

TECATRON PVX black - Stock Shapes (rods, plates, tubes)

Chemical Designation

PPS (Polyphenylensulfide)

Colour

black opaque

Density

1.5 g/cm³

Fillers

carbon fibres, PTFE, graphite

Main features

- very good chemical resistance
- good heat deflection temperature
- very good slide and wear properties
- inherent flame retardant
- high dimensional stability
- high stiffness
- high creep resistance

Target Industries

- mechanical engineering
- oil and gas industry
- vacuum technology
- automotive industry
- aircraft and aerospace technology

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50mm/min	53	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	53	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield (tensile test)	50mm/min	2	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break (tensile test)	50mm/min	2	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	2mm/min, 10 N	91	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	4800	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5mm/min, 10 N	19/36/89	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	3300	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	14	kJ/m ²	DIN EN ISO 179-1eU	5)
Shore hardness	D	85		DIN EN ISO 868	
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		94	°C	DIN EN ISO 11357	1)
Melting temperature		281	°C	DIN EN ISO 11357	
Service temperature	short term	260	°C		2)
Service temperature	long term	230	°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.	6	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, long.	13	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		0.9	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0.58	W/(K*m)	ISO 22007-4:2008	
Electrical properties	parameter	value	unit	norm	comment
surface resistivity		10 ⁴ - 10 ¹⁰	Ω	DIN EN 61340-2-3	
volume resistivity		10 ⁷ - 10 ¹²	Ω*cm	DIN EN 61340-2-3	
Other properties	parameter	value	unit	norm	comment
Water absorption	24h / 96h (23°C)	<0.01 / <0.01	%	DIN EN ISO 62	1) (1) Ø ca. 50mm, h=13mm (2) + good resistance (3) (+) limited resistance
Resistance to hot water/ bases		+		-	2) (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 weathering		(+)		-	3)
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)

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