

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

### Chemical Designation

PPS (Polyphenylensulfide)

### Colour

beige opaque

### Density

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

### 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

- aircraft and aerospace technology
- electronics
- mechanical engineering
- oil and gas industry
- semiconductor technology
- vacuum technology
- chemical technology

<i>Mechanical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Tensile strength	50mm/min	103	MPa	DIN EN ISO 527-2	(1) For tensile test: specimen type 1b
Modulus of elasticity (tensile test)	1mm/min	4100	MPa	DIN EN ISO 527-2	1) (2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	103	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield (tensile test)	50mm/min	6,5	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break (tensile test)	50mm/min	6,5	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	2mm/min, 10 N	166	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	3800	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5mm/min, 10 N	27/56/134	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2860	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	80	kJ/m <sup>2</sup>	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	2,6	kJ/m <sup>2</sup>	DIN EN ISO 179-1eA	
Shore hardness	D	87		DIN EN ISO 868	
<i>Thermal properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Glass transition temperature		97	°C	DIN EN ISO 11357	1)
Melting temperature		281	°C	DIN EN ISO 11357	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Service temperature	short term	260	°C		2)
Service temperature	long term	230	°C		
Thermal expansion (CLTE)	23-60°C, long.	5	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	6	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, long.	11	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	
<i>Electrical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
surface resistivity		10 <sup>14</sup>	Ω	DIN IEC 60093	(1) Specimen in 1.6mm thickness
volume resistivity		10 <sup>14</sup>	Ω*cm	DIN IEC 60093	based on raw material data
Dielectric strength		24	kV/mm	ASTM D 149	1)
Resistance to tracking (CTI)		150		IEC 60112	2)
<i>Other properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
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)
Resistance to weathering		-	-		3)
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4) (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.

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