



OnForce™ LFT LF6600-5002 HI BLACK

Polyamide

Key Characteristics

Product Description

PolyOne's Long Fiber Thermoplastic (LFT) compounds are formulated for demanding applications which require high stiffness and good impact such as metal replacement or other structural applications. These products exhibit enhanced physical and mechanical properties versus standard short fiber products. Benefits of LFT compounds include improved impact strength, elastic modulus, and material strength across wide temperature ranges from subambient to highly elevated. Furthermore, LFT compounds have been shown to offer improved performance in the areas of creep and fatigue performance, improved dimensional stability, and exhibit an exceptional surface finish when compared to traditional highly filled short fiber products.

General

| | | | |
|------------------------|------------------------------------------|-----------------------------|-----------------|
| Material Status | • Commercial: Active | | |
| Regional Availability | • Africa & Middle East • Asia Pacific | • Europe • Latin America | • North America |
| Filler / Reinforcement | • Long Glass Fiber | | |
| Forms | • Pellets | | |

Technical Properties ¹

| Physical | Dry | Conditioned | Unit | Test Method |
|----------------------------------|--------------------|--------------------|-----------------------------------------------|-------------|
| Density | 1.46 | 1.46 | g/cm ³ | ISO 1183 |
| Molding Shrinkage ² | 0.30 | 0.30 | % | ISO 294-4 |
| Mechanical | Dry | Conditioned | Unit | Test Method |
| Tensile Modulus | 1.45E+6 (10000) | 1.45E+6 (10000) | psi (MPa) | ISO 527-2 |
| Tensile Stress (Break) | 23200 (160) | 23200 (160) | psi (MPa) | ISO 527-2 |
| Tensile Strain (Break) | 3.5 | 3.5 | % | ISO 527-2 |
| Flexural Modulus | 1.33E+6 (9200) | 1.33E+6 (9200) | psi (MPa) | ISO 178 |
| Flexural Stress | 31200 (215) | 31200 (215) | psi (MPa) | ISO 178 |
| Impact | Dry | Conditioned | Unit | Test Method |
| Charpy Notched Impact Strength | 17 (35) | 17 (35) | ft-lb/in ² (kJ/m ²) | ISO 179 |
| Charpy Unnotched Impact Strength | 36 (75) | 36 (75) | ft-lb/in ² (kJ/m ²) | ISO 179 |

Processing Information

| Injection | Dry (English) | Dry (SI) |
|------------------------|---------------|---------------|
| Drying Temperature | 176 °F | 80.0 °C |
| Drying Time | 4.0 hr | 4.0 hr |
| Processing (Melt) Temp | 518 to 572 °F | 270 to 300 °C |
| Mold Temperature | 176 °F | 80.0 °C |
| Injection Rate | Slow-Moderate | Slow-Moderate |
| Back Pressure | 145 psi | 1.00 MPa |

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Injection Notes

LFT compounds can be processed using equipment similar to that used for short fiber products. The mechanical properties of finished parts depend greatly on the length of the fibers in the molded part; therefore processing conditions must be set carefully in order to minimize fiber breakage. A "low shear process" is advised, with low back pressure, low screw speed and low-to-medium injection speed.

Notes

¹ Typical values are not to be construed as specifications.

² Measured on a tensile specimen. Actual mold shrinkage values are highly dependant on part geometry, mold configuration, and processing conditions.

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