











Material Data Sheet











PEEK natural

Chemical Designation : Polyetheretherketone
 DIN-Abbreviation: PEEK
 Colours, fillers: natural

Main features

-  high thermal and mechanical capacity
 -  electrically insulating
 -  inherent low flammability (UL94 V-O)
 -  good radiation-resistance
 -  low ionic impurities
 -  good sliding properties
 -  resistant to numerous detergents
 -  creep resistant
 -  resistant to hydrolysis and superheated steam
 -  low emmission in vaccum
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Preferred Fields

-  machine construction
 -  aircraft and aerospace industries
 -  textile machinery
 -  chemical engineering
 -  automotive engineering
 -  food technology
 -  vacuum technology
 -  Semiconductor technology
 -  medical technology
 -  electronics
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Applications

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

Properties

Material Data Sheet	PEEK natural		
Mechanical	dry / moist		standard
Tensile strength at yield	95	MPa	DIN EN ISO 527
Elongation at yield	5	%	DIN EN ISO 527
Elongation at break	25	%	DIN EN ISO 527
Modulus of elasticity in tension	3000	MPa	DIN EN ISO 527
Modulus of elasticity after flexural test	4100	MPa	DIN EN ISO 178
Hardness	M99		ASTM D 785
Impact strength 23° C (Charpy)	n.b.	KJ/m ²	DIN EN ISO 179 (Charpy)
Co-efficient of friction p = 0,05 N/mm ² v=0,6 m/s on steel, hardened and ground	0,30-0,38		

Thermal	dry / moist		standard
Crystalline melting point	343	°C	DIN 53 765
Glass transition temperature	143	°C	DIN 53 765
Heat distortion temperature HDT, Method A	152	°C	ISO-R 75 Verfahren A (DIN 53 461)
Heat distortion temperature HDT, Method B	182	°C	ISO-R 75 Verfahren B (DIN 53 461)
Max. service temperature			
short term	300	°C	
long term	260	°C	
Thermal conductivity (23° C)	0,25	W/(K·m)	
Specific heat (23° C)	0,32	J/g.K	
Coefficient of thermal expansion (23-55°C)	5,0	10 ⁻⁵ 1/K	DIN 53 752

Electrical	dry / moist		standard
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Miscellaneous	dry / moist		standard
Density	1,30	g/cm ³	DIN 53 479
Moisture absorption (23°C/50RH)	0,1	%	DIN EN ISO 62
Water absorption to equilibrium	0,5	%	DIN EN ISO 62
Flammability acc. to UL standard 94	V0		
Resistance to hot water, washing soda:	+		
Resistance to weathering	-		

(1) Testing of semi-finished products

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