



## **FusRock® FDM Printing Material Technical Data Sheet**

**Data / Revised: 05.2025**

**Version No: 5.4**

### **FusFlex™ TPU85A-HF**

一款高流动性的硬度 85A 柔性 3D 打印材料

**Hardness 85A flexible 3D printing material for high speed printing.**

### **产品介绍**

#### **Product Description**

FusFlex™ TPU85A-HF 是一款易打印的 TPU 材料。在同等硬度下，FusFlex™ TPU85A-HF 相比其他常规 TPU 耗材会更容易被挤出，当选用合适的挤出机时，FusFlex™ TPU85A-HF 可支持 100mm/s 以上的打印速度。

**FusFlex™ TPU85A-HF is TPU material that is easy to print. FusFlex™ TPU85A-HF is easier to be extruded than other conventional TPU consumables under the same hardness. When a suitable extruder is selected, FusFlex™ TPU85A-HF can support a printing speed of more than 100mm/s.**

### **产品亮点**

#### **Product Advantages**

- **高流动性**

FusRock™改善了 TPU 材料的流动性，使材料在挤出机内仅需要较小的推力就能轻易推动，在近程挤出机上可以轻松实现高速打印（≥100mm/s）。

- **High Flowability**

**FusRock® improved the fluidity of TPU material, so that the material can be easily pushed in the extruder with only a small thrust. High speed printing (≥100mm/s) can be easily realized by direct extruders.**

### **产品详情**

#### **Available**

颜色 Color: 白色 White/ 黑色 Black/ 鲜绿色 Bright Green

线径 Diameter: 1.75mm

净重 Net Wet: 500g/ 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	1.15 g/cm <sup>3</sup>
硬度 Hardness	ISO 7619	85A
饱和吸湿率 Water absorption	ISO 62: Method 1	1.49 %
熔融指数 Melt index	200°C, 2.16kg	30 g/10min
维卡软化温度 Vicat softening temperature	ISO 306	77 °C
回弹性 Bayshore rebound	ASTM D2632	43 %
拉伸断裂强度 (X-Y) Tensile breaking strength (X-Y)	ISO 37	23.44±2.70 MPa
断裂伸长率(X-Y) elongation at break (X-Y)		564±35 %
100%定伸应力 (X-Y) tensile stress at 100% (X-Y)		6.56±0.25 MPa
200%定伸应力 (X-Y) tensile stress at 200% (X-Y)		8.22±0.26 MPa
300%定伸应力 (X-Y) tensile stress at 300% (X-Y)		10.74±0.32 MPa
Z 方向撕裂强度 (Z) Tear Strength (Z)	ISO 34-1	39.10±2.17 KN/m

试样打印参数: 喷嘴大小 0.4mm, 喷嘴温度 230°C, 底板加热 50°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 230°C, Bed temp 50°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	210-240 °C
建议喷嘴大小 Recommended nozzle diameter	≥0.2 mm
建议底板材质 Recommended build surface	玻璃, PEI 膜或 PC 膜 Glass, PEI Film or PC Film
底板温度 Build plate temperature	20-50°C
Raft 间距 Raft separation distance	0.18-0.22 mm
冷却风扇 Cooling fan speed	On
打印速度 Print speed	30-90 mm/s
回抽距离 Retraction distance	0.8-1.6 mm
回抽速度 Retraction speed	1800-3600 mm/min

#### 其他建议:

1. 如果想实现高速打印, 推荐使用近程挤出机, 例如: **BMG** 挤出机、**Titan** 挤出机、**Hemera** 挤出机, 并适当提高喷嘴温度。
2. **TPU** 材料暴露在空气中容易吸收水分, 吸湿后打印会出现拉丝, 挤出有气泡, 打印表面粗糙等现象, 降低打印质量。建议您打开 **FusFlex™ TPU85A-HF** 真空铝箔袋包装后立即将线材放入干燥盒内 (湿度控制在 **15%** 以下) 进行打印。不用的线材请放回原包装铝箔袋内密封保存。
3. 材料受潮后会出现打印拉丝增多, 挤出有气泡, 打印表面质量粗糙等现象。请将线材放入 **70-80°C** 烘箱内干燥 **4-6h**, 即可恢复 **FusFlex™ TPU85A-HF** 的打印质量。

#### Additional Suggestions:

1. If you want to achieve high-speed printing, it is recommended to use direct extruders, such as **BMG** extruder, **Titan** extruder and **Hemera** extruder, and appropriately increase the nozzle temperature.



2. TPU material is very easy to absorb moisture when exposed to air, and printing after absorbing moisture will result ozzing, extruding with bubbles and rough surface appearance, thus reducing print quality. It is recommended that put the filament into a dry box (humidity below 15%) immediately after opening the FusFlex™ TPU85A-HF vacuum foil bag for printing. Please put the unused filament back into the original aluminum foil bag for sealed storage.
3. After the material is damp, there will be more printing ozzing, bubbles extruded and rough printing surface. Please dry the filament in an oven at 70-80°C for 4-6h to restore the printing quality of FusFlex™ TPU85A-HF.

#### 免责声明

#### Disclaimer

Fusrock® 3D 打印耗材适用于通用打印用途，已在标准条件下进行测试。然而，打印成品的性能与安全性受多种因素影响，包括打印参数、模型设计、使用环境及实际用途。使用 Fusrock® 材料即表示用户已知悉并同意，自行评估打印件是否适用于其具体应用，并承担由此产生的全部风险。Fusrock® 对使用本公司耗材打印的产品在实际应用中可能导致的任何损害、伤害或损失不承担任何责任，包括但不限于结构失效、功能异常或使用环境中的安全隐患。在将打印件应用于关键、功能性或商业性场景前，请务必进行充分测试。除 Fusrock® 已标明材料所获得的各项认证资质外，Fusrock® 产品未取得医疗、航天或生命支持系统认证资质。

Fusrock® 3D printing filaments are suitable for general printing applications and have been tested under standard conditions. However, the performance and safety of printed products are influenced by multiple factors, including printing parameters, model design, operating environment, and intended use. By using Fusrock® materials, users acknowledge and agree to independently evaluate the suitability of printed items for their specific applications and assume all associated risks. Fusrock® shall not be held liable for any damages, injuries, or losses resulting from the practical use of products printed with its materials, including but not limited to structural failures, malfunctions, or safety hazards in operational environments. Thorough testing must be conducted before applying printed components to critical, functional, or commercial scenarios. Fusrock® products are not certified for medical, aerospace, or life-support systems, except for certifications explicitly stated by Fusrock® for specific materials.