Wallace & Tiernan® Liquid Feed Systems Premia® 75 Solenoid Metering Pumps Chemical Resistance Guide

The following pages are offered as a general guide and indication of the suitability of various elastomers and plastics in use today with a wide range of industrial chemicals. The ratings are based, on published literature of various plastic suppliers and elastomer manufacturers but, in some cases, they are considered opinion of experienced compounders. We cannot guarantee their accuracy nor assume responsibility for use thereof. Several factors must always be considered in using an elastomer or plastic part in service. The most important are:

The Temperature of Service
Higher temperatures increase the effect of chemicals on plastics. The increase varies with the plastic and the chemical. A compound quite stable at room temperature might fail at a higher temperature.

Conditions of Service
A compound that swells might still function as a static seal yet fail in any dynamic application.

The Grade of Plastic
Many types of plastics are available in different grades that vary greatly in chemical resistance.

The Compound Itself
Compounds designed with certain outstanding properties may be poorer in performance with a chemical than one designed especially for fluid resistance.

Caution
It is not recommended that Wallace & Tiernan Products Premia®75 Solenoid Metering Pumps be used to handle flammable liquids. In light of the above factors, it is always best to test.

Legend
A: Excellent
B: Good
C: Good to 60°C
D: Moderate effect use under limited conditions
E: Not recommended
F: Autocatalytic
X: Unknown

Selection Guide

Water Technologies

SIEMENS

Chemical Compatibility Table

Chemical	PVC	PVDF	Glass-filled Polypropylene (GFPPL)	Polyethylene	Styrene-Acry-lonitrile (SAN)	Teflon®	316 SS	EPDM	Ceramic	Hypalon®	Viton®
Acetic Acid, 5%	A	E	B	A	A	A	A	A	A	A	A
Acetic Acid, 80%	E	E	E	A	C	B	E	A	A	C	A
Acetic Acid, Glacial	E	E	E	A	C	B	E	A	A	B	A
Acetic Anhydride	A	E	E	E	A	X	E	A	D	B	A
Aluminium Chloride	A	A	A	A	A	A	A	A	D	A	A
Aluminium Fluoride	A	A	A	A	A	X	A	A	C	A	X
Aluminium Sulfate	A	A	A	A	A	A	A	A	D	A	A
Ammonia, 10%	A	A	A	A	A	B	A	A	A	B	A
Ammonium Chloride	A	A	A	A	A	A	A	A	D	A	A
Ammonium Nitrate	A	A	A	A	A	X	A	A	A	A	A
Ammonium Persulfate	A	A	A	A	A	A	X	A	A	C	A
Ammonium Phosphate	A	A	A	A	A	A	X	A	A	A	A
Ammonium Sulfate	B	B	A	A	A	A	A	A	B	A	A
Amyl Alcohol	B	B	A	X	X	E	A	A	B	A	B
Aniline	E	A	C	D	E	A	A	A	A	B	A
Aqua Ammonia	D	D	A	A	A	D	D	A	A	A	A
Agua Regia	A	E	A	X	D	E	A	E	D	A	B
Arsenic Acid	A	A	A	A	X	A	A	X	A	A	X
Barium Chloride	B	B	A	A	A	X	A	A	C	A	A
Barium Sulfate	A	A	A	A	A	X	A	A	B	A	A
Beer	A	A	A	B	A	A	A	A	A	A	A
Benzaldehyde	E	E	A	C	X	E	A	A	A	A	E
Benzoic Acid	A	A	A	A	A	C	A	B	X	A	E
Bromine Water	E	A	C	A	E	X	X	A	E	D	A
Butyric Acid	D	D	A	A	X	D	A	B	B	A	E
Calcium Bisulfite	A	A	A	A	A	A	X	A	B	E	A
Calcium Hypochlorite	A	D	A	A	C	A	A	A	D	B	A
Calcium Sulfate	A	A	A	A	A	X	A	A	B	B	A
Carbon Tetrachloride	E	A	C	A	C	E	X	A	B	X	A
Carbonic Acid	B	A	A	A	X	A	A	B	X	A	B
Chlorine Dioxide	E	A	D	A	E	X	X	A	E	E	X
Chloroacetic Acid	A	A	A	A	D	X	E	A	E	E	A
Chloroform	D	E	A	E	X	E	A	A	E	A	E
Chlorosulphonic Acid	X	E	C	E	E	E	E	A	D	E	A
Chromic Acid, 10%	A	A	A	A	A	A	A	A	B	E	A
Chromic Acid, 30%	A	A	A	A	A	A	A	A	B	E	A
Chromic Acid, 50%	A	A	E	A	A	B	D	A	C	E	A
Citric Acid	A	A	A	A	A	A	A	B	A	A	A
Copper Chloride	B	B	A	A	A	B	A	A	B	B	A
Copper Cyanide	X	B	A	A	A	X	A	A	A	B	A
Copper Nitrate	B	A	A	A	X	A	A	A	B	A	B
Copper Sulfate	B	B	A	A	A	A	A	A	B	B	A
Cresylic Acid	A	B	A	X	X	X	A	A	E	A	X
Ethyl Chloride	A	E	A	E	X	E	A	A	B	A	D
Fatty Acids	B	A	A	A	E	D	A	A	X	A	X
Ferric Chloride	B	B	A	A	A	A	A	A	E	A	A
Ferric Nitrate	B	A	A	A	E	A	A	B	A	A	B
Ferric Sulfate	B	A	A	A	E	A	A	A	A	A	B

Chemical	PVC	PVDF	Glass-filled Polypropylene (GFPPL)	Polyethylene	Styrene-Acry-lonitrile (SAN)	Teflon	316 SS	EPDM	Ceramic	Hypalon®	Viton®
Ferrous Chloride	B	B	A	A	A	A	A	A	E	B	A
Ferrous Sulfate	B	B	A	A	A	B	A	A	D	B	A
Fluoboric Acid	B	X	A	A	A	E	B	A	B	B	A
Fluosilic Acid	B	X	A	A	A	E	B	A	B	B	E
Formaldehyde, 40%	B	E	B	A	A	B	A	A	A	A	A
Formic Acid	E	C	A	A	B	E	A	B	B	A	B
Freon 12 (Wet)	E	A	C	B	A	X	X	A	E	D	A
Furfural	E	E	B	E	X	X	A	B	D	A	X
Glycerine (Glycerol)	B	B	A	A	A	X	A	A	A	A	A
Hydrobromic Acid, 20%	C	A	A	A	A	A	B	X	A	E	B
Hydrochloric Acid, 0-25%	A	B	A	A	A	A	B	A	A	E	C
Hydrofluoric Acid, 10%	E	A	A	C	A	A	A	B	A	C	B
Hydrofluoric Acid, 30%	E	A	A	C	A	B	D	E	A	C	C
Hydrofluoric Acid, 60%	E	D	A	D	A	B	E	E	A	C	D
Hydrofluosilicic Acid, 20%	E	X	B	A	A	A	A	D	A	B	A
Hydrogen Peroxide, 30%	X	A	A	A	A	A	B	B	A	B	D
Hydrogen Peroxide, 50%	X	A	A	A	A	A	B	B	A	B	D
Hydrogen Peroxide, 90%	X	D	A	E	A	X	D	E	A	B	E
Hydrogen Sulfide, AQ. SOL.	X	B	B	C	A	A	X	B	A	B	A
Keytones	E	E	A	E	X	E	A	A	X	A	E
Lactic Acid	B	B	A	A	A	E	A	B	A	A	B
Lead Acetate	A	A	A	A	X	A	A	A	A	A	E
Lubricating Oil	D	A	C	B	C	D	A	A	A	E	A
Magnesium Chloride	A	A	A	A	A	A	A	A	B	A	A
Magnesium Nitrate	A	A	A	A	A	X	A	A	A	B	A
Magnesium Sulfate	A	A	A	A	A	A	A	A	A	A	A
Maleic Acid	A	A	A	A	X	E	A	B	E	A	A
Methylene Chloride	E	D	E	B	E	X	E	A	A	E	A
Napthalene	D	E	A	C	X	E	A	A	E	A	E
Nickel Chloride	B	B	A	A	A	A	A	A	B	A	A
Nickel Sulfate	B	A	A	A	A	A	A	B	A	A	B
Nitric Acid, 10%	A	A	A	A	A	A	C	A	C	D	A
Nitric Acid, 20%	A	A	A	A	A	B	E	A	B	E	A
Nitric Acid, 50%	D	A	A	A	C	C	E	A	C	E	A
Nitric Acid, Anydrous	E	E	E	B	E	E	E	A	B	X	A
Nitro Benzene	A	E	B	C	X	E	A	B	E	A	E
Oil and Fats	A	A	A	A	X	X	A	A	E	A	X
Oleic Acid	D	A	A	C	E	E	A	B	D	A	D
Oleum, 25%	A	E	E	X	E	E	A	X	X	A	E
Oxalic Acid	A	A	A	A	B	D	A	C	B	A	A
Phenol	C	A	B	C	A	A	B	D	A	E	A
Phosphoric Acid, 0-50%	A	A	A	A	A	A	A	B	A	B	D
Phosphoric Acid, 50-100%	A	A	B	B	A	B	B	D	A	B	E
Polymer	A	A	A	A	A	A	A	A	A	A	A
Polyphosphate	A	A	A	A	A	X	A	A	A	A	A
Potassium Bicarbonate	A	B	B	A	A	A	B	A	A	B	A
Potassium Bromide	B	B	A	A	A	B	A	A	B	A	A
Potassium Carbonate	B	B	A	A	A	B	A	A	B	A	A

Chemical	PVC	PVDF	Glass-filled Polypropylene (GFPPL)	Polyethylene	Styrene-Acrylonitrile (SAN)	Teflon®	316 SS	EPDM	Ceramic	Hypalon®	Viton®
Potassium Chlorate	B	B	A	A	A	B	A	A	A	B	A
Potassium Chloride	B	B	A	A	A	A	A	A	D	A	A
Potassium Cyanide	B	B	A	A	A	X	A	A	A	B	A
Potassium Dichromate	A	B	B	A	A	A	B	A	A	A	B
Potassium Hydroxide	B	B	A	A	A	A	E	A	B	D	E
Potassium Nitrate	B	B	A	A	A	A	A	A	B	B	A
Potassium Permanganate	A	B	B	A	A	A	A	A	A	B	B
Potassium Sulfate	B	B	A	A	A	A	A	A	B	A	A
Soaps	A	A	A	C	A	A	A	A	A	B	B
Sodium Acetate	A	E	A	A	A	A	A	A	B	A	A
Sodium Aluminate	A	A	D	A	A	A	A	A	A	A	A
Sodium Bicarbonate	B	B	A	A	A	A	A	A	B	A	A
Sodium Bisulfate	B	B	A	A	A	A	A	A	A	A	A
Sodium Carbonate	B	B	A	A	A	A	A	A	B	B	A
Sodium Chlorate	B	B	A	A	A	A	A	A	B	B	A
Sodium Chloride	B	B	A	A	A	A	A	A	B	B	A
Sodium Cyanide	B	B	A	A	A	X	A	A	A	B	A
Sodium Hydroxide, 20%	B	B	E	A	A	A	A	B	A	A	B
Sodium Hydroxide, 50%	B	B	E	A	A	A	B	B	A	A	C
Sodium Hypochlorite	A	B	A	A	C	A	A	A	D	B	A
Sodium Nitrate	B	B	A	A	A	A	A	A	A	A	A
Sodium Silicate	A	A	A	A	A	A	A	A	B	A	A
Sodium Sulfate	B	B	A	A	A	A	A	A	A	A	A
Sodium Sulfide	B	B	A	A	A	A	A	A	B	B	A
Stannic Chloride	D	B	A	A	A	A	A	A	E	D	A
Stearic Acid	A	A	A	C	E	E	A	A	D	A	D
Stoddards Solvent	X	A	E	X	X	X	X	A	A	E	X
Sulfuric Acid, 0-10%	D	A	A	A	A	A	E	A	E	D	A
Sulfuric Acid, 10-75%	A	D	A	A	A	A	C	E	A	E	E
Sulfuric Acid, 75-95%	A	D	A	C	A	C	C	E	A	E	E
Sulfuric Acid, 95-100%	A	D	A	D	A	C	C	E	A	B	E
Tannic Acid	B	A	A	A	B	X	A	B	B	A	B
Tanning Liquors	X	A	A	A	A	A	X	A	A	E	A
Tartaric Acid	B	A	A	A	X	E	A	B	D	A	B
Trichloroethylene	E	A	E	A	C	E	X	A	B	E	A
Tricresylphosphate	E	A	E	A	X	X	X	A	A	B	A
Urea	A	A	A	X	X	A	B	X	A	A	E
Vinegar	B	A	A	A	A	A	A	A	A	A	B
White Liquor	X	A	A	A	X	X	E	A	A	X	A
Zinc Chloride	B	A	A	A	A	A	A	B	A	A	B
Zinc Orthophosphate	A	A	A	A	A	A	X	A	A	X	X
Zinc Sulfate	A	A	A	A	A	A	A	A	A	A	A

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