



OnForce™ LFT NN-40LCF/001 Grey

Polyamide 66

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 • North America	• South America
Filler / Reinforcement	• Long Carbon Fiber, 40% Filler by Weight		
Features	• Heat Stabilized		
Forms	• Pellets		

Technical Properties ¹

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density	1.35 g/cm ³	1.35 g/cm ³	ISO 1183
Molding Shrinkage ²	0.30 %	0.30 %	ISO 294-4
Mechanical	Typical Value (English)	Typical Value (SI)	Test Method
Tensile Modulus	4.21E+6 psi	29000 MPa	ISO 527-2
Tensile Stress (Break)	44200 psi	305 MPa	ISO 527-2
Tensile Strain (Break)	1.5 %	1.5 %	ISO 527-2
Flexural Modulus	3.48E+6 psi	24000 MPa	ISO 178
Flexural Strength	60900 psi	420 MPa	ISO 178
Impact	Typical Value (English)	Typical Value (SI)	Test Method
Charpy Notched Impact Strength	7.1 ft·lb/in ²	15 kJ/m ²	ISO 179
Charpy Unnotched Impact Strength	26 ft·lb/in ²	55 kJ/m ²	ISO 179
Gardner Impact	104 in·lb	11.8 J	ASTM D5420
Thermal	Typical Value (English)	Typical Value (SI)	Test Method
Heat Deflection Temperature 264 psi (1.8 MPa), Unannealed	482 °F	250 °C	ISO 75-2/A
Heat Deflection Temperature 1160 psi (8.0 MPa), Unannealed	469 °F	243 °C	ISO 75-2/C

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature	176 °F	80.0 °C
Drying Time	4.0 hr	4.0 hr
Processing (Melt) Temp	554 to 608 °F	290 to 320 °C
Mold Temperature	194 °F	90.0 °C
Injection Rate	Slow-Moderate	Slow-Moderate
Back Pressure	145 psi	1.00 MPa

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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.

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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