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

Chemical Designation
PEI (Polyetherimide)

Colour
amber opaque

Density
1.51 g/cm^3

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 (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. (6) Specimen in 4mm thickness
Modulus of elasticity (tensile test)	1mm/min	5300	MPa	DIN EN ISO 527-2	1)	
Tensile strength at yield	5mm/min	135	MPa	DIN EN ISO 527-2		
Elongation at yield (tensile test)	5mm/min	4	%	DIN EN ISO 527-2		
Elongation at break (tensile test)	50mm/min	4	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	195	MPa	DIN EN ISO 178	2)	
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	-		
volume resistivity		10^{14}	Ω*cm	-		

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 (2) + good resistance (3) - poor resistance (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.
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		-		-	3)	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)	

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