

UHMW-PE

Mechanical, Physical and Thermal Properties

polyethylene of ultra high molecular weight

properties	condition	standard	unit	unit	unit
colour				natural	natural
density/specific gravity	23 °C	DIN 53479	kg/m ³	930	g/cm ³ 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 ²	≥ 130	
thermal conductivity		DIN 52612	W/(m*K)	0,41	W/(m*K) 0,41
coefficient of thermal expansion	25 °C - 200 °C		K ⁻¹ * 10 ⁻⁵	15	K ⁻¹ * 10 ⁻⁵ 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

Detailed information concerning chemical resistance see Chemical Resistance Guide

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