



SmithPlast™

PTFE (Poly tetra fluoro ethylene)

PRODUCT

PTFE is a synthetic fluoropolymer which is solid white in colour at room temperature and with soft and excellent low friction properties. PTFE is highly resistance to chemical and high electrical insulation as the combination of chemical and physical properties of PTFE is a consequence of its true fluorocarbon structure. It is available in the form of rods, tubes and sheets.

APPLICATION

PTFE widely used in seals & Gaskets, Valve and fitting components, chemical resistance applications, Bearing & Bushing, medical equipments, Semiconductor equipments.

TECHNICAL DATA

Key Characteristics	Units	Values
Specific Gravity	Cm3	2.14 - 2.20
Tensile Strength	Psi	2000 - 3000
Compressive Strength	Psi	1700
Impact Strength	ft-lbs/in.	3.5
Elongation	%	300 - 500
Flexural Modulus	Psi	72000
Co-efficient of Friction		0.05 - 0.10
Thermal Conductivity	20° C	0.14
Thermal Expansion	10-6 K-1	135
Maximum Continuous Temperature	°C	260
Melting Point	°C	327
Volume Resistivity	7cm@23°C	1018
Water Absorption (24 Hrs)	%	0.01

Smith Therm produces two kinds of PTFE rods:

PTFE Extruded Rod

It is manufactured in paste extruded method in the diameter from 4 to 9mm and other are extruded from ram extruding method from 10 to 50 mm. The electrical insulation used under various kinds of frequency, the seal liner of various kinds of corrosivity medium, antisticking materials, lubrication materials.

SPECIFICATIONS

Tensile Strength	Mpa	≥ 14
Elongation	%	≥ 14
Apparent Density	g/cm ³	2.1 ~ 2.3

Diameter(mm)	Length (mm)	Tolerance
1,2,3,4	>2000	5
5,6,7,8,9		

PTFE Molded Rod

The rods over 50mm in diameter are manufactured by moulding process.

SPECIFICATIONS

Tensile Strength	Mpa	≥ 14
Elongation	%	≥ 14
Apparent Density	g/cm ³	2.1 ~ 2.3

Diameter(mm)	Length (mm)	Tolerance
4,5,6,7,8,10,12,15,16,18,20,25,30	1000, 2000	3.6
35,40,45,50,55,60,65,70,75,80,85		
90, 95, 100, 110, 120, 130, 140, 150, 160		
55,60,65,70,75,80,85,90,95	100 ~ 600	2.5
100, 110, 120, 130,140, 000, 000		2
180, 200,250, 270, 300, 000, 000		

Smith Therm produces two kinds of PTFE sheets:

PTFE Molded Sheet

It is manufactured by molding with PTFE resin as it is the most chemical resistance of all known plastics. It does not age as it has the lowest co-efficient of friction of all known solid materials.

Applications

It is used to make corrosion resistant liner, seal, lining and gasket, scrap, guide rail and dielectric material for different uses.

Tensile Strength	Mpa	≥ 15
Elongation	%	150 ~ 400
Apparent Density	g/cm ³	2.2 ~ 2.3
Dielectric Strength	kV/mm	10
Resistance of Surface @ 500 Volt	Ω	3.7 x 10 ¹⁵

PTFE Skived Sheet

It is manufactured by molding with PTFE resin into work blank and then skived. It does not age as it has the lowest co-efficient of friction of all known solid materials.

SPECIFICATIONS

It is used in reaction kettle, storage tank, valve, container, liner and gasket which under all kinds of corrosive electric. It is also used as liner of anti corrosive pipes, oilless lubricator and adhesive for sliding orbit of machines and dielectric at any frequencies.

Tensile Strength	Mpa	≥15
Elongation	%	150
Apparent Density	g/cm ³	2.2 ~ 2.3
Dielectric Strength	kV/mm	10
Resistance of Surface @ 500 Volt	Ω	3.7 x 10 ¹⁵

Note: We manufacture PTFE products in Sizes as per Customize requirements of our customers.

All values are attributes of the used raw materials.

The physical data contained in this table are typical values. They are obtained on test specimens under specific conditions and represent average values of a large number of tests. The results obtained on these tests specimens cannot be applied to finished parts without reservations, as behaviour is influenced by processing and shaping.