



CORROSION RESISTANCE GUIDE FOR POLYMER CONCRETE

Polymer concrete is a dense, rigid material made from selectively graded aggregates utilizing a resin as the binder instead of the cement found in conventional concrete. High performance polymers and monomers combine through a process of mixing, molding and curing to form an extremely powerful cross-linked bond.

Our polymer concrete products are manufactured using polyester resin for normal environments and *vinyl ester resins* when higher temperature capabilities or increased corrosion resistance is required. Additional benefits include, high strength to weight ratio, excellent impact resistance, low water absorption and non conductivity.

This bulletin lists various chemical reagents and provides recommended corrosion resistance data for each. The recommendations are based upon tests performed by our vinyl ester resin suppliers using coupons of the binding polymer under laboratory conditions. These laboratory tests may not be representative of the conditions in your application. The bulletin is intended to be used as a guide only and specifically for *vinyl ester resin* products manufactured by Quazite/Polycast. At the time of publication, the information and recommendations contained herein were considered accurate and reliable.

We recommend that a coupon of polymer concrete be exposed to the environment for a minimum period of 60 days to verify suitability. We will provide these coupons upon request and can analyze the effects of the exposure if the coupons are returned to our laboratory.

Where corrosion resistance and elevated temperatures are not considered a major design feature, we can offer polyester resin. Please contact our customer service department at 800-346-3061 if you have additional questions or to order coupons.

CHEMICAL	% CONCENTRATION	MAX TEMP °F
A		
Acetaldehyde	100	N.R.
Acetic Acid	10	180
Acetic Acid, Glacial	100	N.R.
Acetic Anhydride	100	N.R.
Acetone	10	150
Acetone	100	N.R.
Acrylamide	50	65
Adipic Acid	23	150
Alum	All	180
Aluminum Chloride	All	180
Aluminum Chlorohydrate	All	180
Aluminum Nitrate	100	150
Aluminum Potassium Sulfate	All	180
Aluminum Sulfate	All	180
Ammonium Acetate	65	65
Ammonium Bicarbonate	50	135
Ammonium Bifluoride	100	125
Ammonium Bromide	43	135
Ammonium Carbonate	All	125
Ammonium Chloride	All	180
Ammonium Fluoride	All	125
Ammonium Hydroxide	20	125
Ammonium Nitrate	All	180
Ammonium Persulfate	All	150
Ammonium Phosphate, dibasic	All	180
Ammonium Sulfate	All	180
Ammonium Thiocyanate	20	180
Aniline	100	N.R.
B		
Barium Carbonate	All	180
Barium Chloride	All	180
Barium Cyanide	All	135
Barium Hydroxide	All	125
Beer		100
Benzene	100	N.R.
Benzoic Acid	Sat'd	180
Benzyl Alcohol	All	N.R.
Benzyl Chloride	100	N.R.
Black Liquor (Pulp Mill)	All	150
Bleaches:		
Calcium Hypochlorite	All	150
Chlorine Dioxide, Wet	Sat'd	170
Sodium Hypochlorite	18	153
Borax	100	180
Boric Acid	All	180
Brine	All	180
Bromine, Liquid	100	N.R.
Bunker C Fuel Oil	100	180
Butyl Acetate	100	100
Butyl Alcohol	All	100

CHEMICAL	% CONCENTRATION	MAX TEMP °F
Butyric Acid	100	65
C		
Calcium Bisulfite	All	150
Calcium Bromide	All	180
Calcium Carbonate	All	150
Calcium Chlorate	All	180
Calcium Chloride	All	180
Calcium Hydroxide	100	180
Calcium Hypochlorite	All	150
Calcium Nitrate	All	180
Calcium Sulfate	All	180
Calcium Sulfite	All	180
Capric Acid	All	65
Carbon Disulfide	100	N.R.
Carbon Tetrachloride	100	125
CARBOWAX Polyethylene Glycol	100	150
Carboxylethyl Cellulose	10	150
Castor Oil	100	125
Chlorine Water	Sat'd	200
Chlorine, wet gas	100	180
Chloroacetic Acid	25	100
Chlorobenzene	100	N.R.
Chloroform	100	N.R.
Chloropyridine (tetra)	100	100
CHLOROTHENE SM 1,1,1- Trichloroethane inhibited	100	85
Chromic Acid	10	130
Citric Acid	All	180
Coconut Oil	All	150
Copper Chloride	All	180
Copper Nitrate	All	180
Copper Sulfate	All	180
Corn Oil		150
Corn Starch	Slurry	180
Crude Oil	100	180
Cyclohexane	100	100
D		
Diammonium Phosphate	65	180
Dibutyl Sebacate	All	100
Dichloropropane	100	N.R.
Diesel Fuel	100	150
Diethanolamine	100	100
Dimethyl Formamide	100	N.R.
Dimethyl Phthalate	100	125
Diethyl Phthalate	100	125
Diphenyl Oxide	100	65
E		
ESTERON Herbicide	100	100
Esters, Fatty Acid	100	150
Ethanol	95	65
Ethanolamine	100	N.R.

CHEMICAL	% CONCENTRATION	MAX TEMP °F	CHEMICAL	% CONCENTRATION	MAX TEMP °F
Ethyl Acetate	100	N.R.	Maleic Acid	100	180
Ethylene Glycol	All	180	Manganese Chloride	All	180
Ethylenediaminetetraacetic Acid		85	Mercurous Chloride	All	180
F			Methanol	5	100
Ferric Chloride	All	180	Methyl Ethyl Ketone	100	N.R.
Ferric Sulfate	All	180	Milk	100	180
Ferrous Chloride	All	180	Mineral Oils	100	180
Ferrous Sulfate	All	180	Molasses	100	100
Fluosilicic Acid	10	150	Molybdenum Disulfide (Manufacturing)		170
Formaldehyde	All	125	Morpholine	100	N.R.
Formic Acid	10	150	Motor Oil		180
Fuel Oil	100	150	Myristic Acid	100	180
G			N		
Gasohol (5% MEOH)	100	100	Nickel Chloride	All	180
Gasoline, Aviation	100	150	Nickel Sulfate	All	180
Gasoline, No Lead, No Methanol	100	100	Nitric Acid	20	100
Glucose	100	180	Nitrobenzene	100	N.R.
Glycerine	100	180	O		
Glycolic Acid (Hydroxyacetic)	70	85	Octanoic Acid (Caprylic Acid)	100	150
Glyconic Acid	50	150	Oleic Acid	All	180
H			Olive Oils	100	180
Herbicides		100	Oxalic Acid	Sat'd	100
Hydraulic Fluid	100	150	P		
Hydrazine	100	N.R.	Palmitic Acid	100	180
Hydrobromic Acid	48	125	Paper Mill Effluent		150
Hydrochloric Acid	20	150	Peanut Oil	100	150
Hydrofluoric Acid	10	125	Perchloroethylene	100	65
Hydrogen Peroxide	30	125	Perchloric Acid	10	125
Hypophosphorous Acid	50	100	Perchloric Acid	30	85
I			Phosphoric Acid	100	180
Insecticides		100	Phosphorous Trichloride		N.R.
Isodecanol		100	Pine Oil	100	N.R.
Isopropyl Alcohol	All	100	Polyethyleneimine	12	125
Isopropyl Myristate	100	100	Polyvinyl Alcohol	All	85
J			Potassium Bicarbonate	50	150
Jet Fuel (JP-4)	100	150	Potassium Carbonate	50	150
K			Potassium Chloride	All	180
Kerosene	100	150	Potassium Dichromate	All	180
L			Potassium Hydroxide	10	125
Lactic Acid	All	180	Potassium Iodide	All	100
Lauryl Alcohol	100	125	Potassium Nitrate	All	180
Lead Acetate	All	180	Potassium Permanganate	All	180
Linseed Oil	100	180	Potassium Persulfate	All	180
Lithium Chloride	Sat'd	180	Potassium Sulfate	All	180
Lithium Hypochlorite	All	150	Propionic Acid	50	155
M			Pyridine	100	N.R.
Magnesium Carbonate	All	150	Q		
Magnesium Chloride	All	180	R		
Magnesium Fluosilicate	All	150	S		
Magnesium Hydroxide	100	180	Salicylic Acid	100	115
Magnesium Sulfate	All	180	Skydrol	100	100

CHEMICAL	% CONCENTRATION	MAX TEMP °F
Sodium Acetate	All	180
Sodium Aluminate	All	100
Sodium Benzoate	100	155
Sodium Bicarbonate	Sat'd	155
Sodium Bisulfate	All	180
Sodium Borate	Sat'd	180
Sodium Bromide	All	180
Sodium Carbonate	35	155
Sodium Chlorate	50	180
Sodium Chloride, pH 5-10, Cl ₂	Sat'd	155
Sodium Ferricyanide	All	180
Sodium Fluoride	All	155
Sodium Hydroxide	10	155
Sodium Hydroxide	50	180
Sodium Hypochlorite	18	180
Sodium Lauryl Sulfate	All	135
Sodium Phosphate	10	180
Sodium Sulfate	All	180
Sodium Sulfide	All	180
Sodium Sulfite	All	180
Sodium Thiosulfate	All	155
Sorbital Solutions	All	135
Stearic Acid	All	180
Styrene	100	N.R.

CHEMICAL	% CONCENTRATION	MAX TEMP °F
Styrene-Butadiene Latex		110
Sulphuric Acid	70	155
Sulphuric Acid	75	85
T		
Tartaric Acid	All	180
Tetrachloroethylene (Perchloroethylene)	100	65
Thioglycolic Acid (Mercaptoacetic Acid)	All	N.R.
Thionyl Chloride		N.R.
Toluene	100	65
Trichloroacetic Acid	50	180
Trisodium Phosphate	All	180
Turpentine	100	125
U		
Urea	50	125
V		
Vinegar	100	180
W		
X		
Xylene	100	65
Z		
Zinc Chloride	70	180
Zinc Sulfate	All	180



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