OnForce™ LFT PP-50LGF/000 8001

Polypropylene

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		
Features	• Heat Stabilized		
Forms	• Pellets		

Technical Properties [1]

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density	1.33 g/cm³	1.33 g/cm³	ISO 1183
Molding Shrinkage - Flow [2]	0.20 to 0.50 %	0.20 to 0.50 %	ISO 294-4
Mechanical	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Tensile Modulus	1.96E+6 psi	13500 MPa	ISO 527-2
Tensile Stress (Break)	20300 psi	140 MPa	ISO 527-2
Tensile Strain (Break)	1.3 %	1.3 %	ISO 527-2
Flexural Modulus	1.52E+6 psi	10500 MPa	ISO 178
Flexural Stress	26800 psi	185 MPa	ISO 178
Impact	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Charpy Notched Impact Strength	15 ft·lb/in²	31 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	309 °F	154 °C	

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature	176 °F	80.0 °C
Drying Time	2.0 hr	2.0 hr
Processing (Melt) Temp	410 to 446 °F	210 to 230 °C
Mold Temperature	140 °F	60.0 °C
Injection Rate	Slow-Moderate	Slow-Moderate
Back Pressure	145 psi	1.00 MPa

Injection Notes

LFT compounds can be processed using equipments similar to those used for short fiber products. The mechanical properties depend greatly on the length of the fibers in the moulded 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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