

# OnForce™ LFT NN-40LGF/000 HS Natural

Polyamide 66

PolyOne Corporation

## Message:

Polyvan's long fiber thermoplastic polymers are used in situations where high hardness and good impact resistance are required, such as metal substitution or other structural applications. These products exhibit enhanced physical and mechanical properties compared to staple fiber products. Its advantages include improved impact strength, elasticity and material strength in different temperature ranges. In addition, compared with traditional high-filled short fiber products, long fiber thermoplastic polymers show improved properties in terms of creep and fatigue resistance, improved dimensional stability and unique surface finish.

General Information			
Filler / Reinforcement	Long glass fiber, 40% filler by weight		
Features	Thermal Stability		
Forms	Particle		
Physical	Nominal Value	Unit	Test Method
Density	1.45	g/cm <sup>3</sup>	ISO 1183
Molding Shrinkage			
--	0.17	%	ASTM D955
-- <sup>1</sup>	0.30	%	ISO 294-4
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
--	12400	MPa	ASTM D638
--	12000	MPa	ISO 527-2
Tensile Stress			
Fracture	206	MPa	ASTM D638
Fracture	230	MPa	ISO 527-2
Tensile Strain			
Fracture	2.4	%	ASTM D638
Fracture	2.0	%	ISO 527-2
Flexural Modulus			
--	10400	MPa	ASTM D790
--	11500	MPa	ISO 178
Flexural Stress			
--	311	MPa	ASTM D790
--	300	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength	20	kJ/m <sup>2</sup>	ISO 179
Charpy Unnotched Impact Strength	80	kJ/m <sup>2</sup>	ISO 179
Notched Izod Impact	200	J/m	ASTM D256
Dart Drop Impact	13.1	J	ASTM D5420
Thermal	Nominal Value	Unit	Test Method

Heat Deflection Temperature			
1.8 MPa, not annealed	257	°C	ASTM D648
1.8 MPa, not annealed	258	°C	ISO 75-2/A
8.0 MPa, not annealed	244	°C	ISO 75-2/C

Injection	Nominal Value	Unit	
Drying Temperature	80.0	°C	
Drying Time	4.0	hr	
Processing (Melt) Temp	290 - 320	°C	
Mold Temperature	90.0	°C	
Injection Rate	Slow-Moderate		
Back Pressure	1.00	MPa	

#### Injection instructions

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.

#### NOTE

1. Measured on a tensile specimen.  
Actual mold shrinkage values are highly dependant on part geometry, mold configuration, and processing conditions.

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