

Technical Data Sheet

PE 1000 conductive black

PE 1000 (PE-UHMW), electrically conductive

Typical Properties

- Electrically conductive (surface resistivity $\leq 10^6 \Omega$)
- Highest wear resistance and impact strength
- Very low friction, no stick-slip
- Service down to -150°C , UV-stabilised

Typical Industries

- Conveyor Technology
- Mechanical Engineering
- Electrical Industry
- Potentially Explosive Areas

	Test Method	Unit	Value
General Properties			
Density	ISO 1183-1	g / cm^3	< 0.96
Molecular weight	Average	million g / mol	> 5
Water absorption (23°C)	ISO 62	%	< 0.01
Flammability	UL 94		HB
Mechanical Properties			
Yield stress	ISO 527-2	MPa	≈ 20
Elongation at break	ISO 527-2	%	> 300
Tensile modulus of elasticity	ISO 527-2	MPa	> 700
Notched impact strength	ISO 179	kJ / m^2	no break
Ball indentation hardness	ISO 2039-1	MPa	> 30
Shore hardness	ISO 868	scale D	61 – 63
Abrasion resistance (sand slurry test)	ISO 15527	%	110
Coefficient of sliding friction	Average		≈ 0.2
Thermal Properties			
Melting temperature	ISO 11357	$^\circ\text{C}$	130 – 135
Thermal conductivity (23°C)	DIN 52612	$\text{W} / (\text{m} \cdot \text{K})$	0.40
Coefficient of linear thermal expansion ($23\text{--}60^\circ\text{C}$)	ISO 11359-2	$10^{-6} / \text{K}$	200
Service temperature, long term	Average	$^\circ\text{C}$	$-150 \dots 80$
Service temperature, short term (max.)	Average	$^\circ\text{C}$	90

	Test Method	Unit	Value
Electrical Properties			
Volume resistivity	IEC 60093	$\Omega \cdot \text{cm}$	$\leq 10^4$
Surface resistivity	IEC 60093	Ω	$\leq 10^6$

The specified values are average values obtained from individual measurements and are up to the latest standards. They are intended merely as information about our products and as an aid to the selection of material. We therefore cannot legally bindingly vouch for specific properties or suitability for specific purposes, as properties may also depend, for example, on the dimensions of the semi-finished products. The short-time maximum operating temperature applies only to applications that involve a low mechanical load during a few hours only. The long-term maximum operating temperature is based on the heat-ageing of the plastics through oxidation, which results in a reduction of the mechanical properties. On thick-walled parts only the surface layer - which can be better protected by the addition of antioxidants - is affected by oxidation at high temperatures. The core normally remains unimpaired. The short-term and long-term maximum operating temperatures depend on pressure and media. The minimum operating temperature is mainly determined by possible impact and shock stresses during operation. The specified values apply to low stresses.

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