

Processing advice

Product name: Bio-Flex® F 7510 (previously V 153302)
Date of issue: 23 February 2016

Version: 1.0

Designation of product, preparation and manufacturer

Trade name: Bio-Flex® F 7510 (previously V 153302)

Use of product: Biodegradable polymer compound suitable for injection moulding and production of filaments, e.g. for 3D printing. The biobased carbon content (BCC) is > 80 % (calculated).

Manufacturer: FKUR Kunststoff GmbH
 Siemensring 79
 47 877 Willich
 Germany
 Phone.: + 49 (0) 2154 / 92 51-0
 Fax: + 49 (0) 2154 / 92 51-51
 Mail: info@fkur.com
 Web: www.fkur.com

Processing conditions for injection moulding

Machine equipment: Standard screw, open nozzle.

Machine settings:

| | | |
|--------------------------|---------|------|
| Feeding Zone | 45 | [°C] |
| Zone 1 | 150 | [°C] |
| Zone 2 | 160 | [°C] |
| Zone 3 | 180 | [°C] |
| Machine nozzle | 190 | [°C] |
| Mould temperature | 40 | [°C] |
| Holding pressure level | 40 - 70 | [%] |
| Melt cushion (of volume) | 3 - 10 | [%] |
| Cooling time | 10 - 60 | [s] |
| Max. dwell time | 300 | [s] |

General advice: We recommend to use cold runner systems.
 Regrind sprues and runners can be reused at 20%.

Purging advice: injection moulding

Before production: Purge the plastification unit and, if existing, the hot runner with PP, PE or purging compound.

During production: Heat tools and plastification unit to the recommended temperature. If tool is not filled, increase temperature stepwise. Material has a tendency to degrade and therefore needs a constant melt flow.

After production: Purge the plastification unit and, if existing, the hot runner with PP, PE or purging compound.

Important information: The dwell time of the material inside the machine shall be reduced to a minimum in order to lower the risk of degradation.

Processing conditions for cast film extrusion

Machine equipment: Standard polyolefin castfilm line.

Machine settings:

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|---------------------------|----------|------|
| Feeding Zone | 60 | [°C] |
| Zone 1 | 170 | [°C] |
| Zone 2 | 175 | [°C] |
| Zone 3 | 180 | [°C] |
| Zone 4 | 190 | [°C] |
| Wide slot nozzle | 190 | [°C] |
| Calender roll temperature | 20 - 40 | [°C] |
| Mass temperature | max. 190 | [°C] |

Purging advice: cast film extrusion

Before production: Ensure that all temperature zones work correctly. Purge the extruder with low melting LDPE, MFR approx. 4 - 6 g/10min using the above temperature settings. Purging time: approximately 10 to 20 minutes. We recommend to change the screen before production.

During production: Heat extruder and nozzle to the recommended temperature. If melt is too viscous, increase temperature stepwise. Material has a tendency to degrade and therefore should not remain hot inside the machine for too long.
 Reduce the temperature of the calender roll stepwise, if the film starts sticking to the calender.

After production: Purge the extruder with high viscosity PP or PE. Do not allow material to remain hot inside the machine for extended periods as the material will degrade.

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Drying conditions and storage

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| General: | Bio-Flex [®] is a biodegradable plastic based on PLA and other biopolymers. Moisture content can lead to hydrolysis. Residual moisture content of more than 0.2 % can result in fish eyes and/or pin holes during processing. |
| Drying: | We recommend drying Bio-Flex [®] at 60°C for a period of 2 - 4 hours. |
| Storage conditions: | If not specified otherwise product life is 6 month after shipment from Sellers warehouse if product is in its original packaging, stored under dry (max. 70% relative humidity) and dark conditions (not exposed to sunlight at a temperature of 5 °C to max. 30°C (ambient temperature)). It is important to observe that a major drop in external air temperature (e.g. during transportation) can result in a development of water condensate. Prior to the processing of the material, it should be ensured that there is no condensate on the packaged product. |
| Storage conditions for finished products: | Finished products made from Bio-Flex [®] must be stored dry and cold. It is recommended to wrap goods in black PE liners to protect them against moisture and UV radiation. Storage time depends on processing parameters and of climate conditions in the respective area. Because of these essential and complex interacting parameters, FKUR Kunststoff GmbH cannot give any shelf life guarantees for finished products. Please notice that the conditions mentioned above depend on experience of our customers. Each customer should execute individual storage tests according to product specifications and storage requirements. |

Legal notice

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| General: | Neither FKUR Kunststoff GmbH nor its marketing affiliates shall be responsible for the use of this information or of any product, method or equipment mentioned. Customers must undertake their own determination of this product's suitability and completeness for their own use, for the protection of the environment, for the health and safety of their employees and purchasers of their products. No warranty is made of the merchantability or fitness of any product, and nothing herein waives any of the seller's conditions of sale. |
| Brand names: | The brands "FKuR - Plastics made by nature" and "Bio-Flex" are registered trademarks of FKUR Kunststoff GmbH, according to the international 'Nice-Classifications' (NCL9), no. 01, 02 and 17. |