

Factsheet | Ultrafuse® TPU 85A

First BASF filament developed on Elastollan®

Ultrafuse® TPU 85A specially developed for FFF printing based on BASF's Elastollan® materials. Elastollan® is the brand name for thermoplastic polyurethane (TPU) from BASF. It stands for maximum reliability, consistent product quality and cost efficiency.

Like in Elastollan®, Ultrafuse® TPU 85A has excellent resistance to hydrolysis and good flexibility at low temperature, resistance to microbiological attack, good wear performance, high tensile strength, good damping behavior.

Excellent properties, such as mechanical strength, resistance to abrasion, and slip resistance, together with broad range of possible degrees of hardness with different designs, make Ultrafuse® TPU 85A an ideal material for applications in the fields of footwear, sports and leisure, automotive, industrial manufacturing, agriculture and construction.



Shoe sole in Ultrafuse® TPU 85A - for customization

Specially formulated filaments based on your requirements.



Watch band in Ultrafuse® TPU 85A

Advantages of Ultrafuse® TPU 85A

- High wear and abrasion resistance
- High tensile strength and outstanding resistance to tear propagation
- Excellent damping characteristics
- Very good low-temperature flexibility
- High resistance to oils, greases, oxygen and ozone

Guideline for Print Settings

| | |
|--------------------|----------------|
| Nozzle temperature | 200 – 220 °C |
| Bed temperature | 40 °C |
| Nozzle diameter | ≥ 0.4 mm |
| Bed modification | Glass |
| Print speed | 15 – 40 mm/sec |

| Properties | TPU 85A | Pro1 tough PLA | ABS Fusion+ |
|-------------------------------------|---------|----------------|-------------|
| Ease of printing | +/- | + | + |
| Damping behavior | ++ | - | - |
| Impact strength at low temperatures | ++ | +/- | - |
| Wear behavior | ++ | - | +/- |
| Layer adhesion | ++ | + | ++ |

Factsheet | Ultrafuse® PA

Ultrafuse® PA is specially developed for FFF printing based on BASF's polyamide portfolio known as Ultramid®. With its unique mechanical properties due to its chemical structure it is suitable for wide range applications working in broader temperature range.

First BASF filament developed on Ultramid®

BASF's Ultramid® grades are molding compounds on the basis of PA6, PA66 and various co-polyamides such as PA6/66. Ultramid® is noted for its high mechanical strength, stiffness and thermal stability. In addition, Ultramid® offers good toughness at low temperatures. Owing to its excellent properties, this material has become indispensable in almost all sectors of engineering for a wide range of different components and machine elements, as a high-grade electrical insulation material and for many special applications.

Ultrafuse® PA is the translation of BASF's Ultramid® to 3D printing space. It is based on copolyamide 6/66 grade of intermediate viscosity. With Ultrafuse® PA, it is possible to print semi-flexible thin parts, however it is very stiff in higher thicknesses. It has a lower melting temperature than PA6 and PA66 hence it can be printed in a lower temperature as well as it has better impact strength against PA6 and PA66 which opens up a new application field to the end-users. Depending on specific requirements, the formulation can be optimized further, and special filaments can be created.

Guideline for Print Settings

| | |
|--------------------|--------------------------------------|
| Nozzle temperature | 220 – 250 °C |
| Bed temperature | 90 - 120 °C |
| Nozzle diameter | ≥ 0.4 mm |
| Bed modification | Glass + PVA Glue Stick / Kapton tape |
| Print speed | 30 - 60 mm/s |

Advantages of Ultrafuse® PA

- Good fatigue resistance
- Low melting point makes it printable for many FFF printers
- Good wear resistance/lubricity

Specially formulated filaments based on your requirements.

| Properties | PA | ABS | PP |
|---------------------|-----|-----|----|
| Ease of printing | + | + | -- |
| Chemical resistance | +/- | - | ++ |
| Moisture uptake | - | ++ | ++ |
| Tensile strength | + | - | - |
| Wear behavior | +/- | - | - |



Shark fin antennae in Ultrafuse® PA - for high strength