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

Chemical Designation
PEI (Polyetherimide)

Colour
amber transparent

Density
1.28 g/cm^3

Main features
- 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

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 (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.
Modulus of elasticity (tensile test)	1mm/min	3200	MPa	DIN EN ISO 527-2	1)	
Tensile strength at yield	50mm/min	127	MPa	DIN EN ISO 527-2		
Elongation at yield (tensile test)	50mm/min	7	%	DIN EN ISO 527-2		
Elongation at break (tensile test)	50mm/min	35	%	DIN EN ISO 527-2		
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)	(1) Found in public sources. (2) n.a. = not applicable (3) Found in public sources. Individual testing regarding application conditions is mandatory.
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 (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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