

# TECATRON GF40 black - Stock Shapes (rods, plates, tubes)

## Chemical Designation

PPS (Polyphenylensulfide)

## Colour

black opaque

## Density

1.63 g/cm<sup>3</sup>

## Fillers

glass fibres

## Main features

- good heat deflection temperature
- high dimensional stability
- very good chemical resistance
- inherent flame retardant
- hydrolysis and superheated steam resistant
- high stiffness
- high creep resistance
- resistance against high energy radiation

## Target Industries

- mechanical engineering
- aircraft and aerospace technology
- chemical technology
- energy industry
- oil and gas industry

## Mechanical properties

	parameter	value	unit	norm	comment
Tensile strength	50mm/min	83	MPa	DIN EN ISO 527-2	
Modulus of elasticity (tensile test)	1mm/min	6500	MPa	DIN EN ISO 527-2	1)
Tensile strength at yield	50mm/min	83	MPa	DIN EN ISO 527-2	
Elongation at yield (tensile test)	50mm/min	2	%	DIN EN ISO 527-2	
Elongation at break (tensile test)	50mm/min	2	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	145	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	6600	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5mm/min, 10 N	21/41/105	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	4600	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	24	kJ/m <sup>2</sup>	DIN EN ISO 179-1eU	5)
Shore hardness	D	91		DIN EN ISO 868	

## Thermal properties

	parameter	value	unit	norm	comment
Glass transition temperature		93	°C	DIN EN ISO 11357	1)
Melting temperature		280	°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.	4	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	5	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, long.	10	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Specific heat		0.9	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0.33	W/(K*m)	ISO 22007-4:2008	

## Electrical properties

	parameter	value	unit	norm	comment
surface resistivity	Silver electrode, 23°C, 12% r.h.	10 <sup>14</sup>	Ω	DIN IEC 60093	1)
volume resistivity	Silver electrode, 23°C, 12% r.h.	10 <sup>14</sup>	Ω*cm	DIN IEC 60093	2)
Dielectric strength	23°C, 50% r.h.	32	kV/mm	ISO 60243-1	3)
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	125	V	DIN EN 60112	(3) Specimen in 1mm thickness

## 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)

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](http://www.ensingerplastics.com). Technical changes reserved.