yes	yes	yes	yes	yes
Ethyl chloride	-	-	-	yes	yes
Ethylene glycol	yes	yes	yes	yes	yes
Extrazine	-	yes	-	-	-
Fallowmaster	-	yes	-	-	-
Fatty acids	yes	-	yes	-	-
Ferric chloride	-	-	-	yes	yes
Ferric nitrate	yes	yes	yes	yes	yes
Ferric sulfate	-	-	-	-	-
Ferrous chloride	yes	yes	yes	yes	yes
Ferrous sulfate	-	yes	yes	yes	yes
Fluoroboric acid, 30-40%	yes	yes	yes	yes	yes
Fluosilicic acid, 20%	-	-	-	yes	yes
Formaldehyde, 40%	yes	yes	yes	yes	yes
Formic acid	-	-	-	yes	yes
Freon 12 (wet)	yes	yes	yes	yes	yes
Fuel oils	yes	-	yes	yes	-
Furfural	-	yes	-	-	yes
Glycerine (glycerol)	yes	yes	yes	yes	yes
Heptane	yes	-	yes	yes	-
Hexane	yes	-	yes	yes	-
Honcho	-	yes	-	-	-
Hydrobromic acid, 40%	-	-	-	yes	yes
Hydrochloric acid, 0-20%	yes	yes	yes	yes	yes
Hydrochloric acid, 40%	-	-	-	-	-

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Chemical	26	27-1AE	27-4AV	28-5BV	28-6BE
Hydrocyanic acid	yes	yes	yes	-	-
Hydrofluoric acid, 10%	-	-	-	-	-
Hydrofluoric acid, 30%	-	-	-	-	-
Hydrofluoric acid, 50%	-	-	-	-	-
Hydrofluosilicic acid, 20%	-	-	-	yes	yes
Hydrogen peroxide, 30%	-	-	-	yes	yes
Hydrogen peroxide, 50%	-	-	-	-	-
Hydrogen peroxide, 90%	-	-	-	-	-
Hydrogen sulfide (Aq. sol.)	-	yes	-	-	yes
Iodine (in alcohol)	-	-	-	-	-
Isopropyl alcohol	-	-	-	yes	yes
Kerosene	yes	-	yes	yes	-
Ketones	-	yes	-	-	yes
Lacquer thinners	-	-	-	-	-
Lactic acid	yes	yes	yes	yes	yes
Lannate	-	yes	-	-	-
Lasso	-	yes	-	-	-
Lead acetate	-	yes	-	-	yes
Lubricating oil	yes	-	yes	yes	-
Magnesium chloride	yes	yes	yes	yes	yes
Magnesium nitrate	yes	yes	yes	yes	yes
Magnesium sulfate	yes	yes	yes	yes	yes
Maleic acid	-	-	yes	-	-
Methyl alcohol (methanol)	-	yes	-	-	yes
Methyl chloride	-	-	-	yes	-
Methyl ethyl ketone	-	yes	-	-	yes
Methyl isobutyl ketone	-	-	-	-	-
Methylene chloride	-	-	-	-	-
Modown	-	yes	-	-	-
N-Serve 24	-	yes	-	-	-
Naptha	yes	-	yes	yes	-
Napthalene	-	-	-	yes	yes
Nickel chloride	-	-	-	yes	yes
Nickel sulfate	yes	yes	yes	yes	yes
Nitric acid, 10%	-	yes	yes	yes	yes
Nitric acid, 20%	-	-	-	yes	yes
Nitric acid, 40%	-	-	-	-	-
Nitric acid, anhydrous	-	-	-	-	-
Nitrobenzene	-	-	-	-	-
Oil and fats	yes	-	yes	yes	-
Oleic acid	yes	-	yes	yes	-
Oleum	-	-	-	yes	-
Oxalic acid	-	-	-	yes	yes

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Chemical	26	27-1AE	27-4AV	28-5BV	28-6BE
Pathway	-	yes	-	-	-
Phenol	-	-	-	yes	-
Phosphoric acid, 0-80%	yes	yes	yes	yes	yes
Phosphoric acid, 80-100%	-	yes	yes	yes	yes
Potassium bicarbonate	yes	-	yes	-	-
Potassium bromide	yes	-	yes	yes	-
Potassium carbonate	yes	yes	yes	yes	yes
Potassium chlorate	yes	yes	yes	yes	yes
Potassium chloride	yes	yes	yes	yes	yes
Potassium cyanide	yes	yes	yes	yes	yes
Potassium dichromate	-	-	-	yes	yes
Potassium hydroxide	-	-	-	-	yes
Potassium nitrate	yes	yes	yes	yes	yes
Potassium permanganate	-	-	-	yes	-
Potassium sulfate	yes	yes	yes	yes	yes
Propyl alcohol	yes	yes	yes	yes	yes
Ranger	-	yes	-	-	-
Roundup	-	yes	-	-	-
Sevin 4 oil	-	yes	-	-	-
Soaps (neutral)	yes	yes	yes	yes	yes
Sodium acetate	-	yes	-	-	yes
Sodium bicarbonate	yes	yes	yes	yes	yes
Sodium bisulfate	yes	yes	yes	yes	yes
Sodium bisulfite	yes	yes	yes	-	-
Sodium carbonate, 10%	yes	yes	yes	yes	yes
Sodium chlorate	yes	yes	yes	yes	yes
Sodium chloride	yes	yes	yes	yes	yes
Sodium cyanide	yes	yes	yes	yes	yes
Sodium hydroxide, 20%	-	-	-	-	yes
Sodium hydroxide, 50%	-	-	-	-	yes
Sodium hypochlorite	-	-	-	yes	yes
Sodium nitrate	yes	yes	yes	yes	yes
Sodium silicate	yes	yes	yes	yes	yes
Sodium sulfate	yes	yes	yes	yes	yes
Sodium sulfide	-	yes	yes	yes	yes
Stannic chloride	-	-	-	yes	yes
Stearic acid	yes	yes	yes	-	-
Stoddards solvent	-	-	yes	yes	-
Sulfuric acid, 0-30%	yes	yes	yes	-	yes
Sulfuric acid, 30-95%	-	-	-	-	-
Tannic acid	-	-	-	yes	yes
Tanning liquors	-	-	-	-	-
Tartaric acid	-	yes	yes	yes	yes

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Chemical	26	27-1AE	27-4AV	28-5BV	28-6BE
Tetrahydrofuran	-	yes	-	-	yes
Toluene (toluol)	-	-	-	yes	-
Trichloroethylene	-	-	-	yes	-
Tricresylphosphate	-	-	-	-	-
Turpentine	yes	-	yes	yes	-
Urea	-	-	-	yes	yes
Vinegar	-	yes	-	-	yes
White liquor (acid)	-	-	-	-	-
Xylene (xylol)	-	-	-	yes	-
Zinc chloride	yes	yes	yes	yes	yes
Zinc sulfate	yes	yes	yes	yes	yes