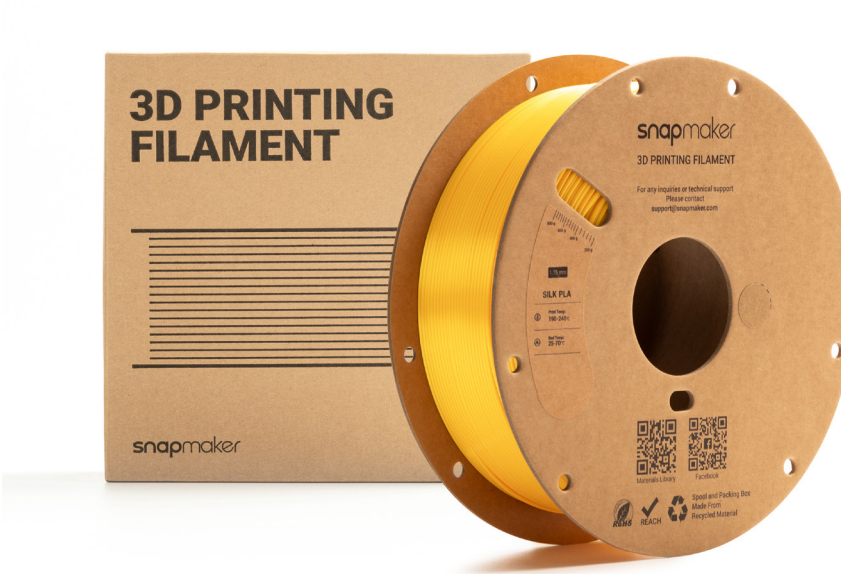
snapmaker | **Silk PLA**

Technical Data Sheet



www.snapmaker.com

1 Filament Introduction 3
2 Specifications 3
3 Recommended Printing Settings 3
4 Properties 4
5 Specimen Test 6
6 Disclaimer 7

1 Filament Introduction

Snapmaker Silk PLA delivers a smooth, glossy finish with a refined silk-like sheen, making it well-suited for decorative models and high-quality display pieces. By combining enhanced interlayer adhesion with an upgraded formula for stable extrusion, it balances elegant aesthetics with dependable durability. Available in a range of vivid colors, it also supports RFID recognition when used with the Snapmaker U1 for a more intelligent printing experience.

2 Specifications

Subjects	Data
Diameter	1.75 ± 0.03 mm
Net Filament Weight	1 kg
Length	335 m/kg
Spool Material	Cardboard Spool
Spool Size	Diameter: 200 mm; Height: 66 mm

3 Recommended Printing Settings

Subjects	Data
Drying Settings Before Printing	55°C , 6 h
Printing and Storage Humidity	< 20% RH (Sealed, with Desiccant)
Nozzle Size	0.2/0.4/0.6/0.8 mm
Nozzle Temperature	190–240°C
Bed Type	Smooth PEI Plate, Textured PEI Plate
Bed Surface Preparation	Glue Stick/Liquid Glue
Bed Temperature	25–70°C
Cooling Fan	ON
Printing Speed	< 250 mm/s
Retraction Length	0.4 mm
Retraction Speed	30 mm/s

Printing Tips

1. Drying & Storage

- **Pre-Dry**: For best results, it is recommended to dry the filament at 55°C for 6 hours before use.
- **Re-Dry**: After prolonged air exposure, recommend re-drying the filament before starting a print.
- **Storage**: It's best to keep the filament in a sealed container with desiccant to prevent moisture buildup.

2. Getting the Best Shine

The glossiness of Silk PLA depends on temperature and speed. For a shinier finish, print slower or use a higher temperature.

4 Properties

Physical Properties

Subjects	Testing Methods	Data
Density	ISO 1183	1.24 g/cm³ at 23°C
Melt Index	210°C , 2.16 kg	21.17 g/10 min
Melting Temperature	DSC, 10 °C/min	162.3°C
Glass Transition Temperature	DSC, 10 °C/min	58.2°C
Decomposition Temperature	TGA, 20 °C/min	365.7°C
Crystallization Temperature	DSC, 10 °C/min	107.1°C
Vicar Softening Temperature	ISO 306, GB/T 1633	64.7°C
Heat Deflection Temperature	ISO 75, 1.8 MPa	54.7°C
Heat Deflection Temperature	ISO 75, 0.45 MPa	57.7°C
Saturated Water Absorption Rate	23°C, 70% RH	0.45%

Mechanical Properties

Subjects	Testing Methods	Data
Young's Modulus (X-Y)	ISO 527, GB/T 1040	2403.7 ± 74.5 MPa
Young's Modulus (Z)	ISO 527, GB/T 1040	2292.5 ± 208.7 MPa
Tensile Strength (X-Y)	ISO 527, GB/T 1040	41.1 ± 0.8 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	23.8 ± 2.8 MPa
Breaking Elongation Rate (X-Y)	ISO 527, GB/T 1040	> 40%
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	1.2 ± 0.16%
Bending Modulus (X-Y)	ISO 178, GB/T 9341	2241.4 ± 140.4 MPa
Bending Modulus (Z)	ISO 178, GB/T 9341	2063.5 ± 95.9 MPa
Bending Strength (X-Y)	ISO 178, GB/T 9341	69.1 ± 1.6 MPa
Bending Strength (Z)	ISO 178, GB/T 9341	37.3 ± 5.5 MPa
Impact Strength (X-Y)	ISO 179, GB/T 1043	13.8 ± 1.3 kJ/m²
Impact Strength (Z)	ISO 179, GB/T 1043	11.2 ± 0.9 kJ/m²

Other Physical and Chemical Properties

Subjects	Data
Odor	Odorless
Composition	Polylactic Acid
Skin Hazards	Non-Hazardous
Chemical Stability	Stable under normal storage and handling conditions
Solubility	Insoluble in Water
Resistance to Acid	Weak Acid Resistance
Resistance to Alkali	Non-Resistant
Resistance to Organic Solvent	Poor
Resistance to Oil and Grease	Fair
Flammability	Flammable
Combustion Products	Water, Carbon Oxides
Odor of Combustion Products	Odorless

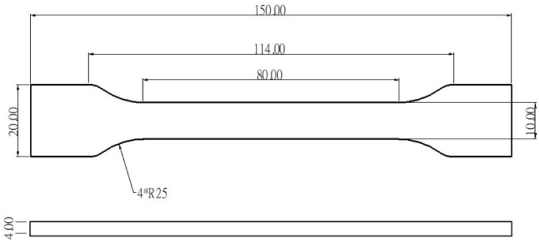
5 Specimen Test

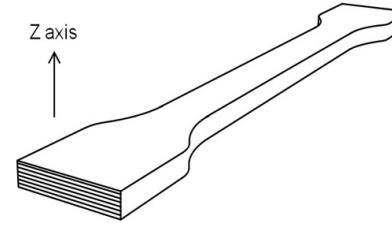
Specimen Printing Conditions

Subjects	Data
Nozzle Temperature	230°C
Bed Temperature	50°C
Printing Speed	50 mm/s
Infill Density	100%

Based on 0.4 mm nozzle. Printing conditions may vary with different nozzle diameters.

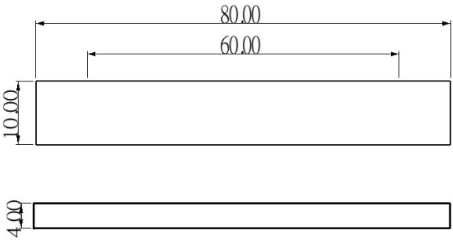
Tensile Testing Specimen

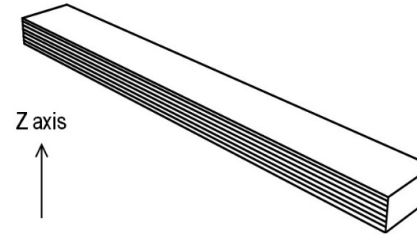




ISO 527, GB/T 1040

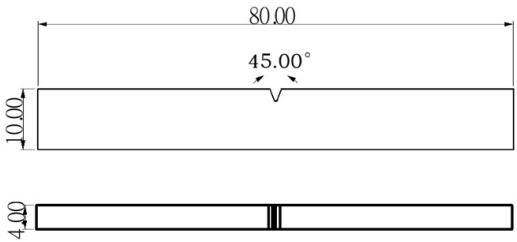
Flexural Testing Specimen

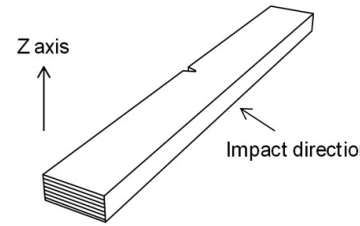




ISO 178, GB/T 9341

Impact Testing Specimen

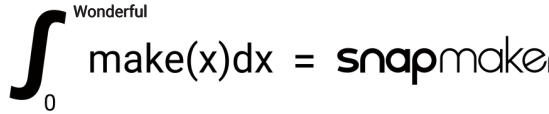




ISO 179, GB/T 1043

6 Disclaimer

The performance and printing parameters of the aforementioned filaments are obtained by Snapmaker through testing filament samples with sample 3D printers. All data provided is for reference and comparison purposes only, and does not constitute design specifications or any warranty of quality. Actual 3D printing quality and final part performance are subject to various factors including, but not limited to, printer equipment, model design, environmental conditions, and printing parameters. Users shall independently evaluate the compliance and safety of printed models and finished parts, including legal compliance, application safety, and structural reliability. Snapmaker shall not be held liable for any direct or indirect losses arising from the use of the aforementioned filaments, including equipment damage, print failure, personal injury, and property damage.



V1.0.0