

PFA

PFA – Perfluoroalkoxy Alkanes



We can laser mark PFA and HP PFA tubing.

Overview

PFA is well recognized for its ability to maintain its integrity in extreme temperatures even when exposed to caustic chemicals. PFA also comes in high purity versions that can be extruded into tubing forms and is SEMI F-57 certified. High Purity PFA tubing is used in critical fluid transport tubing applications that demand a very low level of extractables. PFA can withstand temperature environments of up to 500 °F / 260 °C and can be extruded in convoluted tubing forms that provide a highly flexible conduit.

The qualities of PFA include excellent lubricity, clarity, flexibility, and chemical resistance. This versatility has led to PFA being a popular material selection in the semiconductor, chemical, energy, aerospace, automotive, pharmaceutical, fiber optics, and medical industries.

FILLERS AVAILABLE WITH PFA EXTRUSIONS:

- Carbon



CHEMICAL RESISTANCE



FLEXURAL MODULUS



GAS PERMEABILITY

Applications

- Protection for optical fiber
- Analytical and fluid management Wire and cable insulation
- Medical componentry

Products

- Tubing
- Heat shrink
- Monofilament
- Drawn fiber
- Multi-Lumens
- Custom profiles
- Custom insulated wire
- Co-extrusions
- Convoluted tubing (AS 81914)
- Coated optical fiber




Key Properties







- Excellent clarity and flexibility
- Maximum working temperature 500 °F / 260 °C
- Combines attributes of PTFE and FEP
- Chemically resistant to all common solvents
- Available in high purity grades
- Low gas permeability
- Ultra-low levels of ionic extractables
- ETO, e-beam, and autoclave sterilizable
- Flame resistant: UL 94 V-0











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PHYSICAL		ASTM	PFA
	Density (g/cc)	D792	2.14 - 2.16
	Water Absorption (%)	D570	< 0.03
	Oxygen Index (%)	D2863	≥ 95

MECHANICAL		ASTM	PFA
	Hardness, Shore D	D2240	55 - 60
	Ultimate Tensile Strength (MPa)	D638	28 - 30
	Elongation at Break (%)	D638	300
	Modulus of Elasticity (MGPa)	D638	451
	Flexural Modulus (MPa)	D790	625 - 686
	Coefficient of Friction	D1894	0.04 - 0.06

ELECTRICAL		ASTM	PFA
	Volume Resistivity (Ω - cm)	D257	$\leq 1.0 \times 10^{18}$
	Dielectric Constant 1 MHz	D150	2.03 - 2.10
	Dielectric Strength (V/mil)	D149	508 - 2000

THERMAL		ASTM	PFA
	Thermal Conductivity (W/m - K)	D433	0.26
	Maximum Service Temp, Air (°C)	na	260
	Melt Temp (°C)	D4591	300 - 310
	Decomposition Temp (°C)	AIR	475
	Coefficient of Thermal Expansion, linear 20° ($\mu\text{m}/\text{m}\cdot^\circ\text{C}$)	D696	120

The information presented in this publication is believed to be accurate and is not intended to constitute a specification. Property characteristics are dramatically impacted by geometry and processing method, thus properties of extruded parts may vary. In some instances, data may not be available for publication and will be notated as “na” where applicable. These tables are meant to serve as a general guideline only. Users should evaluate the material to determine suitability for their own particular application.