

Material: Polyetheretherketone

Abbreviation: PEEK



Short description of material:

A partially crystalline high-performance plastic with very good sliding and mechanical properties even under thermal load. Additionally, PEEK stands out due to its excellent chemical resistance.

Material Origin: Europe

Application examples:

- gears
- bushings
- piston rings
- valves
- wiper blades

Colours: natural (\approx RAL 7032), black

Mechanical values		dry	
Density	ISO 1183	1,32	g/cm ³
Yield Stress	ISO 527	95	MPa
Elongation due to tearing	ISO 527	45	%
Modulus of elasticity resulting from tensile test	ISO 527	3.600	MPa
Modulus of elasticity resulting from bending test	ISO 178	4.100	MPa
Flexural strength	ISO 178	160	MPa
Impact strength ¹⁾	ISO 179	o.B.	kJ/m ²
Notched –bar impact strength	ISO 179	7	kJ/m ²
Ball indentation hardness H _{358/30}	ISO 2039-1	230	MPa
Creep rate stress at 1% elongation ²⁾	DIN 53 444	--	MPa
Sliding friction coefficient against steel (dry running) ³⁾	-----	0, 34	-----
Sliding wear agents steel (dry running) ³⁾	-----	---	µm/km
Thermal values			
Melting temperature	ISO 3146	+340	°C
Thermal conductivity	DIN 52612	0, 25	W/ (K·m)
Specific thermal capacity	-----	1,06	J/ (g·k)
Coefficient of linear expansion ⁴⁾	-----	4 -5	10 ⁻⁵ ·K ⁻¹
Operating temperature range (long-term) ⁵⁾	-----	- 40 / + 250	°C
Operating temperature range (short-term) ⁵⁾	-----	+ 310	°C
Fire behavior	UL 94	V- 0	-----
Electrical values			
Dielectric constant ⁶⁾	IEC 250	3,2	-----
Dielectric loss factor ⁶⁾	IEC 250	0,002	----
Specific volume resistance	IEC 93	10 ¹⁶	Ω· cm
Surface resistance	IEC 93	10 ¹⁶	Ω
Dielectric strength	IEC 243	24	KV/mm
Creep current resistance	IEC112	CTI 150	----
Miscellaneous data			
Moisture absorption in normal climate until saturated	DIN 53 715	0, 2	%
Water absorption until saturated	ISO 62	0, 45	%

1; Measured with a pendulum impact testing machine 0,1 DIN 51 222

2; Tension resulting in 1% total elongation after 1.000 h

3; against steel, hardened and ground , P = 0,05 MPa,

V=0,6 m/s, t = 60 °C near running surface

4; For a temperature range of + 23 °C to + 60 °C

5; Experience values established with finished part that are not under any stress in heated air, depending on the type and from of heat exposure, short-term = max. 1 h long term = months

6; at 10⁶ Hz

w.b. = without breakage

1 MPa = 1 N/mm²

1 g/cm³ = 1.000 kg/m³

1 kV/mm = 1 MV/m

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