

## Zyvex Performance Materials Arovex™ HT 250 Nano-Engineered Composite Prepreg System

Category : Polymer , Thermoset , Carbon Fiber/Thermoset Composite

### Material Notes:

Arovex® HT 250 Prepreg is a 180°F (82°C) to 280°F (138°C) curing carbon nanotube strengthened epoxy prepreg suitable for numerous composites applications. Normal curing takes place at 250°F (121°C). Arovex HT 250 resin contains an optimum level of carbon nanotubes for additional toughness and enhanced mechanical properties. The carbon nanotubes use molecular dispersion technology to ensure enhancements are evenly distributed throughout the resin. Features: Extremely high toughnessHigh strengthHigh stiffnessEnhanced mechanical properties Excellent retention of tack and drape

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Zyvex-Performance-Materials-Arovex-HT-250-Nano-Engineered-Composite-Prepreg-System.php](http://www.lookpolymers.com/polymer_Zyvex-Performance-Materials-Arovex-HT-250-Nano-Engineered-Composite-Prepreg-System.php)

| Physical Properties | Metric               | English             | Comments          |
|---------------------|----------------------|---------------------|-------------------|
| Viscosity           | 0.050 cP             | 0.050 cP            | Rheology, 2°C/min |
|                     | @Temperature 120 °C  | @Temperature 248 °F |                   |
|                     | 0.070 cP             | 0.070 cP            | Rheology, 2°C/min |
|                     | @Temperature 80.0 °C | @Temperature 176 °F |                   |
|                     | 1.0 cP               | 1.0 cP              | Rheology, 2°C/min |
|                     | @Temperature 40.0 °C | @Temperature 104 °F |                   |
|                     | 100 cP               | 100 cP              | Rheology, 2°C/min |
|                     | @Temperature 140 °C  | @Temperature 284 °F |                   |

| Mechanical Properties | Metric   | English    | Comments                                                 |
|-----------------------|----------|------------|----------------------------------------------------------|
| Tensile Strength      | 758 MPa  | 110000 psi | with 3K Plain Weave AS-2 Carbon Fiber; ASTM D638         |
|                       | 889 MPa  | 129000 psi | with 3K Resin with 3K Twill TR30 Carbon Fiber; ASTM D638 |
| Tensile Modulus       | 64.9 GPa | 9410 ksi   | with 3K Resin with 3K Twill TR30 Carbon Fiber; ASTM D638 |
|                       | 71.4 GPa | 10400 ksi  | with 3K Plain Weave AS-2 Carbon Fiber; ASTM D638         |
| Flexural Strength     | 807 MPa  | 117000 psi | with 3K Plain Weave AS-2 Carbon Fiber; ASTM D790         |
|                       | 1010 MPa | 146000 psi | with 3K Resin with 3K Twill TR30 Carbon Fiber; ASTM D790 |
| Flexural Modulus      | 56.0 GPa | 8120 ksi   | with 3K Plain Weave AS-2 Carbon Fiber; ASTM D790         |
|                       | 56.7 GPa | 8220 ksi   | with 3K Resin with 3K Twill TR30                         |

| Mechanical Properties | Metric    | English   | Carbon Fiber; ASTM D790<br>Comments                                   |
|-----------------------|-----------|-----------|-----------------------------------------------------------------------|
| Compressive Strength  | 456 MPa   | 66100 psi | with 3K Plain Weave AS-2 Carbon Fiber; ASTM D695                      |
|                       | 601 MPa   | 87200 psi | with 3K Resin with 3K Twill TR30 Carbon Fiber; ASTM D695              |
| Shear Strength        | 71.4 MPa  | 10400 psi | Short Beam, with 3K Plain Weave AS-2 Carbon Fiber; ASTM D2344         |
|                       | 74.39 MPa | 10790 psi | Short Beam, with 3K Resin with 3K Twill TR30 Carbon Fiber; ASTM D2344 |

| Thermal Properties        | Metric   | English  | Comments                                                     |
|---------------------------|----------|----------|--------------------------------------------------------------|
| Glass Transition Temp, Tg | 112.4 °C | 234.3 °F | with 3K Resin with 3K Twill TR30 Carbon Fiber; ASTM D7028-07 |
|                           | 125 °C   | 258 °F   | with 3K Plain Weave AS-2 Carbon Fiber; ASTM D7028-07         |

| Processing Properties | Metric                | English               | Comments |
|-----------------------|-----------------------|-----------------------|----------|
| Cure Time             | 30.0 min              | 0.500 hour            |          |
|                       | @Temperature 137.8 °C | @Temperature 280.0 °F |          |
|                       | 120 min               | 2.00 hour             |          |
|                       | @Temperature 121.1 °C | @Temperature 250.0 °F |          |
|                       | 120 min               | 2.00 hour             | 80 psi   |
|                       | @Temperature 121 °C   | @Temperature 250 °F   |          |
|                       | 240 min               | 4.00 hour             |          |
|                       | @Temperature 104.4 °C | @Temperature 219.9 °F |          |
|                       | 360 min               | 6.00 hour             |          |
|                       | @Temperature 93.3 °C  | @Temperature 200 °F   |          |
|                       | 720 min               | 12.0 hour             |          |
|                       | @Temperature 82.2 °C  | @Temperature 180 °F   |          |
| Gel Time              | 5.00 min              | 5.00 min              |          |
|                       | @Temperature 137.8 °C | @Temperature 280.0 °F |          |
|                       | 13.0 min              | 13.0 min              |          |
|                       | @Temperature 121.1 °C | @Temperature 250.0 °F |          |
|                       | 33.0 min              | 33.0 min              |          |
|                       | @Temperature 104.4 °C | @Temperature 219.9 °F |          |

| Processing Properties | Metric                | English               | Comments |
|-----------------------|-----------------------|-----------------------|----------|
|                       | @Temperature 93.3 °C  | @Temperature 200 °F   |          |
|                       | 168 min               | 168 min               |          |
|                       | @Temperature 82.2 °C  | @Temperature 180 °F   |          |
| Shelf Life            | 12.0 Month            | 12.0 Month            |          |
|                       | @Temperature -17.8 °C | @Temperature 0.000 °F |          |

| Descriptive Properties | Value         | Comments                                             |
|------------------------|---------------|------------------------------------------------------|
| GIC Mode I Energy      | 4.2 in-lb/in² | ASTM D5528-07, with 3K Twill TR30 Carbon Fiber       |
|                        | 4.8 in-lb/in² | ASTM D5528-07, with 3K Plain Weave AS-2 Carbon Fiber |

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