



## Ultramid® B3ZG3

BASF Corporation - Polyamide 6

Monday, November 4, 2019

### General Information

#### Product Description

Ultramid B3ZG3 is an impact-modified, 15% glass fiber reinforced injection molding PA6 grade.

#### Applications

Typical applications include automobile cable conduits.

#### General

|                        |                                         |
|------------------------|-----------------------------------------|
| Material Status        | • Commercial: Active                    |
| Availability           | • Asia Pacific • Europe • North America |
| Filler / Reinforcement | • Glass Fiber, 15% Filler by Weight     |
| Additive               | • Impact Modifier                       |
| Features               | • Impact Modified • Oil Resistant       |
| Uses                   | • Automotive Applications • Conduit     |
| Agency Ratings         | • EC 1907/2006 (REACH)                  |
| RoHS Compliance        | • RoHS Compliant                        |
| Forms                  | • Pellets                               |
| Processing Method      | • Injection Molding                     |

### ASTM & ISO Properties <sup>1</sup>

| Physical                            | Dry    | Conditioned | Unit                   | Test Method |
|-------------------------------------|--------|-------------|------------------------|-------------|
| Density / Specific Gravity          | 1.22   | --          |                        | ASTM D792   |
| Density                             | 1.22   | --          | g/cm <sup>3</sup>      | ISO 1183    |
| Melt Volume-Flow Rate (MVR)         |        |             |                        | ISO 1133    |
| 275°C/5.0 kg                        | 35     | --          | cm <sup>3</sup> /10min |             |
| Molding Shrinkage - Flow (0.125 in) | 5.0E-3 | --          | in/in                  |             |
| Water Absorption (Saturation)       | 7.5    | --          | %                      | ASTM D570   |
| Water Absorption                    |        |             |                        | ISO 62      |
| Saturation, 73°F                    | 7.5    | --          | %                      |             |
| Water Absorption                    |        |             |                        | ASTM D570   |
| Equilibrium, 50% RH                 | 2.4    | --          | %                      |             |
| Water Absorption                    |        |             |                        | ISO 62      |
| Equilibrium, 73°F, 50% RH           | 2.4    | --          | %                      |             |
| Mechanical                          | Dry    | Conditioned | Unit                   | Test Method |
| Tensile Modulus (73°F)              | 798000 | 421000      | psi                    | ISO 527-2   |
| Tensile Strength (Break, 73°F)      | 14900  | --          | psi                    | ASTM D638   |
| Tensile Stress (Break, 73°F)        | 16000  | 8700        | psi                    | ISO 527-2   |
| Tensile Elongation (Break, 73°F)    | 4.0    | --          | %                      | ASTM D638   |
| Tensile Strain (Break, 73°F)        | 4.0    | 18          | %                      | ISO 527-2   |
| Flexural Modulus (73°F)             | 650000 | --          | psi                    | ASTM D790   |
| Flexural Modulus (73°F)             | 653000 | 363000      | psi                    | ISO 178     |
| Flexural Stress (73°F)              | 21800  | 11600       | psi                    | ISO 178     |

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| Impact                            | Dry     | Conditioned | Unit                  | Test Method |
|-----------------------------------|---------|-------------|-----------------------|-------------|
| Charpy Notched Impact Strength    |         |             |                       | ISO 179     |
| -22°F                             | 3.3     | --          | ft·lb/in <sup>2</sup> |             |
| 73°F                              | 7.6     | 14          | ft·lb/in <sup>2</sup> |             |
| Charpy Unnotched Impact Strength  |         |             |                       | ISO 179     |
| -22°F                             | 26      | --          | ft·lb/in <sup>2</sup> |             |
| 73°F                              | 36      | 52          | ft·lb/in <sup>2</sup> |             |
| Notched Izod Impact               |         |             |                       | ASTM D256   |
| -40°F                             | 0.99    | --          | ft·lb/in              |             |
| 73°F                              | 2.0     | --          | ft·lb/in              |             |
| Notched Izod Impact Strength      |         |             |                       | ISO 180     |
| 73°F                              | 7.1     | 14          | ft·lb/in <sup>2</sup> |             |
| Thermal                           | Dry     | Conditioned | Unit                  | Test Method |
| Deflection Temperature Under Load |         |             |                       | ASTM D648   |
| 66 psi, Unannealed                | 399     | --          | °F                    |             |
| Heat Deflection Temperature       |         |             |                       | ISO 75-2/B  |
| 66 psi, Unannealed                | 392     | --          | °F                    |             |
| Deflection Temperature Under Load |         |             |                       | ASTM D648   |
| 264 psi, Unannealed               | 379     | --          | °F                    |             |
| Heat Deflection Temperature       |         |             |                       | ISO 75-2/A  |
| 264 psi, Unannealed               | 356     | --          | °F                    |             |
| Peak Melting Temperature          | 428     | --          | °F                    | ASTM D3418  |
| Melting Temperature (DSC)         | 428     | --          | °F                    | ISO 3146    |
| CLTE - Flow                       | 1.8E-5  | --          | in/in/°F              |             |
| CLTE - Transverse                 | 4.2E-5  | --          | in/in/°F              |             |
| RTI Elec                          |         |             |                       | UL 746      |
| 0.029 in                          | 302     | --          | °F                    |             |
| 0.06 in                           | 302     | --          | °F                    |             |
| 0.12 in                           | 302     | --          | °F                    |             |
| RTI Imp                           |         |             |                       | UL 746      |
| 0.029 in                          | 239     | --          | °F                    |             |
| 0.06 in                           | 239     | --          | °F                    |             |
| 0.12 in                           | 248     | --          | °F                    |             |
| RTI Str                           |         |             |                       | UL 746      |
| 0.029 in                          | 302     | --          | °F                    |             |
| 0.06 in                           | 302     | --          | °F                    |             |
| 0.12 in                           | 302     | --          | °F                    |             |
| Electrical                        | Dry     | Conditioned | Unit                  | Test Method |
| Volume Resistivity (0.0591 in)    | 1.0E+15 | 1.0E+12     | ohms·cm               | ASTM D257   |
| Volume Resistivity                | 1.0E+15 | 1.0E+12     | ohms·cm               | IEC 60093   |
| Dielectric Constant (1 MHz)       | 3.70    | 6.20        |                       | IEC 60250   |
| Dissipation Factor (1 MHz)        | 0.025   | 0.20        |                       | IEC 60250   |
| Flammability                      | Dry     | Conditioned | Unit                  | Test Method |
| Flame Rating                      |         |             |                       | UL 94       |
| 0.029 in                          | HB      | --          |                       |             |
| 0.06 in                           | HB      | --          |                       |             |
| 0.12 in                           | HB      | --          |                       |             |

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| Processing Information |             |      |
|------------------------|-------------|------|
| Injection              | Dry         | Unit |
| Drying Temperature     | 176         | °F   |
| Drying Time            | 2.0 to 4.0  | hr   |
| Suggested Max Moisture | 0.080       | %    |
| Rear Temperature       | 473 to 527  | °F   |
| Middle Temperature     | 500 to 545  | °F   |
| Front Temperature      | 518 to 563  | °F   |
| Nozzle Temperature     | 518 to 563  | °F   |
| Processing (Melt) Temp | 518 to 563  | °F   |
| Mold Temperature       | 176 to 203  | °F   |
| Injection Pressure     | 508 to 1810 | psi  |
| Injection Rate         | Fast        |      |

### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.