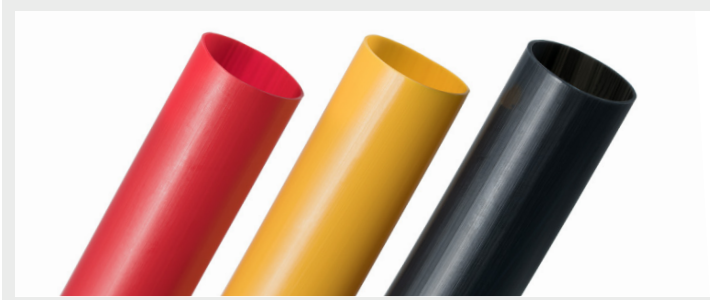


# PTFE

*PTFE – Polytetrafluoroethylene*



We can extrude PTFE into Sub-Lite-Wall® Heat Shrink for wire guides used in endoscopy applications.

## Overview

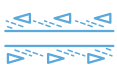
The unique properties of PTFE have made it the polymer of choice for many applications since it was discovered in the late 1930's. With the lowest coefficient of friction of any polymer we offer and an extremely broad working temperature range, PTFE has been designed for use in products such as catheters for delivery channels for medical devices and wire and cable insulation for aircraft. Because of its unparalleled chemical resistance, PTFE has become an ideal polymer for the chemical and analytical sciences. We extrude PTFE in various forms and also electrospin this material to make next generation composite stent coatings.

### ZEUS PTFE PROCESSING FORMS:

- Extrusions
- Electrospinning
- Expanded (Aeos™ ePTFE) extrusions

### FILLERS AVAILABLE WITH PTFE EXTRUSIONS:

- Radio-opaque (bismuth and barium)
- Glass
- Carbon
- Pigment
- Others available upon request



COEFFICIENT OF FRICTION



CHEMICAL RESISTANCE



DIELECTRIC STRENGTH

## Applications

- Catheter componentry
- Wire and cable insulation
- Furcation tubing for fiber optics
- Analytical and fluid management tubing
- Stent grafts

## Products

- Tubing
- Sub-Lite-Wall® tubing and heat shrink (ultra-thin walls)
- Custom profiles
- Heat shrink AMS-DTL-23053/12
- Monofilament
- Multi-Lumens
- Custom insulated wire
- Membranes
- Expanded porous products
- Convoluted tubing (AS 81914)




## Key Properties

- Lowest coefficient of friction offering
- Working temperature range -328 °F to 500 °F (-200 °C to 260 °C)
- Chemically resistant (all common solvents, acids, and bases)
- Low extractables
- Excellent dielectric strength
- Biocompatible: Certified USP Class VI
- Flame resistant: UL 94 V-0
- ETO and autoclave sterilizable












# PTFE






## PTFE – Polytetrafluoroethylene

PHYSICAL		ASTM	PTFE
	Density (g/cm <sup>3</sup> )	D792	2.16 - 2.18
	Water Absorption (%)	D570	≤ 0.01
	Oxygen Index (%)	D2863	≥ 95

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.

MECHANICAL		ASTM	PTFE
	Hardness, Shore D	D2240	50 - 65
	Ultimate Tensile Strength (MPa)	D638	21 - 35
	Elongation at Break (%)	D638	300 - 500
	Modulus of Elasticity (MPa)	D638	392
	Flexural Modulus (MPa)	D790	490 - 588
	Coefficient of Friction	D1894	0.02 - 0.10

ELECTRICAL		ASTM	PTFE
	Volume Resistivity (Ω - cm)	D257	≤ 1.0 × 10 <sup>18</sup>
	Dielectric Constant 1 MHz	D150	2.10
	Dielectric Strength (V/mil)	D149	457 - 483

THERMAL		ASTM	PTFE
	Thermal Conductivity (W/m - K)	C177	0.025 - 0.3
	Maximum Service Temp, Air (°C)	na	260
	Melt Temp (°C)	D3418	326 - 327
	Decomposition Temp (°C)	AIR	505
	Coefficient of Thermal Expansion, linear 20° (μm/m-°C)	D696	100