

## Technical Data Sheet



**Product Name: PLA**

### Material Identification:

<b>Item Name</b>	PLA
<b>Chemical Name</b>	Polylactic Acid
<b>Application</b>	FFF/FDM 3D Printing





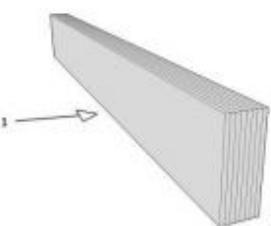
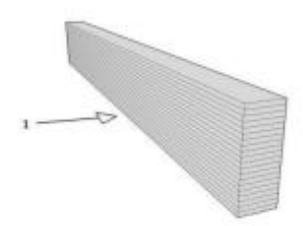
### Guidelines for Print Settings:

<b>Nozzle Temperature</b>	190~220°C
<b>Bed Temperature</b>	0~60°C
<b>Bed Modification</b>	Tape or glue below 60°C
<b>Active Cooling Fan</b>	ON, 100%
<b>Layer Height</b>	0.2mm
<b>Shell Thickness</b>	≥0.8mm
<b>Print Speed</b>	40-80mm/s

### Material Properties:

<b>Melt Temperature</b>	~160	ISO 11357
<b>Glass Transition Temperature</b>	~60°C	ISO 11357
<b>Melt Flow Rate</b>	29.3g/10min	ISO 1133
<b>Heat deflection temperature (HDT)2</b>	57.4°C	ISO 75
<b>Vicat softening temperature(VST)3</b>	59.6°C	ISO 306
<b>Density</b>	1.26g/cm <sup>3</sup>	ISO 1183
<b>Odour</b>	Odourless	/
<b>Solubility</b>	Insoluble in water	/

### Mechanical Properties Tensile Test – Test Method ISO 527

MECHANICAL PROPERTIES TENSILE TEST			Test Method ISO 527	
<p>All test specimens were printed by Ultimaker 2+ under the following conditions:</p> <p>Printing temperature: 205°C</p> <p>Heated bed temperature: 50°C</p> <p>Print speed: 50mm/s</p> <p>Shell thickness: 0.8mm</p> <p>Infill under 45°</p>	 <p>Printed Vertical Z-axis</p>		 <p>Printed horizontal X,Y-axis</p>	
	<b>Infill</b>	50%	100%	50%
<b>Tensile strength (Mpa)</b>	17.1	27.5	24.5	40.4
<b>Force at break (Mpa)</b>	17.1	27.5	24.5	40.4
<b>Elongation at break (%)</b>	3.6	4.1	7.1	4.1
<b>Modulus (Mpa)</b>	462	799	476	830
MECHANICAL PROPERTIES IMPACT TEST			Test Method ISO 179	
<p>The same conditions as tensile test.</p> <p>1→impact direction</p>	 <p>Charpy(en)</p>		 <p>Charpy(ep)</p>	
	<b>Infill</b>	50%	100%	50%
<b>Impact strength (KJ/m<sup>2</sup>)</b>	9.6	21.4	12.6	18.9
<b>Notch impact strength<sup>1</sup> (KJ/m<sup>2</sup>)</b>	3.1	4.9	2.5	6.5
MECHANICAL PROPERTIES  FLEXURAL TEST			Test Method ISO 178	
<p>The same conditions as tensile test.</p> <p>1→bending direction</p>	 <p>Normal</p>		 <p>parallel</p>	
	<b>Infill</b>	50%	100%	50%
<b>Maximum force (Mpa)</b>	77.2	78.2	82.1	95.8
<b>Flexural modulus (Mpa)</b>	2890	2976	2766	3460

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