

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

Chemical Designation

PPS (Polyphenylensulfide)

Colour

beige opaque

Density

1.36 g/cm³

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

Mechanical properties

	parameter	value	unit	norm	comment
Tensile strength	50mm/min	103	MPa	DIN EN ISO 527-2	
Modulus of elasticity (tensile test)	1mm/min	4100	MPa	DIN EN ISO 527-2	1)
Tensile strength at yield	50mm/min	103	MPa	DIN EN ISO 527-2	
Elongation at yield (tensile test)	50mm/min	6,5	%	DIN EN ISO 527-2	
Elongation at break (tensile test)	50mm/min	6,5	%	DIN EN ISO 527-2	
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 ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	2,6	kJ/m ²	DIN EN ISO 179-1eA	
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.	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.	11	10 ⁻⁵ K ⁻¹	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 ¹⁴	Ω	DIN IEC 60093	(1) Specimen in 1.6mm thickness based on raw material data
volume resistivity		10 ¹⁴	Ω*cm	DIN IEC 60093	(2) based on raw material data
Dielectric strength		24	kV/mm	ASTM D 149	1)
Resistance to tracking (CTI)		150		IEC 60112	2)

Other properties

	parameter	value	unit	norm	comment
Water absorption	24h / 96h (23°C)	<0.01 / 0.01	%	DIN EN ISO 62	1)
Resistance to hot water/ bases	+	-			2)
Resistance to weathering	-	-			3)
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)

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