

## Technical Data Sheet

### SUNLU PLA-Meta Filament



#### Product Introduction

1. Environmentally friendly and non-toxic, biodegradable
2. Soft, warm colors
3. Low shrinkage
4. High strength and stiffness
5. Good toughness, not easy to brittle breaks
6. Printing temperature of 185-195°. Lower printing temperature, more energy-saving and environmentally friendly, reduce printer loss.
7. Good fluidity: Printing smoothness is better than the existing PLA and PLA +, greatly improving the success rate of printing.
8. Good drop resistance and impact resistance: after drop test, the drop resistance is about twice as good as existing PLA and PLA+.

Suitable for all models of FDM3D printers, suitable for printing crafts, artwork and industrial design samples.

## Chemical Resistant

Items	Rating
Effect of weak acids pH3-6	Good
Effect of strong acids pH<3	Poor
Effect of weak bases pH 8-10	Good
Effect of strong bases pH >10	Poor
Deionized water	Good
Ethanol	Fair
Acetone	Poor
Gasoline	Good
Ether	Good
Grade Classification: excellent, good, fair, poor	

## Recommended Print Setting

Nozzle(Printing) Temp.	185-195°C
Plate Material	Flexible Magnetic Plate
Surface Treatment of Plate	No Required
Plate Temp.	50-60°C
Cooling Fan	1
Printing Speed	50-150mm/s
Bottom Valve Separation Distance	0.4-0.6
Retraction Distance	5mm
Retraction Speed	50mm/s
Ambient Temp.	Ordinary
Critical Value of Overhang Angle	/
Recommended Support Material	PVA
Drying Temp.	50°C

## Performance

<b>Thermal Performance</b>	<b>Methods</b>	<b>Conditions</b>	<b>Values</b>	<b>Units</b>
Glass Transition Temp.	ASTM D7426	10°C/min	63	°C
Melting Temp.	ASTM D7426	10°C/min	164	°C
Decomposition Temp. @5%	ASTM E2402	20°C/min	≥374	°C
Heat Distortion Temp.	ASTM D648	0.45MPa	53	°C
Vicat Softening Temp.	ASTM D1525	5kg,50°C/h	54	°C
Shrinkage	ASTM D955	23°C	0.1-0.3	%
Coefficient of Thermal Expansion	ASTM E831		101×10-06	μm ( m·°C )
<b>Electrical Performance</b>	<b>Methods</b>	<b>Conditions</b>	<b>Values</b>	<b>Units</b>
Volume Resistivity	ASTM D257		2.9E+15	ohm-cm
Dielectric Constant	ASTM D150	1kHz	1.51	
<b>Physical Performance</b>	<b>Methods</b>	<b>Conditions</b>	<b>Values</b>	<b>Units</b>
Density	ASTM D792	@23°C	1.23	g/cm <sup>3</sup>
Melt Index	ASTM D1238	190°C/2.16k g	6.5	g/10min
<b>Flame-retardant Performance</b>	<b>Methods</b>	<b>Conditions</b>	<b>Values</b>	<b>Units</b>
Flame Retardancy	UL94	1.5mm	HB	
<b>Mechanical performance</b>	<b>Methods</b>	<b>Conditions</b>	<b>Values</b>	<b>Units</b>
Tensile Strength	ASTM D638	50mm/min	50	MPa
Young's Modulus	ASTM D638	1mm/min	2000	MPa
Elongation at Break	ASTM D638	50mm/min	4.1	%
Flexural Strength	ASTM D790	2mm/min	72	MPa
Flexural Modulus	ASTM D790	2mm/min	2139	MPa
Cantilever Beam Notched Impact Strength	ASTM D256	3.2mm	48	J/m

## Precautions

### Install filament

1. Install the spool on the spool holder of a 3D printer, and preheat the nozzle of the 3D printer.
2. Cut the filament tip diagonally, and pass it through the extruder and feeding tube.
3. Manually push the filament through the feeding tube to the nozzle, until the filament melts through the nozzle.

### Special Attention

When installing and changing filament, we highly suggest to preheat the nozzle firstly to reduce the nozzle block risk.

### Safe Package:

Vacuum packing with desiccant, effectively protect the filament dry and remain neat, maintain good printing results.