

NatureWorks® 3D850

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.

Physical Properties	Metric	English	Comments
Specific Gravity	1.24 g/cc	1.24 g/cc	ASTM D792
Viscosity Measurement	4.00	4.00	RV measured at 1.0 g/dL in chloroform at 30°C; ASTM D5225
Melt Flow	7.00 - 9.00 g/10 min @Load 2.16 kg, Temperature 210 °C	7.00 - 9.00 g/10 min @Load 4.76 lb, Temperature 410 °F	ASTM D1238
Mechanical Properties	Metric	English	Comments
Tensile Strength	50.3 MPa	7290 psi	ASTM D638
Tensile Strength, Yield	51.0 MPa	7400 psi	ASTM D638
Elongation at Break	3.31 %	3.31 %	ASTM D638
Tensile Modulus	0.00232 GPa	0.336 ksi	ASTM D638
Izod Impact, Notched	1.18 J/cm	2.21 ft-lb/in	ASTM D256
Thermal Properties	Metric	English	Comments
Melting Point	165 - 180 °C	329 - 356 °F	Peak; ASTM D3418
Deflection Temperature at 0.46 MPa (66 psi)	80.0 - 90.0 °C	176 - 194 °F	ASTM E2092
Glass Transition Temp, Tg	55.0 - 60.0 °C	131 - 140 °F	ASTM D3418
Processing Properties	Metric	English	Comments

Processing Temperature	200 °C	392 °F	Compression Section
	210 °C	410 °F	Metering Section
Feed Temperature	45.0 °C	113 °F	Throat
	190 °C	374 °F	
Adapter Temperature	210 °C	410 °F	
Die Temperature	210 °C	410 °F	
Melt Temperature	210 °C	410 °F	
Drying Temperature	80.0 °C @Temperature 4.00 °C	176 °F @Temperature 39.2 °F	
Moisture Content	<= 0.0250 %	<= 0.0250 %	
Dew Point	-35.0 °C	-31.0 °F	
Drying Air Flow Rate	14.2 l/min	0.500 ft³/min (CFM)	
Screw Speed	20.0 - 150 rpm	20.0 - 150 rpm	
Annealing Temperature	80.0 - 130 °C	176 - 266 °F	