Murdotec KUNSTSTOFFE

# Technical data

## Murdotec® 1000 natural

| Technical properties | Standard | Unit | Values |
|---|---|---|---|
| Short mark | ISO 1043-1 | | UHMW-PE |
| Material colours | | | natural |
| similar RAL | | | 9016 |
| Average molecular weight | N.N. | g/mol | $5 \times 10^6$ |
| Sheet group | ISO 15527 | | 1.2 |
| Density | ISO 1183-1 | $g/cm^3$ | ≤ 0.94 |
| Water absorption - saturation at 23°C | | % | < 0.01 |

| Mechanical properties [1] | Standard | Unit | Values |
|---|---|---|---|
| Yield stress | ISO 527-1/-2 | MPa | ~ 20 |
| Breaking elongation | ISO 527-2 | % | > 300 |
| Coefficient of elasticity | ISO 527-1/-2 | MPa | > 700 |
| Double-sided notch impact toughness (Charpy) | ISO 11542-2 | $kJ/m^2$ | ≥ 170 |
| Shore hardness D | ISO 868 | | 61-65 |
| Ball indentation hardness | ISO 2039-1 | $N/mm^2$ | > 30 |
| Wear resistance (Sand-Slurry-Test) | ISO 15527 | % | 100 |
| Av. coefficient of friction against steel (0,25 m/s, 0,25 MPa, 24 h) [2] | | | ~ 0.20 |
| Av. coefficient of friction against POM (0,25 m/s, 0,25 MPa, 24 h) [2] | | | |

| Thermal properties | Standard | Unit | Values |
|---|---|---|---|
| Heat conductivity at 23 °C | ISO 22007-4 | W/(K × m) | 0.4 |
| Linear thermal coefficient of expansion | | | |
| - Average value between 23 and 60 °C | ISO 11359-1/-2 | m/(K × m) | $20 \times 10^5$ |
| Upper service temperature in air | | | |
| - short term [3] | | °C | 90 |
| - constant for 5000 h [4] | | °C | 80 |
| Lower service temperature [5] | N.N. | °C | -200 |
| Burning behaviour as per UL94 (sample thickness 3/6 mm) | DIN IEC 60695-11-10 | | HB/HB |
| Melting temperature | ISO 11357-1/-3 | °C | 130-135 |

| Electrical properties [1] | Standard | Unit | Values |
|---|---|---|---|
| Electric strength | IEC 60243-1 | kV/mm | ≤ 45 |
| Volume resistivity [6] | DIN EN 62631-3-1 | Ohm × cm | $> 10^{12}$ |
| Surface resistivity [6] | DIN EN 62631-3-2 | Ohm | $> 10^{12}$ |

| Physiological properties | Standard | Unit | Values |
|---|---|---|---|
| Food safe according to FDA regulations | | | Yes |
| Food safe according to regulation EU 10/2011 | | | Yes |

### Properties

- Good anti-adhesion properties
- Good resistance to chemicals
- Good notch impact strength
- Good shock and impact absorption
- Good machinability

### Applications

- Chemical industry
- Beverage industry
- Food sector
- Machine construction
- Transport and conveyor technology

### Legend

The material characteristic tables, which are based on data from our suppliers of raw materials, are intended to help you to quickly compare/ select a material. The values stated are short-term values that can be affected by processing, environmental, and application conditions. The user is solely responsible for the suitability of the selected material for the specific application.

RH Relative humidity
N.N. not named

1) The mechanical and electrical characteristics are based on a test in standard atmosphere at 23 °C/ 50% relative humidity (RH).

2) Test period 24h, linear oscillating measurement method.

3) Temperature stress for several hours; no or low mechanical stress (short-term service temperature).

4) Maximum continuous operating temperature in air: the specified temperature limit is based on the thermo-oxidative degradation (“aging”) after the specified period. It does not refer to the mechanical strength of the material.

5) As the temperature decreases, the impact strength drops. The specified values are based on the most unfavourable impact load possible and do not represent absolute practical limits (lower service temperature).

6) Test standard series DIN EN 62631-3 for insulating materials, DIN EN 61340 for dissipative and conductive materials.

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