Futerro® Fiber Melt Spinning

Polylactic Acid

Futerro

Message:

Futerro® PLA polymer is a thermoplastic fiber-grade resin from annually renewable resources. Available in pellet form, it is designed for extrusion into mechanically drawn staple fibers or continuous filament, using conventional fiber spinning and drawing equipment. Futerro® PLA polymer is typically well suited for fiber processes where lower fiber shrinkage is desired: partially orientated yarn (POY), fully drawn yarn (FDY), staple fibers, and continuous filament. It can be converted into a broad range of fiber products
Potential applications for Futerro® PLA polymer include:
Woven and knitted 100% continuous filament apparel
Woven and knitted, intimate staple blend fabrics including blends with cotton, wool, and other fibers
Woven and knitted fabrics and netting for civil engineering applications
Home furnishings

General Information			
Features	Updatable resources		
Uses	staple fiber Textile applications Household goods Filament Fiber Line Fabric		
Forms	Particle		
Processing Method	Fiber (spinning) extrusion		
Physical	**Nominal Value**	**Unit**	**Test Method**
Density (25°C)	1.24	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR)			ISO 1133
190°C/2.16 kg	10 - 15	g/10 min	ISO 1133
210°C/2.16 kg	15 - 30	g/10 min	ISO 1133
Free Lactide Content		%	
L-poly-Lactide Content	> 99	%	
Moisture Content		ppm	
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	3500	MPa	ISO 527-2
Tensile Stress			ISO 527-2
Yield	60.0	MPa	ISO 527-2
Fracture	55.0	MPa	ISO 527-2
Tensile Strain (Break)	6.0	%	ISO 527-2
Flexural Stress	90.0	MPa	ISO 178
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact	3.5	kJ/m²	ISO 180

Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature	52.0 - 60.0	°C	ISO 11357-2
Melting Temperature	145 - 175	°C	ISO 11357-3
Optical	**Nominal Value**	**Unit**	**Test Method**
Transmittance (2000 µm)	> 90.0	%	ISO 14782
Haze (2000 µm)	< 5.0	%	ISO 14782
Fill Analysis	**Nominal Value**	**Unit**	
Melt Density (230°C)	1.08 - 1.12	g/cm³	
Extrusion	**Nominal Value**	**Unit**	
Drying Temperature	90.0	°C	
Drying Time	3.0	hr	
Suggested Max Moisture	0.010	%	
Cylinder Zone 1 Temp.	200	°C	
Cylinder Zone 2 Temp.	220	°C	
Cylinder Zone 3 Temp.	230	°C	
Melt Temperature	220 - 240	°C	

Extrusion instructions

Feed Throat Temperature: 25°CMelt Pump Temperature: 235°CSpin Head Temperature: 235°C

Recommended distributors for this material

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