

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

Description

Bio-based and biodegradable high flow PLA (Polylactic acid) for injection moulding, suitable as food contact material

Features

- Food contact suitable material*
- Good surface and good flow
- Suitable for dish washer and microwave

Applications

- Plates, cups and bowls
- Houseware

Property, Test Condition	Standard	Unit	Values
Mechanical Properties			
Flexural Strength, 23 °C	ISO 178	MPa	91
Flexural Modulus, 23 °C	ISO 178	MPa	6120
Izod Notched Impact Strength, 23 °C	ISO 180/A	kJ/m ²	4
Izod Unnotched, 23 °C	ISO 180/A	kJ/m ²	18
Charpy Notched Impact Strength, 23° C	ISO 179/1eA	kJ/m ²	2,5
Charpy Unnotched, 23 °C	ISO 179/1eU	kJ/m ²	20
Tensile Stress at Yield, 23 °C	ISO 527	MPa	48
Tensile Strain at Yield, 23 °C	ISO 527	%	0,8
Tensile Stress at Break, 23 °C	ISO 527	MPa	48
Tensile Strain at Break, 23 °C	ISO 527	%	0,8
Tensile Modulus	ISO 527	MPa	6490
Ball indentation hardness	ISO 2039-1	N/mm ²	245 (HB 961)
Thermal Properties			
Vicat Softening Temperature VST/B/50 (50N, 50 °C/h)	ISO 306	°C	109
Heat Deflection Temperature A; (1.8 MPa) **	ISO 75	°C	76
Heat Deflection Temperature B; (0.45 MPa)	ISO 75	°C	109
Other Properties			
Density	ISO 1183	g/cm ³	1,3

Typical values for uncolored products. The properties stated above are not for specification purposes.

* Compliance with Regulation (EC) No 1935/2004 and (EU) No 10/2011

** Mold temperature 110°C

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

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)		%	0,9-1,2
Melt Temperature Range		°C	180-200
Feed Throat		°C	30-50
Feed Temperature		°C	170-190
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	medium
Back Pressure		bar	10-20
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 from 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.

DISCLAIMER: The product(s) mentioned herein are not intended and are restricted to be used for medical, pharmaceutical or healthcare applications. Determining the suitability of these materials for any applications, complying with legal requirements for any such applications, are the sole responsibility and obligation of anyone purchasing these materials for such applications. The information in this Data Sheet is given according to our best knowledge at the date shown in footer. The information is guidance for safe handling, use, processing and storage. This data sheet is for informative purpose only and all specifications need to be discussed and agreed with Arctic Biomaterials Oy separately.

ARCTIC BIOMATERIALS OY MAKES NO WARRANTY, EXPRESS OR IMPLIED, REGARDING THE INFORMATION CONTAINED HEREIN OR ITS PRODUCTS, INCLUDING BUT NOT LIMITED TO ANY WARRANTY AS TO ACCURACY OR COMPLETENESS OF INFORMATION, OR ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.