

Technical properties	Standard	Unit	Values
Short mark	ISO 1043-1		UHMW-PE
Material colours			ruby red
similar RAL			3003
Average molecular weight	N.N.	g/mol	9×10^6
Sheet group	ISO 15527		1.1
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	%	> 200
Coefficient of elasticity	ISO 527-1/-2	MPa	> 600
Double-sided notch impact toughness (Charpy)	ISO 11542-2	kJ/m ²	≥ 140
Shore hardness D	ISO 868		61-64
Ball indentation hardness	ISO 2039-1	N/mm ²	> 30
Wear resistance (Sand-Slurry-Test)	ISO 15527	%	80
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)	20×10^{-5}
Upper service temperature in air			
- short term ³		°C	120
- constant for 5000 h ⁴		°C	100
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 shock and impact absorption
- Good machinability
- Heat stabilized

Applications

- Beverage and food filling machines
- Chain guides
- Food sector

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.