PLA - Basic

Technical DataSheet

This is an entry-level 3D printing filament designed for enthusiasts and beginners. Based on modified PLA,this affordable filament is easy to print, emits no irritating odors, resists stringing and warping, and delivers excellent print quality. It is a cost-effective choice among 3D printing materials.

Basic Information

Characteristics	Highspeed printing Cost-effective Easytoprint	
Applications	Decorations Early Concept Model	Rapid Prototype Design
Forming Method	Filament	
Processing Method	3D Printing	

Physical Properties	Testing Method	Data
Density	GB/T 1033	1.24 g/cm3
Melt Flow Index	GB/T 3682	3.5-4.5 (190℃/2.16kg)

Thermal Properties	Testing Method	Data
Heat Distortion Temperature	GB/T 1634	50-60 ℃ (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	63.95 Mpa
Tensile Strength (Z)	GB/T 1040	28.29 MPa
Elongation at Break (X-Y)	GB/T 1040	4.17 %
Elongation at Break (Z)	GB/T 1040	2.41 %
Flexural Strength (X-Y)	GB/T 9341	101.2 MPa
Flexural Strength (Z)	GB/T 9341	40.5 Mpa
Flexural Modulus (X-Y)	GB/T 9341	3085.87 MPa
Flexural Modulus (Z)	GB/T 9341	2832.46 Mpa
IZOD Impact Strength (X-Y)	GB/T 1843	3.09 KJ/m²
IZOD Impact Strength (Z)	GB/T 1843	2.15KJ/m²

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.

Printing Test Conditions:

Extruder Temperature	230℃
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.

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