

Technical data sheet

Product name: Bio-Flex® F 7510
Date of issue: 12 September 2022

Version: 2.0

Designation of product, preparation and manufacturer

Trade name: Bio-Flex® F 7510
Use of product: Biodegradable polymer compound suitable for injection moulding and production of filament, e.g. for 3D printing. The biobased carbon content (BCC) is >80 % (calculated).
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Mechanical properties

Modulus of elasticity	2,950	[MPa]	ISO 527
Tensile strength	55	[MPa]	ISO 527
Tensile strain at tensile strength	5	[%]	ISO 527
Tensile stress at break	21	[MPa]	ISO 527
Tensile strain at break	16	[%]	ISO 527
Flexural modulus	3,075	[MPa]	ISO 178
Flexural strain at break	no break	[%]	ISO 178
Flexural stress at 3.5 % strain	73	[MPa]	ISO 178
Notched impact strength (Charpy), RT	4	[kJ/m²]	ISO 179-1/1 eA
Impact Strength (Charpy), RT	65	[kJ/m²]	ISO 179-1/1 eU

The values listed have been established on standardized test specimens (DIN EN ISO 3167, type A) at standard temperature and humidity conditions.

Physical properties

Melt flow rate (190 °C/2.16 kg)	3	[g/10 min]	ISO 1133
Melting temperature	> 155	[°C]	ISO 3146-C
Density	1.25	[g/cm³]	ISO 1183

The figures should be regarded as guide values only. Under certain conditions the properties can be influenced to a significant extent by the processing conditions.

Processing and Handling Information

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

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.

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.

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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]

We recommend to use cold runner systems.
Regind sprues and runners can be reused at 20%.

Purging advice for 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:	Feeding Zone	45	[°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 for cast film extrusion

Before production:	Ensure that all temperature zones work correctly. Purge the extruder with low viscosity PP or PE 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
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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