

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

Description

PLA (Polylactic acid) for food contact applications for injection moulding applications suitable for food applications

Features

- Good flow
- Excellent flatness & dimensional stability
- Good surface quality
- Bio content 96%

Applications

- Houseware
- Alternative to PP or SAN

Property, Test Condition	Standard	Unit	Values
Mechanical Properties			
Flexural Strength, 23 °C	ISO 178	MPa	128
Flexural Modulus, 23 °C	ISO 178	MPa	4440
Izod Notched Impact Strength, 23 °C	ISO 180/A	kJ/m ²	9
Izod Unnotched, 23 °C	ISO 180/A	kJ/m ²	25
Charpy Notched Impact Strength, 23° C	ISO 179/1eA	kJ/m ²	11
Charpy Unnotched, 23 °C	ISO 179/1eU	kJ/m ²	47
Tensile Stress at Yield, 23 °C	ISO 527	MPa	68
Tensile Strain at Yield, 23 °C	ISO 527	%	2
Tensile Stress at Break, 23 °C	ISO 527	MPa	57
Tensile Strain at Break, 23 °C	ISO 527	%	3
Tensile Modulus	ISO 527	MPa	4400
Ball indentation hardness	ISO 2039-1	N/mm ²	210
Thermal Properties			
Vicat Softening Temperature VST/B/50 (50N, 50 °C/h)	ISO 306	°C	100
Heat Deflection Temperature A; (1,8 MPa) **	ISO 75	°C	66
Heat Deflection Temperature B; (0,45 MPa) **	ISO 75	°C	122
Other Properties			
Density	ISO 1183	g/cm ³	1,20

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

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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.)		%	1,2-1,6
Melt Temperature Range		°C	180-200
Feed Throat		°C	30-50
Feed Temperature		°C	170-190
Compression Section		°C	170-190
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. Shrinkage value is measured from test part (4x70x150mm) that is moulded at 110°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.

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