

TYGON®

APPLICATION SPECIFIC TUBING
from Saint-Gobain Performance Plastics

Total Plastics carries the full line of Tygon® application specific tubing from Saint-Gobain Performance Plastics. See pages 52 and 53 for a Tubing and Market Overview. Call TPI for non-standard or custom sizes.

Tygon® B-44-3 Beverage Tubing

Tygon® Beverage Tubing is specially formulated for transferring a wide variety of beverages including soft drinks, fruit juices, flavored teas and bottled water. In virtually all cases, Tygon® Beverage Tubing will not affect the taste or odor of product transferred through it, while its excellent non-wetting properties facilitate complete drainage and permit simple flush-cleaning.

Tygon® B-44-3			
I.D.	O.D.	Wall	Length
1/16" to 2-1/4"	3/16" to 2-3/4"	1/32" to 1/2"	50' (100' and 500' in select diameters)

Many of the unique properties inherent to Tygon® Beverage Tubing also apply to a wide variety of complex applications ranging from fine cosmetic production to the dispensing of water-based printing inks found in the publishing industry. The versatility and proven performance of Tygon® Beverage Tubing have made it today's most widely specified clear, flexible plastic tubing.



- Taste-free and odor-free
- Non-wetting surface permits thorough cleaning and complete drainage
- Broad chemical resistance to virtually all non-solvent chemicals
- Lightweight and flexible for easy, quick installation
- Meets FDA, 3-A and NSF 51 criteria

Tygon® B-44-4X

I.D.	O.D.	Wall	Lengths
1/32" to 4"	3/32" to 5"	1/32" to 1/2"	50' (10' and 20' in select diameters)



Tygon® B-44-4X Food, Milk & Dairy Tubing

Producers of food, milk and dairy products insist upon Tygon® Food, Milk and Dairy Tubing for dependable performance in countless filling, draining, transfer and processing applications. Its smooth, non-porous bore inhibits particle entrapment, promoting a sanitary fluid path by minimizing potential for bacterial growth. It has outstanding resistance to harsh alkaline cleaners and is equally unaffected by commonly used sanitizers.

Non-toxic, taste-free and odor-free, Tygon® Food, Milk and Dairy Tubing meets applicable regulatory standards for contact with food products. Complete clarity for positive visual inspection and flow control, it is available in up to a 6" inside diameter, making it a flexible replacement for rigid piping systems.



- Smooth, non-porous bore will not trap particulates or promote bacterial growth
- Compatible with foods containing a high oil content
- Resistant to harsh alkaline cleaners and sanitizers
- Excellent alternative to rigid piping systems
- Meets FDA, 3-A and NSF 51 criteria

Tygon® B-44-4X I.B. Pressure Tubing

Tygon® Pressure Tubing's unique flexibility gets it into service quickly and easily. This means less tubing footage, fittings and labor than required for rigid systems. Reinforced with a tough polyester inner-braid imbedded in the wall, it can handle four times the pressure of non-reinforced tubing. Tygon® Pressure Tubing is compatible with virtually all non-solvent chemicals, meeting the needs of many industries in hundreds of applications where flexibility and higher pressure are required. Its clear wall permits positive flow monitoring and inspection.

The smooth inner bore of Tygon® Pressure Tubing (smoother than virtually all stainless steel) will not trap bacteria-harboring particles, making it ideal for food and beverage use. It is non-toxic, odorless, taste-free and exhibits outstanding resistance to the alkaline cleaners used in this industry.

- Handles four times the pressure of non-reinforced tubing
- Smooth, non-porous bore won't trap particulate matter
- Clear wall for visualization of flow
- Meets FDA, 3-A and NSF 51 criteria



Tygon® B-44-4X I.B.			
I.D.	O.D.	Wall	Length
1/4"	7/16"	3/32"	50'
3/8"	5/8"	1/8"	
1/2"	3/4"	1/8"	
5/8"	7/8"	1/8"	
3/4"	1"	1/8"	
1"	1-3/8"	3/16"	10', 20', 50'
1-1/4"	1-5/8"	3/16"	
1-1/2"	2"	1/4"	
2"	2-3/4"	3/8"	
3"	3-3/4"	3/8"	



TYGON

Flexible Tubing

Tygon® Silver Antimicrobial Tubing

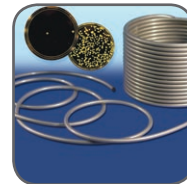
Microorganisms are living cells so small that most can only be seen with a microscope -- they are a type of microorganism found everywhere and include bacteria, fungi and algae. Growth of microbes on many materials can lead to foul odors, discoloration and formation of mildew and biofilm. In the case of tubing, microbes can contaminate the material being transferred, as well as degrade the tubing itself.

Tygon® Silver Antimicrobial Tubing is formulated with a silver based compound on the inner surface at the point of fluid contact; the tubing outer surface can be treated in cases where bacterial buildup on the O.D. is a concern.

- Plasticizer-free inner bore
- Formulated with a silver based compound on I.D. surface
- O.D. surface formulated with a silver based compound available
- Reduces formulation of biofilm and mildew
- Inhibits growth of microbes
- Will not discolor

Tygon® Silver

I.D.	O.D.	Wall	Length
1/8"	1/4"	1/16"	50'
3/16"	5/16"	1/16"	
1/4"	3/8"	1/16"	
3/8"	1/2"	1/16"	
1/2"	3/4"	1/8"	



Norprene® A-60-F

I.D.	O.D.	Wall	Length
1/16"	3/16"	1/16"	50'
1/8"	1/4"	1/16"	
3/16"	5/16"	1/16"	
1/4"	3/8"	1/16"	
1/4"	1/2"	1/8"	
5/16"	7/16"	1/16"	
3/8"	1/2"	1/16"	
3/8"	5/8"	1/8"	
1/2"	3/4"	1/8"	
5/8"	7/8"	1/8"	
3/4"	1"	1/8"	

Norprene® A-60-F Food Process Tubing

Formulated to withstand the high temperatures frequently occurring during food and beverage processing, Norprene® Food Process Tubing will outlast and outperform virtually all other food grade tubings. Even following extended exposure to heat and ozone, Norprene® Food Process Tubing will not crack or deteriorate as commonly found when using traditional rubber tubings. Extremely flexible, Norprene® Food Process Tubing 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, Norprene® Food Process Tubing 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. Also available with reinforcement to withstand elevated working pressure.

- Temperature resistant from -75°F to 275°F
- Compatible with virtually all common sanitizers and cleaners
- Can be autoclaved repeatedly
- Meets FDA, 3-A and NSF 51 criteria



Norprene® A-60-F Pressure Tubing

Ideal for use in clean-in-place and steam-in-place cleaning and sterilization systems, Norprene® Pressure Tubing has excellent alkali resistance and is compatible with numerous oxidizing agents such as hydrogen peroxide, sodium hypochlorite and ozone. Norprene® Pressure Tubing fully complies with FDA 177.2600 criteria, 3A Sanitary Standards and NSF Standard 51, which are applicable to many food contact applications.

Norprene® Pressure Tubing exhibits excellent resistance to ozone and UV light, with little or no signs of deterioration in laboratory testing equivalent to 10 years of outdoor exposure. Norprene® Pressure Tubing provides long service life when exposed to heat, abrasion and pressure. It is temperature resistant up to 275°F and retains flexibility to -60°F.

- Handles at least 4 times the pressure of non-reinforced tubing
- Temperature resistant from -60°F to 275°F
- Ozone and UV light resistant
- Repeatedly autoclavable
- Chemically compatible with a wide range of fluids
- Meets FDA, 3A and NSF Criteria

Norprene® A-60-F

I.D.	O.D.	Wall	Length
1/4"	1/2"	1/8"	50'
3/8"	5/8"	1/8"	
1/2"	3/4"	1/8"	
5/8"	7/8"	1/8"	
3/4"	1"	1/8"	
1"	1-3/8"	3/16"	



Tygon® XL-60 Pump Tubing

Designed specifically for use in peristaltic pump applications, Tygon® Pump Tubing maintains a pump life of over 500 hours. With a durometer hardness of Shore A60, it is extremely flexible and exhibits superior flex life, reducing downtime due to pump tubing failure. Tygon® Pump Tubing is translucent in color and has excellent chemical resistance to a wide range of fluids, including acids and bases. It can be considered an alternative to silicones and PVC when longer pump life is required.



- Long flex life in peristaltic pumps
- Low extractables
- Alternative to PVC
- Temperature resistant up to 250°F
- Meets FDA and NSF 51 criteria

Tygon® XL-60

I.D.	O.D.	Wall	Length
1/16"	3/16"	1/16"	50'
1/8"	1/4"		
3/16"	5/16"		
1/4"	3/8"		
5/16"	7/16"		
3/8"	1/2"	1/8"	
1/2"	3/4"		
5/8"	7/8"		
3/4"	1"		



PharMed® BPT

I.D.	O.D.	Wall	Length
.020"	.145"	1/16"	25'
1/32"	5/32"	1/16"	
1/16"	1/8"	1/32"	
1/16"	3/16"	1/16"	
3/32"	7/32"	1/16"	
1/8"	3/16"	1/32"	
1/8"	1/4"	1/16"	
3/16"	5/16"	1/16"	
1/4"	3/8"	1/16"	
1/4"	1/2"	1/8"	
5/16"	7/16"	1/16"	
3/8"	1/2"	1/16"	
3/8"	5/8"	1/8"	
1/2"	3/4"	1/8"	
5/8"	7/8"	1/8"	
3/4"	1"	1/8"	

PharMed® BPT Tubing for Peristaltic Pumps and Cell Culture

PharMed® BPT Tubing is less permeable to gases and vapors than silicone tubing. It is ideal for cell culture, fermentation, synthesis, separation, purification and process monitoring and control. Independent tests show that PharMed® 65 Tubing is safe for use in sensitive cell culture applications.

PharMed® BPT Tubing has very good general chemical resistance and excellent acid, alkali and oxidation resistance. Opaque to visible and UV light, it helps protect sensitive fluids. Continuous service temperature range is -60°F to 275°F.

- Outlasts silicone tubing in peristaltic pumps by up to 30 times
- Can be autoclaved repeatedly
- Heat weldable for sterile access in closed systems
- Documented biocompatibility to the ISO 10993 Standard
- Meets USP Class VI, FDA and NSF criteria



Tygon® R-3603 Laboratory & Vacuum Tubing

Crystal-clear and flexible, Tygon® Laboratory Tubing handles virtually all inorganic chemicals found in the lab. It is non-oxidizing and non-contaminating.

Long-lasting and crack-resistant, Tygon® Laboratory Tubing is less permeable than rubber tubing. The glassy-smooth inner bore helps prevent buildup so that cleaning is facilitated. Coils are marked at 1-foot intervals for easy measuring. Autoclavable. Remains flexible at -45°F (43°C). Durometer hardness: Shore A, 55.



Tygon® R-3603

I.D.	O.D.	Wall	Lengths
1/32" to 2"	3/32" to 2-1/2"	1/32" to 1/4"	50' (20', 100' and 500' in select diameters)



- Outstanding chemical resistance
- Increases productivity in peristaltic pumps

- Lot-to-lot consistency for reproducible results
- Ideal for condensers, incubators, desiccators, gas lines and drain lines

Tygon® Vacuum Tubing has extra-heavy walls that will withstand a full vacuum at room temperature (29.9" of mercury at 73°F) and up to 27" of mercury at 140°F. Like standard Tygon® Laboratory Tubing, Tygon® Vacuum Tubing resists most inorganic chemicals and can be used in corrosive atmospheres. Clarity allows monitoring for possible backups which could result in equipment damage. Tygon® Vacuum Tubing will not swell closed if vacuum pump oil should back up into it. Low vapor pressure (low outgassing) makes it suitable for vacuum applications down to 3 x 10⁻² mm Hg at 165°F. Ideal for analytical testing of gases or vapors. Well-suited for use in making manometers.

- Holds full vacuum at room temperature
- Excellent clarity for visual inspection
- Will not crack and age like rubber tubing

Flexible Tubing

Tygon® R-1000 Ultra Soft Tubing

Tygon® Ultra-Soft Tubing resists a broad range of aqueous chemicals and provides an excellent alternative to silicone tubing in applications where corrosive chemicals are used. Its minimal resistance to compression permits use in low-torque pump applications including battery driven types.

Tygon® Ultra-Soft Tubing stays flexible at temperatures as low as -100°F. Its smooth bore facilitates easy cleaning and helps prevent possible buildup. Do not autoclave. Durometer hardness: Shore A, 40.

- Ultra-soft and flexible
- Performs well at low temperatures (to -100°F)
- Excellent for use in low-torque pump applications



Tygon® R-1000

I.D.	O.D.	Wall	Length
1/16"	3/16"	1/16"	50'
1/8"	1/4"	1/16"	
3/16"	5/16"	1/16"	
1/4"	3/8"	1/16"	
1/4"	1/2"	1/8"	
5/16"	7/16"	1/16"	
3/8"	1/2"	1/16"	
3/8"	5/8"	1/8"	
1/2"	5/8"	1/8"	
1/2"	3/4"	1/8"	



Tygon® LFL

I.D.	O.D.	Wall	Length
1/16"	3/16"	1/16"	25'
1/8"	1/4"	1/16"	
3/16"	5/16"	1/16"	
1/4"	3/8"	1/16"	
1/4"	1/2"	1/8"	
5/16"	7/16"	1/16"	
3/8"	5/8"	1/8"	
1/2"	3/4"	1/8"	
3/4"	1-1/4"	1/4"	10'
1"	1-3/8"	3/16"	

Tygon® LFL Long Flex Life Pump Tubing

Crystal-clear Tygon® Long Flex Life Pump Tubing is formulated specifically for use in peristaltic pump applications. With its superior flex life characteristics, manufacturing processes can be simplified by reducing production downtime due to pump tubing failure.



The excellent wear properties of Tygon® Long Flex Life Pump Tubing also lead to a reduction of particulate spallation. This feature limits the risk of sensitive-fluid contamination critical to the pharmaceutical, cosmetic, food and beverage industries. Non-aging characteristics and broad chemical resistance provide users with versatility in use for a wide variety of applications. Safe and non-toxic Tygon® Long Flex Life Pump Tubing can be produced in up to a 6" inside diameter, making it the ideal choice in bulk transfer applications.

- Longest flex life of any clear Tygon® tubing
- Extremely low particulate spallation
- Broad chemical resistance
- Meets USP Class VI and FDA criteria



Versilic® SPX-50

I.D.	O.D.	Wall	Length
1/32"	3/32"	1/32"	50'
1/16"	1/8"	1/32"	
1/16"	3/16"	1/16"	
3/32"	5/32"	1/32"	
3/32"	7/32"	1/16"	
1/8"	3/16"	1/32"	
1/8"	1/4"	1/16"	
5/32"	7/32"	1/32"	
3/16"	1/4"	1/32"	
3/16"	5/16"	1/16"	
3/16"	3/8"	3/32"	
3/16"	7/16"	1/8"	
1/4"	5/16"	1/32"	
1/4"	3/8"	1/16"	
1/4"	7/16"	3/32"	
1/4"	1/2"	1/8"	
5/16"	7/16"	1/16"	
5/16"	1/2"	3/32"	
5/16"	9/16"	1/8"	
3/8"	1/2"	1/16"	
3/8"	9/16"	3/32"	
3/8"	5/8"	1/8"	
7/16"	5/8"	3/32"	
1/2"	5/8"	1/16"	
1/2"	11/16"	3/32"	
1/2"	3/4"	1/8"	
5/8"	13/16"	3/32"	
5/8"	7/8"	1/8"	
3/4"	1"	1/8"	
1"	1-1/4"	1/8"	
1-1/4"	1-1/2"	1/8"	25'
1-1/2"	2"	1/4"	



Versilic® SPX-50 High-Strength Silicone Tubing

Peroxide-cured Versilic® High-Strength Silicone Tubing is designed for use in applications where flexibility, resiliency and durability are required. Its smooth inner surface reduces the risk of particulate entrapment and microscopic buildup during fluid transfer. In addition, its high and low working temperatures help the tubing retain its flexibility under extreme conditions.

Because of its consistently reliable performance, Versilic® High-Strength Silicone Tubing is ideal for applications such as food and beverage dispensing and processing, appliance manufacturing, cosmetic production and electronic equipment. Custom formulations can be designed to provide a combination of features, including ultra-high temperature resistance, electrical conductivity, pigmented colors and long flexural life.

- Ultra-smooth inner bore reduces risk of particle entrapment
- Taste and odor free
- Withstands temperatures from -75°F to 350°F
- Meets FDA, 3-A, NSF and USP Class VI criteria



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Versilic® SPX-50 I.B.

I.D.	O.D.	Lengths
3/16"	.443"	50'
1/4"	.515"	
3/8"	.687"	
1/2"	.847"	
5/8"	.980"	
3/4"	1.150"	
1"	1.390"	
1-1/4"	1.636"	25'
1-1/2"	1.900"	



Versilic® SPX-70 I.B. High-Strength Silicone Pressure Tubing

Produced from a proprietary combination of silicone elastomers, Versilic® SPX-70 I.B. Tubing optimizes critical physical properties such as tensile strength, elongation and compression set, resulting in a more physically durable product. Its ultra-smooth inner bore reduces the risk of particle entrapment during fluid transfer.

In addition, Versilic® High-Strength Silicone Pressure Tubing will remain resilient and durable under extreme operating temperatures and repeated cleaning and sterilization.

Versilic® Silicone Tubing complies fully with the requirements of the USP Class VI Criteria and is entirely non-toxic, non-hemolytic and non-pyrogenic.

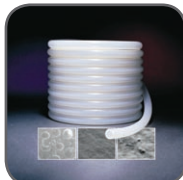
- Tough braid reinforcement permits use under elevated working pressure
- Taste and odor free
- Temperature resistant from -112°F to 320°F
- Withstands repeated CIP and SIP cleaning and sterilization
- Meets FDA, 3-A, NSF and USP Class VI criteria



Tygon® 3350 Sanitary Silicone Tubing

Designed for high-purity applications, Tygon® Sanitary Silicone Tubing's ultra-smooth inner bore can reduce the risk of particle entrapment and microscopic buildup during sensitive fluid transfer. In-house analysis of the inner surface of Tygon® Sanitary Silicone Tubing compared to other silicone tubing shows that it is up to three times smoother. Additionally, this smoother fluid path facilitates complete system cleaning and sterilization. Utilizing a platinum-curing process, Tygon® Sanitary Silicone Tubing eliminates the concern of extraction often encountered when alternative curing methods are used. It has also been fully characterized using the ISO 10993 standards, reducing user cost and time associated with process validation.

- Ultra-smooth inner bore reduces potential for particle entrapment
- Minimal extractables help maintain fluid integrity
- Hydrophobic surface improves fluid flow
- Documented biocompatibility to the ISO 10993 standard
- Meets USP Class VI, FDA and NSF criteria



Tygon® 3350

I.D.	O.D.	Wall	Length
1/32"	3/32"	1/32"	50'
1/16"	1/8"	1/32"	
1/16"	3/16"	1/16"	
3/32"	5/32"	1/32"	
3/32"	7/32"	1/16"	
1/8"	3/16"	1/32"	
1/8"	1/4"	1/16"	
5/32"	7/32"	1/32"	
3/16"	1/4"	1/32"	
3/16"	5/16"	1/16"	
3/16"	3/8"	3/32"	
3/16"	7/16"	1/8"	
1/4"	5/16"	1/32"	
1/4"	3/8"	1/16"	
1/4"	7/16"	3/32"	
1/4"	1/2"	1/8"	
5/16"	7/16"	1/16"	
5/16"	1/2"	3/32"	
3/8"	1/2"	1/16"	
3/8"	9/16"	3/32"	
3/8"	5/8"	1/8"	
7/16"	9/16"	1/16"	
7/16"	5/8"	3/32"	
1/2"	5/8"	1/16"	
1/2"	11/16"	3/32"	
1/2"	3/4"	1/8"	
5/8"	13/16"	3/32"	
5/8"	7/8"	1/8"	
3/4"	1"	1/8"	
1"	1-1/4"	1/8"	
1-1/4"	1-1/2"	1/8"	
1-1/2"	2"	1/4"	

Tygon® 3370 I.B.

I.D.	O.D.	Lengths
3/16"	.443"	50'
1/4"	.515"	
3/8"	.687"	
1/2"	.847"	
5/8"	.980"	
3/4"	1.150"	
1"	1.390"	
1-1/4"	1.636"	25'
1-1/2"	1.900"	
2"	2.432"	



Tygon® 3370 I.B. Sanitary Silicone Pressure Tubing

Often specified in high-purity applications, Tygon® Sanitary Silicone Pressure Tubing is produced from a platinum-curing process that helps ensure the highest level of biocompatibility available. The ultra smooth inner surface and the ability to be cleaned and sterilized repeatedly in CIP and SIP systems helps to maintain fluid integrity throughout sensitive fluid transfer or processing. When used in combination with sanitary fittings, complete assemblies can be constructed that provide the sanitary conditions critical to pharmaceutical, biotechnology, cosmetic, food, dairy and beverage applications. Braid-reinforced for increased pressure resistance, it also provides flexibility, durability, and chemical and temperature resistance to make it the ideal pressure tubing for a wide variety of industries.

- Consistently smooth inner surface reduces potential for particle entrapment
- Tough braid reinforcement for elevated working pressures
- Withstands repeated CIP and SIP sterilization
- Meets USP Class VI, FDA and NSF criteria

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Flexible Tubing

Tygon® S-50-HL Medical and Surgical Tubing

Originally developed for use in cardiac surgery, Tygon® Medical/Surgical Tubing's consistent quality provides dependable performance in medical device applications. Saint-Gobain Performance Plastics compounds its own materials to specific formulation requirements using select ingredients that have been carefully qualified and specified. It has been fully tested for biological safety to the ISO 10993 standard. Durometer hardness: Shore A, 66. Tygon® Medical/Surgical Tubing can be sterilized by radiation, ethylene oxide, steam or chemical methods.



Tygon® S-50-HL

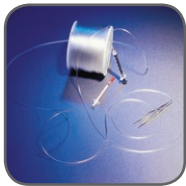
I.D.	O.D.	Wall	Lengths
1/32" to 1"	3/32" to 1-1/4"	1/32" to 1/8"	50' (100' length in specific diameters)



Tygon® S-54-HL

I.D.	O.D.	Wall	Length
.010"	.030"	.010"	50'
.020"	.060"	.020"	
.030"	.090"	.030"	
.040"	.070"	.015"	
.050"	.090"	.020"	

- Ideal for contact with blood
- Flexible and resilient with established performance in peristaltic pump applications
- Fully characterized to ISO 10993 and FDA guidelines for biocompatibility
- Meets USP Class VI criteria



Tygon® S-54-HL Microbore Tubing

Select Tygon® Microbore Tubing for intravenous and arterial infusion as well as other surgical, hospital and laboratory applications. It is flexible enough to permit use of a single size tubing with several different needle gauges, yet sufficiently rigid to minimize the danger of wall collapse. Tygon® Microbore Tubing is non-toxic, non-pyrogenic and biocompatible. Durometer hardness: Shore A, 83. Tygon® Microbore Tubing can be sterilized by radiation, ethylene oxide, steam or chemical methods.

- Stiff enough for easy handling, soft enough to resist puncturing
- Ideal for precision injection and dispensing applications
- Micro-diameter sizes fit needle gauges 30 to 17
- Meets USP Class VI criteria

Tygon® 2275

I.D.	O.D.	Wall	Lengths
1/16"	3/16"	1/16"	50'
1/8"	1/4"	1/16"	
3/16"	5/16"	1/16"	
1/4"	3/8"	1/16"	
5/16"	7/16"	1/16"	
3/8"	1/2"	1/16"	
1/2"	3/4"	1/8"	
5/8"	7/8"	1/8"	
3/4"	1"	1/8"	25'
1"	1-3/8"	3/16"	



Tygon® 2275 High Purity Tubing

Tygon® High-Purity Tubing is ideal for handling sensitive fluids such as pharmaceutical or biological solutions. There is virtually no absorption of key fluid constituents into the tubing material or fluid adsorption onto the tubing walls. As a result, fluid alteration and loss is limited. There is no plasticizer to leach into or contaminate the fluid, yet the tubing remains flexible. Tygon® High-Purity Tubing can be sterilized by radiation, ethylene oxide, steam or chemical methods.



Frequently, incineration is used to dispose of contaminated materials. While many tubings release hazardous by-products when burned, Tygon® High-Purity Tubing only releases carbon dioxide and water when properly incinerated, providing safe disposal. Also available with reinforcement to withstand elevated working pressure.

- Provides an uncompromising fluid path for sensitive solutions
- Low sorption maintains fluid integrity
- Plasticizer-free -- virtually no extractables
- Environmentally friendly -- safe to dispose of through incineration
- Documented biocompatibility to the ISO 10993 Standard
- Meets USP Class VI, FDA and NSF criteria

Tygon® 2275 I.B. High Purity Pressure Tubing

Tygon® 2275 I.B. helps maintain product integrity during fluid transfer in 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. 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.

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.

- Extremely low sorption to aqueous fluids
- Plasticizer-free
- Tough braid reinforcement for elevated working pressures
- Ideal for use with Tygopure® sanitary fittings
- Meets USP Class VI, FDA and NSF criteria



Tygon® 2275 I.B.

I.D.	O.D.	Wall	Lengths
3/16"	7/16"	1/8"	50'
1/4"	1/2"	1/8"	
3/8"	5/8"	1/8"	
1/2"	3/4"	1/8"	
5/8"	7/8"	1/8"	
3/4"	1-1/16"	5/32"	25'
1"	1-3/8"	3/16"	
1-1/2"	2"	1/4"	
2"	2-3/4"	3/8"	10'

Tygon® 2375 Ultra Chemical Resistant Tubing

Tygon® Ultra Chemical Resistant Tubing offers an unequalled combination of chemical resistance, clarity and flexibility. Tygon® Ultra Chemical Resistant Tubing is virtually unaffected by acids, bases, ketones, salts and alcohols, fitting the requirements of many applications from battery acid filling to hazardous material handling. It's entirely plasticizer-free, eliminating fluid contamination and the premature embrittlement and cracking common with many flexible tubings. Its exceptionally smooth inner surface inhibits particulate buildup and reduces the potential for contamination.



- Resistant to highly aggressive chemicals
- Plasticizer-free -- minimizes risk of fluid contamination
- Exceptionally smooth inner surface inhibits particulate buildup
- Low sorption maintains fluid integrity
- Meets USP Class VI criteria

Tygon® 2375

I.D.	O.D.	Wall	Lengths
1/16"	3/16"	1/16"	50'
1/8"	1/4"	1/16"	
3/16"	5/16"	1/16"	
1/4"	3/8"	1/16"	
5/16"	7/16"	1/16"	
3/8"	1/2"	1/16"	
1/2"	3/4"	1/8"	
5/8"	7/8"	1/8"	
3/4"	1"	1/8"	
1"	1-3/8"	3/16"	
			25'

Tygon® 2001 Plasticizer-Free Tubing

Tygon® Plasticizer Free Tubing is a uniquely engineered product that offers the low compression set properties of a thermoset rubber. Tygon® Plasticizer Free Tubing provides the most flexibility, highest temperature resistance and longest pump life available in a clear, plasticizer/oil free tubing. It is ideal for a broad range of applications including peristaltic pump applications, soap and detergent dispensing, water purification lines, food contact applications and chemical transfer. This uniquely engineered tubing will not embrittle or crack prematurely like other tubings that contain plasticizer or extender oils, benefitting the user with less downtime and tubing changes.



- Superior flex life in peristaltic pumps
- Chemically resistant to a wide range of fluids
- Temperature resistant from -108°F to 160°F
- Clear for easy visual flow monitoring
- Meets FDA criteria for food contact

Tygon® 2001

I.D.	O.D.	Wall	Length
1/16"	3/16"	1/16"	50'
1/8"	1/4"	1/16"	
3/16"	5/16"	1/16"	
1/4"	3/8"	1/16"	
5/16"	7/16"	1/16"	
3/8"	1/2"	1/16"	
1/2"	3/4"	1/8"	
5/8"	7/8"	1/8"	
3/4"	1"	1/8"	
1"	1-3/8"	3/16"	



Tygothane® C-210-A Precision Polyurethane Tubing

Our rigidly controlled manufacturing process makes Tygothane® Precision Polyurethane Tubing the flexible polyurethane tubing that has consistently tight tolerances from lot to lot. Precision tolerances and high elasticity provide the user with an easy, worry-free attachment to fittings. Made of a tough, ester-based polyurethane, Tygothane® Precision Polyurethane Tubing's clarity, high tear strength and excellent abrasion resistance make it ideal for many applications, including fuel and lubricant lines, pneumatic lines, abrasive product transfer and cable jacketing. It also offers exceptional resistance to oils, greases, fuels and many chemicals.



Able to withstand rugged daily use, Tygothane® Precision Polyurethane Tubing resists weathering and can be safely used in temperatures ranging from -100°F to 200°F. It meets FDA criteria for food and beverage use and is also available in ether-based, medical grade and reinforced formulations.

- Consistently tight dimensional tolerances
- Excellent abrasion and tear resistance
- Fuel and lubricant resistant
- Sub-zero temperature capabilities

Tygon® C-210-A

I.D.	O.D.	Wall	Length
1/16"	1/8"	1/32"	100'
1/8"	3/16"	1/32"	
1/8"	1/4"	1/16"	
3/16"	1/4"	1/32"	
3/16"	5/16"	1/16"	
3/16"	3/8"	3/32"	
1/4"	5/16"	1/32"	
1/4"	3/8"	1/16"	
1/4"	7/16"	3/32"	
1/4"	1/2"	1/8"	
5/16"	7/16"	1/16"	
3/8"	1/2"	1/16"	
3/8"	9/16"	3/32"	
3/8"	5/8"	1/8"	
7/16"	5/8"	3/32"	
7/16"	11/16"	1/8"	
1/2"	5/8"	1/16"	
1/2"	11/16"	3/32"	
1/2"	3/4"	1/8"	
5/8"	3/4"	1/16"	
5/8"	13/16"	3/32"	
5/8"	7/8"	1/8"	
3/4"	15/16"	3/32"	
3/4"	1"	1/8"	
7/8"	1-1/8"	1/8"	
1"	1-1/4"	1/8"	



TYGON

Flexible Tubing

Tygothane® C-544-A I.B. Precision Polyurethane Pressure Tubing

More flexible than many other reinforced urethane tubings, Tygothane® Pressure Tubing can be used in some of the most physically demanding applications, such as those requiring a tight bend radius. Specially formulated from tough, ether-based polyurethane resin, Tygothane® Pressure Tubing is resistant to a range of chemicals, including oils, greases, solvents and chemicals.

Because of its excellent wear properties, Tygothane® Pressure Tubing frequently outperforms traditional rubber, plastic and metal materials when exposed to abrasive conditions. Tygothane® Pressure Tubing is also plasticizer free, and remains flexible even when cycled through temperature extremes.

- Abrasion and tear resistant
- Braid reinforcement for elevated working pressures
- Resistant to oils, greases and fuels
- Flexible even in sub-zero temperatures
- Meets FDA criteria for food contact
- Meets NSF 61 criteria for potable water contact



Tygothane® C-544-A I.B.

I.D.	O.D.	Wall	Length
1/8"	3/8"	1/8"	100'
3/16"	7/16"	1/8"	
1/4"	1/2"	1/8"	
3/8"	5/8"	1/8"	
1/2"	3/4"	1/8"	
5/8"	7/8"	1/8"	
3/4"	1-1/16"	5/32"	
1"	1-3/8"	3/16"	50'
1-1/4"	1-3/4"	1/4"	
1-1/2"	2"	1/4"	
2"	2-1/2"	1/4"	



Norprene® A-60-G

I.D.	O.D.	Wall	Length
1/16"	3/16"	1/16"	50'
1/8"	1/4"	1/16"	
1/8"	3/8"	1/8"	
3/16"	5/16"	1/16"	
3/16"	3/8"	3/32"	
3/16"	9/16"	3/16"	
1/4"	3/8"	1/16"	
1/4"	7/16"	3/32"	
1/4"	1/2"	1/8"	
5/16"	7/16"	1/16"	
5/16"	1/2"	3/32"	
5/16"	13/16"	1/4"	
3/8"	1/2"	1/16"	
3/8"	9/16"	3/32"	
3/8"	5/8"	1/8"	
7/16"	9/16"	1/16"	
1/2"	5/8"	1/16"	
1/2"	11/16"	3/32"	
1/2"	3/4"	1/8"	
5/8"	13/16"	3/32"	
5/8"	7/8"	1/8"	
3/4"	1"	1/8"	
1"	1-1/4"	1/8"	

Norprene® A-60-G Industrial Grade Tubing

Norprene® Industrial Grade Tubing outperforms neoprene, EPDM and other general-purpose tubings in test after test and application after application. It will not weaken or crack after years of exposure to heat and ozone. This provides long service in a wide range of applications such as gasketing, abrasion-resistant sleeving and cable insulation. Performance formulated for on-the-job reliability, Norprene® handles temperatures from -75°F to 275°F, allowing the use of one material with a broad range of temperatures. It is heat sealable and can be joined without fittings. It also has excellent resistance to inorganic (acids and bases) fluids. With its outstanding flexural fatigue resistance and high temperature capability, Norprene® Industrial Grade Tubing outlasts and outperforms virtually all other general service tubings in peristaltic and vacuum pump applications.



- Superior weathering
- Abrasion resistant
- Outstanding flexural fatigue resistance
- Wide temperature range
- Low gas permeability versus rubber tubing

Tygon® F-4040-A

I.D.	O.D.	Wall	Length
.080"	.140"	.030"	50'
3/32"	3/16"	3/64"	
1/8"	1/4"	1/16"	
3/16"	5/16"	1/16"	
1/4"	3/8"	1/16"	
5/16"	7/16"	1/16"	
3/8"	1/2"	1/16"	
3/8"	5/8"	1/8"	
7/16"	9/16"	1/16"	
1/2"	5/8"	1/16"	
1/2"	3/4"	1/8"	
5/8"	7/8"	1/8"	
3/4"	1"	1/8"	



Tygon® F-4040-A Fuel and Lubricant Tubing

A consistent performer lot after lot, Tygon® Fuel and Lubricant Tubing is the most requested fuel and lubricant tubing for a variety of applications -- from small engine fuel lines to coolant transfer. Specifically designed to handle most fuels and industrial lubricants, Tygon® Fuel and Lubricant Tubing resists the swelling and hardening caused by hydrocarbon-based fluids. This significantly reduces the risk of failure due to cracking and leakage. Its minimum extractability safeguards the liquid or vapor being transferred against adulteration.

Extremely flexible (Shore A, 57), Tygon® Fuel and Lubricant Tubing simplifies installation, even in tight places. It is translucent yellow for positive identification and to allow easy flow monitoring. It is routinely used to handle gasoline, kerosene, heating oils, cutting compounds and glycol-based coolants.

- Resists embrittlement
- Resists swelling and cracking
- Compatible with most petroleum-based products
- Ozone and UV resistant



Tygon® R-3400 UV-Resistant Tubing

Ideal for virtually any permanent or temporary chemical transfer application, Tygon® UV Resistant Tubing combines suppleness and flexibility with resistance to a wide range of chemicals. It shows exceptional resistance to strong acids and many alkalis. The flexibility of Tygon® UV Resistant Tubing makes it quick and easy to put into service, providing considerable savings on installation time and cost. Black in color, it is resistant to ultraviolet light, ozone and weathering, making it ideal for many outdoor applications. Standard inventoried sizes of Tygon® UV Resistant Tubing have sufficient wall thickness to block transmission of all UV light. Additionally, in-house testing indicates a UL 94V-O and UL 94HB flammability rating.

- Black in color, protects light-sensitive fluids
- Wide range of chemical resistance
- Ozone resistant
- Excellent burn resistance



Tygon® R-3400

I.D.	O.D.	Wall	Length
1/16"	1/8"	1/32"	50'
3/32"	5/32"	1/32"	
3/32"	7/32"	1/16"	
1/8"	1/4"	1/16"	
5/32"	9/32"	1/16"	
3/16"	1/4"	1/32"	
3/16"	5/16"	1/16"	
3/16"	3/8"	3/32"	
1/4"	3/8"	1/16"	
1/4"	7/16"	3/32"	
5/16"	7/16"	1/16"	
3/8"	1/2"	1/16"	
3/8"	5/8"	1/8"	
7/16"	9/16"	1/16"	
1/2"	3/4"	1/8"	
5/8"	7/8"	1/8"	
3/4"	1"	1/8"	

Fluran® F-5500-A

I.D.	O.D.	Wall	Length
1/16"	1/8"	1/32"	50'
1/8"	1/4"	1/16"	
3/16"	5/16"	1/16"	
1/4"	3/8"	1/16"	
5/16"	7/16"	1/16"	
3/8"	1/2"	1/16"	

Fluran® F-5500-A Severe Environment Tubing

Made of a proprietary fluoroelastomer, Fluran® Severe Environment Tubing has both the physical and chemical characteristics that make it ideal for severe environments, such as dry cleaning fluid lines and solvent recovery systems, where other flexible tubings fail. Fluran® Severe Environment Tubing can be used in continuous service with temperatures as high as 400°F and has excellent resistance to corrosive chemicals, oils, fuels, solvents and most mineral acids.



This opaque, black tubing helps protect light-sensitive materials being transferred and will not prematurely crack and age when exposed to ozone, sun and weather. It is highly flexible and resilient, making it the ideal choice in peristaltic pumping of extremely corrosive materials. A food grade formulation is available upon request.

- Provides continuous service at temperatures up to 400°F
- Excellent resistance to corrosive chemicals, oils, fuels and solvents
- Resists ozone, sunlight and weathering
- Opaque black color helps protect light sensitive fluids



Tygon® SE-200 Inert Tubing

Without sacrificing the flexibility, glass-like clarity or outstanding bend radius for which Tygon® tubing is known, Tygon® Inert Tubing can handle many applications where flexible tubing of the past could not be used. Its FEP inner liner provides the ultimate in chemical resistance and can handle a wide variety of fluids from corrosives to MEK-based solvents. The liner is inert, meaning it will not extract or contaminate fluids being transferred. The fluid path will not impart odor or taste, making it well-suited for food and beverage use. It meets FDA criteria for food and beverage applications, as well as USP Class VI criteria for biocompatibility.

- Crystal clear for easy visual flow monitoring
- Chemically resistant and inert

- Better flexibility than typical rigid fluoropolymer tubings
- Non-contaminating fluid path



Tygon® SE-200

I.D.	O.D.	Wall	Length
1/16"	1/8"	1/32"	50'
1/8"	1/4"	1/16"	
3/16"	5/16"	1/16"	
1/4"	3/8"	1/16"	
3/8"	9/16"	3/32"	
1/2"	3/4"	1/8"	
3/4"	1"	1/8"	

Chemfluor® Fluoropolymer Tubings (FEP, PFA, PTFE)

Chemfluor® fluoropolymer tubings have outstanding chemical and physical properties and can be used in a broad range of temperatures, from -400°F to 500°F, depending on the polymer type. Chemfluor® tubings are available in a variety of different polymer types including FEP, PFA and PTFE. The primary differences among them are use temperature, clarity and mechanical strength, while several chemical and physical properties are common to all. Chemfluor® tubings are manufactured from resins that meet FDA criteria. No plasticizers, stabilizers or fillers are used, so they are pure and non-contaminating. Unlike metal and rubber alternatives, Chemfluor® tubings are non-corroding and non-oxidizing. Unlike other plastic materials, they are unaffected by solvents, acids and fuels. Chemfluor® FEP and PFA tubings fully comply with the requirements of USP Class VI criteria and are non-toxic, non-hemolytic and non-pyrogenic.

- Ultra-pure
- Non-toxic
- Chemically inert

- Wide temperature capabilities
- Meets FDA criteria



TUBING & MARKET OVERVIEW

Tubing Formulations	Product Description	Durometer Hardness (Shore A, 15s)	Color	Maximum Recommended Operating Temperature °F (°C)
Tygon® Beverage Tubing Formulation B-44-3	Most widely specified clear, flexible tubing	63	Clear	165 (74)
Tygon® Food, Milk and Dairy Tubing Formulation B-44-4X	The preferred clear, flexible tubing for food processing applications	65	Clear	165 (74)
Tygon® Pressure Tubing Formulation B-44-4X I.B.	Most flexible reinforced tubing available	65	Clear <i>(between braid)</i>	165 (74)
Tygon® Silver Antimicrobial Tubing	Antimicrobial tubing that decreases bacterial growth	72	Silver	160 (71)
Norprene® Food Process Tubing Formulation A-60-F	Provides long service life in many hot food/beverage applications	61	Cream	275 (135)
Norprene® Pressure Tubing Formulation A-60-F I.B.	Provides long service life even when exposed to heat, abrasion and pressure	61	Cream	275 (135)
Tygone® Pump Tubing Formulation XL-60	Designed specifically for use in peristaltic pumps	60	Translucent	250 (121)
PharMed® BPT Tubing	Long life peristaltic pump/cell culture tubing	64	Cream	275 (135)
Tygon® Laboratory Tubing Formulation R-3603	For consistently reliable analysis in the lab	55	Clear	165 (74)
Tygon® Vacuum Tubing Formulation R-3603	The clear choice for vacuum lines	55	Clear	165 (74)
Tygon® Ultra-Soft Tubing Formulation R-1000	An extremely soft and flexible tubing that offers minimal resistance to compression	40	Clear	125 (52)
Tygon® Long Flex Life Pump Tubing Formulation LFL	For the longest peristaltic pump flex life of any clear, flexible tubing	56	Clear	165 (74)
Versilic® High-Strength Silicone Tubing Formulation SPX-50	Provides long life, strength and durability	50	Translucent	350 (177)
Versilic® High-Strength Silicone Pressure Tubing Formulation SPX-70 I.B.	Provides elevated working pressures in a silicone tubing	71**	Translucent	320 (160)
Tygon® Sanitary Silicone Tubing Formulation 3350	The platinum-cured silicone tubing with the smoothest inner surface for transfer of sensitive fluids	50**	Translucent	400 (204)
Tygon® Sanitary Silicone Pressure Tubing Formulation 3370 I.B.	A platinum-cured silicone tubing that handles up to four times the pressure of Tygon® 3350	70	Translucent <i>(between braid)</i>	320 (160)
Tygon® Medical/Surgical Tubing Formulation S-50-HL	A tubing designed for use in open heart surgery and other medical applications	66	Clear	165 (74)
Tygon® Microbore Tubing Formulation S-54-HL	For precision injection and dispensing	80	Clear	185 (85)
Tygon® High Purity Tubing Formulation 2275	Provides a high level of purity not previously available in a clear, flexible tubing	72	Clear	125 (52)
Tygon® High Purity Pressure Tubing Formulation 2275 I.B.	High purity, low sorption, flexibility and clarity in a single tubing	72	Clear <i>(between braid)</i>	125 (52)
Tygon® Ultra Chemical Resistant Tubing Formulation 2075	Provides the highest degree of chemical resistance in a clear, flexible tubing	72	Clear	125 (52)
Tygon® Plasticizer Free Tubing Formulation 2001	Provides low compression set properties of a thermoset rubber in a clear, flexible tubing	69	Clear	135 (57)
Tygothane® Precision Polyurethane Tubing Formulation C-210-A	For polyurethane applications requiring tight dimensional tolerances	82**	Transparent	200 (93)
Tygothane® Precision Polyurethane Pressure Tubing Formulation C-544-A I.B.	High-performance polyurethane tubing for physically demanding environments	85**	Clear <i>(between braid)</i>	180 (82)
Norprene® Industrial Grade Tubing Formulation A-60-G	Outlasts and outperforms neoprene, EPDM and other specialty rubber tubings	61	Black	275 (135)
Tygon® Fuel and Lubricant Tubing Formulation F-4040-A	Resists embrittlement caused by hydrocarbon-based fluids, remains flexible	57	Translucent Yellow	165 (74)
Tygon® UV Resistant Tubing Formulation R-3400	Stays flexible in ultraviolet environments	64	Black	165 (74)
Fluran® Severe Environment Tubing Formulation F-5500-A	Withstands the harshest of chemicals, even under high temperatures	60**	Black	400 (204)
Tygon® Inert Tubing Formulation SE-200	Complete clarity and high flexibility with the inertness of a fluoropolymer	67***	Clear	170 (77)
Chemfluor® FEP Tubing	For the ultimate in purity, chemical resistance and temperature resistance	55*	Translucent	400 (204)
Chemfluor® PFA Tubing		60*		500 (260)
Chemfluor® PTFE Tubing		58*		500 (260)

*Shore D Scale. **1-second reading. ***Durometer measured on outer jacket.

Flexible Tubing

Heat Shrinkable Tubing Cross Reference Chart

Manufacturer:	SUMITOMO®	RAYCHEM®	REMTEK®	ALPHA®	ECC®
Trade Name:	SUMITUBE®	THERMOFIT®	TECHFIT®	FIT®	INSULITE®
Commercial Grade	A4	CG-21	CCPE-105	-	CP 221
Flexible Polyolefin Clear	A2	RNF 100/2	GPO-135/2	FIT 221	V-2
Flexible Polyolefin Colors	B2	RNF 100/1	GPO-135/1	FIT 221	V-1
KYNAR®	K	Kynar	PVF-175	FIT 350	Kynar

Sumitube® Shrink Tubing

Sumitube™ is heat-shrinkable tubing which shrinks in radial direction when heated. It is made from such raw materials as polyolefin, fluorine polymer, and thermoplastic elastomer. A variety of products are available to meet various requests and requirements. The wide array of applications includes bundling, encapsulation, heat and corrosion protection, and insulation of electric wires and harnesses.

Applications:

- Heat-resistant protection, insulator protection, and mechanical protection for wires and parts
- Wire tying
- Water-resistant processing of wire end and wiring connections
- Corrosion inhibition of metal pipes
- Protection of oil resistance and chemical resistance of wires and parts
- Recognition and decoration of wires and parts
- Coating materials of condensers and batteries



Sumitube® A2

Sumitube® A2 is a flexible, clear polyolefin heat-shrinkable tubing which meets all of the material and functional requirements of Military Specification AMS-DTL-23053/5C, Class 2. Shrink temperature is 110°C. Operating temperature range is -55°C to +135°C and up to 200°C for short time durations. A2 is recommended for general purpose applications such as electrical insulation or lightweight harness jacketing, where visual inspection of the substrate is desirable. Sumitube® A2 is RoHS compliant. Clear only.



Sumitube® A2, A4 & B4

Grade(s)	Nominal Size	Inside DIA. As Supplied	Inside DIA. After Recovery	Wall Thickness After Recovery	Spool Size	
A2, A4, B2	3/64"	.046"	.023"	.016"	1,000'	
	1/16"	.063"	.031"	.017"		
	3/32"	.093"	.046"	.020"		
	A2, A4, B2	1/8"	.125"	.062"	.020"	500'
		3/16"	.187"	.093"	.020"	
		1/4"	.250"	.125"	.025"	
		3/8"	.375"	.187"	.025"	
		1/2"	.500"	.250"	.025"	
3/4"		.750"	.375"	.030"		
B2	5/8"	.625"	.312"	.030"	200'	
A2, A4, B2	1"	1.000"	.500"	.035"		
	1-1/2"	1.500"	.750"	.040"		
	2"	2.000"	1.000"	.045"		
A2, B2	3"	3.000"	1.500"	.050"	200'	
	4"	4.000"	2.000"	.055"		



SUMITUBE® A4

Sumitube® A4 is a lightweight flexible, heat shrinkable polyolefin tubing which has excellent weather (UV) resistance with good electrical properties and chemical resistance. Sumitube® A4 is available in many opaque glossy colors that are not affected by the color of the substrate. The Shrink temperature is 110°C. Operating temperature range is -55°C to +105°C. Sumitube® A4 is recommended for general purpose applications such as handle covering, radio antennas, insulating wire terminations, and light wire harness bundling. Sumitube® A4 is RoHS compliant. Available colors are Black, White, Red, Yellow, Blue, Green and Clear.



SUMITUBE® B2

Sumitube® B2 is a very flexible, flame-retarded, radiation-crosslinked heat shrinkable polyolefin tubing which meets all of the material and functional requirements of Military Specification AMS-DTL- 23053/5, Class 1 and Class 3. Shrink temperature is 90°C. Operating temperature range is -55°C to +135°C and up to 200°C for short time durations. B2 is recommended for use in general purpose applications such as wire marking, color coding, and electrical insulation of light wire harness assemblies. For higher expansion ratio versions, ask about B2(3X), B2(4X), and B2(4XC). Sumitube® B2 is RoHS compliant. Available colors are Black, White, Red, Yellow, Blue, Green, Violet, Gray and Orange.



Sumitube® Shrink Tubing

Product Name	Material	Feature(s)	Color(s)
Sumitube® A	Polyolefin	Oil and chemical resistance	Transparent: Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray, White and Clear
Sumitube® A2		SAE-AMS-DTL-23053 approved; Flexible	Clear
Sumitube® A4		Weather resistant	Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray, White and Clear (Colors are Opaque and Bright)
Sumitube® B		Flame-retardant	Black, Brown, Red, Orange, Yellow, Green, Blue, Purple and White (Colors are Pastels)
Sumitube® B2		Flame-retardant; SAE-AMS/UL approved; Flexible	Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray and White; Yellow/Green Stripe (Colors are Bright)
Sumitube® B2 (3X)		Flame-retardant; High shrink ratio; UL/CSA approved	Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray and White (Colors are Bright)
Sumitube® B8		Flame-retardant; UL/CSA approved; Semi-rigid	Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray and White
Sumitube® C		Shrinkage at low temperatures; Flexible; Transparent colors	Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray, White and Clear
Sumitube® D		Semi-rigid; Abrasion and chemical resistance; Mechanical strength	
Sumitube® F (Z)		Flame-retardant; UL224 approved; Flexible	Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray and White
Sumitube® F2 (Z)		Flame-retardant; UL/CSA approved; Flexible	
Sumitube® F3 (Z)		Flame-retardant; UL224 approved; Thin wall, quick shrinkage; Flexible	
Sumitube® F4 (Z)		Flame-retardant; UL/CSA approved; Thin wall, quick shrinkage; Flexible	
Sumitube® K		PVDF	
Sumitube® K2		PVDF	
Sumitube® LA	Polyolefin	Large diameter and thick wall	Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, White and Clear
Sumitube® LB		Flame-retardant; Large diameter and thick wall	Black, Brown, Red, Orange, Yellow, Green, Blue, Purple and White (Colors are Pastels)
Sumitube® O2B2		Flame-retardant; SAE-AMS/UL/CSA approved; Effective for fixing and waterproofing pipe; Flexible; Thinner adhesive	Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray and White
Sumitube® O2C		Effective for fixing and waterproofing pipe; Flexible; Thinner adhesive	Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray, White and Clear
Sumitube® SA2		Flame-retardant; High shrink ratio; Effective for waterproofing large gap objects and multiple wire joints with good adhesion to metals, polyolefins and PVC; Abrasion resistant	Black
Sumitube® V (300V)	PVC	Flame-retardant; UL224 approved	Clear
Sumitube® V (600V)	PVC	Flame-retardant; UL/CSA approved	Clear
Sumitube® W	Polyolefin	Dual wall structure; Effective filling for large gap objects	Black (Inner: Gray), Clear (Inner: Clear)
Sumitube® W3B2		Flame-retardant; SAE-AMS/UL/CSA approved; Effective for waterproofing of large gap objects with good adhesion to metals, polyolefins and PVC; Flexible; Thicker adhesive	Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray and White
Sumitube® W3B2 (4X)		Flame-retardant; UL approved; Effective for waterproofing of large gap objects with good adhesion to metals, polyolefins and PVC; Flexible; Thicker adhesive	
Sumitube® W3C		Effective for waterproofing of large gap objects with good adhesion to metals, polyolefins and PVC; Flexible; Thicker adhesive	Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray, White and Clear
Sumitube® W3F2		Flame-retardant; UL/CSA approved; Effective for waterproofing of large gap objects with good adhesion to metals, polyolefins and PVC; Flexible; Thicker adhesives	Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray and White

Flexible Tubing



Sumitube® K (Kynar®)

SUMITUBE K is a translucent semi-rigid, inherently flame retarded, heat-shrinkable PVDF tubing, that is recognized by Underwriters' Laboratories (UL) Subject 224 with a VW-1 rating and meets or exceeds the requirements of AMS-DTL-23053/8C. SUMITUBE K is tough and abrasion resistant in mechanical environments. It has excellent properties for cut-through and solvent resistance. Shrink temperature is 170°C. Operating temperature range is -55°C to +175°C. SUMITUBE K is recommended for applications for strain relieving components such as soldered connections and splices which are in high continuous operating temperature environments. The material is good for applications where abrasion resistance is important. RoHS compliant. Clear only.



Sumitube® K2 (Kynar®)

SUMITUBE K2 is a clear, flexible, inherently flame retarded heat-shrinkable PVDF tubing. Because it is flexible, SUMITUBE K2 is packaged in continuous lengths of 4' on spools. This provides long lengths, not available with standard PVDF tubing. SUMITUBE K2 is tough and abrasion resistant in mechanical environments and has excellent resistance to cut-through and solvents. SUMITUBE K2 meets or exceeds the requirements of AMS-DTL-23053/18B, Class 1 and UL-224, VW-1. The continuous operating temperature is -55°C to +175°C. The shrink temperature of SUMITUBE K2 is 150°C compared with 175°C for standard Kynar. SUMITUBE K2 is recommended for applications where the properties of standard PVDF are desirable, but with the added benefits of flexibility, greater clarity, reduced shrink temperature and long continuous lengths. RoHS compliant. Clear only.

Sumitube® K & K2 (Kynar®)

Size	Inside DIA. As Supplied	Inside DIA After Recovery	Wall Thickness After Recovery
3/64"	.046"	.023"	.010"
1/16"	.063"	.031"	.010"
3/32"	.093"	.046"	.010"
1/8"	.125"	.062"	.010"
3/16"	.187"	.093"	.010"
1/4"	.250"	.125"	.012"
3/8"	.375"	.187"	.012"
1/2"	.500"	.250"	.012"
3/4"	.750"	.375"	.017"
1"	1.000"	.500"	.019"
1-1/2"	1.500"	.750"	.020"
2"	2.000"	1.000"	.020"

NYLON FLEXIBLE PRESSURE TUBING

Our Nylon tubing is high quality pressure tubing, available in five formulations and a wide range of sizes. Used for applications that require toughness, resilience, a small bend radius and high burst strength. Nylon pressure tubing is a high-performance, long-lasting alternative to copper, rubber, aluminum and other types of plastic tubing.

Type H (Burst Pressure - 2500 PSI) & Type T (Burst Pressure - 1000 PSI)

Types T and H Nylon tubing are thin, heavy walled, general purpose tubing made from Type 6/6 nylon. These products offer the highest strength and are FDA compliant for use in food and beverage handling applications. Color is Natural.

Nylon Flexible Pressure Tubing (Type T Natural)

O.D.	I.D.	O.D Tolerance	Wall Tolerance	Coil Length
1/8"	.095"	+ .002" - .004"	+ / - .003"	1500'
5/32"	.106"	+ .002" - .004"	+ / - .003"	1000'
3/16"	.137"	+ .002" - .008"	+ / - .003"	1000'
1/4"	.190"	+ .002" - .008"	+ / - .003"	500'
5/16"	.242"	+ .002" - .008"	+ / - .003"	250'
3/8"	.295"	+ .002" - .010"	+ / - .004"	250'



Nylon Flexible Pressure Tubing (Type H Natural)

O.D.	I.D.	O.D Tolerance	Wall Tolerance	Coil Length
1/8"	.079"	+ .002" - .004"	+ / - .003"	1500'
3/16"	.111"	+ .002" - .008"	+ / - .003"	1000'
1/4"	.150"	+ .002" - .008"	+ / - .003"	500'
5/16"	.188"	+ .002" - .008"	+ / - .003"	250'
3/8"	.225"	+ .002" - .010"	+ / - .004"	250'



Type LP (Burst Pressure - 750 PSI) & Type LM (Burst Pressure - 1000 PSI)

Type LP nylon tubing is a low cost, low pressure, general purpose Type 6 nylon tubing. It is heat and light stabilized. Color is Black. Type LM Nylon tubing is a premium, high-flex tubing available in two types, Natural or Black. This type exhibits improved heat and light stability. Type LM offers excellent chemical resistance and low moisture absorption.

Minimum order of 1 coil on all Nylon Pressure Tubing.

Nylon Flexible Pressure Tubing (Type LP)

O.D.	I.D.	O.D Tolerance	Wall Tolerance	Coil Length
1/8"	.096"	+ .002" - .008"	+ / - .003"	1500'
3/16"	.138"	+ .002" - .006"	+ / - .003"	1000'
1/4"	.190"	+ .003" - .011"	+ / - .003"	500'
5/16"	.242"	+ .003" - .011"	+ / - .003"	250'
3/8"	.295"	+ .003" - .016"	+ / - .004"	250'
1/2"	.375"	+ .003" - .019"	+ / - .004"	150'



Nylon Flexible Pressure Tubing (Type LM)

O.D.	I.D.	O.D Tolerance	Wall Tolerance	Coil Length
1/8"	.095"	+ .002" - .004"	+ / - .002"	1500'
3/16"	.137"	+ .002" - .006"	+ / - .003"	1000'
1/4"	.180"	+ .002" - .008"	+ / - .003"	500'
5/16"	.232"	+ .002" - .008"	+ / - .003"	250'
3/8"	.275"	+ .002" - .010"	+ / - .004"	250'
1/2"	.375"	+ .005" - .010"	+ / - .004"	150'



Polyethylene Lay Flat Tubing

Make your own Polybags. Heat seal to exact length as required. It's easy to make Polybags by using any of the sealers offered by Total Plastics. Call us for more information.

Polyethylene Lay Flat Tubing

Width Size	Thickness	Feet Per Roll
1-1/2"	.002"	1500
2"	.002"	1500
2"	.004"	750
2-1/2"	.002"	1500
2-1/2"	.004"	750
3"	.002"	1500
3"	.004"	750
3"	.006"	500
4"	.002"	3000
4"	.004"	1500
4"	.006"	1000
5"	.002"	3000
5"	.004"	1500
5"	.006"	1000
6"	.002"	3000
6"	.004"	1500
6"	.006"	1000
7"	.002"	3000
7"	.004"	1500
7"	.006"	1000
8"	.002"	3000
8"	.004"	1500
8"	.006"	1000
9"	.002"	3000
9"	.004"	1500
9"	.006"	1000
10"	.002"	3000
10"	.004"	1500
12"	.002"	3000
12"	.004"	1500
12"	.006"	1000
14"	.002"	2700
14"	.004"	1350
16"	.002"	2700
16"	.004"	150
16"	.006"	900
18"	.002"	2400
18"	.004"	1200
18"	.006"	900
20"	.002"	2100
20"	.004"	1050
20"	.006"	700

Teflon® PFA Tubing

Teflon® PFA transparent tubing is the most chemical and corrosion resistant tubing. It meets FDA Standard CFR21 for food packaging, on paragraph 177.1550, and features the widest temperature range of -268°C to 260°C. Do not sterilize with radiation.



Teflon® TFE Tubing

Teflon® TFE features many unique and useful characteristics. If your temperature requirements range up to 500°F, Teflon® TFE is a superior choice. It is resistant to virtually all corrosive chemicals. Its dielectric properties favor it for electronic and electrical service.



Teflon® TFE Tubing
(Heavy Wall Fractional)

I.D.	Wall
1/16"	.063"
1/8"	.063"
5/32"	.047"
3/16"	.063"
1/4"	.063"
3/8"	.063"
1/2"	.063"
5/8"	.063"
1"	.063"

Teflon® TFE Tubing
(Industrial Wall Fractional)

I.D.	Wall
1/16"	.030"
3/32"	.030"
1/8"	.030"
3/16"	.030"
1/4"	.030"
5/16"	.030"
3/8"	.030"
7/16"	.030"
1/2"	.030"
5/8"	.030"
11/16"	.030"
3/4"	.040"

Teflon® FEP Tubing

Teflon® FEP transparent tubing is excellent for acids (all concentrations), aliphatic alcohols, aldehydes, bases, esters, hydrocarbons (aliphatic, aromatic and halogenated) ketones and strong oxidizing agents. Can be cleaned in boiling nitric acid for high-purity analysis. Do not sterilize with radiation. The working temperature range is -75°C to 205°C.



Teflon® FEP Tubing
(Heavy Wall Fractional)

I.D.	Wall
1/16"	.063"
1/8"	.063"
5/32"	.047"
3/16"	.063"
1/4"	.063"
3/8"	.063"
1/2"	.063"
5/8"	.063"
3/4"	.063"
7/8"	.063"
1"	.063"

Teflon® FEP Tubing
(Industrial Wall Fractional)

I.D.	Wall
1/16"	.030"
3/32"	.030"
1/8"	.030"
3/16"	.030"
1/4"	.030"
5/16"	.030"
3/8"	.030"
7/16"	.030"
1/2"	.030"
5/8"	.030"
11/16"	.030"
3/4"	.040"

Teflon® PFA Tubing
(Industrial Wall Fractional)

I.D.	Wall
1/16"	.030"
1/8"	.030"
3/16"	.030"
1/4"	.030"
5/16"	.030"
3/8"	.030"
7/16"	.030"
1/2"	.030"
5/8"	.030"
11/16"	.030"
3/4"	.040"

Flexible Tubing

FEP Roll Cover

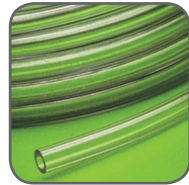
Engineered for the printing industry to prevent ink build-up on rollers, and offer the advantage of being static dissipative.

- High performance anti-static fluoropolymer construction
- Reduces/eliminates ink build-up on your rollers
- Reduces/eliminates static charge
- Reduces maintenance costs
- Engineered for ease of installation
- Provides extended service life
- For water- and oil-based ink presses
- Field tested
- Chemically inert

Call us for sizes and availability.

Clear Flexible Vinyl Tubing

I.D.	O.D.	Wall Thickness
1/16"	1/8"	1/32"
1/8"	1/4"	1/16"
3/16"	5/16"	1/16"
3/16"	3/8"	3/32"
3/16"	7/16"	1/8"
1/4"	3/8"	1/16"
1/4"	7/16"	3/32"
1/4"	1/2"	1/8"
5/16"	7/16"	1/16"
5/16"	1/2"	3/32"
3/8"	1/2"	1/16"
3/8"	9/16"	3/32"
3/8"	5/8"	1/8"
7/16"	9/16"	1/16"
7/16"	5/8"	3/32"
1/2"	5/8"	1/16"
1/2"	11/16"	3/32"
1/2"	3/4"	1/8"
1/2"	13/16"	5/32"
9/16"	3/4"	3/32"
5/8"	13/16"	3/32"
5/8"	7/8"	1/8"
3/4"	1"	1/8"
3/4"	1-1/16"	5/32"
3/4"	1-1/8"	3/16"
3/4"	1-1/4"	1/4"
7/8"	1-1/8"	1/8"
1"	1-1/4"	1/8"
1"	1-3/8"	3/16"
1"	1-1/2"	1/4"
1-1/4"	1-5/8"	3/16"
1-1/4"	1-3/4"	1/4"
1-1/2"	1-7/8"	3/16"
1-1/2"	2"	1/4"
1-3/4"	2-1/4"	1/4"
2"	2-3/8"	3/16"
2"	2-1/2"	1/4"
2-1/2"	3"	1/4"
3"	3-1/2"	1/4"



Clear Flexible Vinyl Tubing

- Optically Clear
- Dimensional Stability
- Odorless
- Tasteless and Non-toxic

Applications:

- Chemical liners
- Food / Beverage
- Laboratory
- Instrumentation
- Water / Fluid lines
- Material handling



Teflon® Spaghetti Tubing

Benefits:

- Abrasion resistance
- Crack resistance
- Chemical resistance
- Unlimited flexibility
- Shock
- Non-stick
- Non-aging
- Non-toxic
- High pressure resistance

Applications:

- Aerospace
- Electronic
- Mechanical
- Chemical
- Automotive
- Medical
- Industrial
- Food processing

Teflon® Spaghetti Tubing

AWG. Size	Nominal I.D.	Heavy Wall	Standard Wall	Thin Wall	Light Wall
32	.010"	-	-	.007"	.005"
30	.012"	-	.009"	.009"	.006"
28	.015"	-	.009"	.009"	.006"
26	.018"	-	.009"	.009"	.006"
24	.022"	.016"	.012"	.010"	.006"
23	.026"	.016"	.012"	.010"	.006"
22	.028"	.016"	.012"	.010"	.006"
21	.032"	.018"	.012"	.012"	.006"
20	.034"	.020"	.016"	.012"	.006"
19	.038"	.020"	.016"	.012"	.006"
18	.042"	.020"	.016"	.012"	.006"
17	.048"	.020"	.016"	.012"	.006"
16	.053"	.020"	.016"	.012"	.006"
15	.059"	.020"	.016"	.012"	.006"
14	.066"	.020"	.016"	.012"	.008"
13	.076"	.020"	.016"	.012"	.008"
12	.085"	.020"	.016"	.012"	.008"
11	.095"	.020"	.016"	.012"	.008"
10	.106"	.025"	.016"	.012"	.008"
9	.118"	.025"	.020"	.015"	.008"
8	.133"	.030"	.020"	.015"	.008"
7	.148"	.030"	.020"	.015"	.008"
6	.166"	.030"	.020"	.015"	.010"
5	.185"	.032"	.020"	.015"	.010"
4	.208"	-	.020"	.015"	.010"
3	.234"	-	.020"	.015"	.010"
2	.263"	-	.020"	.015"	.010"
1	.294"	-	.020"	.015"	.010"
0	.330"	-	.020"	.015"	.012"
1/8	.125"	-	.020"	.015"	.008"
3/16	.186"	-	.020"	.015"	.010"
1/4	.255"	-	.020"	.015"	.010"
5/16	.318"	-	.020"	.015"	.012"
3/8	.381"	-	.025"	.020"	.015"
7/16	.444"	-	.025"	.020"	.018"
1/2	.507"	-	.025"	.020"	.018"
5/8	.632"	-	.030"	.020"	-
3/4	.760"	-	.035"	-	-
7/8	.885"	-	.035"	-	-
1	1.010"	-	.035"	-	-

