

Technical data

Original "S"® 8000® anthracite

production based on UHMW-PE SG 1.1

Technical properties	Standard	Unit	Values
Short mark	ISO 1043-1		UHMW-PE
Material colours			anthracite
Similar RAL			7024
Average molecular weight	N.N.	g/mol	9×10^6
Sheet group	ISO 15527		1.1
Density	ISO 1183-1	g/cm ³	≤ 0.95
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 21304-2	kJ/m ²	≥ 170
Shore hardness D	ISO 868		61-64
Ball indentation hardness	ISO 2039-1	N/mm ²	> 35
Wear resistance (Sand-Slurry-Test)	ISO 15527	%	80
Av. coefficient of friction against steel (0,25 m/s, 0,25 MPa, 24 h) ²	Factory standard		~ 0.20
Av. coefficient of friction against POM (0,25 m/s, 0,25 MPa, 24 h) ²	Factory standard		-

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)	17×10^{-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) ⁶	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 ⁷	DIN EN 62631-3-1	Ohm × cm	> 10 ¹²
Surface resistivity ⁷	DIN EN 62631-3-2	Ohm	> 10 ¹²
Comparative tracking index (CTI)	DIN EN 60112	V	-

Food compliance	Standard	Unit	Values
FDA			No
EU 10/2011			No

Legend

The aim of the material characteristic tables, which are to some extent based on data provided by our raw material suppliers and in general literature, is to help you to quickly compare/select a material. The values stated are short-term values that may be affected by processing, environmental, and application conditions. The user is solely responsible for the selected material's suitability for the specific application.

RH (relative humidity)
N.N. (not named)

1) The mechanical and electrical characteristics are based on a test in a standard atmosphere at 73.4°F/50% 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 unfavorable impact load possible and are not absolute practical limits (lower service temperature).

6) Own assessment; no UL file number available.

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