POLYNOVA
3D PRINTING MATERIALS

PLA Matte

A101

Available Color

Technical Data Sheet

PLA with matte and plastic-free feel and multiple color.

Material Status	Mass Production	
Characteristics	• Matte and plastic-free feel • Good toughness • Excellent printability	
Applications	• Ornaments and Toys	• Handcrafts
Form	• Filament	
Processing method	• 3D Print, FDM Print	

	Testing	Method	Typical value
Physical Properties			
Density	ISO 1183,GB/T 1033	1.31	g/cm3
Melt Flow Index	ISO 1133	10	210°C/2.16kg
Mechanical Properties			
Tensile Strength (X-Y)	ISO 527,GB/T 1040	23.19	MPa
Tensile Strength (Z)		17.75	MPa
Elongation at Break (X-Y)	ISO 527,GB/T 1040	12.98	%
Elongation at Break (Z)		4.23	%
Young'Modulus (X-Y)	ISO 527,GB/T 1040	805.60	MPa
Young'Modulus (Z)		1260.20	MPa
Bending Strength (X-Y)	ISO 178,GB/T 9341	34.73	MPa
Bending Strength (Z)		29.49	MPa
Bending Modulus (X-Y)	ISO 178,GB/T 9341	1401.82	MPa
Bending Modulus (Z)		1255.85	MPa
Impact strength (X-Y)	ISO 179,GB/T 1043	4.9	KJ/m2
Impact strength (Z)		N/A	
Thermal Properties			
Heat distortion Temperature	ISO 75 0.45MPa°C	N/A	
Glass Transition	DSC,10°C/min	N/A	
Melting Point	DSC,10°C/min	N/A	

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Recommended printing parameters	
Print Temperature	205- 225°C
Build Platform	40-60°C
Cool Fan	On
Printing Speed	50-200mm/s

Based on 0.4 mm nozzle and Simplify 3D v.4.1.2. Printing conditions may vary with different nozzle diameters

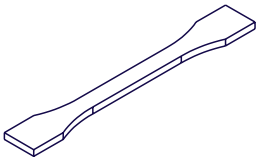
Drying Recommendations

The samples for the general test need to be dried at 55°C for at least 4 hours before printing.

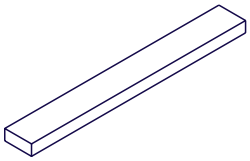
Precautions:

Remote printing needs to reduce the printing speed (≤40mm/s) to prevent potential feeding issue

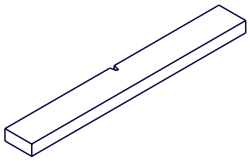
Mechanical Properties



Tensile testing specimen GB/T 1040
Testing specimen GB/T 1043



Bending testing specimen GB/T 9341



Impact

The physical properties, mechanical properties, thermal properties, and electrical properties of the line are obtained based on the injection molding spline test.

Print test condition:	
Print Temperature	210°C
Build Platform Temperature	45°C
Outline/Perimeter Shells	4
Top/Bottom Layers	4
Infill Percentage	20%
Cool Fan	On
Printing speed	55mm/s

Based on 0.4 mm nozzle and Simplify 3D v.4.1.2.

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