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

Chemical Designation
PPS (Polyphenylensulfide)

Colour
beige opaque

Density
1.36 g/cm^3

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 (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen.
Modulus of elasticity (tensile test)	1mm/min	4100	MPa	DIN EN ISO 527-2	1)	
Tensile strength at yield	50mm/min	100	MPa	DIN EN ISO 527-2		
Elongation at yield (tensile test)	50mm/min	4	%	DIN EN ISO 527-2		
Elongation at break (tensile test)	50mm/min	4	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	151	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	4000	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	20/38/96	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	3300	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	29	kJ/m^2	DIN EN ISO 179-1eU	5)	
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)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
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^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	7	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	100-150°C, long.	12	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		
volume resistivity		10^{14}	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 (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	V0		DIN IEC 60695-11-10;	4)	

Our information and statements reflect the current state of our knowledge and shall inform about our products and their applications. They do not assure or guarantee chemical resistance, quality of products and their merchantability in a legally binding way. Our products are not defined for use in medical or dental implants. Existing commercial patents have to be observed. The corresponding values and information are no minimum or maximum values, but guideline values that can be used primarily for comparison purposes for material selection. These values are within the normal tolerance range of product properties and do not represent guaranteed property values. Therefore they shall not be used for specification purposes. Unless otherwise noted, these values were determined by tests at reference dimensions (typically rods with diameter 40-60 mm according to DIN EN 15860) on extruded and machined specimen. As the properties depend on the dimensions of the semi-finished products and the orientation in the component (esp. in reinforced grades), the material may not be used without a separate testing under individual circumstances. The customer is solely responsible for the quality and suitability of products for the application and has to test usage and processing prior to use. Data sheet values are subject to periodic review, the most recent update can be found at www.ensingerplastics.com. Technical changes reserved.

Ensinger GmbH
Rudolf-Diesel Str. 8
71154 Nufringen - Deutschland

Tel +49 7032 819 0
Fax +49 7032 819 100
ensingerplastics.com

Date: 2023/07/19

Version: AD