

Park Electrochemical Nelcote® F-555 Phenolic Prepreg, C2 Reinforced

Category : Polymer , Thermoset , Phenolic

Material Notes:

Nelcote® F-555 is a carbon-filled MIL-R-9299 phenolic resin optimized for coating Carbonized Rayon cloth. F-555 is used extensively in the manufacture of high temperature rocket nozzles, heat shields, and combustion chambers. 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-555-Phenolic-Prepreg-C2-Reinforced.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.37 g/cc	1.37 g/cc	8HS form; ASTM D792
	1.47 g/cc	1.47 g/cc	CMC form; ASTM D792
Volatiles	2.0 - 5.0 %	2.0 - 5.0 %	5 min
	@Temperature 163 °C	@Temperature 325 °F	
Thickness	483 microns	19.0 mil	per ply, 8HS form

Mechanical Properties	Metric	English	Comments
Hardness, Barcol	75	75	8HS form; ASTM D2583
	81	81	CMC form; ASTM D2583
Tensile Strength, Yield	48.3 MPa	7000 psi	0° Direction, Dry; CMC form; ASTM D638
	@Temperature 23.9 °C	@Temperature 75.0 °F	
Tensile Strength	241 MPa	35000 psi	0° Direction, Dry; 8HS form; ASTM D638
	@Temperature 23.9 °C	@Temperature 75.0 °F	
Tensile Modulus	15.9 GPa	2300 ksi	0° Direction, Dry; 8HS form; ASTM D638
	@Temperature 23.9 °C	@Temperature 75.0 °F	
Flexural Strength	17.2 GPa	2500 ksi	0° Direction, Dry; CMC form; ASTM D638
	@Temperature 23.9 °C	@Temperature 75.0 °F	
Flexural Strength	138 MPa	20000 psi	Dry; CMC form; ASTM D790
	@Temperature 23.9 °C	@Temperature 75.0 °F	
Flexural Strength	448 MPa	65000 psi	Dry; 8HS form; ASTM D790
	@Temperature 23.9 °C	@Temperature 75.0 °F	

Mechanical Properties	Metric Pa	English	Comments
Flexural Modulus	@Temperature 23.9 °C	@Temperature 75.0 °F	Dry; 8HS form; ASTM D790
	17.2 GPa	2500 ksi	Dry; CMC form; ASTM D790
Compressive Strength	@Temperature 23.9 °C	@Temperature 75.0 °F	Dry; CMC form; ASTM D695
	290 MPa	42000 psi	Dry; CMC form; ASTM D695
Compressive Modulus	@Temperature 23.9 °C	@Temperature 75.0 °F	Dry; 8HS form; ASTM D695
	317 MPa	46000 psi	Dry; CMC form; ASTM D695
Shear Strength	@Temperature 23.9 °C	@Temperature 75.0 °F	Short Beam; Dry; 8HS form; ASTM D5379
	30.3 MPa	4400 psi	Short Beam; Dry; CMC form; ASTM D5379

Thermal Properties	Metric	English	Comments
CTE, linear	15.5 µm/m-°C	8.60 µin/in-°F	with ply; 8HS form; ASTM D696
	@Temperature 204 °C	@Temperature 400 °F	

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

Descriptive Properties	Value	Comments
Fabric Area Weight (g/m ²)	330	
Filler Content (%)	9-15	
Prepreg Resin Content (%)	31-37	
Resin Flow (%)	5-20	325°F, 150psi

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