PharmaPure™ combines unsurpassed pump life with ultra-low particle spallation making it the peristaltic pump tubing of choice.

PharmaPure® Flexibility
PharmaPure® is a premium, low spallation, biologically compatible peristaltic pump tubing developed especially for pharmaceutical, biotechnology, and laboratory applications. This tubing meets the demanding challenges of providing unsurpassed pump life, with ultra-low particulate spallation and very low permeability.

PharmaPure® Characteristics
PharmaPure®’s superior flex life characteristics simplifies the manufacturing process by reducing production downtime due to pump tubing failures. PharmaPure®’s excellent wear properties allow the product to provide extremely low rates of spallation as compared to silicone and other alternate materials. Because PharmaPure® has low permeability and superior absorption characteristics, it is ideal for protecting sensitive cell cultures, fermentation, separation, purification, process monitoring, and sterile fill applications.

Biocompatibility
PharmaPure® tubing complies fully with the requirements of USP Class VI, European Pharmacopeia 3.2.9 and FDA 21 CFR Part 177.2600 criteria and is entirely non-cytotoxic, non-pyrogenic, and non-hemolytic.

To confirm the superior characteristics of PharmaPure® the following tests were also performed: Genotoxicity Tests, Bacteriostasis – Fungistasis Tests, Physiochemical Testing for Elastomeric Closures (USP <381>), Physiochemical Testing for Plastics (USP <661>), Total Extractables (per 21 CFR 177.2600), and full Preservative Absorption Test Protocol evaluating Benzyl Alcohol, Phenol, Meta-Cresol, Methyl Paraben, and Propyl Paraben. PharmaPure® tubing has a masterfile with the U.S Food and Drug Administration.
PharmaPure® Tubing Inventory Sizes

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

**Opacity**
- Opaque

**FDA Approved for Food Contact**
- Yes

**USP Class VT**
- Yes

**Sterilization**
- Autoclavable/Gas/Radiation

**PharmaPure®** Tubing Inventory Sizes Table

**Typical Physical Properties**

**Property**
- Durometer Hardness Shore A, 15 Sec.
- Tensile Strength, psi (MPa)
- Ultimate Elongation, %
- Tensile Stress @ 100% psi (MPa)
- Tensile Set % @ 75% of Ultimate Elongation
- Color
- Tear Resistance, lb-ft/inch (kN/m)
- Compression Set
- Constant Deflection, % @ 158°F (70°C) for 22 hours
- Specific Gravity
- Water Absorption, %, 24 hours @ 73°F (23°C)
- Brittle Temperature, °F (°C)
- Low Temperature Flexibility @-40°F (-40°C)
- Flame Resistance Classification
- Maximum Recommended Operating Temp., °F (°C)
- Dielectric Strength, v/mil (kV/mm)

**ASTM Method**
- D1220-00
- D412-98
- D412-98
- D412-98
- D412-98
- D1004-94
- D395-98 Method B
- D792-00
- D746-98
- D380-94
- UL 94-HB
- D419-97a

**Value or Rating**
- 65
- 700 (4.8)
- 400
- 375 (2.6)
- 38
- 110 (19.3)
- 36
- 0.92
- 0.04
- -89 (-67)
- Passed (Still Flexible)
- Passed
- 275 (135)
- 567 (22.3)

Unless otherwise noted, all tests were conducted at room temperature (73°F). Values shown were determined on 0.015" thick extruded strip or 0.075" thick molded ASTM plaques or molded ASTM durometer buttons.

**Spallation Rate Tubing Comparison**

The following test data summarizes the spallation results of select tubing used in a peristaltic pump. In each case 1/4" ID tubing was used in a 3 roller pump head operating at 600RPM under room temperature (73°F). Results from a minimum of 5 samples were averaged to obtain values.

**Comparative Peristaltic Pump Tubing Life**

For a period of 6 months from the date of first sale, Saint-Gobain Performance Plastics Corporation warrants this product to be free from 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. User assumes all other risk, if any, including the risk of injury, loss or damage, direct or consequential, arising out of the use, misuse, or inability to use, this product. THIS WARRANTY IS IN LIEU OF THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. No deviation is authorized.

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 used for specification purposes.

**Product Characteristics**

- Opacity: Opaque
- FDA Approved for Food Contact: Yes
- USP Class VT: Yes
- Sterilization: Autoclavable/Gas/Radiation

**Relative Chemical Resistance Properties**

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E = Excellent  F = Fair  U = Unsatisfactory

*All tests conducted at room temperatures.

**Relative Chemical Resistance Properties Tabulation**

**Acids**
- Concentrated
- Weak

**Bases**
- Concentrated
- Weak

**PharmaPure** is a registered trademark.

**Saint-Gobain Performance Plastics**

2664 Gilchrist Road
Akron, OH 44305
Tel: (330) 798-9240
Fax: (330) 798-6968

**IMPORTANT**: It is the user’s responsibility to ensure the suitability and safety of Saint-Gobain Performance Plastics tubing for all intended uses. Laboratory and clinical tests must be conducted in accordance with applicable regulatory requirements in order to determine the safety and effectiveness for use of tubing in any particular application. For a period of 6 months from the date of first sale, Saint-Gobain Performance Plastics Corporation warrants this product to be free from 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. User assumes all other risk, if any, including the risk of injury, loss or damage, direct or consequential, arising out of the use, misuse, or inability to use, this product. THIS WARRANTY IS IN LIEU OF THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. No deviation is authorized.

Saint-Gobain Performance Plastics Corporation assumes no obligations or liability for any advice furnished by it, or for results obtained with respect to those products. All such advice is given and accepted at the buyer’s risk.

**Website**: www.biopharm.saint-gobain.com

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**Fax**: (330) 798-6968
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**Tel**: (330) 798-9240
**Akron, OH 2664**

**PHARMAPURE TUBING IS NOT INTENDED FOR USE AS AN IMPLANT MATERIAL**

**BIOPHARMACEUTICAL PRODUCTS**

Come through clean.

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