PE 1000 / UHMW-PE

POLYETHYLENE / UHMW-PE

Material description

PE 1000 is a semi-crystalline thermoplastic and has the highest molecular weight. PE 1000 achieves excellent values for notch impact strength, abrasion resistance and tear resistance at high temperatures. Thanks to its excellent properties, PE 1000 is suitable for highly stressed applications in the field of materials handling technology. PE 1000 is also available in an antistatic version.

Conformities

RoHS, REACH

Physical properties	Test method	Value	Unit
Density	DIN EN ISO 1183-1	0.94	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	22	MPa
Elongation at break	DIN EN ISO 527	>50	%
Tensile modulus of elasticity	DIN EN ISO 527	700	MPa
Notched impact strength	DIN EN ISO 179	ohne Bruch	kJ/m2
Shore Hardness D	DIN EN ISO 868	63	

Thermal properties	Test method	Value	Unit
Thermal conductivity	DIN 52612-2	0.4	W/(m*K)
Heat capacity	DIN 52612-1	1.9	kJ/(kg*K)
Coefficient of thermal expansion	DIN 53752	150-230	10^{-6*K}-1
Operating temperature short term		130	°C
Operating temperature long term		-250 bis 80	°C
Heat deflection temperature	DIN EN ISO 75 / A	42	°C
Flammability	UL 94, 3 mm	HB	

Electrical properties	Test method	Value	Unit
Volume resistivity	IEC 60093	10^{14}	Ω * cm
Surface resistivity	IEC 60093	10^{14}	Ω * cm
Dielectric strength	IEC 60243	45	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.

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