



FusRock™ FDM Printing Material Technical Data Sheet

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FusFun™ ToughPETG-HF

FusFun™ 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，使其具有极佳的高速打印性能。同时相比 PLA 具有更好的力学强度与耐热性。

FusFun™ ToughPETG-HF is a toughness modified PETG developed specifically for FDM, which provides excellent high speed 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**

FusRock® 通过韧性改良技术，使 FusFun™ 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。

- **High Impact Resistance**

FusRock® has improved the notch impact strength of FusFun™ 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.

- **高速打印**

FusFun™ 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，极限打印速度接近 400mm/s。

- **High Speed Printability**

FusFun™ ToughPETG-HF has excellent material flow and good modeling effect, which can achieve perfect printing results in most printers. The max printing speed is close to 400mm/s.



产品规格

Available

颜色 Color: 白色 RAL9003/ 黑色 RAL9004/ 蓝色 Pantone 2171C/ 橙色 Pantone 151C/ 绿色 Pantone 347C/ 红色 Pantone 3546C/ 黄色 Pantone 102U/紫色 Pantone 2665C

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	1.27 g/cm ³
玻璃化转变温度 Glass transition temperature	ISO 11357	80°C
熔融指数 Melt index	220°C, 2.16kg	7 g/10min
热变形温度 Determination of temperature	ISO 75: Method A ISO 75: Method B	65°C (1.8MPa) 70°C (0.45MPa)
拉伸屈服强度 (X-Y) Tensile yield strength (X-Y)	ISO 527	44.23 ± 0.64 MPa
屈服伸长率 (X-Y) Yield elongation (X-Y)		4.19 ± 0.06 %
杨氏模量 (X-Y) Young's modulus (X-Y)		1821.82 ± 49.41 MPa
拉伸断裂强度 (X-Y) Tensile breaking strength (X-Y)		21.92 ± 3.98 MPa
断裂伸长率 (X-Y) Elongation at break (X-Y)		14.04 ± 7.77 %
杨氏模量 (Z) Young's modulus (Z)		1955.67 ± 179.30 MPa
拉伸断裂强度 (Z)		42.70 ± 0.51 MPa



Tensile breaking strength (Z)		
断裂伸长率 (Z) Elongation at break (Z)		4.51 ± 0.82 %
弯曲强度 (X-Y) Bending strength (X-Y)	ISO 178	71.40 ± 0.74 MPa
弯曲模量 (X-Y) Bending modulus (X-Y)		1895.07 ± 36.19 MPa
缺口冲击强度 (X-Y) Charpy impact strength (X-Y)	ISO 179	16.39 ± 2.16 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 45mm/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 45mm/s,

Infill 100%, Infill angle ±45°

建议打印参数

Recommended printing conditions

喷头温度 Nozzle temperature	230-260°C
建议喷嘴大小和材质 Recommended nozzle diameter and nozzle material	0.2-1.0mm 铜制喷头
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	0.2-0.25 mm
冷却风扇 Cooling fan speed	0-50%
打印速度 Print speed	30-300 mm/s
回抽距离 Retraction distance	1-5 mm
回抽速度	1800-3600 mm/min

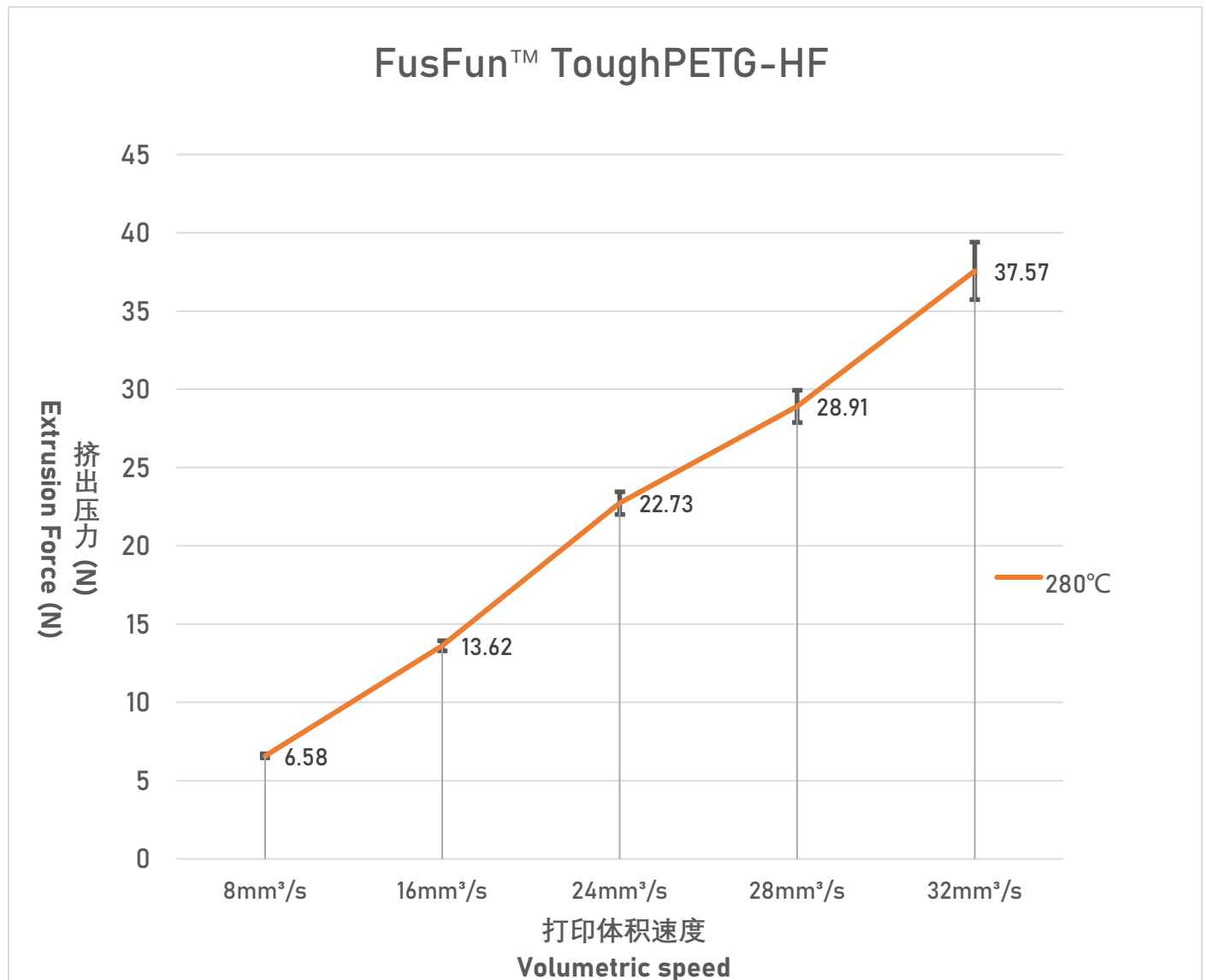


Retraction speed	
建议支撑材料 Recommended support material	FusFree™ S-Multi Quick-Remove Support Material
<p>其他建议：</p> <p>Additional Suggestions:</p> <ol style="list-style-type: none">ToughPETG-HF 和 PC 材质底板粘接非常牢固，在打印较大底面时，可以适当调大模型首层和底板的间距。Since the bonding between ToughPETG-HF and PC material base plate is 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.	



挤出压力与打印流量速度测试

Extrusion Force vs Print Volumetric Speed Test



测试参数: 12mm 铜制加热块, Phaetus 0.4mm 铜合金喷头, 打印层高 0.2mm。

Test parameters: 12mm Length brass heat block, BMG extruder, Phaetus brass nozzle, Nozzle size 0.4mm, Layer Height 0.2mm.