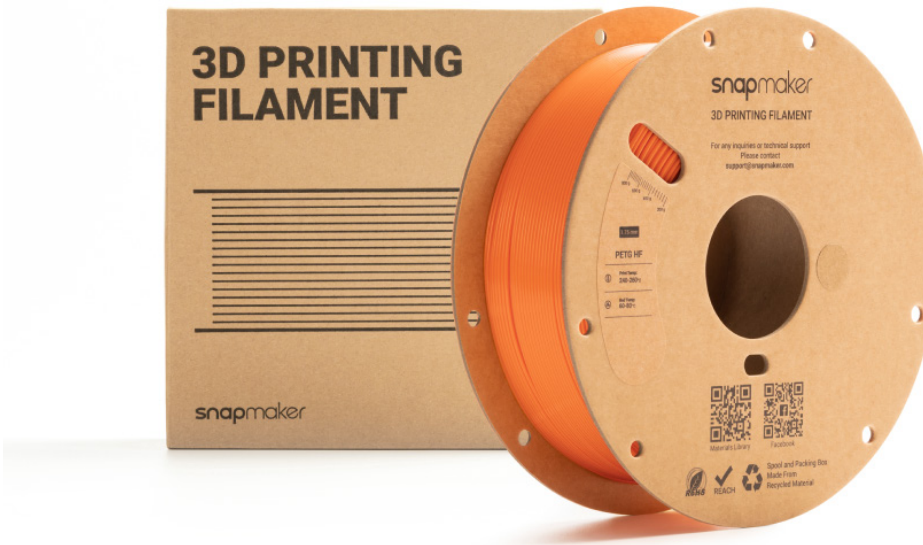
snapmaker | **PETG HF**

Technical Data Sheet



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1 Filament Introduction

Snapmaker PETG HF is engineered for high-speed printing at up to 300 mm/s, significantly reducing print time while maintaining excellent quality. With its reliable toughness and strength, it is a practical choice for durable functional parts like hooks and holders. When used with the Snapmaker U1, it supports RFID recognition for a more intelligent printing experience.

2 Specifications

Subjects	Data
Diameter	1.75 ± 0.02 mm
Net Filament Weight	1 kg
Length	320 m/kg
Spool Material	Cardboard Spool
Spool Size	Diameter: 200 mm; Height: 66 mm

3 Recommended Printing Settings

Subjects	Data
Drying Settings Before Printing	65°C , 6 h
Printing and Storage Humidity	< 20% RH (Sealed, with Desiccant)
Nozzle Size	0.2/0.4/0.6/0.8 mm
Nozzle Temperature	240–260°C
Bed Type	PC Plate, Textured PEI Plate
Bed Surface Preparation	Glue
Bed Temperature	60–80°C
Cooling Fan	ON, 20–40%
Printing Speed	< 300 mm/s
Retraction Length	1–3 mm
Retraction Speed	30 mm/s

Printing Tips

1. Drying & Storage

- **Pre-Dry**: This filament is pre-dried and vacuum-sealed for immediate use upon opening. However, PETG is sensitive to moisture; if left exposed for a long time, we recommend drying it at 65°C for 6 hours before printing to ensure the best results.
- **Re-Dry**: If the filament has been left out for a while, always re-dry it before use.
- **Storage**: Once unboxed, it is best to keep the filament in a sealed container with desiccant.

2. Printing

- **Moisture Control**: Due to its high hygroscopicity, we recommend printing PETG directly from a sealed container with desiccant to ensure optimal quality. If exposed to air for a long time, print quality may significantly degrade. If you hear popping or crackling sounds during extrusion, the filament must be dried.
- **If a Sealed Container with Desiccant Is Unavailable**: Consider shortening the print time by reducing the overall model size, lowering the infill density, or increasing the layer height to minimize moisture exposure.
- **Cooling & Adhesion**: Print with the cooling fan turned off or at a very low speed. Rapid cooling can significantly weaken layer adhesion in PETG. If you still encounter adhesion issues while the fan is off, try increasing the printing temperature.
- **Flow Rate**: For optimal performance, we recommend a maximum volumetric speed of 15 mm^3/s.

4 Properties

Physical Properties

Subjects	Testing Methods	Data
Density	ISO 1183	1.30 g/cm³ at 23°C
Melt Index	230°C , 2.16 kg	16.3 g/10 min
Melting Temperature	DSC, 10 °C/min	N/A
Glass Transition Temperature	DSC, 10 °C/min	71.24°C
Decomposition Temperature	TGA, 20 °C/min	405.49°C
Crystallization Temperature	DSC, 10 °C/min	N/A
Vicar Softening Temperature	ISO 306, GB/T 1633	75°C
Heat Deflection Temperature	ISO 75, 1.8 MPa	69°C
Heat Deflection Temperature	ISO 75, 0.45 MPa	65°C
Saturated Water Absorption Rate	23°C, 70% RH	0.51%

Mechanical Properties

Subjects	Testing Methods	Data
Young's Modulus (X-Y)	ISO 527, GB/T 1040	2311.11 ± 92.41 MPa
Young's Modulus (Z)	ISO 527, GB/T 1040	2202.91 ± 52.34 MPa
Tensile Strength (X-Y)	ISO 527, GB/T 1040	47.96 ± 4.88 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	45.71 ± 1.76 MPa
Breaking Elongation Rate (X-Y)	ISO 527, GB/T 1040	9.33 ± 6.57%
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	3.54 ± 2.35%
Bending Modulus (X-Y)	ISO 178, GB/T 9341	2277.34 ± 198.09 MPa
Bending Modulus (Z)	ISO 178, GB/T 9341	1958.74 ± 126.39 MPa
Bending Strength (X-Y)	ISO 178, GB/T 9341	80.08 ± 3.53 MPa
Bending Strength (Z)	ISO 178, GB/T 9341	57.65 ± 5.63 MPa
Impact Strength (X-Y)	ISO 179, GB/T 1043	4.95 ± 0.55 kJ/m² (Notched); 20.24 ± 3.95 kJ/m²
Impact Strength (Z)	ISO 179, GB/T 1043	15.74 ± 3.91 kJ/m²

Other Physical and Chemical Properties

Subjects	Data
Odor	Odorless
Composition	Thermoplastic Polyester
Skin Hazards	Non-Hazardous
Chemical Stability	Stable under normal storage and handling conditions
Solubility	Insoluble in Water
Resistance to Acid	N/A
Resistance to Alkali	N/A
Resistance to Organic Solvent	N/A
Resistance to Oil and Grease	Good
Flammability	Flammable
Combustion Products	Water, Carbon Oxides
Odor of Combustion Products	Pungent Odor

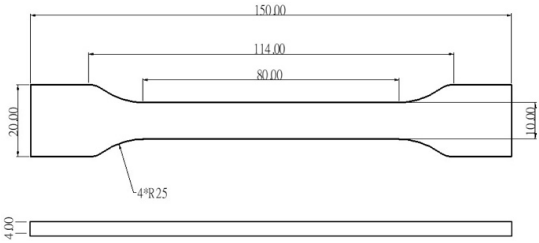
5 Specimen Test

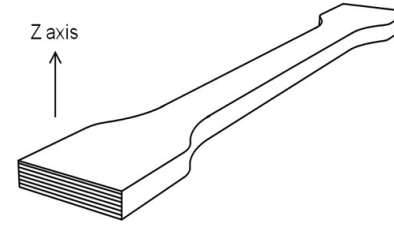
Specimen Printing Conditions

Subjects	Data
Nozzle Temperature	240°C
Bed Temperature	80°C
Printing Speed	50 mm/s
Infill Density	100%

Based on 0.4 mm nozzle. Printing conditions may vary with different nozzle diameters.

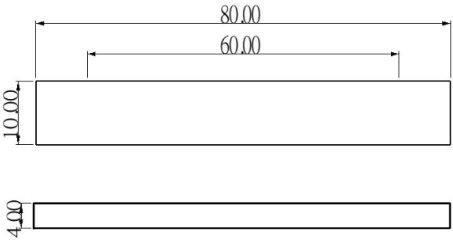
Tensile Testing Specimen

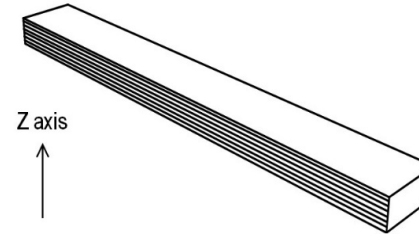




ISO 527, GB/T 1040

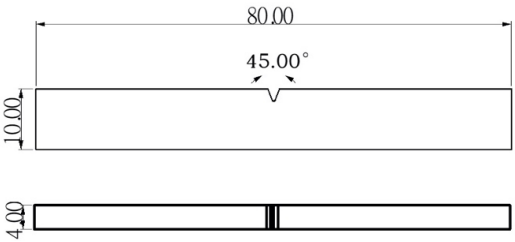
Flexural Testing Specimen

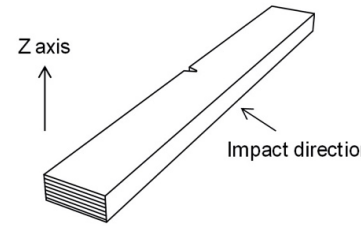




ISO 178, GB/T 9341

Impact Testing Specimen

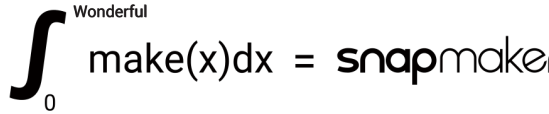




ISO 179, GB/T 1043

6 Disclaimer

The performance and printing parameters of the aforementioned filaments are obtained by Snapmaker through testing filament samples with sample 3D printers. All data provided is for reference and comparison purposes only, and does not constitute design specifications or any warranty of quality. Actual 3D printing quality and final part performance are subject to various factors including, but not limited to, printer equipment, model design, environmental conditions, and printing parameters. Users shall independently evaluate the compliance and safety of printed models and finished parts, including legal compliance, application safety, and structural reliability. Snapmaker shall not be held liable for any direct or indirect losses arising from the use of the aforementioned filaments, including equipment damage, print failure, personal injury, and property damage.



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