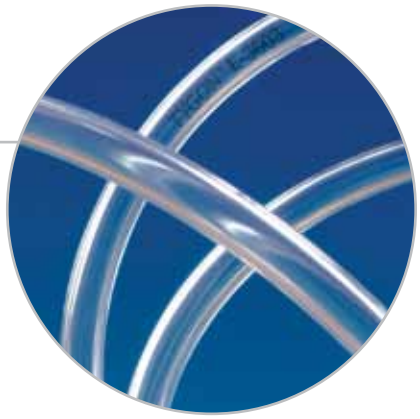
TYGON S3™ E-3603

The only choice for phthalate-free flexible tubing



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

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

Tygon S3™ E-3603 has high tolerances and lot-to-lot consistency, which will yield reproducible results in your laboratory. It is non-toxic and non-contaminating, and less permeable than rubber tubing. The glassy-smooth inner bore helps prevent buildup to facilitate cleaning. Coils are marked at 1-foot (30.4 cm) intervals for easy measuring.

Engineered to Last

Tygon S3™ E-3603 Tubing is specially formulated for resistance to 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™ complies with FDA, NSF, 3-A, meets USP Class VI, Japan Food Sanitation Law # 370/1959, REACH, 1935/2004/EC and 10/2011/EU for many foods and beverages. Tygon S3™ tubing products do not contain chemicals listed in California's Proposition 65.

* 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 found at www.TygonS3.com.

Tygon S3™ E-3603 Features/Benefits

- The new bio-based formulation delivers the same excellent performance
- Lot-to-lot consistency for reproducible results
- Non-toxic and non-contaminating
- Smooth, polished inner wall
- Slips easily over fittings and grips securely for simple lab set-ups
- Contains no BPA or phthalates
- Standard sizes available to hold full vacuum at room temperature

Typical Applications

- General laboratory
- Food & beverage*
- Biopharmaceutical
- Analytical instruments
- Peristaltic and vacuum pumps
- Ideal for condensers, incubators, desiccators, gas lines and drain lines

SAINT-GOBAIN

Tygon S3™ E-3603 Non-DEHP Tubing–Available Sizes

Saint-Gobain Part Number	I.D.		O.D.		Wall Thickness		Length		Minimum Bend Radius		Maximum Working Pressure		Vacuum Rating of Mercury	
	in.	mm	in.	mm	in.	mm	ft.	m	in.	mm	psi at 73°F*	bars at 23°C*	inches at 73°F	mm at 23°C
ACF00001	1/32	0.8	3/32	2.4	1/32	0.8	50	15	1/8	3.2	69	4.8	29.9	760
ACF00002	1/16	1.6	1/8	3.2	1/32	0.8	50	15	1/4	6.4	36	2.5	29.9	760
ACF02002	1/16	1.6	1/8	3.2	1/32	0.8	100	30.5	1/8	3.2	36	2.5	29.9	760
ACF04002	1/16	1.6	1/8	3.2	1/32	0.8	500	152	1/8	3.2	36	2.5	29.9	760
ACF00003	1/16	1.6	3/16	4.8	1/16	1.6	50	15	1/8	3.2	69	4.8	29.9	760
ACF00004	3/32	2.4	5/32	4.0	1/32	0.8	50	15	3/8	9.5	25	1.7	29.9	760
ACF02004	3/32	2.4	5/32	4.0	1/32	0.8	100	30.5	3/8	9.5	25	1.7	29.9	760
ACF00005	3/32	2.4	7/32	5.6	1/16	1.6	50	15	1/4	6.4	47	3.2	29.9	760
ACF00006	1/8	3.2	3/16	4.8	1/32	0.8	50	15	1/2	12.7	20	1.4	20	508
ACF04006	1/8	3.2	3/16	4.8	1/32	0.8	500	152	1/2	12.7	20	1.4	20	508
ACF00007	1/8	3.2	1/4	6.4	1/16	1.6	50	15	3/8	9.5	36	2.5	29.9	760
ACF02007	1/8	3.2	1/4	6.4	1/16	1.6	100	30.5	3/8	9.5	36	2.5	29.9	760
ACF04007	1/8	3.2	1/4	6.4	1/16	1.6	500	152	3/8	9.5	36	2.5	29.9	760
ACF00009	5/32	4.0	7/32	5.6	1/32	0.8	50	15	3/8	9.5	17	1.2	12	305
ACF00010	5/32	4.0	9/32	7.1	1/16	1.6	50	15	1/2	12.7	30	2.1	29.9	760
ACF02010	5/32	4.0	9/32	7.1	1/16	1.6	100	30.5	1/2	12.7	30	2.1	29.9	760
ACF00011	3/16	4.8	1/4	6.4	1/32	0.8	50	15	1	25.4	14	1.0	9	229
ACF00012	3/16	4.8	5/16	7.9	1/16	1.6	50	15	5/8	15.9	25	1.7	29.9	760
ACF02012	3/16	4.8	5/16	7.9	1/16	1.6	100	30.5	5/8	15.9	25	1.7	29.9	760
ACF04012	3/16	4.8	5/16	7.9	1/16	1.6	500	152	5/8	15.9	25	1.7	29.9	760
ACF00013	3/16	4.8	3/8	9.5	3/32	2.4	50	15	1/2	12.7	36	2.5	29.9	760
ACF00014	3/16	4.8	7/16	11.1	1/8	3.2	50	15	3/8	9.5	47	3.2	29.9	760
ACF00016	1/4	6.4	5/16	7.9	1/32	0.8	50	15	1-5/8	41.3	12	0.8	5	127
ACF00017	1/4	6.4	3/8	9.5	1/16	1.6	50	15	1	25.4	20	1.4	20	508
ACF02017	1/4	6.4	3/8	9.5	1/16	1.6	100	30.5	1	25.4	20	1.4	20	508
ACF04017	1/4	6.4	3/8	9.5	1/16	1.6	500	152	1	25.4	20	1.4	20	508
ACF00018	1/4	6.4	7/16	11.1	3/32	2.4	50	15	3/4	19.0	28	1.9	29.9	760
ACF00019	1/4	6.4	1/2	12.7	1/8	3.2	50	15	1/2	12.7	36	2.5	29.9	760
ACF02019	1/4	6.4	1/2	12.7	1/8	3.2	100	30.5	1/2	12.7	36	2.5	29.9	760
ACF00022	5/16	7.9	7/16	11.1	1/16	1.6	50	15	1-3/8	34.9	17	1.2	13	330
ACF00023	5/16	7.9	1/2	12.7	3/32	2.4	50	15	1	25.4	23	1.6	29.9	760
ACF00024	5/16	7.9	9/16	14.3	1/8	3.2	50	15	7/8	22.2	30	2.1	29.9	760
ACF00025	5/16	7.9	5/8	15.9	5/32	4.0	50	15	3/4	19.0	36	2.5	29.9	760
ACF00027	3/8	9.5	1/2	12.7	1/16	1.6	50	15	1-1/2	38.1	14	1.0	9	229
ACF00028	3/8	9.5	9/16	14.3	3/32	2.4	50	15	1-3/8	34.9	20	1.4	21	533
ACF00029	3/8	9.5	5/8	15.9	1/8	3.2	50	15	1-1/8	28.6	25	1.7	29.9	760
ACF00032	7/16	11.1	9/16	14.3	1/16	1.6	50	15	2-1/4	57.2	13	0.9	7	178
ACF00033	7/16	11.1	5/8	15.9	3/32	2.4	50	15	1-3/4	44.4	18	1.2	15	381
ACF00034	7/16	11.1	11/16	17.5	1/8	3.2	50	15	1-3/8	34.9	22	1.5	28	711
ACF00036	1/2	12.7	5/8	15.9	1/16	1.6	50	15	2-7/8	73.0	12	0.8	5	127
ACF00037	1/2	12.7	11/16	17.5	3/32	2.4	50	15	2-1/4	57.2	15	1.0	12	305
ACF02037	1/2	12.7	11/16	17.5	3/32	2.4	100	30.5	2-1/4	57.2	15	1.0	12	305
ACF00038	1/2	12.7	3/4	19.0	1/8	3.2	50	15	1-1/2	38.1	20	1.4	21	533
ACF00039	1/2	12.7	13/16	20.6	5/32	4.0	50	15	1-1/2	38.1	24	1.7	29.9	760
ACF00041	9/16	14.3	3/4	19.0	3/32	2.4	50	15	2-1/2	63.5	14	1.0	9	229
ACF00042	9/16	14.3	13/16	20.6	1/8	3.2	50	15	2	50.8	18	1.2	17	432
ACF00045	5/8	15.9	13/16	20.6	3/32	2.4	50	15	3	76.2	13	0.9	7	178
ACF00046	5/8	15.9	7/8	22.2	1/8	3.2	50	15	2-3/8	60.3	17	1.2	13	330
ACF00047	5/8	15.9	15/16	23.8	5/32	4.0	50	15	2	50.8	20	1.4	21	533
ACF00050	11/16	17.5	7/8	22.2	3/32	2.4	50	15	3-1/2	88.9	12	0.8	6	152
ACF00053	3/4	19.0	1	25.4	1/8	3.2	50	15	3-1/4	82.6	14	1.0	9	229
ACF00054	3/4	19.0	1-1/16	27.0	5/32	4.0	50	15	2-3/4	69.8	17	1.2	15	381
ACF00055	3/4	19.0	1-1/8	28.6	3/16	4.8	50	15	2-3/8	60.3	20	1.4	21	533
ACF00057	3/4	19.0	1-1/4	31.8	1/4	6.4	50	15	2	50.8	25	1.7	29.9	760
ACF00059	7/8	22.2	1-1/8	28.6	1/8	3.2	50	15	4-1/8	104.8	13	0.9	7	178
ACF00060	7/8	22.2	1-3/16	30.2	5/32	4.0	50	15	3-1/2	88.9	15	1.0	11	279
ACF00062	1	25.4	1-1/4	31.8	1/8	3.2	50	15	4-3/4	120.6	12	0.8	5	127
ACF00064	1	25.4	1-3/8	34.9	3/16	4.8	50	15	4	101.6	16	1.1	12	305
ACF00065	1	25.4	1-1/2	38.1	1/4	6.4	50	15	3	76.2	20	1.4	21	533
ACF00068	1-1/8	28.6	1-1/2	38.1	3/16	4.8	50	15	4-1/2	114.3	14	1.0	9	229
ACF00069	1-1/4	31.8	1-1/2	38.1	1/8	3.2	50	15	7-7/8	200	10	0.7	3	76
ACF00070	1-1/4	31.8	1-5/8	41.3	3/16	4.8	50	15	5-1/2	139.7	13	0.9	7	178
ACF00073	1-1/2	38.1	1-7/8	47.6	3/16	4.8	50	15	7-1/4	184.2	12	0.8	5	127
ACF00074	1-1/2	38.1	2	50.8	1/4	6.4	50	15	5-7/8	149.2	14	1.0	9	229
ACF00076	1-3/4	44.4	2-1/4	57.2	1/4	6.4	50	15	7-1/2	190.5	13	0.9	7	178
ACF00078	2	50.8	2-1/2	63.5	1/4	6.4	50	15	9-3/8	238.1	12	0.8	5	127
ACF05078	2	50.8	2-1/2	63.5	1/4	6.4	20	6	9-3/8	238.1	12	0.8	5	127

Tygon S3™ E-3603 Non-DEHP Tubing–Available Sizes

Saint-Gobain Part Number	I.D.		O.D.		Wall Thickness		Length		Minimum Bend Radius		Maximum Working Pressure		Vacuum Rating of Mercury at	
	in.	mm	in.	mm	in.	mm	ft.	m	in.	mm	psi at 73°F*	bars at 23°C*	inches at 73°F	mm at 23°C
Vacuum Sizes														
ACF00015	3/16	4.8	9/16	14.3	3/16	4.8	50	15	1/4	6.4	69	4.8	29.9	760
ACF00020	1/4	6.4	5/8	15.9	3/16	4.8	50	15	1/2	12.7	53	3.7	29.9	760
ACF00030	3/8	9.5	7/8	22.2	1/4	6.4	50	15	5/8	15.9	47	3.2	29.9	760
ACF00040	1/2	12.7	1-1/8	28.6	5/16	7.9	50	15	7/8	22.2	45	3.1	29.9	760
ACF00049	5/8	15.9	1-3/8	34.9	3/8	9.5	50	15	1	25.4	43	3.0	29.9	760
ACF00058	3/4	19.0	1-1/2	38.1	3/8	9.5	50	15	1-1/2	38.1	36	2.5	29.9	760
ACF00066	1	25.4	2	50.8	1/2	12.7	50	15	1-7/8	47.6	36	2.5	29.9	760
ACF05066	1	25.4	2	50.8	1/2	12.7	20	6	1-7/8	47.6	36	2.5	29.9	760
Unipacs (10/10' lengths per carton)														
ACFUN007	1/8	3.2	1/4	6.4	1/16	1.6	10/10'	10/3	3/8	9.5	45	3.1	29.9	760
ACFUN012	3/16	4.8	5/16	7.9	1/16	1.6	10/10'	10/3	5/8	15.9	30	2.0	29.9	760
ACFUN017	1/4	6.4	3/8	9.5	1/16	1.6	10/10'	10/3	1	25.4	25	1.7	20	508
ACFUN019	1/4	6.4	1/2	12.7	1/8	3.2	10/10'	10/3	1/2	12.7	40	2.8	29.9	760
ACFUN027	3/8	9.5	1/2	12.7	1/16	1.6	10/10'	10/3	1-1/2	38.1	20	1.4	9	229
ACFUN036	1/2	12.7	5/8	15.9	1/16	1.6	10/10'	10/3	2-7/8	73.0	10	0.7	5	127
ACFUN053	3/4	19.0	1	25.4	1/8	3.2	10/10'	10/3	3-1/4	82.6	18	1.2	9	229
ACFUN062	1	25.4	1-1/4	31.8	1/8	3.2	10/10'	10/3	4-3/4	120.6	15	1.0	5	127
Vacuum Unipacs (10/10' or 4/10' lengths per carton as shown below)														
ACFUN015	3/16	4.8	9/16	14.3	3/16	4.8	10/10'	10/3	1/4	6.4	60	4.2	29.9	760
ACFUN020	1/4	6.4	5/8	15.9	3/16	4.8	10/10'	10/3	1/2	12.7	50	3.5	29.9	760
ACFUN030	3/8	9.5	7/8	22.2	1/4	6.4	10/10'	10/3	5/8	15.9	50	3.5	29.9	760
ACFUN040	1/2	12.7	1-1/8	28.6	5/16	7.9	10/10'	10/3	7/8	22.2	45	3.1	29.9	760
ACFUN049	5/8	15.9	1-3/8	34.9	3/8	9.5	10/10'	10/3	1	25.4	40	2.8	29.9	760

Metric Sizes

Saint-Gobain Part Number	I.D. mm	O.D. mm	Wall Thickness mm	Length m	Minimum Bend Radius mm	Maximum Working Pressure Bars at 23°C	Vacuum Rating mm of Mercury at 23°C
ACFISI1502	2	4	1	15	7	2.5	760
ACFISI1517	3	5	1	15	13	1.7	760
ACFISI1518	4	6	1	15	16	1.4	533
ACFISI1503	5	8	1.5	15	19	1.6	760
ACFISI1504	6	9	1.5	15	22	1.4	559
ACFISI1506	8	12	2	15	29	1.4	533

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.

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

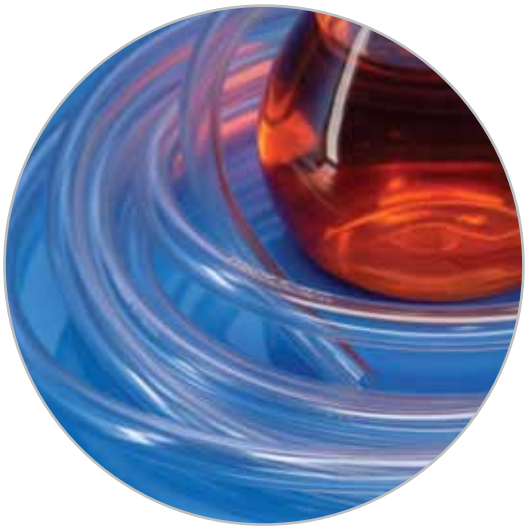
Please consult factory for availability.

Metric dimensions are nominal.

For more than four decades, Saint-Gobain Performance Plastics 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 more than 300 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.

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 Approved for Food Contact	Yes
NSF 51 Standard	Yes
USP Class VI	Approved

† 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 found at www.TygonS3.com.

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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Quality System ISO 9001 Accredited

SAINT-GOBAIN

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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