TECAPEEK SX natural - Stock Shapes (rods, plates, tubes)

Chemical Designation
PEEK (Polyetheretherketone)

Colour
beige opaque

Density
1.31 g/cm^3

The values in this data sheet are tested on a dimension outside of the standard reference dimension (rod Ø 40-60 mm).

Main features
- good heat deflection temperature
- good machinability
- inherent flame retardant
- resistance against high energy radiation
- good slide and wear properties
- very good chemical resistance
- high creep resistance
- hydrolysis and superheated steam resistant

Target Industries
- semiconductor technology

Mechanical properties	parameter	value	unit	norm		comment
Tensile strength	50mm/min	116	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. n.b. = not broken
Modulus of elasticity (tensile test)	1mm/min	4200	MPa	DIN EN ISO 527-2	1)	
Tensile strength at yield	50mm/min	116	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	15	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	175	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	4200	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	23 / 43 / 102	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	3400	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	4	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)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		341	°C	DIN EN ISO 11357		
Heat distortion temperature	HDT, Method A	162	°C	ISO-R 75 Method A		
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		1.1	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.27	W/(K*m)	ISO 22007-4:2008		

Electrical properties	parameter	value	unit	norm		comment
surface resistivity	Silver electrode, 23°C, 12% r.h.	10^{15}	Ω	-	1)	(1) Specimen in 20mm thickness (2) Specimen in 1mm thickness
volume resistivity	Silver electrode, 23°C, 12% r.h.	10^{15}	Ω*cm	-		
Dielectric strength	23°C, 50% r.h.	73	kV/mm	ISO 60243-1	2)	
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	125	V	DIN EN 60112		

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) - poor resistance
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		-		-	3)	
Flammability (UL94)	listed (value at 1.5mm)	V0		DIN IEC 60695-11-10;		

- TECAPEEK products are based on Victrex® PEEK polymer.

Our information and statements reflect the current state of our knowledge and shall inform about our products and their applications. They do not assure or guarantee chemical resistance, quality of products and their merchantability in a legally binding way. Our products are not defined for use in medical or dental implants. Existing commercial patents have to be observed. The corresponding values and information are no minimum or maximum values, but guideline values that can be used primarily for comparison purposes for material selection. These values are within the normal tolerance range of product properties and do not represent guaranteed property values. Therefore they shall not be used for specification purposes. Unless otherwise noted, these values were determined by tests at reference dimensions (typically rods with diameter 40-60 mm according to DIN EN 15860) on extruded and machined specimen. As the properties depend on the dimensions of the semi-finished products and the orientation in the component (esp. in reinforced grades), the material may not be used without a separate testing under individual circumstances. The customer is solely responsible for the quality and suitability of products for the application and has to test usage and processing prior to use. Data sheet values are subject to periodic review, the most recent update can be found at www.ensingerplastics.com. Technical changes reserved.

Ensinger India Engineering Plastics Pvt Ltd.
2205, 22nd Floor, SOLUS Building,
Hiranandani Estate, Thane West - 400607,
India

Phone +91 22-49797082
www.ensinger.in

Date: 2023/10/20

Version: AC