



OnForce™ LFT AM-40LGF/001 Natural

Polyphthalamide

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		
Features	• Heat Stabilized		
Forms	• Pellets		

Technical Properties ¹

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density	1.53 g/cm ³	1.53 g/cm ³	ISO 1183
Molding Shrinkage ²	0.20 %	0.20 %	ISO 294-4
Mechanical	Typical Value (English)	Typical Value (SI)	Test Method
Tensile Modulus	2.10E+6 psi	14500 MPa	ISO 527-2
Tensile Stress (Break)	33400 psi	230 MPa	ISO 527-2
Tensile Strain (Break)	2.0 %	2.0 %	ISO 527-2
Flexural Modulus	1.74E+6 psi	12000 MPa	ISO 178
Flexural Stress	50800 psi	350 MPa	ISO 178
Impact	Typical Value (English)	Typical Value (SI)	Test Method
Charpy Notched Impact Strength	9.5 ft·lb/in ²	20 kJ/m ²	ISO 179
Charpy Unnotched Impact Strength	38 ft·lb/in ²	80 kJ/m ²	ISO 179
Gardner Impact	100 in·lb	11.3 J	ASTM D5420
Thermal	Typical Value (English)	Typical Value (SI)	Test Method
Heat Deflection Temperature 264 psi (1.8 MPa), Unannealed	552 °F	289 °C	ISO 75-2/A

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature	248 °F	120 °C
Drying Time	4.0 hr	4.0 hr
Processing (Melt) Temp	572 to 626 °F	300 to 330 °C
Mold Temperature	284 to 356 °F	140 to 180 °C
Injection Rate	Slow-Moderate	Slow-Moderate
Back Pressure	145 psi	1.00 MPa

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.

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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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