

# TYGON® Ultra Chemical Resistant Tubing



After being immersed in aggressive MEK for 16 hours (plus 4 hours drying time), Tygon® 2075 Ultra Chemical Resistant Tubing is still clear and flexible while PVC tubing is completely degraded and rendered useless.

## Unequaled Chemical Resistance

Until now, many applications for clear flexible tubing were limited due to chemical attack from the fluid being transported. Tygon® 2075 Ultra Chemical Resistant Tubing broadens the range of usability with its expanded chemical resistance. The tubing is virtually unaffected by acids, bases, ketones, salts and alcohols (see Relative Chemical Resistance Properties chart on back of sheet).

## Reduced Disposal Concern

Incineration is one of the most commonly used methods of disposing of contaminated materials. But, many tubings contribute to environmental problems because they release hazardous by-products, such as chlorine, when burned. Tygon® 2075 tubing releases only carbon dioxide and water when properly incinerated.

## Contains No Plasticizer

Tygon® 2075 Ultra Chemical Resistant Tubing is entirely free of plasticizers. Fluid contamination from leaching plasticizers — a common occurrence with other flexible tubings — is eliminated, as is premature cracking or embrittlement due to plasticizer extraction.

## Additional Product Features

- Extremely smooth inner surface — Tygon® 2075 has a much smoother surface than other flexible plastic and rubber tubings, which inhibits particulate build-up, reduces the potential for contamination, and facilitates thorough cleaning.
- Hydrophobic qualities — Tygon® 2075 resists absorption of aqueous fluids, minimizing the risk that the material being transported will be contaminated by residue from previous applications.
- Extremely low outgassing properties — This is a critical characteristic in controlled environment applications where contamination is a concern.

## FORMULATION 2075

*Provides the highest degree of chemical resistance in a clear, flexible tubing*

### Features/Benefits

- Resistant to MEK and other highly aggressive chemicals
- Plasticizer-free
- Safer disposal through incineration
- Smoother inner surface inhibits particulate build-up
- Hydrophobic property reduces absorption of aqueous fluids
- Minimal outgassing from tubing protects sensitive environments

### Typical Applications

- Fine and specialty chemical production
- Battery acid filling
- Clean and degreaser transfer systems
- X-ray processing
- Paint and solvent production
- Ink and printing fluid dispensing
- Hazardous materials handling
- Power generation sampling and drain lines

## TYGON® 2075 Inventoried Sizes

Saint-Gobain Part Number	I.D. (inches)	O.D. (inches)	Wall Thickness (inches)	Length (feet) (inches)	Minimum Bend Radius	Max. Working Pressure at 73°F (psi)*	Vacuum Rating, In. of Mercury at 73°F
AED00003	1/16	3/16	1/16	50	1/4	50	29.9
AED00007	1/8	1/4	1/16	50	1/4	30	29.9
AED00012	3/16	5/16	1/16	50	1/2	20	29.9
AED00017	1/4	3/8	1/16	50	3/4	18	29.9
AED00022	5/16	7/16	1/16	50	1-1/4	15	29.9
AED00027	3/8	1/2	1/16	50	1-1/2	13	20.0
AED00038	1/2	3/4	1/8	50	1-1/2	18	29.9
AED00046	5/8	7/8	1/8	50	2-1/2	15	29.9
AED00053	3/4	1	1/8	50	2-3/4	13	20.0
AED42064	1	1-3/8	3/16	25	3-1/4	14	25.0

\*Working pressures are calculated at a 1:5 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.

## TYGON® 2075 Typical Physical Properties

Property	ASTM Method	Value or Rating
Durometer Hardness Shore A, 15 Sec	D2240-02	72
Color	—	Clear
Tensile Strength psi (MPa)	D412-98	2,000 (13.8)
Ultimate Elongation, %	D412-98	700
Tear Resistance lb-f/inch (kN/m)	D1004-94	220 (39.0)
Specific Gravity	D792-00	0.9
Water Absorption, % 24 hrs. @ 23°C	D570-98	<0.01
Compression Set Constant Deflection, % @ 158°F (70°C) for 22 hrs.	D395-01 Method B	84
Brittleness By Impact Temp., °F (°C)	D746-98	-108 (-78)
Maximum Recommended Operating Temp., °F (°C)	—	125 (52)
Low Temp., Flexibility, °F (°C)	D380-94	-94 (-70)
Dielectric Strength, v/mil (kV/mm)	D149-97	587 (23.1)
Tensile Modulus, @ 100% Elongation, psi (MPa)	D412-98	350 (2.4)
Tensile Set, %	D412-98	187

Unless otherwise noted, all tests were conducted at room temperature (73°F). Values shown were determined on 0.075" thick extruded strip or 0.075" thick molded ASTM plaques or molded ASTM durometer buttons.

TYGON® is a Saint-Gobain Performance Plastics registered trademark.

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## Relative Chemical Resistance Properties

Tubing	Acids			Bases			Salts	Alcohols	Ketones
	Conc.	Med.	weak	Conc.	Med.	weak			
Tygon® 2075	F	E	E	E	E	E	E	E	F
Fluoroelastomers	E	E	E	U	F	F	E	F	U
Urethane	U	U	U	U	F	F	F	U	U
PVC	F	E	E	E	E	E	E	F	U
Thermoplastic Rubber	U	F	F	F	E	E	E	F	U
Neoprene	U	F	E	E	E	E	E	E	U
Nitrile Rubber	F	F	E	U	E	E	E	E	U
Silicone	U	U	U	U	F	F	F	F	U
EVA	U	F	E	F	E	E	E	E	U

E = Excellent G = Good F = Fair U = Unsatisfactory

## Sterilization of TYGON® 2075

The Tygon® 2075 series of clear flexible tubing can be sterilized by several methods. The tubing may be sterilized by radiation exposure. The maximum recommended exposure level is 2.5 Mrad. The tubing may also be sterilized by Ethylene Oxide gas. Finally Tygon® 2075 may be sterilized by steam sterilization in an autoclave for 30 minutes at 15 psi (250°F).

The third method of sterilization, steam, can occasionally cause some aesthetic changes to occur on the surface of the tubing. These changes do not affect or compromise the integrity or properties of the tubing. To eliminate or reduce these occurrences, we have the following suggestions. Do not exceed the recommended time, temperature, and pressure during steam sterilization procedure. If the tubing has a tendency to stick to the bottom of the autoclave, line the autoclave shelf with a piece of blue muslin paper. This will prevent the tubing from sticking to the autoclave. Allow the tubing to cool completely before removing from the autoclave, if possible. At the steam sterilization temperatures the tubing becomes very soft and sticky. Excess handling contributes to the surface changes. Allow the tubing to completely cool before attempting installation procedures. Sterilize only as much tubing as required. The weight of excess tubing can contribute to changes in the surface. Do not lay any material on or against Tygon® 2075 during steam sterilization procedure. Tygon® 2075 becomes sticky at elevated temperatures, and the tubing can stick to foreign objects in contact with it. Finally, if possible uncoil the tubing before sterilization. Although Tygon® 2075 can be sterilized in coils, the tubing does have a tendency to adhere to itself. If this occurs, allow the tubing to cool completely; the tubing should separate from the coil easily.

**TYGON® 2075 TUBING IS NOT INTENDED FOR USE AS AN IMPLANT MATERIAL**

**IMPORTANT:** It is the user's responsibility to ensure the suitability and safety of Saint-Gobain Performance Plastics tubing for all intended uses. Laboratory and clinical tests must be conducted in accordance with applicable regulatory requirements in order to determine the safety and effectiveness for use of tubing in any particular application.

For a period of 6 months from the date of first sale, Saint-Gobain Performance Plastics Corporation warrants this product to be free from defects in materials and workmanship. Our only obligation will be to replace any portion proving defective or at our option to refund the purchase price thereof. User assumes all other risk, if any, including the risk of injury, loss or damage, direct or consequential, arising out of the use, misuse or inability to use this product. THIS WARRANTY IS IN LIEU OF THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. No deviation is authorized.

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