

## TECAPEEK PVX black - Stock Shapes

### Chemical Designation

PEEK (Polyetheretherketone)

### Colour

black opaque

### Density

1.44 g/cm<sup>3</sup>

### Fillers

carbon fibres, PTFE, graphite

### Main features

- good heat deflection temperature
- high creep resistance
- good slide and wear properties
- hydrolysis and superheated steam resistant
- good wear properties
- inherent flame retardant
- very good chemical resistance

### Target Industries

- mechanical engineering
- chemical technology
- energy industry
- automotive industry
- aircraft and aerospace technology

Mechanical properties	parameter	value	unit	norm	comment
Modulus of elasticity (tensile test)	1mm/min	5500	MPa	DIN EN ISO 527-2	1) (1) For tensile test: specimen type 1b
Tensile strength	50mm/min	84	MPa	DIN EN ISO 527-2	(2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	84	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield	50mm/min	3	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break	50mm/min	3	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	2mm/min, 10 N	142	MPa	DIN EN ISO 178	(2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	6000	MPa	DIN EN ISO 178	(6) Specimen in 4mm thickness
Compression strength	1% / 2% 5mm/min, 10 N	23 / 44	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	4000	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	28	kJ/m <sup>2</sup>	DIN EN ISO 179-1eU	5)
Ball indentation hardness		250	MPa	ISO 2039-1	6)
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		146	°C	DIN 53765	1) (1) Found in public sources.
Melting temperature		341	°C	DIN 53765	(2) Found in public sources. Individual testing regarding application conditions is mandatory.
Service temperature	short term	300	°C		2)
Service temperature	long term	260	°C		
Thermal expansion (CLTE)	23-60°C, long.	3	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	3	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, long.	4	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Specific heat		1.1	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0.82	W/(K*m)	ISO 22007-4:2008	
Electrical properties	parameter	value	unit	norm	comment
Specific surface resistance	Conductive rubber, 23°C, 12% r.h.	10 <sup>4</sup> - 10 <sup>11</sup>	Ω	DIN EN 61340-2-3	1) (1) Specimen in 20mm thickness
Specific volume resistance	Conductive rubber, 23°C, 12% r.h.	10 <sup>7</sup> - 10 <sup>12</sup>	Ω*cm	DIN EN 61340-2-3	2) (2) Due to the black colourant and moisture uptake of the material the electrical insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise.
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 (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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