

# MINGDA FDM Printing Material

## Technical Data Sheet

### TPU-78D

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A 78D hardness flexible 3D printing material

### Product Description

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TPU-78D is a high hardness TPU material. The high surface hardness and filament rigidity greatly reduce the jamming of the extruder caused by too soft TPU during printing, and improve the printing success rate.

### Product Advantages

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- High liquidity

MINGDA improves the fluidity of TPU materials, so that materials can be easily pushed in the extruder with only a small thrust. High speed printing ( $\geq 100\text{mm/s}$ ) can be easily realized on both short range and remote extruders, and it is compatible with most printers on the market.

### Product Details

#### Available

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Colors : White/Black

Diameter : 1.75mm

Net weight : 1KG

## Material Properties

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Property	Testing method	Typical value
Density	ISO 1183	1.28g/cm <sup>3</sup>
Hardness	ISO 7619	78D
Melt index	220°C, 2.16kg	22g/10min
Vicat softening temperature	ISO 306	122°C
Tensile breaking strength (X-Y)	ISO 527	36.55±2.11MPa
Young's Modulus		1026.21±220.80MPa
Elongation at break (X-Y)		237.38±13.49%
Tensile stress at 100% (X-Y)		28.81±0.42MPa
Tensile stress at 200% (X-Y)		33.81±1.05MPa

Specimens printed under the following conditions: Nozzle size 0.4mm, Nozzle temp 220°C, Bed temp 50°C, Print speed 45mm/s, Infill 100%, Infill angle ±45°

## Recommended printing conditions

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Nozzle temperature	210-230°C
Recommended nozzle diameter	≥0.2mm
Recommended build surface	Glass, PEI Film or PC Film
Build plate temperature	50-70°C
Raft separation distance	0.18-0.22mm
Cooling fan speed	On
Print speed	30-120 mm/s
Retraction distance	1-5 mm
Retraction speed	1800-3600 mm/min

### Additional Suggestions:

1. TPU materials are easy to absorb moisture when exposed to the air. After moisture absorption, the printing will appear wiredrawing, bubble extrusion, rough printing surface and other phenomena, reducing the printing quality. It is recommended that you open the TPU-78D vacuum aluminum foil bag and immediately put the filament into the drying box (the humidity should be controlled below 15%) for printing, and put the unused filament back into the original aluminum foil bag for sealing.

2. After the material is wet, please put it into an oven at 70-80 °C to dry for 4h, then the printing quality of TPU-78D can be recovered.