



UHMWPE Black

PE-1000

(Ultra High Molecular Weight Polyethylene)

Colour: Black

Density: 0.930g/cm³

Material Data Sheet

| Mechanical Properties | Value | Unit | DIN/EN/ISO |
|--|--------|-------------------|------------|
| Tensile strength at yield | 17 | MPa | 527/D638 |
| Elongation at yield | 11 | % | 527 |
| Modulus of elasticity in tension | 700 | MPa | 527/D638 |
| Modulus of elasticity in flexure | 800 | MPa | 178/D790 |
| Impact strength | No br. | kJ/m ² | 179/D256 |
| Creep rupture strength after 1000hrs with static load | - | MPa | - |
| Time yield limit for 1% elongation after 1000hrs | - | MPa | - |
| Coefficient of friction against hardened and ground steel P= 0.05 N/mm ² , v= 0.6m/s | 0.29 | - | - |
| Ball indentation hardness | 35 | MPa | 2039-1 |
| Shore hardness D | 64 | - | 868 |

| Thermal Properties | Value | Unit | DIN/EN/ISO |
|-------------------------------------|-------|--------------------|------------|
| Glass transition temperature | - | °C | 53736 |
| Crystalline melting point | 135 | °C | 53736 |
| Service temperature (short term) | 120 | °C | - |
| Service temperature (long term) | 90 | °C | - |
| Coefficient of thermal expansion | 20 | 10 ⁻⁵ K | 53483/D696 |
| Specific heat | 1.84 | J/(g*K) | - |
| Coefficient of thermal conductivity | 0.41 | W/(K*m) | - |

| Electrical properties | Value | Unit | DIN/IEC |
|-----------------------|-------------------|-------|---------|
| Surface resistivity | >10 ¹⁴ | Ohm | 60093 |
| Dielectric strength | 44 | kV/mm | 60243-1 |

| Other properties | Value | Unit | DIN/EN/ISO/IEC |
|---------------------------------------|-----------|------|----------------|
| Water absorption | <0.01 | % | 62 |
| Resistance to hot water, washing soda | Resistant | - | - |
| Resistance to weathering | Yes | - | - |
| Flammability (UL94) | HB | - | - |

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The following information corresponds with our current knowledge and indicates our products and possible applications. We cannot give a legally binding guarantee of certain properties or the suitability for a specific application. Existing commercial patents must be observed. A definitive quality guarantee is given in our general conditions of sales. Unless otherwise stated, these values represent averages taken from injection moulding samples. We reserve the right of technical alterations.