

Ingeo™ 6400D

Polylactic Acid

NatureWorks® LLC

Message:

Ingeo biopolymer 6400D, a NatureWorks LLC product, is a thermoplastic fiber-grade resin derived primarily from annually renewable resources. Available in pellet form, 6400D is designed for extrusion into mechanically drawn continuous filament using conventional fiber spinning and drawing equipment. 6400D is typically well suited for fiber that is processed into bulk continuous filament (BCF), which is typically used in the manufacturing of carpet. Ingeo biopolymer 6400D can be converted into BCF using a one-step spin-draw process.

Potential applications for Ingeo biopolymer 6400D include:

Bulk continuous filament

Tufted carpet - loop pile

Tufted carpet - cut pile

Broad loom carpet

Carpet mats

General Information			
Features	Biodegradable		
	Compostable		
	Food Contact Acceptable		
	Renewable Resource Content		
Uses	BCF Yarn		
	Carpet Backing		
	Filaments		
	Staple Fibers		
Agency Ratings	EU 10/2011		
	EU 2002/72/EC		
	FDA Food Contact, Unspecified Rating		
Forms	Pellets		
Processing Method	Fiber (Spinning) Extrusion		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.24	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (210°C/2.16 kg)	6.0	g/10 min	ASTM D1238
Relative Viscosity	4.00		Internal Method
Shrinkage - Boiling Water			ASTM D2102
-- ¹	25 to 35	%	
-- ²	15 to 20	%	
Denier - per filament	10.0 to 20.0		
Elongation of Fibers	35 to 45	%	ASTM D2256
Tenacity of Fibers	2.00 to 2.40	g/denier	ASTM D2256

Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature	55.0 to 60.0	°C	ASTM D3417
Peak Crystallization Temperature (DSC)	160 to 170	°C	ASTM D3418
Fill Analysis	Nominal Value	Unit	Test Method
Melt Density (230°C)	1.08	g/cm ³	
Extrusion	Nominal Value	Unit	
Drying Temperature	80.0	°C	
Drying Time	4.0	hr	
Suggested Max Moisture	< 5.0E-3	%	
Melt Temperature	220 to 240	°C	
NOTE			
1.	Bulk non-heat set		
2.	Bulk heat set		

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