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 the Factory 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	
Chemical	**Rating**
Acetaldehyde	4
Acetic Acid	4-3
Acetic Anhydride	4
Acetone	4
Acetyl Bromide	3-4
Acetyl Chloride	3-4
Acetylene	2-3
Adipic Acid	1
Aluminum Chloride	2
Aluminum Sulfate	2
Aluminum Sulfide	2
Ammonia	2
Ammonium Acetate	3-4
Ammonium Carbonate	2
Ammonium Hydroxide	1-2
Ammonium Nitrate	2
Ammonium Persulfate	2
Ammonium Sulfate	2
Ammonium Sulfide	2
Ammonium Thiocyanate	2
Amyl Acetate	4
Amyl Alcohol	3
Amyl Chloride	3
Aniline	4
Aniline Hydrochloride	4
Animal Fats & Oils	2-3
Antimony Salts	2
Aqua Regia	4
Arsenic Salts	2-1
ASTM Oil #1	1-2
ASTM Oil #2	2
ASTM Oil #3	2
ASTM Ref Fuel A	1
ASTM Ref Fuel B	2
Atlantic Oil	1
Barium Carbonate	2
Barium Hydroxide	1
Benzaldehyde	3-2
Benzene	4
Benzene (Gasoline)	2-3
Benzoic Acid	2-3
Boric Acid	1
Bromine	2-3
Bunker Oil	1-2
Butane	1
Butyl Acetate	4
Butyl Alcohol	2
Calcium Carbonate	2
Calcium Chloride	1

Poly-Ether Urethane Element	
Chemical	**Rating**
Calcium Hydroxide (Lime + H2O)	1
Calcium Nitrate	2
Calcium Sulfate	2
Carbon Dioxide	1
Carbon Disulfide	2-3
Carbon Monoxide	1
Carbon Tetrachloride	3
Chloroacetic Acid	3-4
Chloroform	4
Chromic Acid	3-4
Chromium Potassium Sulfate	2
Citric Acid	2
Cottonseed Oil	1
Cresol (meta)	4
Cupric Chloride	1
Cupric Nitrate	2
Cupric Sulfate	2
Cyclohexanone	4
Cyclohexane	2
Dibutyl Phthalate	3-4
Dibutyl Ether	2
Dichlorobenzene (Ortho)	3
Dodecyl Mercaptan	2-3
Diester Oil	2
Dimethyl Acetamide	4
Dimethyl Formamide	4
DTE Oil (heavy, med.)	2
Ether	2-3
Ethyl Acetate	4
Ethyl Alcohol (Ethanol)	3
Ethyl Bromide	3
Ethyl Chloride	3
Ethylene Glycol	2
Esso #90 Lube Oil	1
Ferric Chloride	2
Ferric Nitrate	2
Ferrous Chloride	2
Ferrous Sulfate	2
Formaldehyde	3
Formic Acid	3-4
Freon, 12 or 113	1
Fuel Oil	2
Gasoline	2
Glycerine (Glycerol)	1
Glycolic Acid	2
Greases	1-2
Heptane	1

Poly-Ether Urethane Element	
Chemical	**Rating**
Hexane	1
Hydrazine	4
Hydrobromic Acid	2
Hydrocarbon Oil	1
Hydrochloric Acid, 20%	2
Hydroflouric Acid	2-3
Hydrogen	1-2
Hydrogen Peroxide	2
Hydrogen Sulfide	3-4
Hydrolodic Acid	2
Iodine Solution	1
Isooctane	2
Isopropyl Alcohol (Isopropanol)	2-3
Isopropyl Ether	2
JP-4 Oil	2-3
JP-5 & JP-6 Oil	4
Kerosene	2
Lactic Acid	2
Lead Acetate	2
Linseed Oil	2
Lubricating Oil	2
Magnesium Hydroxide	1
Magnesium Salts	2
Malaic Acid	3-4
Mercury	1-2
Methyl Alcohol (Methanol)	4
Methyl Ethyl Ketone	4
Methylene Chloride	4
MIL-D-5606 Oil	3
MIL-L-7808	1-2
Mineral Oil	1
Mobil Arctic Oil	1
Napthalene	2
Natural Gas	2
Nickel Salts	3
Nitric Acid	4
Nitrobenzene	4
Nitrogen	1
Oleic Acid	1-2
Oxalic Acid (5%)	1
Oxygen	1
Ozone	1
Palmitic Acid	1
Paints	1-2
Perchloric Acid	4
Perchloroethylene	3-4
Petroleum	1-2

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 Acic, 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 the Factory 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 ★
Flouralcohols
Mineral acids (strong)

Oxidizing agents (strong, high temperature)
Phenols
Potassium Thiocyanate ★
Strong Acids
Thichloroacetic Acid
Zinc Chloride ★

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

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