

Corrosion Resistance of Resin Systems

Enduro offers a variety of resin systems which are listed in more detail on page 9. The two resin systems most often used are isophthalic polyester fire-retardant (FR-P) and vinyl ester fire-retardant (FR-VE). Polyester is more widely used and sufficient for most applications while vinyl ester is recommended where strong acids (such as hydrochloric acid), strong alkalies (such as caustic soda), organic solvents and organic conditions exist. An abbreviated guide is provided below to assist in the selection of the proper standard resin system for individual application.

Polyester and vinyl ester resin systems are available in conductive formulation. Contact us for corrosion resistance information for halogen-free and halogen-free low smoke plus resins.

All composite materials have an ultra-violet light inhibiting chemical additive and has a maximum flame spread of 25 or less, per ASTM E-84 (Class 1 flame spread). All pultruded products have complete synthetic veil coverage (outer surfacing fabric) to provide maximum chemical and UV protection.

Chemicals	75°F (24°C)	160°F (71°C)	Chemicals	75°F (24°C)	160°F (71°C)
Acetic Acid 5%	FR-P	FR-P	Magnesium Chloride	FR-P	FR-P
Acetic Acid 25%	FR-P	FR-VE-210° (*)	Methyl Alcohol 10%	FR-P	FR-VE-150° (*)
Aluminum Potassium Sulfate 5%	FR-P	FR-P	Naphtha	FR-P	FR-P
Ammonium Hydroxide 10%	FR-P	FR-VE-150°	Nitric Acid 5%	FR-P	FR-P
Ammonium Nitrate	FR-P	FR-P	Nitric Acid 20%	FR-VE	FR-VE-120° (*)
Benzenesulfonic Acid 5%	FR-P	FR-P	Phosphoric Acid 10%	FR-P	FR-P
Calcium Chloride	FR-P	FR-P	Phosphoric Acid 30%	FR-P	FR-P
Carbon Tetrachloride	FR-VE	FR-VE-100° (*)	Phosphoric Acid 85%	FR-P	FR-P
Chlorine Dioxide 15%	FR-P	FR-VE-150° (*)	Sodium Bicarbonate 10%	FR-P	FR-P
Chromic Acid 5%	FR-P	FR-VE-150° (*call)	Sodium Bisulfate	FR-P	FR-P
Copper Sulfate	FR-P	FR-P	Sodium Carbonate	FR-P	FR-VE
Diesel Fuel No. 1	FR-P	FR-P	Sodium Chloride	FR-P	FR-P
Diesel Fuel No. 2	FR-P	FR-P	Sodium Hydroxide 1-50%	FR-VE	FR-VE-120° (*)
Ethylene Glycol	FR-P	FR-P	Sodium Hypochlorite 5%	FR-P	FR-VE-120° (*)
Fatty Acids 100%	FR-P	FR-P	Sodium Nitrate	FR-P	FR-P
Ferrous Sulfate	FR-P	FR-P	Sodium Silicate	FR-P	FR-VE-210° (*)
Fluosilicic Acid 0-20%	FR-VE	FR-VE (call)	Sodium Sulfate	FR-P	FR-P
Hydrochloric Acid 1%	FR-P	FR-P	Sulfuric Acid 0-30%	FR-P	FR-P
Hydrochloric Acid 15%	FR-P	FR-VE-180° (*)	Sulfuric Acid 30-50%	FR-VE	FR-VE
Hydrochloric Acid 37%	FR-P	FR-VE-150° (*)	Sulfuric Acid 50-70%	FR-VE	FR-VE-180° (*)
Hydrogen Sulfide	FR-P-140°	FR-VE-210°	Trisodium Phosphate 25%	FR-P	FR-VE-210° (*)
Kerosene	FR-P	FR-P	Trisodium Phosphate - All Water, Distilled	FR-VE FR-P	FR-VE-210° (*) FR-P

FR = Fire-Retardant; P = Polyester Resin; VE = Vinyl Ester Resin; (*) = Not recommended to exceed this temperature; call = Call for recommendations
Information contained in this chart is based on data from raw material suppliers and collected from several years of actual industrial applications. Temperatures are not the minimum nor the maximum (except where specifically stated) but represent standard test conditions. The products may be suitable at higher temperatures, but individual test data should be required to establish such suitability. The recommendations or suggestions contained in this chart are made without guarantee or representation as to results. We suggest that you evaluate these recommendations and suggestions in your own laboratory or by actual field trial prior to use.