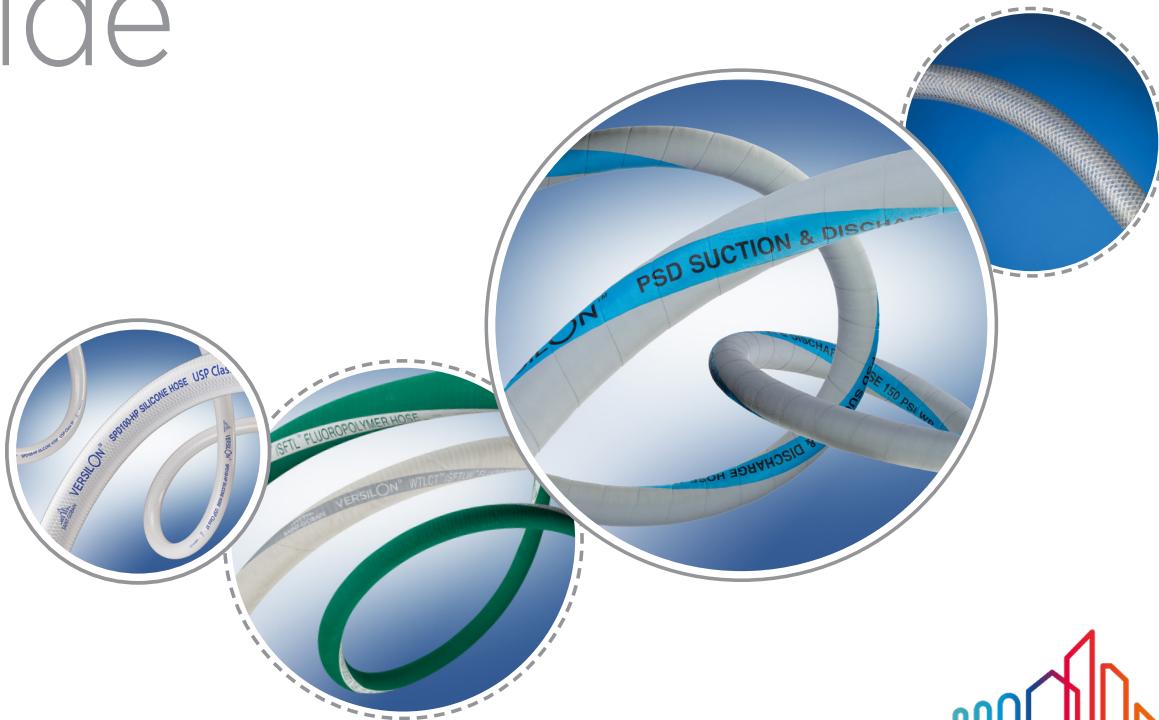




Fluid Performance

Versilon™ Chemical Resistance Properties of Hoses Guide



Chemical Resistance Ratings

The ratings in the charts are based on the results of both laboratory and field tests. They reflect the relative capabilities of various fluoropolymer, silicone, PVC and rubber hose formulations to withstand specific chemicals.

NOTE: The ratings in the chart DO NOT reflect the extent to which extraction 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 hose.

Saint-Gobain makes no representation or warranty with respect to the susceptibility of any fluid to become contaminated or undergo changes in properties or composition as a result of possible extraction of hose ingredients by the fluid to be transmitted. Certain corrosives that would be destructive to hoses with prolonged exposure can be satisfactorily handled for short periods of time if flushed with water after use.

All ratings are based on room temperature (73°F). Chemical resistance will be adversely affected by elevated temperatures.

KEY														
E = Excellent														
G = Good														
F = Fair														
X = Not Recommended														
Environment, % Conc.*														
w = Water alc = Alcohol														
Acetaldehyde	E	E	E	E	X	X	X	X	E	X	F	F	X	E
Acetamide, 67% in w	E	E	E	G	X	X	X	X	E	F	E	F	F	E
Acetate Solvents (general)	E	E	E	G	X	X	X	X	E	X	X	X	X	E
Acetic Acid, 10% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Acetic Acid, 50-60% in w	E	E	E	-	G	G	G	G	E	-	E	E	-	E
Acetic Acid, Glacial, 100%	E	E	E	G	X	X	X	X	E	-	X	X	-	E
Acetic Anhydride	E	E	E	G	X	X	X	X	E	F	E	F	F	E
Acetone	E	E	E	G	X	X	X	X	E	X	F	F	X	E
Acetonitrile	E	E	E	E	X	X	X	X	E	X	X	X	X	E
Acetyl Bromide	E	E	E	-	X	X	X	X	E	X	X	X	X	E
Acetyl Chloride	E	E	E	X	X	X	X	X	E	X	X	X	X	E
Acetylene Gas	E	E	E	E	E	E	E	E	E	F	E	E	F	E
Acrylonitrile	E	E	E	X	X	X	X	X	E	X	X	X	X	E
Adipic Acid, 100% in alc	E	E	E	X	X	X	X	X	E	E	X	X	E	E
Air	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Alcohols General	E	E	E	G	X	X	X	X	E	G	G	G	G	E
Aliphatic Hydrocarbons	E	E	E	X	X	X	X	X	E	F	X	X	F	E
Alkyl Alcohol	E	E	E	E	X	X	X	X	E	G	X	X	G	E
Alum, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Aluminum Chloride, 53% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Aluminum Fluoride, 0.1% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	E
Aluminum Hydroxide, 2% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Aluminum Nitrate, 39% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	E
Aluminum Sulfate, 50% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Aluminum Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Amines	E	E	E	-	X	X	X	X	E	X	X	X	X	E

* If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.

**** Chemical resistance ratings based on inner liner material.**

NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

Chemical Resistance Ratings (continued)

IMPORTANT: It is the user's responsibility to ensure the suitability and safety of Saint-Gobain's hose for all intended uses, including establishing the compatibility of any fluid with the hose through which it is transmitted. Laboratory, field or clinical tests must be conducted in accordance with applicable requirements in order to determine the safety and effectiveness for use of hose in any particular application.

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*** Chemical resistance ratings based on inner liner material.*

NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

Chemical Resistance Ratings (continued)

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Environment, % Conc.*
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Cupric Sulfate, 13% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Cyclohexane	E	E	E	X	X	X	X	X	E	F	X	X	F	F	F	E	E	X
Cyclohexanone	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	X
Detergent Solutions	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Diacetone Alcohol	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-
Diethyl Phthalate	E	E	E	F	F	F	F	F	E	F	E	E	F	F	F	E	E	E
Dichlorobenzene	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-
Diesel Fuel	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-
Diethylamine, 2.5% in w	E	E	E	G	E	E	E	E	E	G	X	X	G	G	G	E	E	X
Diethylene Glycol	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Diethyl Ether	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-
Dimethylformamide	E	E	E	G	X	X	X	X	E	F	E	E	F	F	F	E	E	E
Dimethylsulfoxide	E	E	E	X	X	X	X	X	E	X	F	F	X	X	X	E	E	F
Diocyl Phthalate	E	E	E	G	F	F	F	F	E	X	E	E	X	X	X	E	E	E
Dioxane	E	E	E	G	X	X	X	X	E	X	X	X	X	X	X	E	E	X
Ether	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	X
Ethyl Acetate	E	E	E	G	X	X	X	X	E	X	X	X	X	X	X	E	E	X
Ethyl Alcohol (Ethanol)	E	E	E	E	X	X	X	X	E	F	F	F	F	F	F	E	E	F
Ethyl Benzoate	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	X
Ethyl Chloride	E	E	E	E	X	X	X	X	E	F	X	X	F	F	F	E	E	X
Ethyl Ether	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	X
Ethylamine, 70% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-
Ethylene Bromide	E	E	E	X	X	X	X	X	E	X	E	E	X	X	X	E	E	E
Ethylene Chlorohydrin	E	E	E	G	X	X	X	X	E	X	G	G	X	X	X	E	E	G
Ethylene Diamine	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-
Ethylene Dichloride	E	E	E	F	X	X	X	X	E	X	X	X	X	X	X	E	E	X
Ethylene Glycol	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ethylene Oxide	E	E	E	X	E	E	E	E	E	E	E	E	X	X	X	E	E	E
Fatty Acids	E	E	E	X	X	X	X	X	E	F	G	G	F	F	F	E	E	G
Ferric Chloride, 43% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ferric Nitrate, 60% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ferric Salts	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-
Ferric Sulfate, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ferrous Chloride, 40% in w	E	E	E	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ferrous Salts	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-
Ferrous Sulfate, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Fluoborate Salts	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-
Fluoboric Acid, 48% in w	E	E	E	G	E	E	E	E	E	E	X	X	E	E	E	E	E	X
Fluorine Gas	G	G	G	X	X	X	X	X	G	X	X	X	X	X	X	G	G	X
Fluosilicic Acid, 25% in w	E	E	E	E	E	E	E	E	E	E	F	F	E	E	E	E	E	F
Formaldehyde, 37% in w	E	E	E	G	X	X	X	X	E	F	F	F	F	F	F	E	E	F
Formic Acid, 25% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Formic Acid, 40-50% in w	E	E	E	G	G	G	G	G	E	G	E	E	G	G	G	E	E	E

* If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.

*** Chemical resistance ratings based on inner liner material.*

NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

Chemical Resistance Ratings (continued)

KEY

E = Excellent
G = Good
F = Fair
X = Not Recommended

Environment, % Conc.*
w = Water alc = Alcohol

If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.

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	Versilon™ BCP	Versilon™ BCS	Versilon™ BCSR	Versilon™ BRH	Versilon™ CBT	Versilon™ CCT	Versilon™ CSC	Versilon™ CSS	Versilon™ CSW	Versilon™ CTLCT	Versilon™ FGR	Versilon™ FPD	Versilon™ FPW	Versilon™ GCR	Versilon™ G-FDA	Versilon™ MHH	Versilon™ PSD	Versilon™ PSTLCT	Versilon™ Sight Flow Indicators	Versilon™ SPD
Formic Acid, 98% in w	E	E	E	G	G	G	G	G	E	F	E	E	F	F	F	E	E	E		
Freon 11	E	E	E	X	E	E	E	E	E	G	E	E	G	G	G	F	F	E		
Freon 12	E	E	E	X	E	E	E	E	E	E	E	E	E	E	E	F	F	E		
Freon 22	E	E	E	X	E	E	E	E	E	E	F	E	E	F	F	F	F	F		
Freon 113	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	-	F	F	-	
Fruit Juice	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Fuel Oil	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Furfural	E	E	E	E	X	X	X	X	E	X	X	X	X	X	E	E	E	X		
Gallic Acid, 17% in acetone	E	E	E	E	X	X	X	X	E	F	X	X	F	F	F	E	E	X		
Gasoline, Automotive	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Gelatin	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E		
Glucose, 50% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E		
Glycerol, (Glycerin)	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E		
Glycolic Acid, 70% in w	E	E	E	-	G	G	G	G	E	F	E	E	F	F	F	E	E	E		
Heptane	E	E	E	X	X	X	X	X	E	F	X	X	F	F	F	E	E	X		
Hexane	E	E	E	X	X	X	X	X	E	F	X	X	F	F	F	E	E	X		
Hydrazine	E	E	E	E	X	X	X	X	E	F	X	X	F	F	F	E	E	X		
Hydrobromic Acid, 20-50% in w	E	E	E	E	E	E	E	E	E	F	X	X	F	F	F	E	E	X		
Hydrobromic Acid, 100% in w	E	E	E	E	E	E	E	E	E	X	X	X	X	X	X	E	E	X		
Hydrochloric Acid, 10% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E		
Hydrochloric Acid, 37% in w	E	E	E	G	E	E	E	E	E	F	X	X	F	F	F	E	E	X		
Hydrocyanic Acid	E	E	E	E	E	E	E	E	E	G	E	E	G	G	G	E	E	E		
Hydrofluoric Acid, 10% in w	E	E	E	E	E	E	E	E	E	G	X	X	G	G	G	E	E	X		
Hydrofluoric Acid, 25% in w	E	E	E	G	E	E	E	E	E	G	X	X	G	G	G	E	E	X		
Hydrofluoric Acid, 40-48% in w	E	E	E	G	E	E	E	E	E	X	X	X	X	X	X	E	E	X		
Hydriodic Acid, 55-58% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Hydrogen Gas	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E		
Hydrogen Peroxide, 3% in w	E	E	E	G	E	E	E	E	E	G	E	E	G	G	G	E	E	E		
Hydrogen Peroxide, 10% in w	E	E	E	G	E	E	E	E	E	F	E	E	F	F	F	E	E	E		
Hydrogen Peroxide, 30% in w	E	E	E	G	E	E	E	E	E	G	E	E	G	G	G	E	E	E		
Hydrogen Peroxide, 90% in w	E	E	E	X	F	F	F	F	E	X	F	F	X	X	X	E	E	F		
Hydrogen Sulfide	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E		
Hydroquinone, 7% in w	E	E	E	X	E	E	E	E	E	F	G	G	F	F	F	E	E	G		
Hypochlorous Acid, 25% in w	E	E	E	G	E	E	E	E	E	X	E	E	X	X	X	E	E	E		
Iodine, 50 ppm in w	E	E	E	G	E	E	E	E	E	G	E	E	G	G	G	E	E	E		
Isobutyl Alcohol	E	E	E	E	X	X	X	X	X	F	X	X	F	F	F	E	E	X		
Isooctane	E	E	E	X	X	X	X	X	X	G	X	X	G	G	G	E	E	X		
Isopropyl Acetate	E	E	E	E	X	X	X	X	X	E	X	X	X	X	X	E	E	X		
Isopropyl Alcohol	E	E	E	E	X	X	X	X	X	E	G	X	X	G	G	E	E	X		
Isopropyl Ether	E	E	E	X	X	X	X	X	X	E	G	X	X	G	G	E	E	X		
Jet Fuel, JP8	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Kerosene	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Ketones	E	E	E	G	X	X	X	X	E	X	X	X	X	X	X	E	E	X		

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*** Chemical resistance ratings based on inner liner material.*

NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

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Lacquer Solvents	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	X	
Lactic Acid, 3-10% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Lactic Acid, 85% in w	E	E	E	E	X	X	X	X	E	G	X	X	G	G	G	E	E	X	
Lard, Animal Fat	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-	
Lead Acetate, 35% in w	E	E	E	E	E	E	E	E	E	G	E	E	G	G	G	E	E	E	
Lead Nitrate, 27% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-	
Lead Salts	E	E	E	E	E	E	E	E	E	G	E	E	G	G	G	E	E	E	
Lemon Oil	E	E	E	-	X	X	X	X	E	E	X	X	E	E	E	E	E	X	
Limonene-D	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	X	
Linoleic Acid	E	E	E	X	X	X	X	X	E	X	G	G	X	X	X	E	E	G	
Linseed Oil	E	E	E	G	F	F	F	F	E	F	E	E	F	F	F	E	E	E	
Lubricating Oils, Petroleum	E	E	E	X	X	X	X	X	E	G	G	G	G	G	G	E	E	G	
Magnesium Carbonate, 1% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Magnesium Chloride, 35% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Magnesium Hydroxide, 10% in dilute acids	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Magnesium Nitrate, 50% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Magnesium Sulfate, 25% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Maleic Acid, 30% in w	E	E	E	X	X	X	X	X	E	X	G	G	X	X	X	E	E	G	
Malic Acid, 36% in w	E	E	E	X	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Manganese Salts	E	E	E	-	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Manganese Sulfate, 34% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-	
Mercuric Chloride, 6% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Mercuric Cyanide, 8% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Mercurous Nitrate, 10% in dilute acids	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-	
Mercury	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Mercury Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Methane Gas	E	E	E	X	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Methyl Acetate	E	E	E	E	X	X	X	X	E	X	X	X	X	X	X	E	E	X	
Methyl Alcohol (Methanol)	E	E	E	E	X	X	X	X	E	F	G	G	F	F	F	E	E	G	
Methyl Bromide	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	X	
Methyl Chloride	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	X	
Methyl Ethyl Ketone	E	E	E	E	X	X	X	X	E	X	X	X	X	X	X	E	E	X	
Methyl Isobutyl Ketone	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	X	
Methylene Chloride	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	X	
Methyl Methacrylate	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	X	
Milk	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-	
Mineral Oil	E	E	E	X	G	G	G	G	E	E	X	X	E	E	E	E	E	X	
Mineral Spirits	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	X	
Molasses	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-	
Monoethanolamine	E	E	E	G	X	X	X	X	E	X	X	X	X	X	X	E	E	X	
Motor Oil	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-	
Naphtha	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	X	
Naphthalene	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	X	

* If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.

*** Chemical resistance ratings based on inner liner material.*

NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

Chemical Resistance Ratings (continued)

KEY

E = Excellent

G = God

F = Fair

X = Not Recommended

* If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.

**** Chemical resistance ratings based on inner liner material.**

NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

Chemical Resistance Ratings (continued)

KEY

E = Excellent
G = Good
F = Fair
X = Not Recommended

Environment, % Conc.*
w = Water alc = Alcohol

	Versilon™ BCP	Versilon™ BES	Versilon™ BCSR	Versilon™ BRH	Versilon™ CCT	Versilon™ CSC	Versilon™ CSW	Versilon™ CTLCT	Versilon™ FCR	Versilon™ FPD	Versilon™ FW	Versilon™ GCR	Versilon™ G-FDA	Versilon™ MH	Versilon™ PSD	Versilon™ PSLCT	Versilon™ Sight Flow Indicators	Versilon™ SPD
Natural Gas	E	E	E	X	E	E	E	E	G	E	E	G	G	G	G	E	E	E
Nickel Chloride, 40% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nickel Nitrate, 75% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nickel Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nickel Sulfate, 25% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nitric Acid, 10% in w	E	E	E	E	E	E	E	E	G	F	F	G	G	G	G	E	E	F
Nitric Acid, 35% in w	E	E	E	X	E	E	E	E	X	X	X	X	X	X	X	E	E	X
Nitric Acid, 68-71% in w	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	G	G	X
Nitrobenzene	E	E	E	G	X	X	X	X	E	X	X	X	X	X	X	E	E	X
Nitromethane	E	E	E	G	X	X	X	X	E	X	X	X	X	X	X	E	E	X
Nitrous Acid, 10% in w	E	E	E	-	E	E	E	E	E	X	G	G	X	X	X	E	E	G
Nitrous Oxide	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Oils, Animal	E	E	E	-	F	F	F	F	E	-	E	E	-	-	-	E	E	E
Oils, Essential	E	E	E	-	X	X	X	X	E	-	X	X	-	-	-	E	E	X
Oils, Hydraulic (Phosphate Ester)	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-
Oils, Hydrocarbon	E	E	E	-	X	X	X	X	E	-	G	G	-	-	-	E	E	G
Oils, Vegetable	E	E	E	-	F	F	F	F	E	-	E	E	-	-	-	E	E	E
Oleic Acid	E	E	E	X	X	X	X	X	E	F	G	G	F	F	F	E	E	G
Oleum, 25% in w	E	E	E	-	E	E	E	E	E	-	G	G	-	-	-	E	E	G
Ortho Dichlorobenzene	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	X
Oxalic Acid, 12% in w	E	E	E	G	G	G	G	G	E	E	G	G	G	G	E	E	E	E
Oxygen	E	E	E	E	E	E	E	E	E	G	E	E	G	G	G	E	E	E
Ozone, 300pphm	E	E	E	G	E	E	E	E	E	X	E	E	X	X	X	E	E	E
Palmitic Acid, 100% in ether	E	E	E	G	X	X	X	X	E	G	G	G	G	G	E	E	E	G
Paraffins	E	E	E	E	X	X	X	X	E	X	X	X	X	X	X	E	E	X
Peracetic Acid, 1% @ 40°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perchloric Acid, 67% in w	E	E	E	G	G	G	G	G	E	X	X	X	X	X	X	E	E	X
Perchloroethylene	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	X
Phenol, 5-10% in w	E	E	E	E	E	E	E	E	E	X	E	E	X	X	X	E	E	E
Phenol, 91% in w	E	E	E	E	F	F	F	F	E	X	G	G	X	X	X	E	E	G
Phosphoric Acid, <10% in w	E	E	E	G	E	E	E	E	E	F	F	E	E	E	E	E	E	F
Phosphoric Acid, 25% in w	E	E	E	G	E	E	E	E	E	X	X	X	X	X	X	E	E	X
Phosphoric Acid, 85% in w	E	E	E	G	E	E	E	E	E	X	X	X	X	X	X	E	E	F
Phosphorous Trichloride Acid	E	E	E	E	E	E	E	E	E	X	X	X	X	X	X	E	E	X
Photographic Solutions	E	E	E	G	E	E	E	E	E	G	G	G	G	G	G	E	E	G
Phthalic Acid, 9% in alc	E	E	E	-	F	F	F	F	E	F	G	G	F	F	F	E	E	F
Phthalic Anhydride, 9% in alc	E	E	E	-	X	X	X	X	E	F	E	E	F	F	F	E	E	F
Picric Acid, 1% in w	E	E	E	G	E	E	E	E	E	X	X	X	X	X	X	E	E	X
Plating Solutions	E	E	E	E	E	E	E	E	E	E	X	X	X	E	E	E	E	E
Potassium Carbonate, 55% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Potassium Chloride, 20% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	E
Potassium Cyanide, 33% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Potassium Dichromate, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E

* If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.

** Chemical resistance ratings based on inner liner material.

NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

Chemical Resistance Ratings (continued)

KEY

E = Excellent
G = Good
F = Fair
X = Not Recommended

Environment, % Conc.*
w = Water alc = Alcohol

	Versilon™ SSW	Versilon™ TB	Versilon™ TBOK	Versilon™ TBOP	Versilon™ TBOT	Versilon™ TH	Versilon™ TSLCT	Versilon™ TSLCTCO	Versilon™ TS/ST	Versilon™ TWOB/TWOBHV	Versilon™ TWOK	Versilon™ TWOP	Versilon™ TWOP	Versilon™ WCP	Versilon™ WCS	Versilon™ WCSR	Versilon™ WCSS	Versilon™ WTLCTPFA	Versilon™ XFR
Natural Gas	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	X
Nickel Chloride, 40% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nickel Nitrate, 75% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nickel Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nickel Sulfate, 25% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nitric Acid, 10% in w	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	G
Nitric Acid, 35% in w	X	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	X
Nitric Acid, 68-71% in w	X	E	E	E	E	E	E	E	E	E	G	G	E	E	E	E	E	E	X
Nitrobenzene	X	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	X
Nitromethane	X	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	X
Nitrous Acid, 10% in w	X	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	X
Nitrous Oxide	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Oils, Animal	-	E	E	E	E														

Chemical Resistance Ratings (continued)

KEY

E = Excellent
G = Good
F = Fair
X = Not Recommended

Environment, % Conc.*
w = Water alc = Alcohol

	Versilon™ BCP	Versilon™ BES	Versilon™ BCSR	Versilon™ BRH	Versilon™ CBT	Versilon™ CCT	Versilon™ CSC	Versilon™ CSS	Versilon™ CSW	Versilon™ CTLCT	Versilon™ FCR	Versilon™ FPD	Versilon™ FW	Versilon™ GCR	Versilon™ G-FDA	Versilon™ MH	Versilon™ PSD	Versilon™ PSLCT	Versilon™ Sight Flow Indicators	Versilon™ SPD
Potassium Hydroxide, <10% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Potassium Hypochlorite, 70% in w	E	E	-	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Potassium Iodide, 56% in w	E	E	E	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Potassium Nitrate, 10% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Potassium Oxide, 50% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Potassium Permanganate, 6% in w	E	E	E	G	E	E	E	E	E	G	E	G	G	G	G	E	E	E	E	
Potassium Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Potassium Sulfate, 10% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Potassium Sulfide, 20% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Propane Gas	E	E	E	X	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Propyl Alcohol (Propanol)	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Propylene Glycol	E	E	E	G	E	E	E	E	E	G	E	E	G	G	G	E	E	E	E	
Propylene Oxide	E	E	E	G	E	E	E	E	E	X	E	E	X	X	X	E	E	E	E	
Pyridine	E	E	E	G	X	X	X	X	X	G	X	X	X	X	X	G	G	X		
Salicylic Acid, 1% in w	E	E	E	E	E	E	E	E	E	G	E	E	G	G	G	E	E	E	E	
Silicone Oils	E	E	E	E	G	G	G	G	E	E	X	X	E	E	E	E	E	X		
Silver Nitrate, 55% in w	E	E	E	E	E	E	E	E	E	G	E	E	G	G	G	E	E	E	E	
Skydrol 500A	E	E	E	G	F	F	F	F	E	X	X	X	X	X	X	E	E	X		
Soap Solutions	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Sodium Acetate, 55% in w	E	E	E	E	E	E	E	E	E	G	E	E	G	G	G	E	E	E	E	
Sodium Benzoate, 22% in w	E	E	E	E	E	E	E	E	E	G	E	E	G	G	G	E	E	E	E	
Sodium Bicarbonate, 7% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Sodium Bisulfate, 3% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Sodium Carbonate, 7% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Sodium Chlorate, 45% in w	E	E	E	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Sodium Chloride, 20% in w	E	E	E	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Sodium Cyanide, 30% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Sodium Dichromate, 70% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Sodium Fluoride, 3% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Sodium Hydroxide, 10-15% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Sodium Hydroxide, 30-40% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Sodium Hypochlorite, 5.5% in w	E	E	E	G	E	E	E	E	E	G	X	X	G	G	G	E	X			
Sodium Hypochlorite, 12.2% in w	E	E	E	G	E	E	E	E	E	G	X	X	G	G	G	E	E	X		
Sodium Nitrate, 3.5% in w	E	E	E	E	E	E	E	E	E	G	E	E	G	G	G	E	E	E	E	
Sodium Perborate, 25% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Sodium Peroxide, 20% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Sodium Phosphate, 30% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Sodium Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Sodium Sulfate, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Sodium Sulfide, 45% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
Sodium Sulfite, 10% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	E	E	-		
Stannic Chloride, 50% in w	E	E	E	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E	G	
Stannous Chloride, 45% in w	E	E	E	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	

* If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.

** Chemical resistance ratings based on inner liner material.

NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

Chemical Resistance Ratings (continued)

KEY

E = Excellent
G = Good
F = Fair
X = Not Recommended

Environment, % Conc.*
w = Water alc = Alcohol

	Versilon™ SSW	Versilon™ TB	Versilon™ TBOK	Versilon™ TBOP	Versilon™ TB _Y	Versilon™ TH	Versilon™ TLCT	Versilon™ TCO	Versilon™ TS/ST	Versilon™ TWOB/TWOBHV	Versilon™ TWOK	Versilon™ TWOP	Versilon™ TWY	Versilon™ WCP	Versilon™ WCS	Versilon™ WCSR	Versilon™ WCSS	Versilon™ WTLCTPFA	Versilon™ XFR
Potassium Hydroxide, <10% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Potassium Hypochlorite, 70% in w	-	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	-
Potassium Iodide, 56% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Potassium Nitrate, 10% in w	-	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	-
Potassium Oxide, 50% in w	-	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	-
Potassium Permanganate, 6% in w	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	G
Potassium Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Potassium Sulfate, 10% in w	-	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Potassium Sulfide, 20% in w	-	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	-
Propane Gas	E	E	E	E	E														

Chemical Resistance Ratings (continued)

KEY

E = Excellent

G = Goo

$$F = Fa$$

X = Not Recommended

Environment, % Conc.*

w = Water alc = Alcohol

KEY																								
	E = Excellent		G = Good		F = Fair		X = Not Recommended																	
Environment, % Conc.*	w = Water		alc = Alcohol																					
	Versilon™ BCP	Versilon™ BCS	Versilon™ BCSR	Versilon™ BRH	Versilon™ CBT	Versilon™ CCT	Versilon™ CSC	Versilon™ CSS	Versilon™ CSW	Versilon™ CTLCT	Versilon™ FGR	Versilon™ FPD	Versilon™ FPW	Versilon™ GCR	Versilon™ G-FDA	Versilon™ MH	Versilon™ PSD	Versilon™ PSTLCT	Versilon™ Sight Flow Indicators	Versilon™ SPD				
Stearic Acid, 5% in alc	E	E	E	G	X	X	X	X	E	F	G	G	F	F	F	F	E	E	G					
Styrene Monomer	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	E	X					
Sulfur Chloride	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	E	E	E	X					
Sulfur Dioxide, Gas Dry	E	E	E	G	E	E	E	E	E	E	X	E	E	X	X	X	E	E	E					
Sulfur Dioxide, Gas Wet	E	E	E	E	E	E	E	E	E	E	X	E	E	X	X	X	E	E	E					
Sulfur Trioxide, Wet	G	G	G	G	G	G	G	G	G	X	G	G	X	X	X	G	G	G						
Sulfuric Acid, 10% in w	E	E	E	G	E	E	E	E	E	G	E	E	G	G	G	G	E	E	E					
Sulfuric Acid, 30% in w	E	E	E	G	E	E	E	E	E	G	G	G	G	G	G	G	E	E	G					
Sulfuric Acid, 95-98% in w	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	X	E	E	X					
Sulfurous Acid	E	E	E	G	E	E	E	E	E	E	X	E	E	X	X	X	E	E	E					
Tannic Acid, 75% in w	E	E	E	E	G	G	G	G	E	E	E	E	E	E	E	E	E	E	E					
Tanning Solutions	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	-	E	E	-					
Tartaric Acid, 56% in w	E	E	E	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E					
Tetrahydrofuran	E	E	E	G	X	X	X	X	E	X	X	X	X	X	X	E	E	E	X					
Thionyl Chloride	E	E	E	X	E	E	E	E	E	E	X	E	E	X	X	X	E	E	E					
Tin Salts	E	E	E	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E					
Titanium Salts	E	E	E	-	E	E	E	E	E	E	X	E	E	X	X	X	E	E	E					
Toluene	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	X	E	E	X					
Trichloroacetic Acid, 90% in w	E	E	E	G	E	E	E	E	E	F	E	E	F	F	F	F	E	E	E					
Trichloroethane	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	X	E	E	X					
Triethanolamine	E	E	E	G	X	X	X	X	E	G	X	X	G	G	G	G	E	E	X					
Trichloroethylene	E	E	E	G	X	X	X	X	E	G	X	X	G	G	G	G	E	E	X					
Trichloropropane	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	X	E	E	X					
Tricresyl Phosphate	E	E	E	E	F	F	F	F	E	X	E	E	X	X	X	X	E	E	E					
Trisodium Phosphate	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E					
Turpentine	E	E	E	G	X	X	X	X	E	X	X	X	X	X	X	E	E	E	X					
Urea, 20% in w	E	E	E	E	E	E	E	E	E	G	E	E	G	G	G	G	E	E	E					
Uric Acid	E	E	E	-	E	E	E	E	E	E	E	-	E	E	-	-	-	E	E					
Vinegar	E	E	E	E	E	E	E	E	E	E	G	E	E	G	G	G	E	E	E					
Vinyl Acetate	E	E	E	E	X	X	X	X	E	X	X	X	X	X	X	X	E	E	X					
Water, Brine	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	-	E	E	-					
Water, De-ionized	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E					
Water, Distilled	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E					
Xylene	E	E	E	X	X	X	X	X	E	X	X	X	X	X	X	X	E	E	X					
Zinc Chloride, 80% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E					
Zinc Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E					
Zinc Sulfate, 30% in w	E	E	E	-	-	-	-	-	E	-	-	-	-	-	-	-	E	E	-					

Chemical Resistance Ratings (continued)

KEY

E = Excellent

G = Go

$$F = F_{ai}$$

X = Not Recommended

Environment, % Conc.*

w = Water alc = Alcohol

* If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.

**** Chemical resistance ratings based on inner liner material.**

NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.

Chemical resistance ratings based on inner liner material.

NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

Chemical Resistance Properties of Hoses

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