



ASA (Acrylonitrile-Styrene-Acrylate) Filament

Technical information

Printer settings

Storage information

Safety information

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Acrylonitrile-Styrene-Acrylate (ASA) polymers are amorphous and have mechanical properties similar to those of ABS plastics. However, the ASA properties are far less affected by outdoor weathering. The outstanding weather resistance abilities of ASA is due to the acrylic ester elastomer. ASA parts have good chemical and heat resistance, and high impact strength, even at low temperatures. Typical ASA applications are buiding/construction, automotive and recreation parts.

The **3D4MAKERS** ASA Filament contains unique properties because the material has an extremely constant diameter and roundness. On top of that the ASA 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** ASA Filament particularly suitable for FDM and FFF 3D printers. The material has an excellent adhesion between layers which results in great improvement of the impact resistance, strength, durability and the printing process.

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	1,07 g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (220°C/10KG)	12 g/10 min	ASTM D1238

Mechanical properties

Description	Value	Test method
Tensile Strength	47 Mpa	ASTM D638
Flexural Modulus	2210 Mpa	ASTM D790
Impact strength Notched Izod	180 j/m	ASTM D256

Rockwell Hardness (R-Scale)	103	ASTM D785
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Printer settings

Printer settings

Description	Value
Printer nose temperature	240 - 280°C
Heated platform temperature	90 - 110°C

Our experience while printing with the **3D4MAKERS** ASA Filament is that it gives better results when used at higher temperatures than other ASA 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** ASA Filament in a bag and store it in a cool, dry and dark place.

Safety information

REGULATION (EC) No. 1272/2008. According to EC 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./EG No./Index	REACH Number	Quantity	Component	Classification Regulation (EC) No. 1272/2008
CAS No. 24980-41-4 EG No. Polymer	-----	100 %	2-oxepanone homopolymer	Not classified

Legally Obligated Information

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

2 Chemical safety assessment: Does not apply

RoHS (Restriction of Hazardous Substances) and **REACH** (Registration, Evaluation, Authorisation and Restriction of Chemicals).

The PCL Filament produced by **3D4MAKERS** meets the European RoHS and REACH guidelines.

Recommended restrictions

Do not use in medical applications involving permanent implantation in the human body.

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

