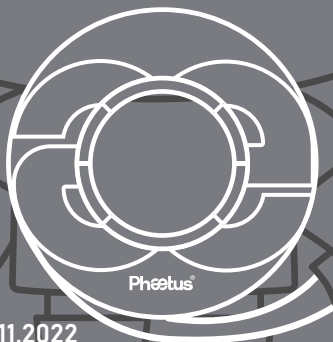




Phætus[®]

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



aeWorthy™ ASA-GF

10% chopped glass fiber reinforced ASA 3D Printing Material

Product Description

aeWorthy™ ASA-GF is a high-strength ASA type material with excellent mechanical properties. The tensile strength of its 3D printing parts in the XY direction can reach 40MPa. Due to the addition of chopped glass fiber, its anti-warpage ability and dimensional stability have been significantly improved, and ASA material has excellent anti-ultraviolet aging performance, which is very suitable for printing large size models and outdoor applications.

aeWorthy™ ASA-GF can work with aeSupport™ S-Multi Quick-Remove Support Material to solve the problem of poor molding effect of complex model support surface.



Product Advantages

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

Available

| | |
|------------|---------------------------------|
| Colors | Natural/Black/Red/Yellow/Orange |
| Diameter | 1.75mm/2.85mm |
| Net weight | 1kg |



Mechanical Properties of Printed Specimens

| Property | Testing method | Typical value |
|---------------------------------|------------------|-------------------------------|
| Density | ISO 1183 | 1.10 g/cm ³ |
| Glass transition temperature | ISO 11357 | 98°C |
| Melt index | 250°C, 2.16kg | 4 g/10min |
| Vicat softening temperature | ISO 306 | 106°C |
| Determination of temperature | ISO 75: Method A | 90°C (1.8MPa) |
| | ISO 75: Method B | 95°C (0.45MPa) |
| Tensile breaking strength (X-Y) | | 45.78 ± 1.08 MPa |
| Elongation at break (X-Y) | ISO 527 | 3.05 ± 0.18 % |
| Young's Modulus (X-Y) | | 2871.68 ± 96.09 MPa |
| Tensile breaking strength (Z) | | 30.86 ± 1.74 MPa |
| Young's Modulus (Z) | ISO 527 | 2352.06 ± 107.69MPa |
| Elongation at break (Z) | | 1.76 ± 0.25% |
| Bending strength (X-Y) | | 79.59 ± 1.74 MPa |
| Bending Modulus(X-Y) | ISO 178 | 2751.21 ± 34.44 MPa |
| Charpy impact strength (X-Y) | ISO 179 | 7.08 ± 0.83 kJ/m ² |

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 | ≥0.2mm |
| Recommended build surface | Glass、PEI Film or PC Film |
| Build plate temperature | 100-110°C |
| Raft separation distance | 0.2mm |
| Cooling fan speed | 0%-20% |
| Print speed | 30-90 mm/s |
| Retraction distance | 1-5 mm |
| Retraction speed | 1800-3600 mm/min |
| Recommended Support Material | aeSupport™ S-Muti Quick-Remove Support |

Additional Suggestions :

1.Compared with PLA and PETG filaments, ASA/ABS needs a higher environment temperature to release the residual stress during printing. Please keep the chamber closed to avoid warping and layer separation issues during the process. If your printer has a heated enclosure already, please keep the chamber temperature between 60-80°C.

2.If the ASA-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™ ASA-GF has much less odor compared with similar products, it is still recommended to place the printer in a well-ventilated area during printing.

4.It is recommended to use hardened steel and above grade nozzles made by Phaetus, which can effectively improve the print quality.

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