



CHEMICAL RESISTANCE CHART Typical Powder Coatings

Key: E – No attack
 F – Some attack, but unseeable in some instances
 N – Rapidly attacked
 H – Hot, 180°F (82.2°C) or boiling point of solvent

G – Appreciably no attack
 P – Attacked, not recommended for use
 C – Cold, 70°F (21.1°C)
 * – And nitrate and sulfate

Chemical	Epoxy		Chemical	Epoxy		Chemical	Epoxy		Chemical	Epoxy	
	C	H		C	H		C	H		C	H
Acids:			Acids (Continued):			Acid Salts:			Solvents:		
Acetic, 10%	F	N	Maleic, 25%	E	E	Aluminum Sulfate	E	E	Alcohols	E	E
Acetic, Glacial	N	N	Nitric, 5%	E	G	Ammonium Chloride*	E	E	Aliphatic Hydrocarbons	E	E
Benzene Sulfonic, 10%	E	E	Nitric, 30%	G	P	Copper Chloride*	E	E	Aromatic Hydrocarbons	E	E
Benzoic	E	E	Oleic	E	E	Iron Chloride*	E	E	Chlorinated Hydrocarbons	F	F
Boric	E	E	Oxalic	E	E	Nickel Chloride*	E	E	Ketones	F	F
Butyric, 100%	P	N	Phosphoric	G	F	Zinc Chloride*	E	E	Ethers	F	F
Chloroacetic, 10%	E	E	Picric	G	F	Alkaline Salts:			Esters	F	F
Chromic, 5%	F	N	Stearic	E	E	Barium Sulfide	E	E	Gasoline	E	E
Citric, 10%	E	N	Sulfuric, 50%	G	F	Sodium Bicarbonate	E	E	Carbon Tetrachloride	E	E
Fatty Acids	E	E	Sulfuric, 80%	F	N	Sodium Sulfide	E	E	Organics:		
Fluosilicic	N	N	Tannic	E	E	Trisodium Phosphate	E	E	Aniline	G	P
Formic, 90%	E	F	Alkalies:			Neutral Salts:			Benzenc	E	E
Hydrobromic, 20%	G	G	Ammonium Hydroxide	E	G	Calcium Chloride*	E	E	Formaldehyde, 37%	E	G
Hydrochloric, 20%	E	G	Calcium Hydroxide	E	E	Magnesium Chloride*	E	E	Phenol, 5%	G	F
Hydrocyanic	E	E	Potassium Hydroxide	E	E	Potassium Chloride*	E	E	Mineral Oils	E	E
Hydrofluoric, 20%	G	G	Sodium Hydroxide	E	E	Sodium Chloride*	E	E	Vegetable Oils	E	E
Hypochlorous, 5%	F	N									
Lactic, 5%	F	N									

Z1180 and Z1184 CHEMICAL RESISTANCE CHART For Composite Material in Light Acid Concentration Environment Only

Key: E – Excellent Corrosion Resistance G – Good F – Fair P – Poor

Medium	Rating	Medium	Rating	Medium	Rating	Medium	Rating
General Outdoor	E	Salts (Continued):		Gases (Wet):		Oils, Fuels, and Other:	
Marine Outdoor	E	Copper Sulfate	E	Ammonia	E	ASTM No. 1 Oil	E
General Industrial	E	Ferric		Carbon Dioxide	E	ASTM No. 3 Oil	E
Water – Pure	E	Chloride	E	Chlorine	E	Detergents	E
Water – Sea	E	Sulfate	E	Hydrogen Sulfide	E	Gasoline	E
Acids:		Magnesium		Nitrogen Dioxide	G-E	Grease	E
Acetic	E	Chloride	E	Sulfur Dioxide	E	Jet Fuel	E
Boric	E	Sulfate	E	Carbon Disulfide	E	Hydraulic Fluid (Ester)	E
Chromic	E	Mercuric Chloride	E	Solvents:		Kerosene	E
Citric	E	Nickel		Acetone	E	Motor Oil	E
Fatty	E	Chloride	E	Benzene	E		
Formic	E	Sulfate	E	Carbon Tetrachloride	E		
Hydrochloric	G	Potassium		Ethyl Acetate	E		
Hydrofluoric	F-P	Chloride	E	Ethyl Alcohol	E		
Nitric	F	Sulfate	E	Ethyl Ether	E		
Phosphoric	G	Sodium		Ethylene Dichloride	E		
Picric	G	Bicarbonate	E	Ethylene Glycol	E		
Sulfuric	G	Bisulfate	E	Freon	E		
Bases:		Chloride	E	Methyl Alcohol	E		
Ammonium Hydroxide	E	Hypochlorite	E	Methyl Ethyl Ketone	E		
Potassium or Sodium Hydroxide	F-G	Nitrate	E	Methylene Chloride	E		
Salts:		Phosphate	E	Perchloroethylene	E		
Aluminum Sulfate	E	Silicate	E	Trichloroethylene	E		
Ammonium		Sulfate	E	Toluene	E		
Chloride	E	Thiosulfate	E	Xylene	E		
Nitrate	E	Zinc					
Phosphate	E	Chloride	E				
Sulfate	E	Sulfate	E				
Borax	E	Calcium Chloride	E				
		Sodium Carbonate	E				

CHEMICAL RESISTANCE CHART Typical Corrosion Resistance of Stainless Steel to Various Media

CODE: a – Unaffected. b – Slightly attacked. c – Attacked. m – Complete details concerning the conditions of service must be evaluated.

MEDIUM	TYPE CF8 304	NUMBERS CF8M 316	MEDIUM	TYPE CF8 304	NUMBERS CF8M 316	MEDIUM	TYPE CF8 304	NUMBERS CF8M 316
Organic Substances:			Salts:			Salts (Continued):		
Acetone	a	a	Aluminum chloride	c	c	Silver cyanide	a	a
Benzol	a	a	Aluminum fluoride	c	b	Sodium bicarbonate	a	a
Carbon tetrachloride	c	c	Aluminum sulfate	a	a	Sodium borate	a	a
Ethyl alcohol	a	a	Ammonium alum	a	a	Sodium bromide	a	a
Ethyl chloride	a	a	Ammonium bromide	c	a	Sodium chloride (2% aerated)	a	a
Ethyl ether	a	a	Ammonium chloride	b	a	Sodium citrate	a	a
Food pastes	a	a	Ammonium hydroxide	a	a	Sodium fluoride	b	–
Fruit juices	a	a	Ammonium nitrate	a	a	Sodium hydroxide	a	a
Ink	m	m	Ammonium sulfate	a	a	Sodium nitrate	a	a
Mustard	b	a	Barium chloride	a	a	Sodium peroxide (212°F)	a	a
Paregoric compd	a	a	Bleaching powder	c	a	Stannic chloride	c	c
Quinine bisulfate	b	a	Calcium chloride	c	a	Stannous chloride	b	–
Quinine sulfate	a	a	Calcium hydroxide or oxide	a	a	Sulfur (molten) 500°F	a	a
Vinegar at 70°F	m	m	Copper chloride	c	c	Sulfur chloride	b	–
Acids:			Copper cyanide	a	a	Titanium tetrachloride	a	a
Acetic	m	m	Copper nitrate	a	a	Zinc chloride	c	b
Benzoic	a	a	Copper sulfate (plus 2% sulfuric acid)	a	a	Zinc sulfate	a	a
Boric	a	a	Copper sulfate	a	a	Miscellaneous:		
Carbolic	a	a	Creosote	c	a	Ammonia	a	a
Chromic (50%)	c	c	Creosote (plus 3% salt)	c	c	Baking oven gases	a	a
Citric	a	a	Hydrogen peroxide	b	a	Bromine	c	c
Formic	c	m	Magnesium carbonate	a	a	Carbonated beverages	a	a
Hydrobromic	c	c	Magnesium chloride	m	m	Chlorine (wet and dry)	c	c
Hydrocyanic	a	a	Magnesium sulfate	a	a	Glycerin	a	a
Hydrochloric	c	c	Magnesium hydroxide	a	a	Hydrogen sulfide (400°F)	b	a
Hydrofluoric	c	c	Magnesium nitrate	a	a	Iodine	c	a
Lactic	a	a	Phosphorous trichloride	a	a	Lead (molten)	c	c
Nitric (conc.)	a	a	Potassium bromide	a	a	Lysol	m	m
Nitric (conc. plus 2% HCl)	a	–	Potassium carbonate	a	a	Mercury	a	a
Nitrous (conc.)	a	a	Potassium chloride	m	m	Sauerkraut brine	c	a
Oxalic	m	m	Potassium chlorate	a	a	Sea water	m	m
Phosphoric	a	a	Potassium cyanide	a	a	Sulfur dioxide	b	b
Phosphoric (10%)	a	a	Potassium dichromate	a	a	Vegetable juices	a	a
Picric (conc.)	a	a	Potassium ferricyanide	a	a	X-ray developing solution	b	a
Pyrogallic (conc.)	a	a	Potassium ferricyanide (boiling)	a	a	Zinc (molten)	c	c
Pyroligneous (conc.)	a	a	Potassium hypochlorite	c	m			
Stearic (conc.)	a	a	Potassium iodide	a	a			
Succinic (molten)	c	–	Potassium iodide	a	a			
Sulfuric (conc.)	a	a	(sat. plus 0.1% sodium carbonate evaporated to dryness)					
Sulfuric (dil.)	m	m	Potassium hydrate	a	a			
Sulfuric 15% (plus 2% potassium dichromate)	a	a	Potassium nitrate	a	a			
Sulfurous (conc.)	b	a	Potassium oxalate	a	a			
Tannic (conc.)	a	a	Potassium permanganate	a	a			
Tartaric (conc.)	a	a	Potassium sulfate	a	a			
Trichloroacetic acid (10%)	a	a	Silver nitrate	a	a			
Uric (conc.)	a	a						