

### Technical Information

## URETHANE INTERIOR COATING CHEMICAL RESISTANCE CHART

SOLUTIONS	CONC.	TEMP.	RECOMMENDED EXPOSURE		
			FUMES	SPLASH	IMMERSION
Acetic Acid	10%	75° F	YES	YES	NO
Acid Copper Plating Sol.	Any	75° F	YES	YES	NO
Alkaline Cleaners	Any	75° F	YES	YES	NO
Aluminum Chloride	Sat'd	75° F	YES	YES	NO
Aluminum Sulfate	Sat'd	75° F	YES	YES	NO
Alums	Sat'd	75° F	YES	YES	NO
Ammonium Chloride	Sat'd	75° F	YES	YES	NO
Ammonium Hydroxide	28%	75° F	YES	YES	NO
Ammonium Hydroxide	10%	75° F	YES	YES	NO
Ammonium Sulfate	Sat'd	75° F	YES	YES	NO
Ammonium Thiocyanate	Sat'd	75° F	YES	YES	NO
Amyl Alcohol	Sat'd	75° F	YES	YES	YES
Arsenic Acids	Any	75° F	YES	YES	NO
Barium Sulfide	Sat'd	75° F	YES	YES	NO
Black Liquor	Sat'd	75° F	YES	YES	NO
Benzoic Acid	Sat'd	75° F	YES	YES	NO
Brass Plating Solution	Sat'd	75° F	YES	YES	NO
Bromine Water	Sat'd	75° F	YES	YES	NO
Butyl Alcohol	Any	75° F	YES	YES	NO
Cadmium Plating Sol.	Any	75° F	YES	YES	NO
Cadmium Bisulfate	Any	75° F	YES	YES	NO
Calcium Chloride	Sat'd	75° F	YES	YES	NO
Calcium Hypochlorite	Sat'd	75° F	YES	YES	NO
Carbonic Acid	Sat'd	75° F	YES	YES	NO
Casein	Any	75° F	YES	YES	NO
Castor Oil	Any	75° F	YES	YES	YES
Caustic Soda	35%	75° F	YES	YES	NO
Caustic Soda	10%	75° F	YES	YES	NO
Caustic Potash	35%	75° F	YES	YES	NO
Caustic Potash	10%	75° F	YES	YES	NO
Chlorine Water	Sat'd	75° F	YES	YES	NO
Chromium Plating Sol.	Any	75° F	YES	YES	NO
Citric Acid	Sat'd	75° F	YES	YES	NO
Copper Chloride	Sat'd	75° F	YES	YES	NO
Copper Cyanide Plating Sol.	Any	75° F	YES	YES	NO
Copper Sulfate	Sat'd	75° F	YES	YES	NO
Coconut Oil	Sat'd	75° F	YES	YES	YES
Cottonseed Oil	Sat'd	75° F	YES	YES	YES
Disodium Phosphate	Sat'd	75° F	YES	YES	NO
Ethyl Alcohol	Any	75° F	YES	YES	NO
Ethylene Glycol	Any	75° F	YES	YES	YES
Ferrous Sulfate	Sat'd	75° F	YES	YES	NO
Fluoboric Acid	Any	75° F	YES	YES	NO
Formaldehyde	37%	75° F	YES	YES	NO
Formic Acid	85%	75° F	YES	YES	NO
Gallic Acid	Sat'd	75° F	YES	YES	NO
Glucose	Any	75° F	YES	YES	YES
Glycerine	Any	75° F	YES	YES	YES
Gold Plating Solution	Any	75° F	YES	YES	NO
Hydrochloric Acid	10%	75° F	YES	YES	NO
Hydrochloric Acid	21.5%	75° F	YES	YES	NO
Hydrochloric Acid	37.5%	75° F	YES	YES	NO
Hydrofluoric Acid	4%	75° F	YES	YES	NO
Hydrofluoric Acid	10%	75° F	YES	YES	NO
Hydrofluoric Acid	48%	75° F	YES	YES	NO
Hydrogen Peroxide	30%	75° F	YES	YES	NO
Hydroquinone	Any	75° F	YES	YES	NO
Indium Plating Solution	Any	75° F	YES	YES	NO
Lactic Acid	Any	75° F	YES	YES	NO
Lead Plating Solution	Any	75° F	YES	YES	NO

SOLUTIONS	CONC.	TEMP.	RECOMMENDED EXPOSURE		
			FUMES	SPLASH	IMMERSION
Malic Acid	Any	75° F	YES	YES	NO
Methyl Alcohol	Any	75° F	YES	YES	NO
Mineral Oils	Any	75° F	YES	YES	YES
Nickel Acetate	Sat'd	75° F	YES	YES	NO
Nickel Plating Solution	Any	75° F	YES	YES	NO
Nickel Salts	Sat'd	75° F	YES	YES	NO
Nitric Acid	35%	75° F	YES	YES	NO
Nitric Acid	40%	75° F	YES	YES	NO
Nitric Acid	60%	75° F	YES	YES	NO
Nitric/Hydrofluoric Acid	15%/4%	75° F	YES	YES	NO
Nitric Acid/Sodium Dichromate					
Water	16%/13%/71%	75° F	YES	YES	NO
Oleic Acid	Any	75° F	YES	YES	NO
Oxalic Acid	Any	75° F	YES	YES	NO
Phenol	Sat'd	75° F	YES	YES	NO
Phosphoric Acid	75%	75° F	YES	YES	NO
Phosphoric Acid	85%	75° F	YES	YES	NO
Potassium Acid Sulfate	Sat'd	75° F	YES	YES	NO
Potassium Antimonate	Sat'd	75° F	YES	YES	NO
Potassium Bisulfite	Sat'd	75° F	YES	YES	NO
Potassium Chloride	Sat'd	75° F	YES	YES	NO
Potassium Cuprocyanide	Sat'd	75° F	YES	YES	NO
Potassium Cyanide	Sat'd	75° F	YES	YES	NO
Potassium Dichromate	Sat'd	75° F	YES	YES	NO
Potassium Hypochlorate	Sat'd	75° F	YES	YES	NO
Potassium Sulfide	Sat'd	75° F	YES	YES	NO
Potassium Thiosulfate	Sat'd	75° F	YES	YES	NO
Propyl Alcohol	Sat'd	75° F	YES	YES	NO
Rhodium Plating Solution	Sat'd	75° F	YES	YES	NO
Silver Plating Solution	Sat'd	75° F	YES	YES	NO
Soaps	Any	75° F	YES	YES	NO
Sodium Acid Sulfate	Sat'd	75° F	YES	YES	NO
Sodium Antimonate	Sat'd	75° F	YES	YES	NO
Sodium Bicarbonate	Sat'd	75° F	YES	YES	NO
Sodium Bisulfite	Sat'd	75° F	YES	YES	NO
Sodium Chloride	Sat'd	75° F	YES	YES	NO
Sodium Cyanide	Sat'd	75° F	YES	YES	NO
Sodium Dichromate	Sat'd	75° F	YES	YES	NO
Sodium Hydroxide	10%	75° F	YES	YES	NO
Sodium Hydroxide	35%	75° F	YES	YES	NO
Sodium Hydroxide	73%	75° F	YES	YES	NO
Sodium Hypochlorite	Sat'd	75° F	YES	YES	NO
Sodium Hypochlorite	15%	75° F	YES	YES	NO
Sodium Sulfide	Sat'd	75° F	YES	YES	NO
Sodium Thiosulfate	Sat'd	75° F	YES	YES	NO
Sulfuric Acid	15%	75° F	YES	YES	NO
Sulfuric Acid	50%	75° F	YES	YES	NO
Sulfuric Acid	70%	75° F	YES	YES	NO
Sulfuric Acid	98%	75° F	YES	YES	NO
Sulfurous Acid	2%	75° F	YES	YES	NO
Sulfurous Acid	4%	75° F	YES	YES	NO
Tannic Acid	Sat'd	75° F	YES	YES	NO
Tartaric Acid	Sat'd	75° F	YES	YES	NO
Tin Chloride	Sat'd	75° F	YES	YES	NO
Tin Plating Solution	Sat'd	75° F	YES	YES	NO
Triethanolamine	Sat'd	75° F	YES	YES	NO
Trisodium Phosphate	Sat'd	75° F	YES	YES	NO
White Liquor	Sat'd	75° F	YES	YES	NO
Zinc Plating Solution	Sat'd	75° F	YES	YES	NO
Zinc Sulfate	Sat'd	75° F	YES	YES	NO

### Technical Information

## PVC EXTERIOR COATING CHEMICAL RESISTANCE CHART

SOLUTIONS	CONC.	TEMP.	RECOMMENDED EXPOSURE		
			FUMES	SPLASH	IMMERSION
Acetic Acid	10%	120	NO	NO	NO
Acid Copper Plating Sol.		160	YES	YES	YES
Alkaline Cleaners		160	YES	YES	YES
Aluminum Chloride	Sat'd	160	YES	YES	YES
Aluminum Sulfate	Sat'd	160	YES	YES	YES
Alums	Sat'd	160	YES	YES	YES
Ammonium Chloride	Sat'd	160	YES	YES	YES
Ammonium Hydroxide	28%	120	YES	YES	YES
Ammonium Hydroxide	10%	120	YES	YES	YES
Ammonium Sulfate	Sat'd	160	YES	YES	YES
Ammonium Thiocyanate	Sat'd	160	YES	YES	YES
Amyl Alcohol	Any	90	YES	YES	YES
Arsenic Acids	Any	150	YES	YES	YES
Barium Sulfide	Sat'd	160	YES	YES	YES
Black Liquor	Sat'd	90	YES	YES	YES
Benzoic Acid	Sat'd	160	YES	YES	YES
Brass Plating Solution	Any	160	YES	YES	YES
Bromine Water	Sat'd	120	YES	YES	YES
Butyl Alcohol	Any	90	YES	YES	YES
Cadmium Plating Sol.	Any	150	YES	YES	YES
Cadmium Bisulfate	Any	150	YES	YES	YES
Calcium Chloride	Sat'd	160	YES	YES	YES
Calcium Hypochlorite	Sat'd	120	YES	YES	YES
Carbonic Acid	Sat'd	160	YES	YES	YES
Casein	Any	90	YES	YES	YES
Castor Oil	Any	90	YES	YES	YES
Caustic Soda	35%	120	YES	YES	YES
Caustic Soda	10%	150	YES	YES	YES
Caustic Potash	35%	120	YES	YES	YES
Caustic Potash	10%	150	YES	YES	YES
Chlorine Water	Sat'd	90	YES	YES	YES
Chromium Plating Sol.	Any	150	YES	YES	YES
Citric Acid	Sat'd	160	YES	YES	YES
Copper Chloride	Sat'd	160	YES	YES	YES
Copper Cyanide Plating Sol. (High Speed)	Any	180	YES	YES	YES
(with Alkali Cyanides)	Sat'd	160	YES	YES	YES
Copper Sulfate	Sat'd	160	YES	YES	YES
Coconut Oil	Sat'd	90	YES	YES	YES
Cottonseed Oil	Sat'd	90	YES	YES	YES
Disodium Phosphate	Sat'd	160	YES	YES	YES
Ethyl Alcohol	Any	90	YES	YES	YES
Ethylene Glycol	Any	90	YES	YES	NO
Ferric Chloride	45%	120	YES	YES	YES
Ferrous Sulfate	Sat'd	150	YES	YES	YES
Fluoboric Acid	Any	150	YES	YES	YES
Formaldehyde	37%	120	YES	YES	YES
Formic Acid	85%	100	NO	NO	NO
Gallic Acid	Sat'd	150	YES	NO	NO
Glucose	Any	150	YES	YES	YES
Glycerine	Any	90	YES	YES	YES
Gold Plating Solution	Any	150	YES	YES	YES
Hydrochloric Acid	10%	120	YES	YES	YES
Hydrochloric Acid	21.5%	120	YES	YES	YES
Hydrochloric Acid	37.5%	120	YES	YES	NO
Hydrochloric Acid	37.5%	90	YES	YES	NO
Hydrofluoric Acid	4%	140	YES	YES	NO
Hydrofluoric Acid	10%	120	YES	YES	NO
Hydrofluoric Acid	48%	120	YES	YES	NO
Hydrogen Peroxide	30%	120	YES	YES	YES
Hydrogen Sulfide	Sat'd	120	YES	YES	YES
Hydroquinone	Any	90	YES	YES	YES
Indium Plating Solution	Any	150	YES	YES	YES

SOLUTIONS	CONC.	TEMP.	RECOMMENDED EXPOSURE		
			FUMES	SPLASH	IMMERSION
Lactic Acid	50%	120	YES	YES	YES
Lactic Acid	Any	90	YES	YES	YES
Lead Plating Solution	Any	150	YES	YES	YES
Malic Acid	Any	90	YES	YES	YES
Methyl Alcohol	Any	90	YES	YES	YES
Mineral Oils	Any	90	YES	YES	YES
Nickel Acetate	Sat'd	160	YES	YES	YES
Nickel Plating Solution		160	YES	YES	YES
Nickel Salts	Sat'd	160	YES	YES	YES
Nitric Acid	35%	120	YES	YES	NO
Nitric Acid	40%	90	YES	YES	NO
Nitric Acid	60%	120	YES	YES	NO
Nitric/Hydrofluoric Acid	15%/4%	140	YES	YES	YES
Nitric Acid/Sodium Dichromate Water	16%/13%/71%130		YES	YES	YES
Oleic Acid	Any	90	YES	YES	YES
Oxalic Acid		90	YES	YES	YES
Phenol	Sat'd	120	NO	NO	NO
Phosphoric Acid	75%	150	YES	YES	YES
Phosphoric Acid	85%	120	YES	YES	YES
Potassium Acid Sulfate	Sat'd	150	YES	YES	YES
Potassium Antimonate	Sat'd	150	YES	YES	YES
Potassium Bisulfite	Sat'd	90	YES	YES	YES
Potassium Chloride	Sat'd	160	YES	YES	YES
Potassium Cuprocyanide	Sat'd	150	YES	YES	YES
Potassium Cyanide	Sat'd	160	YES	YES	YES
Potassium Dichromate	Sat'd	160	YES	YES	YES
Potassium Hypochlorate	Sat'd	90	YES	YES	NO
Potassium Sulfide	Sat'd	150	YES	YES	YES
Potassium Thiosulfate	Sat'd	150	YES	YES	YES
Propyl Alcohol	Sat'd	150	YES	YES	YES
Rhodium Plating Solution	Sat'd	150	YES	YES	YES
Silver Plating Solution	Sat'd	150	YES	YES	YES
Soaps	Any	90	YES	YES	YES
Sodium Acid Sulfate	Sat'd	160	YES	YES	YES
Sodium Antimonate	Sat'd	150	YES	YES	YES
Sodium Bicarbonate	Sat'd	160	YES	YES	YES
Sodium Bisulfite	Sat'd	90	YES	YES	YES
Sodium Chloride	Sat'd	160	YES	YES	YES
Sodium Cyanide	Sat'd	160	YES	YES	YES
Sodium Dichromate	Sat'd	160	YES	YES	YES
Sodium Hydroxide	10%	150	YES	YES	NO
Sodium Hydroxide	35%	120	YES	YES	NO
Sodium Hydroxide	73%	160	NO	NO	NO
Sodium Hypochlorite	Sat'd	90	YES	YES	NO
Sodium Hypochlorite	15%	120	YES	YES	NO
Sodium Sulfide	Sat'd	150	YES	YES	YES
Sodium Thiosulfate	Sat'd	150	YES	YES	YES
Sulfuric Acid	15%	120	YES	YES	YES
Sulfuric Acid	50%	120	YES	YES	YES
Sulfuric Acid	70%	90	YES	YES	NO
Sulfuric Acid	98%	100	YES	NO	NO
Sulfurous Acid	2%	120	YES	YES	NO
Sulfurous Acid	6%	120	YES	YES	NO
Tannic Acid	Sat'd	90	YES	YES	YES
Tartaric Acid	Sat'd	90	YES	YES	YES
Tin Chloride	Sat'd	150	YES	YES	YES
Tin Plating Solution	Sat'd	150	YES	YES	YES
Triethanolamine	Sat'd	150	YES	YES	YES
Trisodium Phosphate	Sat'd	150	YES	YES	YES
White Liquor	Sat'd	90	YES	YES	YES
Zinc Plating Solution		160	YES	YES	YES
Zinc Sulfate	Sat'd	160	YES	YES	YES

## SPECIFICATIONS

1. The PVC coated rigid metal conduit must be UL Listed. The PVC coating must have been investigated by UL as providing the primary corrosion protection for the rigid metal conduit. Ferrous fittings for general service locations must be UL Listed with PVC as the primary corrosion protection. Hazardous location fittings, prior to plastic coating must be UL listed. All conduit and fittings must be new, unused material. Applicable UL standards may include: UL 6 Standard for Safety, Rigid Metal Conduit, UL514B Standard for Safety, Fittings for Conduit and Outlet Boxes.
2. The conduit shall be hot dip galvanized inside and out with hot galvanized threads.
3. A PVC sleeve extending one pipe diameter or two inches, whichever is less, shall be formed at every female fitting opening except unions. The inside sleeve diameter shall be matched to the outside diameter of the conduit.
4. The PVC coating on the outside of conduit couplings shall have a series of longitudinal ribs 40 mils in thickness to protect the coating from tool damage during installation.
5. Form 8 Condulets shall be supplied with plastic encapsulated stainless steel cover screws.
6. A green urethane coating shall be uniformly and consistently applied to the interior of all conduit and fittings. This internal coating shall be a nominal 2 mil thickness. Conduit or fittings having areas with thin or no coating shall be unacceptable.
7. The PVC exterior and urethane interior coatings applied to the conduit shall afford sufficient flexibility to permit field bending without cracking or flaking at temperatures above 30°F (-1°C).
8. All male threads on conduit, elbows and nipples shall be protected by application of a urethane coating.
9. All female threads on fittings or conduit couplings shall be protected by application of a urethane coating.
10. Independent certified test results shall be available to confirm coating adhesion under the following conditions:
  - A. Conduit immersed in boiling water with a minimum mean time to adhesion failure of 200 hours. (ASTM D870)
  - B. Conduit and conduit exposure to 150°F (65°C) and 95% relative humidity with a minimum mean time to failure of 30 days. (ASTM D1151)
  - C. The interior coating bond shall be confirmed using the Standard Method of Adhesion by Tape Test (ASTM D3359).
  - D. No trace of the internal coating shall be visible on a white cloth following six wipes over the coating which has been wetted with acetone (ASTM D1308).
  - E. The exterior coating bond shall be confirmed using the methods described in Section 3.8, NEMA RN1. After these tests the physical properties of the exterior coating shall exceed the minimum requirements specified in Table 3.1, NEMA RN1.
11. Right angle beam clamps and U bolts shall be specially formed and sized to snugly fit the outside diameter of the coated conduit.
12. Installation of the PVC coated Conduit System shall be performed in accordance with the original Installation Manual. To assure correct installation, the installer shall be certified by the manufacturer to install coated conduit.
13. Approved Material: The PVC Coated Conduit and Fittings as original manufactured by the U.S. factory. Any deviation from the above specifications must be approved by the cognizant engineer.

The PVC coated rigid metal conduit must be UL Listed. The PVC coating must have been investigated by UL as providing the primary corrosion protection for the rigid metal conduit. Ferrous fittings for general service locations must be UL Listed with PVC as the primary corrosion protection. Hazardous location fittings, prior to plastic coating must be UL listed. All conduit and fittings must be new, unused material. Applicable UL standards may include: UL 6 Standard for Safety, Rigid Metal Conduit, UL514B Standard for Safety, Fittings for Conduit and Outlet Boxes.

Conduit and fittings shall be evaluated for reliability and performance. Certified test results are the respective test data that have been witnessed and certified to be accurate by an independent, recognized third party.

1. Acceptable conduit PVC bonds shall pass the bond test with a minimum average of 200 hours in an accelerated boil test. (ASTM D870)
2. Acceptable conduit and fitting PVC bonds shall be confirmed with a minimum average of 30 days in a heat and humidity test (ASTM D1151 and D2247) with the temperature at 150°F (66°C) and 95% relative humidity.
3. Acceptable seal performance shall be confirmed at 15 psig (positive) and 25 in. of mercury (vacuum) for 72 hours.

Contact our sales office for third party testing certification and procedure methods.