











Material Data Sheet









PE-1000 natural

Chemical Designation : Polyethylene - ultra high molecular weight
 DIN-Abbreviation: PE-UHMW
 Colours, fillers: opaque

Main features

-  very good sliding properties
 -  easily welded
 -  wear resistant
 -  very good electrical insulation
 -  resistant to cleaning agents and xxx acids
 -  very low moisture absorption
 -  difficult to bond
 -  low density
 -  good cold impact strength of resistance
 -  resistant to numerous solvents
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Preferred Fields

-  mechanical engineering
 -  textile machinery
 -  electrical communication engineering
 -  precision engineering
 -  electrical engineering
 -  construction industry
 -  automotive engineering
 -  filtering technology
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Applications

Housings, containers, spools, anticorrosive seals, coverings, handles, cappings, toothed wheels, filter plates, gliding elements

Properties

Material Data Sheet	PE-1000 natural		
Mechanical	dry / moist		standard
Tensile strength at yield	17	MPa	DIN EN ISO 527
Tensile strength at break	40	MPa	DIN EN ISO 527
Elongation at break	> 50	%	DIN EN ISO 527
Modulus of elasticity in tension	650	MPa	DIN EN ISO 527
Modulus of elasticity after flexural test	800	MPa	DIN EN ISO 178
Hardness	35		DIN 53 456 (Kugeldruckhärte)
Impact strength 23° C (Charpy)	n.b.	KJ/m ²	DIN EN ISO 179
Co-efficient of friction p = 0,05 N/mm ² v=0,6 m/s on steel, hardened and ground	0,29		

Thermal	dry / moist		standard
Crystalline melting point	135	°C	DIN 53 765
Glass transition temperature	k. A.	°C	
Heat distortion temperature HDT, Method A	42	°C	ISO-R 75 Verfahren A (DIN 53 461)
Heat distortion temperature HDT, Method B	~70	°C	ISO-R 75 Verfahren B (DIN 53 461)
Max. service temperature			
short term	120	°C	
long term	90	°C	
Thermal conductivity (23° C)	0,41	W/(K·m)	
Specific heat (23° C)	1,84	J/g.K	
Coefficient of thermal expansion (23-55°C)	20	10 ⁻⁵ 1/K	DIN 53 752

Electrical	dry / moist		standard
Dielectric constant (10 ⁶ Hz)	3		DIN 53 483, IEC-250
Specific volume resistance	10 ¹⁴	Ω·cm	DIN IEC 60093
Surface resistance	10 ¹²	Ω	DIN IEC 60093
Dielectric strength	45	kV/mm	DIN 53 481, IEC-243, VDE 0303 Teil 2
Resistance to tracking	KA3c KB>600; KC>600		DIN 53 480, VDE 0303 Teil 1

Miscellaneous	dry / moist		standard
Density	0,93	g/cm ³	DIN 53 479
Moisture absorption (23°C/50RH)	0,01	%	DIN EN ISO 62
Water absorption to equilibrium	0,02	%	DIN EN ISO 62
Flammability acc. to UL standard 94	HB		
Resistance to hot water, washing soda:	+		
Resistance to weathering	-		

(1) Testing of semi-finished products

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