

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

# Chemical Designation

PPS (Polyphenylensulfide)

#### Colour

beige opaque

# Density

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

## **Fillers**

glass fibres

### Main features

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

## Target Industries

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

Modulus of elasticity (tensile test)  Tensile strength at yield  Elongation at yield (tensile test)  Elongation at break (tensile test)  Flexural strength  Modulus of elasticity (flexural test)  Compression strength  Compression modulus  Impact strength (Charpy)  Shore hardness  D  Thermal properties  Glass transition temperature  Melting temperature  Service temperature  Service temperature  Service temperature  Service temperature  Thermal expansion (CLTE)  Thermal expansion (CLTE)  Thermal expansion (CLTE)  Thermal expansion (CLTE)	iomm/min mm/min iomm/min iomm/min iomm/min iomm/min, 10 N iomax. 7,5J iomarameter iomarameter iomarameter	83 6500 83 3 145 6600 21/41/105 4600 24 89 value 93 280	MPa MPa MPa % % MPa MPa MPa MPa MPa C C C C C C	DIN EN ISO 527-2 DIN EN ISO 178 DIN EN ISO 178 EN ISO 604 EN ISO 604 DIN EN ISO 179-1eU DIN EN ISO 868 norm DIN EN ISO 11357	1) 2) 3) 4) 5) 1)	(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.
(tensile test)  Tensile strength at yield  Elongation at yield (tensile test)  Elongation at break (tensile test)  Flexural strength  Modulus of elasticity (flexural test)  Compression strength  11  55  Compression modulus  Impact strength (Charpy)  Shore hardness  Glass transition temperature  Melting temperature  Service temperature  Service temperature  Service temperature  Thermal expansion (CLTE)  Thermal expansion (CLTE)  Thermal expansion (CLTE)  10  56  57  57  58  58  58  58  58  58  58  58	00mm/min 00mm/min 00mm/min 00mm/min, 10 N 00mm/min, 10 N 00mm/min, 10 N 00mm/min, 10 N 00mm/min, 10 N 00mm/min, 10 N	83 3 145 6600 21/41/105 4600 24 89 <i>value</i> 93	MPa % MPa MPa MPa MPa MPa MPa c MPa MPa c MPa c MC MPa c MC	DIN EN ISO 527-2 DIN EN ISO 527-2 DIN EN ISO 527-2 DIN EN ISO 527-2 DIN EN ISO 178 DIN EN ISO 178 EN ISO 604 EN ISO 604 DIN EN ISO 179-1eU DIN EN ISO 868 norm DIN EN ISO 11357	2) 3) 4) 5)	(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.
Elongation at yield (tensile test)  Elongation at break (tensile test)  Flexural strength  Modulus of elasticity (flexural test)  Compression strength  Inpact strength (Charpy)  Shore hardness  Glass transition temperature  Melting temperature  Service temperature  Service temperature  Service temperature  Service temperature  Thermal expansion (CLTE)  Thermal expansion (CLTE)  Infermal expansion (CLTE)  Thermal expansion (CLTE)	Omm/min Omm/min Omm/min, 10 N	3 3 145 6600 21/41/105 4600 24 89 <i>value</i> 93	% % MPa MPa MPa MPa MPa wnit °C	DIN EN ISO 527-2 DIN EN ISO 527-2 DIN EN ISO 178 DIN EN ISO 178 EN ISO 604 EN ISO 604 DIN EN ISO 179-1eU DIN EN ISO 868 norm DIN EN ISO 11357	3) 4) 5)	. (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen.
Elongation at break (tensile test)  Flexural strength  Modulus of elasticity (flexural test)  Compression strength  Indicate the strength (Charpy)  Element	omm/min cmm/min, 10 N cmx. 7,5J coarameter	3 145 6600 21/41/105 4600 24 89 <i>value</i> 93	% MPa MPa MPa MPa MPa  Mya  Multiple Mu	DIN EN ISO 527-2 DIN EN ISO 178 DIN EN ISO 178 EN ISO 604 EN ISO 604 DIN EN ISO 179-1eU DIN EN ISO 868 norm DIN EN ISO 11357	3) 4) 5)	modulus range between 0.5 and 1% compression (5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	mm/min, 10 N mm/min, 10 N % / 2% / 5% mm/min, 10 N mm/min, 10 N max. 7,5J	145 6600 21/41/105 4600 24 89 <i>value</i> 93	MPa MPa MPa MPa MPa kJ/m² unit °C	DIN EN ISO 178  DIN EN ISO 178  EN ISO 604  EN ISO 604  DIN EN ISO 179-1eU  DIN EN ISO 868  norm  DIN EN ISO 11357	3) 4) 5)	(5) For Charpy test: support span 64mm, norm specimen.
Modulus of elasticity	mm/min, 10 N % / 2% / 5% mm/min, 10 N mm/min, 10 N max. 7,5J parameter	6600 21/41/105 4600 24 89 <i>value</i> 93	MPa MPa MPa kJ/m² unit °C	DIN EN ISO 178  EN ISO 604  EN ISO 604  DIN EN ISO 179-1eU  DIN EN ISO 868  norm  DIN EN ISO 11357	3) 4) 5)	span 64mm, norm specimen.
(flexural test)         1           Compression strength         15           Compression modulus         51           Impact strength (Charpy)         m           Shore hardness         D           Thermal properties         p           Glass transition temperature         Melting temperature           Service temperature         sf           Service temperature         lo           Thermal expansion (CLTE)         23           Thermal expansion (CLTE)         10           Thermal expansion (CLTE)         11	% / 2% / 5% mm/min, 10 N mm/min, 10 N nax. 7,5J	21/41/105 4600 24 89 <i>value</i> 93	MPa MPa kJ/m²  unit °C	EN ISO 604  EN ISO 604  DIN EN ISO 179-1eU  DIN EN ISO 868  norm  DIN EN ISO 11357	4) 5)	
Compression modulus  Impact strength (Charpy)  Shore hardness  D  Thermal properties  Glass transition temperature  Melting temperature  Service temperature  Service temperature  Infermal expansion (CLTE)  Chermal expansion (CLTE)  Chermal expansion (CLTE)  Chermal expansion (CLTE)  Chermal expansion (CLTE)	mm/min, 10 N mm/min, 10 N nax. 7,5J o parameter	4600 24 89 <i>value</i> 93	MPa kJ/m <sup>2</sup> unit	EN ISO 604 DIN EN ISO 179-1eU DIN EN ISO 868 norm DIN EN ISO 11357	4) 5)	
Impact strength (Charpy)  Shore hardness  D  Thermal properties  Glass transition temperature  Melting temperature  Service temperature  Service temperature  Inhermal expansion (CLTE)  Service temperature  23  Thermal expansion (CLTE)  Thermal expansion (CLTE)	nax. 7,5J o parameter	24 89 <b>value</b> 93	kJ/m <sup>2</sup> unit °C	DIN EN ISO 179-1eU DIN EN ISO 868 norm DIN EN ISO 11357	5)	
Shore hardness D  Thermal properties phase transition temperature  Melting temperature  Service temperature should be service that the should be should	oarameter	89 <i>value</i> 93	<i>unit</i> °C	DIN EN ISO 868  norm  DIN EN ISO 11357		
Thermal properties p. Glass transition temperature Melting temperature Service temperature sh Service temperature lo Thermal expansion (CLTE) 23 Thermal expansion (CLTE) 11	parameter	<b>value</b> 93	°C	norm DIN EN ISO 11357	1)	
Glass transition temperature  Melting temperature  Service temperature  Service temperature  Informal expansion (CLTE)  Service temperature  Informal expansion (CLTE)  Informal expansion (CLTE)		93	°C	DIN EN ISO 11357	1)	
Melting temperature  Service temperature  Service temperature  Io Thermal expansion (CLTE)  Thermal expansion (CLTE)  Thermal expansion (CLTE)  Thermal expansion (CLTE)	hort term				1)	(1) Found in public sources.
Service temperature st Service temperature lo Thermal expansion (CLTE) 23 Thermal expansion (CLTE) 23 Thermal expansion (CLTE) 10	hort term	280	°C			(1) Found in public sources.  (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Service temperature lo Thermal expansion (CLTE) 23 Thermal expansion (CLTE) 23 Thermal expansion (CLTE) 10	hort term		-	DIN EN ISO 11357		
Thermal expansion (CLTE)         23           Thermal expansion (CLTE)         23           Thermal expansion (CLTE)         10	HOLE COLLIN	260	°C		2)	
Thermal expansion (CLTE) 23 Thermal expansion (CLTE) 10	ong term	230	°C			
Thermal expansion (CLTE)	3-60°C, long.	4	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2		
······································	3-100°C, long.	5	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2		
O:f:-  t	00-150°C, long.	10	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		0.35	W/(K*m)	ISO 22007-4:2008		••
Electrical properties p	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 pa	parameter	value	unit	norm		comment
Water absorption 24	4h / 96h (23°C)	<0.01 / 0.01	%	DIN EN ISO 62	1)	(2) + good resistance (3) - poor resistance (4) Corresponding means no listing at UL (yellow card). The information might be taken
Resistance to hot water/ bases		+		-	2)	
Resistance to weathering		-		-	3)	
Flammability (UL94) co	orresponding to	V0		DIN IEC 60695-11-10;	4)	

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