

Short description of Material:

Amorphous high performance plastics with high strength and stiffness as well as good creep resistance over a wide temperature range. PEI also has a high long term operating temperature and good dimensional stability and is hydrolysis resistant.

Application examples:

- spools
- sight glasses
- gasket rings
- equipment housing
- insulating joints

Colours: natural (amber, translucent)

Mechanical values			dry	
Density	ISO 1183		1,27	g / cm ³
Yield stress	ISO 527		105	MPa
Elongation due to tearing	ISO 527		> 50	%
Modulus of elasticity resulting from tensile test	ISO 527		3.100	MPa
Modulus of elasticity resulting from bending test	ISO 178		3.300	MPa
Flexural strength	ISO 178		145	MPa
Impact strength ¹⁾	ISO 179		o.B.	kJ/m ²
Notched-bar impact strength	ISO 179		-	kJ/m ²
Ball indentation hardness H _{358/30}	ISO 2039-1		165	MPa
Creep rate stress at 1% elongation ²⁾	DIN 53 444		-	MPa
Sliding friction coefficient against steel (dry running) ³⁾	—		-	—
Sliding wear against steel (dry running) ³⁾	—		-	µm/km
Thermal values				
Melting temperature	ISO 3146		-	°C
Thermal conductivity	DIN 52 612		0,22	W / (K · m)
Specific thermal capacity	—		-	J / (g · K)
Coefficient of linear expansion ⁴⁾	—		5 - 6	10 ⁻⁵ · K ⁻¹
Operating temperature range (long-term) ⁵⁾	—		- 40 / + 170	°C
Operating temperature range (short-term) ⁵⁾	—		+ 200	°C
Fire behaviour	UL 94		V - 0	—
Electrical values				
Dielectric constant ⁶⁾	IEC 250		3,0	—
Dielectric loss factor ⁶⁾	IEC 250		0,003	—
Specific volume resistance	IEC 93		10 ¹⁸	Ω · cm
Surface resistance	IEC 93		10 ¹⁷	Ω
Dielectric strength	IEC 243		33	KV/mm
Creep current resistance	IEC 112		CTI 175	—
Miscellaneous data				
Moisture absorption in normal climate until saturated	DIN 53 715		0,75	%
Water absorption until saturated	ISO 62		1,35	%

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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