

## TECATRON SX natural - Stock Shapes (rods, plates, tubes)

### Chemical Designation

PPS (Polyphenylensulfide)

### Colour

beige opaque

### Density

1.36 g/cm<sup>3</sup>

The values in this data sheet are tested on a dimension outside of the standard reference dimension (rod Ø 40-60 mm).

### Main features

- good heat deflection temperature
- good chemical resistance
- resistance against high energy radiation
- high strength
- high dimensional stability
- high stiffness
- high creep resistance

### Target Industries

- semiconductor technology

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50mm/min	102	MPa	DIN EN ISO 527-2	(1) For tensile test: specimen type 1b
Modulus of elasticity (tensile test)	1mm/min	4000	MPa	DIN EN ISO 527-2	(2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	100	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at break (tensile test)	50mm/min	11	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Flexural strength	2mm/min, 10 N	151	MPa	DIN EN ISO 178	(5) For Charpy test: support span 64mm, norm specimen.
Modulus of elasticity (flexural test)	2mm/min, 10 N	4000	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	20 / 38	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	3300	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7.5J	56	kJ/m <sup>2</sup>	DIN EN ISO 179-1eU	5)
Ball indentation hardness		230	MPa	ISO 2039-1	
Shore hardness	D	87		DIN EN ISO 868	
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		97	°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.	6	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	7	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, long.	12	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Specific heat		1.0	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0.25	W/(K*m)	ISO 22007-4:2008	
Electrical properties	parameter	value	unit	norm	comment
surface resistivity		10 <sup>14</sup>	Ω	DIN IEC 60093	
volume resistivity		10 <sup>14</sup>	Ω*cm	DIN IEC 60093	
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) - poor 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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