

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

Chemical Designation

PEI (Polyetherimide)

Colour

amber transparent

Density

1.28 g/cm³

Main features

- from bio-based/ biomass-balanced raw materials with optimized PCF
- high thermal and mechanical capacity
- resistance against high energy radiation
- high dimensional stability
- inherent flame retardant

Target Industries

- electronics
- semiconductor technology
- aircraft and aerospace technology
- automotive industry
- vacuum technology

This data sheet is only for development purposes and can be changed without prior notice. The commercialisation of the product is not guaranteed.

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50mm/min	127	MPa	DIN EN ISO 527-2	(1) For tensile test: specimen type 1b
Modulus of elasticity (tensile test)	1mm/min	3200	MPa	DIN EN ISO 527-2	(1) (2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	127	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield (tensile test)	50mm/min	7	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break (tensile test)	50mm/min	35	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	2mm/min, 10 N	164	MPa	DIN EN ISO 178	(2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	3300	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5mm/min, 10 N	23/41/92	MPa	EN ISO 604	(3)
Compression modulus	5mm/min, 10 N	2800	MPa	EN ISO 604	(4)
Impact strength (Charpy)	max. 7.5J	113	kJ/m ²	DIN EN ISO 179-1eU	(5)
Shore hardness	D	88		DIN EN ISO 868	
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		216	°C	DIN EN ISO 11357	(1)
Melting temperature		n.a.	°C	DIN EN ISO 11357	(2)
Service temperature	short term	200	°C		(3)
Service temperature	long term	170	°C		
Thermal expansion (CLTE)	23-60°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, long.	6	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1.2	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0.21	W/(K*m)	ISO 22007-4:2008	
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)	0.05 / 0.1	%	DIN EN ISO 62	(1) (1) Ø ca. 50mm, h=13mm
Resistance to hot water/ bases		+	-		(2) + good resistance
Resistance to weathering		-	-		(3) - poor resistance
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	(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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