

Technical data sheet

Product name: Bio-Flex® S 7710
Date of issue: 27 March 2023

Version: 2.1

Designation of product, preparation and manufacturer

Trade name: Bio-Flex® S 7710

Use of product: Biodegradable and compostable polymer compound suitable for cast film and thermoforming as well as profile extrusion. Certified as compostable according to EN 13432 with a maximum thickness of 818 µm. The biobased carbon content (BCC) is >70 % (calculated). Suitable for applications such as food trays.

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Mechanical properties

Modulus of elasticity	3,500	[MPa]	ISO 527
Tensile strength	50	[MPa]	ISO 527
Tensile strain at tensile strength	4.5	[%]	ISO 527
Tensile stress at break	21	[MPa]	ISO 527
Tensile strain at break	21	[%]	ISO 527
Notched impact strength (Charpy), RT	5.9	[kJ/m ²]	ISO 179-1/1 eA
Impact Strength (Charpy), RT	88	[kJ/m ²]	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)	3.5	[g/10 min]	ISO 1133
Melting temperature	170 - 180	[°C]	ISO 3146-C
Density	1.36	[g/cm ³]	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 cast film extrusion

Machine equipment:	Standard polyolefin castfilm line.		
Machine settings:	Feeding Zone	60	[°C]
	Zone 1	160	[°C]
	Zone 2	175	[°C]
	Zone 3	180	[°C]
	Zone 4	195	[°C]
	Wide slot nozzle	190	[°C]
	Calender roll temperature	20 - 50	[°C]
	Mass temperature	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 temperature stepwise. Material has a tendency to degrade and therefore should not remain hot inside the machine for too long. Melting temperature s also depending on the degree of crystallinity. If you are adding regrinded scraps, take care to be able to melt these properly.
After production:	Reduce the temperature of the calender roll stepwise, if the film starts sticking to the calander. 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.

Processing conditions for profile extrusion

Machine equipment:	Standard polyolefin line.		
Machine settings:	Feeding Zone	60	[°C]
	Zone 1	160	[°C]
	Zone 2	175	[°C]
	Zone 3	180	[°C]
	Zone 4	185	[°C]
	Die	190	[°C]

Purging advice for profile 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 temperature stepwise. Material has a tendency to degrade and therefore should not remain hot inside the machine for too long.
After production:	Reduce the temperature of the die, if the melt stability is too low. 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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