

TECAPEEK MT CLASSIX white - Stock Shapes (rods, plates, tubes)

Chemical Designation

PEEK (Polyetheretherketone)

Colour

cream white opaque

Density

1.4 g/cm³

Main features

- very good chemical resistance
- high dimensional stability
- biocompatible
- good slide and wear properties
- hydrolysis and superheated steam resistant
- resistance against high energy radiation
- high strength

Target Industries

- medical technology

Mechanical properties

	parameter	value	unit	norm	comment
Tensile strength	50mm/min	117	MPa	DIN EN ISO 527-2	
Modulus of elasticity (tensile test)	1mm/min	4700	MPa	DIN EN ISO 527-2	1)
Tensile strength at yield	50mm/min	117	MPa	DIN EN ISO 527-2	
Elongation at yield (tensile test)	50mm/min	5	%	DIN EN ISO 527-2	
Elongation at break (tensile test)	50mm/min	11	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	177	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	4400	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5mm/min, 10 N	25/45/105	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	3500	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	5	kJ/m ²	DIN EN ISO 179-1eA	
Shore hardness	D	89		DIN EN ISO 868	

Thermal properties

	parameter	value	unit	norm	comment
Glass transition temperature		150	°C	DIN EN ISO 11357	1)
Melting temperature		341	°C	DIN EN ISO 11357	
Service temperature	short term	300	°C		2)
Service temperature	long term	260	°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.	7	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat	1.0	J/(g*K)		ISO 22007-4:2008	
Thermal conductivity	0.30	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)	0.02 / 0.03	%	DIN EN ISO 62	1)
Resistance to hot water/ bases	+		-		2)
Resistance to weathering	-		-		3)
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)

- (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. n.b. = not broken

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