

## Park Electrochemical Nelcote® F-555 Phenolic Prepreg, ENKA 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-ENKA-Reinforced.php](http://www.lookpolymers.com/polymer_Park-Electrochemical-Nelcote-F-555-Phenolic-Prepreg-ENKA-Reinforced.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.47 g/cc	1.47 g/cc	8HS form; ASTM D792
Volatiles	2.0 - 5.0 % @Temperature 163 °C	2.0 - 5.0 % @Temperature 325 °F	5 min
Thickness	381 microns	15.0 mil	per ply, 8HS form

Mechanical Properties	Metric	English	Comments
Hardness, Barcol	75	75	8HS form; ASTM D2583
Tensile Strength, Yield	145 MPa @Temperature 23.9 °C	21000 psi @Temperature 75.0 °F	0° Direction, Dry; 8HS form; ASTM D638
Tensile Modulus	17.2 GPa @Temperature 23.9 °C	2500 ksi @Temperature 75.0 °F	0° Direction, Dry; 8HS form; ASTM D638
Flexural Strength	269 MPa @Temperature 23.9 °C	39000 psi @Temperature 75.0 °F	Dry; 8HS form; ASTM D790
Flexural Modulus	19.3 GPa @Temperature 23.9 °C	2800 ksi @Temperature 75.0 °F	Dry; 8HS form; ASTM D790
Compressive Strength	379 MPa @Temperature 23.9 °C	55000 psi @Temperature 75.0 °F	Dry; 8HS form; ASTM D695
Compressive Modulus	19.3 GPa @Temperature 23.9 °C	2800 ksi @Temperature 75.0 °F	Dry; 8HS form; ASTM D695
Shear Strength	35.2 MPa @Temperature 23.9 °C	5100 psi @Temperature 75.0 °F	Short Beam; Dry; 8HS form; ASTM D5379

Thermal Properties	Metric	English	Comments
CTE, linear	7.20 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	4.00 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	with ply; 8HS form; ASTM D696
	@Temperature 204 $^{\circ}\text{C}$	@Temperature 400 $^{\circ}\text{F}$	
	12.2 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	6.80 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	x-ply; 8HS form; ASTM D696
	@Temperature 204 $^{\circ}\text{C}$	@Temperature 400 $^{\circ}\text{F}$	
Specific Heat Capacity	2.09 J/g- $^{\circ}\text{C}$	0.500 BTU/lb- $^{\circ}\text{F}$	8HS form; ASTM C351
Thermal Conductivity	0.0720 W/m-K	0.500 BTU-in/hr-ft $^2$ - $^{\circ}\text{F}$	x-ply; 8HS form; ASTM C177
	@Temperature 149 $^{\circ}\text{C}$	@Temperature 300 $^{\circ}\text{F}$	

Processing Properties	Metric	English	Comments
Shelf Life	6.00 Month	6.00 Month	
	@Temperature 4.44 $^{\circ}\text{C}$	@Temperature 40.0 $^{\circ}\text{F}$	

Descriptive Properties	Value	Comments
Fabric Area Weight (g/m $^2$ )	280	
Filler Content (%)	9-15	
Prepreg Resin Content (%)	31-37	
Resin Flow (%)	5-20	325 $^{\circ}\text{F}$ , 150psi

## Contact Songhan Plastic Technology Co.,Ltd.

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