

Nylon, Polycarbonate, Delrin & ETFE Tubing

For information about tubing, see page 98.

Additional Information: For information about the chemical compatibility of the tubing on this page, go to our web site, www.mcmaster.com, and search for 5097TAC.

D.O.T. Choose-a-Color Nylon Tubing for Air



- Flexible
- Wall Hardness: Hard (Shore D: 63)
- Temperature Range: -40° to +200° F
- Tensile Strength: Not rated
- Use compression and instant fittings (see pages 145-173)

This nylon 12 tubing meets the Department of Transportation (D.O.T. FMVSS 106) criteria for air brake tubing. The **nonreinforced** tubing also meets SAE J844 A standards; **reinforced** tubing also meets SAE J844 B standards. Both styles are for use with compressed air only and have a pressure rating of 150 psi @ 75° F. Not rated for sterilization or vacuum.

Comes in opaque black, blue, green, red, silver, and yellow, unless noted. **To Order:** Please specify color and length from the available lengths listed.

ID	OD	Wall	Bend Radius	Available Lengths, ft.	Per Ft. ♦
Nonreinforced					
0.079"	1/8"	0.023"	3/8"	25, 50, 100, 250	5097T312★ \$0.31
0.092"	5/32"	0.032"	1/2"	25, 50, 100, 250	5097T321▲ .42
0.17"	1/4"	0.04"	1"	25, 50, 100, 250	5097T41 .39
Reinforced					
0.251"	3/8"	0.062"	1 1/2"	10, 25, 50, 100	5097T61 .72
0.376"	1/2"	0.062"	2"	10, 25, 50, 100	5097T71 .94
0.441"	5/8"	0.092"	2 1/2"	10, 25, 50, 100	5097T81■ 1.60
0.566"	3/4"	0.092"	3"	5, 10, 25, 50, 100	5097T91■ 2.44

★ Comes in blue only. ▲ Comes in black only.

■ Comes in black and green only.

Durable Clear Polycarbonate Tubing



- Rigid
- Wall Hardness: Very hard (Rockwell R: 118)
- Temperature Range: 32° to 250° F
- Tensile Strength: 9000 psi
- Use adhesives to connect (see pages 3292-3294)

Made of rigid polycarbonate, this super-tough tubing stands up to high-pressure applications. It is UV resistant and it's clear, so you can easily monitor the flow of your line. This tubing is made without a plasticizer that can contaminate fluid passing through. Use with water, air, and food and beverage. Material is FDA compliant. Not rated for bend radius, sterilization, or vacuum.

To Order: Please specify 2-, 4-, or 8-ft. length.

ID	OD	Wall	Max. psi @ 73° F	Each			
				2 ft.	4 ft.	8 ft.	
1/4"	3/8"	1/16"	1250	9176T1	\$2.08	\$4.16	\$6.93
3/8"	1/2"	1/16"	413	9176T2	2.80	5.60	9.33
5/8"	3/4"	1/16"	248	9176T3	3.52	7.04	11.73
3/4"	1"	1/8"	417	9176T4	8.96	17.92	29.87

Abrasion-Resistant White ETFE Tubing



- Flexible
- Wall Hardness: Hard (Shore D: 63-72)
- Temperature Range: -60° to +300° F
- Tensile Strength: 5800-6700 psi
- Use compression fittings (see pgs. 145-160)

ETFE (ethylene tetrafluoroethylene), which is also known as Tefzel, is more abrasion resistant than PTFE, PFA, and FEP. This semi-clear white tubing has a smooth ID for restriction-free flow, has low permeability, and is a good electrical insulator. It's also impact resistant and inert to most chemicals. This tubing is made without a plasticizer that can contaminate fluid passing through. Use with water, deionized water, air, and ethylene glycol. Material meets ASTM D3159. It can be sterilized with steam (autoclaving), gas, and chemicals. Vacuum rating is 29.9" Hg @ 72° F.

To Order: Please specify length from the available lengths listed.

ID	OD	Wall	Bend Radius	Max. psi @ 73° F	Available Lengths, ft.	Per Ft. ♦	
							0.016"
0.02"	1/16"	0.021"	1/2"	1260	5, 10, 25, 50	5583K42	2.07
0.062"	1/8"	0.031"	1/2"	598	5, 10, 25, 50	5583K43	2.66
0.093"	1/8"	0.016"	3/4"	249	10, 25, 50	5583K44	.91
0.14"	3/16"	0.024"	3/4"	248	5, 10, 25, 50	5583K45	1.84
0.187"	1/4"	0.031"	3/4"	248	5, 10, 25, 50	5583K46	2.28
0.232"	5/16"	0.04"	1 3/4"	250	2, 5, 10, 25, 50	5583K47	3.64
0.278"	3/8"	0.048"	1 1/2"	255	2, 5, 10, 25, 50	5583K48	4.35
0.375"	1/2"	0.062"	2"	240	2, 5, 10, 25, 50	5583K49	7.37

Flame-Retardant Nylon Tubing



- Flexible
- Wall Hardness: Hard (Shore D: 50)
- Temperature Range: 32° to 140° F
- Tensile Strength: 1560 psi
- Use instant fittings (see pages 161-173)

Ideal for spot welding applications, this nylon 12 tubing meets UL 94V0 for flammability. It will stay flexible longer than other types of nylon tubing. Use with water and air. Maximum pressure is 174 psi @ 68° F. Not rated for sterilization or vacuum.

To Order: Please specify length from the available lengths listed and color: opaque black, blue, green, white, or red (unless noted).

Inch						
ID	OD	Wall	Bend Radius	Available Lengths, ft.	Per Ft. ♦	
0.166"	1/4"	0.042"	0.91"	10, 25, 50, 100	51185K41	\$1.09
1/4"	3/8"	0.063"	1.06"	5, 10, 25, 50, 100	51185K42	2.23
1 1/32"	1/2"	0.078"	1.38"	2, 5, 10, 25, 50, 100	51185K43	3.71

Metric						
ID, mm	OD, mm	Wall, mm	Bend Radius, mm	Available Lengths, ft.	Per Ft. ♦	
3	6	1.5	17	10, 25, 50, 100	5437K11■	\$1.26
5	8	1.5	19	5, 10, 25, 50, 100	5437K12	1.71
6.5	10	1.75	27	5, 10, 25, 50, 100	5437K13	2.54
8	12	2	32	2, 5, 10, 25, 50, 100	5437K14	3.50

■ Not offered in green or red.

Moisture-Resistant White Delrin Tubing



- Rigid
- Wall Hardness: Very hard (Rockwell R: 120)
- Temperature Range: -20° to +180° F
- Tensile Strength: 10,000 psi
- Use compression fittings (see pgs. 145-160)

Choose Delrin tubing over nylon if you want comparable strength and flexibility with less moisture absorption. This opaque white tubing is hard and durable, plus it's made without a plasticizer that can contaminate fluid passing through. Use with water and deionized water. This tubing can be sterilized with steam (autoclaving). Not rated for bend radius or vacuum.

ID	OD	Wall	Max. psi @ 73° F	5-ft. Lengths	
				Each	Each
0.17"	1/4"	0.04"	265	9362T1	\$3.25
1/4"	3/8"	0.063"	280	9362T2	7.62
3/8"	1/2"	0.063"	205	9362T3	10.87

Flexible White Tubing Made with Teflon® PTFE



- Very flexible
- Wall Hardness: Hard (Shore D: 50-65)
- Temperature Range: -450° to +500° F
- Tensile Strength: 2500-4000 psi
- Use worm drive clamps (see pgs. 238-242)

Also known as convoluted tubing, the spiral design makes this tubing more flexible than smooth-surface tubing. This tubing is made of semi-clear white Teflon® PTFE (polytetrafluoroethylene), so it is inert to most chemicals and is a good electrical insulator. It is made without a plasticizer that can contaminate fluid passing through. This tubing has a cuff on each end to allow for easy connections. Use with water, deionized water, air, food and beverage, and ethylene glycol. Material is FDA compliant, and meets UL 94V0 for flammability and Mil. Spec. AMS-T-8191/4/2. It can be sterilized with steam (autoclaving) and gas. Vacuum is not rated.

To Order: Please specify length in 1-ft. increments up to the maximum continuous length of 10 feet. Length includes both cuffs.

Cuff Dimensions				Spiral OD	Bend Radius	Max. psi @ 70° F	Per Ft. ♦	
ID	OD	Wall	Lg.					
0.177"	0.209"	0.016"	3/4"	0.32"	5/16"	100	51155K21	\$7.27
0.265"	0.297"	0.016"	3/4"	0.414"	7/16"	90	51155K42	8.30
0.365"	0.405"	0.02"	1"	0.53"	1/2"	70	51155K43	9.18
0.472"	0.516"	0.022"	1"	0.66"	3/4"	50	51155K44	11.84
0.595"	0.639"	0.022"	1 1/4"	0.78"	3/4"	50	51155K45	16.38
0.725"	0.777"	0.026"	1 1/2"	0.975"	1 1/16"	40	51155K26	22.32
0.967"	1.019"	0.026"	1 1/2"	1.26"	1 1/8"	30	51155K27	29.90
1.217"	1.273"	0.028"	1 1/2"	1.539"	1 1/8"	20	51155K28	32.48
1.44"	1.496"	0.028"	2"	1.81"	2"	20	51155K29	36.58

♦ Prices are 15-25% lower when you order the maximum continuous length (last available length listed).