TECHNICAL DATA SHEET
Teflon (PTFE)

(POLYTETRAFLUOROETHYLENE RESIN)

Teflon can be used in a a variety of applications having a combination of mechanical, electrical, chemical, temperature and anti-friction properties that are unmatched. PTFE has a very high melting point and is capable of continued service at 500F (260 C). It is the most chemically resistant plastic available and only a few chemicals react with it. PTFE mechanical properties are low compared to other engineering plastics, but its integrity is maintained over a wide temperature range - from -400 to 500°F (-240 to 260°C). Mechanical properties can be improved by the addition of fillers such as glass fiber, carbon, graphite, molybdenum disulfide and bronze. PTFE has excellent thermal and electrical insulation properties along with a low coefficient of friction. It is difficult to bond to PTFE.

TYPICAL PROPERTIES of PTFE

ASTM or UL test	Property	PTFE (unfilled)	PTFE (25% glass filled)	PTFE (25% carbon filled)
	PHYSICAL			
D792	Density (lb/in³) (g/cm³)	0.078 2.16	0.081 2.25	0.075 2.08
D570	Water Absorption, 24 hrs (%)	< 0.01	0.02	0.05
	MECHANICAL			
D638	Tensile Strength (psi)	3,900	2,100	1,900
D638	Tensile Modulus (psi)	80,000	-	-
D638	Tensile Elongation at Break (%)	300	270	75
D790	Flexural Strength (psi)	No break	1,950	2,300
D790	Flexural Modulus (psi)	72,000	190,000	160,000
D695	Compressive Strength (psi)	3,500	1,000	1,700
D695	Compressive Modulus (psi)	70,000	110,000	87,000
D785	Hardness, Shore D	D50	D60	D62
D256	IZOD Notched Impact (ft-lb/in)	3.5	-	-
	THERMAL			
D696	Coefficient of Linear Thermal Expansion (x 10^{-5} in./in./°F)	7.5	6.4	6.0
D648	Heat Deflection Temp (°F / °C) at 264 psi	132 / 55	150 / 65	150 / 65
D3418	Melting Temp (°F / °C)	635 / 335	635 / 335	635 / 335
-	Max Operating Temp (°F / °C)	500 / 260	500 / 260	500 / 260
C177	Thermal Conductivity (BTU-in/ft²-hr-°F) (x 10^{-4} cal/cm-sec-°C)	1.70 5.86	3.1 10.6	4.5 15.5
UL94	Flammability Rating	V-O	V-O	V-O
	ELECTRICAL			
D149	Dielectric Strength (V/mil) short time, 1/8" thick	285	-	-
D150	Dielectric Constant at 1 MHz	2.1	2.4	-
D150	Dissipation Factor at 1 MHz	< 0.0002	0.05	-
D257	Volume Resistivity (ohm-cm)at 50% RH	> 10^{18}	> 10^{15}	10^{4}

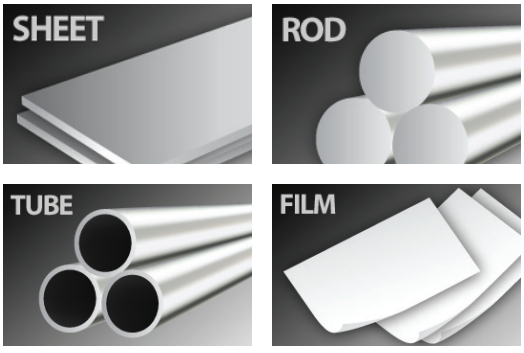
Benefits

High chemical resistance
Low and high temperature capability
Resistance to weathering
Low friction
Electrical and thermal insulation
Anti- stick surface.

Applications

Gaskets
Packing materials exposed to chemicals
Bearings
Seals
Piston rings
Electrical insulation

SHAPES AVAILABLE



NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets.
All values at 73°F (23°C) unless otherwise noted.