PTFE

POLYTETRAFLUOROETHYLENE

Material description

PTFE is a semi-crystalline thermoplastic often referred to by its trade name Teflon®. Its carbon-fluorine compound and the spiral structure of the atoms result in a variety of remarkable properties. Its extraordinary resistance to a wide range of chemicals as well as the high operating temperature enable a versatile field of application for this material. PTFE is soft, hardly susceptible to notching and has excellent sliding properties. It has low strength and is hardly wettable. The abrasion resistance must be described as low.

Conformities

RoHS, REACH

Physical properties	Test method	Value	Unit
Density	DIN EN ISO 1183-1	2.16	g/cm3
Water absorbtion	DIN EN ISO 62	0.01	%
Sliding friction		●	
Abrasion resistance		◔	

Mechanical properties	Test method	Value	Unit
Yield stress	DIN EN ISO 527	10	MPa
Elongation at break	DIN EN ISO 527	350	%
Tensile modulus of elasticity	DIN EN ISO 527	420	MPa
Shore Hardness D	DIN EN ISO 868	54	

Thermal properties	Test method	Value	Unit
Thermal conductivity	DIN 52612-2	0.24	W/(m*K)
Heat capacity	DIN 52612-1	0.96	kJ/(kg*K)
Coefficient of thermal expansion	DIN 53752	165	10^{-6*K}-1
Operating temperature short term		300	°C
Operating temperature long term		-200 bis 260	°C
Heat deflection temperature	DIN EN ISO 75 / A	50	°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^{17}	Ω * cm
Dielectric strength	IEC 60243	20	kV/mm
Comparative tracking index (CTI)	IEC 60112	600	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.

amsler & frey ag
Swiss-machined plastic parts

Amsler & Frey AG
Feldstrasse 26
5107 Schinznach-Dorf

T +41 56 463 60 70
info@amsler-frey.ch