

ABS+

Technical Data Sheet

Adding SAN to ABS can increase rigidity and improve interlayer strength and bending performance, while adding warpage modifiers to ABS can enhance the material's resistance to printing warpage. ABS filament has the advantages of minimal warping, excellent interlayer strength, good temperature resistance, relatively good toughness, and little to no stringing, making it widely applicable in 3D printer parts, tooling fixtures, electronics and electrical appliances, household appliances, automotive components, and more.

Basic Information

Characteristics	• Good toughness	• General interlayer strength
	• Small warpage	• General temperature resistance
	• General wire drawing	
Applications	• Automotive components	• Household appliances
	• 3D printer parts	• Electronics and electrical appliances
	• Tooling fixtures	
Processing Method	• 3D Printing	• FDM Print

Physical Properties	Testing Method	Data
Density	GB/T 1033	1.06 g/cm ³
Melt Flow Index	GB/T 3682	27 g/10min

Thermal Properties	Testing Method	Data
Heat Distortion Temperature	GB/T 1634	78.9 °C (0.45MPa)

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Glass Transition Temperature

Continuous Service Temperature	IEC 60216	N/A
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Maximum (short term) Use Temperature		N/A
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Electrical Properties	Testing Method	Data
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Insulation Resistance	DIN IEC 60167	
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Surface Resistance	DIN IEC 60093	
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Mechanical Properties	Testing Method	Data
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Tensile Strength (X-Y)	GB/T 1040	44.9 MPa
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Tensile Strength (Z)	GB/T 1040	33 MPa
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Elongation at Break (X-Y)	GB/T 1040	3.9 %
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Elongation at Break (Z)	GB/T 1040	3.1 %
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Flexural Strength (X-Y)	GB/T 9341	74.8 MPa
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Flexural Strength (Z)	GB/T 9341	41.1 MPa
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Flexural Modulus (X-Y)	GB/T 9341	2492.5 MPa
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Flexural Modulus (Z)	GB/T 9341	2233 MPa
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IZOD Impact Strength (X-Y)	GB/T 1843	18 kJ/m ²
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IZOD Impact Strength (Z)	GB/T 1843	2 kJ/m ²
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Young's Modulus (X-Y)		
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Young's Modulus (Z)		
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Thermal Properties	Testing Method	Data
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Heat Distortion Temperature (X-Y)	GB/T 1634	89 °C (0.45MPa)
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Heat Distortion Temperature (Z)	GB/T 1634	86.3 °C (0.45MPa)
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Chemical Properties	Data
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1. Acid and alkali resistance: ABS generally has moderate resistance to common acids and bases. It can withstand corrosion from some weak acids and bases, but its chemical resistance is poor against highly concentrated corrosive acids and bases, such as concentrated sulfuric acid, concentrated hydrochloric acid, or concentrated sodium hydroxide, making it prone to erosion.

2. Solvent resistance: ABS performs well with most organic solvents, but its resistance is limited to certain strong solvents, such as acetic acid, acetone, and chloroform.

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3. Oil resistance: ABS shows good resistance to some common machine oils and lubricants, but its performance may decline under high-temperature or highly chemically corrosive oils.



Recommended Printing Parameters	Data
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Drying Preparation	60-70 °C, 6-8 hours
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Nozzle Temperature	270±5 °C (Recommended temperature 270°C)
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Nozzle Size	0.4mm
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Build Platform Type	PEI
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Build Platform Temperature	
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95-105°C (Recommended temperature 100°C)
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Fan Speed	10-50%
Printing Speed	50-300mm/s
Storage Humidity	

Printing Tips

1. When slicing, it is recommended to enable the Z-seam alignment and starting point alignment functions, disable the Z-axis lift and exit feature, avoid traversing through the shell during idle movements, optimize the slicing printing path, and appropriately reduce the printing speed in order to achieve optimal print quality.
2. Due to its relatively fast cooling rate, we strongly recommend printing ABS material inside an enclosed printer.
3. To improve the print quality of ABS material, there are two suggestions: use a medium to large fan to accelerate cooling and minimize overhang angles in the model structure, or print at a high bed temperature to reduce warping.

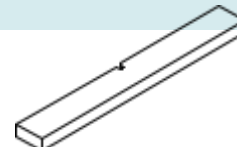
Test Conditions of Mechanical Properties



Tensile testing specimen GB/T 1040



Flexural testing specimen GB/T 9341



Impact testing specimen GB/T 1843

The performance of the filament is evaluated based on standard samples printed by eSUN, while the actual printing performance is influenced by various factors such as printer type, printing parameters, and print environment.

Printing Test Conditions:

Extruder Temperature	270°C
Build Platform Temperature	100°C
Outer Layer Number	2
Top/Bottom Layer Number	3
Infill Density	100%
Fan Speed	0%
Maximum Volumetric Flow Rate	3mm³/s



*Based on Bambu P1S 0.4 mm nozzle and Orcaslicer 2.1.0 Beta.

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