PLA+

Technical Data Sheet

The product is modified based on PLA material, easy to print, in addition, it improves the toughness and layer adhereance. PLA+ is an environmentally friendly material, which is easy to print and has smooth surface. Good strength, rigidity, toughness balance, strong impact resistance, very suitable for functional parts printing. Approved by FDA, safer to use. Can be used for conceptual model, rapid prototyping.

Basic Information

Characteristics	• Good toughness • Strong impact resistance • High speed printing	• Smooth printed surface • Esay to print • Hard to break
Applications	• Prototyping • Cosplay	• Decoration • Other mechanical parts
Forming Method	• Filament	
Processing Method	• 3D Printing	

Physical Properties	Testing Method	Data
Density	GB/T 1033	1.23 g/cm3
Melt Flow Index	GB/T 3682	5 （190℃/2.16kg）

Thermal Properties	Testing Method	Data
Heat Distortion Temperature	GB/T 1634	53 ℃ (0.45Mpa)
Glass Transition Temperature		N/A
Continuous Service Temperature	IEC 60216	N/A
Maximum (short term) Use Temperature		N/A

Electrical Properties	Testing Method	Data
Insulation Resistance	DIN IEC 60167	N/A
Surface Resistance	DIN IEC 60093	N/A

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Mechanical Properties	Testing Method	Data
Tensile Strength (X-Y)	GB/T 1040	53.34 Mpa
Tensile Strength (Z)	GB/T 1040	31.2 MPa
Elongation at Break (X-Y)	GB/T 1040	4.11 %
Elongation at Break (Z)	GB/T 1040	2.6 %
Flexural Strength (X-Y)	GB/T 9341	81.16 MPa
Flexural Strength (Z)	GB/T 9341	59.8 Mpa
Flexural Modulus (X-Y)	GB/T 9341	2888.22 MPa
Flexural Modulus (Z)	GB/T 9341	26884.19 Mpa
IZOD Impact Strength (X-Y)	GB/T 1843	5.5 KJ/m^2
IZOD Impact Strength (Z)	GB/T 1843	2.51KJ/m^2

Chemical Properties	Data
Acid and Alkali Resistance	NO
Grease Resistance	N/A
UV Resistance	NO
Water Repellency	N/A

Recommended Printing Parameters	Data
Drying Preparation	50℃ > 8H
Nozzle Size	0.2,0.4,0.6,0.8mm
Nozzle Temperature	210-230℃
Build Platform Type	PEI
Build Platform Temperature	45-60℃
Fan Speed	100%
Printing Speed	< 300mm/s

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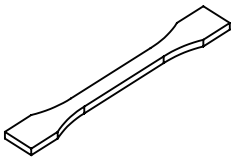
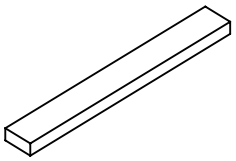
Printing Tips

When slicing, it is best to turn on the Z seam alignment and starting point alignment functions, turn off the Z-axis lift and exit, avoid passing through the shell when idling, optimize the slicing printing path, and appropriately reduce the printing speed to achieve the best printing effect.

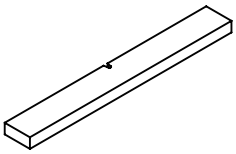
Test Conditions of Mechanical Properties



Tensile testing specimen GB/T 1040



Flexural testing specimen GB/T 9341



Impact testing specimen GB/T 1843

The performance of the filament is evaluated based on standard samples printed by eSUN, while the actual printing performance is influenced by various factors such as printer type, printing parameters, and print environment.

Printing Test Conditions:

Extruder Temperature	220℃
Build Platform Temperature	60℃
Outer Layer Number	2
Top/Bottom Layer Number	3
Infill Density	100%
Fan Speed	100%

*Based on Bambu P1S 0.4 mm nozzle and Orcaslicer 2.1.0 Beta.

Notice

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