

Park Electrochemical Nelcote® P-670I Polyester Prepreg, 7781 E-Glass Reinforced

Category : Polymer , Thermoset , Polyester, TS

Material Notes:

Nelcote® P-670I is a versatile, non-styrenated/low VOC polyester resin. P670I is used in a wide variety of applications including radomes, tooling and aircraft structures. Key Features and Benefits: Non-styrenated / low VOC resin system Meets requirements of MIL-R-7575C, grade B class 4 Flame retardant formulation Good electrical properties at elevated temperatures Retains good mechanical properties after exposure to high-temperature conditioning (250°F) Applications/Qualifications: Radomes Tooling Aircraft Structures Information provided by Park Electrochemical Corp.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Park-Electrochemical-Nelcote-P-670I-Polyester-Prepreg-7781-E-Glass-Reinforced.php

Physical Properties	Metric	English	Comments
Density	2.00 g/cc	0.0723 lb/in ³	
Volatiles	<= 2.0 % @Temperature 104 °C	<= 2.0 % @Temperature 220 °F	8 min
Water Absorption	0.68 %	0.68 %	24hr immersion in DI H2O

Mechanical Properties	Metric	English	Comments
Hardness, Barcol	75	75	
Tensile Strength, Yield	386 MPa @Temperature 177 °C	56000 psi @Temperature 350 °F	0° Direction, Wet; ASTM D638 Type 1
	414 MPa @Temperature 23.9 °C	60000 psi @Temperature 75.0 °F	0° Direction, Wet; ASTM D638 Type 1
	421 MPa @Temperature 121 °C	61000 psi @Temperature 250 °F	0° Direction, Wet; ASTM D638 Type 1
	483 MPa @Temperature 23.9 °C	70000 psi @Temperature 75.0 °F	0° Direction, Dry; ASTM D638 Type 1
Tensile Modulus	22.8 GPa @Temperature 177 °C	3300 ksi @Temperature 350 °F	0° Direction, Wet; ASTM D638 Type 1
	24.1 GPa @Temperature 121 °C	3500 ksi @Temperature 250 °F	0° Direction, Wet; ASTM D638 Type 1
	25.5 GPa	3700 ksi	0° Direction, Wet; ASTM D638 Type 1

Mechanical Properties	@Temperature 23.9 °C Metric	@Temperature 75.0 °F English	Comments
	48.3 GPa	7000 ksi	0° Direction, Dry; ASTM D638 Type 1
	@Temperature 23.9 °C	@Temperature 75.0 °F	
Flexural Strength	248 MPa	36000 psi	Wet; ASTM D790
	@Temperature 177 °C	@Temperature 350 °F	
	393 MPa	57000 psi	Wet; ASTM D790
	@Temperature 121 °C	@Temperature 250 °F	
	545 MPa	79000 psi	Wet; ASTM D790
	@Temperature 23.9 °C	@Temperature 75.0 °F	
	600 MPa	87000 psi	Dry; ASTM D790
	@Temperature 23.9 °C	@Temperature 75.0 °F	
Flexural Modulus	18.6 GPa	2700 ksi	Wet; ASTM D790
	@Temperature 177 °C	@Temperature 350 °F	
	19.3 GPa	2800 ksi	Wet; ASTM D790
	@Temperature 121 °C	@Temperature 250 °F	
	22.1 GPa	3200 ksi	Dry; ASTM D790
	@Temperature 23.9 °C	@Temperature 75.0 °F	
	23.4 GPa	3400 ksi	Wet; ASTM D790
	@Temperature 23.9 °C	@Temperature 75.0 °F	
Compressive Strength	372 MPa	54000 psi	Wet; ASTM D695
	@Temperature 23.9 °C	@Temperature 75.0 °F	
	400 MPa	58000 psi	Dry; ASTM D695
	@Temperature 23.9 °C	@Temperature 75.0 °F	

Thermal Properties	Metric	English	Comments
Flammability Test	5.0	5.0	inches; Method 2021

Electrical Properties	Metric	English	Comments
Dielectric Constant	4.8	4.8	
	@Frequency 9.375e+9 Hz	@Frequency 9.375e+9 Hz	
Dissipation Factor	0.019	0.019	

Electrical Properties	@Frequency 9.375e+9 Metric	@Frequency 9.375e+9 English	Comments
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Processing Properties	Metric	English	Comments
Gel Time	0.500 - 1.50 min	0.500 - 1.50 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/m ²)	300	
Prepreg Resin Content (%)	37-43	
Resin Flow (%)	8-12	275°F, 15psi

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