ENSINGER
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Material Data Sheet, October 2005

TECATRON GF 40

Chemical Designation :	Polyphenylene sulphide
DIN−Abbreviation:	PPS GF 40
Colours, fillers:	beige, 40 % Glass fibres

Main features

- high thermal and mechanical capacity
- hydrolysis resistant
- good machinability
- rigid
- electrically insulating
- good chemical resistance
- good electrical insulation
- very creep resistant
- high dimensional stability
- self extinghishing V−0

Preferred Fields

- transport and conveyor technology
- precision engineering
- chemical engineering
- pumps and instrument manufacture
- electrical device
- construction industry

Applications

Thermal/mechanical high loaded structural parts, insulators (thermal/electrical), connectors, friction rings, contact rails, support rings, device housings, flanges, press leads,

Properties

Mechanical	**dry / moist**		**standard**
Tensile strength at yield		MPa	
Elongation at yield		%	
Tensile strength at break	185	MPa	DIN EN ISO 527

Elongation at break	1,9	%	DIN EN ISO 527
Modulus of elasticity in tension	14000	MPa	DIN EN ISO 527
Modulus of elasticity after flexural test	13000	MPa	DIN EN ISO 178
Hardness	320		DIN 53 456 (Ball indentation hardness)
Impact strength 23º C (Charpy)	45	KJ/m²	DIN EN ISO 179 (Charpy)
Creep rupture strength after 1000 h with static load		MPa	
Time yield limit for 1% elongation after 1000 h		MPa	
Co−efficient of friction p = 0,05 N/mm²v=0,6 m/s on steel, hardened and ground			
Wear p = 0,05 N/mm²v=0,6 m/s on steel, hardened and ground		µm/km	

Thermal	**dry / moist**		**standard**
Crystalline melting point	280	°C	DIN 53 765
Glass transition temperature	90	°C	DIN 53 765
Heat distortion temperature HDT, Method A	260	°C	ISO−R 75 Method A (DIN 53 461)
Heat distortion temperature HDT, Method B		°C	
Max. service temperature			
short term	260	°C	
long term	230	°C	
Thermal conductivity (23º C)	0,25	W/(K·m)	
Specific heat (23º C)	1,18	J/g.K	
Coefficient of thermal expansion (23−55ºC)	ca. 3	10^{-5}1/K	DIN 53 752

Properties

Electrical	dry / moist		standard
Dielectric constant (10^6 Hz)	4		DIN 53 483, IEC−250
Dielectric loss factor (10^6 Hz)	0,004		DIN 53 483, IEC−250
Specific volume resistance	10^13	Ω*cm	DIN IEC 60093
Surface resistance	10^15	Ω	DIN IEC 60093
Dielectric strength	20	kV/mm	DIN 53 481, IEC−243, VDE 0303 Teil 2
Resistance to tracking	KC 175		DIN 53 480, VDE 0303 Teil 1

Miscellaneous	dry / moist		standard
Density	1,64	g/cm^3	DIN 53 479
Moisture absorption (23°C/50RH)	0,02	%	DIN EN ISO 62
Water absorption to equilibrium	1	%	DIN 53 495
Flammability acc. to UL standard 94	V0		

(1) Testing of semi−finished products

The above information corresponds with our current knowledge and indicates our products and possible applications. We cannot give a legally binding guarantee of chemical resistance, of certain properties and the suitability of our products and their applications. Our products are not destined for use in medical and dental implants. Existing commercial patents must be observed. Unless otherwise stated, these values represent averages taken from injection moulding samples, dry as moulded. We reserve the right to make technical alterations.