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NatureWorks® 6100D

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. See table for typical properties.

Physical Properties	Metric	English	Comments
Specific Gravity	1.24 g/cc	1.24 g/cc	ASTM D792
Melt Density	1.08 g/cc @Temperature 230 °C	0.0390 lb/in³ @Temperature 446 °F	ASTM D1238
Viscosity Measurement	3.1	3.1	Relative Viscosity, RV measured at 1.0 g/dL in chloroform at 30°C; CD Internal Viscotek Method
Melt Flow	24.0 g/10 min @Temperature 210 °C	24.0 g/10 min @Temperature 410 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Elongation at Break	10.0 - 70.0 %	10.0 - 70.0 %	Fiber; ASTM D2256/ASTM D3822
Tenacity	0.265 - 0.530 N/tex	3.00 - 6.00 g/denier	ASTM D2256/ASTM D3822

Thermal Properties	Metric	English	Comments
Melting Point	165 - 180 °C	329 - 356 °F	Crystalline; ASTM D3418
Shrinkage	3.00 - 10.0 %	3.00 - 10.0 %	Boiling Water; ASTM D2102
	3.00 - 10.0 % @Temperature 130 °C, Time 601 sec	3.00 - 10.0 % @Temperature 266 °F, Time 0.167 hour	Hot Air; ASTM D2102

Processing Properties	Metric	English	Comments
Drying Temperature	80.0 °C @Time 14400 sec	176 °F @Time 4.00 hour	
Dew Point	-35.0 °C	-31.0 °F	
Drying Air Flow Rate	>= 14.2 l/min	>= 0.500 ft³/min (CFM)	

Descriptive Properties		
Denier per Filament	>0.5 dpf	g/9000m
Modulus	55-65 g/d	ASTM D2256/ASTM D3822