

# Ultramid® 8267G HS BK-102

Polyamide 6

BASF Corporation

Message:

Ultramid 8267G HS BK-102 is a heat stabilized, black pigmented, 40% mineral and glass fiber reinforced PA6 injection molding compound. It possesses a balance of engineering properties in combination with excellent dimensional stability, low warp and resistance to sink-mark formation. It exhibits high strength, rigidity, and good heat distortion temperature. It resists creep under load and the heat stabilizer system extends its retention of properties at elevated temperatures. It has good chemical resistance to greases, oils and hydrocarbons.

Applications

Ultramid 8267G HS BK-102 is generally recommended for applications such as rotors, wheels, rims, timing belt covers, automotive cooling fans and shrouds.

| General Information    |      |                                             |                   |                     |
|------------------------|------|---------------------------------------------|-------------------|---------------------|
| Filler / Reinforcement |      | Glass\Mineral,40% Filler by Weight          |                   |                     |
| Additive               |      | Heat Stabilizer                             |                   |                     |
| Features               |      | Good Chemical Resistance                    |                   |                     |
|                        |      | Good Creep Resistance                       |                   |                     |
|                        |      | Good Dimensional Stability                  |                   |                     |
|                        |      | Good Flow                                   |                   |                     |
|                        |      | Grease Resistant                            |                   |                     |
|                        |      | Heat Stabilized                             |                   |                     |
|                        |      | High Rigidity                               |                   |                     |
|                        |      | High Strength                               |                   |                     |
|                        |      | Hydrocarbon Resistant                       |                   |                     |
|                        |      | Low Warpage                                 |                   |                     |
| Uses                   |      | Automotive Applications                     |                   |                     |
|                        |      | Wheels                                      |                   |                     |
| Agency Ratings         |      | EC 1907/2006 (REACH)                        |                   |                     |
| RoHS Compliance        |      | RoHS Compliant                              |                   |                     |
| Appearance             |      | Black                                       |                   |                     |
| Forms                  |      | Pellets                                     |                   |                     |
| Processing Method      |      | Injection Molding                           |                   |                     |
| Multi-Point Data       |      | Isothermal Stress vs. Strain (ISO 11403-1)  |                   |                     |
|                        |      | Secant Modulus vs. Strain (ISO 11403-1)     |                   |                     |
|                        |      | Shear Modulus vs. Temperature (ISO 11403-1) |                   |                     |
|                        |      | Viscosity vs. Shear Rate (ISO 11403-2)      |                   |                     |
| Physical               | Dry  | Conditioned                                 | Unit              | Test Method         |
| Specific Gravity       | 1.48 | --                                          | g/cm <sup>3</sup> | ASTM D792, ISO 1183 |

|                                            |      |             |                   |                      |
|--------------------------------------------|------|-------------|-------------------|----------------------|
| Molding Shrinkage - Flow<br>(3.18 mm)      | 0.40 | --          | %                 |                      |
| Water Absorption                           |      |             |                   |                      |
| 24 hr                                      | 0.90 | --          | %                 | ASTM D570            |
| 23°C, 24 hr                                | 0.90 | --          | %                 | ISO 62               |
| Saturation                                 | 5.7  | --          | %                 | ASTM D570            |
| Saturation, 23°C                           | 5.7  | --          | %                 | ISO 62               |
| Equilibrium, 50% RH                        | 1.6  | --          | %                 | ASTM D570            |
| Equilibrium, 23°C, 50%<br>RH               | 1.6  | --          | %                 | ISO 62               |
| Hardness                                   | Dry  | Conditioned | Unit              | Test Method          |
| Rockwell Hardness<br>(R-Scale)             | 121  | --          |                   | ASTM D785            |
| Ball Indentation Hardness                  | 220  | --          | MPa               | ISO 2039-1           |
| Mechanical                                 | Dry  | Conditioned | Unit              | Test Method          |
| Tensile Modulus                            |      |             |                   | ISO 527-2            |
| -40°C                                      | 9790 | --          | MPa               |                      |
| 23°C                                       | 8300 | 4160        | MPa               |                      |
| 80°C                                       | 3530 | --          | MPa               |                      |
| 121°C                                      | 2740 | --          | MPa               |                      |
| Tensile Strength                           |      |             |                   |                      |
| Break, 23°C                                | 130  | 67.0        | MPa               | ASTM D638            |
| Break, 23°C                                | 125  | 67.0        | MPa               | ISO 527-2            |
| Tensile Elongation (Break,<br>23°C)        | 3.0  | 14          | %                 | ASTM D638, ISO 527-2 |
| Flexural Modulus                           |      |             |                   |                      |
| 23°C                                       | 7930 | --          | MPa               | ASTM D790            |
| 23°C                                       | 7200 | 3680        | MPa               | ISO 178              |
| Flexural Strength                          |      |             |                   |                      |
| 23°C                                       | 215  | --          | MPa               | ASTM D790            |
| 23°C                                       | 195  | 90.0        | MPa               | ISO 178              |
| Impact                                     | Dry  | Conditioned | Unit              | Test Method          |
| Charpy Notched Impact<br>Strength          |      |             |                   | ISO 179              |
| -30°C                                      | 3.5  | --          | kJ/m <sup>2</sup> |                      |
| 23°C                                       | 5.0  | --          | kJ/m <sup>2</sup> |                      |
| Charpy Unnotched Impact<br>Strength (23°C) | 52   | --          | kJ/m <sup>2</sup> | ISO 179              |
| Notched Izod Impact                        |      |             |                   |                      |
| 23°C                                       | 55   | --          | J/m               | ASTM D256            |
| -40°C                                      | 4.0  | --          | kJ/m <sup>2</sup> | ISO 180              |
| 23°C                                       | 6.0  | --          | kJ/m <sup>2</sup> | ISO 180              |
| Drop Impact Resistance<br>(23°C)           | 2.03 | --          | J                 | Internal Method      |

| Thermal                     | Dry          | Conditioned | Unit     | Test Method          |
|-----------------------------|--------------|-------------|----------|----------------------|
| Heat Deflection Temperature |              |             |          |                      |
| 0.45 MPa, Unannealed        | 215          | --          | °C       | ISO 75-2/B           |
| 1.8 MPa, Unannealed         | 202          | --          | °C       | ASTM D648            |
| 1.8 MPa, Unannealed         | 200          | --          | °C       | ISO 75-2/A           |
| Peak Melting Temperature    | 220          | --          | °C       | ASTM D3418, ISO 3146 |
| CLTE                        |              |             |          |                      |
| Flow                        | 3.1E-5       | --          | cm/cm/°C | ASTM E831            |
| Flow                        | 3.0E-5       | --          | cm/cm/°C |                      |
| Transverse                  | 6.7E-5       | --          | cm/cm/°C |                      |
| RTI Elec (1.50 mm)          | 105          | --          | °C       | UL 746               |
| RTI Imp (1.50 mm)           | 105          | --          | °C       | UL 746               |
| RTI Str (1.50 mm)           | 105          | --          | °C       | UL 746               |
| Electrical                  | Dry          | Conditioned | Unit     | Test Method          |
| Volume Resistivity          |              |             |          |                      |
| 1.50 mm                     | > 1.0E+13    | --          | ohms·cm  | ASTM D257            |
| --                          | > 1.0E+13    | --          | ohms·cm  | IEC 60093            |
| Flammability                | Dry          | Conditioned | Unit     | Test Method          |
| Flame Rating (1.50 mm)      | HB           | --          |          | UL 94                |
| Injection                   | Dry          | Unit        |          |                      |
| Drying Temperature          | 83.0         |             | °C       |                      |
| Drying Time                 | 2.0 to 4.0   |             | hr       |                      |
| Suggested Max Moisture      | 0.15         |             | %        |                      |
| Processing (Melt) Temp      | 270 to 295   |             | °C       |                      |
| Mold Temperature            | 80.0 to 95.0 |             | °C       |                      |
| Injection Pressure          | 3.50 to 12.5 |             | MPa      |                      |
| Injection Rate              | Fast         |             |          |                      |

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