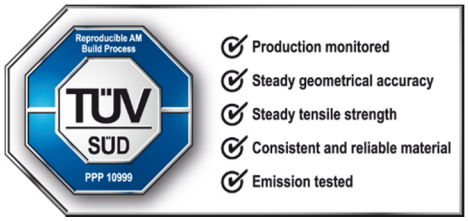
# LUVOCOM 3F Filament
# PA$^{HT®}$ 9825 NT

**High-temperature polyamide**
**unreinforced, natural color**




LUVOCOM® 3F FILAMENT
Additive manufacturing solutions

| **Physical properties** | | **Test method** | **Specimen** | **Units** | **Typical value** |
|---|---|---|---|---|---|
| Specific gravity | | ISO 1183-3 | | g/cm³ | 1.20 |
| Water absorption | 23°C / 24h | ISO 62 | MPTS ISO 3167 A | % | <0.3 |
| Melt flow rates (MFR) | 250°C / 2.16kg | ISO 1133 | Pellet | g/10min | 3.6 |
| Melt volume rate (MVR) | 250°C / 2.16kg | ISO 1133 | Pellet | cm³/10min | 3.5 |
| **Thermal properties** | | | | | |
| Heat distortion temperature | HDT A – 1.8 MPa | ISO 75 | Printed specimen | °C | 80 |
| Continuous service temperature | 20,000 h | IEC 60216 | MPTS ISO 3167 A | °C | 100 |
| Service temperature | during lifetime max. 200h | | MPTS ISO 3167 A | °C | 120 |
| Coefficient of thermal expansion | | ISO 11359 | 10x8x4mm | $10^{-5}$/K | 0.5 |
| Thermal conductivity in plane | hot disk | ISO 22007 | ‖ 60x60x3mm | W/mK | 0.3 |
| **Electrical properties** | | | | | |
| Insulation resistance strip electrode | R25 | DIN IEC 60167 | MPTS ISO 3167 A | Ω | $>10^{12}$ |
| Surface resistance | ROB | DIN IEC 60093 | Ronde 60x4mm | Ω | $>10^{12}$ |
| **Mechanical properties** at 23°C / 50% rh | | ***Printed using Ultimaker S5 Pro and Engineering settings** | | | |
| Tensile strength | 100% infill - 0 ° - XY | ISO 527-2 | ISO 3167:2014 Typ A | MPa | 69.1 ± 2.9 |
| Elongation at maximum force | 100% infill - 0 ° - XY | ISO 527-2 | ISO 3167:2014 Typ A | % | 2.7 ± 0.3 |
| Modulus of elasticity | 100% infill - 0 ° - XY | ISO 527-2 | ISO 3167:2014 Typ A | GPa | 3.1 ± 0.1 |
| Tensile strength | 100% infill - 45/135° - XY | ISO 527-2 | ISO 3167:2014 Typ A | MPa | 82.1 ± 0.9 |
| Elongation at maximum force | 100% infill - 45/135° - XY | ISO 527-2 | ISO 3167:2014 Typ A | % | 3.7 ± 0.0 |
| Modulus of elasticity | 100% infill - 45/135° - XY | ISO 527-2 | ISO 3167:2014 Typ A | GPa | 3.1 ± 0.1 |
| Tensile strength | 100% infill - 90° - XY | ISO 527-2 | ISO 3167:2014 Typ A | MPa | 81.6 ± 0.9 |
| Elongation at maximum force | 100% infill - 90° - XY | ISO 527-2 | ISO 3167:2014 Typ A | % | 3.7 ± 0.0 |
| Modulus of elasticity | 100% infill - 90° - XY | ISO 527-2 | ISO 3167:2014 Typ A | GPa | 3.1 ± 0.0 |
| Tensile strength | 100% infill - ZX | ISO 527-2 | ISO 3167:2014 Typ A | MPa | 26.3 ± 2.7 |
| Elongation at maximum force | 100% infill - ZX | ISO 527-2 | ISO 3167:2014 Typ A | % | 1.1 ± 0.1 |
| Modulus of elasticity | 100% infill - ZX | ISO 527-2 | ISO 3167:2014 Typ A | GPa | 2.8 ± 0.1 |
| **Mechanical properties** at 23°C / 50% rh | | ***Printed using Ultimaker S5 Pro and Fast settings** | | | |
| Tensile strength | 100% infill - 0 ° - XY | ISO 527-2 | ISO 3167:2014 Typ A | MPa | 54.8 ± 1.7 |
| Elongation at maximum force | 100% infill - 0 ° - XY | ISO 527-2 | ISO 3167:2014 Typ A | % | 2.6 ± 0.1 |
| Modulus of elasticity | 100% infill - 0 ° - XY | ISO 527-2 | ISO 3167:2014 Typ A | GPa | 2.8 ± 0.1 |
| Tensile strength | 100% infill - 45/135° - XY | ISO 527-2 | ISO 3167:2014 Typ A | MPa | 51.2 ± 1.9 |
| Elongation at maximum force | 100% infill - 45/135° - XY | ISO 527-2 | ISO 3167:2014 Typ A | % | 2.8 ± 0.1 |
| Modulus of elasticity | 100% infill - 45/135° - XY | ISO 527-2 | ISO 3167:2014 Typ A | GPa | 2.9 ± 0.2 |
| Tensile strength | 100% infill - 90° - XY | ISO 527-2 | ISO 3167:2014 Typ A | MPa | 66.2 ± 2.6 |
| Elongation at maximum force | 100% infill - 90° - XY | ISO 527-2 | ISO 3167:2014 Typ A | % | 3.2 ± 0.2 |
| Modulus of elasticity | 100% infill - 90° - XY | ISO 527-2 | ISO 3167:2014 Typ A | GPa | 2.8 ± 0.3 |
| Tensile strength | 100% infill - ZX | ISO 527-2 | ISO 3167:2014 Typ A | MPa | 22.2 ± 3.5 |
| Elongation at maximum force | 100% infill - ZX | ISO 527-2 | ISO 3167:2014 Typ A | % | 1.0 ± 0.2 |
| Modulus of elasticity | 100% infill - ZX | ISO 527-2 | ISO 3167:2014 Typ A | GPa | 2.8 ± 0.1 |

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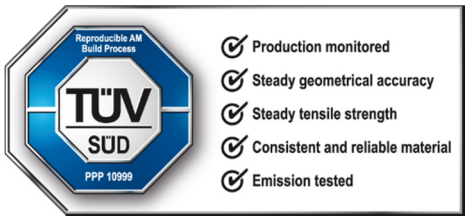


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## General information

LUVOCOM 3F Filament PAHT® 9825 NT is an unreinforced polyamide based formulation with the ability to be printable on non-heated chamber machines. It has excellent tensile and impact strength and allows continues use up to 100°C while retaining 50% of its mechanical properties. Its water uptake takes about 4 times longer to reach the saturation point compared to unmodified PA6, also its saturation point is 5 times lower than conventional PA6 materials.

**Engineering and Fast settings print profiles can be found in Ultimaker Cura Marketplace for download and use.**

**Geometric accuracy was measured according VDI3405:Part 7 (length = 24 - 150 mm) and achieved 0.32 mm for the Engineering settings.**

## Predrying

It is advisable to pre-dry the filament with a suitable dryer immediately before processing. The material may absorb moisture from the environment.

| Dryer type | Temperature °C | Drying time in h |
|---|---|---|
| Dehumidifying dryer | 110 | 6 - 8 |
| Vacuum dryer | 100 | 4 - 6 |

## Processing*

*when not using profiles from Ultimaker Cura Marketplace

| | | |
|---|---|---|
| Printing temperature | °C | 265 - 290 |
| Print bed temperature | °C | ≥ 50 |
| Layer thickness | mm | ≥ 0.1 |
| Nozzle diameter | mm | ≥ 0.2 |
| Printing speeds | mm/s | 30 - 80 |

In order to improve adhesion and facilitate part removal Magigoo PA® or Vision Miner Nano Adhesive are recommended.
The processing notes provided merely represent a recommendation for general use. Due to the large variety of machines, geometries and volumes of parts, it may be necessary to employ different settings according to the specific application.
For additional information please refer to our printing guidelines document.

## Delivery form & storage

Unless indicated otherwise, the material is delivered as ø 1.75mm and ø 2.85mm filaments in re-sealable aluminum bags. Preferably storage should be under dry, normal temperature and pressure conditions.


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