

TECATRON GF40

Chemical Designation: Polyphenylenesulphide

DIN Abbreviation: PPS GF 40

Colour, Filler: Black
40% glass fibres

TECATRON GF 40 is a 40 % glass fibre reinforced semi-crystalline high performance plastic with very high rigidity and strength for demanding applications.

Main characteristics:

- High thermal mechanical strength
- Very good chemical and hydrolysis resistance, even against steam
- High hardness and rigidity
- High creep strength
- High dimensional stability
- Good radiations resistance
- Excellent wear resistance
- Inherently flame retardant UL- 94 V-0

Preferred fields: Electrical engineering, vacuum technology, electronics, mechanical and automotive engineering, transport and conveyor technology, pump and instrument engineering, precision engineering, jig construction, chemical engineering and construction.

Applications:

- Plug parts
- High strength thermal mechanical components
- Pump housing parts
- Thrust / distance pieces
- Light sockets
- Catalyst supports
- Flanges
- Friction pads
- Valve bodies

Ensinger Ltd
Wilfried Way
Tonyrefail
Mid Glam CF39 8JQ

Tel: 01443 678400
Fax: 01443 675777
Web: www.ensinger.ltd.uk
Email: sales@ensinger.ltd.uk

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The following information corresponds with our current knowledge and indicates our products and possible applications. We cannot give a legally binding guarantee of certain properties or the suitability for a specific application. Existing commercial patents must be observed. A definitive quality guarantee is given in our general conditions of sales. Unless otherwise stated, these values represent averages taken from injection moulding samples. We reserve the right of technical alterations.

Properties	Unit	Test method DIN EN ISO / ASTM	
Mechanical			
Density	g/cm ³	527 / D 792	1.65
Tensile strength at yield	MPa	527 / D 638	
Tensile strength at break	MPa	527 / D 638	185
Elongation at break	%	527 / D 638	1.9
Modulus of elasticity in tension	MPa	527 / D 638	14000
Modulus of elasticity in flexure	MPa	178 / D 790	13000
Ball indentation hardness	MPa	2039 / 1	320
Impact strength	kJ/m ²	179 / D 256	45
Creep rupture strength after 1000 hrs with static load	MPa		
Time yield limit for 1% elongation after 1000 hrs.	MPa		
Coefficient of friction against hardened and ground steel $p = 0,05 \text{ N/mm}^2$, $v = 0,6 \text{ m/s}$	-		
Wear conditions as above	µm/km		
Thermal			
Crystalline melting point	°C	DIN 53 736	280
Glass transition temperature	°C	DIN 53 736	90
Heat distortion temperature Method A Method B	°C °C	R 75 R 75	260

Properties	Unit	Test method DIN EN ISO / ASTM	
Thermal			
Max. service temperature short term long term	°C °C		260 230
Coefficient of thermal conductivity	W/(m · K)		0.25
Specific heat	J/(g · K)		1.18
Coefficient of thermal expansion	10 ⁻⁶ /K	DIN 53 483 / D 696	~ 3
Electrical			
Dielectric constant at 10 ⁵ Hz		DIN 53 483	4
Dielectric loss factor at 10 ⁵ Hz		DIN 53 483	0.004
Specific volume resistance	Ω · cm	DIN 60093	10 ¹³
Surface resistance	Ω	DIN 60093	10 ¹⁵
Dielectric strength 1 mm	kV/mm	ASTM 149	20
Tracking resistance		53 480	KC175
Miscellaneous			
Moisture absorption: Equilibrium in standard atmosphere (23 °C / 50 % relative humidity)	%	62	0.02
Water absorption at saturation at 23 °C	%	62	1
Resistance to hot water, washing soda			resistant
Flammability according to UL standard 94			VO
Resistance to weathering			

ENSINGER: Production and stock programme

- Semi-finished product, finished parts, injection moulded parts and profiles in more than 500 materials and modifications.
- Engineering plastics: PA extruded or cast, POM, PC, PET, PBT, PPE, PP, PE
- High temperature plastics: PI, TPI, PEEK, PPS, PES, PPSU, PEI, PSU, PVDF, PCTFE, PTFE
- Stock length: Standard 3 metres. Cast rod and sheet 2 mts. Tube up to 3.5 mts. PE, PP, PVC, and PTFE 2 mts
- Pressed/sintered semi-finished product: PI, PEEK, PPS, PTFE/PI and modifications, as well as PCTFE in special sizes ie, large discs, tubes and rings with diameters up to about 1400 mm
- Material modifications: eg. glass, carbon and aramid fibre, talc, MoS₂, graphite, PTFE, PE, silicone oil, internal lubrication