



*wine, liquor
and alcoholic
cocktails
dispensing*



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 tubing.

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.

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.



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

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

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Tygon® HA-1000 Standard Sizes

Part Number	ID	OD	Wall	Min. Bend Radius	Max. Working Pressure* 22°C (73°F)	Vacuum Rating at 22°C (73°F)
TY1,59HA3,18	1,59 mm (1/16")	3,18 mm (1/8")	0,79 mm (1/32")	6,4 mm	2,75 bar	760 mmHg
TY3,18HA6,35	3,18 mm (1/8")	6,35 mm (1/4")	1,59 mm (1/16")	6,4 mm	2,75 bar	760 mmHg
TY4,76HA7,94	4,76 mm (3/16")	7,94 mm (5/16")	1,59 mm (1/16")	12,7 mm	2,06 bar	760 mmHg
TY6,35HA9,53	6,35 mm (1/4")	9,53 mm (3/8")	1,59 mm (1/16")	19,1 mm	1,72 bar	760 mmHg
TY9,53HA12,7	9,53 mm (3/8")	12,7 mm (1/2")	1,59 mm (1/16")	38,1 mm	1,17 bar	508 mmHg
TY9,53HA15,88	9,53 mm (3/8")	15,88 mm (5/8")	3,18 mm (1/8")	28,6 mm	1,72 bar	760 mmHg
TY12,7HA19,05	12,7 mm (1/2")	19,05 mm (3/4")	3,18 mm (1/8")	38,1 mm	1,72 bar	760 mmHg

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

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.

Typical Physical Properties of Tygon® HA-1000 Tubing

Property	ASTM Method	Value of Rating
Durometer Hardness	D2240	75° Shore A, 15s
Color	-	Clear
Tensile Strength	D412	13,1 MPa (1.900 psi)
Ultimate Elongation	D412	850,00%
Tear Resistance	D1004	42,0 kN/m (240 lb-f/in)
Specific Gravity	D792	0,9
Compression Set Constant Deflection at 70°C (158°F) for 22 hrs	D395 Method B	100,00%
Maximum Recommended Operating Temperature	-	54 °C (130°F)
Low Temperature Flexibility	-	-75°C (-103°F)
Brittleness by Impact Temperature	D746	-75°C (-103°F)
Tensile Stress @100% Elongation	D412	2,9 MPa (425 psi)
Tensile Set	D412	300,00%
Water Absorption, % 24 hrs. @ 23°C	D570	0.04

Unless otherwise noted, all tests were conducted at room temperature 73°F (23°C). Values shown were determined on 0.075" (1.905 mm) thick extruded strip or 0.075" (1.905 mm) 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

Compatibility with Food & Beverage Cleaner & Sanitizers

Type A	Type B	Type C	Type D	Type E	Type F
Sodium Carbonate (10-30%) Sodium Dichloros-triazientrione 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)

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