

# Ingeo™ 6100D

Polylactic Acid

NatureWorks® LLC

## Message:

Ingeo biopolymer 6100D, a NatureWorks product, is a thermoplastic fiber-grade resin derived primarily from annually renewable resources. Available in pellet form, 6100D is designed for extrusion into mechanically drawn staple fibers or continuous filament, using conventional fiber spinning and drawing equipment. 6100D is typically well suited for fiber processes where lower fiber shrinkage and higher dimensional stability is required. Ingeo biopolymer 6100D can be converted into a broad range of fiber products.

Potential applications for Ingeo biopolymer 6100D include:

Staple fiber

Nonwovens

Agricultural woven and nonwoven fabrics

Articles for household disposal

Textiles

Continuous filament - Textured and flat yarns

Spunbond fabrics

General Information			
Features	Good dimensional stability Updatable resources Compliance of Food Exposure		
Uses	staple fiber Textile applications Household goods Line Fabric		
Agency Ratings	FDA Food Exposure, Not Rated Europe 10/1/2011 12:00:00 AM European 2002/72/EC		
Forms	Particle		
Processing Method	Fiber (spinning) extrusion		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.24	g/cm <sup>3</sup>	ASTM D792
Melt Mass-Flow Rate (MFR) (210°C/2.16 kg)	24	g/10 min	ASTM D1238
Relative Viscosity <sup>1</sup>	3.1		ASTM D5225
Shrinkage			ASTM D2102
Boiling Water	3.0 - 10	%	ASTM D2102
Hot Air : 130°C <sup>2</sup>	3.0 - 10	%	ASTM D2102
modulus of elasticity	55.0 - 65.0	g/denier	ASTM D2256
Denier - per filament <sup>3</sup>	> 0.500		

Elongation of Fibers	10 - 70	%	ASTM D2256
Tenacity of Fibers	3.00 - 6.00	g/denier	ASTM D2256
Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature	55.0 - 60.0	°C	ASTM D3417
Peak Crystallization Temperature (DSC)	165 - 180	°C	ASTM D3418
Fill Analysis	Nominal Value	Unit	Test Method
Melt Density (230°C)	1.08	g/cm <sup>3</sup>	
Extrusion	Nominal Value	Unit	
Drying Temperature	80.0	°C	
Drying Time	4.0 - 6.0	hr	
Suggested Max Moisture	< 5.0E-3	%	
Melt Temperature	220 - 240	°C	
Extrusion instructions			
General-purpose screws with L/D ratios of 24:1 to 30:1 and 3:1 compression ratios are recommended.			
NOTE			

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|----|--|
| 1. | Measured at 1.0 g/dL in chloroform at 30°C |
| 2. | 10 min                                     |
| 3. | g/9000m                                    |

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