

# PLA

## *Polylactic Acid*

PLA is a more environmentally friendly than other materials. It is biodegradable, derived from plants, BPA-free, and contains no phthalates or heavy metals. Polylactic Acid, commonly known as PLA, is one of the most popular materials used.

Mechanical Properties	Standard	Value	Unit
<b>Ultimate Tensile Strength</b>	ISO 527	64.4	MPa
<b>Tensile Modulus</b>			MPa
<b>Elongation at Break</b>	ISO 527	15.3	%
<b>Flexural Strength</b>	ISO 178	85	MPa
<b>Flexural Modulus</b>	ISO 178	3100	MPa
<b>Hardness Shore</b>	<b>Standard</b>	<b>Value</b>	<b>Unit</b>
<b>Hardness</b>			

Thermal Properties	Standard	Value	Unit
<b>HDT @ 0.45 MPa</b>			°C
<b>Glass Transition Temp</b>	DSC	58	°C
Physical Properties	Standard	Value	Unit
<b>Density</b>	ISO 1183	1.24	g/cm <sup>3</sup>
Certifications and Tests	Standard	Value	Unit
<b>Flammability (UL 94)</b>			

### Characteristics

- Can be printed on a cold surface -works on heated or unheated beds.
- Shiny and smooth appearance compared to ABS
- No harmful fumes during printing
- Comes in a variety of colors and blends

### Applications

- 3D printing in schools
- Prototypes with short shelf life
- Toys and promotional items
- "Lost Wax" Molds from 3D printed parts

### Considerations

- Low heat resistance
- Can ooze and may need cooling fans
- Filament can get brittle and break
- Not suitable for outdoors (sunlight exposure)

**Printing Skill & Experience:**  Beginner  Intermediate  Advanced  Expert

- Easiest material to print prototypes; no enclosure needed.

### Printer Compatibility

<input type="checkbox"/> 3ntr A2v4	<input type="checkbox"/> 3ntr A4v4	<input checked="" type="checkbox"/> EVO-T	<input checked="" type="checkbox"/> EVO22-T
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**Available colors from [Airwolf 3D](#):** Black, Blue, Green, Natural, Orange, Red, Silver, White, Yellow