

NatureWorks® 6201D

NatureWorks® PLA polymer 6201D is a thermoplastic fiber-grade resin derived primarily from annually renewable resources. Available in pellet form, 6201D is designed for extrusion into mechanically drawn staple fibers or continuous filament, using conventional fiber spinning and drawing equipment. 6201D 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. NatureWorks® PLA 6201D can be converted into a broad range of fiber products.

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/in ³ @Temperature 446 °F	ASTM D1238
Viscosity Measurement	3.1	3.1	Relative Viscosity; CD Internal Viscotek Method

Melt Flow	15 - 30 g/10 min @Load 2.16 kg, Temperature 210 °C	15 - 30 g/10 min @Load 4.76 lb, Temperature 410 °F	ASTM D1238
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Mechanical Properties	Metric	English	Comments
Elongation at Break	10 - 70 %	10 - 70 %	Fiber; ASTM D2256/ASTM D3822

Tenacity	0.221 - 0.441 N/tex	2.50 - 5.00 g/denier	ASTM D2256/ASTM D3822
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Thermal Properties	Metric	English	Comments
Melting Point	160 - 170 °C	320 - 338 °F	ASTM D3418

Glass Transition Temp, T _g	55.0 - 60.0 °C	131 - 140 °F	ASTM D3417
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Shrinkage	5.0 - 15 %	5.0 - 15 %	Boiling Water; ASTM D2102
	5.0 - 15 % @Temperature 130 °C, Time 600 sec	5.0 - 15 % @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	
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Drying Air Flow Rate	>= 14.2 l/min	>= 0.500 ft ³ /min (CFM)	
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