

Park Electrochemical Nelcote® E-746 Epoxy Prepreg, 581 Quartz Reinforced

Category : Polymer , Thermoset , Epoxy

Material Notes:

Nelcote® E-746 is a modified epoxy resin system designed to retain excellent mechanical properties after extended exposure to high temperature. E-746 has a proven history in many demanding aerospace applications. Key Features and Benefits: Excellent retention of mechanical properties after long-term high temperature exposure Soft tack and drape properties Long ambient out-time for maximum process flexibility Good electrical properties for RF applications Meets requirements of MIL-R-9300B Type

II Applications/Qualifications: Secondary Aircraft Structures Radomes Nacelles Inlet Ducts Fairings Meets SS9578 and GMS4001 specifications. Information provided by Park Electrochemical Corp.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Park-Electrochemical-Nelcote-E-746-Epoxy-Prepreg-581-Quartz-Reinforced.php

Physical Properties	Metric	English	Comments
Volatiles	<= 2.0 %	<= 2.0 %	
	@Temperature 163 °C	@Temperature 325 °F	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	379 MPa	55000 psi	0° Direction, Dry, Autoclave with Post-Cure; ASTM D638
	@Temperature 138 °C	@Temperature 280 °F	
	414 MPa	60000 psi	0° Direction, Dry, Autoclave with Post-Cure; ASTM D638
	@Temperature 216 °C	@Temperature 420 °F	
	414 MPa	60000 psi	0° Direction, Dry, Autoclave with Post-Cure; ASTM D638
@Temperature 260 °C	@Temperature 500 °F		
Flexural Strength	448 MPa	65000 psi	0° Direction, Dry, Autoclave with Post-Cure; ASTM D638
	@Temperature 177 °C	@Temperature 350 °F	
	483 MPa	70000 psi	0° Direction, Dry, Autoclave with Post-Cure; ASTM D638
	@Temperature 23.9 °C	@Temperature 75.0 °F	
	207 MPa	30000 psi	Dry, Autoclave with Post-Cure; ASTM D790
@Temperature 260 °C	@Temperature 500 °F		
Flexural Strength	276 MPa	40000 psi	Dry, Autoclave with Post-Cure; ASTM D790
	@Temperature 216 °C	@Temperature 420 °F	
	345 MPa	50000 psi	Dry, Autoclave with Post-Cure; ASTM D790
@Temperature 177 °C	@Temperature 350 °F		
	517 MPa	75000 psi	

Mechanical Properties	Metric	English	Comments
	586 MPa @Temperature 138 °C	85000 psi @Temperature 280 °F	Dry, Autoclave with Post-Cure; ASTM D790
	586 MPa @Temperature 23.9 °C	85000 psi @Temperature 75.0 °F	Dry, Autoclave with Post-Cure; ASTM D790
Compressive Strength	172 MPa @Temperature 260 °C	25000 psi @Temperature 500 °F	Dry, Autoclave with Post-Cure; ASTM D695
	207 MPa @Temperature 216 °C	30000 psi @Temperature 420 °F	Dry, Autoclave with Post-Cure; ASTM D695
	345 MPa @Temperature 177 °C	50000 psi @Temperature 350 °F	Dry, Autoclave with Post-Cure; ASTM D695
	379 MPa @Temperature 138 °C	55000 psi @Temperature 280 °F	Dry, Autoclave with Post-Cure; ASTM D695
	414 MPa @Temperature 23.9 °C	60000 psi @Temperature 75.0 °F	Dry, Autoclave with Post-Cure; ASTM D695
Shear Strength	31.0 MPa @Temperature 177 °C	4500 psi @Temperature 350 °F	Short-Beam, Dry, Autoclave with Post-Cure; ASTM D2344
	44.8 MPa @Temperature 23.9 °C	6500 psi @Temperature 75.0 °F	Short-Beam, Dry, Autoclave with Post-Cure; ASTM D2344

Thermal Properties	Metric	English	Comments
Glass Transition Temp, Tg	180 °C	356 °F	Laminate; standard cure
	230 °C	446 °F	Laminate; post cure

Electrical Properties	Metric	English	Comments
Dielectric Constant	3.3 - 3.6 @Frequency 9.375e+9 Hz	3.3 - 3.6 @Frequency 9.375e+9 Hz	
Dissipation Factor	0.012 - 0.014 @Frequency 9.375e+9 Hz	0.012 - 0.014 @Frequency 9.375e+9 Hz	

Processing Properties	Metric	English	Comments
Gel Time	1.00 - 3.00 min	1.00 - 3.00 min	
	12.0 Month	12.0 Month	

Shelf Life	Metric	English	Comments
Processing Properties	@ Temperature -17.8 °C	@ Temperature 0.000 °F	

Descriptive Properties	Value	Comments
Fabric Area Weight (g/m ²)	292	
Prepreg Resin Content (%)	34-40	
Resin Flow (%)	7-21	325°F, 50psi

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