

Park Electrochemical Nelcote® E-761 Epoxy Prepreg, 7781 E-Glass Reinforced

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-7781-E-Glass-Reinforced.php

Physical Properties	Metric	English	Comments
Volatiles	<= 1.5 %	<= 1.5 %	8 min
	@Temperature 135 °C	@Temperature 275 °F	
Thickness	229 microns	9.00 mil	Per Ply

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	3.79 - 4.78 MPa	549 - 693 psi	Flatwise (sandwich); Bag Surface
	5.79 MPa	840 psi	Flatwise (sandwich); Mold Surface
	324 MPa	47000 psi	0° Direction, Dry; ASTM D638
	@Temperature 93.3 °C	@Temperature 200 °F	
	359 MPa	52000 psi	0° Direction, Wet; ASTM D638
	@Temperature 71.1 °C	@Temperature 160 °F	
	407 MPa	59000 psi	0° Direction, Wet; ASTM D638
	@Temperature 21.1 °C	@Temperature 70.0 °F	
	448 MPa	65000 psi	0° Direction, Dry; ASTM D638
	@Temperature 71.1 °C	@Temperature 160 °F	
Tensile Modulus	496 MPa	72000 psi	0° Direction, Dry; ASTM D638
	@Temperature 21.1 °C	@Temperature 70.0 °F	
	655 MPa	95000 psi	0° Direction, Dry; ASTM D638
	@Temperature -53.9 °C	@Temperature -65.0 °F	
	22.8 GPa	3300 ksi	0° Direction, Wet; ASTM D638

Mechanical Properties	@Temperature 71.1 °C Metric	@Temperature 160 °F English	Comments
	23.4 GPa	3400 ksi	0° Direction, Wet; ASTM D638
	@Temperature 21.1 °C	@Temperature 70.0 °F	
	24.1 GPa	3500 ksi	0° Direction, Dry; ASTM D638
	@Temperature -53.9 °C	@Temperature -65.0 °F	
	25.5 GPa	3700 ksi	0° Direction, Dry; ASTM D638
	@Temperature 21.1 °C	@Temperature 70.0 °F	
	25.5 GPa	3700 ksi	0° Direction, Dry; ASTM D638
	@Temperature 71.1 °C	@Temperature 160 °F	
	26.9 GPa	3900 ksi	0° Direction, Dry; ASTM D638
	@Temperature 93.3 °C	@Temperature 200 °F	
Flexural Strength	448 MPa	65000 psi	Wet; ASTM D790
	@Temperature 71.1 °C	@Temperature 160 °F	
	455 MPa	66000 psi	Dry; ASTM D790
	@Temperature 93.3 °C	@Temperature 200 °F	
	531 MPa	77000 psi	Dry; ASTM D790
	@Temperature 71.1 °C	@Temperature 160 °F	
	552 MPa	80000 psi	Wet; ASTM D790
	@Temperature 21.1 °C	@Temperature 70.0 °F	
	655 MPa	95000 psi	Dry; ASTM D790
	@Temperature 21.1 °C	@Temperature 70.0 °F	
	807 MPa	117000 psi	Dry; ASTM D790
	@Temperature -53.9 °C	@Temperature -65.0 °F	
Flexural Modulus	18.6 GPa	2700 ksi	Wet; ASTM D790
	@Temperature 71.1 °C	@Temperature 160 °F	
	19.3 GPa	2800 ksi	Dry; ASTM D790
	@Temperature 93.3 °C	@Temperature 200 °F	
	20.0 GPa	2900 ksi	Dry; ASTM D790
	@Temperature 71.1 °C	@Temperature 160 °F	
	20.7 GPa	3000 ksi	Wet; ASTM D790
	@Temperature 21.1 °C	@Temperature 70.0 °F	

Mechanical Properties	Metric	English	Comments
	@Temperature -53.9 °C	@Temperature -65.0 °F	Dry; ASTM D790
	22.1 GPa	3200 ksi	Dry; ASTM D790
	@Temperature 21.1 °C	@Temperature 70.0 °F	
Compressive Strength	324 MPa	47000 psi	Wet; ASTM D695
	@Temperature 71.1 °C	@Temperature 160 °F	
	359 MPa	52000 psi	Dry; ASTM D695
	@Temperature 93.3 °C	@Temperature 200 °F	
	379 MPa	55000 psi	Dry; ASTM D695
	@Temperature 71.1 °C	@Temperature 160 °F	
	386 MPa	56000 psi	Wet; ASTM D695
	@Temperature 21.1 °C	@Temperature 70.0 °F	
	455 MPa	66000 psi	Dry; ASTM D695
	@Temperature 21.1 °C	@Temperature 70.0 °F	
	579 MPa	84000 psi	Dry; ASTM D695
	@Temperature -53.9 °C	@Temperature -65.0 °F	
Compressive Modulus	24.1 GPa	3500 ksi	Wet; ASTM D695
	@Temperature 71.1 °C	@Temperature 160 °F	
	24.1 GPa	3500 ksi	Dry; ASTM D695
	@Temperature 71.1 °C	@Temperature 160 °F	
	24.1 GPa	3500 ksi	Dry; ASTM D695
	@Temperature 93.3 °C	@Temperature 200 °F	
	24.8 GPa	3600 ksi	Wet; ASTM D695
	@Temperature 21.1 °C	@Temperature 70.0 °F	
	24.8 GPa	3600 ksi	Dry; ASTM D695
	@Temperature 21.1 °C	@Temperature 70.0 °F	
	25.5 GPa	3700 ksi	Dry; ASTM D695
	@Temperature -53.9 °C	@Temperature -65.0 °F	
Shear Strength	35.9 MPa	5200 psi	Short-Beam, Dry; ASTM D2344
	@Temperature 93.3 °C	@Temperature 200 °F	
	41.4 MPa	6000 psi	

Mechanical Properties	Metric @ Temperature 71.1 °C	English @ Temperature 160 °F	Short-Beam, Wet; ASTM D2344 Comments
	44.8 MPa	6500 psi	Short-Beam, Dry; ASTM D2344
	@Temperature 71.1 °C	@Temperature 160 °F	
	55.2 MPa	8000 psi	Short-Beam, Wet; ASTM D2344
	@Temperature 21.1 °C	@Temperature 70.0 °F	
	62.1 MPa	9000 psi	Short-Beam, Dry; ASTM D2344
	@Temperature 21.1 °C	@Temperature 70.0 °F	
	79.3 MPa	11500 psi	Short-Beam, Dry; ASTM D2344
	@Temperature -53.9 °C	@Temperature -65.0 °F	

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

Electrical Properties	Metric	English	Comments
Dielectric Constant	4.2	4.2	
	@Frequency 9.375e+9 Hz	@Frequency 9.375e+9 Hz	
	4.2	4.2	
	@Frequency 1.80e+10 Hz	@Frequency 1.80e+10 Hz	
Dissipation Factor	0.013	0.013	
	@Frequency 9.375e+9 Hz	@Frequency 9.375e+9 Hz	
	0.013	0.013	
	@Frequency 1.80e+10 Hz	@Frequency 1.80e+10 Hz	

Processing Properties	Metric	English	Comments
Gel Time	4.00 min	4.00 min	
Shelf Life	12.0 Month	12.0 Month	
	@Temperature -17.8 °C	@Temperature 0.000 °F	

Descriptive Properties	Value	Comments
Climbing Drum Peel (in-lb/3in)	14.7	ASTM D1781; Mold Surface, 75°F

14.8	ASTM D1781; Bag Surface, 75°F
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Descriptive Properties	Value	Comments
Fabric Area Weight (g/m ²)	303.5	
Long Beam Flexure (P/Y lb/in)	152 / 124	Bag Surface
	201	Mold Surface
Long Beam Flexure Strength (lbs)	157 / 130	Bag Surface
	205	Mold Surface
Prepreg Resin Content (%)	39	
Resin Flow (%)	14	275°F, 50psi

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China