

TECAFINE PE 10

Chemical Designation:	Polyethylene
DIN Abbreviation:	PE-UHMW
Colour, Filler:	Opaque / black

TECAFINE PE10 is a semi-crystalline, thermoplastic engineering material with high toughness, good wear/abrasion resistance, and very good low temperature properties

- Main characteristics:
- Tough
 - Good sliding properties
 - Resistant to dilute acids, cleaning agents, numerous solvents
 - Very good electrical insulation
 - Difficult to bond
 - Lightweight
 - Very good abrasion resistance
 - Very low water absorption

Preferred fields: Mechanical engineering, transport and conveyor technology, electrical engineering, general engineering, household appliances, plant construction, food industry

- Applications:
- Chemical apparatus
 - Chopping boards
 - Wear strips
 - Conveyor parts
 - Liners
 - Cryogenic parts
 - Food processing

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The following information corresponds with our current knowledge and indicates our products and possible applications. We cannot give a legally binding guarantee of certain properties or the suitability for a specific application. Existing commercial patents must be observed. A definitive quality guarantee is given in our general conditions of sales. Unless otherwise stated, these values represent averages taken from injection moulding samples. We reserve the right of technical alterations.

Properties	Unit	Test method DIN EN ISO / ASTM	
Mechanical			
Density	g/cm ³	527 / D 792	0.93
Tensile strength at yield	MPa	527 / D 638	17
Tensile strength at break	MPa	527 / D 638	40
Elongation at break	%	527 / D 638	>50
Modulus of elasticity in tension	MPa	527 / D 638	650
Modulus of elasticity in flexure	MPa	178 / D 790	800
Ball indentation hardness	MPa	2039 / 1	35
Impact strength	kJ/m ²	179 / D 256	No br.
Creep rupture strength after 1000 hrs with static load	MPa		
Time yield limit for 1% elongation after 1000 hrs.	MPa		
Coefficient of friction against hardened and ground steel p = 0,05 N/mm ² , v = 0,6 m/s	–		0.29
Wear conditions as above	µm/km		
Thermal			
Crystalline melting point	°C	DIN 53 736	135
Glass transition temperature	°C	DIN 53 736	
Heat distortion temperature Method A Method B	°C °C	R 75 R 75	42 ~70

Properties	Unit	Test method DIN EN ISO / ASTM	
Thermal			
Max. service temperature short term long term	°C °C		120 90
Coefficient of thermal conductivity	W/(m · K)		0.41
Specific heat	J/(g · K)		1.84
Coefficient of thermal expansion	10 ⁻⁶ /K	DIN 53 483 / D 696	20
Electrical			
Dielectric constant at 10 ⁵ Hz		DIN 53 483	3
Dielectric loss factor at 10 ⁵ Hz		DIN 53 483	
Specific volume resistance	Ω · cm	DIN 60093	10 ¹⁴
Surface resistance	Ω	DIN 60093	10 ¹²
Dielectric strength 1 mm	kV/mm	ASTM 149	45
Tracking resistance		53 480	KA 3c, KB>600, KC>600
Miscellaneous			
Moisture absorption: Equilibrium in standard atmosphere (23 °C / 50 % relative humidity)	%	62	0.01
Water absorption at saturation at 23 °C	%	62	0.02
Resistance to hot water, washing soda			resistant
Flammability according to UL standard 94			HB
Resistance to weathering			natural not resistant, black resistant

ENSINGER: Production and stock programme

- Semi-finished product, finished parts, injection moulded parts and profiles in more than 500 materials and modifications.
- Engineering plastics: PA extruded or cast, POM, PC, PET, PBT, PPE, PP, PE
- High temperature plastics: PI, TPI, PEEK, PPS, PES, PPSU, PEI, PSU, PVDF, PCTFE, PTFE
- Stock length: Standard 3 metres
- Pressed/sintered semi-finished product: PI, PEEK, PPS, PTFE/PI and modifications, as well as PCTFE in special sizes ie, large discs, tubes and rings with diameters up to about 1400 mm
- Material modifications: eg glass, carbon and aramid fibre, talc, MoS₂, graphite, PTFE, PE, silicone oil, internal lubrication
- Pultruded stock shapes: matrix polyester, vinylester and epoxy resin with glass or carbon continuous fibre