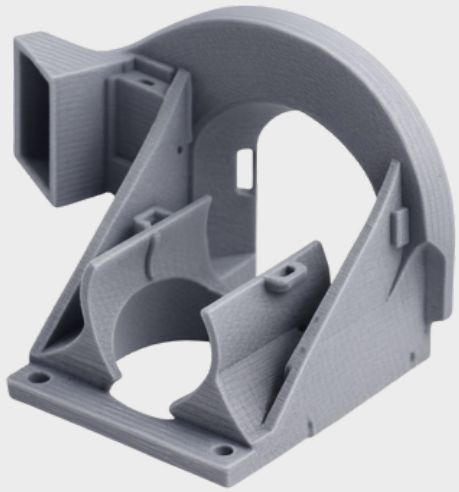
Mech Power
Parts made right



ABS

Technical Data Sheet

ABS is an enhanced formulation of standard ABS, offering improved mechanical strength, reduced odor, and a lower shrinkage rate. Known for its toughness and high impact resistance, ABS is ideal for printing robust, long-lasting parts. It features low VOC emissions and minimal odor during processing, ensuring a cleaner and more comfortable printing environment. With its low shrinkage characteristics, ABS minimizes the risk of warping or cracking, making it a reliable choice for precise and stable prints.

Material Status	**Mass Production**		
Characteristics	• Heat resistance • Sturdy and durable • High toughness	• Low odor • Low shrinkage • High impact resistance	• Excellent printability
Applications	• Machinery • Mould • Electrical products	• Toy • Automobile	
Form	• Filament		
Processing Method	• 3D Print, FDM Print		

Physical Properties	**Testing Method**	**Typical Value**	
Density	GB/T 1033	1.06	g/cm^3
Melt Flow Index	GB/T 3682	15	(220°C/10kg)
Mechanical Properties			
Tensile Strength	GB/T 1040	40	MPa
Elongation at Break	GB/T 1040	30	%
Flexural Strength	GB/T 9341	68	MPa
Flexural Modulus	GB/T 9341	1203	MPa
IZOD Impact Strength	GB/T 1843	42	kJ/m^2

Thermal Properties

Heat distortion Temperature	GB/T 1634	73	°C
Continuous Service Temperature	IEC 60216	N/A	
Maximum (short term) Use Temperature		N/A	

Electrical Properties

Insulation Resistance	DIN IEC 60167	N/A
Surface Resistance	DIN IEC 60093	N/A

Recommended printing parameters

For optimal print quality and dimensional accuracy, the following parameters are recommended for ABS:

Parameter	Recommended Range
Extruder Temperature	230–270°C
Build Platform Temperature	95–110°C
Fan Speed	100%
Printing Speed	40–100 mm/s

Settings are based on a 0.4 mm nozzle using Simplify3D v4.1.2. Actual results may vary depending on printer model, nozzle diameter, and environmental conditions.

Drying Recommendations

No specific drying required.

Precautions

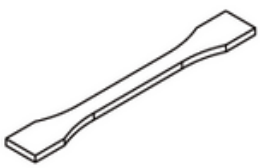
1. Maintain Controlled Temperature:

ABS material exhibits a relatively high shrinkage rate. To prevent warping or cracking, ensure proper temperature control during printing.. It is recommended to use a 3D printer with a fully enclosed build chamber for consistent temperature control.

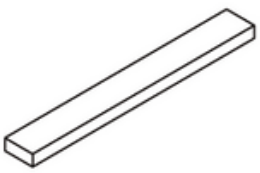
2. Optimize Cooling and Print Settings:

Since ABS has low cooling efficiency, you may enable the cooling fan to improve surface finish. Alternatively, consider reducing overhang angles in the model or lowering the print speed to achieve improved layer adhesion and print quality.

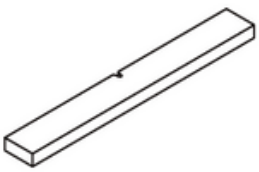
Mechanical Properties



Tensile testing specimen GB/T 1040



Flexural testing specimen GB/T 9341



Impact testing specimen GB/T 1043

The listed physical, mechanical, thermal, and electrical properties are derived from injection-molded test specimens under standard test conditions.

Print Test Condition:

Parameter	Recommended Setting
Extruder Temperature	230–270°C
Build Platform Temperature	95°C
Outline / Perimeter Shells	4
Top / Bottom Layers	4
Infill Percentage	20
Fan Speed	0%
Printing Speed	40 mm/s

Based on: 0.4 mm nozzle and Simplify3D v4.1.2

Notice