OnForce™ LFT PP-30LGF/001 Natural

Polypropylene Homopolymer

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
Filler / Reinforcement	• Long Glass Fiber	
Features	• Heat Stabilized	
Appearance	• Natural Color	
Forms	• Pellets	
Processing Method	• Injection Molding	

Technical Properties [1]

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density	1.10 g/cm³	1.10 g/cm³	ISO 1183
Molding Shrinkage			
-- [2]	0.40 %	0.40 %	ISO 294-4
--	0.10 %	0.10 %	ASTM D955
Mechanical	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Tensile Modulus			
--	1.02E+6 psi	7000 MPa	ISO 527-2
--	1.00E+6 psi	6920 MPa	ASTM D638
Tensile Stress			
Break	17400 psi	120 MPa	ISO 527-2
Break	14800 psi	102 MPa	ASTM D638
Tensile Strain			
Break	2.0 %	2.0 %	ISO 527-2
Break	2.4 %	2.4 %	ASTM D638
Flexural Modulus			
--	798000 psi	5500 MPa	ISO 178
--	785000 psi	5410 MPa	ASTM D790
Flexural Stress			
--	23200 psi	160 MPa	ISO 178
--	21000 psi	145 MPa	ASTM D790
Impact	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Charpy Notched Impact Strength	9.5 ft·lb/in²	20 kJ/m²	ISO 179
Charpy Unnotched Impact Strength	29 ft·lb/in²	60 kJ/m²	ISO 179
Notched Izod Impact	2.8 ft·lb/in	150 J/m	ASTM D256
Gardner Impact	90.0 in·lb	10.2 J	ASTM D5420

Thermal	Typical Value (English)	Typical Value (SI)	Test Method
Heat Deflection Temperature			
264 psi (1.8 MPa), Unannealed	311 °F	155 °C	ISO 75-2/A
264 psi (1.8 MPa), Unannealed	313 °F	156 °C	ASTM D648
Heat Deflection Temperature			ISO 75-2/C
1160 psi (8.0 MPa), Unannealed	275 °F	135 °C	

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature	176 to 185 °F	80.0 to 85.0 °C
Drying Time	4.0 to 6.0 hr	4.0 to 6.0 hr
Processing (Melt) Temp	392 to 464 °F	200 to 240 °C
Mold Temperature	86.0 to 140 °F	30.0 to 60.0 °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.

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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