

Safety information

REGULATION (EC) No. 1272/2008. According to EC criteria regulations this product is not classified as hazardous.

Classification according to EU-directive 67/548/EEC or 1999/45/EC. According to EC criteria this product is not classified as hazardous.

COMPOSITION AND INFORMATION ON THE COMPONENTS

Mixture; This product is a mixture.

CAS-No./EC-No./Index	REACH Number	Quantity	Components	Classification Regulation (EC) No. 1272/2008
CAS-No. 9003-56-9 EC-No. Polymer	-----	>= 99,0%	Acrylonitrile Butadiene Styrene	Not classified

Legally Obligated Information

1 Specific safety, health and environmental regulations and legislation for the substance or mixture.

European inventory of existing commercial chemical substances (EINECS)

The components of this mixture are either included in the EINECS list or exempt.

2 Chemical safety assessment: Does not apply

RoHS (Restriction of Hazardous Substances) and **REACH** (Registration, Evaluation, Authorisation and Restriction of Chemicals). The ABS Filament produced by 3D4MAKERS meets the European RoHS and REACH regulations.

Environmental information

Plastic waste can damage the environment. 3D misprints must be separated with plastic waste together with the Filament reel. 3D4MAKERS is developing a return system for 3D misprints and the Filament reel. **Together we can protect the**

environment!



ABS

Filament

Technical information

Printer settings

Storage information

Safety information

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Technical information

Acrylonitrile-Butadiene-Styrene (ABS) is a thermoplastic and a copolymer that is used for rigid objects. It consists of 5-30% Butadiene, around 50% Styrene and the rest is Acrylonitrile.

ABS is a strong material with high toughness and impact resistance. The maximum operating temperature is between 85 °C and 100 °C, depending on the modifications. The minimum operating temperature is -35 °C. ABS is a flammable polymer to which flame retardant can be added. It also subject to from aging by being exposed to the weather conditions (UV light, oxygen, moisture, heat) because Polybutadiene stimulates the oxidation of Polystyrene. This causes discolouration and the plastic loses its mechanical strength. In order to improve this UV stabilizers can be added.

The 3D4MAKERS ABS Filament contains unique properties because the material has an extremely constant diameter and roundness. On top of that the ABS filament does not come into contact with water during the production process and is directly packaged in a vacuum packaging. These properties make the 3D4MAKERS ABS Filament particularly suitable for FDM and FFF 3D printers.

The material has an excellent adhesion between layers. This results in great improvement of the impact resistance, strength, durability, the printing process and "warping".

The ABS Filament produced by 3D4MAKERS meets the European regulations EC No. 1935/2004, EC No. 2023/2006 and EC No. 10/2011 concerning plastic materials and articles coming into contact with food. The colorants used by 3D4MAKERS to colour the Filament also meet these European regulations

Measurements & Tolerance

Size	Diameter tolerance	Roundness
1,75 mm Filament	+/- 0,05mm	99%
2,85 mm Filament	+/- 0,05mm	99%

Moisture content	< 0,05%	
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Physical properties

Description	Value	Test method
Density	1,05 g/cm³	ISO 1183/B
Melt Mass-Flow Rate (MFR) (220°C/10KG)	15 g/10 min	ISO 1133

Mechanical properties

Description	Value	Test method
Tensile Stress	45 Mpa	ISO 527-2/50
Flexural Modulus	2300 Mpa	ISO 178
Impact strength Notched Izod	19 KJ/m²	ISO 180/A
Tensile Strain	2,50%	ISO 178

Printer settings

Printer settings

Description	Value
Printer nose temperature	220 - 260°C
Heated platform temperature	90 - 110°C

Our experience while printing with the 3D4MAKERS ABS Filament is that it gives better results when used at higher temperatures than other ABS Filaments. This can vary with different printers.

To get the best results while printing we advise you to keep the 3D printer in a room where there is hardly any draft and/or temperature fluctuations. This cannot be a room where people sleep.

When the 3D printer is not being used it is important to keep the 3D4MAKERS ABS Filament in a bag and store it in a cool, dry and dark place.

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