



Injection Moulding Process Guide

Bioblend series LT

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Bioblend compounds are designed for General Purpose injection moulding applications. The grades have a high melt-flow index. Thin-walled parts can be moulded with Bioblend grades.

The material can be processed on conventional injection moulding equipment. The material is sensitive to moisture and high temperatures (above 220°C); high shear rates shall be avoided.

For initial trials (material testing only), moulds designed for ABS or ABS/PC are suitable as shrinkage rates are similar to Bioblend grades.

1. PREPERATION

Storage	Keep the material tightly closed in a dry and cool place.
Drying	Drying of the material is recommended and shall be for 2 hours at 60-80° C. A moisture content of less than 0.100% (1000 ppm) is recommended.
Injection Moulding Start-Up	<ol style="list-style-type: none"> 1. Vacuum-out/clean hopper and air-suction system to avoid contamination. 2. Clean the barrel with general-purpose PP or PE. The material is not compatible with most other resins. 3. Once the barrel has been cleaned, reduce barrel temperatures to the right set points (see next section). 4. Introduce the compounds into the barrel only after all barrel temperatures are at target set points. The material cannot enter into the barrel when temperatures are above 220° C in any section! 5. Make sure that the mould is heated up to a temperature of around 50 - 60 °C. Bioblend LT grades cannot be processed on cold moulds! 6. Start with a moderate holding pressure and keep it applied until demoulding initially. Bioblend LT grades have a slow solidification. Holes and sink marks in the final part are a result of a too low holding pressures that are applied too short. 7. Start with long cooling times before opening the mould (while keeping the holding pressure applied): <i>t_{cooling} (in sec) > biggest wall-thickness (in mm) x 5 (start-up)</i> 8. After start-up, the injection moulding process shall be optimized step-by-step; holding time and cooling time shall be reduced.
MSDS & Technical Datasheet	Read and understand the MSDS and Technical Data Sheets (TDS) provided with the material.

2. INJECTION MOULDING PROCESS PARAMETERS

Hopper Temperature	RT
Feed Zone Temperature	190° C
Compression Zone Temperature	200° C
Metering Zone Temperature	210° C
Nozzle Temperature	200° C
Mould Temperature	50° C to 60° C
Screw Speed	low – medium
Injection Pressure	low
Injection Speed	slow
Holding Pressure / Time	long
Cooling Time	long
Remark	Do not keep the material longer than 15 minutes in the barrel; if so, the material needs to be purged and removed.

3. ANNEALING

Moulded parts can be annealed during or after injection moulding. Annealing initiates a further crystallization of the material. The moulded part will, depending on the intensity of the annealing process, become effectively **heat stable to temperatures above 100°C** (HDT-B). Mechanical properties will change as well; please refer to the respective TDS.

Parts with wall-thickness below 1.5 mm:

Thin parts can be annealed in the injection mould itself. Set the mould temperature to 90 °C. Understand required holding and cooling times to be able to demould.

Post-moulding annealing for parts with wall-thickness above 1.5 mm:

Post-moulding annealing is the exposure of the part to temperatures around 120 – 140°C for 10 – 15 minutes (depending on the wall-thickness). Please make sure that there is no load on the part (during the annealing process, the material is softening) and that parts are not touching each other. Heat ovens or channels with circulating hot air are most suitable for mass production.

After the direct annealing process, the material will further crystallize slowly. Final results shall be obtained after 24 – 48 hours.

4. POST PROCESSING

Storage	Restore unused material tightly closed in a dry and cool place.
Injection Moulding Shutdown	Purge the barrel with general purpose PP or PE. Do not keep Bioblend material in the barrel.

5. ADDITIONAL INFORMATION

This Moulding Process Guide is suitable for all Bioblend L series grades.

**Get in touch with our experts for more information or in case of problems:
info@nature2need.com
<http://nature2need.com>**

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