UHMW-PE

High density polyethylene is very tough due to its long chain structure and has the highest impact strength of any thermoplastic.

Mechanical properties

Ultimate tensile strength	38.6 - 48.3 MPa
Yield strength	21.4 - 27.6 MPa
Young's modulus (modulus of elasticity)	0.894 - 0.963 GPa
Elongation at break	200 - 500 %
Hardness	3.4 - 8.3 HV

Physical properties

UV resistance	Good

Thermal properties

Maximum service temperature	80 - 110 °C
Thermal expansion coefficent	234 - 360 10^-6/ºC
Thermal conductivity	0.19 - 0.197 W/(m·°C)

Electrical properties

ESD Safety	No

Common applications

Conveyor lines	
Gears & bearings	
Marine equipment	
Food processing equipment	
Pistons & valves	

UHMW-PE CNC Machining Applications & Parts

UHMW-PE is renowned for its extreme impact strength, outstanding abrasion resistance, and low coefficient of friction, making it the ideal material for high-wear, low-maintenance components we expertly machine.

Typical Parts We Machine from UHMW-PE:

- **Material Handling:** Conveyor Chain Guides, Wear Strips, Hopper Liners
- **Articulating Components:** Gears, Bearings, Bushings, Slider Pads
- **Industrial Liners:** Chute Liners, Dump Truck Bed Liners, Dock Bumpers

Our Machining Advantage:

We use sharp, specially ground tools and specific feed rates to cleanly shear UHMW-PE rather than gumming it, achieving dimensionally accurate parts with smooth, ready-to-use surfaces.

Get an Instant Quote for your custom UHMW-PE parts today.