aeFlex™ FDM Printing Material
Technical Data Sheet

aeFlex™ TPU85A-HF

A high flowability TPU85A flexible 3D printing material

一款高流动性的 TPU85A 柔性 3D 打印材料

Product Description

产品简介

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

aeFlex™ TPU85A-HF 是一款易打印的 TPU 材料。在同等硬度下，aeFlex™ 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，aeFlex™ TPU85A-HF 可支持 100mm/s 以上的打印速度。

Product Advantages

产品亮点

- **High Flowability**

Phaetus improves 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, and conventional speed printing (30-60mm / s) can be realized by bowden extruders.

- 高流动性

通过改善 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），并可在远程挤出机上实现常规速度打印（30-60mm/s）。

Available

产品详情

Color: White/Black

Diameter: 1.75mm/ 2.85mm

Net wet: 1KG

Material Properties

物性表

测试项目 Property	测试方法 Testing method	典型值 Typical value
密度 Density	ISO 1183	1.15 g/cm³
硬度 Hardness	ISO 7619	85A
熔融指数 Melt Index	200℃，2.16kg	30 g/10min
维卡软温度 Vicat Softening Temperature	ISO 306	77°C
拉伸断裂强度 (X-Y) Tensile breaking strength (X-Y)	ISO 527	23.44±2.70 MPa
断裂伸长率 100% (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±0.26MPa
300% 定伸应力 (X-Y) tensile stress at 300% (X-Y)		10.74±0.32 MPa

试样打印参数：喷嘴大小 0.4mm，喷嘴温度 210°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 210°C, Bed temp 50°C, Print speed 60mm/s, Infill 100%, Infill angle±45°

Recommended Printing Conditions

建议打印参数

喷头温度 Nozzle Temperature	200-225°C
建议喷嘴大小 Recommended Nozzle Diameter	≥0.4mm

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	0.18-0.22mm
冷却风扇 Cooling fan speed	On
打印速度 Print speed	30-90 mm/s
回抽距离 Retraction distance	1-5 mm
回抽速度 Retraction speed	1800-3600 mm/min

Additional Suggestions：

1. If you want to achieve high-speed printing, it is recommended to use direct extruders, such as OminiaDrop V3 extruder, APUS extruder, Titan extruder or 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 oozing, 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 aeFlex™ 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 oozing, bubbles extruded and rough printing surface. Please dry the filament in an oven at 70-80℃ for 4-6h to restore the printing quality of aeFlex™ TPU85A-HF.

其他建议：

如果想实现高速打印，推荐使用近程挤出机，例如：OminiaDrop V3 挤出机，APUS 挤出机、Titan 挤出机、Hemera 挤出机，并适当提高喷嘴温度。

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。

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℃烘箱内干燥 4-6h，即可恢复线材的打印质量。