

# OnForce™ LFT PP-50LGF/001 Natural

Polypropylene Homopolymer

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, 50% filler by weight		
Features	Thermal Stability		
Forms	Particle		
Physical	Nominal Value	Unit	Test Method
Density	1.30	g/cm <sup>3</sup>	ISO 1183
Molding Shrinkage			
--	0.10 - 0.40	%	ASTM D955
-- <sup>1</sup>	0.30	%	ISO 294-4
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
--	12000	MPa	ISO 527-2
-- <sup>2</sup>	11100	MPa	ASTM D638
Tensile Stress			
Fracture	130	MPa	ISO 527-2
Fracture <sup>3</sup>	110	MPa	ASTM D638
Tensile Strain			
Fracture	2.0	%	ISO 527-2
Fracture <sup>4</sup>	1.7	%	ASTM D638
Flexural Modulus			
--	9000	MPa	ISO 178
-- <sup>5</sup>	9470	MPa	ASTM D790
Flexural Stress			
--	180	MPa	ISO 178
-- <sup>6</sup>	188	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength	25	kJ/m <sup>2</sup>	ISO 179
Charpy Unnotched Impact Strength	60	kJ/m <sup>2</sup>	ISO 179
Notched Izod Impact	170	J/m	ASTM D256
Unnotched Izod Impact	830	J/m	ASTM D256
Dart Drop Impact	11.9	J	ASTM D5420

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, not annealed	163	°C	ASTM D648
1.8 MPa, not annealed	152	°C	ISO 75-2/A
8.0 MPa, not annealed	144	°C	ISO 75-2/C
Injection	Nominal Value	Unit	
Drying Temperature	80.0	°C	
Drying Time	2.0	hr	
Processing (Melt) Temp	210 - 230	°C	
Mold Temperature	60.0	°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.

2. 5 mm/min

3. 5 mm/min

4. 5 mm/min

5. 1.3 mm/min

6. 1.3 mm/min

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