

# PES



## POLYETHERSULFONE

### Material description

PES is an amorphous thermoplastic and belongs to the group of high - performance plastics. Its high mechanical property level over a temperature range of -50 °C to 180 ° C, as well as its high chemical and hydrolysis resistance, open up a wide range of applications for this material. PES can be sterilised in many cases and has favourable fire behaviour. Negative properties include high notch sensitivity and a tendency to stress cracking. PES has an amber - coloured transparent appearance.

### Conformities

RoHS, REACH

| Physical properties | Test method       | Value   | Unit  |
|---------------------|-------------------|---|-------|
| Density             | DIN EN ISO 1183-1 | 1.37  | g/cm3 |
| Water absorbtion    | DIN EN ISO 62     | 0.7   | %     |
| Sliding friction    |                   |  |       |
| Abrasion resistance |                   |  |       |

| Mechanical properties         | Test method       | Value | Unit  |
|-------------------------------|-------------------|-------|-------|
| Yield stress                  | DIN EN ISO 527    | 90    | MPa   |
| Elongation at break           | DIN EN ISO 527    | 15    | %     |
| Tensile modulus of elasticity | DIN EN ISO 527    | 2700  | MPa   |
| Notched impact strength       | DIN EN ISO 527    | 7     | kJ/m2 |
| Ball indentation hardness     | DIN EN ISO 2039-1 | 155   | MPa   |

| Thermal properties               | Test method       | Value       | Unit                              |
|----------------------------------|-------------------|-------------|-----------------------------------|
| Thermal conductivity             | DIN 52612-2       | 0.18        | W/(m*K)                           |
| Heat capacity                    | DIN 52612-1       | 1.1         | kJ/(kg*K)                         |
| Coefficient of thermal expansion | DIN 53752         | 55          | 10 <sup>-6</sup> *K <sup>-1</sup> |
| Operating temperature short term |                   | 220         | °C                                |
| Operating temperature long term  |                   | -50 bis 180 | °C                                |
| Heat deflection temperature      | DIN EN ISO 75 / A | 200         | °C                                |
| Flammability                     | UL 94, 3 mm       | V0          |                                   |

| Electrical properties            | Test method | Value            | Unit   |
|----------------------------------|-------------|------------------|--------|
| Volume resistivity               | IEC 60093   | 10 <sup>18</sup> | Ω * cm |
| Surface resistivity              | IEC 60093   | 10 <sup>14</sup> | Ω * cm |
| Dielectric strength              | IEC 60243   | 25               | kV/mm  |
| Comparative tracking index (CTI) | IEC 60112   | 150              | 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.