OnForce™ LFT UR-50 LGF/000 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, 50% Filler by Weight		
Forms	• Pellets		

Technical Properties [1]

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Specific Gravity	1.60	1.60	ASTM D792
Molding Shrinkage - Flow	1.0E-3 to 2.0E-3 in/in	0.10 to 0.20 %	ASTM D955
Mechanical	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Tensile Modulus [2]	2.10E+6 psi	14500 MPa	ASTM D638
Tensile Strength (Yield)	35000 psi	241 MPa	ASTM D638
Tensile Elongation [2] (Break)	2.0 to 3.0 %	2.0 to 3.0 %	ASTM D638
Flexural Modulus	2.20E+6 psi	15200 MPa	ASTM D790
Flexural Strength (Yield)	51000 psi	352 MPa	ASTM D790
Impact	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Notched Izod Impact			ASTM D256
73°F (23°C), 0.125 in (3.18 mm), Injection Molded	8.5 ft·lb/in	450 J/m	
Unnotched Izod Impact	30 ft·lb/in	1600 J/m	ASTM D256
Thermal	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Deflection Temperature Under Load			ASTM D648
264 psi (1.8 MPa), Unannealed	237 °F	114 °C	

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature	194 °F	90.0 °C
Drying Time	8.0 to 12 hr	8.0 to 12 hr
Processing (Melt) Temp	446 to 482 °F	230 to 250 °C
Mold Temperature	176 °F	80.0 °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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