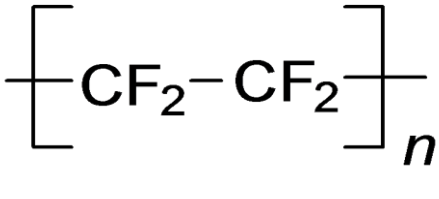
systemseals

MATERIAL SPECIFICATION SHEET

MT186

Polytetrafluoroethylene (PTFE/Ceramic)



SPECIFICATIONS

Property	Spec	Unit	Value
Temperature		°F °C	-400/+550 -240/ +288
Maximum PV (continuous)		psi/fpm(MPa*m/s)	10,000 (0.35)
Maximum P – psi (static)		Psi(MPa)	1000 (6.9)
Maximum V –SFM (no load)		Ft/min (m/s)	400 (2)
Shaft Hardness – Minimum	Rockwell C		35
Shaft finish recommended RMS/Ra		µin (µm)	8 – 16 (0.2 – 0.4)
Shaft Material			Steel
Friction – static + dynamic			0.15 -0.25
Water absorption	ASTM D570	%	0
Flammability	ASTM D635	UL V-0	Non-flammable
Chemical Resistance			Inert
Linear Coefficient of Thermal Expansion 78° to 300° F (26° to 149° C)		X10 -5 in/in °F (x10 -5m/m °C)	Diameter 4.8 (8.6) Length 6.2 (11.1)
Elongation	ASTM D4894	%	175
Tensile Strength	ASTM D4894	psi(MPa)	2000 (13.8)
Deformation	ASTM 621	%	5 (1500 psi – 24 hr RT)
Specific Gravity	ASTM D792	g/cc	2.22
Color			Light Maroon

DESCRIPTION

MT186 is a PTFE material especially compounded for long life and reliability in continuous non-lubricated applications. Polytetrafluoroethylene (PTFE) has exceedingly strong carbon-fluoride bonds (C-F). PTFE has a simple, linear, flexible and regular molecular structure, which makes it highly crystalline. Commercial PTFE is a high molecular weight polymer. Fluorine atoms form a tight sheath of protection providing PTFE with extreme molecular and physical properties. The sheath prevents PTFE from external influences upon the carbon-carbon backbone. It also results in weak interactions/bindings between polymer chains. These molecular structure properties make PTFE extremely resistant to chemicals or solvents even at very high temperatures and high pressures. PTFE also has very low friction and good anti-stick characteristics. PTFE is tough and flexible even at very low temperatures. However the same molecular structure properties result in mediocre mechanical properties with low stiffness and strength among thermoplastics. PTFE articles cannot be formed with conventional processes for thermoplastics because it does not flow above its crystalline melting point. Parts can be formed by a sintering process under high