Fluid Transfer Tubing

CATALOGUE



TYGON®
Excellence By Design

TYGON S3™
Safe Smart Sustainable

VERSILON™
Fluid Performance

PROCESS SYSTEMS

SAINT-GOBAIN

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PRODUCT OVERVIEW

Product and Description	Page #	Material Category	Market: Cleaning Chemical Dispensing	Dairy	Environmental Fluid Sampling and Analysis	Food & Beverage Dispensing	Small Engine	Other Markets
Tygon S3™ B-44-3 Phthalate-Free Flexible Tubing for Beverage Transfer	6	Thermoplastic Elastomer Tubing				•		
Tygon S3™ B-44-4X Phthalate-Free Flexible Tubing for Food and Beverage Dispensing	6	Thermoplastic Elastomer Tubing				•		
Tygon S3™ B-44-4X IB Reinforced Phthalate-Free Flexible Tubing for Food and Beverage Dispensing	7	Thermoplastic Elastomer Tubing				•		
Tygon S3™ E-3603 Phthalate-Free Tubing for Food and Beverage Dispensing	7	Thermoplastic Elastomer Tubing				•		
Tygon S3™ E-LFL Peristaltic Pump Tubing for Food and Beverage Dispensing	8	Thermoplastic Elastomer Tubing				•		
Tygon® 2375 Chemical Resistant Tubing for Food and Beverage Applications	8	Thermoplastic Elastomer Tubing				•		
Tygon® A-60-F Long-Life, Temperature-Resistant Tubing for Food and Beverage Applications	9	Thermoplastic Elastomer Tubing				•		
Tygon® A-60-F IB Long-Life, Temperature-Resistant Reinforced Tubing for Food and Beverage Applications	9	Thermoplastic Elastomer Tubing				•		
Tygon® B-44-FF Oil & Fatty Food Resistant Food & Beverage Tubing	10	Thermoplastic Elastomer Tubing				•		
Tygon® E-1000 Pumpable Tubing for Food and Beverage Dispensing	10	Thermoplastic Elastomer Tubing				•		
Tygon® E-70-V-CE Taste Barrier Tubing for Food and Beverage Transfer	11	Thermoplastic Elastomer Tubing				•		
Tygon® SPT-50 LF Superior Hygiene for Milk Dispensing Applications	11	Silicone & Rubber Tubing				•		
Tygon® SPT-3350 Silicone Tubing for Food and Beverage Transfer	12	Silicone & Rubber Tubing				•		
Tygon® SPT-3370 IB Tubing for Food and Beverage Transfer Under Pressure	12	Silicone & Rubber Tubing				•		
Tygon® XL-60 Long Life Pump Tubing for Food and Beverage Applications	13	Thermoplastic Elastomer Tubing				•		
Tygon S3™ M-34-R Tubing for Milking Equipment	13	Thermoplastic Elastomer Tubing		•				
Tygon S3™ A24, A24-C Vacuum Tubing for Milking Equipment	14	Thermoplastic Elastomer Tubing		•				
Tygon® II Tubing for Milking Equipment	14	Silicone & Rubber Tubing		•				
Tygon® F-4040-A High-Performance Fuel and Lubricant Tubing for Small Engines	15	Thermoplastic Elastomer Tubing					•	
Tygon® LP-1100 Designed for Gasoline Powered Ground Supported Equipment	15	Thermoplastic Elastomer Tubing					•	
Tygon® LP-1200 Clear, High-Performance Fuel Tubing for Small Engines	16	Thermoplastic Elastomer Tubing					•	
Tygon® LP-1500 Designed for Gasoline Powered Handheld Equipment	16	Thermoplastic Elastomer Tubing					•	
Tygon® LP-1600 Designed Specifically for Outboard Marine Applications	17	Thermoplastic Elastomer Tubing					•	
Tygon® SPT-60 L High-Precision Tubing for Automatic Water Sampling Equipment	17	Silicone & Rubber Tubing			•			
Tygon® WSA-60 High-Precision Tubing for Water Analysis Applications	18	Thermoplastic Elastomer Tubing			•			
Tygon® A-60-G High-Performance Chemical Dispensing Alternative to Rubber Tubing	18	Thermoplastic Elastomer Tubing	•					
Tygon® Chemical Long Pump Life Chemical Dispensing Tubing	19	Thermoplastic Elastomer Tubing	•					
Tygon® 2375-C Ultra Chemical Resistant Tubing for Chemical Transfer Applications	19	Thermoplastic Elastomer Tubing	•					
Tygon® Pneumatic HS Kink-Resistant, High-Performance Flexible Tubing for Pneumatic Lines	20	Urethane Tubing						•†
Tygon® Pneumatic SR High-Performance, Spark-Resistant Tubing for Pneumatic Lines	20	Urethane Tubing						•†
Versilon™ SPX-50 High-Strength Silicone Tubing	22	Silicone & Rubber Tubing				•		•†
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Versilon™ 2001 Plasticizer-Free Chemical Resistant Pump Tubing	23	Thermoplastic Elastomer Tubing	•		•	•		•†
Versilon™ C-210-A Oil, Fuel and Grease Resistant Tubing	23	Thermoplastic Elastomer Tubing					•	•†
Versilon™ C-544-A IB Multi-Purpose Abrasion Resistant Tubing	24	Thermoplastic Elastomer Tubing				•		•†
Versilon™ R-3400 UV-Resistant Acid Transfer Tubing	24	Thermoplastic Elastomer Tubing						•†
Versilon™ F-5500 A Pumpable Dry Cleaning Fluid Line and Solvent Recovery Tubing	25	Silicone & Rubber Tubing	•					•†
Versilon™ SE-200 Phthalate-Free Chemical Inert Transfer Tubing	25	Thermoplastic Elastomer Tubing				•		•†
Versilon™ Silver Phthalate-Free Antimicrobial Tubing	26	Thermoplastic Elastomer Tubing				•		•†
Versilon™ FEP High-Performance Transparent Fluoropolymer Tubing	26	Fluoropolymer Tubing			•	•		•†
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Versilon™ PTFE High-Temperature, High-Pressure Fluoropolymer Tubing	27	Fluoropolymer Tubing						•†
Versilon™ 367 High-Purity, Superior Surface Smooth Fluoropolymer Tubing	28	Fluoropolymer Tubing						•†
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Versilon™ ETFE Radiation-Resistant Tubing with Excellent Mechanical Properties	29	Fluoropolymer Tubing						•†
Versilon™ Duality Multi-Purpose High-Purity Tubing	29	Fluoropolymer Tubing			•			•†

† Tubing applications include lubrication/degreaser dispensing, water purification systems, chemical processing and general chemical applications. For information regarding additional applications please contact customer service at 1-800-798-1554 or contact us online at www.processsystems.saint-gobain.com

For complete compliance information, visit **www.processsystems.saint-gobain.com**

MISSION

To co-develop fluid management and sealing solutions with customers using a multi-materials toolset.

Our flexible, global operating model will react quickly to customer needs.

We will provide peace-of-mind to our customers, inspiring our employees and building trust with our customers.

Our employees are experts in high-performance fluid transfer applications and use this expertise to provide innovative solutions.



TYGON®
Excellence By Design

Precision-designed tubing for peak performance and regulatory compliance, across a range of specialized fluid transfer applications.

TYGON S3™
Safe Smart Sustainable

Phthalate-free, bio-based tubing product line for the food and beverage market.

VERSILON™
Fluid Performance

Premium quality tubing, hoses and fittings fulfilling a range of demanding certification, performance and safety standards.

Saint-Gobain's Process Systems Fluid Transfer business helps customers achieve safety, performance and brand assurance through a broad range of capabilities that rely on superior engineering and customer support.

Our products include the food & beverage dispensing, cleaning chemical dispensing, raw milk collection and small fuel engine industries. We are helping customers in all of these industries achieve goals in innovation, efficiency, sustainability and product integrity through customized solutions such as flexible tubing, hoses, fittings, and manifolds.

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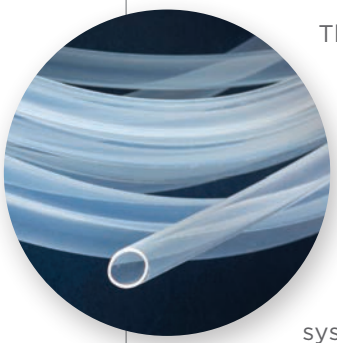
TUBING SELECTION GUIDE



The information presented in this brochure is intended to serve as a guide for selection and specification of flexible tubing. Proper use of this information will lead to the design of systems which provide both optimized tubing performance and overall increased productivity.

In choosing the right tubing for your application there are several factors to consider. Listed to the right are questions which will help direct you in the selection of the proper Tygon® tubing for your specific application. It is required to test tubing under the actual service conditions prior to specifying a particular tubing formulation. If field testing is not practical, laboratory tests that simulate field conditions must be employed.

Assistance in tubing selection is available from our worldwide network of authorized Tygon® tubing distributors. For the name of the distributor nearest you, contact customer service at 1-800-798-1554.

1 What fluid(s) is to be transported?

2 What range of temperatures will the tubing be subjected to?

3 What is the maximum line pressure or vacuum?

4 Are specific dimensional tolerances required?

5 What degree of tubing flexibility is desired?

6 What are the conditions of the ambient environment?

7 Is there a minimum bend radius required?

8 Is clarity of tubing important?

9 What compliance documentation is needed? (e.g., FDA, NSF, ISO 10993, USP, etc.)

10 What method(s) of cleaning and/or sterilization are to be employed?

11 Is resistance to flexural fatigue or abrasion important?

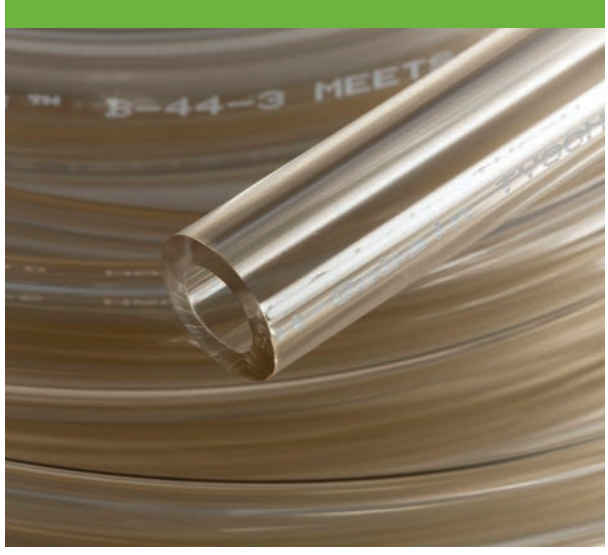
12 Is particle spallation of tubing a concern while used in a peristaltic pump?

13 Will the level of extractability affect the transported fluid?

14 Will any fluid loss or alteration through sorption (adsorption/ absorption) affect your final results?

15 Is disposal of contaminated tubing an issue?

16 Will particle entrapment resulting in increased risk of bacterial growth be a concern?





PHTHALATE-FREE FLEXIBLE TUBING FOR BEVERAGE TRANSFER

TYGON S3™ B-44-3

Tygon S3™ B-44-3 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 S3™ B-44-3 tubing will not affect the taste or odor of products transferred through it, while its excellent non-wetting properties facilitate complete drainage and permit simple flush-cleaning.

The versatility and proven performance of Tygon S3™ B-44-3 tubing have made it today's most widely specified clear, flexible plastic tubing in beverage transfer applications.

- Clear as glass for easy visual monitoring of flow
- Lightweight and flexible for easy, quick installation
- Broad chemical resistance
- Non-wetting properties allow easy cleaning and complete drainage
- Contains no BPA or phthalates

PHTHALATE-FREE TUBING FOR FOOD & BEVERAGE DISPENSING

TYGON S3™ B-44-4X

Tygon S3™ B-44-4X tubing from Saint-Gobain Performance Plastics is now phthalate-free. Saint-Gobain is proud to be among the first companies to offer sustainable flexible tubing products. The bio-based Tygon S3™ line combines the high performance standards customers demand with an eco-friendly tubing design.

Producers of food, milk and dairy products insist upon Tygon S3™ B-44-4X 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.

- Smooth, non-porous bore will not trap particulates or promote bacterial growth
- Resistant to harsh alkaline cleaners and sanitizers
- Excellent alternative to rigid piping systems
- Contains no BPA or phthalates

For complete compliance information, visit **www.processsystems.saint-gobain.com**



REINFORCED TUBING FOR FOOD & BEVERAGE DISPENSING

TYGON S3™ B-44-4X IB

Tygon S3™ B-44-4X IB tubing is designed specifically for food and beverage dispensing applications involving elevated pressure.

Tygon pressure tubing has the identical product features found in Tygon S3™ B-44-4X tubing (clear, lightweight, flexible, smooth, non-porous bore to inhibit particle entrapment, outstanding resistance to harsh alkaline cleaners and unaffected by commonly used sanitizers), with reinforcement added to withstand up to four times the pressure.

Lightweight and easy to handle, Tygon S3™ B-44-4X IB tubing goes into service quickly. It readily curves around corners and obstructions, requiring a minimum of couplings and fittings. Its flexibility can save up to one-third the footage and much of the labor required to install rigid stainless steel, glass tubing or piping.

- Handles four times the pressure of non-reinforced tubing
- Smooth, non-porous bore resists particle entrapment
- Clear wall enables visualization of fluid flow
- Connects easily to Sanitary Fittings
- Contains no BPA or phthalates



PHTHALATE-FREE TUBING FOR FOOD & BEVERAGE DISPENSING

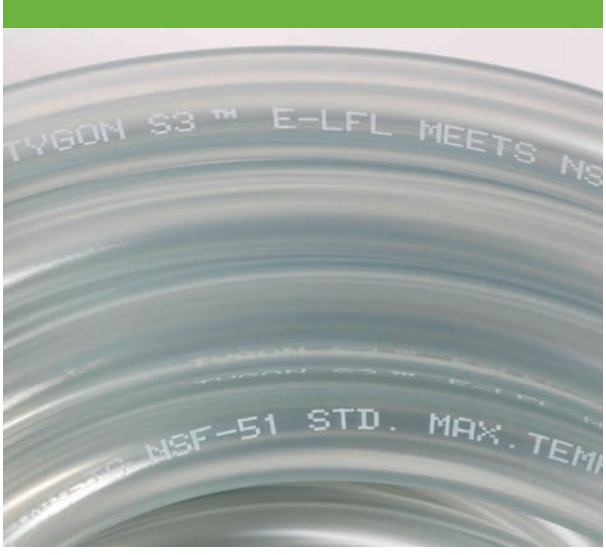
TYGON S3™ E-3603

Tygon S3™ E-3603 tubing from Saint-Gobain Performance Plastics is now phthalate-free. Saint-Gobain is proud to be among the first companies to offer sustainable flexible tubing products.

The bio-based Tygon S3™ line combines the high performance standards customers demand with an eco-friendly tubing design. Crystal clear and flexible, long-lasting and crack-resistant, the new Tygon S3™ E-3603 tubing delivers the same superior performance you have come to expect, but now in a formulation that contains a phthalate-free plasticizer.

Tygon S3™ E-3603 tubing handles the most stringent foods and beverages. It is non-oxidizing and non-contaminating, and less permeable than rubber tubing. The glassy smooth inner bore helps prevent buildup to facilitate cleaning. Coils are marked at 30.4 cm intervals for easy measuring.

- Outstanding chemical resistance
- Lot-to-lot consistency for reproducible results
- Non-oxidizing and non-contaminating
- Smooth, polished inner wall
- Slips easily over fittings and grips securely for simple lab set-ups
- Contains no BPA or phthalates
- Standard sizes available to hold full vacuum at room temperature





PERISTALTIC PUMP TUBING FOR FOOD & BEVERAGE DISPENSING

TYGON S3™ E-LFL

Tygon S3™ E-LFL tubing from Saint-Gobain Performance Plastics is now phthalate-free. Saint-Gobain is proud to be among the first companies to offer sustainable flexible tubing products.

The bio-based Tygon S3™ product line combines the high performance standards customers demand with an eco-friendly tubing design. Tygon S3™ E-LFL tubing is our best performing peristaltic pump tubing and has no industry equivalent.

It has been tested rigorously to ensure that it meets the same physical standards as the old Tygon® LFL tubing, including 1,000 hours of peristaltic pump tubing life at 0 bar back pressure, low particulate spallation and chemical resistance.

- Long flex life — reduces downtime due to pump failure
- Broad chemical resistance
- Extremely low particle spallation — reliable for sensitive-fluid applications
- Contains no BPA or phthalates

CHEMICAL RESISTANT TUBING FOR FOOD & BEVERAGE APPLICATIONS

TYGON® 2375

In order to be effective in highly regulated industries such as hospitality and institutional cleaning, dispensing tubing materials must be resistant to the chemicals found in various cleaners used during the sanitation process, as well as those found in the food product itself.

Depending on the food and beverage product, cleaner, and/or temperature to which the tube is exposed, the tubing may require varying levels of chemical resistance. For example, products with alcoholic or acidic content, such as wine or orange juice can degrade or damage the tubing at a faster rate than products such as iced tea.

Tygon® 2375 chemical resistant tubing for food and beverage applications offers an unequaled combination of chemical resistance, clarity and flexibility. Tygon® 2375 tubing is virtually unaffected by acids, bases, ketones, salts and alcohols.

- Outstanding chemical resistance
- Does not alter the food media taste
- Great flexibility and bend radius
- Non-DEHP for low extractables
- Plasticizer-free for low extractable
- Safer disposal
  - Releases no harmful and corrosive hydrochloride gas
- Smoother inner surface
  - Provides better flow and inhibits particulate buildup
- Low sorption
  - Minimizes cross-contamination
- Clear tubing for easier and better observation

For complete compliance information, visit **www.processsystems.saint-gobain.com**



LONG-LIFE TUBING FOR FOOD & BEVERAGE APPLICATIONS

TYGON® A-60-F

Formulated to withstand extreme temperatures from -75°F to 275°F, Tygon® A-60-F tubing will not crack or deteriorate when used in demanding food and beverage applications.

Extremely flexible, it 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, it 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.

- Long flex life in peristaltic pumps
- Temperature resistant from -75°F to 275°F
- Compatible with virtually all common sanitizers and cleaners
- Ozone and UV light resistant
- Repeatedly autoclavable
- Chemically compatible with a wide range of food types and cleaners



REINFORCED TUBING FOR FOOD & BEVERAGE APPLICATIONS

TYGON® A-60-F IB

Formulated to withstand extreme temperatures from -75°F to 275°F, Tygon® A-60-F IB tubing will not crack or deteriorate when used in demanding food and beverage applications.

Certain applications require using pressures that only reinforced tubing can withstand. For those applications, Tygon® A-60-F IB tubing is now available. It has the same desirable properties as Tygon® A-60-F tubing with an additional reinforcement embedded within its walls to withstand elevated pressure.

- Temperature resistant from -75°F to 275°F
- Compatible with virtually all common sanitizers and cleaners
- Ozone and UV light resistant
- Repeatedly autoclavable
- Chemically compatible with a wide range of food types and cleaners



OIL & FATTY FOOD RESISTANT FOOD & BEVERAGE TUBING

TYGON® B-44-FF

Tygon® B-44-FF tubing delivers clarity, high tear strength and excellent abrasion resistance, making it ideal for many food and beverage applications. It offers exceptional resistance to oils and fatty foods.

While many rubber and plastic materials exhibit resistance to certain solvents, oils and chemicals, Tygon® B-44-FF tubing resists a much wider range of substances.

Plasticizer extraction leading to embrittlement is one of the most frequent causes of failure when flexible tubing is exposed to harsh chemicals. Tygon® B-44-FF tubing is plasticizer-free and remains flexible even when cycled through temperature extremes; it can be safely used in temperatures ranging from -100°F (-73°C) to 175°F (79°C).

- Excellent resistance to oils and fatty foods
- Consistently tight dimensional tolerances
- Excellent abrasion and tear resistance
- Retains flexibility in sub-zero environments
- High tear resistance
- Temperature resistant from -100°F (-73°C) to 175°F (79°C)

Note: Minimum order quantity required. Contact factory for inventory information.



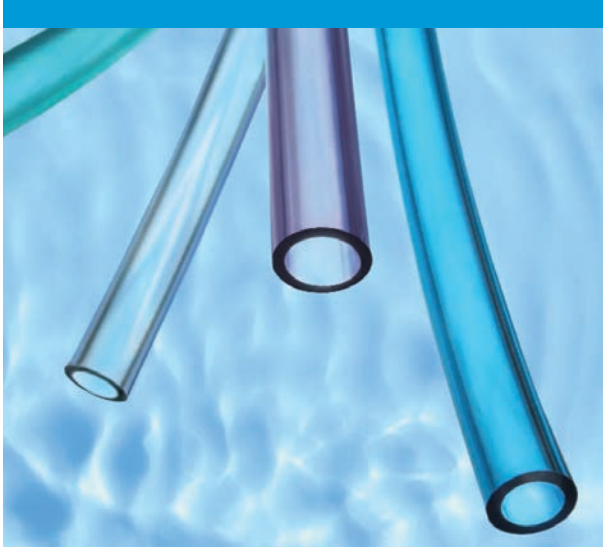
PUMPABLE TUBING FOR FOOD & BEVERAGE DISPENSING

TYGON® E-1000

Soft and flexible, Tygon® E-l000 Non-DEHP Tubing delivers superior performance in a formulation that contains non-DEHP [Bis (2-ethylhexyl) phthalate] plasticizers.

Moving to non-DEHP tubing is part of our commitment to our customers to ensure product quality and safety. Tygon® E-l000 Non-DEHP Tubing has been tested rigorously to meet stringent standards for low temperature and corrosive chemical resistance.

- Soft and flexible
- Low-temperature resistant for low level cryogenic applications
- Resistant to corrosive chemicals
- Low durometer for use in low-torque pump applications



TASTE BARRIER TUBING FOR FOOD & BEVERAGE TRANSFER

TYGON® E-70-V-CE

Tygon® E-70-V-CE tubing is specifically formulated to transfer water and beverages without imparting any “plastic” taste sometimes found in PVC tubing. It is produced with a smooth, plasticizer-free, hydrophobic inner surface to help maintain fluid purity. In addition, it meets FDA requirements for food contact, ensuring the safety of the user.

Tygon® E-70-V-CE tubing is made by the leading manufacturer of specialty tubing for the food and beverage industries. It’s exceptionally flexible, allowing for tight bends and easy installation on dispensing units. Its special construction will ensure a long tubing life, lessening the need for constant replacement.

- Plasticizer-free fluid pathway
- Smooth inner surface
- Extremely low absorption rate
- Custom colors, sizes and lengths
- High clarity
- Hydrophobic inner surface reduces taste transfer

Note: Minimum order quantity required. Contact factory for inventory information.



SUPERIOR HYGIENE FOR MILK DISPENSING APPLICATIONS

TYGON® SPT-50 LF

Tygon® SPT-50 LF tubing is a new, proprietary platinum-cured silicone tubing formulation specifically designed to address the root cause of hygiene issues in milk dispensing applications. By specifically addressing the behavior of heated milk in dispensing applications, Tygon® SPT-50 LF tubing helps provide better hygiene in this type of equipment.

Fouling is defined as the accumulation of unwanted material on solid surfaces to the detriment of function. Protein nature (size and folding) and surface properties (roughness, charges, hydrogen bonding) are the main elements that play a role in the milk fouling.

The accumulation of protein deposit on the walls of a dispensing tubing product makes rigorous cleaning compulsory, not only for sanitary reasons, but also to ensure a proper fluid flow.

- Anti-fouling technology for improved system hygiene
- Ultra-low extractables to eliminate taste and odor impact
- Excellent flexibility
- Temperature range from -80˚F to 392˚F (-62˚C to 200˚C)
- Available in 50 and 65 durometers

Note: Minimum order quantity required. Contact factory for inventory information.



SILICONE TUBING FOR FOOD & BEVERAGE TRANSFER

TYGON® SPT-3350

The inner surface of Tygon® SPT-3350 silicone tubing has been designed to reduce the risk of particle entrapment and microscopic build-up during fluid transfer. In-house analysis of the inner surface of Tygon® SPT-3350 silicone tubing compared to other silicone tubing shows that it is up to three times smoother.

A smoother fluid path also helps to facilitate complete sanitation of a fluid transfer system. Even in repeat use applications, Tygon® SPT-3350 silicone tubing may prevent residue build-up, aiding in complete cleaning and sterilization.

Additionally, the smooth inner surface of the Tygon® SPT-3350 silicone tubing improves fluid flow characteristics by reducing surface area.

- Ultra-smooth inner bore reduces potential for particle entrapment
- Minimal extractable help maintain fluid integrity
- Excellent fluid flow characteristics
- Complete inventory of standard sizes available, including metric sizes

Note: Minimum order quantity required. Contact factory for inventory information.



TUBING FOR FOOD & BEVERAGE TRANSFER UNDER PRESSURE

TYGON® SPT-3370 IB

Braid reinforced for increased pressure resistance, Tygon® SPT-3370 IB silicone tubing is frequently specified in the most demanding applications requiring sanitary transfer of fluids. Its smooth inner surface reduces the risk of particle entrapment and inhibits excessive residue and microscopic bacterial buildup; cleaning and sterilization cycles may become more effective as a result.

Additionally, an improvement in fluid flow characteristics may occur from the reduced surface area and lowered absorption of fluids to the wall.

Tygon® SPT-3370 IB silicone tubing can easily withstand repeated SIP and CIP cleaning and sterilization cycles, making it ideal for repeat-use applications. Its flexibility, durability, chemical and temperature resistance provide a unique combination of characteristics required in many food and beverage applications.

- Consistently smooth inner surface limits particle entrapment
- Platinum cured to minimize extractable
- Tough braid reinforcement permits use under elevated working pressures
- Withstands repeated CIP and SIP cleaning and sterilization
- Custom color striping available

Note: Minimum order quantity required. Contact factory for inventory information.



PUMP TUBING FOR FOOD & BEVERAGE APPLICATIONS

TYGON® XL-60

Designed specifically for use in peristaltic pump applications, Tygon® XL-60 tubing maintains a pump life of over 500 hours. With a durometer hardness of Shore A 60, it is extremely flexible and exhibits superior flex life, reducing downtime due to pump tubing failure.

Tygon® XL-60 tubing can be considered an alternative to silicones and PVC when longer pump tubing life is required.

Tygon® XL-60 tubing is translucent in color and has excellent chemical resistance to a wide range of fluids, including acids and bases. It also exhibits excellent resistance to ozone, oxygen and sunlight aging. Tygon® XL-60 tubing remains flexible at -40°F and is temperature resistant up to 250°F.

- DEHP free
- Long flex life in peristaltic pumps
- Temperature resistant up to 250°F
- Low extractables
- Alternative to PVC
- Clear and flexible
- Custom colors available



TUBING FOR MILKING EQUIPMENT

TYGON S3™ M-34-R

Tygon S3™ M-34-R tubing from Saint-Gobain Performance Plastics is now phthalate-free. Saint-Gobain is proud to be among the first companies to offer sustainable flexible tubing products. The bio-based Tygon S3™ line combines the high performance standards customers demand with an eco-friendly tubing design.

Tygon S3™ M-34-R tubing is specially formulated to reduce the risks that can occur with the use of rubber tubing. Many regulatory sanitarians throughout the world recognize Tygon S3™ as the preferred tubing for raw milk transfer.

- Crystal clarity permits visual inspection of milk flow
- Smooth, non-porous bore resists buildup
- Lightweight and flexible for quick installation
- Non-wetting properties allow easy cleaning and complete drainage
- Durability for long and reliable service
- Contains no BPA or phthalates



VACUUM TUBING FOR MILKING EQUIPMENT

TYGON S3™ A24, A24-C

Tygon S3™ A24 Vacuum tubing from Saint-Gobain Performance Plastics is now phthalate-free. Saint-Gobain is proud to be among the first companies to offer sustainable flexible tubing products. The bio-based Tygon S3™ line combines the high performance standards customers demand with an eco-friendly tubing design.

Tygon S3™ A24 Vacuum tubing is ideally suited for supply air transport. The smooth inner surface is less susceptible to particle entrapment, which can restrict air flow, while crystal clarity permits detection of equipment deficiencies such as backflow of milk into the air lines.

Tygon S3™ A24 Vacuum tubing is designed to work in tandem with Tygon S3™ M-34-R tubing to provide a vacuum tube and easy fluid flow within the milking process.

- Holds full vacuum at room temperature
- Will not crack and age like rubber tubing
- Lightweight and flexible for quick installation
- Non-wetting properties allow easy cleaning and complete drainage
- Durability for long and reliable service
- Contains no BPA or phthalates
- To be used in conjunction with Tygon S3™ M-34-R



TUBING FOR MILKING EQUIPMENT

TYGON® II

Tygon® II is manufactured in a climate-controlled environment and is produced from the highest quality silicone on the market. Because of its curing mechanism, the final product's consistency is very high, and it is more translucent and less tacky than other silicone products on the market.

Tygon® II tubing does not contain plasticizers or other additives and by products that can leach into the milk and cause toxicological issues. It is highly flexible, resistant to kinking and tearing.

This custom formulation is designed specifically to meet and exceed the dairy market's needs in regards to a number of key properties such as tear, vacuum resistance, and durability.

Tygon® II tubing offers a smoother surface that resists sticking, encrustation, and bacteria growth.

- Flexibility during hot and cold temperature
- Reduced tackiness
- Durability for long and reliable service
- Smooth inner bore reduces potential for particle entrapment
- Translucent
- Fitting retention

Note: Minimum order quantity required. Contact factory for inventory information.



FUEL & LUBRICANT TUBING FOR SMALL ENGINES

TYGON® F-4040-A

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.

Because it is extremely flexible, 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
- Compatible with most hydrocarbons
- Resistant to swelling
- Highly flexible, easy to install
- Specifically developed for fuels and lubricants
- Ozone and UV light resistant



DESIGNED FOR GASOLINE POWERED GROUND SUPPORTED EQUIPMENT

TYGON® LP-1100

Innovative Tygon® Low Permeation Fuel Tubing is designed to meet the EPA and CARB evaporation emission standards of 15mg/m²/day.

Tygon® LP-1100 tubing has superior resistance to fuels and industrial lubricants; the fluoropolymer liner is compatible with higher ethanol blend gasolines up to 100%. Its robust multi-layer design and construction is resistant to swelling, hardening and cracking caused by hydrocarbon-based fluids or sour gas.

- Conforms to new government regulatory standards for clean air
- Fluoropolymer liner compatible with higher ethanol blend gasoline
- Robust multi-layer design and construction
- Reduces hydrocarbon vapors escaping or permeating into the atmosphere
- Wide temperature range from -35˚F to 180˚F (-37˚C to 82.2˚C)
- Reduces photochemical smog
- High abrasion, cut and tear resistance for longer service life
- Compatible with 100% ethanol



HIGH-PERFORMANCE FUEL TUBING FOR SMALL ENGINES

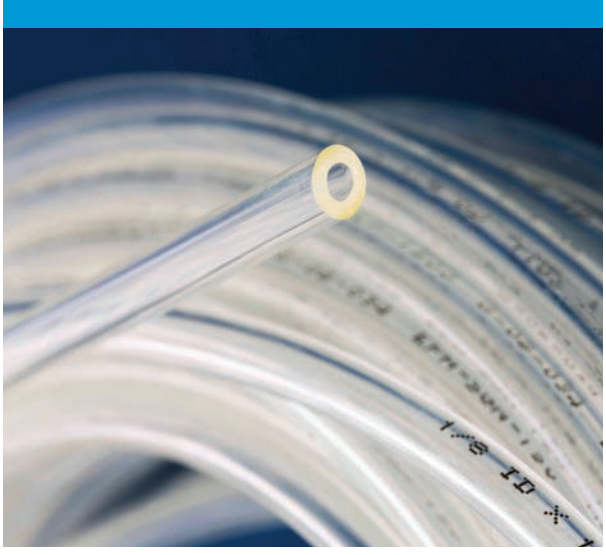
TYGON® LP-1200

Tygon® LP-1200 Low Permeation Fuel Tubing is specially designed to meet new EPA and CARB evaporative emission standards of 15g/m²/day.

The patent-pending design and robust multi-layer construction offers superior fitting retention and resistance to swelling, hardening and cracking caused by hydrocarbon-based fluids.

- Transparent
  - Easy to diagnose fuel flow or leak problems
- High purity fluoropolymer inner liner
  - Reduces the risk of fuel system fouling from extractable solids found in typical rubber products
- Superior fuel resistance and compatible with ethanol-enhanced fuels
  - Worry-free operation
- Excellent fitting retention
  - 100% seal for optimum safety
- Superior flexibility
  - Easy assembly, routing and optimized fuel pick-up
- Excellent elasticity
  - Prevents "necking" from over-stretching during installation
- Submersible*
  - Applicable with most fuel applications.
- UV resistant: Meets ANSI B175.1 Annex D Standard UV testing
  - Durable; long service life
- EPA and CARB approved
  - Meets low permeation standards of 15g/m²/day

*Not recommended for reuse in higher temperature applications.



DESIGNED FOR GASOLINE POWERED HANDHELD EQUIPMENT

TYGON® LP-1500

Tygon® LP-1500 tubing is specially designed to meet new government regulatory standards to reduce the harmful health effects of ozone and carbon monoxide.

Tygon® LP-1500 Low Permeation Fuel Tubing is an environmentally responsible tubing for fuel line applications in small engines and lawn & garden equipment (lawn mowers, snow blowers, chain saws, line trimmers, gas leaf blowers, etc.).

The tubing's robust, multi-layer design features barriers to minimize permeation, with a chemical and fuel resistant inner layer and a UV resistant outer jacket to prevent premature aging.

- Chemical and fuel resistant inner layer
- UV resistant outer jacket to prevent premature aging
- Wide temperature range from -40˚F to 185˚F (-40˚C to 85˚C)
- High abrasion, cut and tear resistant for longer service life
- Highly flexible and kink resistant
- Tight tolerances for better fitting retention and better seal
- Compatible with E-10 ethanol blend fuel



DESIGNED SPECIFICALLY FOR OUTBOARD MARINE APPLICATIONS

TYGON® LP-1600

Tygon® LP-1600 Low Permeation Fuel Tubing meets the government's emission standards for clean air. Specially formulated for marine outboard fuel delivery applications, Tygon® LP-1600 tubing is EPA and CARB certified.

Featuring a highly fuel-resistant, ethanol-compatible inner layer, Tygon® LP-1600 tubing has a robust design that ensures safe fuel transfer from the tank to the engine and provides both excellent fitting retention and fast, easy assembly.

- Thermoplastic multi-layer technology designed to provide the best barrier construction
- Excellent resistance to hydrocarbon-based fuels (leaded and unleaded fuels)
- Compatible with 100% ethanol
- Wide temperature range from -20˚F to 180˚F (-28.9˚C to 82˚C)
- Ozone and UV light resistant to prevent premature aging
- High abrasion, cut and tear resistance for longer service life
- Superior flexibility and kink resistance
- Custom sizes and colors available

Note: Minimum order quantity required. Contact factory for inventory information.



HIGH-PRECISION TUBING FOR AUTOMATIC WATER SAMPLING EQUIPMENT

TYGON® SPT-60 L

Water is vitally important to every aspect of life. We have a vast network of branching rivers, swamps, lakes, etc. and each body of water can contain dramatically different levels of pollution. Measuring water quality is not an easy task, especially as increasing environmental concerns and regulations have heightened the need for increased diligence and tighter restrictions on water quality.

Scientists are continuously testing to determine what effects contamination is having on receiving waters and their associated aquatic life. Peristaltic pumps are often employed as samplers, in order to prevent cross-contamination, as the only part of the pump to come in contact with the water is the interior of the tubing itself.

Tygon® SPT-60 L tubing was specifically designed for automatic water samplers, offering sample integrity along with accurate dosing and performance at high lift.

- Accurate and repeatable dosing
- Sample integrity
- Performance at high lift
- Tested per select EPA drinking and wastewater standards

Note: Minimum order quantity required. Contact factory for inventory information.



HIGH-PRECISION TUBING FOR WATER ANALYSIS APPLICATIONS

TYGON® WSA-60

Seeking compliance with government regulations such as the Clean Water Act, engineers are charged with monitoring municipal and industrial wastewater before its discharge.

To meet this end, engineers often implement the use of peristaltic pumps to prevent cross-contamination, as the only part of the pump to come in contact with the water is the interior of the tubing itself.

Tygon® WSA-60 tubing is chemically inert and long wearing to withstand repeated flexing of peristaltic cycles, and offers repeatable pump control for accurate dosing, making it the ideal choice for water analysis applications.

- Accurate and repeatable dosing
- Long peristaltic pump life
- Chemically inert
- Outstanding chemical resistance

Note: Minimum order quantity required. Contact factory for inventory information.



CHEMICAL DISPENSING ALTERNATIVE TO RUBBER TUBING

TYGON® A-60-G

Specially formulated for chemical dispensing, Tygon® A-60-G tubing outperforms neoprene, EPDM and other general-purpose tubing in test after test, application after application.

It will not weaken or crack after years of exposure to heat and ozone, providing longer pump life in industrial and institutional cleaning-chemical dispensing applications.

Engineered for outstanding performance and on-the-job reliability, Tygon® A-60-G tubing handles temperatures ranging from -75°F (-60°C) to 275°F (135°C), allowing the use of one material within a broad range of temperatures. It is heat sealable and can be joined without fittings. It also offers excellent resistance to inorganic fluids (acids and bases).

- Superior weathering
- Abrasion resistant
- Outstanding flexural fatigue resistance
- Wide temperature range (-75°F to 275°F)
- Low gas permeability versus rubber tubing
- Ozone (300 pphm) and UV light resistant



LONG PUMP LIFE CHEMICAL DISPENSING TUBING

TYGON® CHEMICAL

Tygon® Chemical Peristaltic Pump tubing is a high-performance, co-extruded product specifically formulated to provide an ideal combination of chemical resistance and pump life. Its inert ultra-smooth, plasticizer-free bore resists the absorption/adsorption of aqueous fluids while the Tygon outer jacket provides long flex life in peristaltic pumps.

Tygon® Chemical Peristaltic Pump tubing is an excellent choice for soap and detergent dispensing.

- Long flex life in peristaltic pumps
- Temperature range of -75°F to 165°F
- Superior chemical resistance
- Plasticizer-free bore
- Meets FDA criteria for food contact
- Resists absorption/adsorption of aqueous fluids
- Virtually unaffected by chemical sanitizers and cleaners



ULTRA CHEMICAL RESISTANT TUBING FOR CHEMICAL TRANSFER

TYGON® 2375-C

Tygon® 2375-C Ultra Chemical Resistant Tubing offers an unequaled combination of chemical resistance, clarity and flexibility. Tygon® 2375-C tubing is virtually unaffected by acids, bases, ketones, salts and alcohols.

Tygon® 2375-C Ultra Chemical Resistant Tubing offers safe disposal. When properly incinerated, it does not release hazardous and corrosive hydrochloride gas, which contributes to acid rain.

Tygon® 2375-C Ultra Chemical Resistant Tubing is entirely free of plasticizers, eliminating fluid contamination as well as premature embrittlement and cracking common with many other flexible tubing.

- Outstanding chemical resistance
- Non-DEHP for high purity
- Plasticizer-free for low extractable
- Safer disposal
  - Releases no harmful and corrosive hydrochloride gas
- Smoother inner surface
  - Provides better flow and inhibits particulate build-up
- Low sorption
  - Minimizes cross-contamination
- Clear tubing for easier and better observation

Note: Minimum order quantity required. Contact factory for inventory information.



KINK-RESISTANT FLEXIBLE TUBING FOR PNEUMATIC LINES

Tygon® Pneumatic HS

Tygon® Pneumatic HS is designed to meet and outperform industry standards for Pneumatic Tubings, mainly where kink resistance is required.

Our proprietary Urethane™ formulation is designed to resist grease, oil, ozone and O^2. It also has good mechanical and abrasion resistance, and it remains flexible even at low temperatures.

Lightweight and flexible, it is very easy to handle and can be put into service quickly. The smooth surface finish allows for easy and quick fitting installation.

- 98 ShoreA
- High kink resistance
- Temperature Range: -5°F up to 140°F
- Good resistance to oil, grease and fuel
- Good pressure ratings
- Broad chemical resistance
- Good flexibility at low temperatures
- Good mechanical and abrasion resistance
- Lightweight and smooth surface for easy and quick installation
- Wide variety of sizes and colors available
- Can be coiled

Note: Contact factory for more information. Properties may vary according to working temperature.



HIGH PERFORMANCE, SPARK-RESISTANT TUBING FOR PNEUMATIC LINES

Tygon® Pneumatic SR

Tygon® Pneumatic SR is a multi-layer tubing with an insulating outer cover specially designed to resist to incidental contact with weld spatter and sparks (in accordance to UL94 V0)

The outer cover also has good resistance to oils, greases, acids, bases, aqueous solutions, ozone, aging and ultraviolet light.

Tygon® Pneumatic SR is the ideal choice for applications in severe environment and is available in a wide variety of sizes and colors, and can be coiled.

- Spark-resistant outer cover
- Flexible with an excellent bend radius
- Resistant to kink damage
- Wide range of working temperatures
- Broad range of chemical resistance
- Lightweight and smooth surface for easy and quick installation
- Wide variety of sizes and colors available
- Can be coiled

Note: Contact factory for more information. Properties may vary according to working temperature.

TYGON®

Excellence By Design

PRECISION-DESIGNED TUBING FOR PEAK PERFORMANCE AND REGULATORY COMPLIANCE ACROSS A RANGE OF SPECIALIZED FLUID TRANSFER APPLICATIONS

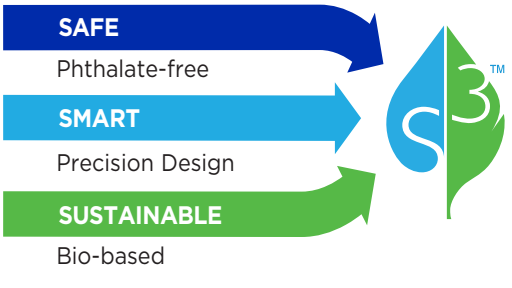
- Flexible Operations
- Technical Service
- Formulating Expertise
- Regulatory Expertise

TYGON S3™

Safe Smart Sustainable

A BIO-BASED PHTHALATE-FREE FLEXIBLE TUBING OPTION WITH UNCOMPROMISING PERFORMANCE

Tygon S3™ Phthalate-free Flexible Tubing



Tygon S3™ uses a bio-based plasticizer allowing food manufacturers to strengthen their commitment to sustainability



HIGH-STRENGTH SILICONE TUBING

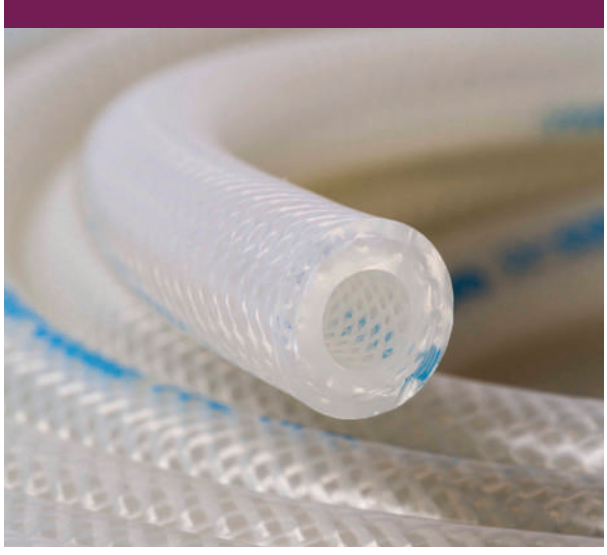
VERSILON™ SPX-50

Peroxide-cured Versilon™ SPX-50 tubing is designed for use in applications where flexibility, resiliency and durability are required.

Produced from a proprietary combination of silicone elastomers, this tubing optimizes critical physical properties such as tensile strength elongation and compression set, resulting in a more physically durable product.

The smooth inner surface of the tubing reduces the risk of particulate entrapment and microscopic build-up during fluid transfer.

- Provides resiliency, long-life, and durability
- Ultra-smooth inner bore reduces risk of particulate entrapment
- Taste and odor free
- Withstands temperature extremes from -75°F to 350°F



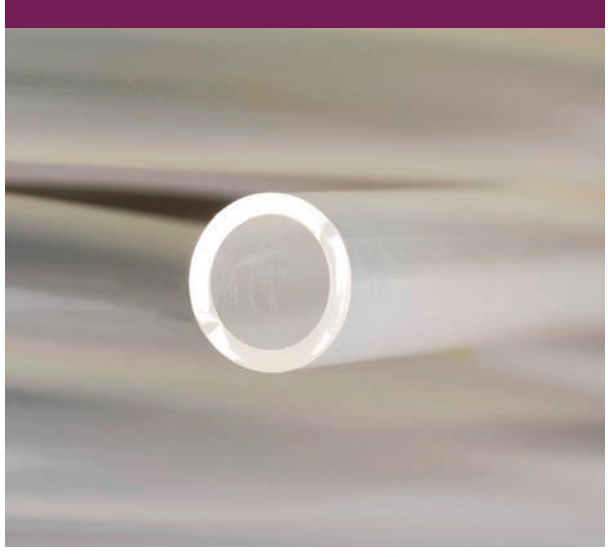
REINFORCED HIGH TENSILE STRENGTH SILICONE TUBING

VERSILON™ SPX-70 IB

Peroxide-cured Versilon™ SPX-70 IB tubing is designed for use in applications where flexibility, resiliency and durability are required.

Produced from a proprietary combination of silicone elastomers, this tubing optimizes critical physical properties such as tensile strength elongation and compression set, resulting in a more physically durable product.

- Provides resiliency, long-life, and durability
- Ultra-smooth inner bore reduces risk of particulate entrapment
- Tough braid reinforcement permits use under elevated working pressures
- Taste and odor free
- Withstands temperature extremes from -112°F to 320°F



PLASTICIZER-FREE CHEMICAL RESISTANT PUMP TUBING

VERSILON™ 2001

Versilon™ 2001 tubing is uniquely engineered to provide flexibility, chemical resistance and extended pump life in a clear, plasticizer/oil-free tubing product.

It is ideal for a broad range of demanding applications including peristaltic pump systems, soap and detergent dispensing, ink transfer, water purification lines, food and beverage, and chemical transfer.

- Plasticizer and oil free–does not contaminate fluids
- Superior flex life in peristaltic pumps
- Chemically resistant to a wide range of fluids
- Temperature resistant from -100°F to 135°F
- Clear for easy visual flow monitoring
- Meets FDA criteria for food contact
- REACH



OIL, FUEL AND GREASE RESISTANT TUBING

VERSILON™ C-210-A

Our rigidly controlled manufacturing process makes Versilon™ C-210-A tubing the flexible polyurethane tubing that has consistent tight tolerances from lot to lot.

Made of tough ester-based polyurethane, Versilon™ C-210-A 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 other chemicals.

Versilon™ C-210-A tubing is able to withstand rugged daily use; it resists weathering and can be safely used in temperatures ranging from -100°F (-73°C) to 175°F (79°C).

- Consistently tight dimensional tolerances
- Excellent abrasion and tear resistance
- Excellent resistance to oils, greases and fuels
- Retains flexibility in sub-zero environments
- High tear resistance



MULTI-PURPOSE ABRASION RESISTANT TUBING

VERSILON™ C-544-A IB

Ultra-flexible compared to many other reinforced urethane tubing products, Versilon™ C-544-A IB flexible tubing can be used in the most physically demanding applications, such as those requiring a tight bend radius.

Specially formulated from tough, ether-based polyurethane resin, Versilon™ C-544-A IB tubing is resistant to a range of chemicals, including oils, greases, fuels, solvents, and chemicals.

Due to its excellent wear properties, Versilon™ C-544-A IB tubing frequently outperforms traditional rubber, plastic and metal materials when exposed to abrasive conditions.

Versilon™ C-544-A IB tubing is 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, fuels, solvents, and chemicals
- Flexible even in sub-zero temperatures



UV-RESISTANT ACID TRANSFER TUBING

VERSILON™ R-3400

Ideal for virtually any permanent or temporary chemical transfer application, Versilon™ R-3400 tubing combines suppleness and flexibility with resistance to a wide range of chemicals. It shows exceptional resistance to strong acids and many alkalies.

The flexibility of Versilon™ R-3400 tubing also makes it quick and easy to put into service, providing considerable savings on installation time and cost when compared to rigid piping systems.

Black in color, Versilon™ R-3400 tubing is resistant to ultraviolet light, ozone and weathering, making it ideal for many outdoor applications. Standard inventoried sizes of Versilon™ R-3400 tubing have sufficient wall thickness to block transmission of all UV light.

- Black in color to protect light-sensitive fluids
- Compatible with a wide range of chemicals
- Ozone resistant
- High temperature rating for excellent burn resistance
- Low compression set to minimize permanent deformation
- Available in clear formulation for fluid flow monitoring



DRY CLEANING FLUID LINE AND SOLVENT RECOVERY TUBING

VERSILON™ F-5500-A

Made of a proprietary fluoroelastomer, Versilon™ F-5500-A tubing has both the physical and chemical characteristics that make it ideal for severe environments. These environments include dry cleaning fluid lines and solvent recovery systems, where other flexible tubings fail.

Versilon™ F-5500-A tubing can be used in continuous service with temperatures as high as 400°F (204°C). The opaque, black color of the Versilon™ F-5500-A helps protect light-sensitive materials being transferred, and will not prematurely crack and age when exposed to ozone, sun and weather.

- Provides continuous service at temperatures up to 400°F (204°C)
- Excellent resistance to corrosive chemicals, oils, fuels and solvents
- Resists ozone, sunlight and weathering
- Opaque black color helps protect light-sensitive fluids



PHTHALATE-FREE CHEMICAL INERT TRANSFER TUBING

VERSILON™ SE-200

Versilon™ SE-200 from Saint-Gobain Performance Plastics is now phthalate-free. Saint-Gobain is proud to be among the first companies to offer sustainable flexible tubing products. Versilon™ SE-200 tubing combines the high performance standards customers demand with an eco-friendly tubing design.

Offering flexibility, glass-like clarity and outstanding bend radius, Versilon™ SE-200 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 accommodate a wide variety of fluids, from corrosives to MEK-based solvents.

The inert liner limits the potential of fluid contamination during transfer. Versilon™ SE-200 will not impart odor or taste, making it well-suited for food and beverage use.

- Crystal clarity
- Improved flexibility when compared to rigid fluoropolymer tubings
- Chemically-resistant and inert
- Non-contaminating fluid path
- Meets FDA criteria for food contact
- Contains no BPA or phthalates



PHTHALATE-FREE ANTIMICROBIAL TUBING

VERSILON™ SILVER

Saint-Gobain Process Systems is the leader in antimicrobial technology. Our custom compounding capabilities allow us to produce antimicrobial versions of many of our tubing products. Versilon™ Silver tubing is formulated with a silver-based compound on the inner surface at the point of fluid contact. The tubing's outer surface can be treated in cases where bacteria buildup on the outer diameter is a concern.

- Plasticizer-free inner bore
- Formulated with a silver-based compound on the inner diameter surface
- Outer diameter surface can also be formulated with a silver-based compound
- Reduces formation of biofilm and mildew
- Inhibits growth of microbes
- Will not discolor



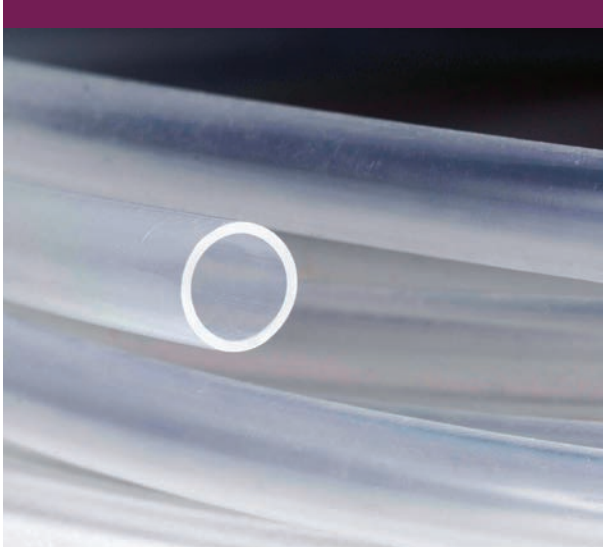
HIGH-PERFORMANCE TRANSPARENT FLUOROPOLYMER TUBING

VERSILON™ FEP

Saint-Gobain Versilon™ FEP tubing is transparent, high-performance fluoropolymer tubing with excellent physical and chemical resistance. A chemically inert thermoplastic, Versilon™ tubing offers high purity.

Unlike metal and rubber alternatives, Versilon™ FEP tubing is non-corroding and non-oxidizing. Unlike other plastics, Versilon™ tubing is not affected by nearly all solvents, acids and fuels. Various grades of FEP are available, allowing customers to tailor tubing properties to specific application needs.

- Excellent physical and electrical properties
- Outstanding chemical resistance
- Wide temperature range, up to 204°C
- Chemically inert
- Ultra-pure
- Non-corroding and non-oxidizing
- Unaffected by solvents, acids and fuels
- Document of Compliance for FDA regulation 21cfr 177.1550 available for specific grades.

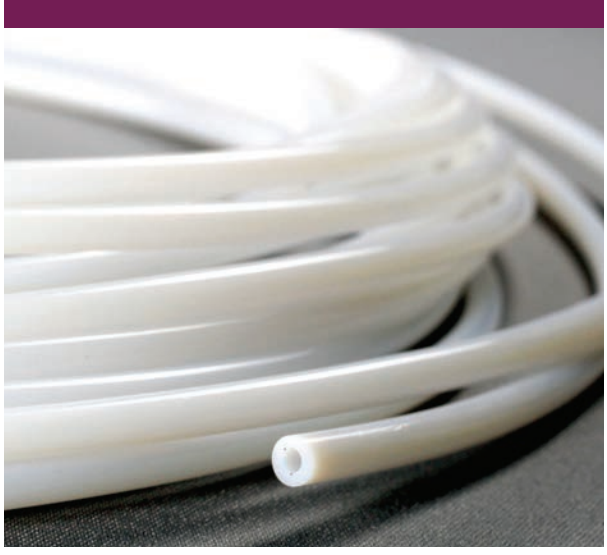


HIGH PURITY TUBING FOR BEVERAGE DISPENSING

VERSILON™ PFA-F

Saint-Gobain's stringent material quality control, state-of-the-art process control and food and beverage regulatory compliance expertise are why food and beverage dispensing equipment manufacturers use Versilon™ PFA-F tubing. Versilon™ PFA-F tubing provides excellent chemical resistance and a good diffusion-resistance.

- High level of purity
- Excellent chemical resistance
- Retains higher mechanical strength at elevated temperatures compared to FEP
- High resistance to stress cracking
- Temperature resistant up to +260°C
- Available also as colored tubing
- Document of Compliance for Regulation EU Nr. 10/2011 for specific grades
- Document of Compliance for FDA Regulation 21 CFR 177.1550



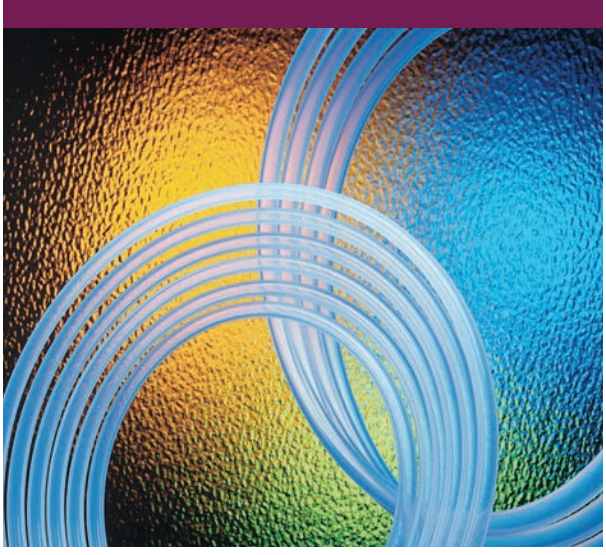
HIGH-TEMPERATURE AND HIGH-PRESSURE FLUOROPOLYMER TUBING

VERSILON™ PTFE

Saint-Gobain's careful selection of resin type, particle size, temperature and pressure produces smooth, non-porous, and dimensionally stable tubing. Made out of polytetrafluoroethylene resin, Versilon™ PTFE tubing has the highest working temperature of any fluoropolymer tubing available today.

In order to consistently ensure the quality of our products, we only use raw materials from leading manufacturers. We are able to produce tubes in various dimensions with different material properties according to the customer needs and the corresponding requirements.

- Fully fluorinated fluoropolymer tubing
- Milky transparent color, other colors available upon request
- Highest working temperature (up to 260°C) out of all fluoropolymer tubing



HIGH-PURITY, SMOOTH FLUOROPOLYMER TUBING

VERSILON™ 367

More and more manufacturers are realizing the importance of maintaining the integrity of the chemicals used in their production processes, and are using chemically inert fluoropolymer tubing to achieve the required purity levels.

Versilon™ 367 Scientific Grade Tubing not only maintains fluid integrity, but outperforms tubing made from standard or high-purity PFA resins in many significant ways.

In terms of surface smoothness, Versilon™ 367 tubing is up to six times smoother, which translates to less cross-contamination, greater product yields and easier-to-clean systems.

- Vastly superior surface smoothness compared to other fluoropolymer tubing
- Very low extractables with deionized water and acids
- Superior clarity versus other fluoropolymer tubing
- Resistant to virtually all commonly used chemicals
- Excellent mechanical properties
- Meets FDA criteria



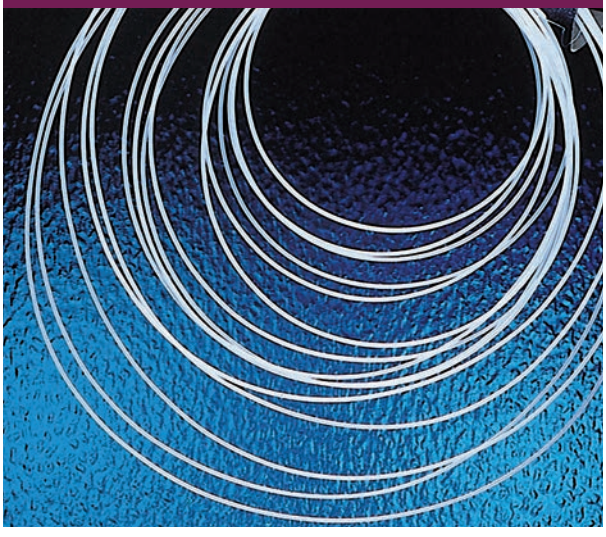
ABRASION-RESISTANT TUBING

VERSILON™ PVDF

Produced from a co-polymer material, Versilon™ PVDF tubing offers the stable characteristics of fluoropolymer tubing. In addition, it has abrasion resistance, mechanical strength and inherent high purity.

Versilon™ PVDF tubing also offers chemical compatibility in higher pH solutions, increased impact strength and better clarity than standard PVDF. These features make Versilon™ PVDF tubing ideal for use in the semi-conductor industry, pulp and paper industry, and nuclear waste processing.

- High purity/low extractables
- High abrasion resistance
- Excellent chemical resistance
- UV and radiation resistance
- Mechanical strength and toughness
- Low permeability
- FDA approved



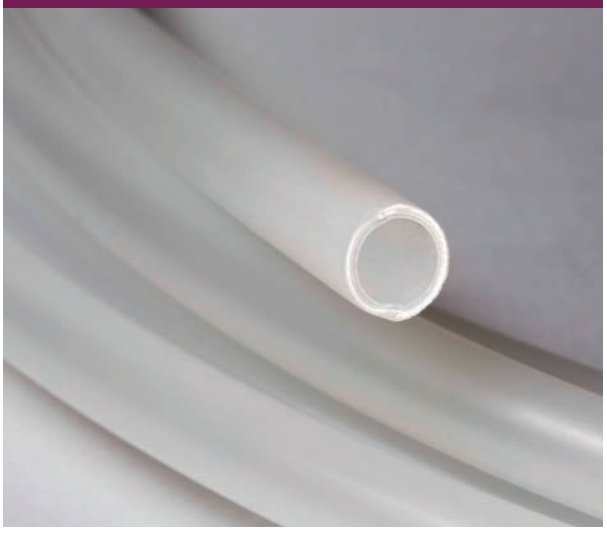
RADIATION-RESISTANT TUBING FOR EXCELLENT MECHANICAL PROPERTIES

VERSILON™ ETFE

Versilon™ ETFE tubing offers improved mechanical properties over fluoropolymers such as FEP and PFA and is resistant to radiation, abrasion and impact. The material is weather-resistant, inert to most solvents and chemicals, and has a continuous service temperature of 300°F.

Due to its mechanical properties, Versilon™ ETFE tubing can be used to manufacture valves, fittings, bearings, pump components and electrical coatings. Versilon™ ETFE tubing is from materials that meet ASTM standard D3159.

- Mechanical strength
- Abrasion resistance
- Broad temperature range
- Good chemical resistance
- Continuous service temperature 300°F



MULTI-PURPOSE HIGH-PURITY TUBING

VERSILON™ DUALITY

Versilon™ Duality fluoropolymer-lined tubing is a versatile, high-purity flexible tubing product designed to handle a variety of fluid transfer applications. Its excellent chemical and alcohol resistance makes it ideal for brewing and distilling processes, liquor dispensing, photo developing equipment and general lab use.

Thanks to the use of FDA-approved jacket and liner, and the absence of plasticizers or fillers that can leach out, Versilon™ Duality tubing imparts no odor or taste contamination to fluids that pass through it.

- Fluoropolymer lined construction
- Purity assured
- No plasticizers
- No fillers
- No VCM
- Excellent alcohol and chemical resistance
- Rapid installation
- Translucent
- No liquid absorption
- No odor or taste contamination
- No special fittings required
- Jacket and liner made from FDA-approved resins
- Flexible
- Lightweight

CHEMICAL RESISTANCE PROPERTIES OF TUBING

The ratings in the charts on pages 30 to 37 are based on the results of laboratory tests. They reflect the relative capabilities of various Saint-Gobain's tubing formulations to withstand specific chemicals.

NOTE: The ratings in the charts DO NOT reflect the extent to which extraction may occur, or the extent to which fluids may undergo any physical changes in properties or composition, as a result of coming into contact with the tubing. Saint-Gobain makes no representation or warranty with respect to the susceptibility of any fluid to become contaminated or undergo changes in properties or composition as a result of possible extraction of tubing ingredients by the fluid to be transmitted. Certain corrosives that would be destructive to tubing with prolonged exposure can be satisfactorily handled for short periods of time if flushed with water after use. All ratings are based on room temperature (73°F). Chemical resistance will be adversely affected by elevated temperatures.

Chemical Resistance Properties

	Tygon S3™ B-44-3	Tygon S3™ B-44-4X	Tygon S3™ B-44-4X IB	Tygon S3™ E-3603	Tygon S3™ E-LFL	Tygon® 2375	Tygon® A-60-F	Tygon® A-60-F IB	Tygon® B-44-FF	Tygon® E-1000	Tygon® E-70-V-CE	Tygon® SPT-3350	Tygon® SPT-3370 IB	Tygon® XL-60	Tygon S3™ M-34-R	Tygon S3™ A24, A24-C	Tygon® II	Tygon® F-4040-A	Tygon® LP-1100**	Tygon® LP-1200**	Tygon® LP-1500
Acetaldehyde	X	X	X	X	X	F	X	X	X	X	F	F	F	F	X	X	X	X	X	X	X
Acetamide, 67% in w	X	X	X	X	X	E	G	G	X	X	E	E	E	G	X	X	X	X	E	E	X
Acetate Solvents (general)	X	X	X	X	X	X	G	G	X	X	X	X	X	X	X	X	X	X	E	E	X
Acetic Acid, 10% in w	E	E	E	E	E	E	E	E	G	E	E	E	E	E	E	E	E	E	E	E	G
Acetic Acid, 50-60% in w	G	G	G	E	E	E	G	G	X	E	E	E	E	E	G	E	E	E	E	E	X
Acetic Acid, Glacial, 100%	F	F	F	F	F	E	G	G	X	X	E	X	X	F	F	F	X	X	E	E	X
Acetic Anhydride	X	X	X	X	X	E	E	E	X	X	E	E	E	E	X	X	X	X	E	E	X
Acetone	X	X	X	X	X	G	X	X	X	X	G	F	F	X	X	X	X	X	X	X	X
Acetonitrile	X	X	X	X	X	G	G	G	X	X	G	X	X	X	X	X	X	X	E	E	X
Acetyl Bromide	X	X	X	X	X	X	F	F	X	X	X	X	X	F	X	X	X	X	E	E	X
Acetyl Chloride	X	X	X	X	X	X	F	F	X	X	X	X	X	F	X	X	X	X	E	E	X
Acetylene Gas	E	E	E	E	E	E	E	E	E	F	E	E	E	E	E	E	E	E	E	E	E
Acrylonitrile	X	X	X	X	X	G	G	G	X	X	G	X	X	X	X	X	X	X	E	E	X
Adipic Acid, 100% in alc	X	X	X	X	X	X	G	G	X	X	X	X	X	F	X	X	F	F	E	E	X
Air	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Alcohols General	X	X	X	X	X	E	E	E	X	X	E	G	G	F	X	X	G	G	E	E	X
Aliphatic Hydrocarbons	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	G	G	E	E	G
Allyl Alcohol	X	X	X	X	X	E	F	F	X	X	E	X	X	F	X	X	E	E	E	E	X
Alum, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Aluminum Chloride, 53% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Aluminum Hydroxide, 2% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Aluminum Sulfate, 50% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Aluminum Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Amines	X	X	X	X	X	X	F	F	X	X	X	X	X	F	X	X	X	X	E	E	X
Ammonia Gas	E	E	E	E	E	E	E	E	G	E	E	X	X	E	E	E	E	E	X	X	G
Ammonia, Anhydrous Liquid	G	G	G	G	G	G	G	G	F	G	G	X	X	E	G	G	G	G	X	X	F
Ammonium Acetate, 45% in w	E	E	E	E	E	E	E	E	G	E	E	E	E	E	E	E	E	E	E	E	G
Ammonium Carbonate, 50% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ammonium Hydroxide, 5-10% in w	X	X	X	X	X	E	E	E	E	X	E	X	X	E	E	X	G	G	E	E	E
Ammonium Hydroxide, 30% in w	F	F	F	F	F	E	E	E	F	F	E	X	X	E	E	F	F	F	E	E	F
Ammonium Persulfate, 30% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ammonium Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ammonium Sulfate, 30% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Amyl Acetate	X	X	X	X	X	X	G	G	X	X	X	X	X	X	X	X	X	X	E	E	X
Amyl Alcohol	X	X	X	X	X	E	X	X	F	X	E	X	X	X	X	X	E	E	E	E	F
Amyl Chloride	X	X	X	X	X	X	F	F	X	X	X	X	X	X	X	X	X	X	E	E	X
Aniline	X	X	X	X	X	X	F	F	X	X	X	X	X	X	X	X	X	X	E	E	X
Aniline Hydrochloride	X	X	X	X	X	X	F	F	X	X	X	X	X	X	X	X	X	X	E	E	X
Antimony Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Aqua Regia	X	X	X	X	X	E	X	X	X	X	E	X	X	E	X	X	X	X	E	E	X
Aromatic Hydrocarbons	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Arsenic Acid, 20% in w	E	E	E	E	E	E	F	F	E	E	E	F	F	F	E	E	E	E	E	E	E
Arsenic Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
ASTM Reference No. 1 Oil	X	X	X	X	X	X	F	F	E	X	X	E	E	X	X	X	E	E	E	E	E
ASTM Reference No. 2 Oil	X	X	X	X	X	X	X	X	E	X	X	G	G	X	X	X	E	E	E	E	E
ASTM Reference No. 3 Oil	X	X	X	X	X	X	X	X	E	X	X	X	X	X	X	X	E	E	E	E	E
Barium Carbonate, 1% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Barium Hydroxide, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Beer	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Benzaldehyde	X	X	X	X	X	F	X	X	X	X	F	F	F	X	X	X	X	X	F	F	X
Benzene	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Benzenesulfonic Acid	X	X	X	X	X	X	X	X	X	X	X	X	X	E	X	X	X	X	E	E	X
Benzoic Acid	X	X	X	X	X	X	G	G	X	X	X	X	X	X	X	X	F	F	E	E	X
Benzyl Alcohol	X	X	X	X	X	E	E	E	X	X	E	E	E	X	X	X	X	X	E	E	X
Bleach Liquor, 22% in w	G	G	G	F	F	E	E	E	G	G	E	X	X	E	G	F	E	E	E	E	G
Borax, 6% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Boric Acid, 4% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Bromine, Anhydrous Liquid	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Butadiene	E	E	E	E	E	G	E	E	E	E	G	E	E	E	E	E	E	E	E	E	E
Butane	E	E	E	E	E	G	E	E	E	E	G	E	E	E	E	E	E	E	E	E	E
Butyl Acetate	X	X	X	X	X	X	G	G	X	X	X	X	X	X	X	X	X	X	G	G	X
Butyl Alcohol	X	X	X	X	X	E	X	X	F	X	E	X	X	E	X	X	E	E	E	E	F
Butyric Acid	X	X	X	X	X	X	G	G	X	X	X	X	X	E	X	X	F	F	E	E	X
Calcium Carbonate, 25% in dilute acids	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Calcium Chloride, 30% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Calcium Hydroxide, 10% in glycerol	X	X	X	X	X	E	E	E	X	X	E	E	E	E	E	X	X	E	E	E	X
Calcium Hypochlorite, 20% in w	E	E	E	E	E	E	E	E	G	E	E	X	X	E	E	E	E	E	E	E	G

E = Excellent G = Good F = Fair X = Not Recommended — = Testing in Progress
Environment, % Conc.* w = Water alc = Alcohol
* If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.
** Chemical resistance ratings based on inner liner material.
NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

IMPORTANT: It is the user's responsibility to ensure the suitability and safety of Saint-Gobain tubing for all intended uses, including establishing the compatibility of any fluid with the tubing through which it is transmitted. Laboratory, field or clinical tests must be conducted in accordance with applicable requirements in order to determine the safety and effectiveness for use of tubing in any particular application. If intended for medical use, it is the user's responsibility to ensure that the tubing to be used complies with all applicable medical regulatory requirements.

	Tygon® LP-1600	Tygon® WSA-60	Tygon® A-60-G	Tygon® Chemical**	Tygon® 2375-C	Versilon™ SPX-50	Versilon™ SPX-70 IB	Versilon™ 2001	Versilon™ C-210-A	Versilon™ C-544-A IB	Versilon™ R-3400	Versilon™ F-5500-A	Versilon™ SE-200**	Versilon™ Silver	Versilon™ FEP	Versilon™ PFA-F	Versilon™ PTFE	Versilon™ 367	Versilon™ PVDF	Versilon™ ETFE	Versilon™ Duality**
Acetaldehyde	X	X	X	F	F	F	F	X	X	X	X	X	E	F	E	E	E	E	X	E	E
Acetamide, 67% in w	E	G	G	E	E	G	G	G	X	X	X	X	E	E	E	E	E	E	E	E	E
Acetate Solvents (general)	E	G	G	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Acetic Acid, 10% in w	E	E	E	E	E	E	E	G	G	G	E	X	E	E	E	E	E	E	E	E	E
Acetic Acid, 50-60% in w	E	G	G	E	E	E	E	E	X	X	E	X	E	E	E	E	E	E	E	E	E
Acetic Acid, Glacial, 100%	E	G	G	E	E	X	X	G	X	X	X	X	E	F	E	E	E	E	E	E	E
Acetic Anhydride	E	E	E	E	E	F	F	E	X	X	X	X	E	E	E	E	E	E	E	E	E
Acetone	X	X	X	G	G	X	X	F	X	X	X	X	E	G	E	E	E	G	X	E	E
Acetonitrile	E	G	G	G	G	X	X	G	X	X	X	X	E	G	E	E	E	E	E	E	E
Acetyl Bromide	E	F	F	X	X	X	X	F	X	X	X	X	E	X	E	E	E	E	E	E	E
Acetyl Chloride	E	F	F	X	X	X	X	F	X	X	X	X	E	X	E	E	E	E	E	E	E
Acetylene Gas	E	E	E	E	E	F	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Acrylonitrile	E	G	G	G	G	X	X	G	X	X	X	X	E	G	E	E	E	E	E	E	E
Adipic Acid, 100% in alc	E	G	G	X	X	X	X	G	X	X	X	X	E	X	E	E	E	E	E	E	E
Air	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Alcohols General	E	E	E	E	E	E	E	E	X	X	X	X	E	E	E	E	E	E	E	E	E
Aliphatic Hydrocarbons	E	X	X	X	X	X	X	X	G	G	F	G	E	X	E	E	E	E	E	E	E
Allyl Alcohol	E	F	F	E	E	X	X	E	X	X	X	E	E	E	E	E	E	E	E	E	E
Alum, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Aluminum Chloride, 53% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Aluminum Hydroxide, 2% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Aluminum Sulfate, 50% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	G	E
Aluminum Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Amines	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Ammonia Gas	X	E	E	E	E	X	X	E	G	G	E	X	E	E	E	E	E	E	X	E	E
Ammonia, Anhydrous Liquid	X	G	G	G	G	X	X	G	F	F	G	X	G	G	E	E	E	E	X	E	E
Ammonium Acetate, 45% in w	E	E	E	E	E	E	E	E	G	G	E	X	E	E	E	E	E	E	E	E	E
Ammonium Carbonate, 50% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ammonium Hydroxide, 5-10% in w	E	E	E	E	E	X	X	E	E	E	E	X	E	E	E	E	E	E	E	E	E
Ammonium Hydroxide, 30% in w	E	E	E	E	E	X	X	E	F	F	G	X	E	E	E	E	E	E	E	E	E
Ammonium Persulfate, 30% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ammonium Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ammonium Sulfate, 30% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Amyl Acetate	E	G	G	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Amyl Alcohol	E	X	X	E	E	X	X	E	F	F	X	E	E	E	E	E	E	E	E	E	E
Amyl Chloride	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Aniline	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Aniline Hydrochloride	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Antimony Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Aqua Regia	E	X	X	E	E	X	X	E	X	X	G	X	G	E	G	E	E	E	E	E	G
Aromatic Hydrocarbons	E	X	X	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Arsenic Acid, 20% in w	E	F	F	E	E	X	X	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Arsenic Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
ASTM Reference No. 1 Oil	E	F	F	X	X	G	G	X	E	E	X	E	E	X	E	E	E	E	E	E	E
ASTM Reference No. 2 Oil	E	X	X	X	X	G	G	X	E	E	X	E	E	X	E	E	E	E	E	E	E
ASTM Reference No. 3 Oil	E	X	X	X	X	X	X	X	E	E	X	E	E	X	E	E	E	E	E	E	E
Barium Carbonate, 1% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Barium Hydroxide, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Beer	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Benzaldehyde	F	X	X	F	F	F	F	F	X	X	X	X	E	F	E	E	E	E	F	E	E
Benzene	E	X	X	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Benzenesulfonic Acid	E	X	X	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Benzoic Acid	E	G	G	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Benzyl Alcohol	E	E	E	E	E	E	E	E	X	X	X	E	E	E	E	E	E	E	E	E	E
Bleach Liquor, 22% in w	E	E	E	E	E	G	G	E	G	G	E	E	E	G	E	E	E	E	E	E	E
Borax, 6% in w	E	E	E	E	E	G	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Boric Acid, 4% in w	E	E	E	E	E	G	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Bromine, Anhydrous Liquid	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Butadiene	E	E	E	G	G	E	E	G	E	E	E	E	E	G	E	E	E	E	E	E	E
Butane	E	E	E	G	G	E	E	G	E	E	E	E	E	G	E	E	E	E	E	E	E
Butyl Acetate	G	G	G	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	G	E	E
Butyl Alcohol	E	X	X	E	E	X	X	E	F	F	X	E	E	E	E	E	E	E	E	E	E
Butyric Acid	E	G	G	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Calcium Carbonate, 25% in dilute acids	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Calcium Chloride, 30% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Calcium Hydroxide,10% in glycerol	E	E	E	E	E	G	G	E	X	X	E	E	E	E	E	E	E	E	E	E	E
Calcium Hypochlorite, 20% in w	E	E	E	E	E	G	G	E	G	G	E	E	E	E	E	E	E	E	E	E	E

E = Excellent G = Good F = Fair X = Not Recommended — = Testing in Progress
Environment, % Conc.* w = Water alc = Alcohol
* If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.
** Chemical resistance ratings based on inner liner material.
NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

Chemical Resistance Properties

	Tygon S3™ B-44-3	Tygon S3™ B-44-4X	Tygon S3™ B-44-4X IB	Tygon S3™ E-3603	Tygon S3™ E-LFL	Tygon® 2375	Tygon® A-60-F	Tygon® A-60-F IB	Tygon® B-44-FF	Tygon® E-1000	Tygon® E-70-V-CE	Tygon® SPT-3350	Tygon® SPT-3370 IB	Tygon® XL-60	Tygon S3™ M-34-R	Tygon S3™ A24, A24-C	Tygon® II	Tygon® F-4040-A	Tygon® LP-1100**	Tygon® LP-1200**	Tygon® LP-1500
Calcium Nitrate, 55% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Calcium Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Calcium Sulfate, 1% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Carbon Dioxide, Wet/Dry	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Carbon Disulfide	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Carbon Monoxide	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Carbon Tetrachloride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Carbonic Acid	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Castor Oil	F	F	F	X	X	G	F	F	E	X	G	E	E	F	F	X	E	E	E	E	E
Cellosolve	X	X	X	X	X	X	F	F	X	X	X	X	X	X	X	X	F	F	E	E	X
Cellosolve Acetate	X	X	X	X	X	X	F	F	X	X	X	X	X	X	X	X	F	F	E	E	X
Chlorine, Dry Gas	E	E	E	E	E	F	F	F	F	F	F	X	X	G	E	E	E	E	E	E	F
Chlorine, Wet Gas	F	F	F	F	F	F	X	X	X	X	F	X	X	F	F	F	E	E	E	E	X
Chloroacetic Acid, 20% in w	E	E	E	E	E	E	G	G	X	E	E	E	E	E	E	E	X	X	E	E	X
Chlorobenzene, Mono, Di, Tri	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Chloroform	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Chlorosulfonic Acid	X	X	X	X	X	X	X	X	X	X	X	X	X	E	X	X	X	X	E	E	X
Chromic Acid, 10-20% in w	E	E	E	G	G	E	E	E	X	G	E	X	X	E	E	G	F	F	E	E	X
Chromic Acid, 50% in w	F	F	F	F	F	G	F	F	X	F	G	X	X	G	F	F	X	X	E	E	X
Citric Acid, 10-20% in w	E	E	E	E	E	E	E	E	G	E	E	E	E	E	E	E	E	E	E	E	G
Coconut Oil	F	F	F	X	X	G	F	F	E	X	G	E	E	F	F	X	E	E	E	E	E
Corn Syrup	E	E	E	E	E	E	E	E	E	E	E	E	E	G	E	E	E	E	E	E	E
Cottonseed Oil	F	F	F	X	X	G	F	F	E	X	G	E	E	F	F	X	E	E	E	E	E
Cresol (m, o, or p)	G	G	G	F	F	E	X	X	X	F	E	G	G	X	G	F	F	F	E	E	X
Cresylic Acid	X	X	X	X	X	X	G	G	X	X	X	X	X	X	X	X	F	F	E	E	X
Cupric Chloride, 40% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Cupric Nitrate, 70% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Cupric Sulfate, 13% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Cyclohexane	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	F	F	E	E	G
Cyclohexanone	X	X	X	X	X	F	X	X	X	X	F	X	X	X	X	X	X	X	E	E	X
Detergent Solutions	E	E	E	E	E	E	G	G	E	E	E	E	E	G	E	E	E	E	E	E	E
Dibutyl Phthalate	F	F	F	F	F	E	E	E	X	F	E	E	E	F	F	F	F	F	E	E	X
Diesel Fuel	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	G	G	E	E	G
Diethylamine, 2.5% in w	E	E	E	E	E	E	E	E	E	E	E	X	X	E	E	E	F	F	E	E	E
Diethylene Glycol	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Dimethylformamide	X	X	X	X	X	E	G	G	X	X	E	E	E	E	X	X	X	X	E	E	X
Dimethylsulfoxide	X	X	X	X	X	G	G	G	X	X	G	F	F	X	X	X	X	X	E	E	X
Dioctyl Phthalate	F	F	F	F	F	E	E	E	X	F	E	E	E	F	F	F	F	F	E	E	X
Dioxane	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Ether	X	X	X	X	X	X	F	F	X	X	X	X	X	X	X	X	F	F	E	E	X
Ethyl Acetate	X	X	X	X	X	X	G	G	X	X	X	X	X	E	X	X	X	X	X	X	X
Ethyl Alcohol (Ethanol)	X	X	X	X	X	E	F	F	X	X	E	G	F	E	X	X	G	G	E	E	X
Ethyl Benzoate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Ethyl Chloride	X	X	X	X	X	X	F	F	X	X	X	X	X	E	X	X	X	X	E	E	X
Ethyl Ether	X	X	X	X	X	X	F	F	X	X	X	X	X	X	X	X	F	F	E	E	X
Ethylene Bromide	X	X	X	X	X	F	X	X	X	X	F	E	E	X	X	X	X	X	E	E	X
Ethylene Chlorohydrin	X	X	X	X	X	E	E	E	X	X	E	G	G	E	X	X	G	G	E	E	X
Ethylene Dichloride	X	X	X	X	X	X	F	F	X	X	X	X	X	E	X	X	X	X	E	E	X
Ethylene Glycol	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ethylene Oxide	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Fatty Acids	X	X	X	X	X	F	F	F	G	X	F	G	G	E	X	X	G	G	E	E	G
Ferric Chloride, 43% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ferric Nitrate, 60% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ferric Sulfate, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ferrous Chloride, 40% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ferrous Sulfate, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Fluoboric Acid, 48% in w	F	F	F	E	F	E	X	X	X	E	E	X	X	E	F	E	X	X	E	E	X
Fluorine Gas	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	F	F	X
Fluosilicic Acid, 25% in w	E	E	E	E	E	E	E	E	E	E	E	F	F	E	E	E	E	E	E	E	E
Formaldehyde, 37% in w	X	X	X	X	X	F	X	X	X	X	F	F	F	E	X	X	X	X	E	E	X
Formic Acid, 25% in w	E	E	E	E	E	E	E	E	F	E	E	E	E	E	E	E	F	F	E	E	F
Formic Acid, 40-50% in w	G	G	G	G	G	E	G	G	X	G	E	E	E	E	G	G	X	X	E	E	X
Formic Acid, 98% in w	F	F	F	F	F	E	G	G	X	F	E	E	E	E	F	F	X	X	E	E	X
Freon 11	E	E	E	E	E	E	E	E	E	E	E	E	E	G	E	E	E	E	E	E	E
Freon 12	E	E	E	E	E	E	E	E	E	E	E	E	E	G	E	E	E	E	E	E	E
Freon 22	E	E	E	E	E	E	E	E	E	E	E	E	E	G	E	E	E	E	E	E	E
Fruit Juice	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Fuel Oil	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	G	G	E	E	G
Furfural	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Gallic Acid, 17% in acetone	X	X	X	X	X	X	G	G	X	X	X	X	X	X	X	X	F	F	E	E	X
Gasoline, Automotive	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	G	G	E	E	G
Gelatin	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Glucose, 50% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Glycerol, (Glycerin)	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Glycolic Acid, 70% in w	G	G	G	E	E	E	G	G	X	E	E	E	E	G	G	E	E	E	F	F	X
Heptane	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	G	G	E	E	G
Hexane	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	G	G	E	E	G
Hydrazine	X	X	X	X	X	X	F	F	X	X	X	X	X	X	X	X	X	X	E	E	X
Hydrobromic Acid, 20-50% in w	E	E	E	E	E	E	X	X	X	E	E	X	X	E	E	E	E	E	E	E	X
Hydrobromic Acid, 100% in w	F	F	F	F	F	E	X	X	X	X	E	X	X	E	F	F	X	X	E	E	X
Hydrochloric Acid, 10% in w	E	E	E	E	E	E	E	E	F	E	E	E	E	E	E	E	E	E	E	E	F
Hydrochloric Acid, 37% in w	F	F	F	F	F	E	G	G	X	X	E	X	X	E	F	F	X	X	E	E	X
Hydrocyanic Acid	E	E	E	E	E	E	E	E	G	E	E	E	E	E	E	E	E	E	E	E	G

E = Excellent G = Good F = Fair X = Not Recommended — = Testing in Progress
Environment, % Conc.* w = Water alc = Alcohol
* If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.
** Chemical resistance ratings based on inner liner material.
NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

	Tygon® LP-1600	Tygon® WSA-60	Tygon® A-60-G	Tygon® Chemical**	Tygon® 2375-C	Versilon™ SPX-50	Versilon™ SPX-70 IB	Versilon™ 2001	Versilon™ C-210-A	Versilon™ C-544-A IB	Versilon™ R-3400	Versilon™ F-5500-A	Versilon™ SE-200**	Versilon™ Silver	Versilon™ FEP	Versilon™ PFA-F	Versilon™ PTFE	Versilon™ 367	Versilon™ PVDF	Versilon™ ETFE	Versilon™ Duality**
Calcium Nitrate, 55% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Calcium Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Calcium Sulfate, 1% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Carbon Dioxide, Wet/Dry	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Carbon Disulfide	E	X	X	X	X	X	X	X	X	X	X	G	E	X	E	E	E	E	E	E	E
Carbon Monoxide	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Carbon Tetrachloride	E	X	X	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Carbonic Acid	E	E	E	E	E	G	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Castor Oil	E	F	F	G	G	E	E	G	E	E	G	E	E	G	E	E	E	E	E	E	E
Cellosolve	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Cellosolve Acetate	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Chlorine, Dry Gas	E	F	F	F	F	X	X	F	F	F	E	E	E	F	E	E	E	E	E	E	E
Chlorine, Wet Gas	E	X	X	F	F	X	X	F	X	X	E	E	E	F	E	E	E	E	E	E	E
Chloroacetic Acid, 20% in w	E	G	G	E	E	G	G	E	X	X	E	X	E	E	E	E	E	E	E	E	E
Chlorobenzene, Mono, Di, Tri	E	X	X	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Chloroform	E	X	X	X	X	X	X	X	X	X	X	F	E	X	E	E	E	E	E	E	E
Chlorosulfonic Acid	E	X	X	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Chromic Acid, 10-20% in w	E	E	E	E	E	X	X	E	X	X	E	E	E	E	E	E	E	E	E	E	E
Chromic Acid, 50% in w	E	F	F	G	G	X	X	G	X	X	E	E	E	F	E	E	E	E	E	E	E
Citric Acid, 10-20% in w	E	E	E	E	E	E	E	E	G	G	E	E	E	E	E	E	E	E	E	E	E
Coconut Oil	E	F	F	G	G	E	E	G	E	E	G	E	E	G	E	E	E	E	E	E	E
Corn Syrup	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Cottonseed Oil	E	F	F	G	G	E	E	F	E	E	G	E	E	G	E	E	E	E	E	E	E
Cresol (m, o, or p)	E	X	X	E	E	G	G	E	X	X	F	E	E	G	E	E	E	E	E	E	E
Cresylic Acid	E	G	G	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Cupric Chloride, 40% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Cupric Nitrate, 70% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Cupric Sulfate, 13% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Cyclohexane	E	X	X	X	X	X	X	X	G	G	X	E	E	X	E	E	E	G	E	E	E
Cyclohexanone	E	X	X	F	F	X	X	F	X	X	X	X	E	F	E	E	E	E	E	E	E
Detergent Solutions	E	G	G	E	E	G	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Dibutyl Phthalate	E	E	E	E	E	E	E	E	X	X	F	E	E	E	E	E	E	E	E	E	E
Diesel Fuel	E	X	X	X	X	X	X	X	G	G	X	E	E	X	E	E	E	E	E	E	E
Diethylamine, 2.5% in w	E	E	E	E	E	X	X	E	E	E	E	X	E	E	E	E	E	E	E	E	E
Diethylene Glycol	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Dimethylformamide	E	G	G	E	E	G	G	E	X	X	X	X	E	E	E	E	E	E	E	E	E
Dimethylsulfoxide	E	G	G	G	G	X	X	G	X	X	X	X	E	G	E	E	E	E	E	E	E
Dioctyl Phthalate	E	E	E	E	E	E	E	E	X	X	F	E	E	E	E	E	E	E	E	E	E
Dioxane	E	X	X	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Ether	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Ethyl Acetate	X	G	G	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	X	E	E
Ethyl Alcohol (Ethanol)	E	F	F	E	E	F	F	E	X	X	X	X	E	E	E	E	E	E	E	E	E
Ethyl Benzoate	E	X	X	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Ethyl Chloride	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Ethyl Ether	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Ethylene Bromide	E	X	X	F	F	E	E	F	X	X	X	E	G	F	E	E	E	E	E	E	E
Ethylene Chlorohydrin	E	E	E	E	E	G	G	E	X	X	X	X	E	E	E	E	E	E	E	E	E
Ethylene Dichloride	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Ethylene Glycol	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ethylene Oxide	E	E	E	E	E	F	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Fatty Acids	E	F	F	F	F	F	F	F	G	G	F	E	E	F	E	E	E	E	E	E	E
Ferric Chloride, 43% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ferric Nitrate, 60% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ferric Sulfate, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ferrous Chloride, 40% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ferrous Sulfate, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Fluoboric Acid, 48% in w	E	X	X	E	E	X	X	E	X	X	X	E	E	F	E	E	E	E	E	E	E
Fluorine Gas	F	X	X	X	X	X	X	X	X	X	X	G	X	X	G	G	G	X	F	F	G
Fluosilicic Acid, 25% in w	E	E	E	E	E	X	X	E	E	E	E	E	E	E	E	E	E	G	E	E	E
Formaldehyde, 37% in w	E	X	X	F	F	F	F	F	X	X	X	X	E	F	E	E	E	E	E	E	E
Formic Acid, 25% in w	E	E	E	E	E	G	G	E	F	F	E	E	E	E	E	E	E	E	E	E	E
Formic Acid, 40-50% in w	E	G	G	E	E	F	F	E	X	X	G	F	E	E	E	E	E	E	E	E	E
Formic Acid, 98% in w	E	G	G	E	E	F	F	E	X	X	G	X	E	F	E	E	E	E	E	E	E
Freon 11	E	E	E	E	E	E	E	E	E	E	E	G	F	E	F	F	F	F	E	E	F
Freon 12	E	E	E	E	E	E	E	E	E	E	E	G	F	E	F	F	F	F	E	E	F
Freon 22	E	E	E	E	E	E	E	E	E	E	E	G	F	E	F	F	F	F	E	E	F
Fruit Juice	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Fuel Oil	E	X	X	X	X	X	X	X	G	G	X	E	E	X	E	E	E	E	E	E	E
Furfural	E	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	E	E	E	E	E
Gallic Acid, 17% in acetone	E	G	G	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Gasoline, Automotive	E	X	X	X	X	X	X	X	G	G	X	E	E	X	E	E	E	E	E	E	E
Gelatin	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Glucose, 50% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Glycerol, (Glycerin)	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Glycolic Acid, 70% in w	F	G	G	E	E	E	E	E	X	X	E	X	X	E	X	X	X	X	F	X	X
Heptane	E	X	X	X	X	X	X	X	G	G	F	G	E	X	E	E	E	E	E	E	E
Hexane	E	X	X	X	X	X	X	X	G	G	F	G	E	X	E	E	E	E	E	E	E
Hydrazine	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Hydrobromic Acid, 20-50% in w	E	X	X	E	E	X	X	E	X	X	E	E	E	E	E	E	E	E	E	E	E
Hydrobromic Acid, 100% in w	E	X	X	E	E	X	X	E	X	X	X	E	E	F	E	E	E	E	E	E	E
Hydrochloric Acid, 10% in w	E	E	E	E	E	E	E	E	F	F	E	E	E	E	E	E	E	E	E	E	E
Hydrochloric Acid, 37% in w	E	G	G	E	E	X	X	E	X	X	E	G	E	F	E	E	E	E	E	E	E
Hydrocyanic Acid	E	E	E	E	E	E	E	E	G	G	E	X	E	E	E	E	E	E	E	E	E

E = Excellent G = Good F = Fair X = Not Recommended — = Testing in Progress
Environment, % Conc.* w = Water alc = Alcohol
* If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.
** Chemical resistance ratings based on inner liner material.
NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

Chemical Resistance Properties

	Tygon S3™ B-44-3	Tygon S3™ B-44-4X	Tygon S3™ B-44-4X IB	Tygon S3™ E-3603	Tygon S3™ E-LFL	Tygon® 2375	Tygon® A-60-F	Tygon® A-60-F IB	Tygon® B-44-FF	Tygon® E-1000	Tygon® E-70-V-CE	Tygon® SPT-3350	Tygon® SPT-3370 IB	Tygon® XL-60	Tygon S3™ M-34-R	Tygon S3™ A24, A24-C	Tygon® II	Tygon® F-4040-A	Tygon® LP-1100**	Tygon® LP-1200**	Tygon® LP-1500
Hydrofluoric Acid, 10% in w	E	E	E	E	E	E	X	X	X	E	E	X	X	E	E	E	E	E	E	E	X
Hydrofluoric Acid, 25% in w	F	F	F	F	F	E	X	X	X	F	E	X	X	E	F	F	X	X	E	E	X
Hydrofluoric Acid, 40-48% in w	F	F	F	X	X	E	X	X	X	X	E	X	X	E	F	X	X	X	E	E	X
Hydrogen Gas	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Hydrogen Peroxide, 3% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Hydrogen Peroxide, 10% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Hydrogen Peroxide, 30% in w	E	E	E	E	E	E	E	E	F	E	E	E	E	E	E	E	X	X	E	E	F
Hydrogen Peroxide, 90% in w	F	F	F	X	X	G	G	G	X	X	G	F	F	E	F	X	X	X	F	F	X
Hydrogen Sulfide	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Hydroquinone, 7% in w	E	E	E	E	E	E	G	G	E	E	E	G	G	G	E	E	E	E	E	E	E
Hypochlorous Acid, 25% in w	E	E	E	E	E	E	E	E	F	E	E	E	E	E	E	E	E	E	E	E	F
Iodine, 50 ppm in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Isobutyl Alcohol	X	X	X	X	X	E	F	F	X	X	E	X	X	F	X	X	E	E	E	E	X
Isooctane	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	G	G	E	E	G
Isopropyl Acetate	X	X	X	X	X	X	G	G	X	X	X	X	X	X	X	X	X	X	E	E	X
Isopropyl Alcohol	X	X	X	X	X	E	F	F	X	X	E	X	X	F	X	X	E	E	E	E	X
Isopropyl Ether	X	X	X	X	X	X	F	F	X	X	X	X	X	X	X	X	F	F	E	E	X
Jet Fuel, JP8	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	G	G	E	E	G
Kerosene	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	G	G	E	E	G
Ketones	X	X	X	X	X	F	X	X	X	X	F	X	X	X	X	X	X	X	E	E	X
Lacquer Solvents	X	X	X	X	X	X	G	G	X	X	X	X	X	X	X	X	X	X	E	E	X
Lactic Acid, 3-10% in w	E	E	E	E	E	E	E	E	G	E	E	E	E	E	E	E	E	E	E	E	G
Lactic Acid, 85% in w	X	X	X	X	X	E	G	G	X	X	E	X	X	E	X	X	X	X	E	E	X
Lard, Animal Fat	F	F	F	F	F	G	F	F	E	F	G	E	E	F	F	F	E	E	E	E	E
Lead Acetate, 35% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Lead Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Lemon Oil	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	F	F	E	E	G
Limonene-D	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	F	F	E	E	G
Linoleic Acid	X	X	X	X	X	F	F	F	G	X	F	G	G	F	X	X	G	G	E	E	G
Linseed Oil	F	F	F	X	X	G	F	F	E	X	G	E	E	X	F	X	E	E	E	E	E
Lubricating Oils, Petroleum	X	X	X	X	X	X	X	X	E	X	X	G	G	X	X	X	E	E	E	E	E
Magnesium Carbonate, 1% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Magnesium Chloride, 35% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Magnesium Hydroxide,10% in dil. acid	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Magnesium Nitrate, 50% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Magnesium Sulfate, 25% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Maleic Acid, 30% in w	X	X	X	X	X	F	F	F	G	X	F	G	G	F	X	X	G	G	E	E	G
Malic Acid, 36% in w	E	E	E	E	E	E	E	E	G	E	E	E	E	E	E	E	E	E	E	E	G
Manganese Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Mercuric Chloride, 6% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Mercuric Cyanide, 8% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Mercury	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Mercury Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Methane Gas	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Methyl Acetate	X	X	X	X	X	X	G	G	X	X	X	X	X	X	X	X	X	X	E	E	X
Methyl Bromide	X	X	X	X	X	X	F	F	X	X	X	X	X	X	X	X	X	X	E	E	X
Methyl Chloride	X	X	X	X	X	X	F	F	X	X	X	X	X	X	X	X	X	X	E	E	X
Methyl Ethyl Ketone (MEK)	X	X	X	X	X	F	X	X	X	X	F	X	X	X	X	X	X	X	X	X	X
Methyl Isobutyl Ketone	X	X	X	X	X	F	X	X	X	X	F	X	X	X	X	X	X	X	E	E	X
Methylene Chloride	X	X	X	X	X	X	F	F	X	X	X	X	X	X	X	X	X	X	E	E	X
Methyl Methacrylate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Milk	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Mineral Oil	G	G	G	G	G	X	X	X	E	G	X	X	X	F	G	G	E	E	E	E	E
Mineral Spirits	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	G	G	E	E	G
Molasses	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Monoethanolamine	X	X	X	X	X	X	F	F	X	X	X	X	X	E	X	X	X	X	E	E	X
Motor Oil	X	X	X	X	X	X	X	X	E	X	X	X	X	X	X	X	E	E	E	E	E
Naphtha	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	G	G	E	E	G
Naphthalene	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	G	G	E	E	G
Natural Gas	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nickel Chloride, 40% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nickel Nitrate, 75% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nickel Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nickel Sulfate, 25% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nitric Acid, 10% in w	E	E	E	E	E	E	E	E	X	E	E	F	F	E	E	E	X	X	X	X	X
Nitric Acid, 35% in w	G	G	G	G	G	E	E	E	X	G	E	X	X	E	G	G	X	X	X	X	X
Nitric Acid, 68-71% in w	X	X	X	X	X	E	X	X	X	X	E	X	X	E	X	X	X	X	E	E	X
Nitrobenzene	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Nitromethane	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Nitrous Acid, 10% in w	E	E	E	E	E	E	E	E	F	E	E	G	G	E	E	E	F	F	E	E	F
Nitrous Oxide	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Oils, Animal	F	F	F	X	X	G	F	F	E	X	G	E	E	F	F	X	E	E	E	E	E
Oils, Essential	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	F	F	E	E	G
Oils, Hydraulic (Phosphate Ester)	F	F	F	X	X	X	X	X	G	X	X	X	X	X	F	X	E	E	E	E	G
Oils, Hydrocarbon	X	X	X	X	X	X	X	X	E	X	X	G	G	X	X	X	E	E	E	E	E
Oils, Vegetable	F	F	F	X	X	G	F	F	E	X	G	E	E	F	F	X	E	E	E	E	E
Oleic Acid	X	X	X	X	X	F	F	F	G	X	F	G	G	F	X	X	G	G	E	E	G
Oleum, 25% in w	E	E	E	E	E	E	E	E	X	E	E	G	G	G	E	E	G	G	E	E	X
Ortho Dichlorobenzene	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Oxalic Acid, 12% in w	F	F	F	F	F	E	G	G	X	F	E	E	E	E	F	F	X	X	E	E	X
Oxygen	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ozone, 300pphm	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Palmitic Acid, 100% in ether	X	X	X	X	X	F	F	F	G	X	F	G	G	X	X	X	G	G	E	E	G

E = Excellent G = Good F = Fair X = Not Recommended — = Testing in Progress
Environment, % Conc.* w = Water alc = Alcohol
* If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.
** Chemical resistance ratings based on inner liner material.
NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

Environment, % Conc.*	Tygon® LP-1600	Tygon® WSA-60	Tygon® A-60-G	Tygon® Chemical**	Tygon® 2375-C	Versilon™ SPX-50	Versilon™ SPX-70 IB	Versilon™ 2001	Versilon™ C-210-A	Versilon™ C-544-A IB	Versilon™ R-3400	Versilon™ F-5500-A	Versilon™ SE-200**	Versilon™ Silver	Versilon™ FEP	Versilon™ PFA-F	Versilon™ PTFE	Versilon™ 367	Versilon™ PVDF	Versilon™ ETFE	Versilon™ Duality**
Hydrofluoric Acid, 10% in w	E	X	X	E	E	X	X	E	X	X	E	E	E	E	E	E	E	E	E	E	E
Hydrofluoric Acid, 25% in w	E	X	X	E	E	X	X	E	X	X	X	E	E	F	E	E	E	E	E	E	E
Hydrofluoric Acid, 40-48% in w	E	X	X	E	E	X	X	E	X	X	X	E	E	F	E	E	E	E	E	E	E
Hydrogen Gas	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Hydrogen Peroxide, 3% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Hydrogen Peroxide, 10% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Hydrogen Peroxide, 30% in w	E	E	E	E	E	E	E	E	F	F	E	E	E	E	E	E	E	E	E	E	E
Hydrogen Peroxide, 90% in w	F	G	G	G	G	F	F	G	X	X	F	E	E	G	E	E	E	E	F	E	E
Hydrogen Sulfide	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Hydroquinone, 7% in w	E	G	G	E	E	F	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Hypochlorous Acid, 25% in w	E	E	E	E	E	E	E	E	F	F	E	E	E	E	E	E	E	E	E	E	E
Iodine, 50 ppm in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Isobutyl Alcohol	E	F	F	E	E	X	X	E	X	X	X	E	E	E	E	E	E	E	E	E	E
Isooctane	E	X	X	X	X	X	X	X	G	G	X	E	E	X	E	E	E	E	E	E	E
Isopropyl Acetate	E	G	G	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Isopropyl Alcohol	E	F	F	E	E	X	X	E	X	X	X	E	E	E	E	E	E	E	E	E	E
Isopropyl Ether	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Jet Fuel, JP8	E	X	X	X	X	X	X	X	G	G	X	E	E	X	E	E	E	E	E	E	E
Kerosene	E	X	X	X	X	X	X	X	G	G	X	E	E	X	E	E	E	E	E	E	E
Ketones	E	X	X	F	F	X	X	F	X	X	X	X	E	F	E	E	E	G	E	G	E
Lacquer Solvents	E	G	G	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Lactic Acid, 3-10% in w	E	E	E	E	E	E	E	E	G	G	E	X	E	E	E	E	E	E	E	E	E
Lactic Acid, 85% in w	E	G	G	E	E	X	X	E	X	X	X	X	E	E	E	E	E	E	E	E	E
Lard, Animal Fat	E	F	F	G	G	E	E	G	E	E	G	E	E	G	E	E	E	E	E	E	E
Lead Acetate, 35% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Lead Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Lemon Oil	E	X	X	X	X	X	X	X	G	G	X	E	E	X	E	E	E	E	E	E	E
Limonene-D	E	X	X	X	X	X	X	X	G	G	X	E	E	X	E	E	E	E	E	E	E
Linoleic Acid	E	F	F	F	F	F	F	F	G	G	F	E	E	F	E	E	E	E	E	E	E
Linseed Oil	E	F	F	G	G	E	E	G	E	E	G	E	E	G	E	E	E	E	E	E	E
Lubricating Oils, Petroleum	E	X	X	X	X	G	G	X	E	E	X	E	E	X	E	E	E	E	E	E	E
Magnesium Carbonate, 1% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Magnesium Chloride, 35% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Magnesium Hydroxide,10% in dil.acid	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Magnesium Nitrate, 50% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Magnesium Sulfate, 25% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Maleic Acid, 30% in w	E	F	F	F	F	F	F	F	G	G	F	E	E	F	E	E	E	E	E	E	E
Malic Acid, 36% in w	E	E	E	E	E	E	E	E	G	G	E	X	E	E	E	E	E	E	E	E	E
Manganese Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Mercuric Chloride, 6% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Mercuric Cyanide, 8% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Mercury	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Mercury Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Methane Gas	E	E	E	E	E	F	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Methyl Acetate	E	G	G	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Methyl Bromide	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Methyl Chloride	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Methyl Ethyl Ketone (MEK)	X	X	X	F	F	X	X	F	X	X	X	X	E	F	E	E	E	G	X	E	E
Methyl Isobutyl Ketone	E	X	X	F	F	X	X	F	X	X	X	X	E	F	E	E	E	E	E	E	E
Methylene Chloride	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Methyl Methacrylate	E	X	X	X	X	X	X	X	X	X	X	F	E	X	E	E	E	E	E	E	E
Milk	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Mineral Oil	E	X	X	X	X	X	X	X	E	E	E	E	E	X	E	E	E	E	E	E	E
Mineral Spirits	E	X	X	X	X	X	X	X	G	G	X	E	E	X	E	E	E	E	E	E	E
Molasses	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Monoethanolamine	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Motor Oil	E	X	X	X	X	X	X	X	E	E	X	E	E	X	E	E	E	E	E	E	E
Naphtha	E	X	X	X	X	X	X	X	G	G	X	E	E	X	E	E	E	E	E	E	E
Naphthalene	E	X	X	X	X	X	X	X	G	G	X	E	E	X	E	E	E	E	E	E	E
Natural Gas	E	E	E	E	E	F	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nickel Chloride, 40% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nickel Nitrate, 75% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nickel Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nickel Sulfate, 25% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Nitric Acid, 10% in w	X	E	E	E	E	F	F	E	X	X	E	E	E	E	E	E	E	E	X	E	E
Nitric Acid, 35% in w	X	E	E	E	E	X	X	E	X	X	E	F	E	G	E	E	E	E	X	E	E
Nitric Acid, 68-71% in w	E	X	X	E	E	X	X	E	X	X	G	X	G	E	G	E	E	E	E	X	G
Nitrobenzene	E	X	X	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Nitromethane	E	X	X	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Nitrous Acid, 10% in w	E	E	E	E	E	G	G	E	F	F	E	E	E	E	E	E	E	E	E	E	E
Nitrous Oxide	E	E	E	E	E	G	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Oils, Animal	E	F	F	G	G	E	E	G	E	E	G	E	E	G	E	E	E	E	E	E	E
Oils, Essential	E	X	X	X	X	X	X	X	G	G	X	E	E	X	E	E	E	E	E	E	E
Oils, Hydraulic (Phosphate Ester)	E	X	X	X	X	X	X	X	G	G	F	E	E	X	E	E	E	E	E	E	E
Oils, Hydrocarbon	E	X	X	X	X	G	G	X	E	E	X	E	E	X	E	E	E	E	E	E	E
Oils, Vegetable	E	F	F	G	G	E	E	G	E	E	G	E	E	G	E	E	E	E	E	E	E
Oleic Acid	E	F	F	F	F	F	F	X	G	G	F	E	E	F	E	E	E	E	E	E	E
Oleum, 25% in w	E	E	E	E	E	G	G	E	X	X	E	E	E	E	E	E	E	E	E	E	E
Ortho Dichlorobenzene	E	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	E	E	E	E	E
Oxalic Acid, 12% in w	E	G	G	E	E	F	F	E	X	X	G	X	E	F	E	E	E	E	E	E	E
Oxygen	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Ozone, 300pphm	E	E	E	E	E	X	X	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Palmitic Acid, 100% in ether	E	F	F	F	F	F	F	F	G	G	F	E	E	F	E	E	E	E	E	E	E

E = Excellent G = Good F = Fair X = Not Recommended — = Testing in Progress
Environment, % Conc.* w = Water alc = Alcohol
* If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.
** Chemical resistance ratings based on inner liner material.
NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

Chemical Resistance Properties

	Tygon S3™ B-44-3	Tygon S3™ B-44-4X	Tygon S3™ B-44-4X IB	Tygon S3™ E-3603	Tygon S3™ E-LFL	Tygon® 2375	Tygon® A-60-F	Tygon® A-60-F IB	Tygon® B-44-FF	Tygon® E-1000	Tygon® E-70-V-CE	Tygon® SPT-3350	Tygon® SPT-3370 IB	Tygon® XL-60	Tygon S3™ M-34-R	Tygon S3™ A24, A24-C	Tygon® II	Tygon® F-4040-A	Tygon® LP-1100**	Tygon® LP-1200**	Tygon® LP-1500
Paraffins	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	G	G	E	E	E	G
Perchloric Acid, 67% in w	F	F	F	X	X	E	E	E	X	X	E	X	X	E	F	X	X	X	E	E	X
Perchloroethylene	X	X	X	X	X	X	F	F	X	X	X	X	X	F	X	X	X	X	E	E	X
Phenol, 5-10% in w	E	E	E	G	G	E	E	E	X	G	E	E	X	X	E	G	E	E	E	E	X
Phenol, 91% in w	G	G	G	F	F	E	E	E	X	X	E	G	X	X	G	F	F	E	E	E	X
Phosphoric Acid, <10% in w	E	E	E	E	E	E	E	E	E	E	E	F	F	E	E	E	E	E	E	E	E
Phosphoric Acid, 25% in w	E	E	E	E	E	E	E	E	E	E	E	X	X	E	E	E	E	E	E	E	E
Phosphoric Acid, 85% in w	F	F	F	F	F	E	E	E	X	F	E	X	X	G	F	F	X	X	E	E	X
Phosphorous Trichloride Acid	F	F	F	F	F	E	G	G	X	F	E	X	X	G	F	F	X	X	E	E	X
Photographic Solutions	E	E	E	E	E	E	G	G	E	E	E	G	G	G	E	E	E	E	E	E	E
Phthalic Acid, 9% in alc	F	F	F	X	X	E	E	E	X	X	E	G	G	X	F	X	F	F	E	E	X
Phthalic Anhydride, 9% in alc	X	X	X	X	X	E	E	E	X	X	E	E	E	G	X	X	X	X	E	E	X
Picric Acid, 1% in w	E	E	E	E	E	E	X	X	X	E	E	X	X	X	E	E	E	E	E	E	X
Plating Solutions	E	E	E	E	E	E	E	E	X	E	E	X	X	G	E	E	X	X	E	E	X
Potassium Carbonate, 55% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Potassium Cyanide, 33% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Potassium Dichromate, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Potassium Hydroxide, <10% in w	X	X	X	X	X	E	E	E	X	X	E	E	E	E	E	X	X	X	E	E	X
Potassium Hypochlorite, 70% in w	G	G	G	F	F	E	E	E	E	F	E	E	E	G	G	F	E	E	E	E	E
Potassium Iodide, 56% in w	E	E	E	E	E	E	E	E	E	E	E	—	—	E	E	E	E	E	E	E	E
Potassium Permanganate, 6% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Potassium Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Propane Gas	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Propyl Alcohol (Propanol)	X	X	X	X	X	E	F	F	X	X	E	—	—	F	X	X	E	E	E	E	X
Propylene Glycol	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Propylene Oxide	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Pyridine	X	X	X	X	X	F	F	F	X	X	F	X	X	E	X	X	X	X	E	E	X
Salicylic Acid, 1% in w	E	E	E	E	E	E	E	E	G	E	E	E	E	E	E	E	E	E	E	E	G
Silicone Oils	G	G	G	G	G	E	F	F	E	G	E	X	X	E	G	G	E	E	E	E	E
Silver Nitrate, 55% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Skydrol 500A	F	F	F	X	X	X	X	X	G	X	X	X	X	X	F	X	E	E	E	E	G
Soap Solutions	E	E	E	E	E	E	G	G	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Acetate, 55% in w	E	E	E	E	E	E	E	E	E	E	E	X	X	E	E	E	E	E	E	E	E
Sodium Benzoate, 22% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Bicarbonate, 7% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Carbonate, 7% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Chlorate, 45% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Chloride, 20% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Cyanide, 30% in w	E	E	E	E	E	E	E	E	X	E	E	E	E	E	E	E	X	X	E	E	X
Sodium Fluoride, 3% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Hydroxide, 10-15% in w	X	X	X	X	X	E	E	E	X	X	E	E	E	E	E	X	X	X	E	E	X
Sodium Hydroxide, 30-40% in w	F	F	F	F	F	E	E	E	X	E	E	E	E	E	G	F	X	X	E	E	X
Sodium Hypochlorite, 5.5% in w	E	E	E	E	E	E	E	E	G	E	E	X	X	E	E	E	E	E	E	E	G
Sodium Hypochlorite, 12.2% in w	G	G	G	F	F	E	E	E	G	F	E	X	X	E	E	F	E	E	E	E	G
Sodium Nitrate, 3.5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Sulfate, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Sulfide, 45% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Sulfite, 10% in w	E	E	E	E	E	E	E	E	E	E	E	—	—	E	E	E	E	E	E	E	E
Stannic Chloride, 50% in w	E	E	E	E	E	E	E	E	F	E	E	E	E	E	E	E	F	F	E	E	F
Stannous Chloride, 45% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Stearic Acid, 5% in alc	X	X	X	X	X	F	F	F	G	X	F	G	G	E	X	X	G	G	E	E	G
Styrene Monomer	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Sulfur Chloride	X	X	X	X	X	E	X	X	X	X	E	X	X	E	X	X	X	X	E	E	X
Sulfur Dioxide, Gas Dry	E	E	E	E	E	E	E	E	F	E	E	E	E	E	E	E	G	G	E	E	F
Sulfur Dioxide, Gas Wet	E	E	E	E	E	E	E	E	F	E	E	E	E	E	E	E	G	G	E	E	F
Sulfur Trioxide, Wet	G	G	G	G	G	G	G	G	X	G	G	G	G	E	G	G	X	X	G	G	X
Sulfuric Acid, 10% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sulfuric Acid, 30% in w	E	E	E	E	E	E	E	E	X	E	E	G	G	E	E	E	G	G	E	E	X
Sulfuric Acid, 95-98% in w	X	X	X	X	X	E	X	X	X	X	E	X	X	E	X	X	X	X	E	E	X
Sulfurous Acid	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Tannic Acid, 75% in w	F	F	F	F	F	E	G	G	X	F	E	E	E	E	F	F	X	X	E	E	X
Tartaric Acid, 56% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Tetrahydrofuran	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Thionyl Chloride	E	E	E	E	E	E	E	E	F	E	E	E	E	E	E	E	G	G	E	E	F
Tin Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Titanium Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Toluene	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Trichloroacetic Acid, 90% in w	E	E	E	E	E	E	G	G	X	E	E	E	E	E	E	E	X	X	E	E	X
Trichloroethane	X	X	X	X	X	X	F	F	X	X	X	X	X	X	X	X	X	X	E	E	X
Triethanolamine	G	G	G	E	E	X	F	F	X	E	X	X	X	G	E	X	X	E	E	E	X
Trichloroethylene	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Trichloropropane	X	X	X	X	X	X	F	F	X	X	X	X	X	X	X	X	F	F	E	E	X
Tricresyl Phosphate	F	F	F	F	F	E	E	E	X	F	E	E	E	G	F	F	F	F	E	E	X
Trisodium Phosphate	F	F	F	E	E	E	E	E	E	E	E	E	E	E	F	E	E	E	E	E	E
Turpentine	X	X	X	X	X	X	X	X	G	X	X	X	X	X	X	X	G	G	E	E	G
Urea, 20% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Uric Acid	E	E	E	E	E	E	E	E	F	E	E	E	E	E	E	E	F	F	E	E	F
Vinegar	E	E	E	E	E	E	E	E	G	E	E	E	E	E	E	E	E	E	E	E	G
Vinyl Acetate	X	X	X	X	X	X	G	G	X	X	X	X	X	X	X	X	X	X	E	E	X
Water, Deionized	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Water, Distilled	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Xylene	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	X
Zinc Chloride, 80% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Zinc Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E

E = Excellent G = Good F = Fair X = Not Recommended — = Testing in Progress
Environment, % Conc.* w = Water alc = Alcohol
* If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.
** Chemical resistance ratings based on inner liner material.
NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

Environment, % Conc.*	Tygon® LP-1600	Tygon® WSA-60	Tygon® A-60-G	Tygon® Chemical**	Tygon® 2375-C	Versilon™ SPX-50	Versilon™ SPX-70 IB	Versilon™ 2001	Versilon™ C-210-A	Versilon™ C-544-A IB	Versilon™ R-3400	Versilon™ F-5500-A	Versilon™ SE-200**	Versilon™ Silver	Versilon™ FEP	Versilon™ PFA-F	Versilon™ PTFE	Versilon™ 367	Versilon™ PVDF	Versilon™ ETFE	Versilon™ Duality**
Paraffins	E	X	X	X	X	X	X	X	G	G	F	G	E	X	E	E	E	E	E	E	E
Perchloric Acid, 67% in w	E	E	E	E	E	X	X	E	X	X	E	E	E	F	E	E	E	E	E	E	E
Perchloroethylene	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Phenol, 5-10% in w	E	E	E	E	E	X	X	E	X	X	F	E	E	E	E	E	E	E	E	E	E
Phenol, 91% in w	E	E	E	E	E	X	X	E	X	X	X	E	E	G	E	E	E	E	E	E	E
Phosphoric Acid, <10% in w	E	E	E	E	E	X	X	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Phosphoric Acid, 25% in w	E	E	E	E	E	X	X	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Phosphoric Acid, 85% in w	E	E	E	E	E	X	X	E	X	X	E	E	E	F	E	E	E	E	E	E	E
Phosphorous Trichloride Acid	E	G	G	E	E	X	X	E	X	X	E	G	E	F	E	E	E	E	E	E	E
Photographic Solutions	E	G	G	E	E	F	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Phthalic Acid, 9% in alc	E	E	E	E	E	F	F	E	X	X	X	E	E	E	E	E	E	E	E	E	E
Phthalic Anhydride, 9% in alc	E	E	E	E	E	F	F	E	X	X	X	X	E	E	E	E	E	E	E	E	E
Picric Acid, 1% in w	E	X	X	E	E	X	X	E	X	X	E	E	E	E	E	E	E	E	E	E	E
Plating Solutions	E	E	E	E	E	X	X	E	X	X	E	E	E	E	E	E	E	E	E	E	E
Potassium Carbonate, 55% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Potassium Cyanide, 33% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Potassium Dichromate, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Potassium Hydroxide, <10% in w	E	E	E	E	E	G	G	E	X	X	E	E	E	E	E	E	E	E	E	E	E
Potassium Hypochlorite, 70% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	G	E	E	E	E	E	E	E
Potassium Iodide, 56% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Potassium Permanganate, 6% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Potassium Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Propane Gas	E	E	E	E	E	F	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Propyl Alcohol (Propanol)	E	F	F	E	E	X	X	E	X	X	X	E	E	E	E	E	E	E	E	E	E
Propylene Glycol	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Propylene Oxide	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Pyridine	E	F	F	F	F	X	X	F	X	X	X	X	G	F	G	G	E	G	E	E	G
Salicylic Acid, 1% in w	E	E	E	E	E	E	E	E	G	G	E	X	E	E	E	E	E	E	E	E	E
Silicone Oils	E	F	F	E	E	X	X	G	E	E	E	E	E	E	E	E	E	E	E	E	E
Silver Nitrate, 55% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Skydrol 500A	E	X	X	X	X	X	X	X	G	G	F	E	E	X	E	E	E	E	E	E	E
Soap Solutions	E	G	G	E	E	F	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Acetate, 55% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Benzoate, 22% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Bicarbonate, 7% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Carbonate, 7% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Chlorate, 45% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Chloride, 20% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Cyanide, 30% in w	E	E	E	E	E	G	G	E	X	X	E	E	E	E	E	E	E	E	E	E	E
Sodium Fluoride, 3% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Hydroxide, 10-15% in w	E	E	E	E	E	G	G	E	X	X	E	E	E	E	E	E	E	E	E	E	E
Sodium Hydroxide, 30-40% in w	E	E	E	E	E	G	G	E	X	X	X	E	E	G	E	E	E	E	E	E	E
Sodium Hypochlorite, 5.5% in w	E	E	E	E	E	E	E	E	G	G	E	E	E	E	E	E	E	E	E	E	E
Sodium Hypochlorite, 12.2% in w	E	E	E	E	E	G	G	E	G	G	E	E	E	E	E	E	E	E	E	E	E
Sodium Nitrate, 3.5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Sulfate, 5% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Sulfide, 45% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Sulfite, 10% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Stannic Chloride, 50% in w	E	E	E	E	E	E	E	E	F	F	E	E	E	E	E	E	E	E	E	E	E
Stannous Chloride, 45% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Stearic Acid, 5% in alc	E	F	F	F	F	F	F	F	G	G	F	E	E	F	E	E	E	E	E	E	E
Styrene Monomer	E	X	X	X	X	X	X	X	X	X	X	F	E	X	E	E	E	E	E	E	E
Sulfur Chloride	E	X	X	E	E	X	X	E	X	X	X	E	E	E	E	E	E	E	E	E	E
Sulfur Dioxide, Gas Dry	E	E	E	E	E	G	G	E	F	F	E	E	E	E	E	E	E	E	E	E	E
Sulfur Dioxide, Gas Wet	E	E	E	E	E	G	G	E	F	F	E	E	E	E	E	E	E	E	E	E	E
Sulfur Trioxide, Wet	G	E	E	G	G	F	F	G	X	X	G	G	G	G	G	G	G	G	G	G	G
Sulfuric Acid, 10% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Sulfuric Acid, 30% in w	E	E	E	E	E	G	G	E	X	X	E	E	E	E	E	E	E	E	E	E	E
Sulfuric Acid, 95-98% in w	E	X	X	E	E	X	X	X	X	X	X	E	E	E	E	E	E	E	E	E	E
Sulfurous Acid	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Tannic Acid, 75% in w	E	G	G	E	E	F	F	E	X	X	G	X	E	F	E	E	E	E	E	E	E
Tartaric Acid, 56% in w	E	E	E	E	E	G	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Tetrahydrofuran	E	X	X	X	X	X	X	X	X	X	X	X	X	X	E	E	E	E	E	E	E
Thionyl Chloride	E	E	E	E	E	G	G	E	F	F	E	E	E	E	E	E	E	E	E	E	E
Tin Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Titanium Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Toluene	E	X	X	X	X	X	X	X	X	X	X	F	E	X	E	E	E	E	E	E	E
Trichloroacetic Acid, 90% in w	E	G	G	E	E	G	G	E	X	X	E	X	E	E	E	E	E	E	E	E	E
Trichloroethane	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Triethanolamine	E	F	F	X	X	X	X	X	X	X	X	X	E	G	E	E	E	E	E	E	E
Trichloroethylene	E	X	X	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Trichloropropane	E	F	F	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Tricresyl Phosphate	E	E	E	E	E	E	E	E	X	X	F	E	E	F	E	E	E	E	E	E	E
Trisodium Phosphate	E	E	E	E	E	E	E	E	E	E	E	E	E	F	E	E	E	E	E	E	E
Turpentine	E	X	X	X	X	X	X	X	G	G	X	E	E	X	E	E	E	E	E	E	E
Urea, 20% in w	E	E	E	E	E	G	G	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Uric Acid	E	E	E	E	E	G	G	E	F	F	E	F	E	E	E	E	E	E	E	E	E
Vinegar	E	E	E	E	E	E	E	E	G	G	E	X	E	E	E	E	E	E	E	E	E
Vinyl Acetate	E	G	G	X	X	X	X	X	X	X	X	X	E	X	E	E	E	E	E	E	E
Water, Deionized	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Water, Distilled	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Xylene	E	X	X	X	X	X	X	X	X	X	X	F	E	X	E	E	E	E	E	E	E
Zinc Chloride, 80% in w	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Zinc Salts	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E

E = Excellent G = Good F = Fair X = Not Recommended — = Testing in Progress
Environment, % Conc.* w = Water alc = Alcohol
* If concentration is not indicated, assume 100% concentration or the maximum percent solubility in water.
** Chemical resistance ratings based on inner liner material.
NOTE: Concentrations of room temperature liquids are given in % volume. Concentrations of room temperature solids are given in % weight.

TYPICAL PHYSICAL PROPERTIES OF FLEXIBLE TUBING

Physical properties of a tubing produced from a specific compound will vary depending on its diameter and wall thickness. The following typical physical properties are average values as measured using test methods of the American Society for Testing and Materials. 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.

IMPORTANT: It is the user's responsibility to ensure the suitability and safety of Saint-Gobain tubing for all intended uses, including establishing the compatibility of any fluid with the tubing through which it is transmitted. Laboratory, field or clinical tests must be conducted in accordance with applicable requirements in order to determine the safety and effectiveness for use of tubing in any particular application. If intended for medical use, it is the user's responsibility to ensure that the tubing to be used complies with all applicable medical regulatory requirements.

Typical Physical Properties

Tubing	Durometer Hardness (Shore A), 15 sec	Color	Opacity	Tensile Strength		Ultimate Elongation, %	Tear Resistance	
				psi	MPa		lb-f/in	kN/m
	ASTM Method D2240	N/A	N/A	ASTM Method D412		ASTM Method D412	ASTM Method D1004	
Tygon S3™ B-44-3	66	Clear	Transparent	2200	15.2	390	250	43.8
Tygon S3™ B-44-4X	66	Clear	Transparent	2200	15.2	390	250	43.8
Tygon S3™ B-44-4X IB	66	Clear	Braided	2200	15.2	390	250	43.8
Tygon S3™ E-3603	56	Clear	Transparent	1750	12.1	425	173	31.0
Tygon S3™ E-LFL	56	Clear	Translucent	1800	12.4	400	184	32.2
Tygon® 2375	75	Clear	Translucent	1900	13.1	850	240	42.0
Tygon® A-60-F	61	Cream	Opaque	1000	6.9	375	120	21.0
Tygon® A-60-F IB	61	Cream	Opaque	1000	6.9	375	120	21.0
Tygon® B-44-FF	82*	Natural	Transparent	6050	41.7	500	475	83.1
Tygon® E-1000	40	Clear	Translucent	1100	7.6	435	104	18.2
Tygon® E-70-V-CE	72	Clear	Translucent	2300	15.8	240	—	—
Tygon® SPT-50 LF	51	Clear	Translucent	1320	9.1	627	—	—
Tygon® SPT-3350	50	Clear	Translucent	1450	10.0	770	200	35.0
Tygon® SPT-3370 IB	70	Clear	Translucent	1200	8.3	500	250	43.8
Tygon® XL-60	60	Clear	Translucent	1630	11.2	770	190	33.3
Tygon S3™ M-34-R	66	Clear	Translucent	2205	15.2	390	250	43.8
Tygon S3™ A24	56	Clear	Transparent	1755	12.1	425	177	31.0
Tygon S3™ A24-C	56	Black	Transparent	1755	12.1	425	177	31.0
Tygon® II	68	Cream	Translucent	—	—	950	200	35.0
Tygon® F-4040-A	57	Yellow	Translucent	1820	12.5	310	167	29.0
Tygon® LP-1100	69	Yellow	Translucent	2400	16.5	450	167	29.0
Tygon® LP-1200	78	Clear	Translucent	3600	24.8	475	500	87.6
Tygon® LP-1500	85	Clear	Translucent	5000	34.5	400	560	98.0
Tygon® LP-1600	72	Gray	Opaque	2700	18.6	300	—	—
Tygon® SPT-60 L	60	Clear	Translucent	900	6.2	300	—	—
Tygon® WSA-60	61	Black	Opaque	1000	6.9	375	120	21.0
Tygon® A-60-G	61	Black	Opaque	1000	6.9	375	120	21.0
Tygon® Chemical	61	Cream	Opaque	1000	6.9	375	120	21.0
Tygon® 2375-C	75	Clear	Translucent	1900	13.1	850	240	42.0
Versilon™ SPX-50	50	Clear	Translucent	1500	10.3	450	148	26.0
Versilon™ SPX-70 IB	71	Clear	Braided	1200	8.3	300	130	22.8
Versilon™ 2001	69	Clear	Translucent	800	5.5	500	140	24.5
Versilon™ C-210-A	82*	Clear	Transparent	6050	41.7	500	475	83.1
Versilon™ C-544-A IB	85*	Clear	Braided	5000	34.5	400	350	61.3
Versilon™ R-3400	64	Black	Opaque	2250	15.5	350	185	32.0
Versilon™ F-5500-A	60*	Black	Opaque	1400	9.3	300	100	17.5
Versilon™ SE-200	66**	Clear	Translucent	2200	15.2	390	250	43.8
Versilon™ Silver	69	Silver	Opaque	2300	15.8	350	250	43.8
Versilon™ FEP	55D*	Clear	Transparent	2600	17.9	325	—	—
Versilon™ PFA-F	60D*	Clear	Translucent	2500	17.2	300	—	—
Versilon™ PTFE	58D*	Clear	Translucent	2650	18.3	250	—	—
Versilon™ 367	58D*	Clear	Transparent	3750	26.0	300	—	—
Versilon™ PVDF	65D*	Clear	Opaque	2900	20.0	400	—	—
Versilon™ ETFE	72D*	Clear	Opaque	6800	47.0	300	—	—
Versilon™ Duality	48D*	Clear	Translucent	—	—	—	—	—

† 75% of ultimate elongation
* 1-second reading
** Durometer measured on outer jacket

NOTE: The ratings in the charts DO NOT reflect the extent to which extraction may occur, or the extent to which fluids may undergo any physical changes in properties or composition, as a result of coming into contact with the tubing. Saint-Gobain makes no representation or warranty with respect to the susceptibility of any fluid to become contaminated or undergo changes in properties or composition as a result of possible extraction of tubing ingredients by the fluid to be transmitted. Certain corrosives that would be destructive to tubing with prolonged exposure can be satisfactorily handled for short periods of time if flushed with water after use. All ratings are based on room temperature (73°F). Chemical resistance will be adversely affected by elevated temperatures.

Specific Gravity	Water Absorption, % at 73°F (23°C) for 24 hrs.	Compression Set Constant Deflection, % at 158°F (70°C) for 22 hrs.	Maximum Recommended Operating Temp.		Brittleness by Impact Temp.		Low Temp. Flexibility		Tensile Set, † %
			°F	°C	°F	°C	°F	°C	
ASTM Method D792	ASTM Method D570	ASTM Method D395	N/A		ASTM Method D746		ASTM Method D380		ASTM Method D412
1.20	0.22	59	165	74	-32	-36	-49	-45	57
1.21	0.22	59	165	74	-32	-36	-49	-45	57
1.21	0.22	59	165	74	-32	-36	—	—	57
1.21	0.21	64	165	74	-51	-46	—	—	95
1.17	0.20	68	165	74	-51	-46	—	—	54
0.90	0.04	100	130	54	-103	-75	—	—	300
0.98	0.30	30	275	135	-75	-60	—	—	57
0.98	0.30	30	275	135	-75	-60	—	—	57
1.20	1.12	68	175	79	-100	-73	—	—	98
1.10	0.29	55	125	52	-67	-55	—	—	—
1.20	<0.01	—	160	71	-47	-44	—	—	—
—	—	—	—	—	—	—	—	—	—
1.14	0.11	7	400	204	-112	-80	—	—	—
1.18	0.11	3	320	160	-112	-80	—	—	25
0.90	0.07	55	250	121	-87	-66	—	—	100
1.21	0.22	59	165	74	-33	-36	—	—	57
1.21	0.21	64	165	74	-32	-36	—	—	95
1.21	0.21	64	165	74	-32	-36	—	—	95
1.18	—	—	212	100	-112	-80	-85	-65	—
1.26	0.49	65	165	74	-35	-37	—	—	50
1.29	0.49	65	180	82	-35	-37	—	—	50
1.27	0.70	35	180	82	-130	-90	-40	-40	90
1.18	0.90	35	185	85	—	—	-40	-40	35
1.32	0.47	—	180	82	—	—	—	—	—
1.12	—	—	350	176	—	—	—	—	—
0.98	0.30	27	275	135	-75	-60	—	—	47
0.98	0.30	30	275	135	-75	-60	—	—	47
0.98	<0.01	30	165	74	-75	-60	—	—	57
0.90	0.04	100	130	54	-103	-75	—	—	300
1.17	0.06	10	350	177	-112	-80	—	—	8
1.20	0.08	10	320	160	-112	-80	—	—	10
0.88	0.04	40	135	57	-108	-78	-100	-73	110
1.20	1.12	68	175	79	-100	-73	—	—	98
1.12	1.80	19	180	82	-100	-73	—	—	45
1.31	0.19	64	165	74	-6	-21	—	—	56
1.90	0.23	37	400	204	-60	-51	—	—	13
1.21	<0.01	59	165	74	-32	-36	—	—	57
1.21	<0.01	63	165	74	-31	-35	—	—	63
2.17	<0.01	—	400	204	-100	-73	—	—	—
2.17	<0.03	—	500	260	-320	-196	—	—	—
2.18	<0.01	—	500	260	-450	-268	—	—	—
2.15	<0.03	—	450	227	-320	-196	—	—	—
1.77	0.03	—	250	121	—	—	—	—	—
1.70	<0.01	—	300	150	-150	-66	200	100	—
—	<0.01	—	180	82	—	—	25	-32	—



INVENTORY SIZES, SUGGESTED MAXIMUM WORKING PRESSURE, AND MINIMUM BEND RADIUS

Maximum Working Pressure – of Tygon® tubing varies with the different formulations. In addition, working pressure is affected by temperature, size and wall thickness, time and material transmitted as explained below:

> TEMPERATURE

Since Tygon® tubing is produced from a variety of polymers, elastomers and rubbers, temperature should be considered in the selection of a Tygon® formulation for an end-use application. As a rule, tubing will stiffen as ambient temperature is reduced from standard room temperature (73°F/23°C). At higher temperatures, the tubing will become more flexible and physical properties such as tensile strength will become lower.

> SIZE AND WALL THICKNESS

Working pressure increases as the wall thickness increases relative to the bore size.

> TIME

If pressure exceeding the maximum suggested working pressure is maintained over a period of time, the tubing will gradually swell and eventually rupture.

> MATERIAL TRANSMITTED

Even materials such as solvents that attack Tygon® tubing can be handled over short periods of time. However, prolonged exposure tends to cause swelling, loss of normal tensile strength and reduced pressure resistance.

Minimum Bend Radius – for flexible tubing is a measure of how tightly the tubing can be bent before distortion or kinking of the walls occurs. Minimum bend radius can vary depending on the tubing formulation or size. Items with smaller minimum bend radius values will be more suitable in applications requiring fluid transfer around tight corners or constricted ports without loss of fluid flow or increase in pressure due to kinking.

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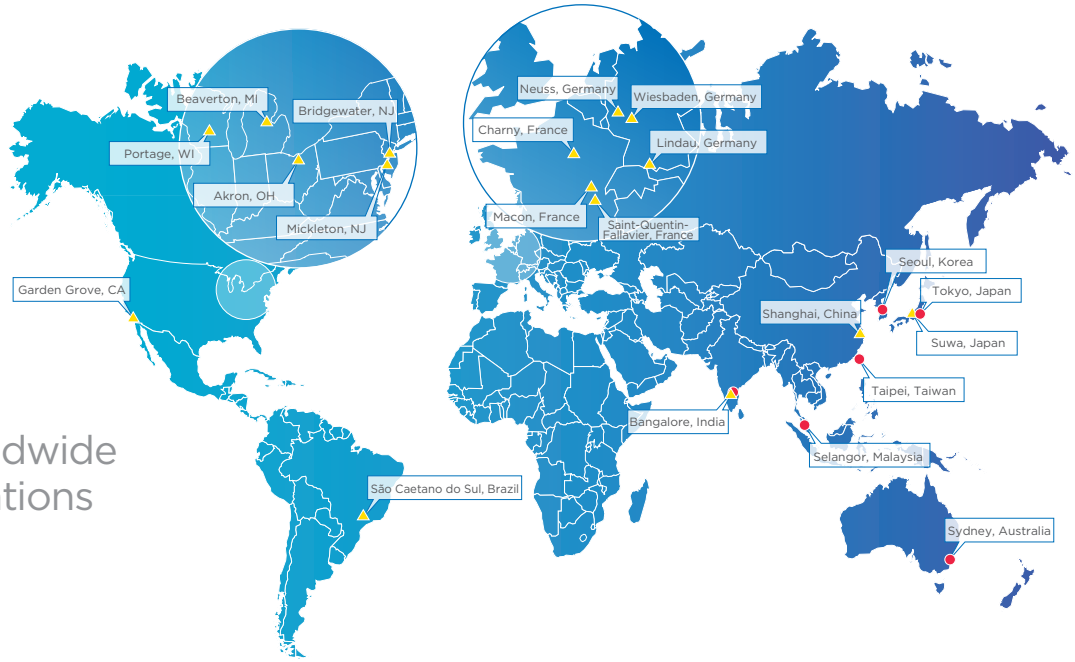
NOTE: The ratings in the charts DO NOT reflect the extent to which extraction may occur, or the extent to which fluids may undergo any physical changes in properties or composition, as a result of coming into contact with the tubing. Saint-Gobain makes no representation or warranty with respect to the susceptibility of any fluid to become contaminated or undergo changes in properties or composition as a result of possible extraction of tubing ingredients by the fluid to be transmitted. Certain corrosives that would be destructive to tubing with prolonged exposure can be satisfactorily handled for short periods of time if flushed with water after use. All ratings are based on room temperature (73°F). Chemical resistance will be adversely affected by elevated temperatures.

Worldwide Locations



Manufacturing and Customer Service Locations

United States
Garden Grove, CA
Beaverton, MI
Bridgewater, NJ
Mickleton, NJ
Akron, OH
Portage, WI

South America
São Caetano do Sul, Brazil

Europe
Charny, France
Macon, France
Saint-Quentin-Fallavier, France
Lindau, Germany
Neuss, Germany
Wiesbaden, Germany

Asia
Shanghai, China
Bangalore, India
Suwa, Japan

Additional Customer Service Locations

Asia
Bangalore, India
Seoul, Korea
Tokyo, Japan
Selangor, Malaysia
Taipei, Taiwan

Australia
Sydney, Australia

Engineering Locations



R&D Locations

United States
Northborough, MA

Europe
Aubervilliers, France

Asia
Bangalore, India (coming soon)
Shanghai, China

Application Engineering

North America
Akron, OH – 2
Mickleton, NJ – 1
Garden Grove, CA – 4
Beaverton, MI – 5
Portage, WI – 1

South America
São Caetano do Sul, Brazil - 1

Europe
Mâcon, France – 1
Saint-Quentin-Fallavier, France – 8
Lindau, Germany – 10
Neuss, Germany – 1
Wiesbaden, Germany – 1

Asia
Shanghai, China – 2
Suwa, Japan – 1
Seoul, Korea – 1
Taipei, Taiwan – 1

Performance Plastics Process Systems Food & Beverage

Performance Plastics Process Systems Industrial

WARNING: The content of Saint-Gobain tubing materials is not certified by the FDA for implant devices and is neither designed nor intended to be used in medical applications involving permanent implantation in the human body or permanent contact with body fluids or tissues. Failure to comply with this warning may lead to serious bodily injury or death.

IMPORTANT: It is the user's responsibility to ensure the suitability and safety of Saint-Gobain materials for all intended uses. Laboratory, field or clinical tests must be conducted in accordance with applicable requirements in order to determine the safety and effectiveness for use of materials in any particular application. If intended for medical use, it is the user's responsibility to ensure that the materials to be used comply with all applicable medical regulatory requirements.

Limitation of Liability

Except for products for which Saint-Gobain (SGPPL) has established a specific written warranty, the products described herein are sold by SGPPL without any guarantee and/or warranty, oral or written. User assumes all risk, if any, including the risk of injury, loss or damage, whether direct, consequential or incidental, arising out of the use, misuse or inability to use these products.

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