

Processing advice

Product name: Bio-Flex® S 6540

Date of issue: 10.08.2009

Version: 1.0

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1. Designation of product, preparation and manufacturer

- 1.1 Trade name: Bio-Flex® S 6540
- 1.2 Use of product: Biodegradable compound for injection moulding made primarily from renewable resources.
- 1.3 Manufacturer: FKUR Kunststoff GmbH
 Siemensring 79
 D - 47 877 Willich
 Phone: + 49 (0) 2154 / 92 51-0
 Fax: + 49 (0) 2154 / 92 51-51
 Mail: info@fkur.com
 Web: www.fkur.com

2. Processing conditions for injection moulding

- 2.1 Machine equipment: Standard screw with non-return flow valve, open nozzle
- 2.2 Machine settings:
- | | | |
|---------------------------------|------------|------------|
| Feeding zone | 40 | [°C] |
| Zone 1 | 120 | [°C] |
| Zone 2 | 140 | [°C] |
| Zone 3 | 160 | [°C] |
| Machine nozzle | 175 | [°C] |
| Cylinder kneeling temp. | 140 | [°C] |
| Mass temperature | 170 | [°C] |
| Mould temperature | 30 | [°C] |
| Screw peripheral velocity | up to 200 | [mm/s] |
| Back pressure | 40 - 80 | [bar] |
| Shot volume | 1 - 3 D | [-] |
| Injection pressure | up to 1800 | [bar] |
| Injection speed | medium | [-] |
| Holding pressure time | 20 - 45 | [s] |
| Melt cushion (of volume) | 3 - 10 | [%] |
| Cooling time | 10 - 60 | [s] |
| Shrinkage | 0.4 - 0.5 | [%] |
| Density | 1.62 | [g/cm³] |
| Bulk density | 990 | [kg/m³] |
| Melt flow rate (190 °C/2.16 kg) | 8 - 10 | [g/10 min] |
- 2.3 General advice: Hot runner and cold runner systems can be used.

3. Purging advice

- 3.1 Before production: Ensure that all temperature zones work correctly! Purge the extruder with low melting LDPE, MFR approx. 8 - 10 [g/10 min] using the above temperature settings.
 Purging time: approx. 10 - 20 minutes.
- 3.2 After production: Purge the extruder with LDPE, MFR 0.4 - 2.0 [g/10 min].
 Do not allow material to remain hot inside the extruder for extended periods as the material will degrade.

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4. Drying conditions and storage

- 4.1 General: Bio-Flex[®] S 6540 is a biodegradable plastic based on PLA and other biopolymers. Residual moisture content of more than 0.2 % can result in hydrolysis and evaporation in the injection unit or in condensed moisture on the mould.
- 4.2 Drying: Drying is recommended at 60 °C for a period of 2 - 4 hours. Do not overheat the material and do not dry it longer than recommended.
- 4.3 Storage conditions: It is essential to store the material in a dry and cool place. Opened octabins should be used immediately or adequately resealed to avoid moisture uptake.
- 4.4 Storage conditions for finished products: Finished products made from Bio-Flex[®] must be stored dry and cold. It is recommended to seal goods in black PE films to protect them against moisture and UV radiation. Storage time depends on processing parameters and on 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 goods. Please notice that the conditions mentioned above depend on experiences of our customers. Each customer should execute individual storage tests according to product specifications and storage requirements.

5. Legal notice

- 5.1 Compostability: Bio-Flex[®] S 6540 is not yet certified as compostable material according to European standard EN 13432.
- 5.2 Food contact approval: Bio-Flex[®] S 6540 is not yet approved for food contact according to European directives.
- 5.3 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.
- 5.4 Brands: 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.