

Material: Ultra-High-Molecular-Weight-Polyethylene.

Abbreviation: UHMWPE-1000



**Short description of material:**

UHMWPE is an extremely tough plastic with high abrasion and wear resistance. The versatility of polyethylene has made it a popular plastic for countless industrial applications that require durability, low friction, and chemical resistance.

**Application examples:**

- \* Chute, Hopper and truck bed liners
- \* Wear strips and chain guides
- \* Star Wheels and Idler Sprockets
- \* High speed Conveyors
- \* Packaging Machinery parts
- \* Bumpers, Pile Guards and Dock Fenders

**Colors:** Natural, black, green, Etc..

- Properties:**
- Excellent wear resistance
  - Good sliding properties
  - High bending and impact strength
  - Good chemical resistance

<b>Material designation</b>		<b>St1000®</b>	
Row material		PE-UHMW	
Material colour(s)		natural, black, green	
<b>Properties</b>	<b>Unit</b>	<b>Test method</b>	<b>value</b>
Molecular Weight (average molar mass)	g/mol		> 4, 4 Mio.
<b>Mechanical Properties</b>			
Density	g/cm <sup>3</sup>	DIN 53479	0,96
Tensile strength	N/mm <sup>2</sup>	DIN 53455	27
Shore D hardness, 15s -Value	Skala D	DIN 53505	64 - 67
Ball indentation hardness,30s - Value	N/mm <sup>2</sup>	DIN ISO 2039 Part 1	38
Ultimate tensile strength	N/mm <sup>2</sup>	DIN 53455	40,5
Elongation at break	%	DIN ISO / R 527	400
Modulus of elasticity	N/mm <sup>2</sup>	DIN 53457	700
Notched impact strength (Charpy)	kJ/m <sup>2</sup>	DIN 53453	>80 - 140
Abrasion	%	Send slurry method	100
Coefficient of Friction	μ		0,1 – 0,2
<b>Thermal properties</b>			
Dimensional stability under heat	°C	DIN 53461	47
Vicat softening temperature	°C	DIN 53460	79
Crystalline melting range	°C	DTA	130 – 135
Thermal conductivity at 23 °C	W/(K *m )	DIN 52612	0,42
Specific heat at 23 °C	kJ/ (K * Kg)		1,8
Coefficient of linear expansion at 23 °C	10 <sup>-5</sup> * ( 1/K)	DIN 53752	20
Fire behaviour		UL 94	HB
Application temperature (min)	°C		-200
Application temperature (constant)	°C		+80
Moisture absorption	%		< 0,01
<b>Electrical properties</b>			
Specific volume resistance	Ω * cm	DIN 53482	> 10 <sup>15</sup>
Surface resistance	Ω	DIN 53482	> 10 <sup>14</sup>
Dielectric strength	kV/mm	DIN 53481	45
Dielectric constant at 50 Hz		DIN 53485	1,9
Physiologically harmless according to EU-directive 2002/72/EG, FDA-directive 21CFR177.1520 and 21 CFR178.3297		Ismat Seals & Hydraulics Inc. Plot No. E4-05, SAIF Zone, Sharjah, UAE. Tel:- 06-5572242. Fax:- 06-5572243. URL:- www.ismatseals.com Email:- sales@ismatseals.com	