

POLYETHYLENE UHMWPE

SPECIFICATIONS SHEET

DETAILS

Chemical Name: Ultra-High-Molecular-Weight Polyethylene

Abbreviation: UHMWPE

Properties (Colour): White, Black, Grey, Red, Blue, Yellow, Green

Properties (Form): Rod, Plate

Machining: Excellent

Types: Glass Filled, Carbon Filled, PTFE Filled

Chemical Resistance: Strong chemical resistance. Highly resilient to most alkalis and acid, organic solvents, degreasing agents and electrolytic attack.

KEY BENEFITS

- Excellent stress resistance
- Abrasion wear resistance
- Low moisture absorption
- Self-lubricating
- Easy to fabricate
- Low coefficient of friction
- UV-resistant
- Good chemical resistance
- Extremely tough & durable

MECHANICAL PROPERTIES

Density ρ (g/cm ³)	0.93
Tensile Strength at Yield s (MPa)	24
Elongation at Break %	>450
Modulus of Elasticity Tensile E_t (Mpa)	1100
Modulus of Elasticity Bending E_b (Mpa)	900
Impact Strength kJ/mm ²	NO BREAK
Hardness Ball Indent	38
Creep 1 % after 1000hr MPa	3.2
Coefficient of friction against Steel m	0.15-0.2

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(CONT.)

THERMAL PROPERTIES

Melting Point °C	135-138
Thermal Conductivity W/M°C	0.33
Specific Heat J/(g.K)	2.3
Coefficient of Linear Expansion α 10-6 .°K	130
Safe Working Temp. Short Term °C	110
Safe Working Temp. Continuous °C	70

ELECTRICAL PROPERTIES

Dielectric Constant $\hat{\epsilon}$ 106 Hz	2.3
Dielectric loss Factor tand 106 Hz	-
Volume Resistance W.cm	$>10^{17}$
Surface Resistance W	10^{14}
Dielectric Strength kV/mm	90
Moisture Absorption % (at 50%RH)	>0.1

Whilst all care has been taken to provide accurate & up to date information, we cannot provide legal certification of properties. We recommend that this information be used as a design guide only. Actual testing should be undertaken to confirm data if certification is required.