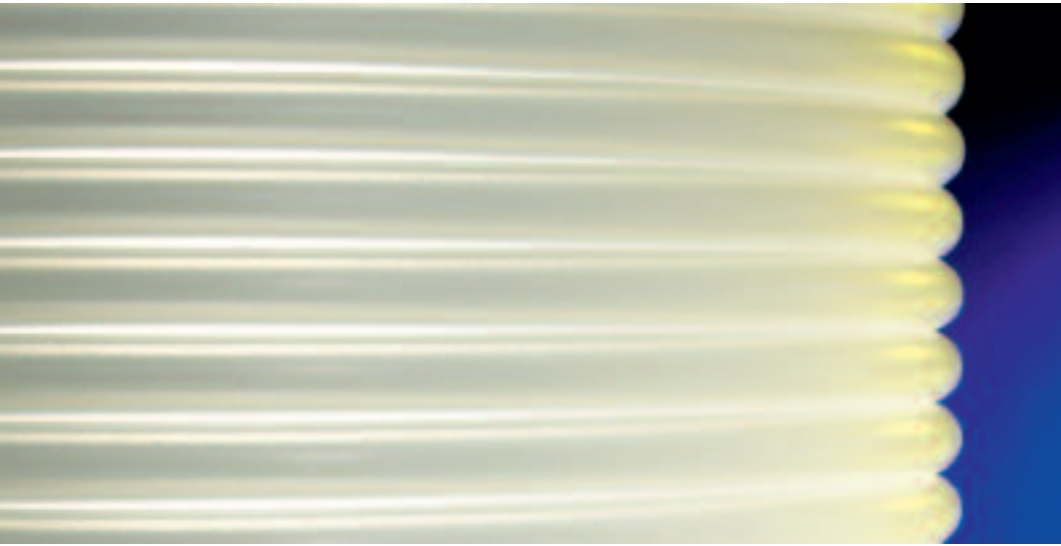


NEW

# TYGOPRENE® Pump Tubing



Tygoprene® Pump Tubing provides flexibility and long life in peristaltic pumps.

## Superior Performance in Peristaltic Pumps

Designed specifically for use in peristaltic pump applications, Tygoprene® Pump Tubing maintains a pump life of over 500 hours. With a durometer hardness of Shore A 60, it is extremely flexible and exhibits superior flex life, reducing downtime due to pump tubing failure (see “Comparative Peristaltic Pump Tubing Life” chart on back of page). Tygoprene® Pump Tubing can be considered an alternative to silicones and PVC when longer pump tubing life is required.

## Excellent Physical Properties

Tygoprene® Pump Tubing is translucent in color and has excellent chemical resistance to a wide range of fluids, including acids and bases. It also exhibits excellent resistance to ozone, oxygen and sunlight aging. Tygoprene® Pump Tubing remains flexible at -40°F and is temperature resistant up to 250°F. Tygoprene® Pump Tubing complies with FDA 21 CFR, 177.1210 criteria, which are applicable for food contact applications, and is NSF listed under standard 51. It has also passed the UL 94-HB flammability resistance classification.

## Low Extractables

Tygoprene® Pump Tubing has low extractables, greatly reducing the risk of fluid contamination in applications such as ink transfer. It does not impart taste to fluids being transferred, making it an ideal choice for food and beverage applications.

## FORMULATION XL-60

Long life pump tubing for a variety of applications

### Features/Benefits

- DEHP free
- Long flex life in peristaltic pumps
- Temperature resistant up to 250°F
- Low extractables
- Meets FDA and NSF 51 criteria
- Alternative to PVC

### Typical Applications

- Ink transfer
- Soap and detergent delivery
- Cold or hot beverage transfer and dispensing
- Food processing
- Laboratory applications requiring long pump life and/or low extractables
- General chemical transfer and processing



## TYGOPRENE® XL-60 Inventoried Sizes

Saint-Gobain Part Number	I.D. (inches)	O.D. (inches)	Wall Thickness (inches)	Length (feet) (inches)	Minimum Bend Radius	Max. Working Pressure at 73°F (psi)*	Vacuum Rating, In. of Mercury at 73°F
AN800003	1/16	3/16	1/16	50	1/2	35	29.9
AN800007	1/8	1/4	1/16	50	1/2	20	29.9
AN800012	3/16	5/16	1/16	50	3/4	13	29.9
AN800017	1/4	3/8	1/16	50	1	15	29.9
AN800022	5/16	7/16	1/16	50	1-1/2	11	20.0
AN800027	3/8	1/2	1/16	50	2	11	15.0
AN800038	1/2	3/4	1/8	50	2-1/2	15	29.9
AN800046	5/8	7/8	1/8	50	3	11	20.0
AN800053	3/4	1	1/8	50	4	11	20.0

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

## TYGOPRENE® XL-60 Typical Physical Properties

Property	ASTM Method	Value or Rating
Durometer Hardness Shore A, 15 Sec	D2240-03	60
Color	-	Translucent
Tensile Strength psi (MPa)	D412-98	1,630 (11.2)
Ultimate Elongation, %	D412-98	770
Tear Resistance lb-f/inch (kN/m)	D1004-03	190 (33.3)
Specific Gravity	D792-00	0.90
Water Absorption, % 24 hrs. @ 23°C	D570-98	0.07
Compression Set Constant Deflection, % @ 158°F (70°C) for 22 hrs.	D395-03 Method B	55
Brittleness By Impact Temp., °F (°C)	D746-98	-87 (-66)
Maximum Recommended Temperature*, °F (°C)	-	250 (121)
Dielectric Strength v/mil (kV/mm)	D149-97	550 (21.6)
Tensile Modulus, @ 100% Elongation, psi (MPa)	D412-98	555 (3.83)
Tensile Set, %	D412-98	100

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.

\*Values based on static oven test at 0 psi.

## Relative Permeability Coefficients

Tubing Material	Carbon Dioxide	Nitrogen	Oxygen
Tygon® XL-60 Tubing	1,116	62	186
Silicone Tubing	42,800	3,900	8,025

Permeability Coefficient (x10<sup>-11</sup>) cc • cm / cm<sup>2</sup> • s • cmHg

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

TYGOPRENE® is a Saint-Gobain Performance Plastics registered trademark.

## 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 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.

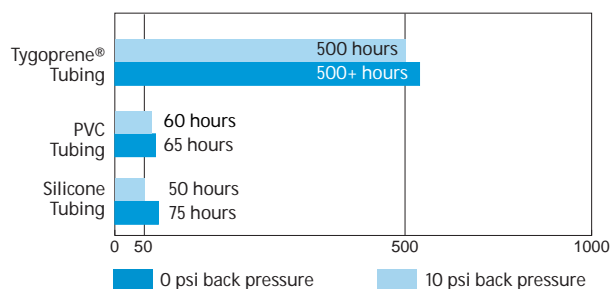
For a period of 6 months from the date of first sale, Saint-Gobain Performance Plastics Corporation warrants this product to be free from defects in materials and workmanship. Our only obligation will be to replace any portion proving defective or at our option to refund the purchase price thereof. User 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.

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.

## Comparative Peristaltic Pump Tubing Life

The table below depicts hours until failure of 1/4" ID x 3/8" OD tubing. In each case, a 3-roller pump head operating at 600 rpm under room temperature (73°F) conditions was utilized. Tubing failure is measured in hours of use prior to rupture.



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.

## Relative Chemical Resistance Properties

Tubing	Acids			Bases		
	Conc.	Med.	Weak	Conc.	Med.	Weak
Tygon® Tubing	G	G	E	G	G	E
PVC Tubing	F	E	E	E	E	E
Silicone Tubing	U	U	U	U	F	F

E = Excellent G = Good F = Fair U = Unsatisfactory

\*All tests conducted at room temperature