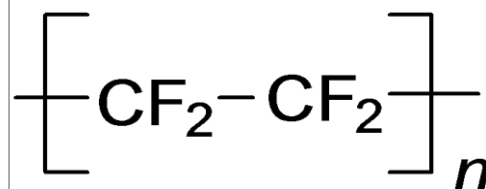


Polytetrafluoroethylene (PTFE/Carbon Fiber)

SPECIFICATIONS

Property	Spec	Value
Hardness	ASTM D-2240	66
Specific Gravity	ASTM D-4894	2.08
Tensile Strength	ASTM D-4894	4000 psi
Tensile Elongation	ASTM D-4894	280%
Deformation under load		
a) 2175psi, 24hrs	ASTM D-621	
Total Deformation		5.0%
Permanent Deformation		3.0%
Coefficient of Thermal Expansion	ASTM E-831	
a) 86-212F		6.9in/(in F)
b) 212-392F		9.8in/(in F)
c) 392-500F		12.4in/(in F)
Color		Dark Gray



DESCRIPTION

MT90 is a PTFE material with hardness 66, specially compounded with carbon fiber. 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 temperatures.