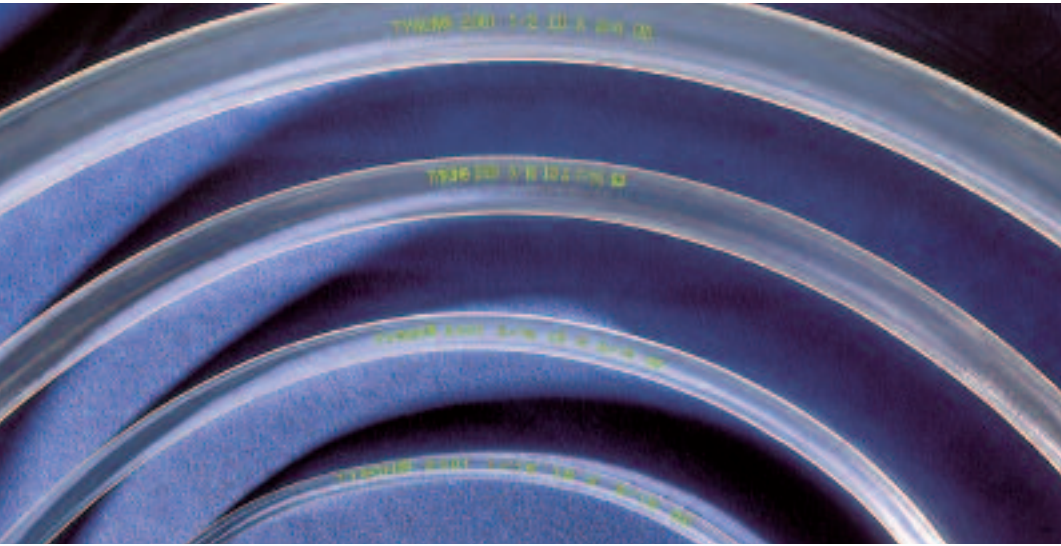


# TYGON® Plasticizer Free Tubing



Tygon® Plasticizer Free Tubing resists chemical attack and is a clear, flexible alternative to PVC.

## Superior Performance in a Broad Range of Applications

Tygon® Plasticizer Free Tubing is uniquely engineered to provide flexibility, chemical resistance and extended pump life in a clear, plasticizer/oil free tubing product. It is ideal for a broad range of demanding applications including peristaltic pump systems, soap and detergent dispensing, ink transfer, water purification lines, food and beverage and chemical transfer.

## Outperforms PVC in Chemical Resistance

Tygon® Plasticizer Free Tubing is resistant to a wide range of fluids that typically destroy PVC products. Its chemical resistance allows it to be used in applications with aggressive chemicals such as polar solvents, benefiting the user with less downtime and tubing changes. Tygon® Plasticizer Free Tubing yields a longer service life and does not degrade over time, unlike other flexible tubing products (see "Relative Chemical Resistance Chart" on back of sheet).

## Additional Product Features

Upon incineration, many tubing products release hazardous by-products such as hydrogen chloride gas, but when properly incinerated, Tygon® Plasticizer Free Tubing does not. Since it contains no plasticizers or oils, Tygon® Plasticizer Free Tubing will not yield any taste, which makes it an ideal choice for food and beverage applications with strict taste requirements and will help ensure accurate results from analytical instrument tests. Tygon® Plasticizer Free Tubing fully complies with FDA 21 CFR, 177.2600 criteria.

## Formulation 2001

### Features/Benefits

- Plasticizer and oil free — does not contaminate fluids
- Superior flex life in peristaltic pumps
- Chemically resistant to a wide range of fluids
- Temperature resistant from -108°F to 135°F
- Clear for easy visual flow monitoring
- Meets FDA criteria for food contact

### Typical Applications

- Chemical transfer
- Peristaltic pumps
- Soap and detergent dispensing
- Ink transfer
- Water purification lines
- Food and beverage
- Analytical instruments
- Ideal for condensers, incubators, desiccators, gas and drain lines

## TYGON® 2001 Manufactured Sizes and Pressures

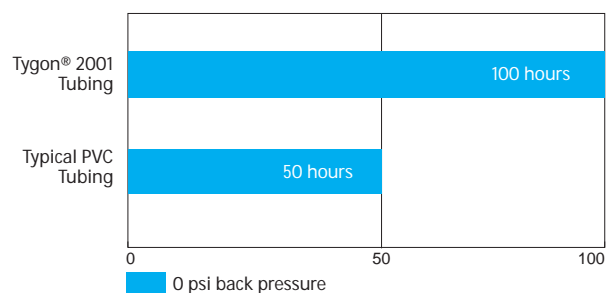
Saint-Gobain Part Number	I.D. (inches)	O.D. (inches)	Wall Thickness (inches)	Length (feet)	Minimum Bend Radius (inches)	Max. Working Pressure at 73°F (psi)*	Vacuum Rating, In. of Mercury at 73°F
AE300003	1/16	3/16	1/16	50	1/4	45	29.9
AE300007	1/8	1/4	1/16	50	1/2	30	29.9
AE300012	3/16	5/16	1/16	50	1/2	22	29.9
AE300017	1/4	3/8	1/16	50	1	17	29.9
AE300022	5/16	7/16	1/16	50	1-1/2	14	25.0
AE300027	3/8	1/2	1/16	50	2	12	15.0
AE300038	1/2	3/4	1/8	50	1-1/2	16	29.9
AE300046	5/8	7/8	1/8	50	2-1/2	13	25.0
AE300053	3/4	1	1/8	50	3	11	15.0
AE300064	1	1-3/8	3/16	50	3-3/4	13	17.0

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.

\*Working pressures are calculated at a 1:1.5 ratio relative to burst pressure using ASTM D1599.

## 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). 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.

## TYGON® 2001 Typical Physical Properties

Property	ASTM Method	Value or Rating
Durometer Hardness Shore A, 15 Sec	D2240-03	69
Color	-	Clear
Tensile Strength psi (MPa)	D412-98	800 (5.51)
Ultimate Elongation, %	D412-98	500
Tear Resistance lb-f/inch (kN/m)	D1004-03	140 (24.5)
Specific Gravity	D792-00	0.88
Water Absorption, % 24 hrs. @ 23°C	D570-98	0.04
Compression Set Constant Deflection, % @ 158°F (70°C) for 22 hrs.	D395-03 Method B	40
Brittleness By Impact Temp., °F (°C)	D746-98	-108 (-78)
Maximum Recommended Operating Temperature, °F (°C)	-	135 (57)
Low Temp Flexibility, °F (°C)	D380.94	-100 (-73)
Dielectric Strength, v/mil (kV/mm)	D149-97	530 (20.9)
Tensile Modulus, @ 100% Elongation, psi (MPa)	D412-98	240 (1.65)
Tensile Set, %	D412-98	110

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.

## Relative Chemical Resistance Properties

Tubing	Acids			Bases			Salts	Alcohols	Ketones
	Conc.	Med.	Weak	Conc.	Med.	Weak			
Tygon® 2001	F	E	E	F	E	E	E	E	F
Fluoroelastomers	E	E	E	U	F	F	E	F	U
Urethane	U	U	U	U	F	F	F	U	U
PVC	F	E	E	E	E	E	E	F	U
Thermoplastic Rubber	U	F	F	F	E	E	E	F	U
Neoprene	U	F	E	E	E	E	E	E	U
Nitrile Rubber	F	F	E	U	E	E	E	E	U
Silicone	U	U	U	U	F	F	F	F	U
EVA	U	F	E	F	E	E	E	E	U

E = Excellent F = Fair U = Unsatisfactory

\*All tests conducted at room temperature

TYGON® 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.

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