



# Nylon Kevlar

## Property Data

Property	Test Method	Value	Comment
Density/ gcm <sup>-3</sup>	ASTM D792	1.13	Resin Manufacturer data
Heat Deflection Temperature/ °C *	ASTM D648 at 66 psi	113	
Tensile Strength at Yield/ psi *	ASTM D638, Type IV	5070	
Tensile Elongation/ % *	ASTM D638, Type IV	6	
Flexural Modulus/ kpsi *	ASTM D790	84	
Flexural Peak Stress / kpsi *	ASTM D790	2.9	
Notched Izod Impact/ Jm <sup>-1</sup> *	ASTM D256	119	
Abrasion Resistance **		1.27	27% improvement over Phoenix™ Nylon

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

\*\* Abrasion test on printed parts developed in-house and used as a relative comparison of the resistance to abrasive wear of our materials, using Phoenix™ Nylon as the standard.

## Recommended Printer Conditions

Nozzle temperature*	255 °C
Heated bed temperature	70 °C
Speed**	50-150 mm/s
Infill	As needed, up to 100 %
Bed material	Adheres to a variety of standard bed materials, including: Glass, garolite, PEI, glue sticks (PVA based)
Drying temperature/time***	165 °F (75 °C) for 8 hours

\*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

\*\*\*Nylon materials inherently take up moisture from the surrounding atmosphere due to the nature of their chemistry. If moisture is present during extrusion, degradation can occur, resulting in a weaker part. A tell-tale sign of your nylon being too wet is popping noises and visible air bubbles escaping the extrudate. We recommend drying all nylons prior to printing.

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