

FIL-A-GEHR®

Filaments for professional 3D printing



 **PET**


MEDI-GEHR®

MEDI-FIL-A-GEHR PET MG® is suitable for medical and pharmaceutical applications in direct body contact with tissue, bone, skin and mucous membrane up to 24 hours. They have been tested and evaluated by independent, accredited test laboratories and meet the following biocompatibility requirements:

- » ISO 10993-5: Tests for in vitro cytotoxicity
- » ISO 10993-18: Chemical characterization of materials
- » USP Class VI



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"	⊕ ○

Colours: ⊕ transparent ○ white

DISTINCTIVE FEATURES MEDI-FIL-A-GEHR PET MG®

- » Very good chemical resistance
- » Very high impact strength
- » High surface hardness and hydrolysis resistance
- » High creep resistance
- » Good sliding friction properties and abrasion resistance
- » Good electrical insulation properties
- » High resistance to gamma radiation
- » Pressure nozzle temperature 260°C, printing plate temperature 90°C

TYPICAL APPLICATIONS

- » Operating room lights
- » Housings
- » Medical components



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.

TECHNICAL DATA MEDI-FIL-A-GEHR PET MG®

Properties	Parameters	Units	Values
General Properties			
Specific gravity (ρ)	ISO 1183	g/cm ³	1.18
Moisture absorption	ISO 62	%	0.09
Maximum permissible service temperature	UL746B	°C	75

Mechanical Properties			
Tensile strength at yield (σ_S)	ISO 527	MPa	52
Elongation at yield (ε_S)	ISO 527	%	6
Tensile strength at break (σ_R)	ISO 527	MPa	58
Elongation at break (ε_R)	ISO 527	%	185
Impact strength (a_n)	ISO 179	kJ/m ²	n. b.
Notch impact strength (a_k)	ISO 179	kJ/m ²	95
Ball indentation (H_k)	ISO 2039-1	N/mm ²	81
Flexural strength ($\sigma_{B, 3,5\%}$)	ISO 178	MPa	63
Modulus of elasticity (E_t)	ISO 527	MPa	1600

Thermal Properties			
Heat deflection temperature (HDT/A)	ISO 75	°C	108
Heat deflection temperature (HDT/B)	ISO 75	°C	-
Coef. of linear thermal expansion (α)	ISO 11359	K ⁻¹ ·10 ⁻⁴	0.8
Glass transition temperature (T_G)	ISO 3146	°C	108
Melting temperature (T_m)	ISO 3146	°C	90

Printing Properties			
Pressure nozzle temperature		°C	255-260
Printing plate temperature		°C	90
Build chamber temperature		°C	-
Nozzle diameter		mm	0.40
Print speed		mm/s	50
Fan speed		%	50
Predrying temperature		°C	120
Predrying time		h	8

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.