

# TORZEN® G4000HSL BK20

Polyamide 66  
INVISTA Engineering Polymers

Message:

TORZEN® G4000HSL BK20 is a 40% glass reinforced, heat stabilized, black, PA66 resin suitable for many injection molding applications where high tensile strength and dimensional stability are needed.

| General Information                 |                                  |                   |             |
|-------------------------------------|----------------------------------|-------------------|-------------|
| Filler / Reinforcement              | Glass Fiber,40% Filler by Weight |                   |             |
| Additive                            | Heat Stabilizer                  |                   |             |
| Features                            | Good Dimensional Stability       |                   |             |
|                                     | Good Mold Release                |                   |             |
|                                     | Heat Stabilized                  |                   |             |
|                                     | High Tensile Strength            |                   |             |
| Agency Ratings                      | EC 1907/2006 (REACH)             |                   |             |
| RoHS Compliance                     | RoHS Compliant                   |                   |             |
| Appearance                          | Black                            |                   |             |
| Processing Method                   | Injection Molding                |                   |             |
| Physical                            | Nominal Value                    | Unit              | Test Method |
| Density                             | 1.47                             | g/cm <sup>3</sup> | ISO 1183    |
| Molding Shrinkage                   |                                  |                   | ISO 294-4   |
| Across Flow : 2.00 mm               | 0.85 to 0.95                     | %                 |             |
| Flow : 2.00 mm                      | 0.35 to 0.45                     | %                 |             |
| Water Absorption                    |                                  |                   | ISO 62      |
| 23°C, 24 hr                         | 0.70                             | %                 |             |
| Equilibrium, 23°C, 50% RH           | 1.1                              | %                 |             |
| Mechanical                          | Nominal Value                    | Unit              | Test Method |
| Tensile Modulus                     | 12300                            | MPa               | ISO 527-2   |
| Tensile Stress (Break)              | 225                              | MPa               | ISO 527-2   |
| Tensile Strain (Break)              | 3.0                              | %                 | ISO 527-2   |
| Flexural Modulus                    | 10300                            | MPa               | ISO 178     |
| Flexural Stress                     | 320                              | MPa               | ISO 178     |
| Impact                              | Nominal Value                    | Unit              | Test Method |
| Charpy Notched Impact Strength      |                                  |                   | ISO 179     |
| -40°C                               | 10                               | kJ/m <sup>2</sup> |             |
| 23°C                                | 13                               | kJ/m <sup>2</sup> |             |
| Notched Izod Impact Strength (23°C) | 13                               | kJ/m <sup>2</sup> | ISO 180     |
| Thermal                             | Nominal Value                    | Unit              | Test Method |
| Heat Deflection Temperature         |                                  |                   |             |

| 0.45 MPa, Unannealed   | 260             | °C   | ISO 75-2/B  |
|------------------------|-----------------|------|-------------|
| 1.8 MPa, Unannealed    | 250             | °C   | ISO 75-2/A  |
| Melting Temperature    | 262             | °C   | ISO 11357-3 |
| Injection              | Nominal Value   | Unit |             |
| Drying Temperature     | 80.0            | °C   |             |
| Drying Time            | 3.0 to 4.0      | hr   |             |
| Suggested Max Moisture | 0.080 to 0.18   | %    |             |
| Rear Temperature       | 250 to 270      | °C   |             |
| Middle Temperature     | 270 to 290      | °C   |             |
| Front Temperature      | 270 to 290      | °C   |             |
| Nozzle Temperature     | 270 to 290      | °C   |             |
| Processing (Melt) Temp | 280 to 300      | °C   |             |
| Mold Temperature       | 50.0 to 90.0    | °C   |             |
| Back Pressure          | 0.200 to 1.00   | MPa  |             |
| Cushion                | 4.00 to 6.00    | mm   |             |
| Vent Depth             | 7.0E-3 to 0.040 | mm   |             |
| Screw Speed            | Low rpm         |      |             |

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