ENSINGER
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Material Data Sheet, October 2005

TECATRON

Chemical Designation :	Polyphenylene sulphide
DIN−Abbreviation:	PPS
Colours, fillers:	natural

Main features

- high thermal and mechanical capacity
- continuous service temperature up to 230°C
- very good chemical resistance
- inherently flame retardant (UL94 V−O)
- high hardness and rigidity
- high dimensional stability
- good radiation−resistance
- low creep

Preferred Fields

- electronics
- vacuum technology
- pumps and instrument manufacture
- precision engineering
- electrical engineering
- chemical engineering
- maintenance engineering
- mechanical engineering

Applications

Wafer clamping rings, light sockets, sensor housings, catalyst supports, flanges, thermal/electrical insulators, pump housing parts,chip carrier, valve bodies, switch and plug parts

Properties

Mechanical	**dry / moist**		**standard**
Tensile strength at yield	75	MPa	DIN EN ISO 527
Elongation at yield		%	

Tensile strength at break		MPa	
Elongation at break	4	%	DIN EN ISO 527
Modulus of elasticity in tension	3700	MPa	DIN EN ISO 527
Modulus of elasticity after flexural test	3600	MPa	DIN EN ISO 178
Hardness	190		DIN 53 456 (Kugeldruckhärte)
Impact strength 23º C (Charpy)	50	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	110	°C	ISO−R 75 Verfahren 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)		J/g.K	
Coefficient of thermal expansion (23−55ºC)	5	10^{-5}1/K	DIN 53 752

Properties

Electrical	dry / moist		standard
Dielectric constant (10^6 Hz)			
Dielectric loss factor (10^6 Hz)			
Specific volume resistance	10^13	Ω*cm	DIN IEC 60093
Surface resistance	10^15	Ω	DIN IEC 60093
Dielectric strength		kV/mm	
Resistance to tracking			

Miscellaneous	dry / moist		standard
Density	1,35	g/cm^3	DIN 53 479
Moisture absorption (23°C/50RH)	0,01	%	DIN EN ISO 62
Water absorption to equilibrium		%	
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.