# Azdel Plus U421B02N 42% Directionalized Continuous Fiber Mat / PP Resin Matrix

**Category :** Polymer , Thermoplastic , Polypropylene (PP)

**Material Notes:**

AZDEL® U421B02N is a uni-directional fiber and random glass mat reinforced polypropylene composite material featuring excellent fiber distribution over long flow paths and complex part forms. This material allows highly directionalized reinforcement where loads are in defined planes.The material can be combined with AZDEL random mat products to reinforce localized high stress paths, minimizing both part weight and cost.Commercially available only to European based customers.Information provided by Azdel.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Azdel-Plus-U421B02N-42-Directionalized-Continuous-Fiber-Mat-PP-Resin-Matrix.php

| Physical Properties | Metric | English | Comments |
|---|---|---|---|
| Specific Gravity | 1.21 g/cc | 1.21 g/cc | Laminate; ISO 2577 |
| | 1.25 g/cc | 1.25 g/cc | Molded plaque; ISO 2577 |
| Filler Content | 42 % | 42 % | AZDEL Test |
| Thickness | 3900 microns | 154 mil | AZDEL Test |
| Linear Mold Shrinkage, Flow | 0.0020 cm/cm | 0.0020 in/in | flat plaques, 320 x 320 mm; ISO 1183 |
| Linear Mold Shrinkage, Transverse | 0.0040 cm/cm | 0.0040 in/in | measured on flat plaques, 320 x 320 mm; ISO 1183 |

| Mechanical Properties | Metric | English | Comments |
|---|---|---|---|
| Tensile Strength at Break | 50.0 MPa | 7250 psi | Transverse direction; ISO 527/4 |
| | 270 MPa | 39200 psi | Longitudinal direction; ISO 527/4 |
| Elongation at Break | 2.0 % | 2.0 % | Transverse direction; ISO 527/4 |
| | 2.4 % | 2.4 % | Longitudinal direction; ISO 527/4 |
| Tensile Modulus | 4.20 GPa | 609 ksi | Transverse direction; ISO 527/4 |
| | 12.5 GPa | 1810 ksi | Longitudinal direction; ISO 527/4 |
| Flexural Strength | 130 MPa | 18900 psi | Transverse direction; ISO 178 |
| | 270 MPa | 39200 psi | Longitudinal direction; ISO 178 |
| Flexural Modulus | 5.00 GPa | 725 ksi | Transverse direction; ISO 178 |
| | 9.00 GPa | 1310 ksi | Longitudinal direction; ISO 178 |
| Charpy Impact, Notched | 6.00 J/cm² | 28.6 ft-lb/in² | Transverse direction; ISO 179/2fn |

| Mechanical Properties | Metric | English | Comments |
|---|---|---|---|
| | 18.0 J/cm² | 85.7 ft-lb/in² | Longitudinal direction; ISO 179/2fn |
| Impact | 13300<br>@Thickness 4.00 mm | 13300<br>@Thickness 0.157 in | Multi-axial in Newtons, at max. force; ISO 6603-2 |
| Impact Test | 58.0 J<br>@Thickness 4.00 mm | 42.8 ft-lb<br>@Thickness 0.157 in | Multi-axial, at max. force; ISO 6603-2 |
| | 100 J<br>@Thickness 4.00 mm | 73.8 ft-lb<br>@Thickness 0.157 in | Multi-axial, total energy; ISO 6603-2 |

| Thermal Properties | Metric | English | Comments |
|---|---|---|---|
| CTE, linear | 17.0 µm/m-°C<br>@Temperature 0.000 - 120 °C | 9.44 µin/in-°F<br>@Temperature 32.0 - 248 °F | longitudinal direction, 100 x 15 x 3 mm sample; AZDEL Test |
| | 27.0 µm/m-°C<br>@Temperature -30.0 - 0.000 °C | 15.0 µin/in-°F<br>@Temperature -22.0 - 32.0 °F | longitudinal direction, 100 x 15 x 3 mm sample; AZDEL Test |
| | 33.0 µm/m-°C<br>@Temperature 0.000 - 120 °C | 18.3 µin/in-°F<br>@Temperature 32.0 - 248 °F | longitudinal direction, 100 x 15 x 3 mm sample; AZDEL Test |
| CTE, linear, Transverse to Flow | 50.0 µm/m-°C<br>@Temperature -30.0 - 0.000 °C | 27.8 µin/in-°F<br>@Temperature -22.0 - 32.0 °F | 100 x 15 x 3 mm sample; AZDEL Test |
| Melting Point | 119 °C | 246 °F | Recrystallizing temperature; ISO 3146 |
| | 166 °C | 331 °F | ISO 3146 |
| Deflection Temperature at 1.8 MPa (264 psi) | 145 °C | 293 °F | Transverse direction; ISO 75/2a |
| | 160 °C | 320 °F | Longitudinal direction; ISO 75/2a |

| Processing Properties | Metric | English | Comments |
|---|---|---|---|
| Processing Temperature | 205 - 220 °C | 401 - 428 °F | Surface temperature |
| Mold Temperature | 30.0 - 90.0 °C | 86.0 - 194 °F | |
| Back Pressure | 15.0 - 25.0 MPa | 2180 - 3630 psi | Depending on wall thickness and part complexity |

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