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TECAFLON PTFE

Chemical Designation:	Polytetrafluoroethylene
DIN Abbreviation:	PTFE
Colour, Filler:	Opaque

TECAFLON PTFE is a semi-crystalline high performance thermoplastic with excellent chemical resistance, very good non-stick characteristics as well as good machinability.

Main characteristics:

- Extremely good chemical resistance against virtually all media
- Hot water resistant
- Very good sliding properties
- Anti-adhesive
- Very tough
- Very good UV resistance
- Very good electrical insulation
- Soft
- Difficult to bond
- Gamma radiation sensitive
- Self-extinguishing V-0
- Non-melting

Preferred fields: Chemical engineering, machine parts, transport and conveyor technology, pump and instrument construction, electrical industry, electronics, laser technology, fume purification, pure water production, cryogenics, filter technology, food and medical technology

Applications:

- Pump housings
- Valve seats
- Tank linings
- Pipe linings
- Roller coverings
- Slide bearings
- Filter housings
- Etching plates
- High frequency insulation
- Pump parts
- Seals
- Slide runners

Ensinger Ltd
Wilfried Way
Tonyrefail
Mid Glam CF39 8JQ

Tel: 01443 678400
Fax: 01443 675777
Web: www.ensinger.ltd.uk
Email: sales@ensinger.ltd.uk

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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/cm³	527 / D 792	2.18
Tensile strength at yield	MPa	527 / D 638	25
Tensile strength at break	MPa	527 / D 638	
Elongation at break	%	527 / D 638	>50
Modulus of elasticity in tension	MPa	527 / D 638	700
Modulus of elasticity in flexure	MPa	178 / D 790	
Ball indentation hardness	MPa	2039 /1	30
Impact strength	kJ/m²	179 / D 256	no br
Creep rupture strength after 1000 hrs with static load	MPa		5
Time yield limit for 1% elongation after 1000 hrs	MPa		1.58
Coefficient of friction against hardened and ground steel p = 0,05 N/mm², v = 0,6 m/s	–		0.08 - 0.10
Wear conditions as above	µm/km		21
Thermal			
Crystalline melting point	°C	DIN 53 736	327
Glass transition temperature	°C	DIN 53 736	-20
Heat distortion temperature Method A Method B	°C °C	R 75 R 75	55 121

Properties	Unit	Test method DIN EN ISO / ASTM	
Thermal			
Max. service temperature short term long term	°C °C		260 260
Coefficient of thermal conductivity	W/(m · K)		0.25
Specific heat	J/(g · K)		1
Coefficient of thermal expansion	10^{-6}/K	DIN 53 483 / D 696	12
Electrical			
Dielectric constant at 10^6 Hz		DIN 53 483	2.1
Dielectric loss factor at 10^6 Hz		DIN 53 483	0.0002
Specific volume resistance	Ω · cm	DIN 60093	10^{16}
Surface resistance	Ω	DIN 60093	10^{16}
Dielectric strength 1 mm	kV/mm	ASTM 149	48
Tracking resistance		53 480	KA 3c KB > 600
Miscellaneous			
Moisture absorption Equilibrium in standard atmosphere (23 °C / 50 % relative humidity)	%	62	<0.05
Water absorption at saturation at 23 °C	%	62	
Resistance to hot water, washing soda			resistant
Flammability according to UL standard 94			V0
Resistance to weathering			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. Cast rod and sheet 2 mts. Tube up to 3.5 mts. PE, PP, PVC, and PTFE 2 mts
- 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, MoS_2, graphite, PTFE, PE, silicone oil, internal lubrication

1005