

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/cm ³ |
| 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 | >200 | % |
| Tensile modulus of elasticity | DIN EN ISO 527 | 700 | MPa |
| Notched impact strength | DIN EN ISO 527 | ohne Bruch | kJ/m ² |
| Ball indentation hardness | DIN EN ISO 2039-1 | 38 | MPa |

| 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.