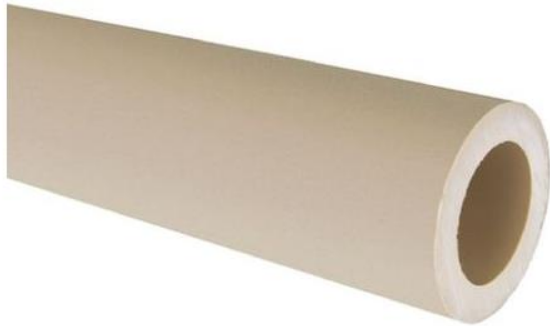


Datasheet

TECAPEEK

RS Stock number 778-1731



Chemical Designation
PEEK (Polyetheretherketone)

Colour
natural opaque

Density
1.31 g/cm³

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

- chemical technology
- mechanical engineering
- electrical engineering
- aircraft and aerospace technology
- automotive industry
- food engineering
- semiconductor technology
- vacuum technology
- textile industry

Mechanical properties	parameter	value	unit	norm	comment
Modulus of elasticity (tensile test)	1mm/min	4200	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	116	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	116	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	5	%	DIN EN ISO 527-2	
Elongation at break	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% 5mm/min, 10 N	23 / 43	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	
Ball indentation hardness		253	MPa	ISO 2039-1	6)

(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
 (6) Specimen in 4mm thickness

<i>Thermal properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>		<i>comment</i>
Glass transition temperature		150	°C	DIN 53765	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		341	°C	DIN 53765		
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		
<i>Electrical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>		<i>comment</i>
Specific surface resistance	Silver electrode, 23°C, 12% r.h.	10 ¹⁵	Ω	DIN IEC 60093	1)	(1) Specimen in 20mm thickness (2) Specimen in 1mm thickness
Specific volume resistance	Silver electrode, 23°C, 12% r.h.	10 ¹⁵	Ω*cm	DIN IEC 60093		
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		
<i>Other properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>		<i>comment</i>
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;		