TECAPEI GF 30

Chemical Designation:	Polyetherimide
DIN Abbreviation:	PEI GF 30
Colour, Filler:	Dark brown, slightly translucent 30% glass fibre

TECAPEI GF 30 is a 30 % glass fibre reinforced amorphous engineering thermoplastic, (Ultem®), with very high rigidity and strength for demanding applications

Main characteristics:

- High thermal mechanical strength
- Hydrolysis resistant including steam
- High creep resistance
- Very rigid
- Good dimensional stability
- Good electrical insulation
- Abrasion resistant
- Flame retardant UL 94 V-0
- Easily machined, care required with coolant susceptible to stress cracking
- Gamma ray resistant

Preferred fields: Electrical engineering, electronics, mechanical and automotive engineering, vacuum technology, transport and conveyor technology, pump and instrumentation manufacture, precision engineering, jig construction, chemical engineering, construction.

Applications:

- Plug parts
- High strength thermal mechanical components
- Thermal electrical insulators
- Comb strips
- Sensor housings
- Light sockets
- Catalyst supports
- Flanges
- Switch parts
- Valve bodies
- Thrust / distance pieces

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The following information corresponds with our current knowledge and indicates our products and possible applications. We cannot give a legally binding guarantee of certain properties or the suitability for a specific application. Existing commercial patents must be observed. A definitive quality guarantee is given in our general conditions of sales. Unless otherwise stated, these values represent averages taken from injection moulding samples. We reserve the right of technical alterations.

Properties	Unit	Test method DIN EN ISO / ASTM	
Mechanical			
Density	g/cm³	527 / D 792	1.51
Tensile strength at yield	MPa	527 / D 638	
Tensile strength at break	MPa	527 / D 638	165
Elongation at break	%	527 / D 638	2
Modulus of elasticity in tension	MPa	527 / D 638	9500
Modulus of elasticity in flexure	MPa	178 / D 790	9000
Ball indentation hardness	MPa	2039 /1	165
Impact strength	kJ/m²	179 / D 256	40
Creep rupture strength after 1000 hrs with static load	MPa		
Time yield limit for 1% elongation after 1000 hrs.	MPa		
Coefficient of friction against hardened and ground steel p = 0,05 N/mm², v = 0,6 m/s	–		
Wear conditions as above	µm/km		
Thermal			
Crystalline melting point	°C	DIN 53 736	
Glass transition temperature	°C	DIN 53 736	217
Heat distortion temperature Method A Method B	 °C °C	 R 75 R 75	 210 215

Properties	Unit	Test method DIN EN 1S0 / ASTM	
Thermal			
Max. service temperature short term long term	 °C °C		 200 170
Coefficient of thermal conductivity	W/(m · K)		0.23
Specific heat	J/(g · K)		
Coefficient of thermal expansion	10^{-5}/K	DIN 53 483 / D 696	2
Electrical			
Dielectric constant at 10^5 Hz		DIN 53 483	3.7
Dielectric loss factor at 10^5 Hz		DIN 53 483	0.007
Specific volume resistance	Ω · cm	DIN 60093	10^{15}
Surface resistance	Ω	DIN 60093	10^{15}
Dielectric strength 1 mm	kV/mm	ASTM 149	30
Tracking resistance		53 480	
Miscellaneous			
Moisture absorption: Equilibrium in standard atmosphere (23 °C / 50 % relative humidity)	%	62	0.5
Water absorption at saturation at 23 °C	%	62	0.9
Resistance to hot water, washing soda			resistant
Flammability according to UL standard 94			V0
Resistance to weathering			not resistant

ENSINGER: Production and stock programme

- Semi-finished product, finished parts, injection moulded parts and profiles in more than 500 materials and modifications.
- Engineering plastics: PA extruded or cast, POM, PC, PET, PBT, PPE, PP, PE
- High temperature plastics: PI, TPI, PEEK, PPS, PES, PPSU, PEI, PSU, PVDF, PCTFE, PTFE
- Stock length: Standard 3 metres. Cast rod and sheet 2 mts . Tube up to 3.5 mts. PE, PP, PVC, and PTFE 2 mts
- Pressed/sintered semi-finished product: PI, PEEK, PPS, PTFE/PI and modifications, as well as PCTFE in special sizes ie, large discs, tubes and rings with diameters up to about 1400 mm
- Material modifications: eg glass, carbon and aramid fibre, talc, MoS_2, graphite, PTFE, PE, silicone oil, internal lubrication