



# OnForce™ LFT UR-40 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 • Europe • Asia Pacific • Latin America • North America
Filler / Reinforcement	• Long Glass Fiber, 40% Filler by Weight
Forms	• Pellets

## Technical Properties <sup>1</sup>

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Specific Gravity	1.51	1.51	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 <sup>2</sup>	1.60E+6 psi	11000 MPa	ASTM D638
Tensile Strength (Yield)	32000 psi	221 MPa	ASTM D638
Tensile Elongation <sup>2</sup> (Break)	2.0 to 3.0 %	2.0 to 3.0 %	ASTM D638
Flexural Modulus	1.60E+6 psi	11000 MPa	ASTM D790
Flexural Strength (Yield)	44500 psi	307 MPa	ASTM D790
Impact	Typical Value (English)	Typical Value (SI)	Test Method
Notched Izod Impact 73°F (23°C), 0.125 in (3.18 mm), Injection Molded	6.9 ft-lb/in	370 J/m	ASTM D256
Unnotched Izod Impact	27 ft-lb/in	1400 J/m	ASTM D256
Thermal	Typical Value (English)	Typical Value (SI)	Test Method
Deflection Temperature Under Load 264 psi (1.8 MPa), Unannealed	235 °F	113 °C	ASTM D648

## Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature - Desiccant Dryer	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 desiccant dryer with a dew point set at -40°C.

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**Notes**<sup>1</sup> Typical values are not to be construed as specifications.<sup>2</sup> Type I, 0.20 in/min (5.1 mm/min)**CONTACT INFORMATION****Americas**United States - Avon Lake  
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