

FIL-A-GEHR®

Filaments for professional 3D printing



 **PC-FR**

FIL-A-GEHR® PC-FR is a flame-retardant polycarbonate with high heat resistance and high impact strength. The polycarbonate has been optimized for the 3D printing process.

FEATURES OF FILAMENTS MADE BY 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	

Colours:  white



DISTINCTIVE FEATURES FIL-A-GEHR® PC-FR

- » High mechanical strength
- » High dimensional stability
- » High impact strength
- » Low water absorption
- » UV stabilized
- » Raw material complies with ISO10093-5
- » Inherent flame retardant (UL94-V0)
- » Pressure nozzle temperature 270°C,
- » Printing plate temperature 90°C
- » Printing room temperature 60°C

TYPICAL APPLICATIONS

- » Mass transportation (e.g. Rail)
- » IT-infrastructure
- » Automotive



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 FIL-A-GEHR® PC-FR

Properties	Parameters	Units	Values
General Properties			
Specific gravity (ρ)	ISO 1183	g/cm ³	1.25
Water absorption	ISO 62	%	-
Moisture	ISO 62	%	-
Maximum permissible service temperature	UL746B	°C	-

Mechanical Properties (XY Flat)			
Tensile strength at yield (σ_S)	ISO 527	MPa	42.5
Elongation at yield (ε_S)	ISO 527	%	6.1
Tensile strength at break (σ_R)	ISO 527	MPa	41.3
Elongation at break (ε_R)	ISO 527	%	6.1
Impact strength (a_n)	ISO 179	kJ/m ²	35.2
Notch impact strength (a_k)	ISO 179	kJ/m ²	-
Ball indentation (H_k) / Rockwell hardness	ISO 2039-1	N/mm ²	-
Shore-D	ISO 868		72
Flexural strength ($\sigma_{B\ 3,5\ %}$)	ISO 178	MPa	-
Modulus of elasticity (E_t)	ISO 527	MPa	1987

Thermal Properties			
Vicat-softening point (VST/B/50)	ISO 306	°C	94
Heat deflection temperature (HDT/B)	ISO 75	°C	94.5
Coef. of linear thermal expansion (α)	ISO 11359	°C ⁻¹ *10 ⁻⁴	-
Thermal conductivity at 20 °C (λ)	ISO 22007-4	W/(m*K)	-
Glass transition temperature (T_G)	ISO 3146	°C	100
Melting temperature (T_m)	ISO 3146	°C	-

Printing Properties			
Pressure nozzle temperature		°C	270
Printing plate temperature		°C	90
Build chamber temperature		°C	60
Nozzle diameter		mm	0.4
Print speed		mm/s	60
Fan speed	(activated on layer 4)	%	60
Predrying temperature		°C	80
Predrying time		h	4

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.