

Chemical Resistance of Epoxy to Common Chemicals

Epoxy (polyepoxide) is an epoxide polymer that cures when mixed with a catalyzing agent or "hardener". Epoxy resin have an excellent electrical, thermal, and chemical resistance. It is common to increase the strength of epoxy with fibrous reinforcement or mineral fillers. The variety of combinations of epoxy resins and reinforcements provides a wide latitude in properties obtainable in molded parts.

The table below can be used as an indication of epoxy resistance to chemical compounds. Always check the chemical resistance with the epoxy manufacturer.

Chemical Product	Resistance
Acetic Acid (20%)	Excellent
Acetone	Not Recommended
Acetylene	Excellent
Alcohol - Ethyl	Excellent (temperature < 120oF, 50oC)
Alcohol - Isopropyl	Excellent
Alcohol - Methyl	Good (temperature < 72oF, 22oC)
Aluminum Chloride	Excellent (temperature < 72oF, 22oC)
Aluminum Fluoride	Good (temperature < 72oF, 22oC)
Aluminum Hydroxide	Good (temperature < 72oF, 22oC)
Aluminum Sulfate	Excellent (temperature < 72oF, 22oC)
Amines	Excellent (temperature < 72oF, 22oC)
Ammonia - Liquid	Excellent (temperature < 72oF, 22oC)
Ammonia 10%	Excellent (temperature < 72oF, 22oC)
Ammonium Carbonate	Excellent (temperature < 72oF, 22oC)
Ammonium Chloride	Excellent (temperature < 72oF, 22oC)
Ammonium Hydroxide	Excellent (temperature < 72oF, 22oC)
Ammonium Nitrate	Excellent (temperature < 72oF, 22oC)
Ammonium Phosphate	Excellent (temperature < 72oF, 22oC)
Ammonium Sulfate	Excellent (temperature < 72oF, 22oC)
Amyl acetate	Excellent (temperature < 72oF, 22oC)
Aniline	Fair (temperature < 72oF, 22oC)
Barium Carbonate	Excellent (temperature < 72oF, 22oC)
Barium Chloride	Excellent (temperature < 72oF, 22oC)
Barium Hydroxide	Excellent (temperature < 72oF, 22oC)
Barium Sulfate	Fair (temperature < 72oF, 22oC)
Barium Sulfide	Good (temperature < 72oF, 22oC)
Beer	Excellent (temperature < 72oF, 22oC)
Benzol	Excellent (temperature < 72oF, 22oC)
Borax	Excellent (temperature < 72oF, 22oC)
Boric acid	Excellent (temperature < 72oF, 22oC)
Bromine	Not Recommended
Butadiene gas	Excellent (temperature < 72oF, 22oC)
Butane gas	Excellent (temperature < 72oF, 22oC)
Butyl acetate	Good (temperature < 72oF, 22oC)
Butaric Acid	Fair (temperature < 72oF, 22oC)
Calcium Bisulfite	Excellent (temperature < 72oF, 22oC)
Calcium Carbonate	Excellent (temperature < 72oF, 22oC)
Calcium Chloride	Excellent (temperature < 72oF, 22oC)
Calcium Hydroxide	Excellent (temperature < 72oF, 22oC)
Calcium Hypochlorite	Excellent (temperature < 72oF, 22oC)
Calcium Sulfate	Excellent (temperature < 72oF, 22oC)
Carbon dioxide gas	Excellent (temperature < 72oF, 22oC)
Carbon Tetrachloride	Excellent (temperature < 72oF, 22oC)

Carbonic Acid	Good (temperature < 72oF, 22oC)
Citric Acid	Excellent (temperature < 72oF, 22oC)
Copper Chloride	Excellent
Copper Nitrate	Excellent (temperature < 72oF, 22oC)
Dichloroethane	Good (temperature < 120oF, 50oC)
Diesel Fuel	Excellent (temperature < 72oF, 22oC)
Ethyl acetate	Fair (temperature < 72oF, 22oC)
Ethyl chloride	Excellent (temperature < 72oF, 22oC)
Ethylene glycol	Fair (temperature < 72oF, 22oC)
Fatty Acids	Excellent (temperature < 72oF, 22oC)
Ferric Chloride	Excellent (temperature < 72oF, 22oC)
Ferric Sulfate	Excellent (temperature < 72oF, 22oC)
Ferrous Chloride	Excellent (temperature < 72oF, 22oC)
Ferrous Sulfate	Excellent (temperature < 72oF, 22oC)
Fluorine gas	Note Recommended
Fluosilicic acid	Fair
Formaldehyde, 40%	Excellent (temperature < 72oF, 22oC)
Formic Acid	Fair (temperature < 72oF, 22oC)
R-12 dichlorodifluoromethane	Excellent
Gasoline	Excellent
Glucose	Good
Glycerine	Excellent
Heptane	Excellent
Hexane	Good
Hydraulic Fluid	Excellent
Hydrobromic Acid, 100%	Not Recommended
Hydrochloric acid, 20%	Good (temperature < 72oF, 22oC)
Hydrocyanic Acid	Excellent
Hydrofluoric Acid, 75%	Good (temperature < 72oF, 22oC)
Hydrogen Peroxide, 10%	Fair (temperature < 72oF, 22oC)
Hydrogen Sulfide	Excellent
Jet Fuel	Excellent
Kerosene	Excellent
Lactic Acid	Good (temperature < 72oF, 22oC)
Lead acetate	Excellent
Magnesium Carbonate	Excellent
Magnesium Chloride	Excellent
Magnesium Hydroxide	Excellent
Magnesium Nitrate	Excellent
Magnesium Sulfate	Excellent
Maleic Acid	Excellent
Mercury	Excellent
Methyl Ethyl Ketone	Fair (temperature < 72oF, 22oC)
Naphtha	Excellent
Naphthalene	Excellent
Nickel Chloride	Excellent
Nickel Sulfate	Excellent
Nitric Acid	Not Recommended
Oil - Castor	Excellent
Oleic acid	Excellent
Oxalic Acid	Excellent

Phenol	Good
Phosphoric Acid	Good
Picric Acid	Excellent
Potassium Bicarbonate	Excellent
Potassium Bromide	Excellent
Potassium Carbonate	Excellent
Potassium Chloride	Excellent
Potassium Dichromate	Fair
Potassium Hydroxide	Excellent
Potassium Nitrate	Excellent
Potassium Sulfate	Excellent
Propane, liquid	Excellent
Silver Nitrate	Excellent
Soaps	Excellent
Sodium Acetate	Excellent
Sodium Bicarbonate	Excellent
Sodium Bisulfate	Excellent
Sodium Carbonate	Fair (temperature < 72oF, 22oC)
Sodium Chlorate	Excellent
Sodium Chloride	Excellent
Sodium Cyanide	Excellent
Sodium Fluoride	Excellent
Sodium Hydroxide, 50%	Good (temperature < 120oF, 50oC)
Sodium Hypochlorite, 100%	Not Recommended
Sodium Nitrate	Excellent
Sodium Silicate	Excellent
Sodium Sulfate	Excellent
Sodium Sulfite	Excellent
Sodium Thiosulfate	Excellent
Stannic Chloride	Excellent
Stearic Acid	Good
Sulfuric Acid, 75-100%	Fair (temperature < 72oF, 22oC)
Sulfur Dioxide	Excellent (temperature < 72oF, 22oC)
Tannic Acid	Excellent
Tartaric Acid	Excellent
Toluene	Good (temperature < 72oF, 22oC)
Turpentine	Good
Urine	Excellent
Vinegar	Excellent
Water - Distilled	Excellent
Water - Fresh	Excellent
Water - Sea, Salt	Excellent
Xylene	Excellent
Zinc Chloride	Excellent