OnForce™ LFT LF0100-5001 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, 40% Filler by Weight		
Forms	• Pellets		

Technical Properties [1]

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Specific Gravity	1.51	1.51	ISO 1183
Molding Shrinkage - Flow			
--	1.0E-3 to 2.0E-3 in/in	0.10 to 0.20 %	ISO 294-4
--	8.0E-4 in/in	0.080 %	ASTM D955
Mechanical	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Tensile Modulus			
--	1.58E+6 psi	10900 MPa	ASTM D638
-- [2]	1.55E+6 psi	10700 MPa	ISO 527-2
Tensile Strength (Yield)	27600 psi	190 MPa	ISO 527-2
Tensile Stress (Break)	27200 psi	188 MPa	ASTM D638
Tensile Elongation [2] (Break)	2.0 to 3.0 %	2.0 to 3.0 %	ISO 527-2
Tensile Strain (Break)	2.5 %	2.5 %	ASTM D638
Flexural Modulus			
--	1.20E+6 psi	8300 MPa	ISO 178
--	1.40E+6 psi	9640 MPa	ASTM D790
Flexural Stress	39000 psi	269 MPa	ASTM D790
Flexural Strength (Yield)	37700 psi	260 MPa	ISO 178
Impact	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Charpy Notched Impact Strength	17 ft·lb/in²	35 kJ/m²	ISO 179
Charpy Unnotched Impact Strength	38 ft·lb/in²	80 kJ/m²	ISO 179
Notched Izod Impact	7.0 ft·lb/in	370 J/m	ASTM D256
Thermal	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Heat Deflection Temperature			
264 psi (1.8 MPa), Unannealed	230 °F	110 °C	ISO 75-2/A
264 psi (1.8 MPa), Unannealed	210 °F	99.0 °C	ASTM D648
Thermal Conductivity	1.5 Btu·in/hr/ft²/°F	0.22 W/m/K	ASTM E1461

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	428 to 482 °F	220 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)

CONTACT INFORMATION

Americas

United States - Avon Lake
+1 440 930 1000

United States - McHenry
+1 815 385 8500

Asia

China - Guangzhou
+86 20 8732 7260

China - Shenzhen
+86 755 2969 2888

China - Suzhou
+86 512 6823 24 38

China - Suzhou
+86 512 6265 2600

Hong Kong -
+852 2690 5332

Taiwan - Yonghe City,
+886 9396 99740, +886 2929 1849

Europe

Germany - Gaggenau
+49 7225 6802 0

Spain - Barbastro (Huesca)
+34 974 310 314

Beyond Polymers.

Better Business Solutions. SM

www.polyone.com

PolyOne Americas
33587 Walker Road
Avon Lake, Ohio 44012
United States
+1 440 930 1000
+1 866 POLYONE

PolyOne Asia
No. 88 Guoshoujing Road
Z.J Hi-tech Park, Pudong
Shanghai, 201203, China
+86 21 5080 1188

PolyOne Europe
6 Giällewee
+352 269 050 35