

## Tygon® E-3603 Laboratory and Vacuum Tubing

Crystal clear and flexible, Tygon E-3603 tubing handles virtually all organic chemicals found in the modern laboratory. This tubing has high tolerances and lot-to-lot consistency, which will yield reproducible results in your laboratory. Less permeable than rubber tubing, it features a glassy-smooth inner bore that minimizes buildup and facilitates easy cleaning. Tygon E-3603 tubing is specially formulated for resistance to flex-fatigue and abrasion.

Vacuum tubing is available with extra-heavy walls designed to withstand a full vacuum at room temperature.



### CERTIFICATION

USP Class VI, FDA, and NSF-51 compliant

**WARNING:** This product is not approved or intended for, and should not be used for, medical, clinical, surgical, or other patient-oriented applications.

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China	+86.21.5109.9909	Italy	+39.02.84349215
India	+1.800.266.1244	All others	+1.847.549.7600

### APPLICATIONS

- Peristaltic and vacuum pumps, gas and drain lines, and desiccators
- Ideal for general-purpose, laboratory, and single-use applications

### FEATURES/BENEFITS

- Smooth, polished inner wall prevents buildups
- Excellent lot-to-lot consistency for reproducible results
- Non-toxic, non-oxidizing, and non-contaminating
- Sterilize by ethylene oxide (EtO) and autoclave
- Wide temperature range  $-46$  to  $74$  °C ( $-51$  to  $165$  °F)
- Flexible tubing with a 56 Shore A durometer
- Clear tubing—perfect for visual monitoring
- BPA and phthalate free

## Physical Properties

	ASTM	Units	Typical Value
Durometer Hardness, 15s	D2240	Shore A	56
Specific Gravity	D792	g/cm <sup>3</sup>	1.21
Tensile Strength	D412	psi (MPa)	1750 (12.1)
Tensile Stress at 100% Elongation	D412	psi (MPa)	582 (4)
Ultimate Elongation	D412	%	425
Compression Set Constant Deflection at 158 °F (70 °C) for 22 hrs.	D395 Method B	%	64
Tear Resistance	D1004	lb-f/in (kN/m)	173 (31)
Water Absorption at 73 °F (23 °C) for 24 hrs.	D570	%	0.21
Brittleness by Impact Temperature	D746	°C (°F)	-46 (-51)
Maximum Recommended Operating Temperature	—	°C (°F)	74 (165)
Color	—	—	Clear
Shelf Life	—	Years	3

## Specification and Ordering Table

Dimensions in. (mm)			Max Pressure psi (bar)	Minimum Bend Radius in. (mm)	Vacuum Rating inHg (mmHg)	Item Number	Length (ft)
Tubing ID	Tubing OD	Wall					
1/32" (0.8)	3/32" (2.4)	1/32" (0.8)	70 (4.8)	1/8" (3.2)	29.9 (760)	<a href="#">50106-20</a>	50
1/16" (1.6)	1/8" (3.2)	1/32" (0.8)	36 (2.5)	1/4" (6.4)	29.9 (760)	<a href="#">50106-21</a>	50
1/16" (1.6)	3/16" (4.8)	1/16" (1.6)	70 (4.8)	1/8" (3.2)	29.9 (760)	<a href="#">50106-22</a>	50
3/32" (2.4)	5/32" (4)	1/32" (0.8)	25 (1.7)	3/8" (9.5)	29.9 (760)	<a href="#">50106-23</a>	50
3/32" (2.4)	7/32" (5.6)	1/16" (1.6)	46 (3.2)	1/4" (6.4)	29.9 (760)	<a href="#">50106-24</a>	50
1/8" (3.2)	3/16" (4.8)	1/32" (0.8)	20 (1.4)	1/2" (12.7)	20 (508)	<a href="#">50106-25</a>	50
1/8" (3.2)	1/4" (6.4)	1/16" (1.6)	36 (2.5)	3/8" (9.5)	29.9 (760)	<a href="#">50106-26</a>	50
5/32" (4)	7/32" (5.6)	1/32" (0.8)	17 (1.2)	3/8" (9.5)	12 (305)	<a href="#">50106-27</a>	50
3/16" (4.8)	1/4" (6.4)	1/32" (0.8)	15 (1)	1" (25.4)	9 (229)	<a href="#">50121-84</a>	50
3/16" (4.8)	5/16" (8)	1/16" (1.6)	25 (1.7)	5/8" (15.9)	29.9 (760)	<a href="#">50106-28</a>	50
3/16" (4.8)	3/8" (9.5)	3/32" (2.4)	36 (2.5)	1/2" (12.7)	29.9 (760)	<a href="#">50106-29</a>	50
1/4" (6.4)	3/8" (9.5)	1/16" (1.6)	20 (1.4)	1" (25.4)	20 (508)	<a href="#">50106-30</a>	50
1/4" (6.4)	7/16" (11)	3/32" (2.4)	28 (1.9)	3/4" (19.1)	29.9 (760)	<a href="#">50106-31</a>	50
1/4" (6.4)	1/2" (12.7)	1/8" (3.2)	36 (2.5)	1/2" (12.7)	29.9 (760)	<a href="#">50106-32</a>	50
5/16" (8)	7/16" (11)	1/16" (1.6)	17 (1.2)	1-3/8" (35)	13 (330)	<a href="#">50106-33</a>	50
5/16" (8)	1/2" (12.7)	3/32" (2.4)	23 (1.6)	1" (25.4)	29.9 (760)	<a href="#">50106-34</a>	50
5/16" (8)	9/16" (14.3)	1/8" (3.2)	30 (2.1)	7/8" (22.2)	29.9 (760)	<a href="#">50106-35</a>	50
3/8" (9.5)	1/2" (12.7)	1/16" (1.6)	15 (1)	1-1/2" (38.1)	9 (229)	<a href="#">50106-36</a>	50
3/8" (9.5)	9/16" (14.3)	3/32" (2.4)	20 (1.4)	1-3/8" (35)	21 (533)	<a href="#">50106-37</a>	50
3/8" (9.5)	5/8" (15.9)	1/8" (3.2)	25 (1.7)	1-1/8" (28.6)	29.9 (760)	<a href="#">50106-38</a>	50

## Specification and Ordering Table

Dimensions in. (mm)			Max Pressure psi (bar)	Minimum Bend Radius in. (mm)	Vacuum Rating inHg (mmHg)	Item Number	Length (ft)
Tubing ID	Tubing OD	Wall					
7/16" (11)	9/16" (14.3)	1/16" (1.6)	13 (0.9)	2-1/4" (57.2)	7 (178)	<a href="#">50106-39</a>	50
1/2" (12.7)	5/8" (15.9)	1/16" (1.6)	12 (0.8)	2-7/8" (73)	5 (127)	<a href="#">50106-40</a>	50
1/2" (12.7)	11/16" (17.5)	3/32" (2.4)	15 (1)	2-1/4" (57.2)	12 (305)	<a href="#">50106-41</a>	50
1/2" (12.7)	3/4" (19.1)	1/8" (3.2)	20 (1.4)	1-1/2" (38.1)	21 (533)	<a href="#">50106-42</a>	50
1/2" (12.7)	13/16" (20.6)	5/32" (4)	25 (1.7)	1-1/2" (38.1)	29.9 (760)	<a href="#">50106-43</a>	50
5/8" (15.9)	13/16" (20.6)	3/32" (2.4)	13 (0.9)	3" (76.2)	7 (178)	<a href="#">50106-44</a>	50
5/8" (15.9)	7/8" (22.2)	1/8" (3.2)	17 (1.2)	2-3/8" (60.3)	13 (330)	<a href="#">50106-45</a>	50
3/4" (19.1)	1" (25.4)	1/8" (3.2)	15 (1)	3-1/4" (82.6)	9 (229)	<a href="#">50106-46</a>	50
3/4" (19.1)	1-1/8" (28.6)	3/16" (4.8)	20 (1.4)	2-3/8" (60.3)	21 (533)	<a href="#">50106-47</a>	50
1" (25.4)	1-1/4" (31.8)	1/8" (3.2)	12 (0.8)	4-3/4" (120.7)	5 (127)	<a href="#">50106-48</a>	50
1" (25.4)	1-1/2" (38.1)	1/4" (6.4)	20 (1.4)	3" (76.2)	21 (533)	<a href="#">50106-49</a>	50
<b>Vacuum Tubing</b>							
3/16" (4.8)	9/16" (14.3)	3/16" (4.8)	70 (4.8)	1/4" (6.4)	29.9 (760)	<a href="#">50113-65</a>	50
1/4" (6.4)	5/8" (15.9)	3/16" (4.8)	54 (3.7)	1/2" (12.7)	29.9 (760)	<a href="#">50113-66</a>	50
3/8" (9.5)	7/8" (22.2)	1/4" (6.4)	46 (3.2)	5/8" (15.9)	29.9 (760)	<a href="#">50113-67</a>	50
1/2" (12.7)	1-1/8" (28.6)	5/16" (8)	45 (3.1)	7/8" (22.2)	29.9 (760)	<a href="#">50113-68</a>	50
5/8" (15.9)	1-3/8" (35)	3/8" (9.5)	44 (3)	1" (25.4)	29.9 (760)	<a href="#">50113-69</a>	50
3/4" (19.1)	1-1/2" (38.1)	3/8" (9.5)	36 (2.5)	1-1/2" (38.1)	29.9 (760)	<a href="#">50113-70</a>	50
1" (25.4)	2" (50.8)	1/2" (12.7)	36 (2.5)	1-7/8" (47.6)	29.9 (760)	<a href="#">50113-71</a>	50

## Metric Vacuum Tubing

Dimensions mm (in.)			Max Pressure bar (psi)	Minimum Bend Radius mm (in.)	Vacuum Rating mmHg (inHg)	Item Number	Length (m)
Tubing ID	Tubing OD	Wall					
2 (0.08")	4 (0.16")	1 (0.04")	2.5 (36)	7 (0.28)	760 (29.9)	<a href="#">50143-57</a>	15
3 (0.12")	5 (0.2")	1 (0.04")	1.7 (25)	13 (0.51)	760 (29.9)	<a href="#">50143-58</a>	15
4 (0.16")	6 (0.24")	1 (0.04")	1.4 (20)	16 (0.63)	533 (21)	<a href="#">50143-59</a>	15
5 (0.2")	8 (0.32")	1.5 (0.06")	1.6 (23)	19 (0.75)	760 (29.9)	<a href="#">50143-60</a>	15
6 (0.24")	9 (0.35")	1.5 (0.06")	1.4 (20)	22 (0.87)	559 (22)	<a href="#">50143-61</a>	15
8 (0.32")	12 (0.47")	2 (0.08")	1.4 (20)	29 (1.14)	533 (21)	<a href="#">50143-62</a>	15