

PolyChloroTriFluoroEthylene (PCTFE)

KEY FEATURES

- Cryogenic applications — super-cold refrigeration components
- Valves — seats, stems, seals
- Seals — lips, o-rings, v-rings, special construction seals
- Compressors & pumps
- Films — food packaging, pharmaceutical packaging, optical recording, electroluminescent display panels
- Gaskets — pressure, diaphragm, liquid gauge seals, fluid handling
- Bearings — sleeve & thrust

DESCRIPTION

PCTFE offers the unique combination of physical and mechanical properties, non-flammability, chemical resistance, near zero moisture absorption, and excellent electrical properties. These characteristics cannot be found in any other thermoplastic fluoropolymer with a useful temperature range of -400°F to +400°F (-240°C to +204°C).

PCTFE also has extremely low outgassing (0.01% TML, 0.00% CVCM, 0.00% WVR when tested per ASTM E-595-90), so it is suitable for use in aerospace and flight applications.

TYPICAL PROPERTY VALUES

	ASTM or UL Test	Properties	PCTFE
Physical	D792	Density (lb/in ³)	0.077
		(g/cm ³)	2.13
	D570	Water Absorption, 24 hrs (%)	< 0.01
Mechanical	D638	Tensile Strength (psi)	5,300
	D638	Tensile Modulus (psi)	207,000
	D638	Tensile Elongation at Break (%)	150
	D790	Flexural Strength (psi)	8,500
	D790	Flexural Modulus (psi)	180,000
	D695	Compressive Strength (psi)	5,500
	D695	Compressive Modulus (psi)	180,000
	D785	Hardness, Shore D	D90
	D256	IZOD Notched Impact (ft-lb/in)	5
Thermal	D696	Coefficient of Linear Thermal Expansion (x 10 ⁻⁵ in./in./°F)	7.0
	D648	Heat Deflection Temp (°F / °C) at 264 psi	258 / 126
	D3418	Melting Temp (°F / °C)	415 / 212
		Max Operating Temp (°F / °C)	270 / 132
	C177	Thermal Conductivity (BTU-in/ft ² -hr-°F)	1.45
		(x 10 ⁻⁴ cal/cm-sec-°C)	4.99
UL94	Flammability Rating	V-0	
Electrical	D149	Dielectric Strength (V/mil) short time, 1/8" thick	500
	D150	Dielectric Constant at 1 MHz	
	D150	Dissipation Factor at 1 MHz	
	D257	Volume Resistivity (ohm-cm)at 50% RH	10 ¹⁸

• 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