



## Technical Data Sheet

### TOUGH PLA (Strong Polylactic Acid)

#### Physical Properties – Typical Values

Property	Value (SI Units)
Tensile Modulus (ASTM D638)	2870 MPa
Ultimate Tensile Strength	40 MPa
Elongation at Break	5%
Density, ASTM D792	1.22 gm/cm <sup>3</sup>
Hardness (Shore), ASTM D785	90 - 95 R
Izod Impact, 23 C, ASTM D256	160 J /min
Glass Transition Temp, ASTM D792	55 to 60 °C
Heat Deflection Temp, ASTM D648	75 to 85 °C

#### 3D Printing Guide

Property	Value (SI Units)
Recommended Print Speed	45 - 60 mm /s
Recommended Nozzle Temperature	215 – 235 °C
Recommended Bed Temperature	60 °C
Preferred Bed Adhesive	PEI Cover and Glue or Glass and Glue
Special Considerations	Fan Speed 100%

#### Suggested Applications

TOUGH PLA is a polymer derived from corn. It is a great proto-typing material for mechanical parts that require some added heat-resistance and higher impact strength. This engineered material provides improved mechanical and thermal properties to regular PLA and is more like ABS. Provides prints with crisp detail and less warping.

Available Colors: Natural, Black, Blue, Green, Red, Yellow, White, and Custom

Material is produced using both virgin and reprocessed materials from consistent sources.

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