



TECHNICAL DATA SHEET

FILAMENT | PAHT ULTRA

V1.0



PAHT ULTRA is a polyamide-based filament with great mechanical resistance and toughness and excellent performance at high temperatures, especially indicated for industrial applications and for pieces that will have an end use, such as bearings or gears.

The main advantages of this filament are:

- Easy to print
- It can stand high temperatures up to 120°C
- High traction resistance up to 85 MP
- High mechanical and impact resistance
- Great adhesion between layers regardless of print position
- Low warping
- Good resistance to moisture absorption (<0.3% 23°C-24h). But it has to be protected. 75% reduction in water catchment compared to PA 6
- Good quality on the surface of the working piece
- It is compatible in dual printing with support materials

PRODUCT DESCRIPTION

Property	Value
Diameter	1.75 mm ± 0.05 mm
Chemical name	Polyamide
Fiber content	-
Odor	-

RECOMMENDED PRINTING PROPERTIES

Property	Value
Extruder temperature	255-280 °C
Plate temperature	>50 °C
Ventilation	0-30 %
Printing speed	30-50 mm/s
Extrusion multiplier	-
Retraction distance	-
Retraction speed	-
Storage	-

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PHYSICAL PROPERTIES

Property	Testing Method	Unit	Value
Specific gravity	-	-	-
Density	ISO 1183	g/cm ³	1.20
Hardness	-	-	-
Moisture content	-	-	-
Moisture absorption	-	-	-
Water absorption	-	-	-
Solubility	-	-	-
VICAT softening temperature	-	-	-
Glass transition temperature	-	-	-
Melting temperature	-	-	-
Melt flow rate	-	-	-
Heat deflection temperature	ISO 75	°C	90
Coefficient of thermal Expansion	-	-	-
Continuous service temperature	UL 746B	°C	120
Maximum (short term) use temperature	-	°C	160
Flammability	-	-	-
Insulation resistance	DIN/IEC 60167	Ω	>10 ¹²
Surface resistance	DIN/IEC 60093	Ω	>10 ¹²
Abrasion resistance	-	-	-

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MECHANICAL PROPERTIES

Property	Testing Method	Unit	Value
Young's modulus	-	-	-
Tensile strength	ISO 527	MPa	85
Tensile elongation	ISO 527	%	3,6
Bending modulus	ISO 527	GPa	3,4
Bending strength	-	-	-
Izod Impact, notched	-	-	-
Izod Impact strength, unnotched	-	-	-
Charpy Impact strength	-	-	-
Brittleness temperature	-	-	-
Tear strength	-	-	-

OTHER PROPRIETIES

Property

-

-

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Disclaimer :

This information is based on our current knowledge of raw materials and the manufacturing process and refers to the above mentioned products when leaving Volumic 3D. It is solely the customer's responsibility to determine if the product and information in this document are appropriate for the customer's end use. Responsibility for the use, storage, handling and disposal of the products herein is that of the purchaser or end user.

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Use recommendations :

PROTECT FROM HUMIDITY

PAHT ULTRA is delivered in a vacuum bag, with a great barrier against moisture so that the filament can not absorb humidity. Prior to bagging, the filament follows the strictest quality controls by dehumidifying the raw material until the moisture content of less than 0.02%. During the process, the filament is cooled with dry air and then pocketed to ensure that the product is of the best quality.

Once unpacked, we recommend to keep it in a dry and dark environment. If it is not maintained in a suitable environment the material can absorb up to 0.5% of the atmospheric moisture, this can create water vapor in the extrusion that confers a poor surface finish.

To maintain optimal printing conditions, it is recommended to dry the material before using it in a 3D printer filament. Many printing equipments already have these drying systems incorporated.

KEEP THE EXTRUDER IN GOOD CONDITION

Once printing is finished it is necessary to clean the nozzle eliminating the excess of material to avoid seals and defects in the printing pieces, if several materials are used we recommend to have a nozzle for each material to avoid being mixed.