



# TYGON S3™ E-3603

The only choice for phthalate-free flexible tubing

## Non-DEHP Tubing for Laboratory, Food & Beverage and Vacuum Applications

Saint-Gobain is proud to be among the first companies to offer sustainable, flexible tubing products. The bio-based Tygon S3 line combines high performance with an eco-friendly tubing design. Crystal clear and flexible, long-lasting and crack-resistant, Tygon S3 E-3603 non-DEHP tubing delivers the same superior performance you have come to expect, and in a formulation that contains a bio-based plasticizer.

Tygon S3™ E-3603 is manufactured under tightly controlled standards to ensure consistency and reduce variability in your application. It is non-toxic, non-contaminating, and the glassy-smooth inner bore helps prevent buildup and facilitates cleaning. Coils are marked at 1-foot (30.4 cm) intervals for easy measuring.

## Engineered to Last

Tygon S3™ E-3603 Tubing is formulated to resist flex-fatigue and abrasion. As a tubing for instrumentation connection, vent, drain and other general laboratory applications, Tygon S3™ E-3603 Tubing offers superior life, which minimizes the labor and expense of replacement. It can be sterilized through conventional autoclave methods (steam 30 minutes at 15 psi, 121°C) and ethylene oxide.

## Available in Vacuum Tubing Sizes

Tygon S3™ E-3603 Vacuum Tubing has extra-heavy walls that will withstand a full vacuum at room temperature (29.9" [759 mm] of mercury at 73°F [23°C] and up to 27" [686 mm] of mercury at 140°F [60°C]). Like standard Tygon® Laboratory Tubing, Tygon S3 E-3603 Vacuum Tubing has good tensile and tear strength.

## Regulatory Standards

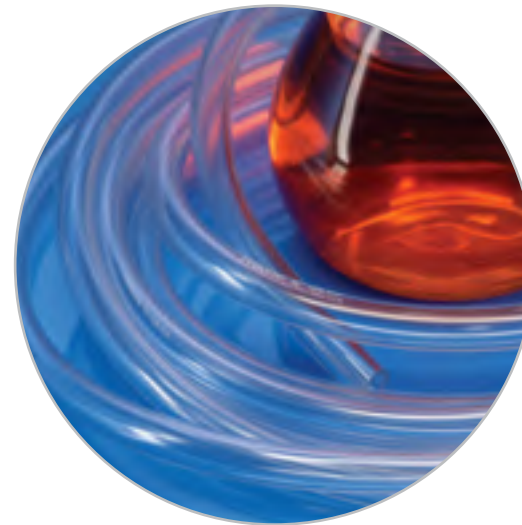
Tygon S3™ E-3603 complies with:

- US FDA food contact criteria \*
- (EU) 10/2011 and (EC) 1935/2004 \*
- Japanese Food Sanitation Law 370/1959
- NSF\*-51, Food Equipment Materials
- USP <88> Class VI criteria
- REACH (EC) 1907/2006

\* For complete compliance information and appropriate use instructions, please refer to the detailed document of compliance. The complete compliance information and use instructions can be obtained by contacting Saint-Gobain

## Sterilization Methods

- Autoclavable — Steam 30 minutes at 15 psi at 250 °F (121°C)
- Radiation:
  - Gamma up to 2.5 MRad
- Ethylene oxide gas



## Product Characteristics

Opacity	Clear
FDA Food Contact Compliance	Yes
NSF 51 Standard	Yes
USP Class VI	Passed

## Typical Physical Properties

Property	ASTM Method	Value or Rating E-3603
Durometer Hardness (Shore A), 15 sec	D2240	56
Color	-	Clear
Tensile Strength, psi (MPa)	D412	1,750 (12.1)
Ultimate Elongation, %	D412	425
Tear Resistance, lb-f/inch (kN/m)	D1004	173 (31)
Specific Gravity	D792	1.21
Water Absorption, % 24 hrs. @ 73°F (23°C)	D570	0.21
Compression Set Constant Deflection, % @ 158°F (70°C) for 22 hrs.	D395 Method B	64
Brittle Temperature, °F (°C)	D746	-51 (-46)
Maximum Recommended Operating Temp., °F (°C)	-	165 (74)
Tensile Stress, @ 100% elongation psi (MPa)	-	582 (4.0)
Tensile Set, %	D412	95

Unless otherwise noted, all tests were conducted at room temperature (73°F/23°C). Values shown were determined on 0.075"/1.9 mm thick extruded strip or 0.075"/1.9 mm thick molded ASTM plaques or molded ASTM durometer buttons.

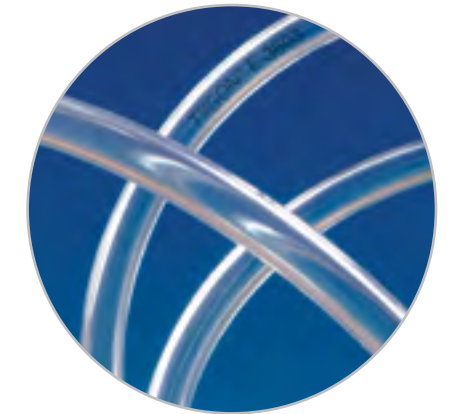
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**IMPORTANT: It is the user's responsibility to ensure the suitability and safety of Saint-Gobain Performance Plastics products for all intended uses and that the materials to be used comply with all applicable medical regulatory requirements. Saint-Gobain 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.**

**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.

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## Tygon S3™ E-3603 Features/Benefits

- Bio-based formulation reduces environmental impact
  - Lot-to-lot consistency for reproducible results
  - Non-toxic and non-contaminating
  - Smooth inner wall
  - Slips easily over fittings and grips securely for simple lab set-ups
  - No BPA or phthalates intentionally added
  - Sizes available which hold full vacuum at room temperature
- ### Typical Applications
- General laboratory connections
  - Food & beverage\*
  - Biopharmaceutical analysis
  - Analytical Instrumentation
  - Vacuum pumps
  - Ideal for condensers, incubators, desiccators, gas lines and drain lines



For more than four decades, Saint-Gobain and its family of companies have supplied the world with innovative, high-performance polymer products for the most demanding applications. Our tradition of excellence goes back 350 years through our parent company, Compagnie de Saint-Gobain, one of the world's top 100 industrial corporations, with operations in 64 countries. This successful corporation has been built with the single purpose of serving the customer and a commitment to quality and leadership in each of the industries served.

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