

Park Electrochemical Nelcote® E-761 Epoxy Prepreg, 4581 Quartz

Category : Polymer , Thermoset , Epoxy

Material Notes:

Nelcote® E-761 is a versatile self-adhesive epoxy matrix for use in aerospace and commercial application where ease of processing and cost are key considerations. Key Features and Benefits: Controlled flow for ease of processing Self adhesive for honeycomb or foam sandwich laminates without the use of film adhesive Flexible cure temperature 180°F to 250°F Good electrical properties Flame and fire retardant per FAR 25.853 Wet service temperatures up to 160°F Applications/Qualifications: Radomes Aircraft Interiors Secondary Aircraft Structures Sandwich Panels MRI Resonators Widely specified on commercial and military aircraft programs Information provided by Park Electrochemical Corp.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Park-Electrochemical-Nelcote-E-761-Epoxy-Prepreg-4581-Quartz.php

Physical Properties	Metric	English	Comments
Volatiles	<= 1.5 % @Temperature 135 °C	<= 1.5 % @Temperature 275 °F	8 min
Thickness	254 microns	10.0 mil	Per Ply

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	496 MPa @Temperature 71.1 °C	72000 psi @Temperature 160 °F	0° Direction, Dry; ASTM D638
	496 MPa @Temperature 71.1 °C	72000 psi @Temperature 160 °F	0° Direction, Wet; ASTM D638
	593 MPa @Temperature 21.1 °C	86000 psi @Temperature 70.0 °F	0° Direction, Wet; ASTM D638
Tensile Modulus	593 MPa @Temperature 21.1 °C	86000 psi @Temperature 70.0 °F	0° Direction, Dry; ASTM D638
	745 MPa @Temperature -53.9 °C	108000 psi @Temperature -65.0 °F	0° Direction, Dry; ASTM D638
	20.0 GPa @Temperature 71.1 °C	2900 ksi @Temperature 160 °F	0° Direction, Dry; ASTM D638
	20.0 GPa @Temperature 21.1 °C	2900 ksi @Temperature 70.0 °F	0° Direction, Wet; ASTM D638
	20.7 GPa	3000 ksi	0° Direction, Dry; ASTM D638

Mechanical Properties	@Temperature -53.9 °C Metric	@Temperature -65.0 °F English	Comments
	24.8 GPa	3600 ksi	0° Direction, Dry; ASTM D638
	@Temperature 21.1 °C	@Temperature 70.0 °F	
Flexural Strength	214 MPa	31000 psi	Wet; ASTM D790
	@Temperature 71.1 °C	@Temperature 160 °F	
	483 MPa	70000 psi	Dry; ASTM D790
	@Temperature 71.1 °C	@Temperature 160 °F	
	634 MPa	92000 psi	Dry; ASTM D790
	@Temperature 21.1 °C	@Temperature 70.0 °F	
	676 MPa	98000 psi	Dry; ASTM D790
	@Temperature -53.9 °C	@Temperature -65.0 °F	
Flexural Modulus	15.2 GPa	2200 ksi	Wet; ASTM D790
	@Temperature 71.1 °C	@Temperature 160 °F	
	16.5 GPa	2400 ksi	Dry; ASTM D790
	@Temperature 71.1 °C	@Temperature 160 °F	
	18.6 GPa	2700 ksi	Dry; ASTM D790
	@Temperature -53.9 °C	@Temperature -65.0 °F	
	22.1 GPa	3200 ksi	Dry; ASTM D790
	@Temperature 21.1 °C	@Temperature 70.0 °F	
Compressive Strength	234 MPa	34000 psi	Wet; ASTM D695
	@Temperature 71.1 °C	@Temperature 160 °F	
	407 MPa	59000 psi	Dry; ASTM D695
	@Temperature 71.1 °C	@Temperature 160 °F	
	448 MPa	65000 psi	Dry; ASTM D695
	@Temperature 21.1 °C	@Temperature 70.0 °F	
	510 MPa	74000 psi	Dry; ASTM D695
	@Temperature -53.9 °C	@Temperature -65.0 °F	
Compressive Modulus	20.0 GPa	2900 ksi	Dry; ASTM D695
	@Temperature 21.1 °C	@Temperature 70.0 °F	
	20.7 GPa	3000 ksi	Wet; ASTM D695
	@Temperature 71.1 °C	@Temperature 160 °F	

Mechanical Properties	Metric	English	Comments
	71.4 GPa @Temperature 71.1 °C	3100 ksi @Temperature 160 °F	Dry; ASTM D695
	22.8 GPa @Temperature -53.9 °C	3300 ksi @Temperature -65.0 °F	Dry; ASTM D695
Shear Strength	15.2 MPa @Temperature 93.3 °C	2200 psi @Temperature 200 °F	Short-Beam, Dry; ASTM D2344
	36.5 MPa @Temperature 71.1 °C	5300 psi @Temperature 160 °F	Short-Beam, Dry; ASTM D2344
	48.3 MPa @Temperature 21.1 °C	7000 psi @Temperature 70.0 °F	Short-Beam, Dry; ASTM D2344
	62.1 MPa @Temperature -53.9 °C	9000 psi @Temperature -65.0 °F	Short-Beam, Dry; ASTM D2344

Thermal Properties	Metric	English	Comments
Glass Transition Temp, Tg	115 °C	239 °F	Dry; DMA

Electrical Properties	Metric	English	Comments
Dielectric Constant	3.15 @Frequency 1.80e+10 Hz	3.15 @Frequency 1.80e+10 Hz	
	3.3 @Frequency 9.375e+9 Hz	3.3 @Frequency 9.375e+9 Hz	
Dissipation Factor	0.0080 @Frequency 1.80e+10 Hz	0.0080 @Frequency 1.80e+10 Hz	
	0.0090 @Frequency 9.375e+9 Hz	0.0090 @Frequency 9.375e+9 Hz	

Processing Properties	Metric	English	Comments
Gel Time	5.80 min	5.80 min	
Shelf Life	12.0 Month	12.0 Month	
	@Temperature -17.8 °C	@Temperature 0.000 °F	

Descriptive Properties	Value	Comments
Fabric Area Weight (g/m ²)	288.2	
Prepreg Resin Content (%)	38	
Resin Flow (%)	18	275°F, 50psi

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