

Park Electrochemical Nelcote® F-557 Phenolic Prepreg, Chopped Molding Compound Reinforced

Category : Polymer , Thermoset , Phenolic

Material Notes:

Nelcote® F-557 is a high purity silica filler phenolic resin coated on Commercial or Aerospace grade silica fabric. F-557 is used in the manufacture of intermediate temperature ablative rocket nozzles, heat shields, and combustion chambers in highly oxidative environments. Key Features and Benefits: Provides a combination of high-strength and ablative properties for demanding applications. Low thermal expansion. Good Tack and Drape properties. Applications/Qualifications: Rocket Nozzles, Combustion Chambers, Heat Shields, Rocket Motor Throat Sections. Information provided by Park Electrochemical Corp.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Park-Electrochemical-Nelcote-F-557-Phenolic-Prepreg-Chopped-Molding-Compound-Reinforced.php

Physical Properties	Metric	English	Comments
Volatiles	2.0 - 5.0 % @Temperature 135 °C	2.0 - 5.0 % @Temperature 275 °F	8 min

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	29.6 MPa @Temperature 23.9 °C	4300 psi @Temperature 75.0 °F	0° Direction, Dry; 325°F 2500psi; ASTM D3039b
	37.2 MPa @Temperature 23.9 °C	5400 psi @Temperature 75.0 °F	0° Direction, Dry; 325°F 2500psi and Post-Cure; ASTM D3039b
Tensile Modulus	15.2 GPa @Temperature 23.9 °C	2200 ksi @Temperature 75.0 °F	0° Direction, Dry; 325°F 2500psi and Post-Cure; ASTM D3039b
	17.2 GPa @Temperature 23.9 °C	2500 ksi @Temperature 75.0 °F	0° Direction, Dry; 325°F 2500psi; ASTM D3039b
Flexural Strength	58.6 MPa @Temperature 23.9 °C	8500 psi @Temperature 75.0 °F	Dry; 325°F 2500psi; ASTM D790
	103 MPa @Temperature 23.9 °C	15000 psi @Temperature 75.0 °F	Dry; 325°F 2500psi and Post-Cure; ASTM D790
Flexural Modulus	14.5 GPa @Temperature 23.9 °C	2100 ksi @Temperature 75.0 °F	Dry; 325°F 2500psi and Post-Cure; ASTM D790
	176 MPa @Temperature 23.9 °C	25500 psi @Temperature 75.0 °F	Dry; 325°F 2500psi; ASTM D695

Mechanical Properties	214 MPa Metric	31000 psi English	Comments : 1500psi and Post-Cure; ASTM D695
	@Temperature 23.9 °C	@Temperature 75.0 °F	

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	1.00 J/g-°C	0.240 BTU/lb-°F	ASTM C351
Thermal Conductivity	0.389 W/m-K @Temperature 149 °C	2.70 BTU-in/hr-ft ² -°F @Temperature 300 °F	ASTM C177

Processing Properties	Metric	English	Comments
Shelf Life	6.00 Month @Temperature 4.44 °C	6.00 Month @Temperature 40.0 °F	

Descriptive Properties	Value	Comments
Filler Content (%)	3.4-5.4	
Nominal Prepreg Weight (oz/yd)	30	
Resin Flow (%)	10-25	325°F, 150psi
Resin Solids Content (%)	30-36	

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