PET

POLYETHYLENE TEREPHTHALATE

Material description

PET is a semi-crystalline thermoplastic polyester with extremely low moisture absorption and excellent creep behaviour. Its high crystallinity results in its high hardness, tensile strength, stiffness, and low creep tendency. Its advantageous sliding behaviour with low wear and its large dimensional stability of PET make it a suitable material for precision machine elements with sliding functions. PET is not resistant to hydrolysis. Continuous applications in hot and humid environments, condensation, hot water, and steam lead to cracking.

Conformities

RoHS, REACH

Physical properties	Test method	Value	Unit
Density	DIN EN ISO 1183-1	1.38	g/cm3
Water absorbtion	DIN EN ISO 62	0.25	%
Sliding friction		◑	
Abrasion resistance		◑	

Mechanical properties	Test method	Value	Unit
Yield stress	DIN EN ISO 527	85	MPa
Elongation at break	DIN EN ISO 527	15	%
Tensile modulus of elasticity	DIN EN ISO 527	3000	MPa
Notched impact strength	DIN EN ISO 179	2	kJ/m2
Shore Hardness D	DIN EN ISO 868	82	

Thermal properties	Test method	Value	Unit
Thermal conductivity	DIN 52612-2	0.28	W/(m*K)
Heat capacity	DIN 52612-1	1.1	kJ/(kg*K)
Coefficient of thermal expansion	DIN 53752	60	10^{-6*K}-1
Operating temperature short term		180	°C
Operating temperature long term		-20 bis 115	°C
Heat deflection temperature	DIN EN ISO 75 / A	138	°C
Flammability	UL 94, 3 mm	HB	

Electrical properties	Test method	Value	Unit
Volume resistivity	IEC 60093	10^{18}	Ω * cm
Surface resistivity	IEC 60093	10^{16}	Ω * cm
Dielectric strength	IEC 60243	20	kV/mm
Comparative tracking index (CTI)	IEC 60112	350	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.

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