



# Cleaning Chemical Dispensing



## **Long-Life, Temperature-Resistant Tubing for Cleaning Chemical Dispensing**

Formulated to withstand extreme temperatures from -59° C to 135° C (-75° F to 275° F), Tygon® A-60-C tubing will not crack or deteriorate when used in demanding cleaning chemical dispensing applications. Extremely flexible, it resists kinks and retains its shape while installing quickly and easily. Its excellent flexural fatigue resistance makes it the absolute best choice for use in peristaltic pumps often found in dispensing equipment. Repeatedly autoclavable, it can be steam cleaned in place, eliminating the need for frequent tubing replacement. When harsh sanitizing solutions are used, it exhibits exceptional chemical resistance and is entirely unaffected by a wide variety of cleaning solutions.

### **Simplifies Cleaning and Sterilization**

Tygon® A-60-C tubing is ideal for use in clean-in-place and steam-in-place cleaning and sterilization systems. It is compatible with virtually all commercial cleaners and sanitizers and can be repeatedly autoclaved for up to five cycle times without affecting its overall service life.

### **Now Available to Withstand Elevated Pressure**

Certain applications require using pressures that only reinforced tubing can withstand. For those applications, Tygon A-60-C® IB tubing is now available. It has the same desirable properties as Tygon® A-60-C tubing with an additional reinforcement embedded within its walls to withstand elevated pressure.

### **Excellent Chemical Resistance**

Tygon® A-60-C tubing has excellent acid and alkali resistance, and is compatible with numerous oxidizing agents such as peroxide, hypochlorite and ozone. For the complete listing of common chemicals and their relative effect, please contact us.

## **Features and Benefits**

- long flex life in peristaltic pumps
- temperature resistant from -59° C to 135° C
- compatible with virtually all common sanitizers and cleaners
- ozone and UV light resistant
- repeatedly autoclavable
- chemically compatible with a wide range of cleaners

## **Typical Applications**

- cleaning chemical dispensing
- peristaltic pumps

**OPTUBUS GmbH – [www.optubus.de](http://www.optubus.de) – [info@optubus.de](mailto:info@optubus.de)**

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-C 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)
TY1,59AC4,76	1,59 mm (1/16")	4,76 mm (3/16")	1,59 mm (1/16")	6,4 mm	2,3 bar	1,4 bar	760 mmHg	760 mmHg
TY3,18AC6,35	3,18 mm (1/8")	6,35 mm (1/4")	1,59 mm (1/16")	12,7 mm	1,3 bar	0,8 bar	760 mmHg	760 mmHg
TY4,76AC7,94	4,76 mm (3/16")	7,94 mm (5/16")	1,59 mm (1/16")	19,1 mm	0,9 bar	0,5 bar	760 mmHg	584 mmHg
TY6,35AC9,53	6,35 mm (1/4")	9,53 mm (3/8")	1,59 mm (1/16")	31,7 mm	0,7 bar	0,4 bar	660 mmHg	330 mmHg
TY6,35AC12,7	6,35 mm (1/4")	12,7 mm (1/2")	3,18 mm (1/8")	19,1 mm	1,3 bar**	0,8 bar**	760 mmHg	760 mmHg
TY7,94AC11,11	7,94 mm (5/16")	11,11 mm (7/16")	1,59 mm (1/16")	31,7 mm	0,5 bar	0,3 bar	431 mmHg	203 mmHg
TY9,53AC12,7	9,53 mm (3/8")	12,7 mm (1/2")	1,59 mm (1/16")	57,1 mm	0,5 bar	0,3 bar	279 mmHg	127 mmHg
TY9,53AC15,88	9,53 mm (3/8")	15,88 mm (5/8")	3,18 mm (1/8")	31,7 mm	0,9 bar**	0,5 bar**	760 mmHg	584 mmHg
TY12,7AC19,05	12,7 mm (1/2")	19,05 mm (3/4")	3,18 mm (1/8")	50,8 mm	0,7 bar**	0,4 bar**	660 mmHg	330 mmHg
TY15,88AC22,23	15,88 mm (5/8")	22,23 mm (7/8")	3,18 mm (1/8")	82,5 mm	0,5 bar**	0,3 bar**	431 mmHg	203 mmHg
TY19,05AC25,4	19,05 mm (3/4")	25,4 mm (1")	3,18 mm (1/8")	101,6 mm	0,5 bar**	0,3 bar**	279 mmHg	127 mmHg

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

\*\*Available in a reinforced construction for higher pressures

## Tygon® A-60-C I.B. 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)
TY6,35AC12,7IB	6,35 mm (1/4")	12,7 mm (1/2")	3,18 mm (1/8")	19,1 mm	8,6 bar	4,8 bar	760 mmHg	760 mmHg
TY9,53AC15,88IB	9,53 mm (3/8")	15,88 mm (5/8")	3,18 mm (1/8")	31,7 mm	7,2 bar	4,4 bar	760 mmHg	508 mmHg
TY12,7AC19,05IB	12,7 mm (1/2")	19,05 mm (3/4")	3,18 mm (1/8")	57,1 mm	6,8 bar	4,1 bar	635 mmHg	381 mmHg
TY15,88AC22,23IB	15,88 mm (5/8")	22,23 mm (7/8")	3,18 mm (1/8")	63,5 mm	6,5 bar	3,7 bar	508 mmHg	254 mmHg
TY19,05AC26,99IB	19,05 mm (3/4")	26,99 mm (1-1/16")	3,97 mm (5/32")	82,5 mm	5,8 bar	3,1 bar	254 mmHg	127 mmHg
TY25,4AC34,93IB	25,4 mm (1")	34,93 mm /1-3/8"	4,76 mm (3/16")	127 mm	5,1 bar	2,7 bar	304 mmHg	177 mmHg

\*Working pressures are calculated at a 1:4 ratio relative to burst pressure using ASTM D1599

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-C Tubing

Property	ASTM Method	Value of Rating A-60-C	Value of Rating A-60-C I.B.
Durometer Hardness	D2240-03	61° Shore A, 15s	61° Shore A, 15s
Color	-	Cream	Cream
Tensile Strength	D412-98	6,9 MPa (1000 psi)	6,9 MPa (1000 psi)
Ultimate Elongation	D412-98	375,00%	375,00%
Tear Resistance	D1004-03	21,0 kN/m (120 lb-f/in)	21,0 kN/m (120 lb-f/in)
Specific Gravity	D792-00	0,98	0,98
Compression Set Constant Deflection 22 hrs. @ 70°C	D395-0 Method B	27,00%	30,00%
Tensile Modulus at 100% Elongation at 300% Elongation	D412-98	2,8 MPa (410 psi) 5,5 MPa (800 psi)	2,8 MPa (410 psi) 5,5 MPa (800 psi)
Tensile Set at 75% Elongation	D412-98	47	47
Dielectric Strength	D149-97	21,1 kV/mm (535 v/mil)	21,1 kV/mm (535 v/mil)
Maximum Recommended Operating Temperature	-	135°C (275 °F)	135°C (275 °F)
Brittleness by Impact Temperature	D746-98	-60°C (-75°F)	-60°C (-75°F)
Water Absorption, 24 hrs. @ 23°C	D570-98	0,30%	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.