OnForce™ LFT NN-40LGF/000 HS Natural

Polyamide 66

Key Characteristics

Product Description
Avient'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	1.45 g/cm³	1.45 g/cm³	ISO 1183
Molding Shrinkage			
-- [2]	0.30 %	0.30 %	ISO 294-4
--	0.17 %	0.17 %	ASTM D955
Mechanical	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Tensile Modulus			
--	1.74E+6 psi	12000 MPa	ISO 527-1
--	1.80E+6 psi	12400 MPa	ASTM D638
Tensile Stress			
Break	33400 psi	230 MPa	ISO 527-2
Break	29900 psi	206 MPa	ASTM D638
Tensile Strain			
Break	2.0 %	2.0 %	ISO 527-2
Break	2.4 %	2.4 %	ASTM D638
Flexural Modulus			
--	1.67E+6 psi	11500 MPa	ISO 178
--	1.51E+6 psi	10400 MPa	ASTM D790
Flexural Stress			
--	43500 psi	300 MPa	ISO 178
--	45100 psi	311 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	38 ft·lb/in²	80 kJ/m²	ISO 179
Notched Izod Impact	3.7 ft·lb/in	200 J/m	ASTM D256
Gardner Impact	116 in·lb	13.1 J	ASTM D5420

Thermal	Typical Value (English)	Typical Value (SI)	Test Method
Deflection Temperature Under Load			
264 psi (1.8 MPa), Unannealed	496 °F	258 °C	ISO 75-2/A
264 psi (1.8 MPa), Unannealed	495 °F	257 °C	ASTM D648
Deflection Temperature Under Load			ISO 75-2/C
1160 psi (8.0 MPa), Unannealed	471 °F	244 °C	

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature	176 °F	80 °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 °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.

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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