

NatureWorks® 3001D

NatureWorks® PLA (polylactide) polymer 3001D is designed for injection molding applications. It is designed for clear applications with heat deflection temperatures lower than 130°F (55°C). Applications include cutlery, cups, plates and saucers, and outdoor novelties.

Physical Properties	Metric	English	Comments
Specific Gravity	1.24 g/cc	1.24 g/cc	ASTM D792

Linear Mold Shrinkage	0.003 - 0.005 cm/cm	0.003 - 0.005 in/in	
Melt Flow	10 - 30 g/10 min @Load 2.16 kg, Temperature 190 °C	10 - 30 g/10 min @Load 4.76 lb, Temperature 374 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	48.0 MPa	6960 psi	ASTM D638

Elongation at Break	2.5 %	2.5 %	ASTM D638
Flexural Strength	83.0 MPa	12000 psi	ASTM D790
Flexural Modulus	3.83 GPa	556 ksi	ASTM D790
Izod Impact, Notched	0.160 J/cm	0.300 ft-lb/in	ASTM D256

Optical Properties	Metric	English	Comments
Transmission, Visible	90 %	90 %	Thickness Unknown

Processing Properties	Metric	English	Comments
Feed Temperature	165 °C	329 °F	Crystalline Pellets

Nozzle Temperature	205 °C	401 °F	
Melt Temperature	200 °C	392 °F	
Mold Temperature	25.0 °C	77.0 °F	
Back Pressure	0.345 - 0.689 MPa	50.0 - 100 psi	
Screw Speed	100 - 175 rpm	100 - 175 rpm	