FIL-A-GEHR®

Filaments for professional 3D printing

MEDI-GEHR®
certified for medical products
GEHR

PEEK

MEDI-GEHR®

PLASTICS ENGINEERED BY GEHR®

MEDI-FIL-A-GEHR PEEK 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: ● natural

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

» Excellent combination of strength, stiffness and toughness
» Low moisture absorption
» Exceptional chemical resistance
» Maximum continuous operating temperature 260 °C
» Excellent sterilisation and hydrolysis resistance
» Self-extinguishing, low smoke emission
» Pressure nozzle temperature 375°C, printing plate temperature 180°C
» Printing room temperatur 180°C

TYPICAL APPLICATIONS

» Surgical and dental instruments
» Bearing cages
» In vitro diagnostics

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.

GEHR GmbH Casterfeldstraße 172 / D - 68219 Mannheim/ T: +49 - 621/87 89 – 164 / 3D@gehr.de
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TECHNICAL DATA MEDI-FIL-A-GEHR PEEK MG®

Properties	Parameters	Units	Values
General Properties			
Specific gravity (ρ)	ISO 1183	g/cm³	1.32
Water absorption	ISO 62	%	0.
Moisture	ISO 62	%	0.07
Maximum permissible service temperature	UL746B	°C	260
Lower permissible service temperature	UL746B	°C	-40
Mechanical Properties			
Tensile strength at yield (σ_S)	ISO 527	MPa	115
Elongation at yield (ε_S)	ISO 527	%	7
Tensile strength at break (σ_R)	ISO 527	MPa	67
Elongation at break (ε_R)	ISO 527	%	16
Impact strength (a_n)	ISO 179	kJ/m²	no break
Notch impact strength (a_k)	ISO 179	kJ/m²	4
Ball indentation (H_k) / Rockwell hardness	ISO 2039-1	N/mm²	250 / M 99
Shore-D	ISO 868		90
Flexural strength ($\sigma_{B\ 3,5\ \%}$)	ISO 178	MPa	170
Modulus of elasticity (E_t)	ISO 527	MPa	4210
Thermal Properties			
Vicat-softening point (VST/B/50)	ISO 306	°C	250
Heat deflection temperature (HDT/B)	ISO 75	°C	240
Coef. of linear thermal expansion (α)	ISO 11359	$K^{-1}*10^{-4}$	0.47
Thermal conductivity at 20 °C (λ)	ISO 22007-4	W/(m*K)	0.25
Glass transition temperature (T_G)	ISO 3146	°C	143
Melting temperature (T_m)	ISO 3146	°C	340
Printing Properties			
Pressure nozzle temperature		°C	390-410
Printing plate temperature		°C	130-140
Build chamber temperature		°C	>80
Nozzle diameter	(hardend steel)	mm	0.40
Print speed		mm/s	50
Fan speed	(activated on layer 4)	%	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.

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