TPU 75A (2.85mm)

• Recommended Printing Settings

Subjects	Data
Drying Settings before Printing	Blast Drying Oven: 70 °C, 8 h Printer Heatbed: 90 °C, 16 h
Printing and Keeping Container's Humidity	< 20% RH (Sealed, with desiccant)
Nozzle Size	0.4mm, 0.6mm, 0.8 mm
Nozzle Temperature	200 - 250 °C
Build Plate Type	Textured PEI Plate / Smooth PEI Plate
Bed Temperature	30 - 35 °C
Cooling Fan	Turn on
Printing Speed	< 200 mm/s
Retraction Length	2 - 4 mm
Retraction Speed	10 - 50 mm/s
Chamber Temperature	25 - 45 °C
Max Overhang Angle	~ 40°
Max Bridging Length	＜ 10mm
Support	Turn on

• Physical Properties

Subjects	Testing Methods	Data
Density	ISO 1183	1.17 g/cm³
Melt Index	190 °C, 2.16 kg	25 ± 5 g/10 min
Melting Temperature	DSC, 10 °C/min	190 °C
Glass Transition Temperature	DSC, 10 °C/min	/
Crystallization Temperature	DSC, 10 °C/min	/
Vicat Softening Temperature	ISO 306, GB/T 1633	/
Heat Deflection Temperature	ISO 75 1.8 MPa	/
Heat Deflection Temperature	ISO 75 0.45 MPa	/
Saturated Water Absorption Rate	25 °C, 55% RH	0.70%
Durometer Hardness	ASTM D2240	76 ± 1 A
Ball Rebound Resilience Value	ASTM D3574	50%

• Mechanical Properties

Subjects	Testing Methods	Data
Young's Modulus (X-Y)	ISO 527, GB/T 1040	/
Young's Modulus (Z)	ISO 527, GB/T 1040	/
Tensile Strength (X-Y)	ISO 527, GB/T 1040	11.50 ± 0.50 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	/
Breaking Elongation Rate (X-Y)	ISO 527, GB/T 1040	> 800%
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	/
Bending Modulus (X-Y)	ISO 178, GB/T 9341	/
Tear strength (X-Y)	ASTM D624，GB/T 529	/
Tear strength (Z)	ASTM D624，GB/T 529	14.00 ± 0.80 N/mm
Bending Modulus (Z)	ISO 178, GB/T 9341	/
Bending Strength (X-Y)	ISO 178, GB/T 9341	/
Bending Strength (Z)	ISO 178, GB/T 9341	/
Impact Strength (X-Y)	ISO 179, GB/T 1043	/
Impact Strength (Z)	ISO 179, GB/T 1043	/
Abrasion Volume Loss	ASTM D5963-22	116 mm³
Thickness Loss after Static Compression	ASTM D3574 TestC	2.7%
Static Compressive Strength	ASTM D3574 TestC	174 KPa

* All the specimens were printed at the following settings: Nozzle Temperature = 230 °C, Printing Speed = 119 mm/s, Bed Temperature = 35 °C, InfDensity= 100%. All the specimens were dried at 70 °C for 12 h before testing. When drying the filament, it's required to use an oven that has big enough inside volume and can provides even temperature distribution, such as a blast drying oven (forced-air drying oven), the filament and prints need to be away from the heater, and amicro-wave oven or kitchen oven is not compatible, otherwise the filament and prints can get damaged.

• Other Physical ang Chemical Properties

Subjects	Data
Color and State	Black, Orange, Blue, etc., solid
Odor	Odorless
Composition	Thermoplastic polyurethane
Skin Hazards	No hazard
Chemical Stability	Stable under normal storage and handling conditions
Solubility	Insoluble in water
Resistance to Acid	Not resistant
Resistance to Alkali	Not resistant
Resistance to Organic Solvent	Not resistant to some organic solvents
Resistance to Oil and Grease	Resistant to most kinds of oil and grease
Flammability	Flammable
Combustion Products	Water, carbon oxides, nitrogen oxides
Odor of Combustion Products	Pungent odor