CRAFTECH®
INDUSTRIES, INC.

Polytetrafluoroethylene
(PTFE)

KEY FEATURES

- Low Coefficient of Friction
- Excellent Electrical Properties
- Chemically Inert
- Broad Operating Temperature Range
- FDA Approved (Virgin Grade)

DESCRIPTION

PTFE (Polytetrafluoroethylene), usually referred to as Teflon (a registered trademark of DuPont) is a semi-crystalline high performance thermoplastic that is the most chemically resistant plastic known. Its mechanical properties are low compared to other engineering plastics, however its properties remain at a useful level over a great temperature range from -400°F to 500°F. 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 as well as a very low coefficient of friction.

TYPICAL PROPERTY VALUES

	Properties	Condition	Units	Value	ASTM Test
Physical	Density		g/cm^3	2.16	D792
	Chemical Designation			PTFE	
	Filler				

	Properties	Condition	Units	Value	ASTM Test
Mechanical	Tensile Modulus	@ 73 °F	PSI	80,000	D638
	Tensile Strength	@ 73 °F	PSI	3,900	D638
	Elongation @ Yld	@ 73 °F	%		D638
	Elongation @ Brk	@ 73 °F	%	300	D638
	Flexural Modulus	@ 73 °F	PSI	72,000	D790
	Flexural Strength	@ 73 °F	PSI	no break	D790
	Compressive Modulus	@ 73 °F	PSI	70,000	D695
	Compressive Strength	@ 73 °F, 10% strain	PSI	3,500	D695
	Izod (Charpy) Impact Strength	@ 73 °F	ft-lbs/in	3.5	D256
	Hardness, Shore D	@ 73 °F		D50	D785

	Properties	Condition	Units	Value	ASTM Test
Thermal	Heat Deflection Temperature	@ 66 PSI	°F		D648
	Max Operating Temperature		°F	500	
	Heat Deflection Temperature	@ 264 PSI	°F	132	D648
	Service Temperature	Intermittent	°F		
	Thermal Expansion (CLTE)		in/in/°F	$7.5*10^{-5}$	D696
	Specific Heat		BTU/lb-°F		
	Thermal Conductivity		BTU-in/hr-ft^2-°F	1.7	C177

	Properties	Condition	Units	Value	ASTM Test
Electrical	Surface Resistivity		ohms/square		
	Volume Resistivity		ohm-cm	$>10^{18}$	D257
	Dielectric Constant	50% RH		2.1	D150
	Dielectric Strength	@ 60 Hz, 73 °F	V/mil	285	D149
	Dissipation Factor	@ 60 Hz, 73 °F		<0,0002	D150

	Properties	Condition	Units	Value	ASTM Test
Other	Moisture Absorption	@ 24 hrs, 73 °F	%	<0,01	D570
	Moisture Absorption	@ Saturation, 73 °F	%		
	Flammability	UL 94		V-0	
	Food Grade				
	Relative Cost				

- The data stated above are typical values intended for reference and comparison purposes only.
- The data should not be used as a basis for design specifications or quality control.
- The information is provided as a guide to the best of our knowledge and given without obligation or liability.
- Testing under individual application circumstances is recommended