



OnForce™ LFT LF5400-5001 BLACK

Polyethylene

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 | • Basalt Fiber, 33% Filler by Weight | | |
| Forms | • Pellets | | |

Technical Properties ¹

| Physical | Typical Value (English) | Typical Value (SI) | Test Method |
|--------------------------------|--------------------------------|--------------------------------|-------------|
| Density | 1.17 to 1.21 g/cm ³ | 1.17 to 1.21 g/cm ³ | ISO 1183 |
| Mechanical | Typical Value (English) | Typical Value (SI) | Test Method |
| Tensile Modulus | 841000 psi | 5800 MPa | ISO 527-2 |
| Tensile Stress (Break) | 12200 psi | 84.0 MPa | ISO 527-2 |
| Tensile Strain (Break) | 2.0 to 4.0 % | 2.0 to 4.0 % | ISO 527-2 |
| Flexural Modulus | 667000 psi | 4600 MPa | ISO 178 |
| Flexural Stress | 16700 psi | 115 MPa | ISO 178 |
| Impact | Typical Value (English) | Typical Value (SI) | Test Method |
| Charpy Notched Impact Strength | 9.5 ft·lb/in ² | 20 kJ/m ² | ISO 179 |

Processing Information

| Injection | Typical Value (English) | Typical Value (SI) |
|------------------------|-------------------------|--------------------|
| Drying Temperature | 176 °F | 80 °C |
| Drying Time | 2.0 hr | 2.0 hr |
| Processing (Melt) Temp | 410 to 446 °F | 210 to 230 °C |
| Mold Temperature | 86 to 140 °F | 30 to 60 °C |
| Injection Rate | Slow-Moderate | Slow-Moderate |
| Back Pressure | 145 psi | 1.00 MPa |

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.

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