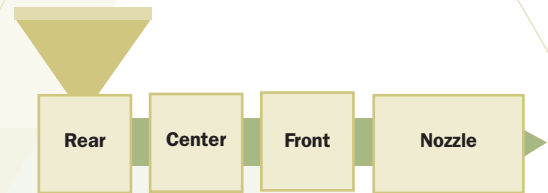


# OnForce™ LFT Long Fiber Compounds

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 improved surface finish when compared to traditional highly-filled, short fiber products.



## Temperatures

	Rear °F (°C)	Center °F (°C)	Front °F (°C)	Nozzle °F (°C)	Melt °F (°C)	Mold °F (°C)
<b>Material</b>						
<b>Long-Glass PA 66 OnForce LFT NN-LGF</b>	540 - 570 (282 - 299)	550 - 580 (288 - 304)	560 - 590 (293 - 310)	550 - 590 (288 - 310)	560 - 590 (293 - 310)	180 - 250 (82 - 121)
<b>Long-Carbon PA 66 OnForce LFT NN-LCF</b>	540 - 570 (282 - 299)	550 - 580 (288 - 304)	560 - 590 (293 - 310)	550 - 590 (288 - 310)	560 - 590 (293 - 310)	180 - 250 (82 - 121)
<b>Long-Glass PP OnForce LFT PP-LGF</b>	390 - 410 (199 - 210)	400 - 420 (204 - 216)	410 - 430 (210 - 221)	400 - 420 (204 - 216)	410 - 430 (210 - 221)	100 - 150 (38 - 66)
<b>Long Glass TPU OnForce LFT UR-LGF</b>	460 - 490 (238 - 254)	470 - 500 (243 - 260)	480 - 510 (249 - 266)	490 - 500 (254 - 260)	480 - 510 (249 - 266)	160 - 190 (71 - 88)

## Drying

	Temperature °F (°C)	Time	Minimum Moisture	Maximum Moisture
<b>Material</b>				
<b>Long-Glass PA 66 OnForce LFT NN-LGF</b>	175 (79)	4 hours	0.10%	0.18%
<b>Long-Carbon PA 66 OnForce LFT NN-LCF</b>	175 (79)	4 hours	0.10%	0.18%
<b>Long-Glass PP OnForce LFT PP-LGF</b>	200 (93)	2 hours	N/A	N/A
<b>Long Glass TPU OnForce LFT UR-LGF</b>	175 (79)	4 hours	0.02%	0.02%

## Processing

<b>Screw Speed</b>	20 - 50 RPM
<b>Back Pressure</b>	20 - 50 psi (hydraulic)
<b>Pack Pressure</b>	60 - 80% of max injection pressure
<b>Hold Pressure</b>	40 - 60% of max injection pressure
<b>Cool Time</b>	10 - 30 seconds (dependent on part geometry and dimensional stability)
<b>Regrind</b>	Max allowable regrind not to exceed 5%

## Equipment

Feed throats smaller than 2.5" may cause bridging due to pellet size

General purpose metering screw

- L/D ratio 18:1 - 20:1 (40% feed, 40% transition, 20% metering) - Mixing screws are not recommended
- Low compression ratio 2:1 - 3:1
- Deep flights
  - Metering zone 3.5 mm
  - Feed zone 7.5 mm

Three piece free flowing check ring

General purpose nozzle

- Minimum orifice diameter of 7/32"
- Tapered nozzles are not recommended for long fiber resins

Clamp tonnage:

- 2.5 - 5 tons/in<sup>2</sup>

## Gates

Large, free-flow gating recommended

- 0.25" x 0.125" land length
- 0.5" gate depth

## Runners

- Full round gate design
- No sharp corners
- Minimum of 0.25" diameter
- Hot runners can be used

**Product choices often vary by region due to differences in regulatory and agency requirements, availability and other key factors. Please contact your nearest sales office for assistance in choosing the right solution for your locale.**

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