



Material data sheet PE 1000 black

PE 1000 black – is an ultra-high-molecular-low pressure polyethylene (UHMW-PE) with a molecular weight ~ 500.000 g/mol..

Colour: black / similar RAL9005

Properties

- good wear resistance
- very high notched impact strength
- very good sliding properties
- extremely versatile



Target Industries

- Mechanical engineering
- Conveying industry
- Food industry
- Chemical industry

Characteristics and standard values

Properties Physical properties	Method	PE 1000 - black	
		SI	US
Molecular-weight	k.a.	~ 0.5 Mio. g/mol.	~ 0.5 Mio. g/mol.
Density	DINENISO 1183-1 (04/2013) ASTM D792	> 0.930 g/cm ³	> 58.058 lb/ft ³
Notched impact strength	DINENISO 11542-2 (01/2010)	> 140 kJ/m ²	> 66.57 ft-lb/in ²
Abrasion-Index (Sand-Slurry)	DINENISO 15527 (05/2013)	100	100
Tensile strength at yield (1B - 50mm/Min.)	DINENISO 527-2 (06/2012) ASTM D 638 (2010)	> 18 N/mm ²	> 2610 psi
Elongation (Break / 1B – 50 mm/Min.)	DINENISO 527-2 (06/2012) ASTM D 638 (2010)	> 350 %	> 350 %
Tensile-E-modulus (1B – 1 mm/Min.)	DINENISO 527-2 (06/2012) ASTM D 638 (2010)	> 650 N/mm ²	> 94250 psi
Static Friction	ASTM D 1894 (2011)	~ 0.15 - 0.20	~ 0.15 - 0.20
Dynamic Friction	ASTM D 1894 (2011)	~ 0.10 - 0.15	~ 0.10 - 0.15
Shore-D-Hardness, 3 sec. value 6 mm plate	DINENISO 868 (10/2003)	61 – 65 D	61 – 65 D
Ball indentation hardness	DINENISO 2039	~ 35 N/mm ²	~ 5075 psi
Water absorption	DINENISO 62 (05/2008)	< 0.01 %	< 0.01 %





Werkstoffdatenblatt PE 1000 black

Thermal properties	Method	PE 1000 - black	
		SI	US
Melting Piont (DSC)	DINENISO 11357-1 (03/2010)	133 - 135 °C	271.4 – 275 °F
Thermal Conductivity	Wire method	~ 0.41 W/m*K	~ 2.84253 (BTU-in)/hr-ft ² -°F
Max. operation temperature	Literature	~ 80 °C	176 °F
Coefficient of thermal expansion (23 – 80°C)	ISO 11359	~ 0.00015 - 0.00020 mm/mm °C	~ 0.000083 - 0.000111 in/in °F

Electrical properties			
Volume resistivity	DINEN 62631-3-1 (01/2017)	> 1.0E+14 Ohm*cm	> 1.0E+14 Ohm*cm
Surface resistivity	DINEN 62631-3-2 (10/2016)	> 1.0E+14 Ohm	> 1.0E+14 Ohm
ATEX-Directive – TÜV approved!	ATEX-Directive	---	---
ESD-D	---	--- Ohm	--- Ohm

Burning properties			
Fire resistance (Self-classification)	DIN 4102	B2 Class	B2 Class
Fire resistance (Self-classification)	UL94	HB Class	HB Class

Physiological properties			
Food compliant		EU/FDA	EU/FDA

The above data are based on the present knowledge and are given without guarantee. Existing laws and conditions are to be respected by the user of our products. The decision about the suitability of a material for a certain application must be made by the user. We reserve the right to alter the indicated values after for a 15 mm thick sheet.

2020/09/24

