

PEEK



POLYETHER ETHER KETONE

Material description

PEEK is a semi-crystalline thermoplastic and belongs to the group of high-performance plastics. This plastic is characterised by its extremely wide range of applications, even for highly stressed components. PEEK has an optimal ratio of stiffness, strength, toughness, low creep tendency, and high elastic modulus. These excellent properties are maintained even at temperatures up to 250 °C. PEEK is suitable for applications as bearings and guides thanks to its excellent sliding and abrasion behaviour. Its high resistance to chemicals and hydrolysis, as well as resistance to high-energy radiation, open up a wide range of applications for PEEK which were previously reserved for metals. PEEK is also flame retardant, bondable and weldable.

Conformities

RoHS, REACH

Physical properties	Test method	Value	Unit
Density	DIN EN ISO 1183-1	1.31	g/cm ³
Water absorption	DIN EN ISO 62	0.2	%
Sliding friction			
Abrasion resistance			

Mechanical properties	Test method	Value	Unit
Yield stress	DIN EN ISO 527	110	MPa
Elongation at break	DIN EN ISO 527	20	%
Tensile modulus of elasticity	DIN EN ISO 527	4000	MPa
Notched impact strength	DIN EN ISO 527	3.5	kJ/m ²
Ball indentation hardness	DIN EN ISO 2039-1	230	MPa

Thermal properties	Test method	Value	Unit
Thermal conductivity	DIN 52612-2	0.25	W/(m*K)
Heat capacity	DIN 52612-1	1.34	kJ/(kg*K)
Coefficient of thermal expansion	DIN 53752	50	10 ⁻⁶ *K ⁻¹
Operating temperature short term		310	°C
Operating temperature long term		-30 bis 250	°C
Heat deflection temperature	DIN EN ISO 75 / A	152	°C
Flammability	UL 94, 3 mm	V0	

Electrical properties	Test method	Value	Unit
Volume resistivity	IEC 60093	10 ¹⁶	Ω * cm
Surface resistivity	IEC 60093	10 ¹⁸	Ω * cm
Dielectric strength	IEC 60243	20	kV/mm
Comparative tracking index (CTI)	IEC 60112	150	CTI

These technical data have been determined as average values by our suppliers from many individual measurements. In all measurements, the test specimens were tested in the dry state. We pass on the data with reservation. The table does not claim to be complete or correct. Material technology is subject to constant further development. No rights or guarantees can be derived from it. Own tests are necessary because the environmental and operating conditions (humidity, temperature, mechanical forces, radiation and chemicals, etc.) set limits in the application.