

FIL-A-GEHR®

Filaments for professional 3D printing



ULTEM™ AM1010F FILAMENT (PEI)

ULTEM™ AM1010F FILAMENT (PEI) is a polyetherimide product for 3D printing applications manufactured from ULTEM 1010 resin.

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 0.07"	●

Colours: ● natural



DISTINCTIVE FEATURES ULTEM™ AM1010F FILAMENT (PEI)

- » Excellent combination of high heat resistance and dimensional stability
- » High mechanical strength
- » Continuous service temperature 170 °C
- » High heat resistance
- » Inherently flame retardant (UL94-V0)
- » Print nozzle temperature 370-390°C
- » Pressure plate temperature 150°C
- » Pressure chamber temperature 90°C

TYPICAL APPLICATIONS

- » Mass transportation (e.g. Rail)
- » Aerospace
- » Automotive

APPROVALS OF THE RAW MATERIAL:

- » Aerospace FAR25.853



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.

ULTEM™ is a registered trademark of Saudi Basic Industries Corporation (SABIC)

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TECHNICAL DATA ULTEM™ AM1010F FILAMENT (PEI)

Properties	Parameters	Units	Values
General Properties			
Specific gravity (ρ)	ISO 1183	g/cm ³	1,27
Water absorption	ISO 62	%	0.25
Moisture	ISO 62	%	0.2
Maximum permissible service temperature	UL746B	°C	170
Lower permissible service temperature	UL746B	°C	-

Mechanical Properties			
Tensile strength at yield (σ_S)	ISO 527	MPa	110
Elongation at yield (ε_S)	ISO 527	%	6
Tensile strength at break (σ_R)	ISO 527	MPa	-
Elongation at break (ε_R)	ISO 527	%	50
Impact strength (a_n)	ISO 179	kJ/m ²	No Break
Notch impact strength (a_k)	ISO 179	kJ/m ²	32
Ball indentation (H_k) / Rockwell hardness	ISO 2039-1	N/mm ²	106
Shore-D	ISO 868		-
Flexural strength ($\sigma_{B, 3,5\%}$)	ISO 178	MPa	160
Modulus of elasticity (E_t)	ISO 527	MPa	3350

Thermal Properties			
Vicat-softening point (VST/B/50)	ISO 306	°C	211
Heat deflection temperature (HDT/B)	ISO 75	°C	209
Coef. of linear thermal expansion (α)	ISO 11359	°C ⁻¹ *10 ⁻⁴	0.52
Thermal conductivity at 20 °C (λ)	ISO 22007-4	W/(m*K)	0.22
Glass transition temperature (T_G)	ISO 3146	°C	217
Melting temperature (T_m)	ISO 3146	°C	350-410

Printing Properties			
Pressure nozzle temperature		°C	370-390
Printing plate temperature		°C	150
Build chamber temperature		°C	90
Nozzle diameter	(hardend steel)	mm	0.4
Print speed		mm/s	45
Fan speed		%	0-25
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.