

**UHMW-PE (PE10)**

## polyethylene of ultra high molecular weight

## Mechanical, Physical and Thermal Properties

properties	condition	standard	unit		unit	
colour				nature / green		nature / green
density/specific gravity	23 °C	DIN 53479	kg/m <sup>3</sup>	930	g/cm <sup>3</sup>	0,93
hardness	23 °C	ISO 868	Shore D	61 ±3	Shore D	61 ±3
ball indentation hardness	23 °C	DIN 53456 H 135/30	MPa	≥ 36	psi	≥ 5200
tensile strength	23 °C	ASTM D 4745-79	MPa	≥ 40	psi	≥ 5800
elongation at break	23 °C	ASTM D 4745-79	%	≥ 50	%	≥ 50
izod impact strength	23 °C	ISO 180 / 1A	kJ/m <sup>2</sup>	≥ 130		
thermal conductivity		DIN 52612	$\frac{J * 10^3}{m * h * K}$	0,41	$\frac{J * 10^3}{m * h * K}$	0,41
coefficient of thermal expansion	25 °C - 200 °C		K <sup>-1</sup> * 10 <sup>-5</sup>	15	K <sup>-1</sup> * 10 <sup>-5</sup>	15
coefficient of friction *	23 °C		μ	0,25	μ	0,25
minimum service temperature			°C	-200	°F	-328
maximum service temperature			°C	80	°F	176
young's modulus	23 °C	DIN 53457	MPa	680	psi	98000

\* coefficient of friction dry dynamic Steel 16MnCr5 v=0,6m/s; p=0,05 MPa; t=5h

**Chemical Properties**

Excellent chemical properties

Good corrosion resistance

Good sliding and antiadhesive behaviour

High resistance to abrasive wear

Excellent izod impact strength / high resilience at shock and impact stress

Foodstuff applications: Generally recognized as safe for foodstuff applications