

Park Electrochemical Nelcote® F-554 Phenolic Prepreg, Commercial Silica Fabric Reinforced

Category : Polymer , Thermoset , Phenolic

Material Notes:

Nelcote® F-554 is a high purity silica filled phenolic resin coated on Commercial or Aerospace grade silica fabric. F-554 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 Conforms to MIL-R-9299 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-554-Phenolic-Prepreg-Commercial-Silica-Fabric-Reinforced.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.70 g/cc	1.70 g/cc	ASTM D792
Volatiles	2.0 - 5.0 % @Temperature 163 °C	2.0 - 5.0 % @Temperature 325 °F	10 min
Thickness	533 microns	21.0 mil	nominal, cured, per ply

Mechanical Properties	Metric	English	Comments
Hardness, Barcol	70	70	ASTM D2583
Tensile Strength, Yield	131 MPa @Temperature 23.9 °C	19000 psi @Temperature 75.0 °F	0° Direction, Dry; 325°F Autoclave; ASTM D638
Tensile Modulus	19.3 GPa @Temperature 23.9 °C	2800 ksi @Temperature 75.0 °F	0° Direction, Dry; 325°F Autoclave; ASTM D638
Flexural Strength	200 MPa @Temperature 23.9 °C	29000 psi @Temperature 75.0 °F	Dry; 325°F Autoclave; ASTM D790
Flexural Modulus	17.9 GPa @Temperature 23.9 °C	2600 ksi @Temperature 75.0 °F	Dry; 325°F Autoclave; ASTM D790
Compressive Strength	324 MPa @Temperature 23.9 °C	47000 psi @Temperature 75.0 °F	Dry; 325°F Autoclave; ASTM D695
Compressive Modulus	21.4 GPa @Temperature 23.9 °C	3100 ksi @Temperature 75.0 °F	Dry; 325°F Autoclave; ASTM D695
Shear Strength	26.9 MPa	3900 psi	Short Beam; Dry; 325°F Autoclave;

Mechanical Properties	@Temperature 23.9 °C Metric	@Temperature 75.0 °F English	ASTM D2344 Comments
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Thermal Properties	Metric	English	Comments
Specific Heat Capacity	1.00 J/g-°C	0.240 BTU/lb-°F	ASTM C351
Thermal Conductivity	4.67 W/m-K @Temperature 149 °C	32.4 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 (%)	2-4	
Nominal Prepreg Weight (oz/yd)	31	
Resin Flow (%)	8-17	325°F, 150psi
Resin Solids Content (%)	29-35	

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