## Technical Information

### Original Material "S" plus+® GB

Production based on PE-UHMW TG 1.1

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### Technical properties

<table>
<thead>
<tr>
<th>Code</th>
<th>Standard</th>
<th>Unit</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 1043-1</td>
<td>-</td>
<td></td>
<td>PE-UHMW</td>
</tr>
<tr>
<td>Material colour</td>
<td>-</td>
<td></td>
<td>lime</td>
</tr>
<tr>
<td>Average molecular weight</td>
<td>-</td>
<td>g/mol</td>
<td>(9 \times 10^6)</td>
</tr>
<tr>
<td>Sheet group</td>
<td>DIN EN ISO 15527</td>
<td>-</td>
<td>1.1</td>
</tr>
<tr>
<td>Density</td>
<td>DIN EN ISO 1183-1</td>
<td>kg/dm³</td>
<td>(10,94)</td>
</tr>
<tr>
<td>Water absorption – saturation at 23 °C</td>
<td>-</td>
<td>%</td>
<td>(&lt;0,01)</td>
</tr>
</tbody>
</table>

#### Mechanical properties

- **Yield stress**
  - DIN EN ISO 527-2 MPa
  - ~20

- **Breaking elongation**
  - DIN EN ISO 527-2 %
  - 1250

- **Coefficient of elasticity (pulling test)**
  - DIN EN ISO 868 MPa
  - 62-65

- **Charpy impact strength – two-sided notch**
  - DIN EN ISO 2039 kJ/m²
  - >250

- **Indentation hardness**
  - DIN EN ISO 15527 MPa
  - 135

- **Sand-Slurry-Test**
  - DIN EN ISO 15527 %
  - 80

- **Average coefficient of friction against steel**
  - \((0,25 \text{ m/s}, 0,25 \text{ N/mm}^2)\)
  - \(\mu\) 0.2

- **Average coefficient of friction against POM**
  - \((0,25 \text{ m/s}, 0,25 \text{ N/mm}^2)\)
  - \(\mu\) -

#### Thermal properties

- **Heat conductivity at 23 °C**
  - DIN 52612 W/(K x m)
  - 0.4

- **Linear thermal coefficient of expansion**
  - DIN EN ISO 11359-2 m/(K x m)
  - 17 \(\times 10^{-5}\)

- **Upper service temperature short-term in air**
  - °C
  - 90

- **Upper service temperature constant in air (1000h)**
  - °C
  - 80

- **Lower service temperature**
  - °C
  - -200

- **Burning behavior UL 94 – sample thickness 3/6mm**
  - -
  - HB/HB

- **Melting temperature**
  - DIN EN ISO 3146 °C
  - 130-135

#### Electrical properties

- **Electric strength**
  - IEC 60243 kV/mm
  - 545

- **Specific contact resistance**
  - IEC 60093 Ω x cm
  - 1000

- **Specific surface resistance**
  - IEC 60093 Ω
  - 100

#### Approved for use in the food industry

- **FDA**
  - yes

  - no

- **Under the designation**
  - Original Material "S" plus+® GB [FS]

- **Also available as food save material in accordance with regulation (EG) Nr. 1935/2004 - (EU) Nr. 10/2011**

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### 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
- **NB** no break

1. The mechanical and electrical characteristics are based on a test in standard atmosphere at 23 °C/50% relative humidity (RH).
2. Temperature stress for several hours; no or low mechanical stress (short-term service temperature).
3. 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.
4. 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).
5. The electric strength can be up to 50% lower than for natural colored materials (for black materials Murylon®, Murylon®, Murytal®, Murylat®, Murpec®).
6. Test period 24 h, oscillating measurement method.

### Chemical resistance of our materials:

For a detailed selection chart, see our Internet Pages [www.murtfeldt.com](http://www.murtfeldt.com) or [www.kunststoffratgeber.de/en](http://www.kunststoffratgeber.de/en).