

Choosing the Right MASTERFLEX® Tubing

Fluid	Tubing formulation										Pump head material				
	PN	CF	S	T	TU	TC	CD	PFL	V	FP	PSF	PC	PPS	SS	PP
Hydrogen peroxide (dil)	A	A	A	A	A	A	A	A	A	A	A	A	—	B	A
Hydrogen peroxide, 90%	B	D	A	D	D	A	B	A	A	A	A	A	—	B	A
Hypochlorous acid	A	A	D	A	A	A	A	A	A	A	—	—	—	—	—
Iodine solutions	A	C	C	A	A	A	A	—	A	A	—	D	D	D	A
Iodoform	—	—	—	—	—	—	D	—	C	—	—	—	—	A	—
Kerosene	D	D	D	D	B	D	D	A	A	A	A	A	A	A	A
Ketones	D	B	—	D	D	C	C	—	—	A	D	D	A	A	A
Lacquer solvents	B	D	D	D	D	D	D	A	D	A	—	D	—	A	D
Lactic acid, 3–10%	A	A	A	A	A	A	A	A	A	A	A	A	A	B	A
Lead acetate	A	A	D	A	A	A	A	—	D	A	A	—	A	B	A
Linseed oil	C	D	A	D	A	B	A	A	A	A	A	A	A	A	A
Lithium hydroxide	B	A	D	A	A	—	B	—	C	—	—	D	A	B	—
Magnesium chloride	A	A	A	A	A	A	A	A	A	A	A	A	A	B	A
Magnesium sulfate	A	A	A	A	A	A	A	A	A	A	A	A	A	B	A
Malic acid	A	A	B	A	A	A	A	A	A	A	—	—	—	A	B
Manganese salts	A	A	B	A	A	A	A	—	A	A	—	—	—	D	—
Mercury salts	A	A	—	A	A	A	A	—	A	A	—	—	—	B	A
Methane	A	D	D	A	A	A	A	B	A	A [†]	—	—	—	A	B
Methanol (methyl alcohol)	A	—	A	C	C	A	A	A	B	A	D	B	A	A	A
Methyl chloride	C	A	D	D	D	D	D	B	B	A	D	D	A	A	D
Methyl ethyl ketone (MEK)	D	—	D	D	D	C	C	B	D	A	D	D	A	A	A
Mixed acid (40% H ₂ SO ₄ , 15% HNO ₃)	B	—	—	B	D	—	A	—	—	A	D	—	—	B	A
Molybdenum disulfide	—	A	B	—	—	—	A	—	A	—	—	—	—	—	—
Monoethanolamine	C	B	B	D	D	D	D	—	D	A	A	—	A	A	B
Naphtha	D	D	D	D	B	D	D	B	A	B	B	—	A	A	A
Natural gas	A	D	A	A	A	A	A	B	A	A [†]	—	—	—	A	B
Nickel salts	A	A	A	A	A	A	A	A	A	A	A	—	A	B	A
Nitric acid (dil)	A	A	B	A	D	A	A	A	B	A	A	B	A	A	A
Nitric acid (med)	A	—	C	C	D	A	A	A	A	A	C	C	—	A	B
Nitric acid (conc)	D	—	D	D	D	A	A	A	A	A	C	D	D	A	C
Nitrobenzene	D	D	D	D	D	D	D	A	B	A	D	D	A	B	B
Nitrogen oxides	A	A	D	A	A	A	A	—	D	A	—	—	—	—	—
Nitrous acid	A	A	—	A	C	A	A	—	—	A	—	—	—	B	A
Oils, animal	C	B	B	D	B	B	B	—	A	A	—	—	—	A	—
Oils, mineral	D	B	B	C	A	D	D	—	A	A	B	A	A	A	A
Oils, vegetable	C	B	B	D	A	B	B	A	A	A	A	—	A	A	A
Oleic acid	C	A	D	D	B	D	C	A	B	A	A	A	A	B	A
Oxalic acid, cold	B	A	B	C	D	A	A	A	A	A	—	B	A	B	A
Oxygen, gas	A	A	B	A	A	A	A	A	B	A [†]	A	A	—	A	—
Palmitic acid, 100% in ether	C	—	D	D	B	C	C	A	A	A	—	—	—	B	C
Perchloric acid	A	A	D	C	D	A	A	A	A	A	D	D	A	B	C
Perchloroethylene	C	B	D	D	D	D	D	B	A	A	D	D	A	B	D
Phenol (carbolic acid)	A	D	D	B	C	A	A	A	A	A	—	D	—	B	A
Phosphoric acid, 50%	A	A	C	C	A	A	A	A	A	A	A	B	—	A	A
Phthalic acid	A	D	B	D	A	A	A	—	B	A	—	—	—	B	A
Plating solutions	A	A	D	A	D	A	A	—	A	A	—	—	—	—	A
Polyglycol	B	B	A	A	A	—	B	—	A	—	—	—	—	—	—
Potassium carbonate	A	A	—	A	A	A	A	A	A	—	A	—	A	B	A
Potassium chlorate	B	A	B	B	A	—	A	A	A	A	A	—	A	B	A
Potassium hydroxide (med)	A	A	B	B	D	—	A	B	D	A	A	D	A	B	A
Potassium hydroxide (conc)	A	A	C	D	D	—	A	B	D	A	A	D	—	B	B
Potassium iodide	A	A	—	A	A	A	A	—	A	A	—	—	—	A	B
Propanol (propyl alcohol)	C	—	A	D	A	A	A	A	A	A	B	A	A	A	A
Pyridine	C	A	D	D	D	C	C	A	D	A	D	D	A	A	B
Refrigerant	D	C	—	D	D	A	A	A	D	—	A	—	D	A	—
Silicone fluids	A	B	C	B	A	B	A	—	A	A	—	—	A	A	A
Silicone oils	C	B	C	B	A	B	A	—	A	A	—	—	A	A	A
Silver nitrate	A	A	A	A	A	A	A	A	A	A	A	A	A	B	A
Soap solutions	B	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Sodium bicarbonate	A	A	A	A	A	A	A	A	A	A	A	A	A	B	A
Sodium bisulfate	A	A	—	A	A	A	A	A	A	A	A	A	A	D	A
Sodium bisulfite	A	A	A	A	A	—	A	A	A	A	—	A	—	B	A
Sodium borate	A	A	A	A	A	—	A	—	A	A	A	A	A	B	B
Sodium carbonate	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Sodium chlorate	A	A	C	A	A	A	A	—	A	A	A	A	A	B	A
Sodium chloride	A	A	A	A	A	A	A	A	A	A	A	A	A	C	A
Sodium ferrocyanide	A	A	—	B	B	—	A	—	A	A	—	—	—	B	A
Sodium hydrosulfite	B	A	—	A	A	—	A	—	A	—	—	—	—	—	—
Sodium hydroxide (dil)	A	A	A	A	D	A	A	A	A	A	A	D	A	A	A
Sodium hydroxide, 25%	A	B	B	C	D	A	A	—	A	A	A	D	A	B	A
Sodium hydroxide (conc)	—	C	—	C	D	A	A	—	A	A	—	D	A	C	B
Sodium hypochlorite, <5%	A	A	B	A	A	A	A	A	A	A	A	B	A	A	A
Sodium hypochlorite, >5%	A	A	B	A	A	A	A	A	A	A	A	—	A	C	B
Sodium nitrate	A	A	D	A	A	A	A	A	A	A	—	—	A	B	A
Sodium silicate	A	A	A	A	A	—	A	A	A	A	A	—	A	B	A
Sodium sulfide	A	A	A	A	A	A	A	A	A	A	A	—	A	C	A
Sodium sulfite	A	A	A	A	A	A	A	A	A	A	—	D	—	A	B
Steam, up to 40 psi	C	—	A	D	D	—	D	A	B	A [†]	A	A	A	A	—
Stearic acid	C	A	B	A	B	C	C	A	A	A	C	A	—	B	C
Styrene	D	D	D	D	D	D	D	A	A	A	—	D	—	A	—
Sulfuric acid (dil)	A	A	A	D	A	A	A	A	A	A	A	A	A	D	A
Sulfuric acid (med)	A	A	D	A	B	A	A	—	A	A	B	C	A	D	A
Sulfuric acid (conc)	D	A	D	D	D	D	A	C	A	A	D	D	A	C	B
Sulfurous acid	A	A	D	A	A	A	A	—	B	A	A	—	A	B	A
Tannic acid	B	A	B	C	D	A	A	—	A	A	A	—	A	B	A
Tanning liquors	A	B	—	A	A	A	A	—	—	A	—	—	—	A	B
Tartaric acid	A	A	A	A	A	A	A	A	A	A	A	B	A	C	A
Tin salts	A	A	B	A	A	A	A	—	—	A	—	—	—	—	A
Toluene (toluol)	D	D	D	D	D	D	D	A	A	A	D	D	A	A	B
Trichloroacetic acid	B	A	D	A	D	A	A	—	C	A	—	D	A	D	A
Trichloroethylene	D	D	D	D	D	D	D	B	A	A	C	D	A	B	D
Trisodium phosphate	A	A	—	A	A	A	A	—	A	A	—	—	A	B	A
Turpentine	D	D	D	D	B	D	D	A	A	A	—	—	A	A	B
Urea	A	A	B	A	A	A	A	A	—	A	C	D	A	A	A
Uric acid	A	A	—	A	C	A	A	—	—	A	—	—	—	B	—
Water, fresh	A	A	B	A	A	A	A	A	A	A	A	A	A	A	A
Water, salt	A	A	A	A	A	A	A	A	A	A	A	A	A	B	A
Xylene	D	D	D	D	D	D	D	A	A	A	D	D	A	A	C
Zinc chloride	A	A	A	A	A	A	A	A	A	A	A	A	A	D	A

[†]Do not use the L/S® PTFE-tubing pump head with gases due to excessive heat buildup.

Tubing for Food Products

Liquified food products	Norprene® Food	Silicone	Tygon® E-Food	FDA Viton®
Alcohol	B	—	—	A
Beer	B	A	—	A
Brandy	B	—	—	A
Butter	A	B	A	A
Carrot	A	—	A	—
Chocolate syrup	A	—	A	—
Citric acid	A	A	A	A
Coffee	A	A	—	A
Corn oil	—	A	—	A
Corn syrup	—	—	A	A
Fish	—	A	A	—
Fruit juices	A	—	A	—
Liqueurs	B	B	—	A
Mayonnaise	A	—	A	A
Milk	A	A	A	A
Milk of magnesia	A	—	B	—
Molasses	A	—	B	A
Orange syrup	A	B	—	A
Sauerkraut	A	—	B	—
Shortening (Liq)	C	B	—	A
Soft drink concentrate	B	C	—	—
Sugar	A	A	A	A
Tomatoes	A	—	A	A
Vegetable oil	B	B	B	A
Vinegar	A	A	A	A
Whiskey	B	A	B	A
Wines	B	A	B	A

Caution

The ratings in the charts do not reflect the extent to which extraction or leaching may occur or the extent to which fluids may undergo any physical changes in properties or composition as a result of coming into contact with the wetted materials. It is the user's responsibility to test and ensure the suitability of wetted materials for all intended users, including establishing the compatibility of any fluid with the material through which it is coming into contact.

Warning

The information in these tables has been supplied to Cole-Parmer by the tubing manufacturers and is to be used ONLY as a guide to select your tubing. Test fluids and tubing using the tubing test procedure on page 682. Cole-Parmer does not warrant (neither express or implied) that the information in these tables is accurate or complete or that any material is suitable for any purpose.

Danger

Even if tubing passes the immersion test, variations in temperature, pressure, or concentration may cause tubing failure. **SERIOUS INJURY MAY RESULT.** Use suitable guards and/or personal protection when pumping chemicals.