TECAPEEK ST black - Stock Shapes (rods, plates, tubes)

Chemical Designation
PEKEKK
(Polyetherketoneetherketoneketone)

Colour
black opaque

Density
1.32 g/cm^3

Main features
- high thermal and mechanical capacity
- very good chemical resistance
- good machinability
- good heat deflection temperature
- high dimensional stability
- low moisture absorption

Target Industries
- chemical technology
- mechanical engineering
- automotive industry

Mechanical properties	parameter	value	unit	norm		comment
Tensile strength	50mm/min	134	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	4600	MPa	DIN EN ISO 527-2	1)	
Tensile strength at yield	50mm/min	134	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	13	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	193	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	4600	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	24/42/98	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	4	kJ/m^2	DIN EN ISO 179-1eA		
Shore hardness	D	90		DIN EN ISO 868		

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		165	°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		384	°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.	6	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		

Electrical properties	parameter	value	unit	norm		comment
surface resistivity		10^{14}	Ω	-		

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) (+) limited 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)	

- TECAPEEK products are based on Victrex® PEEK polymer.

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Date: 2024/03/26

Version: AD