

# TYGON® 2275 I.B. High-Purity Pressure Tubing



TYGON® 2275 I.B. tubing is one example of Saint-Gobain Performance Plastics commitment to the development of innovative material technologies which positively impact process efficiency.

## Minimize Fluid Alteration and Loss

Maintaining product integrity during fluid transfer is critical in most pharmaceutical and biotechnology applications. Loss of fluid through migration into the tubing or adherence of fluid onto the tubing walls may create inconsistencies in final product results. TYGON® 2275 I.B. High-Purity Tubing is hydrophobic and resists the sorption (absorption/adsorption) of aqueous fluids. This reduction in sorption minimizes the risk of fluid alteration in single or repeat-use applications.

## Flexibility Without the Use of Plasticizers

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

## Superb Chemical Resistance Provides Versatility in Cleaning and Sterilization

TYGON 2275 I.B. 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. In addition, TYGON 2275 I.B. tubing can be sterilized easily using conventional gamma radiation, gas (ethylene oxide) and autoclave methods.

### BIOPHARMACEUTICAL PRODUCTS

*High-purity pressure tubing with low sorption, flexibility and clarity, available in a single tubing*

#### Features/Benefits

- Extremely Low Sorption to Aqueous Fluids
- Plasticizer Free
- Tough Braid Reinforcement for Elevated Working Pressures
- Meets USP Class VI and FDA Criteria

#### Typical Applications

- Deionized Water Systems
- Sterile Fill Lines
- Cell Harvest and Media Process Systems
- Water for Injection (WFI) Transport
- Preservative Fill Lines
- Pharmaceutical and Cosmetic Processing
- Chemical Transfer

## TYGON® 2275 I.B. High-Purity Pressure Tubing Inventory Sizes

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)*, 125°F (psi)*		Vacuum Rating In. of Mercury at 73°F, 125°F	
AFH00019	1/4	1/2	1/8	50	3/8	150	85	29.9	10.0
AFH00029	3/8	5/8	1/8	50	1	135	80	29.9	10.0
AFH00038	1/2	3/4	1/8	50	1-1/4	125	70	29.9	10.0
AFH00046	5/8	7/8	1/8	50	1-3/4	120	65	29.9	10.0
AFH00054	3/4	1-1/16	5/32	50	2-1/4	120	65	29.9	10.0
AFH42064	1	1-3/8	3/16	25	3-1/2	100	55	29.9	10.0
AFH06074	1-1/2	2	1/4	10	6	65	50	25	5.0
AFH06079	2	2-3/4	3/8	10	5-3/4	50	40	29.9	10.0

\*Safety factor of 4 to 1 ratio of burst pressure to working pressure using ASTM D1599.

## Relative Chemical Resistance Properties

Tubing	Acids			Bases			Salts	Alcohols	Ketones
	conc.	med.	weak	conc.	med.	weak			
TYGON® 2275 I.B.	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

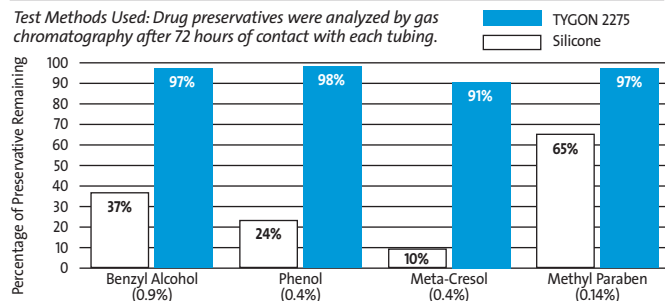
## TYGON® 2275 I.B. Typical Physical Properties

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	375 (2.6)
Toxicity	—	Non-Toxic
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.

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

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



TYGON® is a registered trademark.

## Sterilization of TYGON® 2275 I.B.

Autoclavable — Steam 30 minutes at 15 psi (250°F).

Gas — Ethylene Oxide.

Radiation — Radiation up to 2.5 MRad.

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

## BIOPHARMACEUTICAL PRODUCTS

*Come through clean.™*

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**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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