

# TORZEN® GM3800HSL BK20

Polyamide 66

INVISTA Engineering Polymers

## Message:

TORZEN® GM3800HSL BK20 is a 38% glass/mineral 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\Mineral,38% 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                                          | 1.46                               | g/cm <sup>3</sup> | ISO 1183    |
| Molding Shrinkage                                |                                    |                   | ISO 294-4   |
| Across Flow : 2.00 mm                            | 0.85 to 1.0                        | %                 |             |
| Flow : 2.00 mm                                   | 0.20 to 0.35                       | %                 |             |
| Mechanical                                       | Nominal Value                      | Unit              | Test Method |
| Tensile Modulus                                  | 10900                              | MPa               | ISO 527-2   |
| Tensile Stress (Break)                           | 135                                | MPa               | ISO 527-2   |
| Tensile Strain (Break)                           | 2.1                                | %                 | ISO 527-2   |
| Flexural Modulus                                 | 9800                               | MPa               | ISO 178     |
| Flexural Stress                                  | 205                                | MPa               | ISO 178     |
| Impact                                           | Nominal Value                      | Unit              | Test Method |
| Charpy Notched Impact Strength                   |                                    |                   | ISO 179     |
| -40°C                                            | 4.0                                | kJ/m <sup>2</sup> |             |
| 23°C                                             | 5.0                                | kJ/m <sup>2</sup> |             |
| Notched Izod Impact Strength <sup>1</sup> (23°C) | 4.0                                | kJ/m <sup>2</sup> | ISO 180     |
| Thermal                                          | Nominal Value                      | Unit              | Test Method |
| Heat Deflection Temperature                      |                                    |                   |             |
| 0.45 MPa, Unannealed                             | 250                                | °C                | ISO 75-2/B  |
| 1.8 MPa, Unannealed                              | 213                                | °C                | ISO 75-2/A  |
| Melting Temperature                              | 254                                | °C                | ISO 11357-3 |

| Flammability           | Nominal Value   | Unit   | Test Method |
|------------------------|-----------------|--------|-------------|
| Burning Rate           | 0.0             | mm/min | ISO 3795    |
| 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         |        |             |

#### NOTE

1. After heat ageing

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