

PA6-CF

INDUSTRIAL GRADE MATERIALS FOR FDM 3D PRINTING



MATERIAL NAME

PA6-CF

COLOR

Black

PROCESS

FDM

PRODUCT DESCRIPTION

PA6-CF is a carbon fiber-reinforced engineering plastic based on PA6, combining the toughness and wear resistance of nylon with the strength and rigidity of carbon fiber. It offers exceptional structural performance and dimensional stability, making it ideal for demanding applications such as automotive parts, electronic housings, mechanical components, and high-strength 3D-printed products.

TYPICAL APPLICATIONS

- The automotive industry
- Aerospace
- Consumer electronics

PRODUCT SAFETY

Most nylon products are biocompatible materials. There is no problem with normal skin contact. Only a small number of people will experience slight skin irritation.

PRODUCT DELIVERY & WAREHOUSING

- **MOISTURE CONTROL**

Nylon is highly hygroscopic. Store in a dry environment with humidity below 50% to prevent dimensional swelling and performance degradation.

Use sealed packaging with desiccants or vacuum storage.

- **TEMPERATURE CONTROL**

Keep storage temperature between 5°C and 35°C. Avoid high temperatures (>60°C) that may cause deformation and low temperatures (<0°C) that may induce brittleness.

- **UV PROTECTION**

Avoid exposure to UV light to prevent material aging, such as yellowing, brittleness, or loss of mechanical properties.

- **PHYSICAL PROTECTION**

Prevent heavy stacking or impacts to avoid deformation or cracking.

MATERIAL PROPERTIES

Properties	Test Method	Value
Hardness	/	/
Flexural modulus (Mpa)	ISO 178	XY: 6454.97 ± 523.47 MPa
Flexural strength (Mpa)	ISO 178	XY: 150.67 ± 3.28 MPa
Tensile modulus (Mpa)	ISO 527	XY: 7241.68 ± 371.73 MPa Z: 3921.85 ± 223.65 MPa
Tensile strength (Mpa)	ISO 527	XY: 94.07 ± 2.70 MPa Z: 48.24 ± 1.98 MPa
Elongation at break	ISO 527	XY: 1.71 ± 0.09 % Z: 1.50 ± 0.08 %
Poisson's Ratio	/	/
Impact strength notched Izod (J/m)	ISO 179-1	6.39 ± 0.36 KJ/m²
Heat deflection temperature (°C)	ISO75	HDT @0.45 MPa: 84.8°C HDT @1.8 MPa: 82°C
Glass transition, Tg (°C)	/	/
Coefficient of thermal expansion (/°C)	/	/
Density (g/cm³)	/	1.2 g/cm³

Tips: Want to explore a wider range of materials? Check out <https://www.unionfab.com/materials>



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