

material specification

s-mart UHMWPE

(ultra high molecular weight polyethylene)

property	condition	unit	value	standard
color			○ white/natural	
density/specific gravity	23° C	g/cm ³	0,93	DIN 53479
hardness	23° C	Shore D	61 ± 3	ISO 868
ball indentation hardness	23° C	MPa	36	DIN 53456 H135/30
tensile strength	23° C	MPa	40	ASTM D 4745-79
elongation at break	23° C	%	50	ASTM D 4745-79
izod impact strength	23° C	kJ/m ²	130	ISO 180/1A
thermal conductivity	23° C	$\frac{J \times 10^3}{m \times h \times K}$	0,41	DIN 52612
coefficient of thermal expansion	25° C - 200° C	K ⁻¹ x 10 ⁻⁵	15	
coefficient of friction*	23° C	μ	0,25	
minimum service temperature		°C	-200	
maximum service temperature		°C	80	
young's modulus	23° C	MPa	680	DIN 53457
* dynamic coefficient of friction, dry, steel 16MnCr5: v=0,6m/s; p=0,05 MPa; t=5h				

the mentioned data are only valid for test pieces of the corresponding ISO, DIN and ASTM standards and cannot be directly related to gaskets and joints. the values which are marked with the symbols greater than (≥) and smaller than (≤) are nominal values and must be fulfilled of each batch. all values which are not marked are typical values which are only tested on selected samples.

high resistance to abrasive wear
 good oxidation resistance
 good sliding and antiadhesive behaviour
 excellent izod impact strength/high resilience at shock and impact stress
 excellent chemical properties; generally recognized as safe for foodstuff applications

turnability: good
 tool-abrasion: low