



KEY:

- S** = Superior Resistance/Completely Unaffected under all Conditions
- L** = Limited Resistance, Some Chemical Attack May Occur Over Time
- M** = Moderate Resistance, Superficial Effects only, Testing Recommended
- U** = Unsatisfactory, Severe/Chemical Attack in a relatively short time
- = No Data Available

TABLE 3. CHEMICAL RESISTANCE OF FIBERGLASS MATERIALS AND ENCLOSURE ACCESSORIES

CHEMICAL	Aluminum	Fiber Glass Polyester	Steel			Stainless Steel		PC	PVC
			Polyester Powder	Urethane Enamel	Galvanized	Type 304	Type 316		
Acetyldehyde	S	U	—	—	—	S	S	U	U
Acetic Acid (10%)	L	S	U	U	U	S	U	S	U
Acetone	S	L	L	U	L	S	S	U	U
Aluminum Chloride (10%)	U	S	U	U	U	U	M	S	S
Aluminum Sulfate (10%)	L	S	U	U	U	U	S	S	S
Ammonia Gas	L	S	—	—	—	S	S	—	—
Ammonium Chloride	U	S	U	U	U	S	S	S	S
Ammonium Hydroxide (10%)	S	L	U	U	U	S	S	U	S
Ammonium Nitrate (10%)	M	S	U	U	U	S	S	U	S
Ammonium Phosphate (10%)	L	M	S	L	U	S	M	S	—
Ammonium Sulfate	S	S	—	—	—	S	S	S	S
Aniline	L	U	—	—	—	S	S	U	L
ASTM #1 Oil	S	S	S	S	S	S	S	L	—
ASTM #3 Oil	S	S	S	S	S	S	S	L	—
Axle Grease	S	S	S	S	S	S	S	L	—
Benzene	S	S	—	—	S	S	S	U	L
Boric Acid (10%)	M	S	U	U	U	S	S	S	L
Bromine	U	L	U	U	U	U	U	U	U
Butyl Acetate	M	L	—	—	—	S	S	U	U
Butyric Acid	U	S	—	—	—	S	S	U	U
Calcium Chloride (10%)	L	S	U	U	U	L	S	S	L
Calcium Hydroxide (10%)	U	S	U	U	U	S	S	S	L

Chemical Resistance – Material

TABLE 3. Continued

CHEMICAL	Aluminum	Fiber Glass Polyester	Steel			Stainless Steel		PC	PVC
			Polyester Powder	Urethane Enamel	Galvanized	Type 304	Type 316		
Calcium Hypochlorite (10%)	L	M	U	U	U	U	M	L	L
Calcium Sulfate	M	S	U	U	U	S	S	S	L
Carbolic Acid (25%)	M	L	U	U	U	S	S	U	
Carbon Disulfide	S	L	—	—	—	S	S	U	U
Carbon Tetrachloride	S	M	U	S	S	U	S	U	
Chlorine (dry)	S	S	—	—	—	S	S	U	U
Chlorine (water) 5-10 ppm	M	L	S	U	U	U	—	S	S
Chlorobenzene	S	S	—	—	S	S	S	U	
Chloroform	L	U	—	—	—	S	S	U	U
Chrome Plating Solution	U	L	U	U	U	L	L	S	—
Chromic Acid	S	S	—	—	—	U	U	U	U
Citric Acid (10%)	U	M	U	U	U	S	S	S	L
Copper Sulfate	U	S	—	—	—	S	S	S	S
Creosote	L	L	—	—	—	S	S	U	—
Cutting Fluid (5 Star) 10%	S	S	U	U	U	S	S	L	—
Cutting Fluid (Castrol 980 H)	S	S	S	U	U	S	S	L	—
Cutting Fluid (Norton 205)	U	S	U	U	U	S	S	S	—
Cutting Fluid (Rustlick) 10%	M	S	U	U	U	S	S	S	—
Cutting Oil (Dark)	S	S	S	S	S	S	S	S	—
Diethyl Ether	S	S	—	—	—	S	S	U	U
Ethyl Alcohol	S	S	M	U	S	S	S	M	S
Ethylene Dichloride	S	L	—	—	—	—	—	U	U
Ethylene Glycol	S	S	S	S	U	S	S	S	S
Ferric Chloride	U	S	U	U	U	S	U	S	S
Ferric Nitrate	—	S	—	—	—	S	S	S	S
Ferric Sulfate	M	S	—	—	—	S	S	S	S
Fluorine	S	U	—	—	—	M	—	L	U
Formaldehyde	S	S	—	—	—	L	S	S	L
Formic Acid	U	S	U	U	U	M	S	S	—
Fuel Oil (#2)	S	S	M	S	S	S	M	L	S
Gasoline	S	M	—	—	—	S	S	U	S
Glycerine	S	S	—	—	S	S	S	S	S
Hydraulic Brake Fluid	S	S	U	U	S	S	S	U	—
Hydraulic Oil	S	S	S	S	S	S	S	L	S



TABLE 3. Continued

CHEMICAL	Aluminum	Fiber Glass Polyester	Steel			Stainless Steel		PC	PVC
			Polyester Powder	Urethane Enamel	Galvanized	Type 304	Type 316		
Hydrochloric Acid (10%)	U	M	U	U	U	U	U	S	S
Hydrocyanic Acid	S	U	—	—	—	S	S	L	L
Hydrofluoric Acid (20%)	U	U	U	U	U	U	U	L	L
Hydrogen Peroxide	S	M	—	—	—	L	S	S	S
Hydrogen Sulfide	M	S	—	—	—	L	S	L	L
Hypochlorous Acid	U	S	—	—	—	—	—	—	—
Isopropyl Alcohol	S	S	M	U	S	S	S	S	—
Kerosene	S	S	S	S	S	S	S	L	S
Lacquer Thinner	S	S	L	U	S	S	S	U	U
Lactic Acid	M	S	—	—	—	L	S	L	L
Lime	M	M	—	—	—	—	—	—	L
Liquid Dish Soap (10%)	M	S	U	U	U	S	M	S	S
Lubricating Oils	S	S	—	—	—	S	S	S	—
Magnesium Chloride (10%)	L	S	U	U	U	S	S	S	L
Magnesium Hydroxide (10%)	L	S	U	U	U	S	S	S	S
Mercuric Chloride (10%)	U	M	U	U	U	S	U	S	L
Methyl Ethyl Ketone	S	L	—	—	—	S	S	U	U
Methylene Chloride	S	S	U	U	M	S	S	U	U
Milk	S	S	—	—	—	S	S	S	S
Mineral Oil	S	S	—	—	—	S	S	S	S
Mineral Spirits	S	S	S	S	S	S	S	L	S
Motor Oil (10 weight)	S	S	S	S	S	S	S	S	L
Nickel Salts	L	S	—	—	—	L	S	S	S
Nitric Acid (10%)	U	M	U	U	U	S	S	L	S
Nitrobenzene	S	L	—	—	—	S	S	U	U
Oleic Acid	S	S	—	—	—	L	S	S	L
Perchloroethylene	S	S	S	U	S	S	S	U	L
Phosphoric Acid (25%)	U	L	U	U	U	S	S	S	S
Phosphoric Acid (50%)	U	U	U	U	U	S	S	S	S
Pickling Solution	U	M	U	U	U	S	M	S	—
Potassium Carbonate (10%)	U	S	S	S	L	S	S	S	L
Potassium Chloride (25%)	L	S	U	U	U	S	S	S	S
Potassium Hydroxide (25%)	U	U	U	U	U	M	M	U	S
Potassium Nitrate (10%)	U	S	U	U	U	S	S	S	S

Chemical Resistance – Material

TABLE 3. Continued

CHEMICAL	Aluminum	Fiber Glass Polyester	Steel			Stainless Steel		PC	PVC
			Polyester Powder	Urethane Enamel	Gal- vanized	Type 304	Type 316		
Potassium Sulfate (10%)	L	S	U	U	U	S	S	S	L
Soap (Igepal) 10%	L	S	S	U	U	S	S	S	S
Sodium Bicarbonate (10%)	L	S	S	S	U	S	S	S	S
Sodium Bisulfate (10%)	U	L	U	U	U	S	S	S	S
Sodium Chloride (25%)	L	S	U	U	U	S	S	S	S
Sodium Hydroxide	U	U	U	U	U	M	M	U	S
Sodium Hypochlorite	U	M	U	U	U	S	M	L	S
Sodium Nitrate (10%)	M	S	U	U	U	S	S	S	S
Sodium Phosphate (10%)	L	S	U	U	U	S	S	S	S
Sulfuric Acid (25%)	U	S	U	U	U	S	S	S	S
Sulfuric Acid (10%)	U	U	U	U	U	S	S	S	S
Tannic Acid ((10%)	L	S	U	U	U	M	M	S	S
Tetrahydrofuran	M	L	U	U	U	S	S	U	U
Toluene	S	S	L	U	S	S	S	U	U
Trichloroethylene	S	U	—	—	—	L	S	U	U
Trisodium Phosphate	L	M	—	—	—	—	—	S	S
Turpentine	S	M	M	U	L	S	S	S	U
Vegetable Oils	S	S	—	—	—	S	S	S	S
Vinegar	M	S	—	—	—	S	S	S	L
Water, Industrial	L	S	L	L	L	S	S	S	S
Water, Rain	L	S	S	L	L	S	S	S	—
Water, Sea	L	S	U	U	U	S	S	S	S
Water, Tap	L	S	S	L	L	S	S	S	S
Xylene	S	S	L	U	S	S	S	U	U
Zinc Acetate	S	S	—	—	—	S	S	—	—
Zinc Chloride	L	S	S	U	U	M	S	M	L
Zinc Sulfate	S	S	—	—	—	M	S	S	S



**TABLE 4. SPECIFIC CHEMICAL RESISTANCE INFORMATION
OTHER MATERIALS USED FOR ENCLOSURE FEATURES**

CHEMICAL	Rigid PVC	Glass Nylon	Gaskets			Windows	
			Neoprene Rubber	Silicone Rubber	Urethane	Acrylic	Poly-carbonate
Acetyldehyde	U	—	S	S	—	—	—
Acetic Acid (10%)	L	U	U	M	L	S	S
Acetone	U	S	U	S	U	U	U
Aluminum Chloride (10%)	S	U	S	S	S	S	S
Aluminum Sulfate (10%)	S	L	U	S	S	S	S
Ammonia Gas	—	S	S	S	—	S	—
Ammonium Chloride	S	U	S	S	S	S	S
Ammonium Hydroxide (10%)	S	—	L	L	S	S	U
Ammonium Nitrate (10%)	S	U	U	S	S	S	U
Ammonium Phosphate (10%)	—	L	U	S	S	S	S
Ammonium Sulfate	S	U	S	S	—	—	—
Aniline	S	L	U	U	—	S	—
ASTM #1 Oil	—	—	M	S	S	S	M
ASTM #3 Oil	—	—	U	L	S	S	M
Axle Grease	—	—	L	S	S	S	M
Benzene	U	S	U	U	—	U	—
Boric Acid (10%)	L	S	S	S	S	S	S
Bromine	U	U	U	U	U	L	U
Butyl Acetate	U	S	U	U	—	U	—
Butyric Acid	U	U	U	—	—	—	—
Calcium Chloride (10%)	S	U	S	S	S	S	S
Calcium Hydroxide (10%)	S	—	U	S	L	S	S
Calcium Hypochlorite (10%)	S	U	U	S	U	M	S
Calcium Sulfate	S	U	S	S	S	S	S
Carbolic Acid (25%)	—	—	U	U	U	U	U
Carbon Disulfide	U	—	U	—	—	S	—
Carbon Tetrachloride	L	S	U	U	U	S	U
Chlorine (dry)	L	—	—	—	—	—	—
Chlorine (water) 5-10 ppm	L	—	L	S	S	S	S
Chlorobenzene	U	S	U	U	—	L	—
Chloroform	U	U	U	U	—	U	—
Chrome Plating Solution	—	—	U	U	U	S	S
Chromic Acid	L	U	U	M	—	U	—
Citric Acid (10%)	S	L	U	S	U	S	S

Chemical Resistance – Gaskets, Windows and Other

TABLE 4. Continued

CHEMICAL	Rigid PVC	Glass Nylon	Gaskets			Windows	
			Neoprene Rubber	Silicone Rubber	Urethane	Acrylic	Poly-carbonate
Copper Sulfate	S	L	S	S	—	U	—
Creosote	—	U	U	U	—	—	—
Cutting Fluid (5 Star) 10%	—	—	U	S	S	S	M
Cutting Fluid (Castrol 980 H)	—	—	L	S	S	S	L
Cutting Fluid (Norton 205)	—	—	S	S	S	S	S
Cutting Fluid (Rustlick) 10%	—	—	S	S	S	S	S
Cutting Oil (Dark)	—	—	U	S	S	S	S
Diethyl Ether	U	—	—	U	—	U	—
Ethyl Alcohol	S	—	L	S	S	U	M
Ethylene Dichloride	U	—	U	U	—	U	—
Ethylene Glycol	S	—	S	S	S	S	S
Ferric Chloride	S	U	L	S	L	S	S
Ferric Nitrate	S	U	S	M	—	—	—
Ferric Sulfate	S	U	S	M	—	—	—
Fluorine	L	—	—	U	—	—	—
Formaldehyde	L	U	U	M	—	S	—
Formic Acid	L	S	U	L	L	U	S
Fuel Oil (#2)	S	—	U	U	U	S	S
Gasoline	S	S	U	L	—	S	—
Glycerine	S	S	S	S	—	S	—
Hydraulic Brake Fluid	—	—	U	S	U	U	U
Hydraulic Oil	—	—	U	S	S	S	M
Hydrochloric Acid (10%)	S	U	L	L	U	S	S
Hydrocyanic Acid	S	—	S	M	M	—	—
Hydrofluoric Acid (20%)	L	U	U	U	—	S	M
Hydrogen Peroxide	S	U	U	M	—	S	—
Hydrogen Sulfide	S	—	U	M	—	—	—
Hypochlorous Acid	—	—	—	—	—	—	—
Isopropyl Alcohol	—	—	S	S	S	S	S
Kerosene	S	—	U	U	S	S	M
Lacquer Thinner	—	S	U	S	L	U	U
Lactic Acid	S	L	L	—	—	L	—



TABLE 4. Continued

CHEMICAL	Rigid PVC	Glass Nylon	Gaskets			Windows	
			Neoprene Rubber	Silicone Rubber	Urethane	Acrylic	Poly-carbonate
Lime	—	—	S	M	—	—	—
Liquid Dish Soap (10%)	S	—	L	S	S	S	S
Lubricating Oils	—	—	U	U	—	S	—
Magnesium Chloride (10%)	S	S	S	S	S	S	S
Magnesium Hydroxide (10%)	S	—	S	S	S	S	S
Mercuric Chloride (10%)	L	—	U	L	U	S	S
Methyl Ethyl Ketone	U	S	S	U	—	L	—
Methylene Chloride	—	U	U	S	U	U	U
Milk	S	—	S	S	—	S	—
Mineral Oil	S	—	L	M	—	S	—
Mineral Spirits	—	—	U	U	S	S	M
Motor Oil (10 weight)	—	—	U	U	S	S	S
Nickel Salts	S	—	U	S	—	—	—
Nitric Acid (10%)	S	U	U	U	U	S	L
Nitrobenzene	U	S	U	—	—	—	—
Oleic Acid	S	U	—	U	—	—	—
Perchlorethylene	—	—	U	S	U	U	U
Phosphoric Acid (25%)	S	U	S	S	U	S	S
Phosphoric Acid (50%)	S	U	S	S	U	S	S
Pickling Solution	—	—	L	M	M	S	S
Potassium Carbonate (10%)	L	S	S	S	S	S	S
Potassium Chloride (25%)	S	L	S	S	S	S	S
Potassium Hydroxide (25%)	S	S	U	L	M	U	U
Potassium Nitrate (10%)	S	L	S	S	S	S	S
Potassium Sulfate (10%)	SL	S	S	S	S	S	S
Soap (Igepal) 10%	S	—	U	S	S	S	S
Sodium Bicarbonate (10%)	S	S	S	S	S	S	S
Sodium Bisulfate (10%)	S	L	S	S	L	S	S
Sodium Chloride (25%)	S	S	S	S	S	S	S
Sodium Hydroxide	S	S	U	U	M	S	U
Sodium Hypochlorite	S	U	U	S	U	S	S
Sodium Nitrate (10%)	S	S	S	S	S	S	S

Chemical Resistance – Gaskets, Windows and Other

TABLE 4. Continued

CHEMICAL	Rigid PVC	Glass Nylon	Gaskets			Windows	
			Neoprene Rubber	Silicone Rubber	Urethane	Acrylic	Poly-carbonate
Sodium Phosphate (10%)	S	—	U	S	S	S	S
Sulfuric Acid (25%)	S	U	S	S	U	S	S
Sulfuric Acid (10%)	S	—	U	U	L	S	S
Tannic Acid ((10%)	S	U	U	L	U	S	S
Tetrahydrofuran	—	S	U	U	U	U	U
Toluene	U	S	U	U	U	U	U
Trichloroethylene	U	U	U	U	—	U	—
Trisodium Phosphate	S	—	—	—	—	—	—
Turpentine	—	S	U	L	U	S	S
Vegetable Oils	S	—	L	S	—	S	—
Vinegar	—	S	L	S	—	S	—
Water, Industrial	S	—	S	S	S	S	S
Water, Rain	S	—	S	S	S	S	S
Water, Sea	S	—	S	S	S	S	S
Water, Tap	S	—	S	S	S	S	S
Xylene	—	S	U	M	U	S	U
Zinc Acetate	—	—	—	U	—	—	—
Zinc Chloride	S	U	M	S	U	S	M
Zinc Sulfate	S	L	S	S	—	—	—