ArcBiox™ materials are bio-based and/or biodegradable compounds. These high-performance materials provide sustainable green alternatives for demanding technical applications.

ABM COMPOSITE
Arctic Biomaterials

ArcBiox™ BGF40-A19

Technical data sheet

Description

PLA (Polylactic acid) with 40% degradable long glass fiber reinforcement for injection moulding

Features

- High temperature resistance
- High stiffness and strength
- Excellent flatness and dimensional stability
- Bio content 95%

Applications

- Consumer electronic housing
- Houseware
- Furniture
- Accessories

Property, Test Condition	Standard	Unit	Values
Mechanical Properties			
Flexural Strength, 23 °C	ISO 178	MPa	204
Flexural Modulus, 23 °C	ISO 178	MPa	13480
Izod Notched Impact Strength, 23 °C	ISO 180/A	kJ/m²	12
Izod Unnotched, 23 °C	ISO 180/A	kJ/m²	32
Charpy Notched Impact Strength, 23° C	ISO 179/1eA	kJ/m²	13
Charpy Unnotched, 23 °C	ISO 179/1eU	kJ/m²	33
Tensile Stress at Yield, 23 °C	ISO 527	MPa	128
Tensile Strain at Yield, 23 °C	ISO 527	%	1
Tensile Stress at Break, 23 °C	ISO 527	MPa	128
Tensile Strain at Break, 23 °C	ISO 527	%	1
Tensile Modulus	ISO 527	MPa	11110
Ball indentation hardness	ISO 2039-1	N/mm²	280 (HB 961)
Thermal Properties			
Vicat Softening Temperature VST/B/50 (50N, 50 °C/h)	ISO 306	°C	142
Heat Deflection Temperature A; (1,8 MPa) *	ISO 75	°C	160
Heat Deflection Temperature B; (0,45 MPa)	ISO 75	°C	170
Other Properties			
Density	ISO 1183	g/cm³	1,60

Typical values for uncolored products. The properties stated above are not for specification purposes.
* Mold temperature 110°C

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Processing

ArcBiox™ materials must be always dried before processing with dehumidifying dryer, due to fact that insufficient drying before processing will cause loss of mechanical properties. Please note that a combination of a very long drying time and high temperature may cause degradation and agglomeration of pellets and may cause yellowing.

Property, Test Condition	Standard	Unit	Values
Processing			
Linear Mold Shrinkage (Note 3.)		%	0,2-0,4
Melt Temperature Range		°C	180-200
Feed Throat		°C	30-40
Feed Temperature		°C	180-200
Compression Section		°C	180-200
Metering Section		°C	180-200
Nozzle		°C	180-200
Mold Temperature Range; amorphous, cooling time according to part		°C	20-40
Mold Temperature Range; crystalline, cooling time min. 50s (Note 1.)		°C	100-120
Injection Velocity		mm/s	low - medium
Back Pressure		bar	5-10
Screw Surface Speed / Screw rotation speed		m/s	<0,3 / low
Drying Temperature, Dew point -40°C (Note 2.)		°C	80
Drying Time		h	5

Note 1. Holding pressure time is part of cooling time and can be decreased from this value
Note 2. Moisture content less than 0,025% (250 ppm) is recommended to prevent loss of mechanical properties.
Note 3. Mold shrinkage is measured with test part (4x70x150mm) which is moulded at 110°C tool temperature.

Change-over point should be always checked visually by setting holding pressure to 0 bar/MPa to avoid over filling and flashes. Part should be 95 – 98% filled before changing to holding pressure.

Use low MFR Polypropylene to clean the screw and barrel.