ENSINGER
ASK. THINK. SUCCEED.

Material Data Sheet, December 2007

TECAPEEK HT sw

Chemical Designation :	Polyetherketone
DIN−Abbreviation:	PEK
Colours, fillers:	black

Main features

- high thermal and mechanical capacity
- excellent sliding properties
- electrically insulating
- creep resistant
- inherent low flammability (UL94 V−O)
- wear resistant
- resistant to cleaning agents and numerous solvents and detergents
- good radiation−resistance

Preferred Fields

- mechanical engineering
- transport and conveyor technology
- automotive engineering
- chemical engineering

Applications

Gears, friction bearings, wear strips, ball valve seals, bushes, pump housings, metering pistons, wafer supports, light mountings, plug parts

Properties

Mechanical	dry / moist		standard
Tensile strength at yield	110	MPa	DIN EN ISO 527
Elongation at yield	5	%	DIN EN ISO 527
Tensile strength at break		MPa	

Elongation at break	20	%	DIN EN ISO 527
Modulus of elasticity in tension	3800	MPa	DIN EN ISO 527
Modulus of elasticity after flexural test	4100	MPa	
Hardness	R108		ASTM D 785 (Rockwell)
Impact strength 23° C (Charpy)	52	KJ/m²	ASTM D 256 (Izod)
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	374	°C	DIN 53 765
Glass transition temperature	157	°C	DIN 53 765
Heat distortion temperature HDT, Method A	165	°C	ISO−R 75 Verfahren A (DIN 53 461)
Heat distortion temperature HDT, Method B		°C	
Max. service temperature			
short term		°C	
long term	260	°C	
Thermal conductivity (23° C)		W/(K·m)	
Specific heat (23° C)		J/g.K	
Coefficient of thermal expansion (23−55°C)	5,7	10^{-5} 1/K	ASTM D 696

Properties

Electrical	dry / moist		standard
Dielectric constant (10^6 Hz)	3,3		DIN 53 483, IEC−250
Dielectric loss factor (10^6 Hz)	0,0035		IEC 112
Specific volume resistance	10^16	Ω*cm	EC 93
Surface resistance		Ω	
Dielectric strength		kV/mm	
Resistance to tracking			

Miscellaneous	dry / moist		standard
Density	1,32	g/cm^3	DIN 53 479
Moisture absorption (23°C/50RH)		%	
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.