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™ CA4

Technical data sheet

Description

Partially bio-based plastic for injection moulding/3D printing

Features

- High impact properties
- Good temperature resistance
- Bio content 25%

Applications

- 3D printing
- Non visual applications

Property, Test Condition	Standard	Unit	Values
Mechanical Properties			
Flexural Strength, 23 °C	ISO 178	MPa	95
Flexural Modulus, 23 °C	ISO 178	MPa	2650
Izod Notched Impact Strength, 23 °C	ISO 180/A	kJ/m²	84
Izod Unnotched, 23 °C	ISO 180/A	kJ/m²	NB
Charpy Notched Impact Strength, 23° C	ISO 179/1eA	kJ/m²	84
Charpy Unnotched, 23 °C	ISO 179/1eU	kJ/m²	NB
Tensile Stress at Yield, 23 °C	ISO 527	MPa	58
Tensile Strain at Yield, 23 °C	ISO 527	%	5
Tensile Stress at Break, 23 °C	ISO 527	MPa	49
Tensile Strain at Break, 23 °C	ISO 527	%	70
Tensile Modulus	ISO 527	MPa	2730
Ball Indentation Hardness	ISO 2039	N/mm²	120 (HB 358)
Thermal Properties			
Vicat Softening Temperature VST/B/50 (50N, 50 °C/h)	ISO 306	°C	138
Heat Deflection Temperature A; (1,8 MPa) *	ISO 75	°C	96
Heat Deflection Temperature B; (0,45 MPa)	ISO 75	°C	124
Other Properties			
Density	ISO 1183	g/cm³	1,20

Typical values for uncolored products. The properties stated above are not for specification purposes.
* Mold temperature 80°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 2.)		%	0,6-0,9
Melt Temperature Range		°C	215-230
Feed Throat		°C	50-60
Feed Temperature		°C	200-210
Compression Section		°C	210-220
Metering Section		°C	220-230
Nozzle		°C	220-230
Mold Temperature Range		°C	40-80
Injection Velocity		mm/s	medium
Back Pressure		bar	10-20
Drying Temperature, Dew point -40°C (Note 1.)		°C	80
Drying Time		h	5

Note 1. Moisture content less than 0,025% (250 ppm) is recommended to prevent loss of mechanical properties.
Note 2. Shrinkage value is measured from test part (4x70x150mm) that is moulded at 80°C mould 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.