

Park Electrochemical Nelcote® E-761 Epoxy Prepreg, 120 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-120-E-Glass-Reinforced.php

| Physical Properties | Metric | English | Comments |
|---------------------|---------------------------------|---------------------------------|----------|
| Volatiles | <= 1.5 % @Temperature 135 °C | <= 1.5 % @Temperature 275 °F | 8 min |
| Thickness | 102 microns | 4.00 mil | Per Ply |

| Mechanical Properties | Metric | English | Comments |
|-------------------------|----------------------------------|------------------------------------|------------------------------|
| Tensile Strength, Yield | 290 MPa @Temperature 71.1 °C | 42000 psi @Temperature 160 °F | 0° Direction, Wet; ASTM D638 |
| | 345 MPa @Temperature 21.1 °C | 50000 psi @Temperature 70.0 °F | 0° Direction, Wet; ASTM D638 |
| | 365 MPa @Temperature 93.3 °C | 53000 psi @Temperature 200 °F | 0° Direction, Dry; ASTM D638 |
| | 414 MPa @Temperature 71.1 °C | 60000 psi @Temperature 160 °F | 0° Direction, Dry; ASTM D638 |
| | 455 MPa @Temperature 21.1 °C | 66000 psi @Temperature 70.0 °F | 0° Direction, Dry; ASTM D638 |
| | 572 MPa @Temperature -53.9 °C | 83000 psi @Temperature -65.0 °F | 0° Direction, Dry; ASTM D638 |
| Tensile Modulus | 20.0 GPa @Temperature 71.1 °C | 2900 ksi @Temperature 160 °F | 0° Direction, Wet; ASTM D638 |
| | 20.7 GPa | 3000 ksi | 0° Direction, Dry; ASTM D638 |

| Mechanical Properties | @Temperature 21.1 °C Metric | @Temperature 70.0 °F English | Comments |
|-----------------------|--------------------------------|---------------------------------|------------------------------|
| | 21.4 GPa | 3100 ksi | 0° Direction, Dry; ASTM D638 |
| | @Temperature -53.9 °C | @Temperature -65.0 °F | |
| | 22.1 GPa | 3200 ksi | 0° Direction, Dry; ASTM D638 |
| | @Temperature 71.1 °C | @Temperature 160 °F | |
| | 22.1 GPa | 3200 ksi | 0° Direction, Dry; ASTM D638 |
| | @Temperature 93.3 °C | @Temperature 200 °F | |
| | 22.1 GPa | 3200 ksi | 0° Direction, Wet; ASTM D638 |
| | @Temperature 21.1 °C | @Temperature 70.0 °F | |
| Flexural Strength | 414 MPa | 60000 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 | |
| | 496 MPa | 72000 psi | Wet; ASTM D790 |
| | @Temperature 21.1 °C | @Temperature 70.0 °F | |
| | 538 MPa | 78000 psi | Dry; ASTM D790 |
| | @Temperature 71.1 °C | @Temperature 160 °F | |
| | 593 MPa | 86000 psi | Dry; ASTM D790 |
| | @Temperature 21.1 °C | @Temperature 70.0 °F | |
| | 758 MPa | 110000 psi | Dry; ASTM D790 |
| | @Temperature -53.9 °C | @Temperature -65.0 °F | |
| Flexural Modulus | 17.2 GPa | 2500 ksi | Wet; ASTM D790 |
| | @Temperature 71.1 °C | @Temperature 160 °F | |
| | 17.2 GPa | 2500 ksi | Dry; ASTM D790 |
| | @Temperature 93.3 °C | @Temperature 200 °F | |
| | 18.6 GPa | 2700 ksi | Wet; ASTM D790 |
| | @Temperature 21.1 °C | @Temperature 70.0 °F | |
| | 18.6 GPa | 2700 ksi | Dry; ASTM D790 |
| | @Temperature 71.1 °C | @Temperature 160 °F | |
| | 19.3 GPa | 2800 ksi | Dry; ASTM D790 |
| | @Temperature -53.9 °C | @Temperature -65.0 °F | |

| Mechanical Properties | 19.3 GPa Metric | 2800 ksi English | Comments |
|-----------------------|-----------------------|-----------------------|-----------------------------|
| | @Temperature 21.1 °C | @Temperature 70.0 °F | Dry; ASTM D798 |
| 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 | |
| | 400 MPa | 58000 psi | Wet; ASTM D695 |
| | @Temperature 21.1 °C | @Temperature 70.0 °F | |
| | 414 MPa | 60000 psi | Dry; ASTM D695 |
| | @Temperature 71.1 °C | @Temperature 160 °F | |
| | 483 MPa | 70000 psi | Dry; ASTM D695 |
| | @Temperature 21.1 °C | @Temperature 70.0 °F | |
| | 621 MPa | 90000 psi | Dry; ASTM D695 |
| | @Temperature -53.9 °C | @Temperature -65.0 °F | |
| Compressive Modulus | 20.0 GPa | 2900 ksi | Dry; ASTM D695 |
| | @Temperature 93.3 °C | @Temperature 200 °F | |
| | 21.4 GPa | 3100 ksi | Wet; ASTM D695 |
| | @Temperature 71.1 °C | @Temperature 160 °F | |
| | 21.4 GPa | 3100 ksi | Dry; ASTM D695 |
| | @Temperature 71.1 °C | @Temperature 160 °F | |
| | 22.1 GPa | 3200 ksi | Dry; ASTM D695 |
| | @Temperature -53.9 °C | @Temperature -65.0 °F | |
| | 22.1 GPa | 3200 ksi | Dry; ASTM D695 |
| | @Temperature 21.1 °C | @Temperature 70.0 °F | |
| | 22.8 GPa | 3300 ksi | Wet; ASTM D695 |
| | @Temperature 21.1 °C | @Temperature 70.0 °F | |
| Shear Strength | 35.9 MPa | 5200 psi | Short-Beam, Wet; ASTM D2344 |
| | @Temperature 71.1 °C | @Temperature 160 °F | |
| | 37.2 MPa | 5400 psi | Short-Beam, Dry; ASTM D2344 |
| | @Temperature 93.3 °C | @Temperature 200 °F | |
| | 43.4 MPa | 6300 psi | |

| Mechanical Properties | Metric | English | Comments |
|-----------------------|-----------------------|-----------------------|-----------------------------|
| | @Temperature 71.1 °C | @Temperature 160 °F | Short-Beam, Dry; ASTM D2344 |
| | 48.3 MPa | 7000 psi | Short-Beam, Wet; ASTM D2344 |
| | @Temperature 21.1 °C | @Temperature 70.0 °F | |
| | 55.2 MPa | 8000 psi | Short-Beam, Dry; ASTM D2344 |
| | @Temperature 21.1 °C | @Temperature 70.0 °F | |
| | 80.0 MPa | 11600 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 | |
| Dissipation Factor | 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 | |
| Dissipation Factor | 0.013 | 0.013 | |
| | @Frequency 1.80e+10 Hz | @Frequency 1.80e+10 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) | 107.1 | |
| Prepreg Resin Content (%) | 45 | |
| Resin Flow (%) | 14 | 275°F, 50psi |

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