

TYGON S3™ E-3603 Non-DEHP Laboratory Tubing

Overview

The bio-based Tygon S3™ E-3603 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, noncontaminating, 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.

Features and Benefits

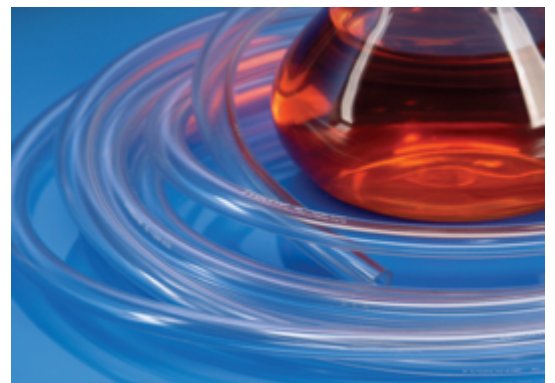
- Bio-based formulation reduces environmental impact
- Lot-to-lot consistency for reproducible results
- Non-toxic and non-contaminating
- Smooth inner wall
- Slips easily over fittings and grips securely for simple lab set-ups
- No BPA or phthalates intentionally added
- Sizes available which hold full vacuum at room temperature

Compliance:

- 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

Typical Applications

- General laboratory connections
- Food & beverage*
- Biopharmaceutical analysis
- Analytical Instrumentation
- Vacuum pumps
- Ideal for condensers, incubators, desiccators, gas lines and drain lines



Sterilization Methods

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

Typical Physical Properties of TYGON S3™ E-3603 Non-DEHP Laboratory Tubing

Property	Value	Test Method
Colour	Clear	-
Durometer Hardness Shore A, 15 seconds	56	ASTM D 2240
Tensile Strength, psi (MPa)	1,750 (12.1)	ASTM D412
Ultimate Elongation, %	425	ASTM D412
Tear Resistance, lb-f/inch (kN/m)	173 (31)	ASTM D1004
Specific Gravity	1.21	ASTM D792
Water Absorption, % 24 hrs. @ 73°F (23°C)	0.21	ASTM D570
Compression Set Constant Deflection, % @ 158°F (70°C) for 22 hrs.	64	ASTM D395 Method B
Brittle Temperature, °F (°C)	-51 (-46)	ASTM D746
Maximum Recommended Operating Temp., °F (°C)	165 (74)	-
Tensile Stress, @ 100% elongation psi (MPa)	582 (4.0)	-
Tensile Set, %	95	ASTM D412

Unless otherwise noted, all tests were conducted at room temperature (23°C/73°F). Values shown were determined on 0.075" thick extruded strip of 0.075" 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

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

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.	Mt.	In.	mm	In. psi at 73°F*	bar 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

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

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.	Mt.	In.	mm	In. psi at 73°F*	bar at 23°C*	inches at 73°F	mm at 23°C
	ACF00015	3/16	4.8	9/16	14.3	3/16	4.8	50	15	1/4	6.4	69	4.8	29.9
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	¾	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' Length Per Carton)

ACFUN007	1/8	3.2	3/16	4.8	1/32	0.8	500	152	1/2	12.7	20	1.4	20	508
ACFUN012	1/8	3.2	1/4	6.4	1/16	1.6	50	15	3/8	9.5	36	2.5	29.9	760
ACFUN017	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
ACFUN019	1/8	3.2	1/4	6.4	1/16	1.6	500	152	3/8	9.5	36	2.5	29.9	760
ACFUN027	5/32	4.0	7/32	5.6	1/32	0.8	50	15	3/8	9.5	17	1.2	12	305
ACFUN036	5/32	4.0	9/32	7.1	1/16	1.6	50	15	1/2	12.7	30	2.1	29.9	760
ACFUN053	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
ACFUN062	3/16	4.8	1/4	6.4	1/32	0.8	50	15	1	25.4	14	1.0	9	229

Vacuum Unipacs (10/10' Length or 4/10' 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	70	4.8	29.9	760
ACFUN020	1/4	6.4	5/8	15.9	3/16	4.8	10/10'	10/3	1/2	12.7	54	3.7	29.9	760
ACFUN030	3/8	9.5	7/8	22.2	1/4	6.4	10/10'	10/3	5/8	15.9	46	3.2	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	44	3.0	29.9	760

Metric Sizes

	I.D. (mm)	O.D. (mm)	Wall Thickness (mm)	Length (mt.)	Minimum Bend Radius (mm)	Maximum Working Pressure Bars at 23°C	Vacuum Rating mm of Mercury at 23°C
ACF1S1502	2	4	1	15	7	2.5	760
ACF1S1517	3	5	1	15	13	1.7	760
ACF1S1518	4	6	1	15	16	1.4	533
ACF1S1503	5	8	1.5	15	19	1.6	760
ACF1S1504	6	9	1.5	15	22	1.4	559
ACF1S1506	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.

Custom sizes available upon request