



MINGDA

Technical Data Sheet

WELCOME

Company Introduction

About us

Shenzhen MINGDA Technology Co., Ltd. was founded in 2012, which is a professional 3D printer research and development manufacturer in China and a national high-tech enterprise.

The Company's business focuses on the development, production and sales of high performance extruded 3D printing materials. With formulation development as its core competence, the Company is committed to solving the Fused Deposition Modeling process from the material side, reducing the hardware requirements of materials for printing equipment, and achieving the goal of printing high-performance composite materials with low-cost printers.

The Company is committed to providing customers with industry-leading 3D printing materials and total solutions from printing process to printing equipment, and has the ability to quickly customize materials to meet customer application requirements.

Superiority

- With a deep understanding of the FDM process, all product lines and materials are optimized for the FDM process.
- Relying on the strong strength in material modification development, we can provide customized material development services according to customer application requirements.
- The unique product line of support materials fits perfectly with high-performance printing materials to form a complete industrial-grade printing solution, thus closing the loop of the printing process.
- High-performance online production monitoring equipment and mature production processes can ensure the stable quality of FDM materials.

Contact us

For any inquiries or technical support, please contact:support@3dmingda.com



HtPA

15% chopped glass fiber reinforced Polyethylene Terephthalate 3D printing material.

Product Description

MINGDA HtPA is specially developed for FDM 3D printing process, and its substrate material is high temperature nylon, which has low density, low moisture absorption, high strength, high abrasion resistance, excellent chemical resistance and high heat resistance.

MINGDA HtPA have the best layer strength in product catalog , the surface of print parts feels smooth and exquisite . It also has good dimensional stability , no warpage and no shrinkage during the printing process , and can be used with MINGDA Support F-Green Quick-remove Support material to solve the problem of poor molding effect on the support surface of complex models.



Product Advantages

- **Low Moisture Sensitivity**

HtPA based on modified high temperature nylon, whose saturated moisture absorption rate is only one tenth of ordinary PA6, completely solving the defects of the mechanical properties and dimensional stability of nylon materials that change greatly after absorbed moisture.

- **Strongest layer bonding performance**

HtPA have the best layer strength in MINGDA product catalog, the layer adhesion of single wall structure is 2-3 times of ABS material and 1.5 times of PLA material.

- **Super Abrasive Resistance**

HtPA has a low coefficient of friction, self-lubricating properties and excellent wear resistance, which can easily meet all kinds of high-strength gears or industrial applications with high wear requirements.

Available

Colors	Natural
Diameter	1.75mm/2.85mm
Net weight	500g/1kg

Material Properties

Property	Testing method	Typical value
Density	ISO 1183	1.21 g/cm ³
Water absorption	ISO 62: Method I	0.6 %
Melting Temperature	ISO 11357	223°C
Melt index	280°C, 2.16kg	12.5
Determination of temperature	ISO 75: Method A	79°C (1.80MPa)
	ISO 75: Method B	84°C (0.45MPa)
Tensile strength(X-Y)		86.30 ± 0.79 MPa
Young's modulus(X-Y)	ISO 527	3172.39 ± 71.95 MPa
Elongation at break (X-Y)		7.08 ± 0.97 %
Bending strength (X-Y)		133.35±1.20 MPa
Bending modulus (X-Y)	ISO 178	3512.73 ± 153.72 MPa
Charpy impact strength (X-Y)	ISO 179	5.14 ± 0.21 KJ/m ²
Single shell Z-axis tensile strength	Custom method Vase mode Nozzle size 0.6mm / Layer height 0.3mm Layer time 20s	62.63 ± 1.02 MPa

Specimens printed under the following conditions : Nozzle temp 300°C, Bed temp 80°C, Print speed 45mm/s Infill 100%, Infill angle±45°

Recommended printing conditions

Nozzle temperature	280-320°C
Recommended nozzle diameter	0.2-1.0mm
Recommended build plate material	PEI Film or Coating with PVP Glue
Build plate temperature	70-80°C
Raft separation distance	0.14-0.16mm
Cooling fan speed	Off-20%
Print speed	30-90 mm/s
Retraction distance	3-6 mm
Retraction speed	1800-3600 mm/min
Recommended support material	Support F-Green Quick-Remove Support Material

Additional Suggestions:

1. Nylon material is very easy to absorb moisture within the environment, and printing after absorbing moisture will result in oozing, extruding with bubbles and rough surface appearance. It is recommended that filament be put into a dry box (humidity below 15%) immediately after opening the MINGDA HiPA vacuum foil bag for printing. Please put the unused filament back into the original aluminum foil bag for sealed storage.

2. 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 80-100°C for 4-6h to restore the printing quality of MINGDA HiPA.

3. Hardened steel nozzles shall be selected, which can effectively improve the print quality. Besides, it is recommended that the thickness of the heating block should be no less than 12mm.



MINGDA