

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

Chemical Designation

PEK (Polyetherketone)

Colour

black opaque

Density

1.31 g/cm³

Main features

- high thermal and mechanical capacity
- good wear resistance
- good chemical resistance
- inherent flame retardant
- very good slide and wear properties
- electrically insulating
- high creep resistance
- resistance against high energy radiation

Target Industries

- mechanical engineering
- conveyor technology
- automotive industry
- chemical plant engineering

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50mm/min	120	MPa	DIN EN ISO 527-2	(1) For tensile test: specimen type 1b
Modulus of elasticity (tensile test)	1mm/min	4600	MPa	DIN EN ISO 527-2	(2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	120	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield (tensile test)	50mm/min	4	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break (tensile test)	50mm/min	5	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	2mm/min, 10 N	192	MPa	DIN EN ISO 178	n.b. = not broken
Modulus of elasticity (flexural test)	2mm/min, 10 N	4600	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5mm/min, 10 N	25/45/100	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		160	°C	DIN EN ISO 11357	(1)
Melting temperature		375	°C	DIN EN ISO 11357	(2)
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	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω	-	(1) Specimen in 20mm thickness
volume resistivity	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω*cm	-	(2) Specimen in 1mm thickness
Dielectric strength	23°C, 50% r.h.	62	kV/mm	ISO 60243-1	(2)
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	200	V	DIN EN 60112	
Other properties	parameter	value	unit	norm	comment
Water absorption	24h / 96h (23°C)	0.02 / 0.04	%	DIN EN ISO 62	(1) Ø ca. 50mm, h=13mm
Resistance to hot water/ bases		+		-	(2) + good resistance
Resistance to weathering		(+)		-	(3) (+)limited resistance
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	(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.