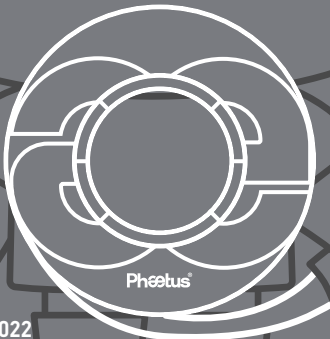




# Phætus<sup>®</sup>

## Technical Data Sheet



# WELCOME

*Supreme Pursuit.*



# Company Introduction

## About us

Phaetus is dedicated to the design of the nozzle system for high-end 3D printers and the research and development of materials and printing processes. We also provides customers with software and hardware integrated system solutions for materials, printing heads and printing processes based on applications.

Through continuous product innovation, we try to solve customers' pain points, and for global 3D printer users, provide high-end product designs and solutions is the direction and goal of our efforts.

Focusing on the market of core parts of middle and high-end 3D printing equipment, we insist that R&D and innovation of products and technologies are the core driving forces on the road of development. To this end, Phaetus has built a strong R&D and marketing team, developed a number of global best-selling products, obtained dozens of patents, established sales channels in more than 100 countries and regions around the world, and has high visibility and influence among 3D printing enthusiasts and communities.

Deep research in the 3D printing industry, become a leader in the 3D printing subdivision field! In the future, we will continue to work hard and innovate constantly!

## Contact us

For any inquiries or technical support, please contact: [support@phaetus.com](mailto:support@phaetus.com)



# aeWorthy™ ABS-GF

Orderless ABS-GF 3D Printing Filament



## Product Description

aeWorthy™ ABS-GF is an ABS-based filament specially developed for 3D printing and it is reinforced with 10% glass fiber. Compared with other ABS filaments, it has a much lower odor and excellent dimensional stability.

# Product Advantages

aeWorthy™ ABS-GF is a high-strength ABS-based 3D printing filament with outstanding mechanical properties. Due to the addition of chopped glass fibers, the tensile strength of its 3D printed parts in the XY axis direction can be close to 40MPa. The glass fiber has also improved its dimensional stability. Therefore, aeWorthy™ ABS-GF is ideal for printing functional prototypes, jigs and low-volume production parts.

The main raw material of aeWorthy™ ABS-GF is an ABS resin synthesized by continuous bulk polymerization technique. Thanks to this advanced production process, the residual amount of solvents and monomers used in the production process in the final ABS product is so low that the filament has a low odor during printing.

aeWorthy™ ABS-GF can be used together with aeSupport™ S-Multi Quick-Remove Support Material to solve the poor surface of complex model above supports.

## Available

Colors	Beige / Black / Red / Yellow / Orange
Diameter	1.75mm/2.85mm
Net weight	1kg

# Material Properties

Property	Testing method	Typical value
Density	ISO 1183	1.1g/cm³
Glass transition temperatur	ISO 11357	101 °C
Melt index	240°C, 2.16kg	4g/10 min
Vicat softening temperature	ISO 306	106 °C
Determination of temperature	ISO 75: Method A	92°C (1.80MPa)
	ISO 75: Method B	96°C (0.45MPa)
Tensile breaking strength (X-Y)		39.28 ± 0.93 MPa
Elongation at break (X-Y)	ISO 527	2.43 ± 0.20 %
Young's Modulus (X-Y)		2826 ± 56 MPa
Tensile breaking strength (Z)		19.02 ± 0.9 MPa
Young's Modulus (Z)	ISO 527	2331 ± 130 MPa
Elongation at break (X-Y)		1.28 ± 0.32 %
Bending strength (X-Y)		66.21 ± 0.42 MPa
Bending Modulus (X-Y)	ISO 178	2681 ± 24.99 MPa
Charpy impact strength (X-Y)	ISO 179	8.17 ± 0.66 KJ/m²

Specimens printed under the following conditions: Nozzle size 0.4mm , Nozzle temp 250°C, Bed temp 100°C, Print speed 50mm/s, Infill 100%, Infill angle ±45°

## Recommended printing conditions

Nozzle temperature	250-270°C
Recommended nozzle diameter	≥0.4mm
Recommended build surface treatment	Glass, PEI Film or PC Film
Build plate temperature	100-110°C
Raft separation distance	0.18-0.2mm
Cooling fan speed	0%-20%
Print speed	30-90 mm/s
Retraction distance	2-5 mm
Retraction speed	1800-3600 mm/min
Recommended Support Material	aeSupport™ S-Multi Quick-Remove Support

### *Additional Suggestions:*

1. Compared with PLA, PETG and other materials, ABS materials need a higher chamber temperature to help release the residual stress during the printing process. Please keep the printer chamber closed during the printing process. It can effectively avoid printed parts from warping and cracking. If the device has a heated chamber, it is recommended to set the temperature of heated chamber between 60-80°C.
2. If the ABS-GF filament has been unpacked for a long time and the printing quality starts to degrade during the printing process, please dry the filament at 70-80°C for 4-6 hours before printing.
3. Although aeWorthy™ ABS-GF has much less odor compared with similar products, it is still recommended to place the printer in a well-ventilated area during printing.

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