

# ELIX ABS-3D HI

High Impact ABS material optimized for FDM 3D-printing technology

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## **Major Benefits**

- Mechanically high-performance material
- High impact up to -30°C
- High strength
- Good printability and resolution
- High impact resistance with low temperature ductility
- Well balanced flowability and high toughness material

## **Chemical composition**

Acrylonitrile-butadiene-styrene (ABS) copolymer

## **Physical form**

White to slightly yellowish pellets.

## **3D printing material properties**

<b>Properties</b>	<b>Values</b>
<i>Flowability</i>	<i>Medium</i>
<i>Heat Resistance</i>	<i>Medium</i>
<i>Strength</i>	<i>High</i>
<i>Warping</i>	<i>Standard</i>
<i>Resolution</i>	<i>Good</i>

**ABS General properties**

<b>Properties</b>	<b>Test condition</b>	<b>Unit</b>	<b>Standard</b>	<b>Value</b>
<b>Rheological properties</b>				
Melt Volume- flow Rate	220°C, 10 Kg	cm <sup>3</sup> /10'	ISO 1133	14
<b>Mechanical Properties (23°C /50% H.R.)</b>				
Yield Stress	50 mm/min	MPa	ISO 527-1,2	34
Elongation at Break	1 mm/min	%	ISO 527-1,2	8
Tensile modulus	1 mm/min	MPa	ISO 527-1,2	1500
Flexural modulus	2 mm/min	MPa	ISO 178	1700
Izod notched impact strength	23 °C	KJ/m <sup>2</sup>	ISO 180-1A	30
Izod notched impact strength	- 30 °C	KJ/m <sup>2</sup>	ISO 180-1A	20
Ball Indentation Hardness		N/mm <sup>2</sup>	ISO 2039-1	70
<b>Thermal properties</b>				
Vicat softening temperature	B50, 50 °C/h	°C	ISO 306	90
Burning behavior UL 94	1.6 mm	Class	UL94	HB
<b>Other properties</b>				
Density	25°C	g/cm <sup>3</sup>	ISO 1183-1	1.02

<b>Processing conditions for 3D printing</b>	<b>Value</b>
Temperature resistance	90 °C
Slumping temperature	100 °C
Printing temperature	230 – 250 °C
Recommended printbed temperature	80 – 100 °C

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### ***Disclaimer for sales products***

#### Disclaimer for sales products

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#### Test values

Unless specified to the contrary, the values given have been established on standardised test specimens at room temperature. The figures should be regarded as guide values only and not as binding minimum values. Kindly note that, under certain conditions, the properties can be affected to a considerable extent by the design of the mould/die, the processing conditions and the colouring.

#### Processing note

Under the recommended processing conditions small quantities of decomposition product may be given off during processing. To preclude any risk to the health and well-being of the machine operatives, tolerance limits for the work environment must be ensured by the provision of efficient exhaust ventilation and fresh air at the workplace in accordance with the Safety Data Sheet. In order to prevent the partial decomposition of the polymer and the generation of volatile decomposition products, the prescribed processing temperatures should not be substantially exceeded. Since excessively high temperatures are generally the result of operator error or defects in the heating system, special care and controls are essential in these areas.

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