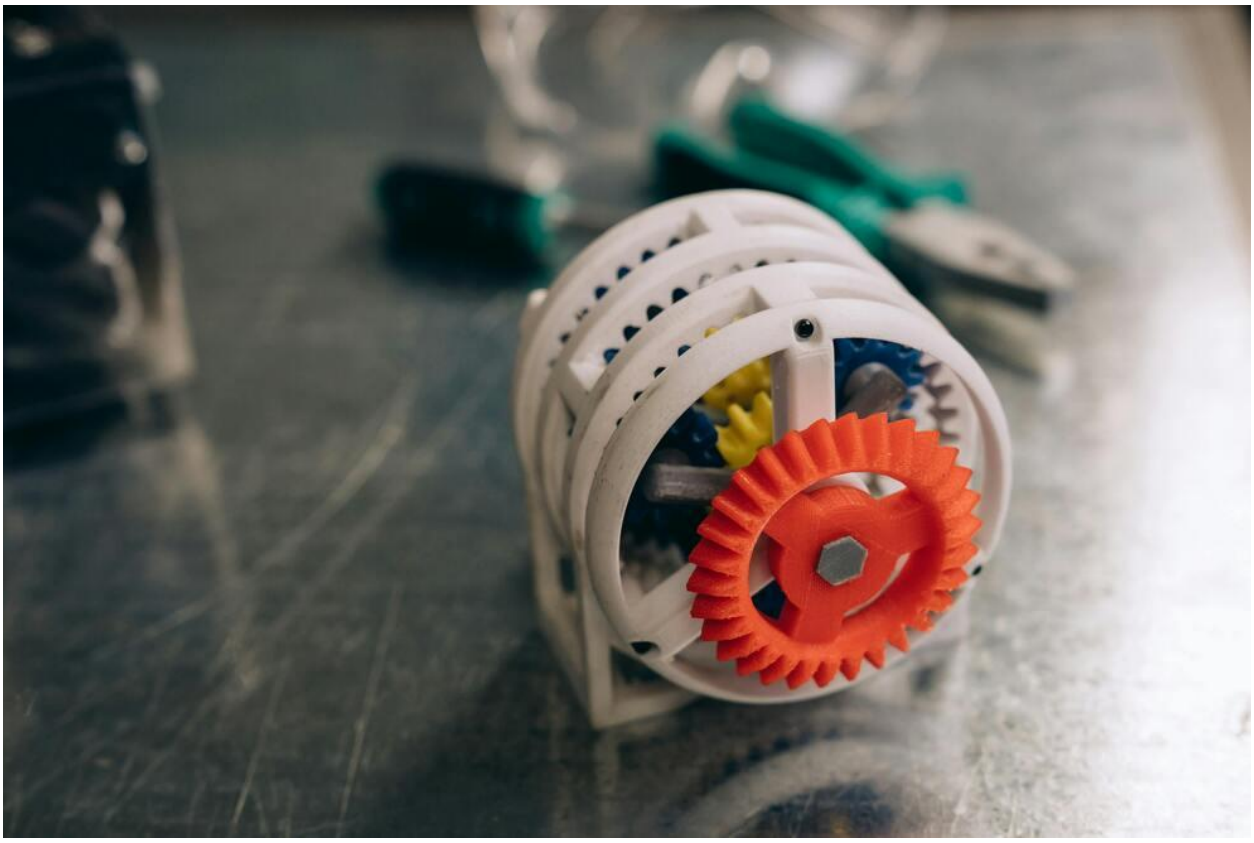
ABS Datasheet



Overview

Designed for tough, heat-resistant prototypes and end-use parts, ABS filament is a top choice for engineers, makers, and manufacturers producing functional components, automotive parts, and enclosures that demand durability, impact strength, and performance in higher-temperature environments.

As-printed Part's Tolerance: ±300μm or 0.3%

Maximum Printing Size: 256*256*256mm

Infill Options: 15%, 30%, 50%, 65%, 85%, 100%

Color Options: 40+

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Material Properties

Density Properties	Metric	Test Standard
Density	1.05g/cm³	ISO 1183
Rheological Properties	**Metric**	**Test Standard**
Melt Flow Rate (MFR)	22-32g/10min	ISO 1133
Thermal Properties	**Metric**	**Test Standard**
Heat Deflection Temperature (HDT)	85℃	ISO 75
Vicat Softening Temperature (VST)	98℃	ISO 306

Mechanical Properties

Tensile Test:

Tensile Strength Metric	Infill	Coordinate Axes	Test Standard
30-32Mpa	100%	X-Y axes	ISO527
38-41Mpa	100%	X-Z axes	ISO527
20-25Mpa	100%	Z-X axes	ISO527
Tensile Modulus Metric	**Infill**	**Coordinate Axes**	**Test Standard**
2000-2100Mpa	100%	X-Y axes	ISO527
2100-2300Mpa	100%	X-Z axes	ISO527
1500-1600Mpa	100%	Z-X axes	ISO527
Elongation at Break Metric	**Infill**	**Coordinate Axes**	**Test Standard**
5-6%	100%	X-Y axes	ISO527
5-6%	100%	X-Z axes	ISO527
4-5%	100%	Z-X axes	ISO527

Flexural Test:

Flexural Strength Metric	Infill	Coordinate Axes	Test Standard
55-56Mpa	100%	X-Y axes	ISO178
67-70Mpa	100%	X-Z axes	ISO178
38-41Mpa	100%	Z-X axes	ISO178
Flexural Modulus Metric	**Infill**	**Coordinate Axes**	**Test Standard**
2100-2200Mpa	100%	X-Y axes	ISO178
2500-2600Mpa	100%	X-Z axes	ISO178
1900-2000Mpa	100%	Z-X axes	ISO178

Impact Test:

Un-notched Impact Strength Metric	Infill	Coordinate Axes	Test Standard
35-40KJ/m²	100%	X-Y Axes	ISO179

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49-60KJ/m²	100%	X-Z Axes	ISO179
5-8KJ/m²	100%	Z-X Axes	ISO179
Notched Impact Strength Metric	**Infill**	**Coordinate Axes**	**Test Standard**
10-15KJ/m²	100%	X-Y Axes	ISO179
23-27KJ/m²	100%	X-Z Axes	ISO179
2-3KJ/m²	100%	Z-X Axes	ISO179

Pros

With high impact strength and excellent heat resistance, FDM printed ABS delivers tough, durable parts that withstand demanding mechanical use and elevated temperatures. Its good machinability, smooth surface finish, and ability to be post-processed with acetone vapor make it ideal for professional prototypes, automotive components, and functional end-use products requiring long-term performance.

Cons

ABS prints can emit noticeable fumes during printing, requiring good ventilation or an enclosed setup. Its higher printing temperature and tendency to warp make bed adhesion and temperature control more critical. While offering excellent strength, prolonged UV exposure can cause discoloration and brittleness, making untreated ABS less suitable for long-term outdoor use.

Applications

Consumer Product Casings Architectural Scale Models Custom Tools

Toys And Hobby Parts Protective Housings and Enclosures

Industrial Jigs and Fixtures Sporting Goods Functional Prototypes

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