

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.

Application examples:

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

Colours: natural (≈ 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 against steel (dry running) ³⁾	—		-	µm/km
Thermal values				
Melting temperature	ISO 3146		+ 340	°C
Thermal conductivity	DIN 52 612		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 behaviour	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		10¹⁶	Ω·cm
Surface resistance	IEC 93		10¹⁶	Ω
Dielectric strength	IEC 243		24	KV/mm
Creep current resistance	IEC 112		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 parts that are not under any stress in heated air, depending on the type and form 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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