OnForce™ LFT LF0100-5002 NATURAL

Polyurethane

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, 60% Filler by Weight		
Forms	• Pellets		

Technical Properties [1]

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density	1.71 g/cm³	1.71 g/cm³	ISO 1183
Molding Shrinkage	0.050 to 0.15 %	0.050 to 0.15 %	ISO 294-4
Mechanical	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Tensile Modulus [2]	2.76E+6 psi	19000 MPa	ISO 527-1
Tensile Strength (Yield)	30500 psi	210 MPa	ISO 527-2
Tensile Elongation [2] (Break)	2.0 %	2.0 %	ISO 527-2
Flexural Modulus	1.89E+6 psi	13000 MPa	ISO 178
Flexural Strength (Yield)	36300 psi	250 MPa	ISO 178
Impact	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Charpy Notched Impact Strength	14 ft·lb/in²	30 kJ/m²	ISO 179
Charpy Unnotched Impact Strength	31 ft·lb/in²	65 kJ/m²	ISO 179
Thermal	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Heat Deflection Temperature			ISO 75-2/A
264 psi (1.8 MPa), Unannealed	237 °F	114 °C	

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature	194 °F	90 °C
Drying Time	8.0 to 12 hr	8.0 to 12 hr
Processing (Melt) Temp	500 to 536 °F	260 to 280 °C
Mold Temperature	176 °F	80 °C

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. This grade must be dried in a dessicant dryer with a dew point set at -40°C.

Notes

[1] Typical values are not to be construed as specifications.

[2] Type I, 0.20 in/min (5.1 mm/min)

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