Ingeo™ 3D850

Polylactic Acid

NatureWorks® LLC

Message:

Ingeo™ 3D850 is a grade developed for manufacturing 3D printer monofilament. This grade exhibits faster crystallization rates and is able to develop improved heat-resistance in 3D printed parts. This low color resin grade demonstrates the best performance in formulated systems designed to enhance toughness or heat-resistance. Monofilaments made with Ingeo 3D850 have excellent 3D printing characteristics such as precise detail, good adhesion to build plates, less warping or curling, and low odor.

General Information			
Features	Low warpage Crystallization Comstable Updatable resources Good adhesion The smell is low to none Compliance of Food Exposure		
Uses	monofilament Filament		
Agency Ratings	FDA Food Exposure, Not Rated Europe 10/1/2011 12:00:00 AM		
Appearance	Opacity		
Processing Method	3D Printing, Fused Filament Fabrication (FFF)		
Physical	**Nominal Value**	**Unit**	**Test Method**
Specific Gravity	1.24	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (210°C/2.16 kg)	7.0 - 9.0	g/10 min	ASTM D1238
Relative Viscosity [1] (30°C)	4.00		ASTM D5225
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus [2]	2320	MPa	ASTM D638
Tensile Strength [3]	50.3	MPa	ASTM D638
Films	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength - MD [4] (Yield)	51.3	MPa	ASTM D882
Tensile Elongation - MD [5] (Break)	3.3	%	ASTM D882
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact [6]	120	J/m	ASTM D256
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load [7] (0.45 MPa, Unannealed)	80.0 - 90.0	°C	ASTM E2092

Glass Transition Temperature	55.0 - 60.0	°C	ASTM D3418
Peak Crystallization Temperature (DSC)	165 - 180	°C	ASTM D3418

Additional Information
3D Printing Temperature: 190 to 230°CAnnealing Temperature: 80 to 130°CPrint Bed Temperature: None needed (or 50 to 70°C if applicable)

Extrusion	Nominal Value	Unit
Cylinder Zone 1 Temp.	179	°C
Cylinder Zone 2 Temp.	191	°C
Cylinder Zone 3 Temp.	199	°C
Adapter Temperature	199	°C
Melt Temperature	210	°C
Die Temperature	199	°C

Extrusion instructions
Screw Speed: 20 to 150 rpm

NOTE	
1.	1.0 g/dL in chloroform
2.	3D printed part, 100% in-fill, annealed at 110°C/15 min
3.	3D printed part, 100% in-fill, annealed at 110°C/15 min
4.	3D printed part, 100% in-fill, annealed at 110°C/15 min
5.	3D printed part, 100% in-fill, annealed at 110°C/15 min
6.	3D printed part, 100% in-fill, annealed at 110°C/15 min
7.	3D printed part, 100% in-fill, annealed at 110°C/15 min

Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China