



Tygon S3™ A24, A24-C

Vacuum Tubing for Milking Equipment

Tygon S3™ A24 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.

Reduced Maintenance and Inspection Concerns

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

The Mark of Quality

Every foot of Tygon S3™ A24 tubing has been embedded with a trademark stripe within the tubing walls. The embedded stripe is your assurance of receiving genuine Tygon S3™ tubing, the world's finest raw milk tubing produced specifically for the dairy industry.

Regulatory Standards

Tygon S3™ A24 tubing complies with FDA 21 CFR 175.300, NSF**, 3-A and Japan Food Sanitation Law # 370/1959 for many foods and beverages. Tygon S3™ tubing products do not contain chemicals listed in California's Proposition 65.



Features and Benefits

- 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

Typical Applications*

- Raw milk transport lines
- Dairy processing

* For complete compliance information and appropriate use instructions, please refer to the detailed document of compliance. The complete compliance information and use instructions can be found at www.TygonS3.com.

** Only US manufacturing sites are NSF compliant. For EU manufacturing sites, NSF compliance is in progress.

Relative Chemical Resistance Properties*

Acids			Bases			Salts	Alcohols	Ketones
Conc.	Med.	Weak	Conc.	Med.	Weak			
F	E	E	F	E	E	E	F	U

E = Excellent F = Fair U = Unsatisfactory

*All tests conducted at room temperature

Tubing Properties

Min. Bend Radius, inch (mm)	1-1/8 (28.57)
Max. Working Pressure at 73°F, psi (bar)	25 (1.7)
Vacuum Rating at 73°F, inHg (mmHg)	29.9 (760)

Product Characteristics

Opacity A24 A24-C	Transparent Opaque
FDA 21 CFR 175.300 Compliant for Food Contact	Yes
NSF 51* Standard	No
USP Class VI	No

*Only US manufacturing sites are NSF compliant. For EU manufacturing sites, NSF compliance is in progress.

Typical Physical Properties

Property	ASTM Method	Value or Rating
Durometer Hardness, (Shore A), 15 sec	D2240	56
Color A24 A24-C	—	Clear Black
Tensile Strength, psi (MPa)	D412	1755 (12.1)
Ultimate Elongation, %	D412	425
Tear Resistance, lb-f/in (kN/m)	D1004	177 (31.0)
Specific Gravity	D792	1.21
Water Absorption, % at 73°F (23°C) for 24 hrs.	D570	0.21
Compression Set Constant Deflection, % at 158°F (70°C) for 22 hrs.	D395 Method B	64
Maximum Recommended Operating Temp., °F (°C)	—	165 (74)
Brittleness by Impact Temp., °F (°C)	D746	-32 (-36)
Tensile Stress, psi (MPa) @ 100% Elongation	D412	580 (4.0)
Tensile Set, %	D412	95

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.

Tygon S3™ A24 Cleaning Instructions

To extend the usable life of Tygon S3™ A24 tubing and reduce the risk of bacterial growth resulting from a buildup of milksoil film, the following cleaning and sanitary procedures must be followed:

- Following milking and dumping, rinse tubing with clean water at 43°C without recirculating until discharge is clear.
- Wash tubing with alkaline cleaner (containing no caustic soda) for 10-15 minutes at 65°C; final dump temperature should not be below 43°C.
- Use an acid rise to prevent milkstone deposits.
 - Perform daily after each cleaning for 5 minutes with cold- to room-temperature water.
 - Perform a once-weekly acid rinse for 15 minutes with 43°C to 60°C water in place of the alkaline cleaner used in Step 2.
- Purge moisture by draining and passing warm filtered air through the tubing until complete dryness is achieved.
- Sanitize tubing immediately prior to use following the manufacturer's recommended procedures.

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

TYGON S3™ A24, A24-C TUBING ARE NOT INTENDED FOR USE AS AN IMPLANT MATERIAL.

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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.

Tygon S3™ is a trademark of Saint-Gobain Performance Plastics.