Material Introduction

PFA Polymer

PFA – Perfluoroaloxy Alkanes

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.

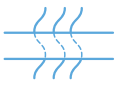
The qualities of PFA include excellent lubricity, clarity, flexibility, and chemical resistance. This versatility has led to PFA being a popular material selection in the semiconductor, chemical, energy, aerospace, automotive, pharmaceutical, fiber optics, and medical industries.

Fillers available with PFA extrusions:

- *Carbon*

CHEMICAL RESISTANCE

FLEXURAL MODULUS



GAS PERMEABILITY

We can laser mark PFA and HP PFA tubing.

APPLICATIONS

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

AVAILABLE PRODUCTS

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

QUICK SUMMARY OF 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

PFA

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.

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 (MPa)	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° (µm/m-°C)	D696	120