

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

Description

High impact PLA (Polylactic acid) for injection moulding

Features

- Good impact properties
- Good surface quality
- Bio content 87%

Applications

- Consumer electronics housing
- Houseware
- Good alternative to PC/ABS

Property, Test Condition	Standard	Unit	Values
Mechanical Properties			
Flexural Strength, 23 °C	ISO 178	MPa	98 (79)
Flexural Modulus, 23 °C	ISO 178	MPa	3760 (3580)
Izod Notched Impact Strength, 23 °C	ISO 180/A	kJ/m ²	28 (9)
Izod Unnotched, 23 °C	ISO 180/U	kJ/m ²	125 (38)
Charpy Notched Impact Strength, 23 °C / -30 °C	ISO 179/1eA	kJ/m ²	30 / - (7 / 5)
Charpy Unnotched, 23 °C / -30 °C	ISO 179/1eU	kJ/m ²	130 / - (65 / 62)
Tensile Stress at Yield, 23 °C	ISO 527	MPa	50 (47)
Tensile Strain at Yield, 23 °C	ISO 527	%	2 (2)
Tensile Stress at Break, 23 °C	ISO 527	MPa	40 (5)
Tensile Strain at Break, 23 °C	ISO 527	%	13 (>10)
Tensile Modulus	ISO 527	MPa	3640 (3050)
Ball indentation hardness	ISO 2039-1	N/mm ²	190 / HB 961 (-)
Thermal Properties			
Vicat Softening Temperature VST/B/50 (50N, 50 °C/h)	ISO 306	°C	90 (-)
Heat Deflection Temperature A; (1,8 MPa) *	ISO 75	°C	64 (-)
Heat Deflection Temperature B; (0,45 MPa)	ISO 75	°C	100 (53)
Other Properties			
Density	ISO 1183	g/cm ³	1,20
MFI (200°C; 5kg)	ISO 1133-1	g/10 min	6

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

* Mould temperature 110°C (30 °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 Mould Shrinkage (Note 1.)		%	1,0-1,3%
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
Mould Temperature Range; total cycle time according to part (Note 2)		°C	20-40
Mould Temperature Range; total cycle time min. 50s (Note. 3)		°C	100-120
Injection Velocity		mm/s	medium
Back Pressure		bar	10-20
Drying Temperature, Dew point -40°C (note 4.)		°C	80
Drying Time		h	5

Note 1. Shrinkage value is measured from test part (4x70x150mm) that is moulded at 110°C mould temperature

Note 2. Mould Temperature Range; semi crystalline Xc <20%, total time according to part

Note 3. Mould Temperature Range; crystalline Xc >35%, total cycle time min. 50s

Note 4. Moisture content less than 0,025% (250 ppm) is recommended to prevent loss of mechanical properties.

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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