Material data sheet
PEEK PVX black

Chemical Designation: Polyetheretherketone
DIN-abbreviation: PEEK
Colour / Fillers: black opaque / carbon fibres, PTFE, graphite
Density: 1,44 g/cm³

Main features

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

Target Industries

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

Characteristics

mechanical properties	parameter	value	unit	norm	comment
Modulus of elasticity (tensile test)	1 mm / min	5500	MPa	DIN EN ISO 527-2 1)	1) For tensile test: specimen type 1b 2) For flexual test: support span 64 mm, norm specimen. 3) Specimen 10 x 10 x 10 mm 4) Specimen 10 x10 x 50 mm, modulus range between 0,5 and 1% compression. 5) For Charpy test: support span 64 mm, norm specimen.
Tensile strength	50 mm / min	84	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50 mm / min	84	MPa	DIN EN ISO 527-2	
Elongation at yield	50 mm / min	3	%	DIN EN ISO 527-2	
Elongation at break	50 mm / min	3	%	DIN EN ISO 527-2	
Flexural strength	2 mm / min, 10 N	142	MPa	DIN EN ISO 178 2)	
Modulus of elasticity (flexural test)	2 mm / min, 10 N	6000	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5 mm / min, 10 N	22/43/102	MPa	EN ISO 604 3)	
Compression modulus	5 mm / min, 10 N	4000	MPa	EN ISO 604 4)	
Impact strength (Charpy)	max. 7,5 J	28	kJ/m²	DIN EN ISO 179-1eU 5)	
Shore hardness	D	87		DIN EN ISO 868	

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thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		146	°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 53765	
Service temperature	short term	300	°C	2)	
Service temperature	long term	260	°C		
Thermal expansion (CLTE)	23-60 °C, long	3	10^{-5} K^{-1}	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100 °C, long	3	10^{-5} K^{-1}	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150 °C, long	4	10^{-5} K^{-1}	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
surface resistivity	Conductive rubber 23 °C, 12% r.h.	10^4-10^{11}	Ω	DIN EN 61340-2-3 1)	1) Specimen in 20 mm thickness
volume resistivity	Conductive rubber 23 °C, 12% r.h.	10^7-10^{12}	Ω*cm	DIN EN 61340-2-3	

other properties	parameter	value	unit	norm	comment
Water absorption	24 h / 96 h (23 °C)	0.2 / 0.3	%	DIN EN ISO 62 1)	1) Ø ca. 50 mm, h = 13 mm 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	VO		DIN IEC 60695-11-10 4)	

→ PEEK products may be based on Victrex® PEEK or Solvay KetaSpire® polymer

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