

**MATERIAL COMPATIBILITY KEY:**

1. Excellent 2. Acceptable with Limited Service Life 3. Not Recommended 0. No Information, Test Before Using. Consult factory for other than room temperature applications.

**EFFUSION COMPATIBILITY KEY:**

**A.** Will effuse and can displace breathable air in a confined space. **B.** Potential to effuse and, with atmosphere, form chemicals that can corrode braid and fitting material. Especially significant when "vapor phase" exists, I.E., when they reach their boiling point of approximately 125° F at atmospheric pressure. Hose assemblies should be used in well-vented areas only. **C.** Potential for effusion and can cause corrosion of the hose braid reinforcement and fitting material. These chemicals are all gases at atmospheric pressure and at temperatures of 56° F or lower. N/C. No change.

**ELECTROSTATIC DISCHARGE:**

In many industrial plants, there is an awareness that electrostatic discharge can be a hazard. This discharge is the result of two unlike materials coming into contact. This contact allows electrons from one material to move across its boundary and associate with the other. For example, electrons from steam can align with the wall of a PTFE hose. If both materials are good conductors of electricity, the positive and negative electrons flow back and forth between the chemical and hose wall, keeping them in balance. However, if one or both of them are insulators, the balance will be disrupted. As a result, chemicals such as gasoline or steam flowing through a white PTFE hose will deposit electrons on the wall of the innercore, building up static charge. When the charge exceeds the dielectric strength of the hose wall, dielectric breakdown occurs.

CHEMICAL	PTFE	FITTING MATERIAL				EFFUSION
		CS	304SS	316SS	BRASS	
Acetaldehyde	1	1	1	1	1	B
Acetic Acid Glacial	1	0	2	1	3	
Acetic Acid 30%	1	0	2	1	3	
Acetic Anhydride	1	3	2	2	3	
Acetone	1	1	1	1	1	
Acetylene	1	0	2	2	2	C
Acrylonitrile	1	0	2	2	2	
Alum Ammonium or Potassium	1	3	3	2	2	
Aluminum Acetate	1	0	1	1	3	
Aluminum Bromide	1	3	2	2	3	
Aluminum Chloride	1	3	2	2	3	
Aluminum Flouride	1	3	2	2	3	
Aluminum Hydroxide	1	0	1	1	1	
Aluminum Nitrate	1	3	1	1	0	
Aluminum Salts	1	0	2	2	0	
Aluminum Sulfate	1	3	3	2	3	
Ammonia, Anhydrous	1	1	1	1	0	
Ammonia, Aqueous	1	0	1	1	3	
Ammonium Carbonate	0	1	1	1	0	
Ammonium Chloride	1	0	2	2	3	
Ammonium Hydroxide	1	2	1	1	3	
Ammonium Metaphosphate	1	1	1	1	0	
Ammonium Nitrate	1	1	1	1	3	
Ammonium Nitrite	0	0	1	1	3	
Ammonium Persulfate	3	0	1	1	0	

CHEMICAL	PTFE	FITTING MATERIAL				EFFUSION
		CS	304SS	316SS	BRASS	
Ammonium Phosphate	1	3	2	1	0	
Ammonium Sulphate	1	3	1	1	3	
Ammonium Thiocyanate	1	3	3	1	0	
Amyl Acetate	1	3	1	1	2	
Amyl Alcohol	1	2	1	1	1	
Amyl Chloride	1	1	1	1	1	
Amyl Chloronaphthalene	1	0	1	1	0	
Amyl Naphthalene	1	0	1	1	0	
Aniline	1	2	1	1	3	
Aniline Dyes	1	3	1	1	3	
Aniline Hydrachloride	1	3	3	3	3	
Animal Fats	1	1	1	1	0	
Aqua Regia	1	3	2	2	3	
Arsenic Acid	1	3	3	1	2	
Askarel	0	1	1	1	1	
Asphalt	1	1	1	1	1	
Barium Carbonate	1	2	1	1	1	
Barium Chloride	1	2	1	1	2	
Barium Hydroxide	1	3	1	1	3	
Barium Sulfate	1	1	1	1	2	
Barium Sulfide	1	3	1	1	3	
Beer	1	2	1	1	1	
Beet Sugar Liquors	1	1	1	1	0	
Benzene	1	1	1	1	1	
Benzenesulfonic Acid	0	3	2	2	2	

Fitting material ratings are based on a fluid temperature of 70° F. Higher temperatures may accelerate adverse effects. Consult Titeflex engineering.

WARNING

These products can be used to convey hazardous fluids, steam, and other dangerous materials which can cause personal injury or property damage if released through misuse, misapplication, or damaged. The user is responsible to analyze each application prior to specifying any product from this catalog. Due to the wide variety of operating conditions and applications, the user, through personal analysis and testing, is solely responsible for final product selection and meeting all performance, safety, and warning requirements. Careful selection, proper assembly and use of hose fittings and accessories is essential for the safe and warranted operation of the hose assembly.

CHEMICAL	PTFE	FITTING MATERIAL				EFFUSION
		CS	304SS	316SS	BRASS	
Benzaldehyde	1	2	1	1	1	
Benzene	1	1	1	1	1	B
Benzyl Alcohol	1	2	1	1	1	
Benzyl Benzoate	1	1	1	1	0	
Benzyl Chloride	1	1	0	0	0	
Bismuth Carbonate	1	1	1	1	0	
Black Sulphate Liquor	1	2	2	1	3	
Blast Furnace Gas	1	1	1	1	1	C
Borax	1	2	1	1	1	
Bordeaux Mixture	1	0	1	1	0	
Baric Acid	1	3	1	1	2	
Bunker Oil	1	1	1	1	1	
Butadine	1	1	1	1	1	
Butane	1	1	1	1	1	C
Butter Oil	1	1	1	1	1	
Butyric Acid	1	3	1	1	2	
Butyl Acetate	1	2	1	1	2	
Butyl Alcohol	1	1	1	1	1	
Butyl Amine	0	1	1	1	1	
Butyl Carbitol	1	1	1	1	1	
Butyl Stearate	1	1	1	1	1	
Butyl Mercaptan	1	0	1	1	0	
Butraldehyde	1	0	0	0	1	
Calcium Acetate	1	1	1	1	1	
Calcium Bisulfate	1	0	2	1	3	
Calcium Bisulfite	1	3	1	1	3	
Calcium Carbonate	1	2	1	1	3	
Calcium Chlorate	1	2	2	1	2	
Calcium Chloride	1	3	2	1	2	
Calcium Hydroxide	1	3	1	1	3	
Calcium Hypochlorite	1	3	2	2	3	
Calcium Nitrate	1	2	1	1	1	
Calcium Silicate	1	1	1	1	1	B
Calcium Sulfate	1	1	1	1	1	
Calcium Sulfide	1	1	1	1	0	
Cane Sugar Liquors	1	1	1	1	2	
Carbolic Acid	1	3	1	1	3	
Carbon Dioxide	1	1	1	1	1	A
Carbon Disulfide	0	2	1	1	2	
Carbonic Acid	1	3	1	1	3	
Carbon Monoxide	1	1	1	1	1	C
Carbon Tetrachloride	1	2	1	1	2	
Castor Oil	1	1	1	1	1	
Caustic Soda	1	2	1	1	3	
Cellosolve, Acetate	1	0	2	2	1	

CHEMICAL	PTFE	FITTING MATERIAL				EFFUSION
		CS	304SS	316SS	BRASS	
Cellosolve, Butyl	1	1	1	1	1	
Cellulube	1	1	1	1	1	
Chlorine, Gaseous, Dry*	*	2	3	3	2	C
Chlorine, Gaseous, Wet*	*	3	3	3	3	B
Chlorine Trifluoride	0	3	0	0	0	C
Chloroacetic Acid	1	3	3	3	3	
Chlorobenzene	1	1	1	1	1	
Chlorobromomethane	1	1	1	1	1	
Chloroform	1	1	1	1	1	
O-Chloronaphthalene	1	1	1	1	1	
Chlorotoluene	1	1	1	1	1	
Chromic Acid	1	3	3	2	3	
Citric Acid	1	3	3	1	3	
Cod Liver Oil	1	1	1	1	1	
Coke Oven Gas	1	1	1	1	0	
Compressed Natural Gas (CNG) <sup>1</sup>	0	1	1	1	2	A <sup>1</sup>
Copper Chloride	1	3	3	1	3	
Copper Cyanide	1	0	1	1	3	
Copper Sulfate	1	3	1	1	3	
Corn Oil	1	1	1	1	1	
Corn Syrup	1	1	1	1	0	
Cottonseed Oil	1	1	1	1	1	
Creosote	1	2	1	1	3	
Cresol	1	2	1	1	0	
CrudeWax	1	1	1	1	1	
Cutting Oil	1	1	1	1	1	
Cyclohexane	1	1	1	1	1	
Cyclohexanome	1	0	1	1	0	
Cymene	1	0	0	0	1	
Decaline	1	0	0	0	1	
Denatured Alcohol	1	1	1	1	1	
Diacetone	1	1	1	1	1	
Diacetone Alcohol	1	1	1	1	1	
Dibenzyl Ether	1	1	1	1	1	
Dibutyl Ether	1	1	1	1	1	
Dibutyl Phthalate	1	1	1	1	1	
Dibutyl Sebacate	1	1	1	1	1	
Dichlorobenzene	1	0	1	1	1	
Diesel Oil	1	1	1	1	1	
Diethylamine	1	3	0	2	3	
Diethyl Ether	1	1	1	1	1	B
Diethylene Glycol	1	1	1	1	1	
Diethyl Phthalate	1	0	1	1	1	
Diethyl Sebacate	1	0	1	1	1	
Di-Isobutylene	0	0	1	1	1	

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<sup>1</sup> Consult Titeflex engineering

\* Refer to page 17 for chlorine/bromine hose. Do not use stainless steel braided PTFE hose.

CHEMICAL	PTFE	FITTING MATERIAL				EFFUSION
		CS	304SS	316SS	BRASS	
Di-Isopropyl Ketone	1	0	1	1	1	
Dimethyl Aniline	1	0	0	0	1	
Dimethyl Formamide	0	1	1	1	0	
Dimethyl Phthalate	1	0	0	0	1	
Diocetyl Phthalate	1	1	1	1	1	
Dioxane	1	1	1	1	1	
Dipentene	1	1	1	1	1	
Ethanolamine	1	1	1	1	1	
Ethyl Acetate	1	1	1	1	1	
Ethyl Acetoacetate	1	1	1	1	1	
Ethyl Atrylate	0	1	1	1	0	
Ethyl Alcohol	1	1	1	1	1	
Ethyl Benzene	1	1	1	1	1	
Ethyl Cellulose	1	1	1	1	1	
Ethyl Chloride	1	2	1	1	2	
Ethyl Ether	1	2	1	1	2	
Ethyl Mertaptan	1	2	0	0	2	B
Ethyl Pentochlorobenzene	1	2	1	1	1	
Ethyl Silicate	1	1	1	1	1	
Ethylene Chloride	1	2	1	1	2	
Ethylene Chlorohydrin	1	0	0	0	0	
Ethylene Diamine	1	0	1	0	1	
Ethylene Glycol	1	2	1	1	1	
Fatty Acids	1	0	1	1	0	
Ferric Chloride	1	3	3	3	3	
Ferric Nitrate	1	3	1	1	0	
Ferric Sulfate	1	3	1	1	3	
Ferrous Chloride	1	3	1	2	2	
Ferrous Nitrate	1	3	1	1	3	
Ferrous Sulfate	1	3	1	1	2	
Fluoroboric Acid	1	0	1	1	0	
Formaldehyde	1	2	1	1	2	
Formic Acid	1	3	2	1	2	
Freon 12	2	3	1	1	0	A
Freon 21	2	3	1	1	0	A
Freon 22	2	3	1	1	0	A
Freon 113	2	3	1	1	0	A
Freon 114	2	3	1	1	0	A
Fuel Oil	1	1	1	1	1	
Fumaric Acid	0	0	1	1	0	
Furon Furfuran	1	1	1	1	1	
Furfural	1	2	1	1	1	
Gallic Acid	1	3	1	1	0	

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\*\* Caution: explosive, consult Titeflex engineering.

CHEMICAL	PTFE	FITTING MATERIAL				EFFUSION
		CS	304SS	316SS	BRASS	
Gasoline	1	1	1	1	1	
Glauber's Salt	0	1	1	1	0	
Glucose	1	1	1	1	1	
Glue	1	2	1	1	1	
Glycerin	1	2	1	1	1	
Glycols	1	1	1	1	1	
Green Sulfate Liquor	1	1	1	1	0	
n-Hexaldehyde	1	1	1	1	1	
Hexane	1	1	1	1	1	
Hexene	1	1	1	1	1	
Hexyl Alcohol	1	1	1	1	2	
Hydraulic Oil, Petroleum	1	1	1	1	1	
Hydrochloric Acid, 15%	1	3	3	3	3	B
Hydrochloric Acid, 37%	1	3	3	3	3	B
Hydrochromic Acid	1	3	3	3	3	
Hydrofluoric Acid, Concentrated	1	3	3	3	3	
Hydrofluosilicic Acid	1	0	2	2	3	
Hydrogen, Gaseous	**	1	1	1	1	C
Hydrogen Peroxide, 70%	1	2	3	1	3	
Hydrogen Sulfide, Gaseous	1	3	2	1	3	C
Hydroquinone	0	1	1	1	0	
Isobutyl Alcohol	1	1	1	1	1	
Iso Octane	1	1	1	1	1	
Isopropyl Acetate	1	1	1	1	1	
Isopropyl Alcohol	1	1	1	1	1	
Isopropyl Ether	1	1	1	1	1	
JP3 Fuel	1	1	1	1	1	
JP4 Fuel	1	1	1	1	1	
JP5 Fuel	1	1	1	1	1	
JP6 Fuel	1	1	1	1	1	
JP8 Fuel	1	1	1	1	1	
Kerosene	1	1	1	1	1	
Ketones	1	1	1	1	1	
Lacquers	1	3	3	1	1	
Lacquer Solvents	1	3	3	1	1	B
Lactic Acid	1	3	2	1	2	
Lard	1	1	1	1	3	
Lead Acetate	1	3	0	1	1	
Lead Nitrate	0	1	1	1	0	
Lime Bleath	0	3	2	1	0	
Linoleic Acid	1	3	2	2	3	
Linseed Oil	1	1	1	1	1	
Lubricating Oils, Petroleum	1	1	1	1	1	
Magnesium Chloride	1	3	3	3	2	
Magnesium Hydroxide	1	1	1	1	0	
Magnesium Sulfate	1	1	1	1	1	



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# CHEMICAL RESISTANCE DATA

FLEXIBLE PTFE HOSE

TITFLEX®

CHEMICAL	PTFE	FITTING MATERIAL				EFFUSION
		CS	304SS	316SS	BRASS	
Molic Acid	1	2	2	1	0	
Mercuric Chloride	1	3	1	1	3	
Mercury	1	1	1	1	3	
Mesityl Oxide	1	1	1	1	1	
Methyl Acetate	1	2	1	1	1	
Methyl Atrylote	0	1	1	1	1	
Methyl Alcohol	1	1	1	1	2	
Methyl Bromide	1	0	2	2	0	B
Methyl Butyl Ketone	0	1	1	1	1	
Methyl Chloride	1	1	1	1	1	B
Methylene Chloride	1	1	1	1	3	
Methyl Ethyl Ketone (MEK)	1	1	1	1	1	
Methyl Formate	1	0	1	1	3	B
Methyl Isobutyl Ketone	1	1	1	1	1	
Methyl Methacrylate	1	1	1	1	0	
Methyl Salicylate	1	1	1	1	1	
Milk	1	3	1	1	3	
Mineral Oil	1	1	1	1	1	
Monochlorobenzene	1	1	1	1	1	
Monoethanolamine	0	1	1	1	1	
Naphtha	1	2	1	1	1	
Naphthalene	1	2	2	2	0	
Naphthenic Acid	1	0	2	1	0	
Natural Gas†	0	1	1	1	2	A†
Nickel Acetate	1	1	1	1	1	
Nickel Chloride	1	3	2	2	3	
Nickel Sulfate	1	0	2	1	3	
Niter Coke	0	3	2	1	0	
Nitric Acid, All Concentrations	1	3	2	2	3	
Nitric Acid, Red Fuming	1	3	3	2	3	
Nitrobenzene	1	1	1	1	1	
Nitroethane	1	0	1	1	1	
Nitrogen, Gaseous	1	1	1	1	1	A
Nitrogen Telroxide	0	0	0	2	0	
n-Octane	0	1	1	1	1	
Octyl Alcohol	1	3	1	1	2	
Oil, SAE	1	1	1	1	1	
Oleic Acid	1	3	3	1	2	
Olive Oil	1	1	1	1	1	
Oxalic Acid	1	3	1	1	3	
Oxygen, Gaseous****	1	1	1	1	1	A
Ozone	1	1	1	1	1	
Paint	1	1	1	1	1	
Palmitic Acid	1	2	1	1	1	
Peanut Oil	1	1	1	1	1	

CHEMICAL	PTFE	FITTING MATERIAL				EFFUSION
		CS	304SS	316SS	BRASS	
Perchloric Acid	1	0	2	2	0	
Perchloroethylene	1	2	1	1	1	
Petroleum	1	1	1	1	1	
Phenol	1	3	1	1	3	
Phorone	1	1	1	1	1	
Piric Acid	1	3	1	1	3	
Pinene	1	1	1	1	1	
Pine Oil	1	2	1	1	0	
Plating Solution, Chrome	1	0	3	3	0	
Potassium Acetate	1	3	2	2	0	
Potassium Chloride	1	1	2	2	2	
Potassium Cyanide	1	2	1	1	3	
Potassium Dichromate	1	3	1	1	0	
Potassium Hydroxide, 30%	1	3	1	1	3	
Potassium Nitrate	1	3	1	1	2	
Potassium Sulfate	1	1	1	1	2	
Propane	1	1	1	1	1	A
Propyl Acetate	0	1	1	1	1	
Propyl Alcohol	1	1	1	1	1	
Pyridine, 50%	1	1	1	1	1	
Red Oil	1	2	2	1	2	
Salicylic Acid	0	3	1	1	0	
Salt Water	1	3	3	2	3	
Sewage	1	3	1	1	1	
Silicon Tetrafluoride (STF)	0	3	2***	2***	3	C
Silicone Greases	0	1	1	1	1	
Silicone Oils	0	1	1	1	1	
Silver Nitrate	1	3	1	1	3	
Skydrol 500 & 7000	1	1	1	1	0	
Soap Solutions	1	1	1	1	1	
Soda Ash	1	1	1	1	2	
Sodium Acetate	1	3	1	1	0	
Sodium Bicarbonate	1	3	1	1	2	
Sodium Bisulfite	1	3	1	1	3	
Sodium Borate	1	1	1	1	0	
Sodium Chloride	1	2	2	2	1	
Sodium Cyanide	1	2	1	1	3	
Sodium Hydroxide, 40%	1	2	1	1	3	
Sodium Hypochlorite	1	3	3	2	3	
Sodium Metaphosphate	1	3	1	1	3	
Sodium Nitrate	1	1	1	1	2	
Sodium Perborate	1	3	1	1	3	
Sodium Peroxide	1	3	1	1	3	
Sodium Phosphate	1	2	1	1	3	
Sodium Thiosulfate	1	3	1	1	3	

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† Consult Titeflex engineering

\*\*\* Highly corrosive, consult Titeflex engineering

\*\*\*\* Special cleaning required. Consult Titeflex engineering

CHEMICAL	PTFE	FITTING MATERIAL				EFFUSION
		CS	304SS	316SS	BRASS	
Soybean Oil	1	1	1	1	0	
Stannic Chloride	1	3	3	3	3	
Steam	1	3	1	1	1	A
Stearic Acid	1	3	2	1	3	
Stoddard Solvent	1	1	1	1	1	
Styrene	1	2	0	2	2	
Sucrose Solution	1	1	1	1	1	
Sulfur, 200° F	1	3	1	1	3	
Sulfur Chloride	1	3	3	2	3	
Sulfur Dioxide	1	2	1	1	1	C
Sulfur Trioxide	1	3	2	2	3	B
Sulfuric Acid, 10%	1	3	2	3	3	
Sulfuric Acid, 98%	1	2	3	2	3	
Sulfuric Acid, Fuming	1	3	3	2	3	
Sulfurous Acid, 10%	1	3	2	1	3	
Sulfurous Acid, 75%	1	3	3	2	3	
Tanic Acid, 10%	1	2	1	1	3	
Tar, Bituminous	1	1	1	1	2	
Tartaric Acid	1	3	1	1	3	
Terpineol	1	0	0	0	0	
Titanium Tetrachloride	0	3	2	2	3	
Toluene	1	1	1	1	1	
Toluene Diisocyanate	0	0	0	0	0	
Transformer Oil	1	1	1	1	1	

CHEMICAL	PTFE	FITTING MATERIAL				EFFUSION
		CS	304SS	316SS	BRASS	
Transmission Fluid, Type A	1	1	1	1	1	
Tributoxyethyl Phosphate	1	0	1	1	0	
Tributyl Phosphate	1	1	0	0	0	
Trichloroethylene	1	2	1	1	1	
Tricresyl Phosphate	1	1	0	2	0	
Tung Oil	1	1	1	1	1	
Turpentine	1	1	1	1	2	
Urea Solution, 50%	1	1	1	1	0	
Varnish	0	3	1	1	2	
Vegetable Oils	1	1	1	1	1	
Versilube	1	1	1	1	1	
Vinegar	1	3	1	1	3	
Vinyl Chloride	1	2	1	1	3	C
Water	1	2	1	1	1	
Whiskey, Wines	1	3	2	1	3	
Xylene	1	2	2	2	3	
Zinc Acetate	1	1	1	1	1	
Zinc Chloride	1	3	2	1	3	
Zinc Sulfate	1	3	2	1	3	

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SIZE	TEMPERATURE/OPERATING PRESSURE: R-115, R-122, R-105, R-144								
	65 F° 18.3 C°	100 F° 37.8 C°	150 F° 65.6 C°	200 F° 93.3 C°	250 F° 121.1 C°	300 F° 148.9 C°	350 F° 176.7 C°	400 F° 204.4 C°	450 F° 232.0 C°
-3, -4, -5	3000	2922	2810	2698	2586	2474	2362	2250	2138
-6	2500	2435	2341	2248	2155	2062	1968	1875	1782
-8	2000	1948	1873	1799	1724	1649	1575	1500	1425
-10	1500	1461	1405	349	1293	1237	1181	1125	1069
-12	1200	1169	1124	1079	1034	990	945	900	855
-16, -20Z	1000	974	937	899	862	825	787	750	713

SIZE	TEMPERATURE/OPERATING PRESSURE: R-160, R165								
	65 F° 18.3 C°	100 F° 37.8 C°	150 F° 65.6 C°	200 F° 93.3 C°	250 F° 121.1 C°	300 F° 148.9 C°	350 F° 176.7 C°	400 F° 204.4 C°	450 F° 232.0 C°
-4, -6, -8, -10, -12, -16	5000	4869	4683	4496	4310	4123	3937	3750	3563

SIZE	TEMPERATURE/OPERATING PRESSURE: R-272, R-276								
	65 F° 18.3 C°	100 F° 37.8 C°	150 F° 65.6 C°	200 F° 93.3 C°	250 F° 121.1 C°	300 F° 148.9 C°	350 F° 176.7 C°	400 F° 204.4 C°	450 F° 232.0 C°
-3, -4, -5	1000	974	937	899	862	825	787	750	713
-6	750	730	702	674	646	618	590	563	535
-8	500	487	468	450	431	412	394	375	356



These products can be used to convey hazardous fluids, steam, and other dangerous materials which can cause personal injury or property damage if released through misuse, misapplication, or damaged. The user is responsible to analyze each application prior to specifying any product from this catalog. Due to the wide variety of operating conditions and applications, the user, through personal analysis and testing, is solely responsible for final product selection and meeting all performance, safety, and warning requirements. Careful selection, proper assembly and use of hose fittings and accessories is essential for the safe and warranted operation of the hose assembly.