



# Tough PLA

## Property Data

Property	Test Method	Value	Comment
Melt Flow Index/ g/10 mins	ASTM D1238	5 – 15	Dependent on color. Tested at <400 ppm moisture
Density/ gcm <sup>-3</sup>	ASTM D792	1.22	Resin Manufacturer data
Glass transition temperature/ °C	ASTM D3418	55	Resin Manufacturer data
Heat Deflection Temperature/ °C *	ASTM D648 at 66 psi	55	
Tensile Strength at Yield/ psi *	ASTM D638, Type IV	8350	
Tensile Elongation/ % *	ASTM D638, Type IV	4	
Flexural Modulus/ kpsi *	ASTM D790	848	
Flexural Peak Stress / kpsi *	ASTM D790	17.5	
Notched Izod Impact/ Jm <sup>-1</sup> *	ASTM D256	283	

\* 3D printed test specimens using Ultimaker 2+; 100 % infill; y-axis orientation; tested in an independent lab

## Recommended Printer Conditions

Nozzle temperature*	200 °C
Heated bed temperature	Ambient - 55 °C
Speed**	90-150 mm/s
Infill	As needed, up to 100 %
Bed material	Adheres to a variety of standard bed materials, including: Glass, painter's tape, BuildTak, PEI, Kapton tape, glue sticks etc.

\*Nozzle temperature recommendations based on achieving better print definition. The recommendations given above leave about ±15°C depending on specific printers and other print settings.

\*\*Higher print speeds might require higher nozzle temperatures

*These processing conditions are general guidelines only. Each printer will likely have a unique set of printing parameters.*