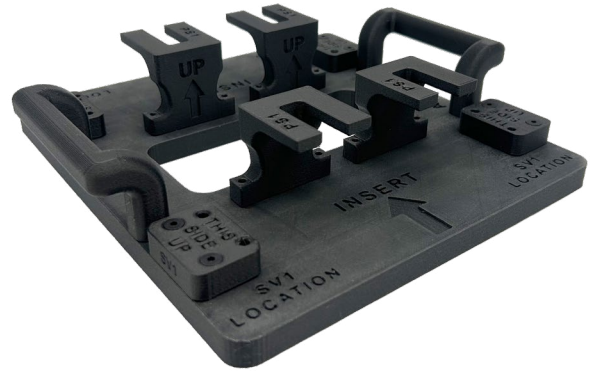


# HP 3D Filament PA-CF

HP Industrial Filament (IF) 3D Printer 600 High Temperature (HT) Solution



## Material overview

HP 3D Filament PA-CF is a carbon fiber reinforced long-chain copolyimide (PA612) filament for the HP Industrial Filament (IF) 3D Printer 600 HT Solution. Its chemical structure provides lower moisture sensitivity compared to PA6/66 and PA6-based materials, and better mechanical properties than PA12-based materials.

The material is suited for rigid functional parts in industrial environments where stiffness, strength, and moisture resistance are required.

## Typical use cases

Suited for:

- Rigid functional prototypes and end-use industrial parts
- Structural components requiring high stiffness-to-weight ratio
- Tooling, jigs, and fixtures in manufacturing environments
- Parts exposed to moderate moisture or humidity in service
- Parts requiring dimensional stability after printing

## Physical properties<sup>1</sup>

	Testing method	Typical value
Density	ISO1183, GB/T1033	1.03 g/cm <sup>3</sup> at 23 °C
Melt index	260 °C, 2.16 kg	9.9 g/10min
Flame retardancy	UL 94, 1.5mm	HB
Surface Resistivity	ANSI ESD S11.11	OL, >1012 Ω

## Thermal properties<sup>1</sup>

	Testing method	Typical value
Melting temperature	DSC, 10 °C/min	210 °C
Crystallization temperature	DSC, 10 °C/min	180 °C
Decomposition temperature	TGA, 20 °C/min	448.4 °C
Vicat softening temperature	ISO 306, GB/T 1633	206.2 °C
Heat deflection temperature	ISO 75 1.8MPa	114 °C
Heat deflection temperature	ISO 75 0.45MPa	175 °C

## Mechanical properties<sup>1</sup>

	Testing method	Typical value
Young's modulus (X-Y)	ISO 527, GB/T 1040	5136.7 ± 192.2 MPa
Tensile strength (X-Y)	ISO 527, GB/T 1040	91.9 ± 2.0 MPa
Elongation at break (X-Y)	ISO 527, GB/T 1040	2.6 ± 0.2 %
Bending modulus (X-Y)	ISO 178, GB/T 9341	4583.5 ± 62.7 MPa
Bending strength (X-Y)	ISO 178, GB/T 934	138.0 ± 2.2 MPa
Charpy impact strength (X-Y) notched	ISO 179, GB/T 1043	8.1 ± 0.8 kJ/m <sup>2</sup>
Charpy impact strength (X-Y) un-notched	ISO 179, GB/T 1043	29.9 ± 1.6 kJ/m <sup>2</sup>

## Recommended printing conditions<sup>1</sup>

Nozzle temperature	250-300 °C
Build plate temperature	40-50 °C
Printing speed	Up to 300 mm/s
Drying temp. and time	100 °C/10H

## Material specifications<sup>1</sup>

Product name	Weight supply	Diameter filament
HP 3D Filament PA-CF Black	0.5 kg	1.75 mm

## Process compatibility<sup>1</sup>

Support material compatibility	HP 3D Filament SM10 White
Compatible printer modules	HP IF 3D Printer 280 Module

## Safety Data Sheet (SDS)\*

A general Safety Data Sheet covering HP 3D printing materials is available here: [hp3dfilaments.com/safetydatasheets](https://hp3dfilaments.com/safetydatasheets)

This document provides guidance on safe handling, storage, and disposal. For material-specific questions, please contact your HP AM representative.

Typical values provided by Filament Provider. These results have not been validated on the HP Industrial Filament (IF) 3D Printer 600 HT Solution. Values are indicative; actual results may vary depending on print profile and process conditions. Contact HP to develop customized print profiles optimized for your application.