

MINGDA FDM Printing Material

Technical Data Sheet

MINGDA 增韧型高速打印 PETG

MINGDA ToughPETG-HF

MINGDA ToughPETG-HF 是一款专为 FDM 开发的韧性改良 PETG，通过提高材料流动性，使其具有极佳的打印性能。同时相比 PLA 具有更好的力学强度与耐热性。

MINGDA ToughPETG-HF is a toughness modified PETG developed specifically for FDM, which provides excellent printability by improving material flow and have better mechanical strength and heat resistance compared to PLA.

产品亮点

Product Highlights

- 高抗冲击性能
High Impact Resistance

MINGDA 通过韧性改良技术,使 MINGDA ToughPETG-HF 的缺口冲击强度提高至普通 PETG 的 2 倍以上,同时不影响 Z 轴方向的层间粘接强度。

MINGDA has improved the notch impact strength of MINGDA ToughPETG-HF to more than twice that of ordinary PETG without affecting the interlayer bonding strength in the Z-axis direction through toughness improvement technology.

- 易打印
Easy to Print

MINGDA ToughPETG-HF 具有优异的材料流动性，成型效果好，可以在大部分打印机实现完美的打印效果。

MINGDA ToughPETG-HF has excellent material flow and good modeling effect, which can achieve perfect printing results in most printers.

颜色 Color: 白色 White/黑色 Black/蓝色 Blue/粉色 Pink/绿色 Green/紫色 Purple

线径 Diameter: 1.75mm/2.85mm

净重 Net weight: 1KG

物性表

Material Properties

测试项目 Property	测试方法 Testing method	典型值 Typical value
密度 Density	ISO 1183	1.24 g/cm ³
玻璃化转变温度 Glass transition temperature	ISO 11357	78°C
熔融指数 Melt index	220°C, 2.16kg	13.2 g/10min
热变形温度 Determination of temperature	ISO 75: Method A ISO 75: Method B	73°C (1.8MPa) 78°C (0.45MPa)
拉伸屈服强度 Tensile yield strength (X-Y)	ISO 527	40.3±0.6 MPa
屈服伸长率 Yield elongation (X-Y)		4.0±0.2%
杨氏模量 (X-Y) Young's modulus		1780±80MPa
拉伸断裂强度 Tensile breaking strength (X-Y)		20.2 ±0.8MPa
断裂伸长率 Elongation at break (X-Y)		10.1±0.6%
拉伸屈服强度 Tensile yield strength (Z)	ISO 527	39.8±0.4MPa
屈服伸长率 Yield elongation (Z)		3.8±0.5%
杨氏模量 (Z) Young's modulus		1820±110MPa
拉伸断裂强度 Tensile breaking strength (Z)		19.2±0.8MPa
断裂伸长率 Elongation at break (Z)		5.0±0.5%
弯曲强度 Bending strength (X-Y)	ISO 178	62.8±0.4MPa
弯曲模量 Bending modulus (X-Y)		1919±54 MPa
缺口冲击强度 Charpy impact strength (X-Y)	ISO 179	13.9±2.3 KJ/m ²

试样打印参数：喷嘴大小 0.4mm，喷嘴温度 240°C，底板加热 80°C，打印速度 60mm/s，填充率 100%，填充角度±45°

Specimens printed under the following conditions: Nozzle size 0.4mm, Nozzle temp 240°C, Bed temp 80°C, Print speed 60mm/s, Infill 100%, Infill angle ±45°

建议打印参数

Recommended printing conditions

喷头温度 Nozzle temperature	220-250°C
建议喷嘴大小 Recommended nozzle diameter	0.2-1.0mm
建议底板材质 Recommended build surface	玻璃、PEI 膜或涂抹 PVP 固体胶 Glass、PEI Film or Coating with PVP glue
底板温度 Build plate temperature	70-80°C
Raft 间距 Raft separation distance	0.2-0.25mm
冷却风扇 Cooling fan speed	≤50%
打印速度 Print speed	30-250 mm/s
回抽距离 Retraction distance	1-3 mm
回抽速度 Retraction speed	1800-3600 mm/min
建议支撑材料 Recommended support material	-

其他建议：

Additional Suggestions:

1. Tough-PETG 和 PC 材质底板粘接非常牢固，在打印较大底面时，可以适当调大模型首层和底板的间距。

Since the bonding between Tough-PETG and PC material base plate is very strong, it is recommended to increase the spacing between the first layer of the model and the base plate when printing a larger subface.