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PTFE

PTFE (Polytetrafluoroethylene) is a semi-crystalline high performance thermoplastic with excellent chemical resistance, very good non-stick characteristics as well as good machinability. PTFE has poor creep and wear resistance.

Its main characteristics are:

- 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

The preferred fields for the use of PTFE are: 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. PTFE is also extensively used as a **gasket material** in its own right or also to encapsulate another jointing material.

Popular applications for the use of PTFE are:

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

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Technical Information

Information to be used as a guide only. It corresponds with our current knowledge and indicates possible applications. We cannot guarantee suitability for a specific application.

Unless otherwise stated these values represent averages taken from injection moulded samples.

Properties	Unit	Test Method DIN ASTM	Result
Mechanical	-	-	-
Density	g/cm ³	53479	2.18
Tensile strength at yield	MPa	53455	25
Tensile strength at break	MPa	53455	-
Elongation at Break	%	53455	500
Modulus of elasticity in tension	MPa	53457	700
Modulus of elasticity in flexure	MPa	53457	-
Ball indentation hardness	MPa	53456	30
Impact strength (Charpy)	KJ/m ²	53453	o.Br.
Creep rupture strength after 1000 hours with static load	MPa	-	5
Time yield limit for 1% elongation after 1000 hours	MPa	-	1.5
Coefficient of friction against hardened and ground steel p+0,05 N/mm ² , v=0,6 m/s	-	-	0.08 - 0.1
Wear conditions as above	µm/km	-	21
Thermal	-	-	-
Crystalline melting point	°C	53736	327
Glass transition temperature	°C	53736	-20
Heat distortion temperature method A	°C	ISO 75	5.5
Heat distortion temperature method B	°C	ISO 75	121
Max. service temperature short term	°C	-	260
Max. service temperature long term	°C	-	260
Coefficient of thermal conductivity	W/(m K)	-	0.25
Specific heat	J/(g K)	-	1
Coefficient of thermal expansion	10 ⁻⁵ /K	-	12
Electrical	-	-	-
Dielectric constant at 10 (5) Hz	-	53483	2.1
Dielectric loss factor at 10(5) Hz	-	53483	0.0002
Specific Volume Resistance	Ωcm	53482	10 (18)
Surface Resistance	Ω	53482	
Dielectric strength 1mm	kV/mm	53481	48
Tracking resistance	-	53480	KA 3c/KB > 600
Miscellaneous	-	-	-
Moisture Absorption: Equilibrium in standard atmosphere (23°C / 50% relative humidity)	%	53714	0
Water absorption at saturation at 23°C	%	53495	-
Resistance to hot water, washing soda	-	-	resistant
Flamability	-	UL 94	VO
Resistance to weathering	-	-	resistant