



UHMWPE-1000

Ultra High Molecular Weight Polyethylene

✓ FDA/EU Approved — Suitable for Food Contact

Material Type

PE-UHMW

Form: Flat / Plate / Rod

Combustion Class: **HB (UL 94)**

MATERIAL DESCRIPTION

UHMWPE-1000 is one of the materials with the highest wear resistance and impact toughness among engineering plastics, thanks to its extremely high molecular weight (3-6 million g/mol). This material, which can work up to -200°C, is the indispensable choice of many heavy-duty applications, from silo lining to mining, with its near-zero water absorption, excellent chemical resistance and exceptionally low coefficient of friction.

MECHANICAL AND PHYSICAL PROPERTIES (ISO/ASTM)

Feature	Unit	Value	Feature	Unit	Value
Intensity	g/cm ³	0.93 – 0.94	Shore D Hardness	—	60 – 65
Yield Stress	MPa	17 – 22	Friction Coefficient	—	0.10 – 0.15
Yield Elongation	%	15	Melting Temperature	°C	~ 135
Breaking Stress	MPa	35 – 45	Softening Temperature	°C	~ 80
Elongation at Break	%	350	Work. Gene. Coefficient	10 ⁻⁴ K ⁻¹	2.0
Elasticity Modulus	MPa	650 – 750	Dielek. Strength	kV/mm	~ 40
Impact Resistance	kJ/m ²	Unbreakable	Surface Resistance	Ohm	10¹⁴
Water Absorption (24h)	%	≈ 0	Service Temperature	°C	-200 / +80

AREAS OF APPLICATION

Silo and Bunker Coatings

Wear Plates and Slides

Conveyor System Parts

Mining Hardware

Food Line Components (FDA)

Marine Environment Parts

Plain Bearings

CHEMICAL RESISTANCE AND GENERAL PROPERTIES

It shows excellent resistance to acids, bases, salt solutions and organic solvents; It is resistant to almost all chemicals. Since water absorption is equal to zero, no dimensional change due to moisture is observed. It offers approximately 10 times higher wear resistance, a much lower coefficient of friction and superior impact toughness compared to HDPE. UV resistance is above average in black versions. It is difficult to join with traditional welding method; pressing or sintering is recommended. It is preferred as a long-lasting surface solution in mining, food processing, automotive, logistics and marine applications.

The technical information specified in this document reflects the reference values of international ISO/ASTM standards. Chemical resistance may vary depending on concentration, temperature and exposure time.

CORUM BRONZE

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