

# Ultramid® B3GM35 BK30564

Polyamide 6

BASF Corporation

## Message:

A glass-fibre and mineral reinforced injection moulding grade for industrial articles having medium rigidity and high dimensional stability, used e.g. for engine covers, handles, mountings, etc.

| General Information                                                |      |                                                                                               |                        |             |
|--------------------------------------------------------------------|------|-----------------------------------------------------------------------------------------------|------------------------|-------------|
| Filler / Reinforcement                                             |      | Glass fiber reinforced material, 15% filler by weight<br>Mineral filler, 25% filler by weight |                        |             |
| Features                                                           |      | Good dimensional stability<br>Oil resistance<br>Medium hardness                               |                        |             |
| Uses                                                               |      | Handle<br>Industrial components<br>Application in Automobile Field                            |                        |             |
| Agency Ratings                                                     |      | EC 1907/2006 (REACH)                                                                          |                        |             |
| RoHS Compliance                                                    |      | RoHS compliance                                                                               |                        |             |
| Forms                                                              |      | Particle                                                                                      |                        |             |
| Processing Method                                                  |      | Injection molding                                                                             |                        |             |
| Physical                                                           | Dry  | Conditioned                                                                                   | Unit                   | Test Method |
| Density                                                            | 1.48 | --                                                                                            | g/cm <sup>3</sup>      | ISO 1183    |
| Apparent Density                                                   | 0.70 | --                                                                                            | g/cm <sup>3</sup>      |             |
| Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)                         | 40.0 | --                                                                                            | cm <sup>3</sup> /10min | ISO 1133    |
| Water Absorption                                                   |      |                                                                                               |                        | ISO 62      |
| Saturated, 23°C                                                    | 5.7  | --                                                                                            | %                      | ISO 62      |
| Equilibrium, 23°C, 50% RH                                          | 1.7  | --                                                                                            | %                      | ISO 62      |
| Viscosity Number (H <sub>2</sub> SO <sub>4</sub> (Sulphuric Acid)) | 135  | --                                                                                            | cm <sup>3</sup> /g     | ISO 307     |
| Mold Shrinkage - constrained <sup>1</sup>                          | 0.40 | --                                                                                            | %                      |             |
| Maximum operating temperature-short cycle operation                | 180  | --                                                                                            | °C                     |             |
| Screw Speed                                                        |      |                                                                                               | mm/sec                 |             |
| Mechanical                                                         | Dry  | Conditioned                                                                                   | Unit                   | Test Method |
| Tensile Modulus                                                    | 8300 | 4300                                                                                          | MPa                    | ISO 527-2   |

|                                                 |                 |             |                   |             |
|-------------------------------------------------|-----------------|-------------|-------------------|-------------|
| Tensile Stress (Break)                          | 125             | 70.0        | MPa               | ISO 527-2   |
| Tensile Strain (Break)                          | 2.8             | 7.5         | %                 | ISO 527-2   |
| Tensile Creep Modulus <sup>2</sup><br>(1000 hr) | 1850            | --          | MPa               | ISO 899-1   |
| Flexural Stress (23°C)                          | 190             | 120         | MPa               | ISO 178     |
| Impact                                          | Dry             | Conditioned | Unit              | Test Method |
| Charpy Notched Impact Strength                  |                 |             |                   | ISO 179/1eA |
| -30°C                                           | 4.0             | --          | kJ/m <sup>2</sup> | ISO 179/1eA |
| 23°C                                            | 6.0             | 8.0         | kJ/m <sup>2</sup> | ISO 179/1eA |
| Charpy Unnotched Impact Strength                |                 |             |                   | ISO 179/1eU |
| -30°C                                           | 50              | --          | kJ/m <sup>2</sup> | ISO 179/1eU |
| 23°C                                            | 50              | 70          | kJ/m <sup>2</sup> | ISO 179/1eU |
| Notched Izod Impact (23°C)                      | 5.5             | 13          | kJ/m <sup>2</sup> | ISO 180/A   |
| Thermal                                         | Dry             | Conditioned | Unit              | Test Method |
| Heat Deflection Temperature                     |                 |             |                   |             |
| 0.45 MPa, not annealed                          | 210             | --          | °C                | ISO 75-2/B  |
| 1.8 MPa, not annealed                           | 190             | --          | °C                | ISO 75-2/A  |
| Melting Temperature                             | 220             | --          | °C                | ISO 11357-3 |
| CLTE - Flow (23 to 80°C)                        | 3.5E-5 - 4.0E-5 | --          | cm/cm/°C          | ISO 11359-2 |
| Specific Heat                                   | 1300            | --          | J/kg/°C           |             |
| Thermal Conductivity                            | 0.38            | --          | W/m/K             | DIN 52612   |
| Electrical                                      | Dry             | Conditioned | Unit              | Test Method |
| Surface Resistivity                             | 1.0E+10         | --          | ohms              | IEC 60093   |
| Volume Resistivity                              | 1.0E+15         | 1.0E+12     | ohms · cm         | IEC 60093   |
| Relative Permittivity (1 MHz)                   | 3.90            | 6.20        |                   | IEC 60250   |
| Dissipation Factor (1 MHz)                      | 0.020           | 0.20        |                   | IEC 60250   |
| Comparative Tracking Index (Solution A)         | 400             | --          | V                 | IEC 60112   |
| Flammability                                    | Dry             | Conditioned | Unit              | Test Method |
| Flame Rating (1.60 mm)                          | HB              | --          |                   | UL 94       |
| Injection                                       | Dry             | Unit        |                   |             |
| Drying Temperature                              | 80.0            |             | °C                |             |
| Drying Time                                     | 4.0             |             | hr                |             |
| Suggested Max Moisture                          | 0.15            |             | %                 |             |
| Hopper Temperature                              | 80.0            |             | °C                |             |
| Rear Temperature                                | 260             |             | °C                |             |
| Middle Temperature                              | 270             |             | °C                |             |
| Front Temperature                               | 280             |             | °C                |             |
| Nozzle Temperature                              | 280             |             | °C                |             |

|                          |             |    |
|--------------------------|-------------|----|
| Processing (Melt) Temp   | 270 - 290   | °C |
| Mold Temperature         | 80.0 - 90.0 | °C |
| Injection instructions   |             |    |
| Residence time : <10 min |             |    |
| NOTE                     |             |    |

- |    |                                                                                                               |
|----|---------------------------------------------------------------------------------------------------------------|
|    | Test box with central gating, dimensions of base (107*47*1,5) mm, processing condition: TM = 280°C, TW = 80°C |
| 1. |                                                                                                               |
| 2. | strain <= 0.5%, 23°C                                                                                          |

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