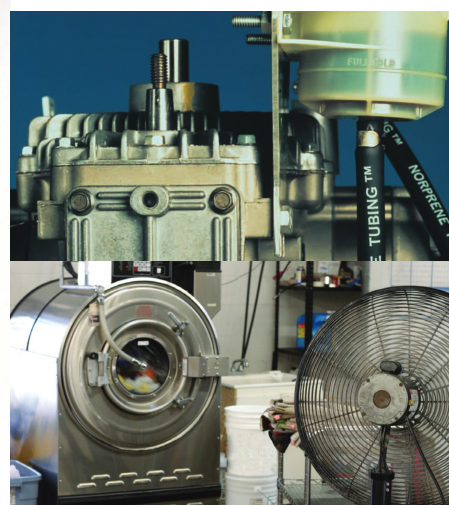




High- Performance Peristaltic Pump Tubing



High-performance Chemical Dispensing Alternative to Rubber Tubing

Specially formulated for chemical dispensing, Tygon® A-60-G tubing outperforms Neoprene, EPDM and other general-purpose Tubing in test after test, application after application. It will not weaken or crack after years of exposure to heat and ozone, providing longer pump life in industrial and institutional cleaning-chemical dispensing applications. Engineered for outstanding performance and on-the-job reliability, Tygon® A-60-G tubing handles temperatures ranging from -75°F (-60°C) to 275°F (135°C), allowing the use of one material within a broad range of temperatures. It is heat sealable and can be joined without fittings. It also offers excellent resistance to inorganic fluids (acids and bases).

Unequaled Life in Peristaltic Pump Applications

Peristaltic pumps are used in a wide range of markets and applications, including industrial and institutional cleaning-chemical dispensing. The universal requirement common to these applications is the ability of the tubing to withstand the constant high flexural fatigue exerted by the pump rollers. Tygon® A-60-G tubing outlasts and outperforms virtually all other general service Tubing in Peristaltic Pump Applications due to its high flexural fatigue strength.

Ideal for Use in Vacuum Systems

Tygon® A-60-G tubing is available in standard vacuum sizes that will withstand a full vacuum (759 mm of mercury at 23°C). Unlike typical rubber vacuum tubing, Tygon® tubing resists the cracking and aging that are frequent causes of vacuum tubing failure.

Features and Benefits

- Superior weathering
 - Abrasion resistant
 - Outstanding flexural fatigue resistance
 - Wide temperature range (-75°F to 275°F)
 - Low gas permeability versus rubber tubing
 - Ozone* and UV light resistant
- * 300 pphm

Typical Applications

- Soap and disinfectant dispensing
- Cleaning chemical transfer
- Caustic chemical dispensing
- Plating and etching chemicals
- Glass and window wash systems
- Vacuum pumps

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OPTUBUS believes that the information in this technical data sheet is an accurate description of the typical uses of the product. OPTUBUS, however, disclaims any liability for incidental or consequent damages, which may result from the use of the product that are beyond its control. Therefore it is the user's responsibility to thoroughly test the product in their particular application to determine its performance, efficiency and safety. Nothing contained herein is to be considered as permission or a recommendation to infringe any patent or any other intellectual property right.

Tygon® A-60-G Standard Sizes

Part Number	ID	OD	Wall	Min. Bend Radius	Max. Working Pressure* 22°C (73°F)	Max. Working Pressure* 82°C (180°F)	Vacuum Rating at 22°C (73°F)	Vacuum Rating at 82°C (180°F)
TY1,59AG4,76	1,59 mm (1/16")	4,76 mm (3/16")	1,59 mm (1/16")	6,4 mm	2,3 bar (34 psi)	1,4 bar (21 psi)	760 mmHg	760 mmHg
TY3,18AG6,35	3,18 mm (1/8")	6,35 mm (1/4")	1,59 mm (1/16")	12,7 mm	1,3 bar (19 psi)	0,8 bar (12 psi)	760 mmHg	760 mmHg
TY3,18AG9,53**	3,18 mm (1/8")	9,53 mm (3/8")	3,18 mm (1/8")	12,7 mm	2,3 bar (34 psi)	1,4 bar (21 psi)	760 mmHg	760 mmHg
TY4,76AG7,94	4,76 mm (3/16")	7,94 mm (5/16")	1,59 mm (1/16")	19,1 mm	0,9 bar (13 psi)	0,5 bar (8 psi)	760 mmHg	584 mmHg
TY4,76AG9,53	4,76 mm (3/16")	9,53 mm (3/8")	2,38 mm (3/32")	12,7 mm	1,3 bar (19 psi)	0,8 bar (12 psi)	760 mmHg	760 mmHg
TY4,76AG14,29**	4,76 mm (3/16")	14,29 mm (9/16")	4,76 mm (3/16")	6,4 mm	2,3 bar (34 psi)	1,4 bar (21 psi)	760 mmHg	760 mmHg
TY6,35AG9,53	6,35 mm (1/4")	9,53 mm (3/8")	1,59 mm (1/16")	22,2 mm	0,7 bar (10 psi)	0,4 bar (6 psi)	760 mmHg	401 mmHg
TY6,35AG11,11	6,35 mm (1/4")	11,11 mm (7/16")	2,38 mm (3/32")	19,1 mm	1,0 bar (15 psi)	0,6 bar (9 psi)	760 mmHg	760 mmHg
TY6,35AG12,7	6,35 mm (1/4")	12,7 mm (1/2")	3,18 mm (1/8")	19,1 mm	1,3 bar (19 psi)	0,8 bar (12 psi)	760 mmHg	760 mmHg
TY6,35AG15,88**	6,35 mm (1/4")	15,88 mm (5/8")	4,76 mm (3/16")	12,7 mm	1,8 bar (26 psi)	1,1 bar (16 psi)	760 mmHg	760 mmHg
TY7,94AG11,11	7,94 mm (5/16")	11,11 mm (7/16")	1,59 mm (1/16")	31,7 mm	0,5 bar (8 psi)	0,3 bar (5 psi)	513 mmHg	256 mmHg
TY7,94AG12,7	7,94 mm (5/16")	12,7 mm (1/2")	2,38 mm (3/32")	25,4 mm	0,8 bar (12 psi)	0,5 bar (7 psi)	760 mmHg	635 mmHg
TY7,94AG20,64**	7,94 mm (5/16")	20,64 (13/16")	6,35 mm (1/4")	12,7 mm	1,9 bar (28 psi)	1,2 bar (17 psi)	760 mmHg	760 mmHg
TY9,53AG12,7	9,53 mm (3/8")	12,7 mm (1/2")	1,59 mm (1/16")	35,0 mm	0,5 bar (7 psi)	0,3 bar (4 psi)	358 mmHg	178 mmHg
TY9,53AG14,29	9,53 mm (3/8")	14,29 mm (9/16")	2,38 mm (3/32")	38,1 mm	0,7 bar (10 psi)	0,4 bar (6 psi)	760 mmHg	381 mmHg
TY9,53AG15,88	9,53 mm (3/8")	15,88 mm (5/8")	3,18 mm (1/8")	28,6 mm	0,9 bar (13 psi)	0,5 bar (8 psi)	760 mmHg	704 mmHg
TY11,11AG14,29	11,11 mm (7/16")	14,29 mm (9/16")	1,59 mm (1/16")	57,2 mm	0,4 bar (6 psi)	0,3 bar (4 psi)	127 mmHg	0 mmHg
TY12,7AG15,88	12,7 mm (1/2")	15,88 mm (5/8")	1,59 mm (1/16")	76,2 mm	0,4 bar (6 psi)	0,2 bar (3 psi)	381 mmHg	0 mmHg
TY12,7AG17,46	12,7 mm (1/2")	17,46 mm (11/16")	2,38 mm (3/32")	57,2 mm	0,5 bar (8 psi)	0,3 bar (5 psi)	508 mmHg	254 mmHg
TY12,7AG19,05	12,7 mm (1/2")	19,05 mm (3/4")	3,18 mm (1/8")	28,6 mm	0,7 bar (10 psi)	0,4 bar (6 psi)	752 mmHg	396 mmHg
TY15,88AG20,64	15,88 mm (5/8")	20,64 (13/16")	2,38 mm (3/32")	82,6 mm	0,5 bar (7 psi)	0,3 bar (4 psi)	254 mmHg	127 mmHg
TY15,88AG22,23	15,88 mm (5/8")	22,23 mm (7/8")	3,18 mm (1/8")	69,9 mm	0,5 bar (8 psi)	0,3 bar (5 psi)	508 mmHg	252 mmHg
TY19,05AG25,4	19,05 mm (3/4")	25,4 mm (1")	3,18 mm (1/8")	88,9 mm	0,5 bar (7 psi)	0,3 bar (4 psi)	350 mmHg	175 mmHg
TY25,4AG31,8	25,4 mm (1")	31,8 mm (1-1/4")	3,18 mm (1/8")	127 mm	0,4 bar (6 psi)	0,2 bar (3 psi)	127 mmHg	0 mmHg

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

**Vacuum tubing sizes

The values listed for working and burst pressures are derived from tests conducted under controlled laboratory conditions. Many factors will reduce the tubing's ability to withstand pressures, including temperature, chemical attack, stress, pulsation and the attachment to fittings. It is imperative that the user conduct tests simulating the conditions of the application prior to specifying the tubing for use.

Typical Physical Properties of Tygon® A-60-G Tubing

Property	ASTM Method	Value of Rating A-60-G
Durometer Hardness	D2240	61° Shore A, 15s
Color	-	black
Tensile Strength	D412	6.9 MPa (1000 psi)
Ultimate Elongation	D412	375,00%
Tear Resistance	D1004	21.0 kN/m (120 lb-f/in)
Specific Gravity	D792	0,98
Compression Set Constant Deflection 22 hrs. @ 70°C	D395 Method B	27,00%
Tensile Modulus at 100% Elongation at 300% Elongation	D412	2.8 MPa (410 psi) 5.5 MPa (800 psi)
Tensile Set at 75% Elongation	D412	47
Dielectric Strength	D149	21.1 kV/mm (535 v/mil)
Maximum Recommended Operating Temperature	-	135°C (275 °F)
Brittleness by Impact Temperature	D746	-59°C (-75°F)
Water Absorption, 24 hrs. @ 23°C	D570	0,30%

Unless otherwise noted, all tests were conducted at room temperature 23°C (73°F). Values shown were determined on 1.905 mm (0,075") thick extruded strip or 1.905 mm (0,075") thick molded ASTM plaques or molded ASTM durometer buttons. Size of tubing tested is 3,18 mm (1/8") ID x 6,35 (1/4") OD.

Tygon® A-60-G TUBING IS NOT INTENDED FOR USE AS AN IMPLANT MATERIAL.

How Tygon® A-60-G Compares with Neoprene®

The following information is based on tests conducted for 28 days at 22°C, unless otherwise noted. The information is based on reliable test results. Use as a guide only, taking into account such variables as temperature and fluid contamination in your own application.

Chemical Tested	Performance	
	Tygon®	Neoprene®
20% Ammonium Hydroxide	Excellent	Good
10% Sodium Hydroxide	Excellent	Fair
50% Sulfuric Acid	Excellent	Excellent
90% Sulfuric Acid	Fair	Failed
Methanol	Excellent	Excellent
37% Hydrochloric Acid	Excellent	Fair
Ethanol	Good	Good
50% Ethylene Glycol	Excellent	Excellent
Water: 28 days @ 104°C	Excellent	Fair
Air: 7 days @ 135°C	Good	Failed
Ozone: 100 pphm, 40°C, 28 days	Excellent	Fair
Fatigue Resistance Ross Flex @ 100 CPM	750,000 cycles – 1 inch cut growth	2,000 cycles – 0.1 inch cut growth
Hot Air Heat Aging, 7 days @ 135°C	+22% tensile, +9% elongation	Crumbled
Hot Air 7 days @ 104°C	+15% tensile, +14% elongation	Fair Good-Fair

Typical Environmental Resistance

Ozone, 300 pphm	Excellent	Good
Weather (UV)*	Excellent-Good	Good
Acids	Excellent	Good
Alkalis	Excellent	Good
Lubricating Oils	Fair	Fair
Gas Permeability	Fair	Good-Fair

*UV environmental resistance properties are influenced by additives. These comparisons are based on published material properties and are not guaranteed for all samples or applications. Actual performance will vary, depending on finished part design and requirements.