



# ABS

Versatile and Impact-Resistant



The BigRep ABS filament is a popular FFF material trusted for its impact resistance, high heat deflection properties, and high-quality prints. The material's strength, lightness, and durability make it a popular choice for both industrial manufacturing and 3D print enthusiasts. Print complex, ready-to-use parts including end-use, factory tooling, and functional prototypes with demanding geometries.

ABS is a thermoplastic polymer made from three monomers: acrylonitrile, butadiene, and styrene. Acrylonitrile delivers chemical resistance, butadiene adds toughness and impact resistance, and styrene provides rigidity and ease of molding. This combination makes ABS a durable, lightweight material ideal for parts that are frequently used and/or subject to moderate impact and heat.



High Impact Resistance



Lightweight



High Heat Deflection



PHYSICAL PROPERTIES	TEST METHOD	VALUE
Density	ISO 1183	1.08 g/cm <sup>3</sup>
Filament Diameter	-	2.85 mm +/- 0.05
Color Availability	-	Black, White
Filament Net Weight	-	2.5, 4.5, 8.0 kg
MECHANICAL PROPERTIES	TEST METHOD	VALUE
Tensile Strength	ISO 527	30 MPa
Tensile Modulus	ISO 527	1400 MPa
Elongation at Break	ISO 527	10%
Flexural Strength	ISO 178	48 MPa
Flexural Modulus	ISO 178	1350 MPa
Charpy Unnotched Impact Strength	ISO 179	70 kJ/m <sup>2</sup>
Charpy Notched Impact Strength	ISO 179	30 kJ/m <sup>2</sup>
THERMAL PROPERTIES	TEST METHOD	VALUE
HDT - B - 0.45 MPa	ISO 75	91 °C
HDT - A - 1.8 MPa	ISO 75	71 °C
Vicat Softening Temperature	ISO 306	100 °C
Glass Transition Temperature (Tg)	DSC	110 °C
Continuous Use Temp. (UL Yellow Card)	UL 746	60 °C
<b>COMPLIANCE</b>	<input checked="" type="checkbox"/> REACH Compliant <input checked="" type="checkbox"/> RoHS Certified <input checked="" type="checkbox"/> FDA Compliant	

PROPERTIES	RECOMMENDED USAGE
Nozzle Temperature	230 - 260 °C
Bed Temperature	90 - 110 °C
Printer Compatibility	BigRep ALTRA 280, BigRep V110 250
Fan Speed	0 - 50%
Surface Adhesion	<ul style="list-style-type: none"> <li>Kapton (additional adhesion using glue, e.g. Magigoo)</li> <li>BigRep SWITCHPLATE</li> </ul>
Drying	ABS is moderately hygroscopic. Recommended drying at 80 °C for 4 - 6 hours.
Storage and Shelf Life	Keep dry, avoid sunlight, and store at room temperature. Use BigRep DRYCON for best results. When stored properly, product has a shelf life of 24 months.
Handling	Use the BigRep Keep-Dry Box for best material printability.
Post-Processing	Wear gloves to avoid possible microdamage to skin. Use a dust mask and protective glasses when processing. Acetone vapors can be used to post-process ASA prints to achieve a completely smooth and glossy surface finish.
Support	<ul style="list-style-type: none"> <li>Breakaway</li> <li>BigRep BVOH</li> </ul>