

Park Electrochemical Nelcote® F-502 Phenolic Prepreg, 581 Quartz Reinforced

Category : Polymer , Thermoset , Phenolic

Material Notes:

Nelcote® F-502 is a MIL-R-9299 phenolic resin system suitable for impregnation on any MIL-C-9084 fabric with a compatible finish. F-502 is used in the manufacture of ablative reinforcements in rocket nozzles, as well as ducting and secondary structures. GMS4001 qualified specifications. 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 Type B. Applications/Qualifications: Rocket Nozzles, Ducting, Secondary Structures. Information provided by Park Electrochemical Corp.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Park-Electrochemical-Nelcote-F-502-Phenolic-Prepreg-581-Quartz-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 135 °C	2.0 - 5.0 % @Temperature 275 °F	8 min
Thickness	305 microns	12.0 mil	cured laminate, per ply

Mechanical Properties	Metric	English	Comments
Hardness, Barcol	75	75	ASTM D2583
Tensile Strength, Yield	414 MPa @Temperature 23.9 °C	60000 psi @Temperature 75.0 °F	0° Direction, Dry; 325°F Autoclave Cured; ASTM D638
Tensile Modulus	24.1 GPa @Temperature 23.9 °C	3500 ksi @Temperature 75.0 °F	0° Direction, Dry; 325°F Autoclave Cured; ASTM D638
Flexural Strength	586 MPa @Temperature 23.9 °C	85000 psi @Temperature 75.0 °F	Dry; 325°F Autoclave Cured; ASTM D790
Flexural Modulus	24.1 GPa @Temperature 23.9 °C	3500 ksi @Temperature 75.0 °F	Dry; 325°F Autoclave Cured; ASTM D790
Compressive Strength	448 MPa @Temperature 23.9 °C	65000 psi @Temperature 75.0 °F	Dry; 325°F Autoclave Cured; ASTM D695
Compressive Modulus	24.8 GPa @Temperature 23.9 °C	3600 ksi @Temperature 75.0 °F	Dry; 325°F Autoclave Cured; ASTM D695

Thermal Properties	Metric	English	Comments
	8.10 µm/m-°C	4.50 µin/in-°F	

Thermal Properties	Metric	English	Comments
	@ Temperature 26.7 - 204 °C	@ Temperature 80.0 - 400 °F	ASTM D696
	34.2 µm/m-°C	19.0 µin/in-°F	
	@Temperature 26.7 - 204 °C	@Temperature 80.0 - 400 °F	x-ply; ASTM D696
Specific Heat Capacity	0.837 J/g-°C	0.200 BTU/lb-°F	ASTM C351
	@Temperature 23.9 °C	@Temperature 75.0 °F	

Processing Properties	Metric	English	Comments
Gel Time	0.800 - 3.30 min	0.800 - 3.30 min	
Shelf Life	3.00 Month	3.00 Month	
	@Temperature 4.44 °C	@Temperature 40.0 °F	
	6.00 Month	6.00 Month	
	@Temperature -17.8 °C	@Temperature 0.000 °F	

Descriptive Properties	Value	Comments
Fabric Area Weight (g/m²)	475	
Prepreg Resin Content (%)	33-39	
Resin Flow (%)	5-20	325°F, 15psi

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