Saint-Gobain
Life Sciences –
Bioprocess Solutions

PharMed® BPT

Biocompatible Peristaltic Pump Tubing

High Performance Peristaltic Pump Tubing

PharMed® BPT tubing has been formulated to withstand the rigors of peristaltic pumping action while providing the fluid surface required in sensitive bioprocess applications which meets the requirements of USP <88> Class VI, and/or USP <87>, and/or ISO 10993-5. With its superior flex life characteristics, PharMed BPT tubing simplifies biopharmaceutical manufacturing processes by reducing production downtime due to pump tubing failure.

Simplifies Cleaning and Sterilization

PharMed® BPT tubing is ideal for use in clean-in-place systems. It is compatible with virtually all commercial cleaners and sanitizers and can be repeatedly autoclaved up to five cycles without affecting overall service life. PharMed BPT also withstands 50kGy of gamma radiation with minimal effect on physical properties.

Superior Barrier Properties

PharMed® BPT tubing is less permeable to gases and vapors than silicone tubing. It is ideal for protecting sensitive fluids in a variety of biopharmaceutical operations including media mixing, cell culture, harvest, and purification. PharMed BPT tubing has very good general chemical resistance and excellent acid, alkali and oxidation resistance. Opaque to visible and UV light, PharMed BPT tubing will help to protect light-sensitive fluids.

Fully Characterized and Biocompatible

PharMed® BPT tubing comes complete meeting the requirements of USP <88> Class VI, and/or USP <87>, and/or ISO 10993-5, and with physiochemical and extractable testing which can be found in the Validation Guide Summary on the Saint-Gobain Bioprocess Solutions website.

Features/Benefits

- Outlasts silicone tubing in peristaltic pumps
- Withstands repeated autoclaving
- Meets the requirements of USP <88> Class VI, and/or USP <87>, and/or ISO 10993-5
- Multiple Manufacturing sites

Typical Pump Applications

- Cell harvest and media process systems
- Bioreactor process lines
- Production filtration and fermentation
- Aseptic filling
- Shear-sensitive fluid transfer
- Diagnostics and laboratory testing

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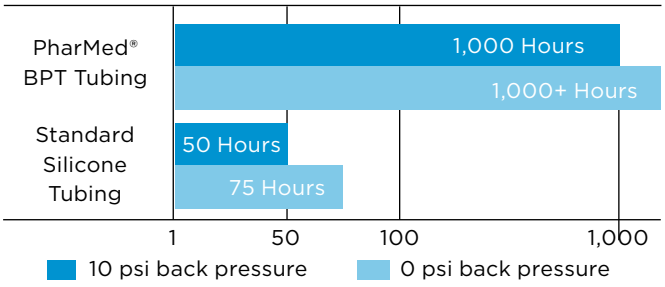
Comparative Peristaltic Pump Tubing Life

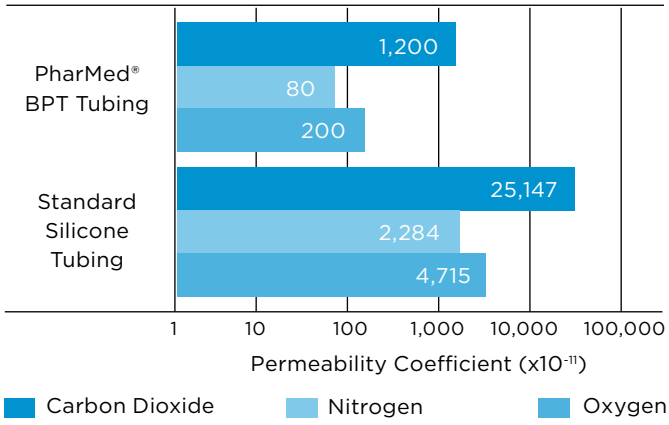
The table below depicts hours until tubing rupture of 1/4″ (6.4mm) ID x 3/8″ (9.5mm) OD tubing. In each case, a 3-roller pump head was utilized operating at 600 rpm at room temperature 73°F (23°C).



The performance of tubing in peristaltic pumping applications is affected by the conditions of use and equipment utilized, along with size and wall thickness of the tubing tested. The data above is presented for information only and should not be utilized for specification purposes.

Permeability Coefficient Comparison

$$\text{Permeability Coefficient} = \frac{\text{amount of gas } (cm^3) \times \text{tubing wall thickness } (cm)}{\text{surface area of tubing ID } (cm^2) \times \text{time (sec)} \times \text{pressure drop across tubing wall (cm Hg)}}$$



Typical Physical Properties of PharMed® BPT Tubing

Property	ASTM Method	Value or Rating
Appearance	—	Opaque Cream
Durometer Hardness Shore A, 15 Sec	D2240	64
Maximum Service Temperature, °F (°C)	—	275 (135)
Low Temperature Embrittlement, °F (°C)	D746	-75 (-59)
Water Absorption, % 24 hrs. @ 23°C	D570	0.30

Unless otherwise noted, all tests were conducted at room temperature (73°F). Values shown were determined on 0.075″ thick extruded strip or 0.075″ thick molded ASTM plaques or molded ASTM durometer buttons.

Sterilization Methods

Autoclavable	30 min at 121°C
Gamma	50kGy

PharMed® BPT Standard Sizes

Part Numbers	I.D. inches (mm)	O.D. inches (mm)	Wall thickness inches (mm)	Length feet (m)	Minimum bend radius inches (mm)	Max Working Pressure at 73°F psi* (bar)	Max Working Pressure at 180°F psi* (bar)	Vacuum Rating in Hg (mm Hg) 73°F (23°C)	Vacuum Rating in Hg (mm Hg) 180°F (82°C)
AY242605	.020 (0.5)	.145 (3.7)	1/16 (1.6)	25 (7.6)	1/8 (3.2)	115 (7.9)	72 (5.0)	29.9 (760)	29.9 (760)
AY242606	1/32 (0.8)	5/32 (4.0)	1/16 (1.6)	25 (7.6)	1/8 (3.2)	78 (5.4)	49 (3.4)	29.9 (760)	29.9 (760)
AY242002	1/16 (1.6)	1/8 (3.2)	1/32 (0.79)	25 (7.6)	1/4 (6.4)	24 (1.7)	14 (1.0)	29.9 (760)	29.9 (760)
AY242003	1/16 (1.6)	3/16 (4.76)	1/16 (1.6)	25 (7.6)	1/8 (3.2)	43 (3.0)	27 (1.9)	29.9 (760)	29.9 (760)
AY242005	3/32 (2.4)	7/32 (5.6)	1/16 (1.6)	25 (7.6)	1/4 (6.4)	30 (2.1)	19 (1.3)	29.9 (760)	29.9 (760)
AY242006	1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	25 (7.6)	1/2 (12.7)	13 (0.9)	8 (0.6)	25 (635)	15 (381)
AY242007	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	25 (7.6)	1/2 (12.7)	24 (1.7)	15 (1.0)	29.9 (760)	29.9 (760)
AY242012	3/16 (4.8)	5/16 (7.9)	1/16 (1.6)	25 (7.6)	5/8 (15.8)	17 (1.2)	10 (0.7)	29.9 (760)	27 (686)
AY242017	1/4 (6.4)	3/8 (9.5)	1/16 (1.6)	25 (7.6)	7/8 (22.2)	13 (0.9)	8 (0.6)	25 (635)	15 (381)
AY242019	1/4 (6.4)	1/2 (12.7)	1/8 (3.2)	25 (7.6)	3/4 (19.0)	24 (1.7)	15 (1.0)	29.9 (760)	29.9 (760)
AY242022	5/16 (7.9)	7/16 (11.1)	1/16 (1.6)	25 (7.6)	1-1/4 (31.7)	11 (0.8)	6 (0.4)	15 (381)	9 (229)
AY242027	3/8 (9.5)	1/2 (12.7)	1/16 (1.6)	25 (7.6)	1-3/8 (34.9)	9 (0.6)	5 (0.3)	10 (254)	6 (152)
AY242029	3/8 (9.5)	5/8 (15.8)	1/8 (3.2)	25 (7.6)	1-1/8 (28.5)	17 (1.2)	10 (0.7)	29.9 (760)	27 (686)
AY242038	1/2 (12.7)	3/4 (19.0)	1/8 (3.2)	25 (7.6)	1-1/8 (28.5)	10 (0.7)	8 (0.6)	25 (635)	15 (381)
AY242046	5/8 (15.9)	7/8 (22.2)	1/8 (3.2)	25 (7.6)	2-3/4 (69.8)	11 (0.8)	6 (0.4)	15 (381)	9 (229)
AY242053	3/4 (19.0)	1 (25.4)	1/8 (3.2)	25 (7.6)	3-1/2 (88.9)	9 (0.6)	5 (0.3)	10 (254)	6 (152)

*Working pressures are calculated at a 1:5 ratio relative to burst pressure using ASTM D1599.

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.

Saint-Gobain Life Sciences' manufacturing facilities have the ability to create a variety of sizes or coil lengths for your particular application needs.

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WARRANTY: For a period of 12 months from the date of first sale, Saint-Gobain Life Sciences 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.

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