



# Tygon® HA-1000

## Chemical Resistant Tubing for Food and Beverage Dispensing

Tygon HA-1000 tubing is designed specifically for food and beverage applications involving high alcohol and high acidic content. With outstanding chemical resistance to high alcohol, high acidity media, the tubing is the ideal choice for room temperature and chilled media transfer. Lightweight and smooth, Tygon HA-1000 has a non-porous bore to inhibit particle entrapment and resists staining better than most soft plastics. The tubing has outstanding resistance to harsh alkaline cleaners and is unaffected by commonly used sanitizers. The Relative Chemical Resistance Properties chart on the following page highlights that the tubing is virtually unaffected by acids, bases, salts and alcohols.

### Flexible and Translucent

Tygon HA-1000 tubing is flexible, making it easy to maneuver within the food and beverage dispensing equipment. Easy to install, versatile with fittings and connectors. The tubing is also translucent, allowing for easy visual inspection and fluid monitoring. Tygon HA-1000 does not contain plasticizers or DEHP, eliminating fluid contamination as well as premature brittleness and cracking, commonly seen with many other flexible tubings.

### Environmentally Friendly

Tygon HA-1000 chemical resistant tubing is environmentally friendly and can be disposed safely. When properly incinerated, it does not release hazardous and corrosive hydrochloride gas, which has been proven to be a contributing factor of acid rain.

### Typical Applications

- Alcoholic beverages: wine transfer, liquor and alcoholic cocktails dispensing
- Acidic foods dispensing such as vinegar, salad dressing, ketchup, mustard, citric acid
- High Staining potential beverage transfer: flavored electrolyte beverages, cold brew coffee, cranberry juice



### Features and Benefits

- Outstanding chemical resistance to alcoholic and acidic foods
- Smooth, non-porous inner surface resists particle entrapment and provides a better flow
- Resists stains from highly acidic and pigmented condiments
- Clear wall enables visualization of fluid flow
- Contains no plasticizers or phthalates
- Low sorption - minimizes cross contamination, maintains media purity

### Regulatory Compliance\*

- Compliant with applicable FDA Food Additive Regulation 21 CFR 170-189
- Compliant with Regulation (EC) No. 1935/2004, (EU) No 10/2011
- List in NSF/ANSI 51 Food Equipment Materials
- REACH Regulation (EC) No 1907/2006

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

## Tygon HA-1000

Part Number	ID		OD		Wall Thickness		Length		Min. Bend Radius		Max. Working Pressure		Vacuum Rating	
	(in)	(mm)	(in)	(mm)	(in)	(mm)	(ft)	(m)	(in)	(mm)	73°F (psi)	23°C (bar)	73°F (inHg)	23°C (mmHg)
AVT00002	1/16	1.6	1/8	3.2	1/32	0.8	50	15.2	1/4	6.4	40	2.75	29.9	760
AVT00007	1/8	3.2	1/4	6.4	1/16	1.6	50	15.2	1/4	6.4	40	2.75	29.9	760
AVT00012	3/16	4.8	5/16	7.9	1/16	1.6	50	15.2	1/2	12.7	30	2.06	29.9	760
AVT00017	1/4	6.4	3/8	9.5	1/16	1.6	50	15.2	3/4	19.1	25	1.72	29.9	760
AVT00027	3/8	9.5	1/2	12.7	1/16	1.6	50	15.2	1-1/2	38.1	17	1.17	20.0	508
AVT00029	3/8	9.5	5/8	15.9	1/8	3.2	50	15.2	1-1/8	28.6	25	1.72	29.9	760
AVT00038	1/2	12.7	3/4	19.1	1/8	3.2	50	15.2	1-1/2	38.1	25	1.72	29.9	760

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	75
Color	-	Clear
Tensile Strength, psi (MPa)	D412	1900 (13.1)
Ultimate Elongation, %	D412	850
Tear Resistance, lb-f/in (kN/m)	D1004	240 (42.0)
Specific Gravity	D792	0.90
Water Absorption, % at 73°F (23°C) for 24 hrs	D570	0.04
Compression Set Constant Deflection, % at 158°F (70°C) for 22 hrs	D395 Method B	100
Maximum Recommended Operating Temp., °F (°C)	-	130 (54)
Low Temp Flexibility, °F (°C)	-	-103 (-75)
Brittleness by Impact Temp., °F (°C)	D746	-103 (<-75)
Tensile Stress, psi (MPa) @ 100% Elongation	D412	425 (2.9)
Tensile Set, %	D412	300

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.

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.

## Relative Chemical Resistance Properties

Acids			Bases			Salts	Alcohol Ethanol
Conc.	Med.	Weak	Conc.	Med.	Weak		
G	E	E	E	E	E	E	E

E = Excellent G = Good F = Fair U = Unsatisfactory  
All tests conducted at room temperature

## Compatibility with Food & Beverage Cleaners & Sanitizers

Type A	Type B	Type C	Type D	Type E	Type F
Sodium Carbonate (10-30%) Sodium Dichloro-s-triazinetrione Dihydrate (6%)	Peracetic Acid (6%)	Sodium Hydroxide (30-35%)	Phosphoric Acid (20-40%)	Quaternary Ammonium Cations	Sodium Hypochlorite (10%)
E	E	E	G	G	E

E = Excellent G = Good F = Fair U = Unsatisfactory  
All tests conducted at room temperature

www.processsystems.saint-gobain.com



**Saint-Gobain Performance Plastics**  
2664 Gilchrist Road  
Akron, OH 44305  
1-800-798-1554  
Tel: (330) 798-9240  
Fax: (330) 798-6968

**Saint-Gobain Performance Plastics**  
BP 14-La Mothe-aux-Aulnaies  
F-89120 Charny, France  
Tel: (33) 3-86-63-78-78  
Fax: (33) 3-86-63-77-77

**Saint-Gobain Performance Plastics**  
1476 Kun Yang Road  
Minghang Economic & Technological Development Zone  
Shanghai, China 200245  
Tel: (86) 21-5472-1568  
Fax: (86) 21-5472-2378/5472-2379

**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.