

# FIL-A-GEHR®

Filaments for professional 3D printing



 **PETG**

**FIL-A-GEHR PETG®** is characterized by high impact strength and easy printability. Due to its very good melt strength, small, detailed parts and also large parts can be printed with low warpage. The good self-bonding ability ensures excellent layer adhesion. Compared to PLA, **FIL-A-GEHR PETG®** is less prone to moisture retention, is significantly more weather-resistant and more resistant to UV light. It also shows a good chemical resistance.

**FEATURES FIL-A-GEHR**

- » Highest precision in diameter and roundness
- » Filaments made of high-quality raw materials
- » Compatible with all open-system 3D printers
- » Low-emission and odour free
- » Void-free
- » Good layer adhesion
- » Ideal flow behaviour while printing
- » Carefully spooled and packed in easy to use aluminium-laminated resealable zip bags

**PRODUCT RANGE**

diameter	1 kg spool (~2,2 lbs)
1.75 mm 0.07"	● ● ○
2.85 mm 0.11"	● ● ○

Colours: ● black ● red ○ white



**DISTINCTIVE FEATURES FIL-A-GEHR PETG®**

- » High impact strength
- » Easy processing
- » High self-bonding ability
- » High melt strength
- » Very good self-linking capabilities
- » High strength and durability of the printed parts
- » 100 % recyclable
- » Moisture: ≤ 0.3 %
- » Pressure nozzle temperature 230°C – 250°C, printing plate temperature 70°C - 90°C

**TYPICAL APPLICATIONS**

- » 3D printing applications where easy processing and high toughness are key
- » Detailed and multiple parts even in small designs



**GEHR, Specialist In Plastics – Premium Quality Since 1932**

We extrude thermoplastic semi-finished materials and rank amongst the global leading producers of technical semi-finished products. **FIL-A-GEHR®** expands our product range with plastic filaments for 3D printers. GEHR produces the filaments in Mannheim and has been representing innovation and premium quality since 1932.

**TECHNISCHE DATEN FIL-A-GEHR PETG®**

Properties	Parameters	Units	Values
<b>General Properties</b>			
Specific gravity ( $\rho$ )	ISO 1183	g/cm <sup>3</sup>	1.29
Water absorption	ISO 62	%	0.12
Moisture	ISO 62	%	0.3

<b>Mechanical Properties</b>			
Tensile strength at yield ( $\sigma_S$ )	ISO 527	MPa	53
Elongation at yield ( $\varepsilon_S$ )	ISO 527	%	4
Tensile strength at break ( $\sigma_R$ )	ISO 527	MPa	53
Elongation at break ( $\varepsilon_R$ )	ISO 527	%	4
Impact strength ( $a_n$ )	ISO 179	kJ/m <sup>2</sup>	non break
Notch impact strength ( $a_k$ )	ISO 179	kJ/m <sup>2</sup>	4.5
Ball indentation ( $H_k$ ) / Rockwell hardness	ISO 2039-1	N/mm <sup>2</sup>	-
Shore-D	ISO 868		76
Flexural strength ( $\sigma_{B, 3,5\%}$ )	ISO 178	MPa	71
Modulus of elasticity ( $E_t$ )	ISO 527	MPa	3000

<b>Thermal Properties</b>			
Vicat-softening point (VST/B/50)	ISO 306	°C	78
Heat deflection temperature (HDT/B)	ISO 75	°C	62
Glass transition temperature ( $T_G$ )	ISO 3146	°C	80
Melting temperature ( $T_m$ )	ISO 3146	°C	-

<b>Printing Properties</b>			
Pressure nozzle temperature		°C	235-255
Printing plate temperature		°C	75-85
Build chamber temperature		°C	-
Nozzle diameter		mm	0.40
Print speed		mm/s	50
Fan speed		%	<50
Predrying temperature		°C	65
Predrying time		h	6

All properties are measured under laboratory conditions using the analytical method shown. The limits in these specifications apply only to data obtained using the specified test methods. Different analysis methods or analysis conditions can lead to different values.