

# TYGON® 2475 High Purity Tubing



Clear and flexible, TYGON® 2475 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® 2475 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® 2475 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® 2475 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® 2475 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® 2475 tubing only releases carbon dioxide and water when properly incinerated.

## Superb Chemical Resistance

TYGON® 2475 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® 2475 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® 2475 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 |
|-------------|---------------|---------------|-------------------------|---------------|------------------------------|--|--------------------------------------|
| ACG00003    | 1/16          | 3/16          | 1/16                    | 50            | 1/8                          | 85   | 29.9                                 |
| ACG00007    | 1/8           | 1/4           | 1/16                    | 50            | 1/4                          | 50   | 29.9                                 |
| ACG00012    | 3/16          | 5/16          | 1/16                    | 50            | 1/2                          | 40   | 29.9                                 |
| ACG00017    | 1/4           | 3/8           | 1/16                    | 50            | 3/4                          | 30   | 29.9                                 |
| ACG00022    | 5/16          | 7/16          | 1/16                    | 50            | 1-3/8                        | 18   | 29.9                                 |
| ACG00027    | 3/8           | 1/2           | 1/16                    | 50            | 1-3/4                        | 20   | 25.0                                 |
| ACG00038    | 1/2           | 3/4           | 1/8                     | 50            | 1-1/2                        | 29   | 29.9                                 |
| ACG00046    | 5/8           | 7/8           | 1/8                     | 50            | 2-1/4                        | 25   | 29.9                                 |
| ACG00053    | 3/4           | 1             | 1/8                     | 50            | 3-1/4                        | 21   | 29.9                                 |
| ACG42064    | 1             | 1-3/8         | 3/16                    | 25            | 3                            | 20   | 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.

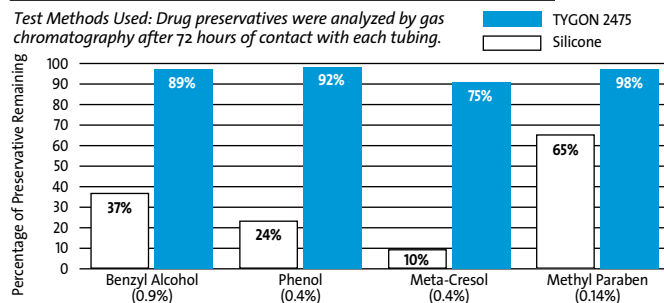
## Relative Chemical Resistance Properties

| Tubing               | Acids |      |      | Bases |      |      | Salts | Alcohols | Ketones |
|----------------------|-------|------|------|-------|------|------|-------|----------|---------|
|                      | conc. | med. | weak | conc. | med. | weak |       |          |         |
| TYGON® 2475          | 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® 2475 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.™

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

TYGON® is a registered trademark.



**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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## TYGON® 2475 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® 2475

Gas — Ethylene Oxide.

Radiation — Radiation up to 2.5 MRad.