

	<u>PUR</u>	<u>PE</u>	<u>PVC</u>	<u>Nylon 11</u>
Acetic Acid, Glacial	4	2	4	-
Acetic Acid, 30%	4	1	4	2
Acetone	4	2	4	1
Acetylene	1	4	1	1
Alkazene	4	-	-	-
Aluminum Chloride (aq)	3	2	1	-
Aluminum Nitrate (aq)	3	-	2	-
Ammonia Anhydrous	4	2	1	-
Ammonia Gas (cold)	3	-	3	1
Ammonia Gas (hot)	4	-	-	1
Ammonium Chloride (aq) 40%	2	1	1	-
Ammonium Sulfate (aq)	1	1	1	1
Amyl Alcohol	4	2	1	-
Amyl Naphthalene	4	-	-	-
Animal Fats	1	-	-	-
Aqua Regia	4	2	3	-
Arsenic Acid	3	2	1	-
Asphalt	2	1	1	-
ASTM Fuel A	2	-	-	-
ASTM Fuel B	3	-	-	-
Barium Chloride (aq)	1	2	1	1
Beer	2	2	1	1
Beet Sugar Liquors	4	1	1	-
Benzine	3	4	3	1
Benzine	2	-	-	-
Blast Furnace Gas	4	-	-	-

Bleach Solutions	4	1	1	-
Borax	1	1	1	-
Boric Acid	1	1	1	-
Brake Fluid	4	-	-	-
Brine	2	-	3	-
Bromine Water	4	-	3	4
Bunker Oil	2	-	-	-
Butane	1	3	3	1
Butter	1	-	-	-
Butyl Alcohol (Butanol)	3	1	3	1
Butylene	4	1	1	-
Calcium Chloride (aq)	1	1	3	1
Calcium Hydroxide (aq)	2	1	2	-
Calcium Nitrate (aq)	1	-	1	1
Calcium Sulfide (aq)	1	-	-	-
Cane Sugar Liquors	4	-	1	-
Carbolic Acid	3	4	3	-
Carbon Dioxide	1	2	1	-
Carbonic Acid	4	2	1	-
Carbon Monoxide	1	2	1	-
Castor Oil	1	1	1	-
Chlorine (dry)	4	3	4	4
Chlorine (wet)	4	3	-	4
Chloroform	4	4	4	3

Chlorox	4	-	-	-
Chromic Acid 50%	4	1		4
Citric Acid	1	1	2	1
Coal Tar (Creosote)	3	-	-	-
Coconut Oil	2	1	1	-
Cod Liver Oil	1	1	1	-
Coke Oven Gas	4	-	-	-
Copper Chloride (aq)	1	2	1	-
Copper Cyanide (aq)	1	2	1	-
Corn Oil	1	1	2	-
Cotton Seed Oil	1	1	2	-
Creosol (Methyl Phenol)	4	4	4	4
Cychlohexane	1	4	4	1
Denatured Alcohol	4	-	-	-
Detergent Solution	3	1	1	-
Diesel Oil	2	3	1	-
Dioxane	4	3	-	-
Dowtherm Oil	3	-	-	-
Dry Cleaning Fluids	4	-	-	-
Ethane	1	-	1	-
Ethyl Acrylate	4	-	-	-
Ethyl Alcohol (Ethanol)	4	2	3	3
Ethyl Benzine	4	-	-	-
Ethyl Cellulose	2	-	-	-

Ethyl Chloride	4	4	4	-
Ethyl Ether	3	4	4	-
Ethylene Chloride	4	4	4	-
Ethylene Glycol5 (Anti-Freeze)	2	1	1	1
Ethylene Oxide	4	3	3	1
Ethylene Trichloride	4	4	-	-
Ferric Chloride (aq)	1	2	1	-
Ferric Nitrate (aq)	1	2	1	-
Ferric Sulfate (aq)	2	1	1	-
Fluroine (Liquid)	4	3	4	4
Formaldehyde (RT)	4	2	1	1
Formic Acid	4	2	1	4
Freon 11	4	3	1	-
Freon 12	1	1	1	1
Freon 22	4	-	1	1
Fuel Oil (Bunker 'C')	2	3	1	-
Gasoline (100 Octane, High Test)	3	4	3	1
Glue	1	1	3	-
Glycerin (Glycerol)	1	1	1	1
Glycols	4	-	-	1
Green Sulfate Liquor	1	-	-	-
Hexane	2	4	2	-
Hydraulic Oil	1	1-3	1	-
Hydrochloric Acid (cold) 37%	4	2	2	4

Hydrochloric Acid (hot) 37%	4	-	-	4
Hydrofluoric Acid (Conc.) (cold)	4	2	-	-
Hydrofluoric Acid (Conc.) (hot)	4	-	-	-
Hydrogen Gas	1	1	1	1
Isobutyl Alcohol	3	1	-	-
Isooctane	2	3	1	-
Isopropyl Acetate	4	3	4	
Isopropyl Alcohol (Isopropanol)	3	1	-	1
Isopropyl Ether	2	1	2	-
Kerosene	1	4	2	1
Lacquers	4	1	4	-
Lacquer Solvents	4	1	3	-
Lard	1	1	1	-
Lavender Oil	4	-		-
Lead Acetate (aq)	4	1	1	-
Linseed Oil	2	3	1	1
Liquified Petroleum Gas	1	-	-	1
Lubricating Oils	1-2	4	2	1
Lye	4	1-4	1-2	-
Magnesium Chloride (aq)	1	2	1	1
Magnesium Hydroxide (aq)	4	2	1	-
Mercury	1	1	1	1
Methane	3	-	2	1
Methyl Acetate	4	2	4	1

Methyl Acrylate	4	-	-	-
Methyl Alcohol (Methanol)	4	1	1	1
Methyl Butyl Ketone	4	-	1	-
Methyl Chloride	4	4	4	1
Methylene Chloride	4	4	4	-
Methyl Ethyl Ketone	4	2	4	1
Methyl Isobutyl Ketone	4	3	4	1
Milk	4	1	1	1
Mineral Oil	1	3	1	1
Motor Oil 20W, 10W40	2	3	2	1
Naphtha (Lighter Fluid)	2	4	1	1
Naphthalene (Moth Repellent)	2	2		1
Natural Gas	2	-	1	-
Neatsfoot Oil	1	-	-	-
Nitric Acid 70%	4	2	-	4
Nitric Acid (Dilute) 10%	3	2	1	4
Nitroethane	4	-	-	-
N-Octane	4	1	-	-
Oleic Acid	2	1	3	1
Oleum Spirits	3	4	4	-
Olive Oil	1	1	-	-
Oxygen (cold)	1	-	-	1
Oxygen (200-400F)	4	-	-	-
Paint Thinner, Duco	4	-	-	-

Perchloric Acid	4	1	3	-
Perchloroethylene	4	4	3	3
Petroleum - Below 250F	2	3	-	-
Petroleum - Above 250F	4	-	-	4
Phenol (Carbolic Acid)	3	2	3-4	4
Phenyl Ethyl Ether	4	-	-	-
Phosphoric Acid - 45%	4	1		2
Pickling Solution	4	-	-	-
Picric Acid	2	1	4	3
Potassium Acetate (aq)	4	-	-	-
Potassium Chloride (aq)	1	2	1	-
Potassium Cyanide (aq)	1	2	1	-
Potassium Hydroxide (aq)	4	1	1	3
Producer Gas	1	1	1	-
Propane	1	4	1	1
Propyl Alcohol (Propanol)	4	1	1	-
Propylene	4	-	2	-
Propylene Glycol (Anti-Freeze)	3	1	3	2
Propylene Oxide	4	2	-	-
Pydraul, 10E, 29 ELT	4	-	-	-
Pydraul 30E, 50E, 65E	4	-	-	-
Pydraul, 115E	4	-	-	-
Pydraul 230E, 312C, 540C	4	-	-	-
Rapeseed Oil	2	4	-	-

Red Oil (MIL-H-5606)	1	-	-	-
RJ-1 (MIL-F-23338 B)	1	-	-	-
RP-1 (MIL-F-25576 C)	1	-	-	-
Salt Water	2	1	1	1
Sewage	1	-	-	-
Silicate Esters	1	-	-	-
Silicone Oils	1	1	1	-
Silver Nitrate	1	1	1	-
Skydrol 500	4	-	-	-
Skydrol 700	4	-	-	-
Soap Solutions	3	4	1	1
Sodium Chloride (aq)	1	1	1	1
Sodium Hydroxide (aq)	4	1		2
Sodium Peroxide (aq)	4	1	2	-
Sodium Phosphate (aq)	1	-	-	-
Sodium Sulfate (aq)	1	1	1	-
Soy Bean Oil	2	1	1	-
Stoddard Solvent	1	3	3	-
Styrene (Monomer)	4	-	4	1
Sucrose Solution	4	2	-	-
Sulfuric Acid (Dilute Battery Acid)	3	1	1	-
Sulfuric Acid (Conc)	4	2	4	-
Sulfuric Acid (20% Oleum)	4	-	4	-
Sulfurous Acid	4	2	1	-



Tannic Acid	4	1	1	-
Tetrochlorethylene	4	2	4	-
Toluene (Toluol)	4	3	4	1
Transformer Oil	2	-	2	-
Transmission Fluid Type A	2	-	-	-
Trichloroethane	4	4	3	3
Trichloroethylene	4	4	4	3
Turbine Oil	1	3	1	1
Turpentine	4	4	4	1
Varnish	3	3	4	-
Vinegar	2	1	1	1
Vinyl Chloride	4	4	4	-
Water	1	1	1	1
Whiskey, Wines	2	1	1	1
White Oil	1	-	-	-
Wood Oil	3	-	-	-
Xylene	4	4	4	1
Zinc Acetate (aq)	4	-	-	-
Zinc Chloride (aq)	2	1	1	1

## Plastic Tubing Chemical Resistance Chart

This information was provided to Freelin-Wade by our suppliers and other sources. It is to be used only as a general reference guide to aid in the selection of products in which chemical and material compatibility issues are a factor. This guide is not intended as a complete nor conclusive database. Freelin-Wade does not guarantee these ratings since the resistance of a material can be greatly affected by the temperature, consistency, and presence of other chemicals. Ultimately, the consumer must determine the chemical compatibility of an item based on the conditions in which the product is

being used.

Rating Scale:

- 1= Little or no impact
- 2= Minor effect
- 3= Moderate effect
- 4= Severe effect

Legend:

- 1. Petroleum Base
- 2. Synthetic Base = 1, Petroleum Base = 3
- 3. SAE 10, 20, 30, 40, 50 = 1, Petroleum = 2
- 4. Calcium Hydroxide and Potassium -- Hydroxide = 1, Sodium Hydroxide = 4
- 5. Also see Propylene Glycol
- 6. Also see Ethylene Glycol