

## BASF Ultramid® B3WG10 BK 00564 50% Glass Filled PA6 (Dry)

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6, 50% Glass Fiber Filled

### Material Notes:

Description: 50% glass-fiber reinforced and heat aging resistant injection-molding grade for technical parts with very high stiffness. Information provided by BASF

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_BASF-Ultramid-B3WG10-BK-00564-50-Glass-Filled-PA6-Dry.php](http://www.lookpolymers.com/polymer_BASF-Ultramid-B3WG10-BK-00564-50-Glass-Filled-PA6-Dry.php)

| Physical Properties                | Metric                                                 | English                                                | Comments             |
|------------------------------------|--------------------------------------------------------|--------------------------------------------------------|----------------------|
| Bulk Density                       | 0.500 - 0.800 g/cc                                     | 0.0181 - 0.0289 lb/in <sup>3</sup>                     |                      |
| Density                            | 1.55 g/cc                                              | 0.0560 lb/in <sup>3</sup>                              | ISO 1183             |
| Water Absorption                   | 4.5 - 5.1 %                                            | 4.5 - 5.1 %                                            | Saturation; ISO 62   |
| Moisture Absorption at Equilibrium | 1.3 - 1.7 %                                            | 1.3 - 1.7 %                                            | 23°C; 50% RH; ISO 62 |
| Viscosity Measurement              | 135                                                    | 135                                                    | ISO 307              |
| Linear Mold Shrinkage              | 0.0030 cm/cm                                           | 0.0030 in/in                                           | restricted           |
| Melt Flow                          | 38.75 g/10 min<br>@Load 5.00 kg,<br>Temperature 275 °C | 38.75 g/10 min<br>@Load 11.0 lb,<br>Temperature 527 °F | ISO 1133             |

| Mechanical Properties      | Metric                                          | English                                             | Comments                |
|----------------------------|-------------------------------------------------|-----------------------------------------------------|-------------------------|
| Tensile Strength, Yield    | 225 MPa                                         | 32600 psi                                           | 50 mm/min; ISO 527-1/-2 |
| Elongation at Yield        | 2.5 %                                           | 2.5 %                                               | 50 mm/min; ISO 527-1/-2 |
| Modulus of Elasticity      | 16.7 GPa                                        | 2420 ksi                                            | ISO 527-1/-2            |
| Flexural Strength          | 345 MPa                                         | 50000 psi                                           | at max force; ISO 178   |
| Flexural Modulus           | 14.5 GPa                                        | 2100 ksi                                            | ISO 178                 |
| Izod Impact, Notched (ISO) | 20.0 kJ/m <sup>2</sup><br>@Temperature 23.0 °C  | 9.52 ft-lb/in <sup>2</sup><br>@Temperature 73.4 °F  | ISO 180/A               |
| Charpy Impact Unnotched    | 8.80 J/cm <sup>2</sup><br>@Temperature -30.0 °C | 41.9 ft-lb/in <sup>2</sup><br>@Temperature -22.0 °F | ISO 179/1eU             |
|                            | 9.00 J/cm <sup>2</sup><br>@Temperature 23.0 °C  | 42.8 ft-lb/in <sup>2</sup><br>@Temperature 73.4 °F  | ISO 179/1eU             |
|                            | 1.40 J/cm <sup>2</sup>                          | 6.66 ft-lb/in <sup>2</sup>                          |                         |

| Charpy Impact, Notched<br>Mechanical Properties | Metric<br>@ Temperature -30.0 °C | English<br>@ Temperature -22.0 °F | ISO 179/1eA<br>Comments |
|-------------------------------------------------|----------------------------------|-----------------------------------|-------------------------|
|                                                 | 1.90 J/cm²                       | 9.04 ft-lb/in²                    | ISO 179/1eA             |
|                                                 | @Temperature 23.0 °C             | @Temperature 73.4 °F              |                         |

| Thermal Properties                          | Metric                                             | English                                             | Comments                                       |
|---------------------------------------------|----------------------------------------------------|-----------------------------------------------------|------------------------------------------------|
| CTE, linear, Parallel to Flow               | 10.0 - 15.0 µm/m-°C<br>@Temperature 23.0 - 80.0 °C | 5.56 - 8.33 µin/in-°F<br>@Temperature 73.4 - 176 °F | DIN 11359-1/-2                                 |
| CTE, linear, Transverse to Flow             | 50.0 - 60.0 µm/m-°C<br>@Temperature 23.0 - 80.0 °C | 27.8 - 33.3 µin/in-°F<br>@Temperature 73.4 - 176 °F | DIN 11359-1/-2                                 |
| Specific Heat Capacity                      | 1.30 J/g-°C                                        | 0.311 BTU/lb-°F                                     |                                                |
| Thermal Conductivity                        | 0.380 W/m-K                                        | 2.64 BTU-in/hr-ft²-°F                               | DIN 52612                                      |
| Melting Point                               | 220 °C                                             | 428 °F                                              | DIN 53765                                      |
| Maximum Service Temperature, Air            | 145 °C                                             | 293 °F                                              | for 50% loss of tensile strength after 20000hr |
|                                             | 175 °C                                             | 347 °F                                              | for 50% loss of tensile strength after 5000hr  |
|                                             | 200 °C                                             | 392 °F                                              |                                                |
| Deflection Temperature at 0.46 MPa (66 psi) | 220 °C                                             | 428 °F                                              | ISO 75-1/-2                                    |
| Deflection Temperature at 1.8 MPa (264 psi) | 215 °C                                             | 419 °F                                              | ISO 75-1/-2                                    |
| Decomposition Temperature                   | >= 300 °C                                          | >= 572 °F                                           |                                                |
| Flammability, UL94                          | HB<br>@Thickness 1.60 mm                           | HB<br>@Thickness 0.0630 in                          |                                                |

| Electrical Properties | Metric                         | English                        | Comments  |
|-----------------------|--------------------------------|--------------------------------|-----------|
| Volume Resistivity    | 1.00e+13 ohm-cm                | 1.00e+13 ohm-cm                | IEC 60093 |
| Dielectric Constant   | 4.2<br>@Frequency 1.00 Hz      | 4.2<br>@Frequency 1.00 Hz      | IEC 60250 |
| Dissipation Factor    | 0.014<br>@Frequency 1.00e+6 Hz | 0.014<br>@Frequency 1.00e+6 Hz | IEC 60250 |

| Processing Properties  | Metric          | English         | Comments                    |
|------------------------|-----------------|-----------------|-----------------------------|
| Processing Temperature | 80.0 °C         | 176 °F          | Hopper Throat               |
| Zone 1                 | 270 °C          | 518 °F          | Feed Zone                   |
| Zone 2                 | 280 °C          | 536 °F          | Compression                 |
| Zone 3                 | 290 °C          | 554 °F          | Metering-zone               |
| Zone 4                 | 290 °C          | 554 °F          | Nozzle                      |
| Melt Temperature       | 290 °C          | 554 °F          | Optimal                     |
|                        | 280 - 300 °C    | 536 - 572 °F    | Injection-molding/Extrusion |
| Mold Temperature       | 80.0 °C         | 176 °F          | Optimal                     |
|                        | 80.0 - 90.0 °C  | 176 - 194 °F    | Injection-molding           |
| Drying Temperature     | 80.0 °C         | 176 °F          |                             |
| Dry Time               | 4 hour          | 4 hour          |                             |
| Moisture Content       | 0.030 - 0.060 % | 0.030 - 0.060 % | Optimal                     |
|                        | <= 0.15 %       | <= 0.15 %       |                             |

| Descriptive Properties | Value     | Comments  |
|------------------------|-----------|-----------|
| Color                  | BK 00564  |           |
| Commercial Status      | Europe    |           |
| Ignition Temperature   | >400°C    | ASTM D129 |
| Peripheral screw speed | < 0.3 m/s |           |

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