



PEEK - ACETAL - NYLON - H.D.P.E. - POLYCARBONATE

PEI (TECAPEI) - Stock Shapes

Chemical Designation

PEI (Polyetherimide)

Colour

amber transparent

Density

1.28 g/cm³

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
- food engineering
- medical technology
- automotive industry
- vacuum technology

Mechanical properties

	parameter	value	unit	norm		comment
Modulus of elasticity (tensile test)	1mm/min	3200	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b
Tensile strength	50mm/min	127	MPa	DIN EN ISO 527-2		(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	50mm/min	7	%	DIN EN ISO 527-2		(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break	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)	(6) Specimen in 4mm thickness
Modulus of elasticity (flexural test)	2mm/min, 10 N	3300	MPa	DIN EN ISO 178		
Compression strength	1% / 2%	23 / 41	MPa	EN ISO 604	3)	
	5mm/min, 10 N					
Compression modulus	5mm/min, 10 N	2800	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	113	kJ/m	DIN EN ISO 179-1eU	5)	
Ball indentation hardness		225	MPa	ISO 2039-1	6)	

Thermal properties

	parameter	value	unit	norm		comment
Glass transition temperature		216	°C	DIN 53765 1)		(1) Found in public sources.
Melting temperature		n.a.	°C	DIN 53765 2)		(2) n.a. = not applicable
Service temperature	short term	200 °C 3)				(3) Found in public sources. Individual testing regarding application conditions is mandatory.
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
Specific surface resistance		10	Ω	DIN IEC 60093		
Specific volume resistance		10	Ω*cm	DIN IEC 60093		

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

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