

## Zyvex Performance Materials Aroply™ 350 Nano-Engineered Composite Film Adhesive

Category : Polymer , Thermoset , Carbon Fiber/Thermoset Composite

### Material Notes:

Aroply™ 350 Film Adhesive is a versatile, heat curing carbon-nanotube modified epoxy structural film adhesive available in a variety of film weights on a supported carrier. Cured adhesive characteristics are designated by exceptionally high shear and peel strengths on a variety of substrates at temperatures up to 350F. This film adhesive is designed for both solid panel and honeycomb constructions. Aroply™ 350 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 adhesive. Features: Semi-tacky for adherence to desired location Long Open Time: 30 days in standard shop conditions Adaptable to many processes

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Zyvex-Performance-Materials-Aroply-350-Nano-Engineered-Composite-Film-Adhesive.php](http://www.lookpolymers.com/polymer_Zyvex-Performance-Materials-Aroply-350-Nano-Engineered-Composite-Film-Adhesive.php)

| Physical Properties  | Metric              | English             | Comments          |
|----------------------|---------------------|---------------------|-------------------|
| Viscosity            | 1000 cP             | 1000 cP             | Rheology, 2°C/min |
|                      | @Temperature 120 °C | @Temperature 248 °F |                   |
|                      | 1100 cP             | 1100 cP             | Rheology, 2°C/min |
|                      | @Temperature 160 °C | @Temperature 320 °F |                   |
|                      | 8000 cP             | 8000 cP             | Rheology, 2°C/min |
| @Temperature 80.0 °C | @Temperature 176 °F |                     |                   |
| 800000 cP            | 800000 cP           | Rheology, 2°C/min   |                   |
| @Temperature 40.0 °C | @Temperature 104 °F |                     |                   |
| 1.10e+7 cP           | 1.10e+7 cP          | Rheology, 2°C/min   |                   |
| @Temperature 175 °C  | @Temperature 347 °F |                     |                   |

| Mechanical Properties | Metric              | English             | Comments   |
|-----------------------|---------------------|---------------------|--|
| Tensile Strength      | 6.89 MPa            | 1000 psi            | Flatwise, 90 min @ 350°F, Spring Clamp Pressure, Abraded 6061-T6 Untreated; ASTM C297M |
| Shear Strength        | 10.34 MPa           | 1500 psi            | 2 hr soak, 90 min @ 350°F, Spring Clamp Pressure, FPL Acid Etched 6061-T6; ASTM D1002  |
|                       | @Temperature 177 °C | @Temperature 350 °F |  |
|                       | 20.68 MPa           | 3000 psi            | 90 min @ 350°F, Spring Clamp Pressure, FPL Acid Etched 6061-T6; ASTM D1002             |
|                       | @Temperature 177 °C | @Temperature 350 °F |  |
|                       | 26.20 MPa           | 3800 psi            | 90 min @ 350°F, Spring Clamp Pressure, FPL Acid Etched 6061-T6; ASTM D1002             |
|                       | @Temperature 121 °C | @Temperature 250 °F |  |

| Mechanical Properties | Metric<br>78.95 MPa  | English<br>4200 psi  | Comments<br>90 min @ 350°F, Spring Clamp Pressure, FPL Acid Etched 6061-T6;             |
|-----------------------|----------------------|----------------------|---|
|                       | @Temperature 21.1 °C | @Temperature 70.0 °F | ASTM D1002  |
| Peel Strength         | 2.98 kN/m            | 17.0 pli             | T-Peel, 90 min @ 350°F, Spring Clamp Pressure, FPL Acid Etched 6061-T6; ASTM D1876      |
|                       | @Temperature 21.1 °C | @Temperature 70.0 °F |   |
|                       | 4.56 kN/m            | 26.0 pli             | T-Peel, 90 min @ 350°F, Spring Clamp Pressure, FPL Acid Etched 6061-T6; ASTM D1876      |
|                       | @Temperature 121 °C  | @Temperature 250 °F  |   |
|                       | 5.61 kN/m            | 32.0 pli             | Roller Peel, 90 min @ 350°F, Spring Clamp Pressure, FPL Acid Etched 6061-T6; ASTM D3167 |
|                       | @Temperature 177 °C  | @Temperature 350 °F  |   |
|                       | 6.49 kN/m            | 37.0 pli             | Roller Peel, 90 min @ 350°F, Spring Clamp Pressure, FPL Acid Etched 6061-T6; ASTM D3167 |
|                       | @Temperature 21.1 °C | @Temperature 70.0 °F |   |
|                       | 7.54 kN/m            | 43.0 pli             | Roller Peel, 90 min @ 350°F, Spring Clamp Pressure, FPL Acid Etched 6061-T6; ASTM D3167 |
|                       | @Temperature 121 °C  | @Temperature 250 °F  |   |

| Descriptive Properties | Value         | Comments   |
|------------------------|---------------|--|
| Drum Peel              | 19.8 in-lb/in | Tool Side Up, 2 hrs @ 250°F, 30 psi, 6061 T6 Abraded, 1" Nomex 3 lb core 1/8" cell   |
|                        | 20.5 in-lb/in | Tool Side Down, 2 hrs @ 250°F, 30 psi, 6061 T6 Abraded, 1" Nomex 3 lb core 1/8" cell |
| Load to Failure        | 606 lbf       | 5 lb Core, 6 hrs @ 220°F, Vacuum Bag   |
|                        | 669 lbf       | 8 lb Core, 6 hrs @ 220°F, Vacuum Bag   |

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