

Ingeo™ 3801X

Polylactic Acid

NatureWorks® LLC

Message:

Ingeo 3801X, a NatureWorks LLC product is designed for injection molding applications that require high heat and high impact performance. This polymer grade has much more rapid crystallization kinetics than other Ingeo resin grades currently in the market place. The rapid crystallization rate allows for the molding of crystalline parts at competitive cycle times with high heat distortion temperatures.

Ingeo 3801X is designed for injection molding applications where the property requirements are opaque molded parts with heat deflection temperatures between 150°F (65°C) and 285°F (140°C) that do not require food contact approvals.

General Information			
Features	High Heat Resistance		
	High Impact Resistance		
	Renewable Resource Content		
Appearance	Opaque		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.25	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	8.0	g/10 min	ASTM D1238
Molding Shrinkage - Flow	1.1 to 1.3	%	ASTM D955
Relative Viscosity	3.10		
Heat Deflection Temperature - at 16.5 psi	140	°C	ASTM E2092
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	2980	MPa	ASTM D638
Tensile Strength (Yield)	25.9	MPa	ASTM D638
Tensile Elongation (Break)	8.1	%	ASTM D638
Flexural Modulus	2850	MPa	ASTM D790
Flexural Strength	44.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact	140	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (0.45 MPa, Unannealed)	65.0	°C	ASTM E2092
Glass Transition Temperature	45.0	°C	ASTM D3417
Peak Crystallization Temperature (DSC)	155 to 170	°C	ASTM D3418
Injection	Nominal Value	Unit	
Suggested Max Moisture	< 0.010	%	
Rear Temperature	177	°C	
Middle Temperature	188	°C	
Front Temperature	188	°C	

Nozzle Temperature	188	°C
Processing (Melt) Temp	188	°C
Mold Temperature	85.0 to 105	°C
Injection Pressure	31.0 to 55.0	MPa
Back Pressure	1.70	MPa
Screw Speed	125	rpm

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