

### Falk Wrapflex Coupling – Poly-Ether Urethane Element – Fluid/Chemical Compatibility

Rating Key:

- 1 = Excellent
- 2 = Good
- 3 = Fair
- 4 = Poor

The following fluid/chemical resistance data should be used as a guide only – testing may be necessary to determine compatibility. The total environment, including temperature, must be considered when determining acceptable operating conditions. Refer to Falk for more detailed fluid resistance information.

**CAUTION:** Cross-reference both the **element** and **nylon cover** fluid resistance data. A fluid may be compatible with one component but not the other.

The ratings are based on percentage volume increase of the element when immersed for 7 days at 24°C (75°F). Generally, an “Excellent” or “Good” rating will yield satisfactory performance and a “Fair” or “Poor” rating will result in unsatisfactory performance. However, all operating conditions must be considered when assessing compatibility. For instance, higher temperatures (above 24°C [75°F]) will typically result in greater volume increases. If possible, test one coupling in actual service conditions to determine if the element will perform satisfactorily.

**TABLE 1 — Fluid/Chemical Compatibility** (Continued on Page 2)

Poly-Ether Urethane Element		Poly-Ether Urethane Element		Poly-Ether Urethane Element	
Chemical	Rating	Chemical	Rating	Chemical	Rating
Acetaldehyde	4	Calcium Hydroxide (Lime + H2O)	1	Hexane	1
Acetic Acid	4-3	Calcium Nitrate	2	Hydrazine	4
Acetic Anhydride	4	Calcium Sulfate	2	Hydrobromic Acid	2
Acetone	4	Carbon Dioxide	1	Hydrocarbon Oil	1
Acetyl Bromide	3-4	Carbon Disulfide	2-3	Hydrochloric Acid, 20%	2
Acetyl Chloride	3-4	Carbon Monoxide	1	Hydrofluoric Acid	2-3
Acetylene	2-3	Carbon Tetrachloride	3	Hydrogen	1-2
Adipic Acid	1	Chloroacetic Acid	3-4	Hydrogen Peroxide	2
Aluminum Chloride	2	Chloroform	4	Hydrogen Sulfide	3-4
Aluminum Sulfate	2	Chromic Acid	3-4	Hydroiodic Acid	2
Aluminum Sulfide	2	Chromium Potassium Sulfate	2	Iodine Solution	1
Ammonia	2	Citric Acid	2	Isooctane	2
Ammonium Acetate	3-4	Cottonseed Oil	1	Isopropyl Alcohol (Isopropanol)	2-3
Ammonium Carbonate	2	Cresol (meta)	4	Isopropyl Ether	2
Ammonium Hydroxide	1-2	Cupric Chloride	1	JP-4 Oil	2-3
Ammonium Nitrate	2	Cupric Nitrate	2	JP-5 & JP-6 Oil	4
Ammonium Persulfate	2	Cupric Sulfate	2	Kerosene	2
Ammonium Sulfate	2	Cyclohexanone	4	Lactic Acid	2
Ammonium Sulfide	2	Cyclohexane	2	Lead Acetate	2
Ammonium Thiocyanate	2	Dibutyl Phthalate	3-4	Linseed Oil	2
Amyl Acetate	4	Dibutyl Ether	2	Lubricating Oil	2
Amyl Alcohol	3	Dichlorobenzene (Ortho)	3	Magnesium Hydroxide	1
Amyl Chloride	3	Dodecyl Mercaptan	2-3	Magnesium Salts	2
Aniline	4	Diester Oil	2	Malic Acid	3-4
Aniline Hydrochloride	4	Dimethyl Acetamide	4	Mercury	1-2
Animal Fats & Oils	2-3	Dimethyl Formamide	4	Methyl Alcohol (Methanol)	4
Antimony Salts	2	DTE Oil (heavy, med.)	2	Methyl Ethyl Ketone	4
Aqua Regia	4	Ether	2-3	Methylene Chloride	4
Arsenic Salts	2-1	Ethyl Acetate	4	MIL-D-5606 Oil	3
ASTM Oil #1	1-2	Ethyl Alcohol (Ethanol)	3	MIL-L-7808	1-2
ASTM Oil #2	2	Ethyl Bromide	3	Mineral Oil	1
ASTM Oil #3	2	Ethyl Chloride	3	Mobil Arctic Oil	1
ASTM Ref Fuel A	1	Ethylene Glycol	2	Napthalene	2
ASTM Ref Fuel B	2	Eso #90 Lube Oil	1	Natural Gas	2
Atlantic Oil	1	Ferric Chloride	2	Nickel Salts	3
Barium Carbonate	2	Ferric Nitrate	2	Nitric Acid	4
Barium Hydroxide	1	Ferrous Chloride	2	Nitrobenzene	4
Benzaldehyde	3-2	Ferrous Sulfate	2	Nitrogen	1
Benzene	4	Formaldehyde	3	Oleic Acid	1-2
Benzene (Gasoline)	2-3	Formic Acid	3-4	Oxalic Acid (5%)	1
Benzoic Acid	2-3	Freon, 12 or 113	1	Oxygen	1
Boric Acid	1	Fuel Oil	2	Ozone	1
Bromine	2-3	Gasoline	2	Palmitic Acid	1
Bunker Oil	1-2	Glycerine (Glycerol)	1	Paints	1-2
Butane	1	Glycolic Acid	2	Perchloric Acid	4
Butyl Acetate	4	Greases	1-2	Perchloroethylene	3-4
Butyl Alcohol	2	Heptane	1	Petroleum	1-2
Calcium Carbonate	2				
Calcium Chloride	1				

**TABLE 1 — Fluid/Chemical Compatibility**  
(Cont. from Page 1)

Poly-Ether Urethane Element	
Chemical	Rating
Phenol (Carbolic Acid)	4
Phosphoric Acid (dil.)	2-3
Phosphoric Acid (conc.)	3
Potassium Cyanide	1
Potassium Salts	2
Propane	2
Propyl Alcohol	2-3
Propylene Glycol	2
Pydraul Oil	4
SAE #10 Oil	1
Seawater	1-2
Silicic Acid	2-1
Skydrol Oil (500)	4
Silver Nitrate	2
Soap	2-3
Sodium Acetate	1-2
Sodium Bicarbonate	2
Sodium Bisulfate	2
Sodium Borate	2
Sodium Carbonate	2
Sodium Chlorate	2
Sodium Chloride	2
Sodium Cyanide	2
Sodium Dichromate	2
Sodium Ferrocyanide	2
Sodium Flouride	2
Sodium Hydrosulfite	2
Sodium Hydroxide, 45%	2
Sodium Nitrate	2
Sodium Silicate	1-2
Sodium Sulfate	2
Sodium Sulfide	2
Sodium Hypochlorite, 5% (bleach)	4
Sperry Oil	2
Steam	4
Stoddard Solvent	1
Styrene	2
Sulfur Dioxide	2
Sulfuric Acid, 10-50%	3-4
Tannic Acid, 10%	1
Tartaric Acid	1
Tin Salts	2
Titanium Salts	2
Toluene	4
Transformer Oil	2-3
Trichloroacetic Acid	4
Trichloroethylene	4
Tricresyl Phosphate	3-4
Triethanol Amine	2
Trisodium Phosphate	2
Turpentine	3
Urea	2
Varnish	2
Vegetable Oil	1
Water	2
Xylene	3
Xylol	3-4
Zinc Chloride	2
Zinc Sulfate	2

**Falk Wrapflex Coupling – Nylon Cover – Fluid/Chemical/Compatibility**

The following fluid/chemical resistance data should be used as a guide only – testing may be necessary to determine compatibility. The total environment, including temperature, must be considered when determining acceptable operating conditions. Refer to Falk for more detailed fluid resistance information.

**CAUTION:** Cross-reference both the **cover** and **element** fluid resistance data. A fluid may be compatible with one component but not the other.

**TABLE 2 — Acceptable, but not recommended for maximum service life**

Aldehydes (most)
Aromatic Materials (most)
Esters (most)
Chlorinated Aliphatic (most)
Ketones
Alcohols
Chloroform
Ethylene Dichloride
Methylene Chloride

**TABLE 3 — Unacceptable – Do No Use**

Calcium Bromide *
Calcium Chloride *
Calcium Thiocyanate *
Floualcohols
Mineral acids (strong)
Oxidizing agents (strong, high temperature)
Phenols
Potassium Thiocyanate *
Strong Acids
Thichloroacetic Acid
Zinc Chloride *

\* High concentration (50 – 80%) and elevated temperature.