

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 PLA (Polylactic acid) for injection moulding, suitable as food contact material

## Features

- Food contact suitable material\*
- Good impact and surface properties
- Medium flow
- Bio content 100%

## Applications

- Rigid packaging
- Houseware
- Bowls, plates and cups

Property, Test Condition	Standard	Unit	Values
<b>Mechanical Properties</b>			
Flexural Strength, 23 °C	ISO 178	MPa	123
Flexural Modulus, 23 °C	ISO 178	MPa	6690
Izod Notched Impact Strength, 23 °C	ISO 180/A	kJ/m <sup>2</sup>	6
Izod Unnotched, 23 °C	ISO 180/A	kJ/m <sup>2</sup>	34
Charpy Notched Impact Strength, 23° C	ISO 179/1eA	kJ/m <sup>2</sup>	4
Charpy Unnotched, 23 °C	ISO 179/1eU	kJ/m <sup>2</sup>	39
Tensile Stress at Yield, 23 °C	ISO 527	MPa	66
Tensile Strain at Yield, 23 °C	ISO 527	%	1
Tensile Stress at Break, 23 °C	ISO 527	MPa	66
Tensile Strain at Break, 23 °C	ISO 527	%	1
Tensile Modulus	ISO 527	MPa	6620
Ball indentation hardness	ISO 2039-1	N/mm <sup>2</sup>	245 (HB 961)
<b>Thermal Properties</b>			
Vicat Softening Temperature VST/B/50 (50N, 50 °C/h)	ISO 306	°C	100
Heat Deflection Temperature A; (1,8 MPa) **	ISO 75	°C	73
Heat Deflection Temperature B; (0,45 MPa)	ISO 75	°C	130
<b>Other Properties</b>			
Density	ISO 1183	g/cm <sup>3</sup>	1,30

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
<b>Processing</b>			
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 110C 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.

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