

HP 3D Filament ABS

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



Material overview

HP 3D Filament ABS is manufactured using a specialty bulk-polymerized ABS resin with significantly lower volatile content compared to traditional ABS resins. This formulation results in excellent printing quality with minimal odor during the printing process, making it suitable for environments where air quality is a concern.

HP 3D Filament ABS is engineered for reliable performance across a wide range of functional prototyping and end-use part applications, offering a balanced combination of mechanical strength, thermal resistance, and dimensional accuracy.

Typical use cases

Suited for:

- Functional prototypes requiring mechanical strength and thermal stability
- Consumer product housings, enclosures, and structural components
- Automotive interior parts and under-hood components exposed to moderate heat
- Jigs, fixtures, and tooling aids in manufacturing environments
- Electronic device casings and brackets

Physical properties¹

	Testing method	Typical value
Density	ISO1183, GB/T1033	1.03 g/cm ³ 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 properties¹

	Testing method	Typical value
Glass transition temperature	DSC, 10 °C/min	101 °C
Decomposition temperature	TGA, 20 °C/min	>380 °C
Vicat softening temperature	ISO 306, GB/T 1633	104 °C
Heat deflection temperature	ISO 75 1.8MPa	98 °C
Heat deflection temperature	ISO 75 0.45MPa	100 °C

Mechanical properties¹

	Testing method	Typical value
Young's modulus (X-Y)	ISO 527, GB/T 1040	2246.6 ± 58.2 MPa
Young's modulus (Z)	ISO 527, GB/T 1040	2080.9 ± 92.7 MPa
Tensile strength (X-Y)	ISO 527, GB/T 1040	33.4 ± 0.6 MPa
Tensile strength (Z)	ISO 527, GB/T 1040	29.7 ± 0.3 MPa
Elongation at break (X-Y)	ISO 527, GB/T 1040	17.9 ± 1.3 %
Elongation at break (Z)	ISO 527, GB/T 1040	3.1 ± 0.3 %
Bending modulus (X-Y)	ISO 178, GB/T 9341	2127.2 ± 29.9 MPa
Bending modulus (Z)	ISO 178, GB/T 9341	N/A
Bending strength (X-Y)	ISO 178, GB/T 934	56.2 ± 0.3 MPa
Bending strength (Z)	ISO 178, GB/T 934	N/A
Notched Charpy impact strength (X-Y)	ISO 179, GB/T 1043	18.0 ± 0.9 kJ/m ²

Recommended printing conditions¹

Nozzle temperature	245-265 °C
Build surface treatment	PC and Texture PEI (Glue when needed)
Build plate temperature	90-100 °C
Printing speed	50-200 mm/s

Material specifications¹

Product name	Weight supply	Diameter filament
HP 3D Filament ABS Black	1 kg	1.75 mm
HP 3D Filament ABS White	1 kg	1.75 mm
HP 3D Filament ABS Red	1 kg	1.75 mm
HP 3D Filament ABS Blue	1 kg	1.75 mm

Safety Data Sheet (SDS)*

A general Safety Data Sheet covering HP 3D printing materials is available here: hp.3dfilaments.com/safetydatasheets

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

1. Typical values provided by 3D Gence. 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.