

Physical properties PE-HMW

| Properties | Test methods | Units | Values |
|--|--|-----------------------|---|
| Colour | - | - | natural (white) / green / black / colours |
| Average molar mass (average molecular weight) | - | 10 ⁶ g/mol | 0.5 |
| Density | ISO 1183-1 | g/cm ³ | 0.96 |
| Water absorption: - at saturation in water of 23°C | - | % | <0.1 |
| Thermal Properties | | | |
| Melting temperature (DSC, 10° C/min.) | ISO 11357-1/-3 | °C | 135 |
| Glass transition temperature | | °C | - |
| Thermal conductivity at 23°C | - | W/(K.m) | 0.40 |
| Coefficient of linear thermal expansion: - average value between 23 and 100°C | - | m/(m.K) | 150 x 10 ⁶ |
| Temperature of deflection under load: - method A: 1.8 MPa | ISO 75-1/-2 | °C | 44 |
| vicat - softening temperature - VST/B50 | ISO 306 | °C | 80 |
| Max. allowable service temperature in air: - for short periods - continuously: for. min. 20'000 h | - - | °C °C | 120 80 |
| Min. service temperature | - | °C | -100 |
| Flammability: - „Oxygen Index“ - according to UL 94 (6 mm thickness) | ISO 4589-1/-2 - | % - | <20 HB |
| Mechanical Properties at 23°C | | | |
| Tension test: - tensile stress at yield - Tensile strength - tensile strain at break - tensile modulus of elasticity | ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 | MPa % % MPa | 28 10 >50 1300 |
| Compression test: - compressive stress at 1 / 2 / 5% nominal strain | ISO 604 | MPa | 12 / 18.5 / 26.5 |
| Flexural test: - flexural strength | ISO 178 | MPa | 27 |
| Charpy impact strength - unnotched | ISO 179-1/1eU | kJ/m ² | no break |
| Charpy impact strength - notched | ISO 179-1/1eA | kJ/m ² | 105P |
| Charpy impact strength - notched (14° V-notch, both sides) | ISO 11542-2 | kJ/m ² | 25 |
| Ball indentation hardness | ISO 2039-1 | N/mm ² | 48 |
| Shore hardness D (15 s) | ISO 2039-2 | - | 62 |
| Relative weight loss in an abrasion test according to the "sand-water-slurry-method"; TIVAR 1000 = 100 | ISO 15527 | - | 350 |
| Electrical Properties at 23°C | | | |
| Electrical strength | IEC 60243-1 | kV/mm | 45 |
| Volume resistivity | IEC 60093 | Ohm.cm | > 10 ¹⁴ |
| Surface resistivity | IEC 60093 | Ohm | >10 ¹² |
| Relative permittivity ε _r : - bei 100 Hz - bei 1 MHz | IEC 60250 IEC 60250 | - - | 2.4 2.4 |
| Dielectric dissipation factor δ tan : - bei 100 Hz - bei 1 MHz | IEC 60250 IEC 60250 | - - | 0.0002 0.0002 |
| Comparative tracking index (CTI) | IEC 60112 | -- | 600 |

Note: 1 g/cm³ = 1000 kg/m³; 1 Mpa = 1 N/mm²; 1 kV/mm = 1 MV/m.

This table is a valuable help in the choice of a material. The data listed here fall within the normal range of products properties, but they should not be used to establish material specification limits nor used alone as the basis of design.