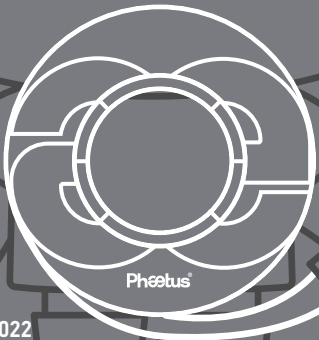




# Phætus<sup>®</sup>

## 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!

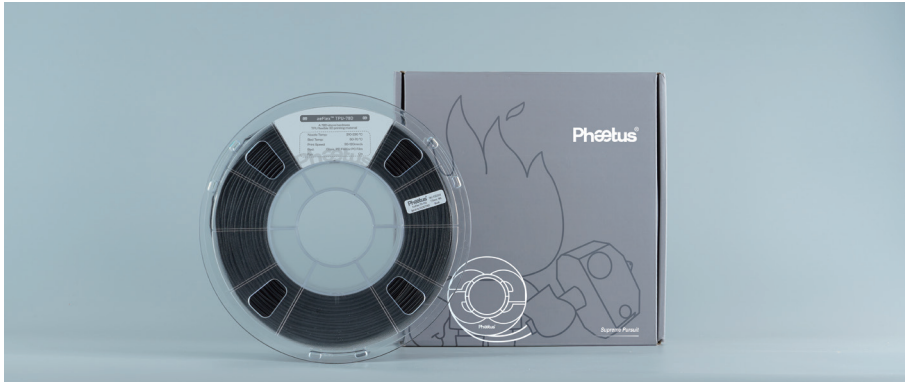
## Contact us

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



# aeFlex™ TPU-78D

A 78D shore hardness TPU flexible 3D printing material



## Product Description

aeFlex™ TPU-78D is a high hardness TPU 3D printing material, higher surface hardness and modulus greatly reduce the TPU in the printing process because of too soft to jam the extruder, improve the success rate of printing.

## Product Advantages

- High Flowability

Phaetus® improved the fluidity of TPU material, so that the material can be easily pushed in the extruder with only a small thrust. High speed printing ( $\geq 100\text{mm/s}$ ) can be easily realized by direct extruders, and conventional speed printing (30-60mm / s) can be realized by bowden extruders.

# Available

Colors	White / Black
Diameter	1.75mm/2.85mm
Net weight	1kg

# Material Properties

Property	Testing method	Typical value
Density	ISO 1183	1.28g/cm <sup>3</sup>
Hardness	ISO 7619	78D
Melt index	200°C, 2.16kg	22g/10min
Vicat softening temperature	ISO 306	122°C
Tensile breaking strength(X-Y)		36.55±2.11MPa
Young's Modulus		1026.21±220.80MPa
Elongation at break (X-Y)	ISO 527	237.38±13.49%
Tensile stress at 100% (X-Y)		28.81±0.42MPa
Tensile stress at 200% (X-Y)		33.81±1.05MPa
Bending strength (X-Y)	ISO 178	18.91±0.29MPa
Bending Modulus (X-Y)		532.07±46.37MPa

Specimens printed under the following conditions: Nozzle size 0.4mm, Nozzle temp 210°C, Bed temp 50°C, Print speed 60mm/s, Infill 100%, Infill angle ±45°.

## Recommended printing conditions

Nozzle temperature	210-230°C
Recommended nozzle diameter	≥0.2mm
Recommended build surface treatment	Glass, PEI Film or PC Film
Build plate temperature	50-70°C
Raft separation distance	0.18-0.22mm
Cooling fan speed	On
Print speed	30-120 mm/s
Retraction distance	1-5 mm
Retraction speed	1800-3600 mm/min

### *Additional Suggestions:*

1. TPU material is very easy to absorb moisture when exposed to air, 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 FusFlex™ TPU-78D vacuum foil bag for printing. Please put the unused filament back into the original aluminum foil bag for sealed storage.

2. 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 70-80°C for 4-6h to restore the printing quality of FusFlex™ TPU-78D.

# Phætus<sup>®</sup>

