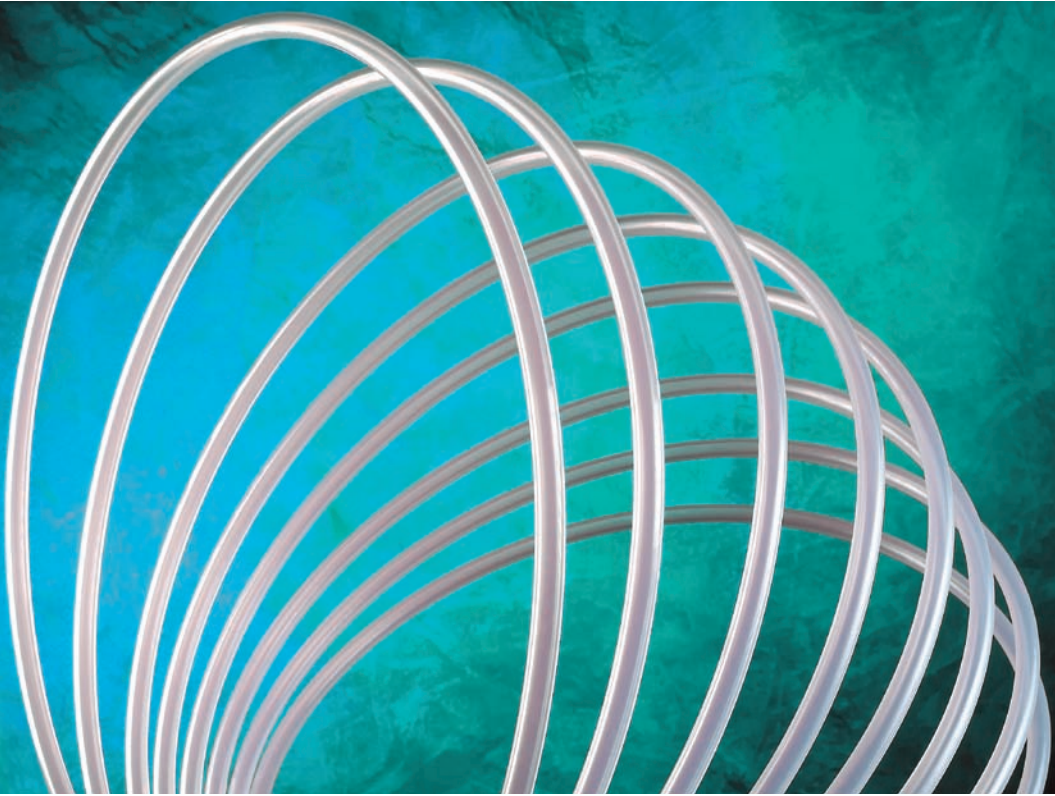


Pharma Fluor® FEP Tubing



PharmaFluor tubing is manufactured using fluoropolymers under strictly controlled processing conditions.

PharmaFluor FEP

PharmaFluor FEP is a fluoropolymer tubing that meets the demands of biopharmaceutical, medical and laboratory applications. PharmaFluor tubing has outstanding chemical and physical characteristics because processing occurs under stringently controlled conditions. In addition to being chemically inert, PharmaFluor tubing can be used in a broad range of temperatures, from -100°F to 400°F.

PharmaFluor Characteristics

Fluid integrity is an obvious area of concern in biopharmaceutical, medical and lab applications. PharmaFluor FEP will resist the absorption/adsorption of aqueous fluids, which minimizes the risk of fluid alteration in single or repeat use applications. PharmaFluor tubing is also virtually unaffected by chemical sanitizers and cleaners and can be cleaned repeatedly without decreasing its service life.

Biocompatibility

PharmaFluor FEP complies fully with the requirements of USP Class VI and all current ISO standards, and is entirely non-cytotoxic, non-pyrogenic and non-hemolytic.

To ensure the superior characteristics of PharmaFluor FEP, the following tests were also performed: Genotoxicity Tests, Bacteriostasis-Fungistasis Tests, Physiochemical Testing for Elastomeric Closures (USP <381>) and Physiochemical Testing for Plastics (USP <661>). PharmaFluor® FEP has a Master File with the U.S. Food and Drug Administration.

PHARMACEUTICAL SYSTEMS

Features/Benefits

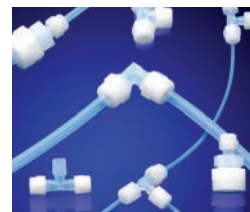
- Chemically inert
- Ultra-pure
- Documented biocompatibility
- Fully characterized to all current standards
- Non-cytotoxic, non-pyrogenic and non-hemolytic
- Extremely low sorption characteristics compared to other flexible tubings
- Fully autoclavable and sterilizable
- Excellent barrier with very low permeability

Typical Applications

- Sterile filling and dispensing systems
- Diagnostic equipment
- General laboratory use
- Cell and tissue culture transport
- Analytical and process equipment in biotechnology, pharmaceutical and environmental fields

Connections

- PharmaFluor PFA Compression Fittings



PharmaFluor® Sizes

Part Number*	Diameter (inches)		Approximate Min. Bend Radius (inches)	Maximum Working Pressure (psi)**		
	ID	OD		73°F (23°C) FEP	212°F (100°C) FEP	400°F (204°C) FEP
PHFE6-0125-031-50	1/16	1/8	1/2	412	148	N/A
PHFE6-0250-062-50	1/8	1/4	1/2	417	150	N/A
PHFE6-0250-047-50	5/32	1/4	3/4	289	104	N/A
PHFE6-0250-031-50	3/16	1/4	1	177	64	N/A
PHFE6-0312-062-50	3/16	5/16	1-1/2	312	112	N/A
PHFE6-0375-062-50	1/4	3/8	1	250	90	N/A
PHFE6-0375-031-50	5/16	3/8	2-1/2	113	41	N/A
PHFE6-0500-062-50	3/8	1/2	2	97	35	N/A

Typical Physical Properties

Property	ASTM Method	Value or Rating
Color	—	Transparent
Durometer Hardness Shore D	D2240	55
Elongation @ 73°F	D638	275%
Maximum Service Temperature, °F (°C)	—	400 (204)
Melting Point, °F (°C)	D4591	500-530 (302-310)
Low Temperature Embrittlement, °F (°C)	D746	-100 (-73)
Specific Gravity	D792	2.17
Odor and Taste	—	none
Toxicity	—	none
Flammability	—	UL 94 rated V-0 (self-extinguishing)
Chemical Resistance (data available)	D471	
- strong or weak acids		excellent
- strong or weak alkalies		excellent
- solvents or fuels		excellent
Moisture Absorption, %	D570	< 0.01%
Effect of Weathering and UV Exposure	—	none

* Part numbers shown are for 50-foot lengths. Additional lengths available upon request.

** Safety factor of 4 to 1 ratio burst pressure to working pressure. ASTM D1559.

The values listed for working and burst pressures are derived from tests conducted under controlled laboratory conditions. Many factors will reduce the tubing's ability to withstand pressures including temperature, chemical attack, stress, pulsation and the attachment to fittings. It is imperative that the user conduct tests simulating the conditions of the application prior to specifying the tubing for use.

Sterilization Methods

Autoclavable	Yes
Gas (Ethylene Oxide)	Yes
Radiation (Up to 50 kGy)	Yes

PHARMAFLUOR TUBING IS NOT INTENDED FOR USE AS AN IMPLANT MATERIAL

Pharmafluor® is a registered trademark of Saint-Gobain Performance Plastics.

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IMPORTANT: It is the user's responsibility to ensure the suitability and safety of Saint-Gobain Performance Plastics products for all intended uses and that the materials to be used comply with all applicable medical regulatory requirements. Saint-Gobain Performance Plastics assumes no responsibility for any product failures that occur due to misuse of the materials it provides arising out of the design, fabrication or application of the products into which the materials are incorporated.

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WARRANTY: For a period of 12 months from the date of first sale, Saint-Gobain Performance Plastics warrants this product to be free of defects in materials and workmanship. Our only obligation will be to replace any portion proving defective, or at our option, to refund the purchase price thereof.