Park Electrochemical Nelcote® F-502 Phenolic Prepreg, 7781 E-Glass 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 applicationsLow thermal expansionGood Tack and Drape propertiesConforms to MIL-R-9299 Type BApplications/Qualifications:Rocket NozzlesDuctingSecondary StructuresInformation provided by Park Electrochemical Corp.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Park-Electrochemical-Nelcote-F-502-Phenolic-Prepreg-7781-E-Glass-Reinforced.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.75 g/cc	1.75 g/cc	ASTM D792
Volatiles	2.0 - 5.0 % @Temperature 135 °C	2.0 - 5.0 % @Temperature 275 °F	8 min
Thickness	229 microns	9.00 mil	cured laminate, per ply

Mechanical Properties	Metric	English	Comments
Hardness, Barcol	70	70	ASTM D2583
Tensile Strength, Yield	331 MPa @Temperature 260 °C	48000 psi @Temperature 500 °F	0° Direction, Dry; 325°F Autoclave Cured; ASTM D638
	352 MPa @Temperature 23.9 °C	51000 psi @Temperature 75.0 °F	0° Direction, Dry; 325°F Autoclave Cured; ASTM D638
Tensile Modulus	20.0 GPa @Temperature 260 °C	2900 ksi @Temperature 500 °F	0° Direction, Dry; 325°F Autoclave Cured; ASTM D638
	25.5 GPa @Temperature 23.9 °C	3700 ksi @Temperature 75.0 °F	0° Direction, Dry; 325°F Autoclave Cured; ASTM D638
Flexural Strength	276 MPa @Temperature 260 °C	40000 psi @Temperature 500 °F	Dry; 325°F Autoclave Cured; ASTM D790
	490 MPa @Temperature 23.9 °C	71000 psi @Temperature 75.0 °F	Dry; 325°F Autoclave Cured; ASTM D790
Flexural Modulus	18.6 GPa	2700 ksi	Dry; 325°F Autoclave Cured; ASTM

Mechanical Properties	Metric	English	Comments
	@Temperature 260 °C	@Temperature 500 °F	D790
	24.8 GPa @Temperature 23.9 °C	3600 ksi @Temperature 75.0 °F	Dry; 325°F Autoclave Cured; ASTM D790
Compressive Strength	262 MPa @Temperature 260 °C	38000 psi @Temperature 500 °F	Dry; 325°F Autoclave Cured; ASTM D695
	462 MPa @Temperature 23.9 °C	67000 psi @Temperature 75.0 °F	Dry; 325°F Autoclave Cured; ASTM D695
Compressive Modulus	20.7 GPa @Temperature 260 °C	3000 ksi @Temperature 500 °F	Dry; 325°F Autoclave Cured; ASTM D695
	24.1 GPa @Temperature 23.9 °C	3500 ksi @Temperature 75.0 °F	Dry; 325°F Autoclave Cured; ASTM D695

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	1.17 J/g-°C @Temperature 65.6 °C	0.280 BTU/lb-°F @Temperature 150 °F	ASTM C351

Processing Properties	Metric	English	Comments
Gel Time	0.800 - 1.70 min	0.800 - 1.70 min	
Shelf Life	3.00 Month @Temperature 4.44 °C	3.00 Month @Temperature 40.0 °F	
	6.00 Month @Temperature -17.8 °C	6.00 Month @Temperature 0.000 °F	

Descriptive Properties	Value	Comments
Fabric Area Weight (g/m²)	303	
Prepreg Resin Content (%)	31-37	
Resin Flow (%)	5-20	325°F, 15psi

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