

TECAPEI GF30 natural - Stock Shapes (rods, plates, tubes)

Chemical Designation

PEI (Polyetherimide)

Colour

amber opaque

Density

1.51 g/cm³

Fillers

glass fibres

Main features

- high dimensional stability
- good heat deflection temperature
- high thermal and mechanical capacity
- high strength
- high creep resistance
- electrically insulating
- resistance against high energy radiation
- sensitive to stress cracking

Target Industries

- electronics
- semiconductor technology
- automotive industry
- mechanical engineering
- vacuum technology

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	5mm/min	135	MPa	DIN EN ISO 527-2	(1) For tensile test: specimen type 1b
Modulus of elasticity (tensile test)	1mm/min	5300	MPa	DIN EN ISO 527-2	1) (2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	5mm/min	135	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield	5mm/min	4	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break	50mm/min	4	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	2mm/min, 10 N	195	MPa	DIN EN ISO 178	2) (6) Specimen in 4mm thickness
Modulus of elasticity (flexural test)	2mm/min, 10 N	5500	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	18 / 39	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	4200	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7.5J	51	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 2J	6	kJ/m ²	DIN EN ISO 179-1eA	
Ball indentation hardness		325	MPa	ISO 2039-1	6)
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		213	°C	DIN EN ISO 11357	(1) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature			°C	DIN EN ISO 11357	
Service temperature	short term	200	°C		1)
Service temperature	long term	170	°C		
Thermal expansion (CLTE)	23-60°C, long.	3	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	3	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, long.	4	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Electrical properties	parameter	value	unit	norm	comment
surface resistivity		10 ¹⁴	Ω	DIN IEC 60093	
volume resistivity		10 ¹⁴	Ω*cm	DIN IEC 60093	
Other properties	parameter	value	unit	norm	comment
Water absorption	24h / 96h (23°C)	0.04 / <0.1	%	DIN EN ISO 62	1) (1) Ø ca. 50mm, h=13mm
Resistance to hot water/ bases		+	-		2) (2) + good resistance
Resistance to weathering		-	-		3) (3) - poor resistance
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4) (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

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