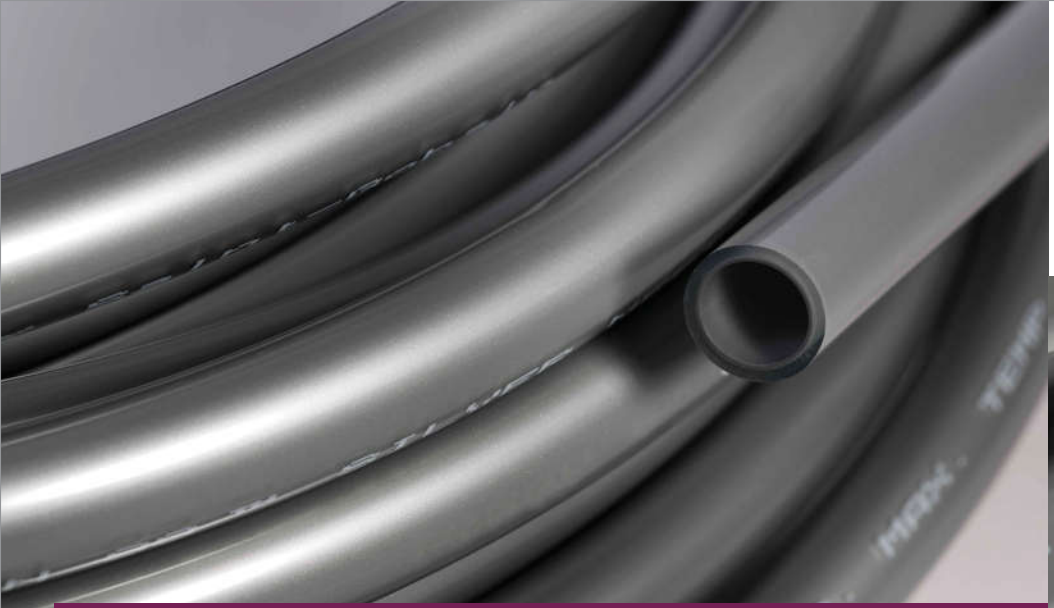

VERSILON™
Fluid Performance



Versilon™ Silver

Phthalate-Free Antimicrobial Tubing

Is Your Tubing Protected Against Microbes?

Microorganisms are living cells so small that most can only be seen with a microscope. Microbes are a type of microorganism found everywhere and includes bacteria, fungi and algae. The majority of microbes do not interfere with human activities. However, in some situations they can cause problems. Growth of microbes on many materials can lead to foul odors, discoloration, and formation of mildew and biofilm. In the case of tubing, microbes can contaminate the material being transferred as well as degrade the tubing itself.

Leader in Microbial Technology

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.

Adds Value

Cleaning procedures, such as washing with detergent and hot water, can kill microbes. But this process can be time consuming and costly, and does not provide residual protection against fresh contamination. The additional use of a durable and safe antimicrobial treatment is the best way to provide protection against microbial contamination. Offering your customers this added protection adds value to your product.

Features and Benefits

- 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

Typical Applications

- Food and beverage dispensing*
- Ice machines
- Water purification
- Chemical transfer
- Dairy processing*

Regulatory Compliance

- Meets FDA criteria
- Meets NSF-51 criteria
- Contains no chemicals listed in California Proposition 65
- Contains no BPA or phthalates

* For complete compliance information and appropriate use instructions, please refer to the detailed document of compliance.

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Versilon™ Silver

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Part Number	ID	OD	Wall Thickness	Min. Bend Radius	Max. Working Pressure	Vacuum Rating
	(in)	(in)	(in)	(in)	73°F (psi)*	73°F (inHg)
AS600007	1/8	1/4	1/16	1/2	65	29.9
AS600012	3/16	5/16	1/16	3/4	50	29.9
AS600017	1/4	3/8	1/16	3/4	40	29.9
AS600027	3/8	1/2	1/16	1-1/2	30	25.0
AS600038	1/2	3/4	1/8	1-3/4	38	29.9

*Working pressures are calculated at a 1:5 ratio relative to burst pressure using ASTM D1599.

Typical Physical Properties

Property	ASTM Method	Value or Rating
Durometer Hardness (Shore A), 15 sec	D2240	69
Color	—	Silver
Opacity	—	Opaque
Tensile Strength, psi (MPa)	D412	2300 (15.8)
Ultimate Elongation, %	D412	350
Tear Resistance, lb-f/in (kN/m)	D1004	250 (43.8)
Specific Gravity	D792	1.21
Water Absorption, % at 73°F (23°C) for 24 hrs.	D570	< 0.01
Compression Set Constant Deflection, % at 158°F (70°C) for 22 hrs.	D395 Method B	63
Maximum Recommended Operating Temp., °F (°C)	—	165 (74)
Brittleness by Impact Temp., °F (°C)	D746	-31 (-35)
Tensile Stress, psi (MPa) @ 100% Elongation	D412	990 (6.8)
Tensile Set, %	D412	63

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.

The values listed for working and burst pressures are derived from tests conducted under controlled laboratory conditions. Many factors will reduce the tubing's ability to withstand pressure, including temperature, chemical attack, stress, pulsation and the attachment to fittings. It is imperative that the user conduct tests simulating the conditions of the application prior to specifying the tubing for use.

Relative Chemical Resistance Properties*

Tubing	Acids			Bases			Salts	Alcohols	Ketones
	Conc.	Med.	Weak	Conc.	Med.	Weak			
Versilon™ Silver	F	E	E	F	E	E	E	E	F
Fluoroelastomers	E	E	E	U	F	F	E	F	U
Urethane	U	U	U	U	F	F	F	U	U
PVC	F	E	E	E	E	E	E	F	U
Thermoplastic Rubber	U	F	F	F	E	E	E	F	U
Neoprene	U	F	E	E	E	E	E	E	U
Nitrile Rubber	F	F	E	F	U	E	E	E	U
Silicone	U	U	U	U	F	F	F	F	U
EVA	U	F	E	F	E	E	E	E	U

E = Excellent F = Fair U = Unsatisfactory

*All tests conducted at room temperature.
Refer to the Flexible Tubing Catalog for an expanded listing of chemical resistance.

How It Works

AlphaSan®, the antimicrobial polymer compound used by Saint-Gobain Process Systems is a zirconium phosphate-based ceramic ion-exchange resin containing silver. Silver is recognized as being safe for human contact and is an integral part of antimicrobial additives that provide the following benefits:

- Inhibitory activity against a wide range of microorganisms, improving contamination control.
- Consistent antimicrobial impact through silver ion exchange, not just during cleaning procedures.
- Antimicrobial polymer compound is EPA FIFRA registered for contact with food and drinking water, and also FDA approved for food packaging.

Applications

Silver is known to be effective against a broad spectrum of microorganisms that cause discoloration, odor, biofouling and other aesthetic problems. Antimicrobial polymer compound can be added to approved materials at varying levels to impart fungistatic, bacteriostatic and algistatic properties to the material and the end-use product. The high temperature stability and low color formation of antimicrobial polymer compounds translate to proven performance in a wide variety of applications.

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NOTE: The data and details given in this document are correct and up to date. This document is intended to provide information about the product and possible applications. This document is not the product specification and does not provide specific features, nor does it guarantee product performance in specific applications. Saint-Gobain cannot anticipate or control the conditions of the field and for this reason strongly recommends that practical tests are conducted to ensure that the product meets the requirements of a specific application.

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