

# AZDEL™ U421B02N (Longitudinal)

Polypropylene Alloy

Azdel, Inc.

## Message:

Azdel® U421B02N is a uni-directional fiber and random glass mat reinforced polypropylene composite featuring excellent fiber distribution over long flow paths and complex part forms. This material allows highly directionalised reinforcement in applications where major 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 costs.

| General Information                                  |                                                       |                   |              |
|------------------------------------------------------|-------------------------------------------------------|-------------------|--------------|
| Filler / Reinforcement                               | Glass fiber reinforced material, 42% filler by weight |                   |              |
| Uses                                                 | Laminate                                              |                   |              |
| Forms                                                | Sheet                                                 |                   |              |
| Processing Method                                    | Compression molding                                   |                   |              |
| Physical                                             | Nominal Value                                         | Unit              | Test Method  |
| Density                                              | 1.25                                                  | g/cm <sup>3</sup> | ISO 1183     |
| Molding Shrinkage                                    | 0.20                                                  | %                 | ISO 294-4    |
| Mechanical                                           | Nominal Value                                         | Unit              | Test Method  |
| Tensile Modulus                                      | 12500                                                 | MPa               | ISO 527-2    |
| Tensile Stress (Yield)                               | 270                                                   | MPa               | ISO 527-2    |
| Tensile Strain (Break)                               | 2.4                                                   | %                 | ISO 527-2    |
| Flexural Modulus                                     | 9000                                                  | MPa               | ISO 178      |
| Flexural Stress                                      | 270                                                   | MPa               | ISO 178      |
| Impact                                               | Nominal Value                                         | Unit              | Test Method  |
| Charpy Unnotched Impact Strength                     | 180                                                   | kJ/m <sup>2</sup> | ISO 179/2fnU |
| Multi-Axial Instrumented Impact Energy               |                                                       |                   | ISO 6603-2   |
| 4.00, total impact penetration energy                | 100                                                   | J                 | ISO 6603-2   |
| 4.00, energy to power peak                           | 58.0                                                  | J                 | ISO 6603-2   |
| Multi-Axial Instrumented Impact Peak Force (4.00 mm) | 13300                                                 | N                 | ISO 6603-2   |
| Thermal                                              | Nominal Value                                         | Unit              | Test Method  |
| Heat Deflection Temperature (1.8 MPa, Unannealed)    | 160                                                   | °C                | ISO 75-2/A   |
| Melting Temperature (DSC)                            | 166                                                   | °C                | ISO 3146     |
| Additional Information                               |                                                       |                   |              |

Mass Per Unit Area, Azdel Test Method: 4.840 kg/m<sup>3</sup>Thickness, Azdel Test Method: 3.9 mmRecrystallizing Temperature, ISO 3146 Test Method: 119 °CDensity, ISO 1183 Test Method: 1.21 g/cm<sup>3</sup>CTLE, Azdel Test Method, -30°C to 0°C, 3mm: 2.7e-5 1/°CCTLE, Azdel Test Method, 0°C to 120°C, 3mm: 1.7e-5 1/°CBlank Heat Parameters-Internal Temperature: 190 to 215°C-Surface Temperature: 205 to 220°C-Typical Heating Time for IR-System: 180 to 240°C-Typical Heating Time for Hot Air System: 240 to 480°C-Mould Temperature: 30 to 90°C-Moulding Preasure: 150 to 250 barMinimum Pressing Speed: 20 mm/secTotal Cycle Time: 30 to 90 sec

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