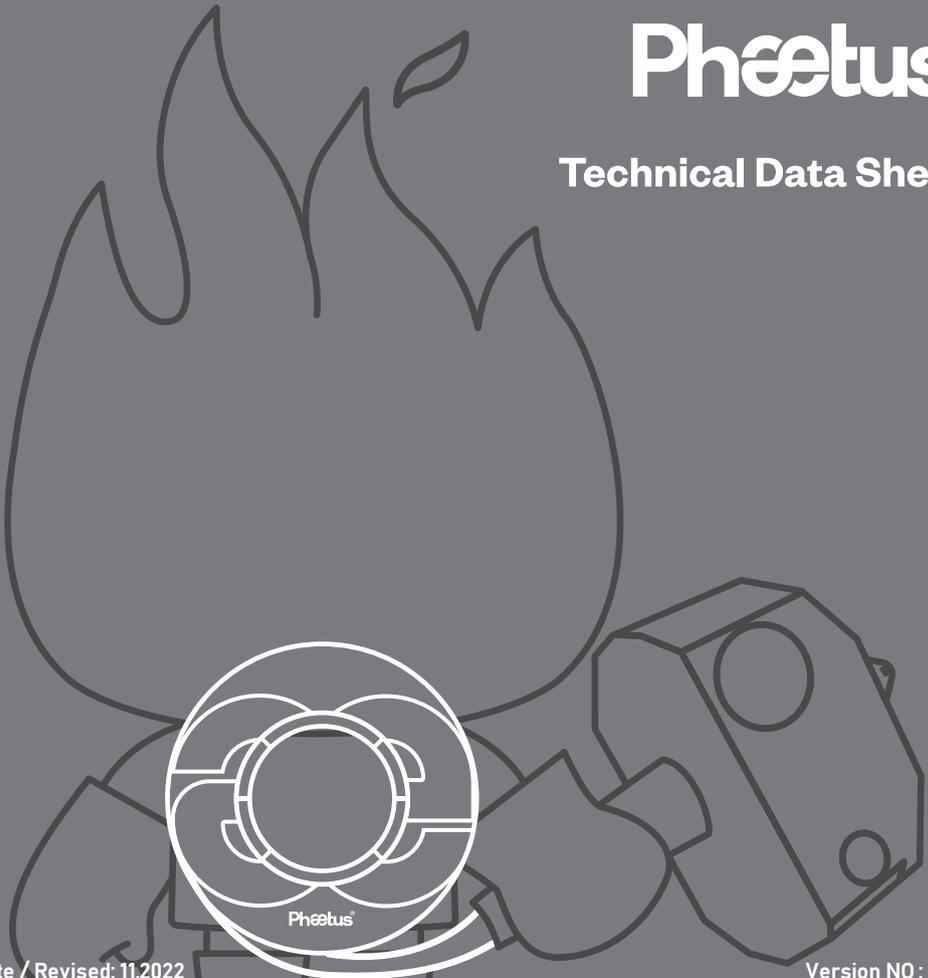


Phætus[®]

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



aeSupport™ S-Multi

aeSupport™ S-Multi Quick-Remove Support Material



Product Description

aeSupport™ S-Multi Quick-Remove Support Material can achieve fast and easy peeling by adjusting the bonding strength to the support surface of the body material and the bonding strength of S-Multi itself. S-Multi Quick-Remove Support Material does not require the use of water or solvents during the removal of the support and does not produce water pollution, which is safe and environmentally friendly. It can be used in dual printhead FDM printers or 2-in/1-out FDM printers.

S-Multi Quick-Remove Support Material is compatible with the following Phaetus® industrial grade material products.

aeForce™ PET-GF

aeForce™ PET-CF

aeForce™ EasePA12-CF

Product Advantages

- Smart Adhesion Technology

aeSupport™ S-Multi can provide a moderate bond strength to the body material through formulation and process modifications, which ensures that the body material can be molded to the support surface and can be easily separated from the support surface of the body material during removal of the support.

- Quick Remove Technology

aeSupport™ S-Multi has dramatically reduced its own interlayer bond strength through formulation and process modifications, and can be easily torn apart during removal process.

- ECO Friendly

The aeSupport™ S-Multi does not require the use of water or solvents during the use process, does not produce water pollution, and is safe and environmentally friendly.

Available

Colors	Beige
Diameter	1.75mm/2.85mm
Net weight	500g/1kg/2.5kg

Material Properties

Property	Testing method	Typical value
Density	ISO 1183	1.16 g/cm ³
Water absorption	ISO 62: Method 1	0.4 %
Melting Temperature	ISO 11357	168 °C
Melt index	270 °C, 2.16 kg	5.1

Specimens printed under the following conditions: Nozzle temp 320°C, Bed temp 80°C, Print speed 45mm/s, Infill 100%, Infill angle $\pm 45^\circ$
Post-processing: 100°C Annealing 8 hours

Recommended printing conditions

Nozzle Temperature	260-280 °C
Recommended Nozzle Diameter	0.4-1.0 mm
Recommended build surface treatment	Coating with PVP glue
Build plate temperature	60-80 °C
Raft separation distance	0 mm
Recommended Support Infill Ratio	15%-20%
Recommended Dense Support Layers	3-5
Vertical Offset Top/Down Layers	0
Horizontal offset	0.3-0.6mm
Support infill outlines	0-1
Cooling fan speed	Off
Print speed	30-120mm/s
Retraction distance	1-3mm
Retraction speed	1800-3600mm/min
Recommended support material	aeForce™ PET-CF/PET-GF/EasePA12-CF

Additional Suggestions:

aeSupport™ S-Multi very easy to absorb moisture within the environment, and printing after absorbing moisture will result oozing, extruding with bubbles and rough surface appearance, thus reducing print quality. It is recommended that put the filament into a dry box (humidity below 15%) immediately after opening the aeSupport™ S-Multi vacuum foil bag for printing. Please put the unused filament back into the original aluminum foil bag for sealed storage.

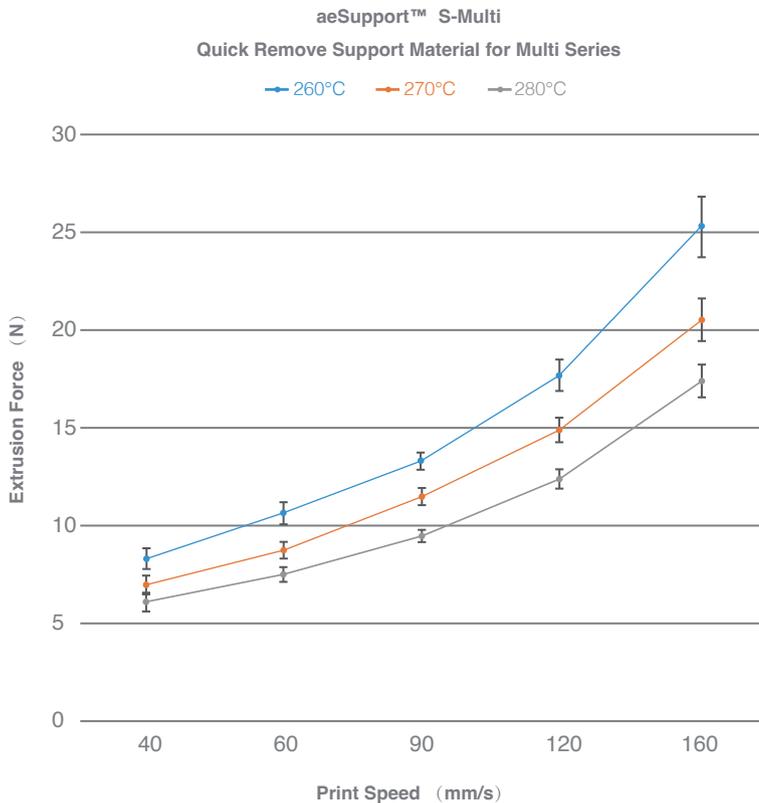
After the material is damp, there will be more printing oozing, bubbles extruded and rough printing surface. Please dry the filament in an oven at 80-100°C for 4-6h to restore the printing quality of aeSupport™ S-Multi.

It is recommended to use hardened steel and above grade nozzles made by Phaetus, which can effectively improve the print quality. Besides, it is recommended that the thickness of the heating block is longer 12mm.

In dual-extruder printing mode, the material in the standby nozzle will deteriorate due to prolonged heating, and the deteriorated material needs to be squeezed out before the print nozzle is switched, so it is necessary to use the Wipe wall or Wipe tower function in the slicing software.

After the printing is completed, the printed part can be annealed and then the aeSupport™ S-Multi removal step can be performed. During the annealing process, aeSupport™ can play the role of supporting the body material, reducing the dimensional deformation of the body material and improving the mechanical properties of the body material. Annealing conditions: set according to the requirements of the body material.

Extrusion Force vs Print Speed Test



Test parameters: 12mm length brass heat block, BMG extruder, Phaetus Hardened Steel Nozzle, Nozzle size 0.4mm, Layer Height 0.2mm.

Phætus®

