

TYGON® 2275 High Purity Tubing



Clear and flexible, TYGON® 2275 High Purity Tubing is ideally suited for use in many sensitive cell culture and fermentation applications.

Low Absorption/Adsorption

Maintaining fluid integrity during transfer is critical in numerous pharmaceutical and biotechnology applications. Loss of fluid through migration into the tubing walls can cause inconsistencies in final product results. TYGON® 2275 High Purity Tubing is hydrophobic and will resist the absorption/adsorption of aqueous fluids. This reduction in absorption/adsorption minimizes the risk of fluid alteration in single or repeat use applications.

Designed for Purity

Until now, clear, flexible tubing was restricted from use in many applications due to concern of plasticizer extraction. TYGON® 2275 High Purity Tubing is entirely free of any plasticizers. This unique tubing uses the latest in polymer technology to provide an entirely clear and flexible tubing choice for sensitive fluid transfer applications.

Smooth Inner Surface Improves Sanitation

Analysis has shown the inner surface of TYGON® 2275 High Purity Tubing to be smoother than other frequently specified flexible tubings. This smooth surface inhibits particulate entrapment onto the tubing wall and reduces the potential for bacterial growth and contamination. A smoother fluid path also improves fluid flow characteristics by reducing surface area and lowering adherence of fluid onto the tubing wall.

Reduced Disposal Concern

TYGON® 2275 High Purity Tubing is also unique when it comes to disposal. In today's environment, incineration is commonly used to dispose of contaminated materials. Many tubings actually contribute to this problem by releasing hazardous byproducts, such as chlorine, when burned. TYGON® 2275 tubing only releases carbon dioxide and water when properly incinerated.

Superb Chemical Resistance

TYGON® 2275 High Purity Tubing is virtually unaffected by chemical sanitizers and cleaners. As a result, it can be cleaned repeatedly without decreasing its service life. The non-wettable surface of the product facilitates complete drainage of fluid during the cleaning process. TYGON® 2275 has a masterfile with the U.S. Food and Drug Administration.

BIOPHARMACEUTICAL PRODUCTS

High-purity tubing providing a high level of purity not previously available in a clear, flexible tubing

Features/Benefits

- Exceptionally Low Absorption and Adsorption Compared to Silicone
- Smooth Inner Surface Inhibits Particulate Entrapment
- Environmentally Safer to Dispose; Reduces Cost of Disposal
- Highly Resistant to Aggressive Cleaners and Sanitizers
- Plasticizer Free
- Meets USP Class VI and FDA Criteria

Typical Applications

- Sterile Filling and Dispensing Systems
- Diagnostic Equipment
- Nuclear Equipment
- Laboratory Analytical Instrumentation
- Infusion Sets for Parenterals and Drugs
- Cosmetic Production
- Food and Beverage Processing
- Cell and Tissue Culture Transport

TYGON® 2275 Manufactured Sizes and Pressures

Part Number	I.D. (inches)	O.D. (inches)	Wall Thickness (inches)	Length (feet)	Minimum Bend Radius (inches)	Max. Suggested Working Pressure at 73°F (psi)*	Vacuum Rating In. of Mercury at 73°F
AERO0003	1/16	3/16	1/16	50	1/4	60	29.9
AERO0007	1/8	1/4	1/16	50	3/8	45	29.9
AERO0012	3/16	5/16	1/16	50	5/8	35	29.9
AERO0017	1/4	3/8	1/16	50	1	25	29.9
AERO0022	5/16	7/16	1/16	50	1-3/8	17	29.9
AERO0027	3/8	1/2	1/16	50	1-5/8	15	25.0
AERO0038	1/2	3/4	1/8	50	1-7/8	20	29.9
AERO0046	5/8	7/8	1/8	50	2-7/8	17	29.9
AERO0053	3/4	1	1/8	50	3	16	29.9
AER42064	1	1-3/8	3/16	25	3	19	29.9

*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.

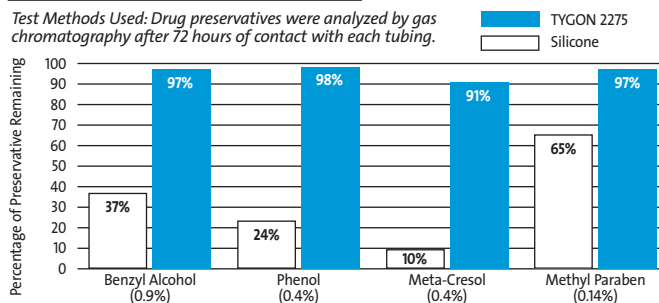
Relative Chemical Resistance Properties

Tubing	Acids			Bases			Salts	Alcohols	Ketones
	conc.	med.	weak	conc.	med.	weak			
TYGON® 2275	F	E	E	E	E	E	E	E	E
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 F = Fair U = Unsatisfactory

Comparative Absorption/Adsorption of TYGON® 2275 Tubing vs. Silicone Tubing

Test Methods Used: Drug preservatives were analyzed by gas chromatography after 72 hours of contact with each tubing.



BIOPHARMACEUTICAL PRODUCTS

Come through clean.™



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.

Saint-Gobain Performance Plastics Corporation assumes no obligations or liability for any advice furnished by it, or for results obtained with respect to those products. All such advice is given and accepted at the buyer's risk.

TYGON® 2275 Typical Physical Properties

Property	ASTM Method	Value or Rating
Durometer Hardness Shore A, 15 Sec	D2240-97	72
Color	—	Clear
Tensile Strength psi (MPa)	D412-97	2,000 (13.8)
Ultimate Elongation, %	D412-97	700
Tear Resistance lb-f/inch (kN/m)	D1004-93	220 (39)
Specific Gravity	D792-91	0.9
Water Absorption, % 24 hrs. @ 23°C	D570-95	<0.01
Compression Set Constant Deflection, % @ 158°F (70°C) for 22 hrs.	D395-89 Method B	84
Brittleness by Impact Temp., °F (°C)	D746-95	-108 (-78)
Maximum Recommended Operating Temp., °F (°C)	—	125 (52)
Low Temp. Flexibility, °F (°C)	D380-87	-94 (-70)
Dielectric Strength v/mil (kV/mm)	D149-93	587 (23.1)
Tensile Modulus, @ 100% Elongation, psi (MPa)	D412-97	350 (2.4)
Tensile Set, %	D412-97	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.

Sterilization of TYGON® 2275

The TYGON 2275 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 2275 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 the 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 eliminate the tubing from sticking to the autoclave. Allow the tubing to cool completely before removing from the autoclave, if possible. At the steam sterilization temperature, 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 2275 during the steam sterilization procedure. TYGON 2275 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 2275 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 TUBING IS NOT INTENDED FOR USE AS AN IMPLANT MATERIAL

TYGON® is a registered trademark.

