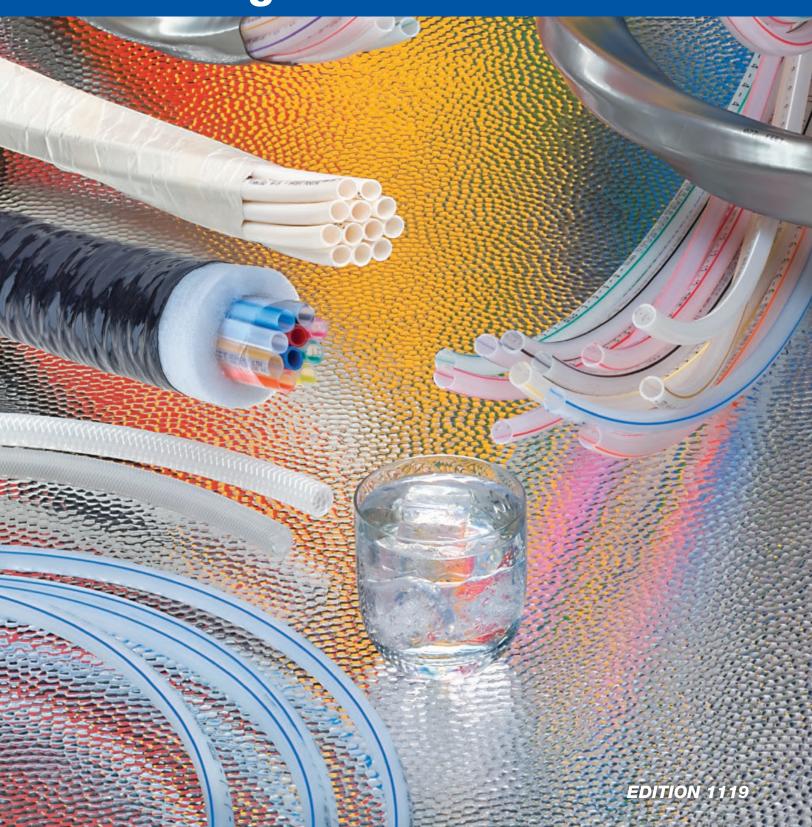


# **Beverage Transfer Products**



# Accuflex — The Recognized Leader in Beverage Transfer Products



• Bevlex®
Your Value Choice



• Bev-Seal® Your Barrier Choice



• Bev-Seal Ultra®

Your Flushable Barrier Choice







Accuflex NSF-listed hose, tubing and cabled bundle products for beverage dispensing are the most trusted names in the industry because they provide consistent, dependable, economical performance. They help maintain the highest drink quality, while reducing costly service calls. They are very easy to install, reliable and provide great customer satisfaction with fewer call-backs. Small wonder these fine products have set the standard for the industry and have become the most-specified beverage dispensing products by quality-conscious customers.

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# **Bev-Seal** Ultra® hose and tubing

This unique multi-layer design combines the flushability and taste-free characteristics of the **Glas-Flex™** liner with the overall permeation-resistance of the original **Bev-Seal®** product line. Whenever flushability, taste-free performance, or protection against taste-transfer or flavor contamination is a concern, choose **Bev-Seal Ultra®** products.

# **Bev-Seal** Ultra<sup>®</sup> cabled beverage bundles

The exclusive **Bev-Seal Ultra®** cabled bundle construction provides the first truly installer-friendly barrier tubing bundle. Compact, light weight and incredibly flexible, it bends and stays in place, and rolls out straight while eliminating loops and twists for the ultimate ease of installation and labor savings. The multi-layer construction provides layer-upon-layer of protection, from the inside out and from the outside in.

### **Bev-Seal**®

# 176 Series — Barrier Protected - UV Resistant CO2 Supply Hoses

Bev-Seal® CO2 Barrier Protected – UV Resistant CO2 Supply Hose is ideal for pressure regulated CO2 Supply Lines up to 300 PSI WP @ RT. It is recommended for supplying regulated CO2 Gas to Carbonators for Carbonated Beverage and Beer dispensing. This quality hose provides excellent Barrier Protection from environmental contamination, thus assuring the quality of the CO2 gas being delivered and therefore ensuring a quality tasting final beverage. In addition to the exclusive custom formulated outer jacket compounds, the cover jacket is co-extruded with a unique Duo-Ex WHITE over BLACK combination, that provides the optimum in UV and weather resistance, resulting in superior outdoor service life.

## **BEVLEX**®

#### Non-Barrier hose, tubing and bundles

Economical polyethylene-based products incorporating a special linear low density polyethylene tube material that offers the best combination of low taste and odor, along with resistance to stress-cracking. These reliable products continue to satisfy the basic needs of the beverage industry.

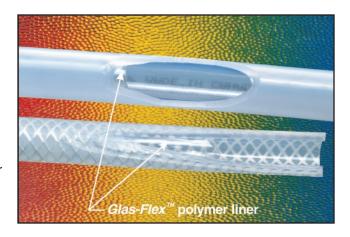
## **BEV-FLEX**®

#### 172 Series – the flexible beverage hose

This revolutionary product adds the flexibility that you need to the protection provided by the same liner used in all our quality **Bevlex**® beverage products. **Bev-Flex**® hose is extremely flexible, kink-resistant, and allows a very tight bend radius for those "hard to install" locations.

#### **The Flavor Delivery Choice!**

The *Bev-Seal* Ultra® flushable Dual-Barrier system, exclusive to Accuflex, combines two barrier layers to protect your beverages from cross-tastes and other off-tastes. The Dual-Barrier system, with an ultra smooth inner surface, provides permeation resistance far superior to products with single barrier liners. This system gives you a flushable flavor control package that not only allows the true flavor of your beverages to be enjoyed, but also allows for flavor changes when needed. Patent applications are pending in the USA and in the UK on the use of the Glas-Flex™ liner and the Dual-Barrier construction.



# **Bev-Seal** Ultra<sup>®</sup> with Glas-Flex<sup>™</sup> Inner Liner — The Flushable Dual-Barrier System!

**Bev-Seal Ultra®** beverage hose, tubing and bundles feature our exclusive **Glas-Flex™** inner layer, creating a truly flushable Dual-Barrier product that allows quick flavor changes, including pungent flavors.

Our **Glas-Flex**™ inner liner is:

- Non-porous
- Non-absorbent
- Flushable
- Taste-Free
- FDA-Sanctioned
- NSF-51/NSF-61 Accepted

The **Glas-Flex™** polymer liner offers permeation resistance to flavors and gases, **Bev-Seal Ultra®** products still utilize our proprietary barrier layer in the wall of the tube to give optimum permeation resistance for organic flavors and gases such as oxygen and carbon dioxide. This dual-barrier construction makes **Bev-Seal Ultra®** products ideal for conveying and dispensing soft drinks for which flavor cross-over protection for pungent flavors is needed, and for juices and beer for which oxygen protection is critical.



Extensive laboratory testing, using both analytical and sensory techniques, has demonstrated that **Bev-Seal Ultra**® products are the best in the industry to assure that the great original flavor of beverages is not altered or compromised by the hose or tubing, even over extended lengths. **Bev-Seal Ultra**® can transport and hold both alcoholic and non-alcoholic beverages, while retaining their properties for hours, days, and even weeks.

As part of our comprehensive field testing program in actual commercial installations, we confirmed that a highly flavored cranberry concentrate and a colorless carbonated beverage could be exchanged in the <code>Bev-Seal Ultra®</code> lines through a normal sanitizing protocol without evidence of any residual flavor left in the lines. Now, even pungent flavors can be switched without the need to remove and replace the tubing lines.



Syrup tubes, water hoses and gas hoses all in one convenient cabled bundle!

### Bev-Seal Ultra® 974H Series Cabled Barrier Tubing/Hose Bundle

Construction: Flushable Bev-Seal Ultra® 235 Series syrup tubes, each color coded, individually numbered and branded with date codes for traceability. In each configuration, there are two 3/8" ID PET-lined Bevlex® Plus 180 Series hoses specifically included to carry water at pressures up to 300 psig at 70°F. In addition one 1/4" ID polyethylene Bev-Seal® 176 Series hose has been included to carry carbon dioxide gas at pressures up to 250 psig at 70°F. The cable construction and silver-gray "low-friction" extruded jacket allows for convenient one-step installation. All component lines carry NSF-51 and NSF-61 listings and are branded accordingly. Sequential footage marks on the bundle jacket add to the ease of installation.

Nominal S	Nominal Specifications											
Part Number	Standard Package	Description & Configuration for Each Bundle Film Wrapped — Silver-Gray Extruded Jacket	Max. Bundle OD (in)	per	ight Pkg. (kgs)	Min. Bend Radius (in)	Clamp Size (mm)					
974H-00080012-01	100' Coil	8 – .380 x .500 <b>Bev-Seal Ultra</b> <sup>®</sup> 235 Syrup Tubes	2.3	75	34	10	14.0					
974H-00080012-02	200' Reel	2 – .375 x .593 <b>Bevlex® Plus</b> 180 Water Hoses	2.3	160	73	10	15.7					
974H-00080012-05	500' Reel	1 – .265 x .457 <b>Bev-Seal</b> ® 176 Gas Hose	2.3	450	204	10	13.3					
974H-00100012-01	100' Coil	10 – .380 x .500 <b>Bev-Seal Ultra</b> ® 235 Syrup Tubes	2.3	83	38	10	14.0					
974H-00100012-02	200' Reel	2 – .375 x .593 <b>Bevlex® Plus</b> 180 Water Hoses	2.3	189	86	10	15.7					
974H-00100012-05	500' Reel	1 – .265 x .457 <b>Bev-Seal</b> ® 176 Gas Hose	2.3	466	212	10	13.3					
974H-00120012-01	100' Coil	12 – .380 x .500 <b>Bev-Seal Ultra</b> ® 235 Syrup Tubes	2.5	92	42	12	14.0					
974H-00120012-02	200' Reel	2 – .375 x .593 <b>Bevlex® Plus</b> 180 Water Hoses	2.5	197	90	12	15.7					
974H-00120012-05	500' Reel	1 – .265 x .457 <b>Bev-Seal</b> ® 176 Gas Hose	2.5	510	231	12	13.3					
974H-00140012-01	100' Coil	14 – .380 x .500 <b>Bev-Seal Ultra</b> ® 235 Syrup Tubes	2.6	100	45	13	14.0					
974H-00140012-02	200' Reel	2 – .375 x .593 <b>Bevlex® Plus</b> 180 Water Hoses	2.6	226	103	13	15.7					
974H-00140012-05	500' Reel	1 – .265 x .457 <b>Bev-Seal</b> ® 176 Gas Hose	2.6	554	252	13	13.3					
974H-00160012-01	100' Coil	16 – .380 x .500 <b>Bev-Seal Ultra</b> ® 235 Syrup Tubes	2.8	108	49	14	14.0					
974H-00160012-02	200' Reel	2 – .375 x .593 <b>Bevlex® Plus</b> 180 Water Hoses	2.8	248	113	14	15.7					
974H-00160012-05	500' Reel	1 – .265 x .457 <b>Bev-Seal</b> ® 176 Gas Hose	2.8	598	272	14	13.3					

Bevlex® and Bev-Seal Ultra® are registered trademarks of Kuriyama of America, Inc., Schaumburg, IL, USA

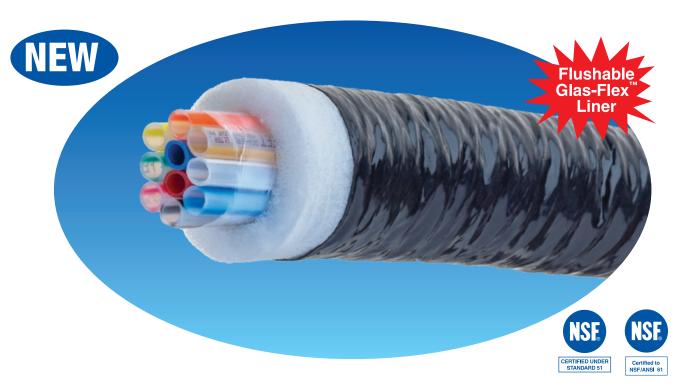


### Bev-Seal Ultra® 974 Series Cabled Barrier Tubing Bundle

**Construction:** Flushable **Bev-Seal Ultra**® 235 Series tubes (see page 13), each color coded, individually numbered and branded with NSF-51 and NSF-61 listings and date codes for traceability. Special film wrap over cabled tubes offers excellent flexibility and tight bend capabilities. Silver-gray extruded jacket, with slip agent to minimize friction, is branded with product identification, NSF listing marks, and sequential footage markings for ease of measurement. Other jacket colors available (some limitations may apply).

Nominal	Specif	ications					
Part Number	Standard Package	Description & Configuration Film Wrapped — Silver-Gray Extruded Jacket	Max. Bundle OD (in)		eight Pkg (kgs)	Min. Bend Radius (in)	Clamp Size (mm)
974-07010-01 974-07010-02 974-07010-05	100' Coil 200' Reel 500' Reel	7 – .265 x .375 <b>Bev-Seal Ultra</b> ® Tubes 1 – .380 x .500 <b>Bev-Seal Ultra</b> ® Tube	1.5	39 87 207	18 35 94	5	10.0 14.0
974-08020-01 974-08020-02 974-08020-05	100' Coil 200' Reel 500' Reel	8 – .265 x .375 <b>Bev-Seal Ultra</b> ® Tubes 2 – .380 x .500 <b>Bev-Seal Ultra</b> ® Tubes	1.7	48 105 240	22 48 109	6	10.0 14.0
974-08040-01 974-08040-02 974-08040-05	100' Coil 200' Reel 500' Reel	8 – .265 x .375 <b>Bev-Seal Ultra</b> ® Tubes 4 – .380 x .500 <b>Bev-Seal Ultra</b> ® Tubes	2.0	51 116 268	23 53 122	7	10.0 14.0
974-10020-01 974-10020-02 974-10020-05	100' Coil 200' Reel 500' Reel	10 – .265 x .375 <b>Bev-Seal Ultra</b> ® Tubes 2 – .380 x .500 <b>Bev-Seal Ultra</b> ® Tubes	2.0	51 116 268	23 53 122	7	10.0 14.0
974-10040-01 974-10040-02 974-10040-05	100' Coil 200' Reel 500' Reel	10 – .265 x .375 <b>Bev-Seal Ultra</b> ® Tubes 4 – .380 x .500 <b>Bev-Seal Ultra</b> ® Tubes	2.2	62 139 323	28 63 147	8	10.0 14.0
974-00080-01 974-00080-02 974-00080-05	100' Coil 200' Reel 500' Reel	8 – .380 x .500 <b>Bev-Seal Ultra</b> ® Tubes	2.0	53 121 273	24 55 129	8	14.0
974-00100-01 974-00100-02 974-00100-05	100' Coil 200' Reel 500' Reel	10 – .380 x .500 <b>Bev-Seal Ultra</b> ® Tubes	2.2	58 139 341	26 63 155	9	14.0
974-00120-01 974-00120-02 974-00120-05	100' Coil 200' Reel 500' Reel	12 – .380 x .500 <b>Bev-Seal Ultra</b> ® Tubes	2.2	67 147 385	30 67 175	10	14.0
974-00140-01 974-00140-02 974-00140-05	100' Coil 200' Reel 500' Reel	14 – .380 x .500 <b>Bev-Seal Ultra</b> ® Tubes	2.6	75 176 429	34 80 195	10	14.0
974-00160-01 974-00160-02 974-00160-05	100' Coil 200' Reel 500' Reel	16 – .380 x .500 <b>Bev-Seal Ultra</b> ® Tubes	3.0	83 198 473	38 90 215	12	14.0





### Bev-Seal Ultra® 973 Series Insulated Barrier Tubing Bundles

Construction: Bev-Seal Ultra® 973 Series cabled insulated bundles are comprised of flushable Bev-Seal Ultra® 235 Series tubes (see page 13), each color coded and individually numbered, and red/blue-colored Bev-Seal Ultra® Series coolant tubes strategically placed and designed to provide optimum cooling. A tear-resistant aluminized film wrap over the group of tubes further enhances

the insulating properties of the 3/4" thick tubular foam sleeve. A black extruded jacket with slip agent to minimize friction is branded with product identification, NSF listing marks, and footage counter marks.

Nominal S	Nominal Specifications											
Part Number	Standard	Description & Configuration Foam Insulation • Film Wrapped	Max. Bundle		ht per (g.	Min. Bend Radius	Clamp Size					
	Package	Black Extruded Jacket	OD (in)	(lbs)	(kgs)	(in)	(mm)					
973-0004002X250	250' Reel	4 – .380 x .500 <i>Bev-Seal</i> <b>Ultra</b> ® Tubes 2 – .380 x .500 Red/Blue Tubes	3.0	176	80	12	14.0					
973-0006002X250	250' Reel	6 – .380 x .500 <i>Bev-Seal</i> <b>Ultra</b> ® Tubes 2 – .380 x .500 Red/Blue Tubes	3.4	231	105	14	14.0					
973-0008002X250	250' Reel	8 – .380 x .500 <i>Bev-Seal</i> <b>Ultra</b> ® Tubes 2 – .380 x .500 Red/Blue Tubes	3.5	250	114	8	14.0					
973-0010004X250	250' Reel	10 – .380 x .500 <i>Bev-Seal</i> <b>Ultra</b> ® Tubes 4 – .380 x .500 Red/Blue Tubes	3.8	275	125	12	14.0					
973-0012004X250	250' Reel	12 – .380 x .500 <i>Bev-Seal</i> Ultra® Tubes 4 – .380 x .500 Red/Blue Tubes	4.0	297	135	12	14.0					

**Note:** Call for quotation for non-standard configurations and/or lengths. . . minimums will apply.

<sup>\*</sup> Bundles containing 5/16" product tubes are available as 973S Series.



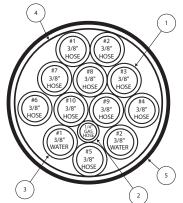
#### **Bev-Seal** Ultra® 975FR Series Fire Resistant Cabled Bundle

Construction: Flushable Bev-Seal Ultra® 175FR Series fire resistant hoses, individually branded with NSF-51 and NSF-61 listings, and date codes for traceability.

Each hose incorporates extruded layers of fire resistant non-halogen polyolefin compound. Special metallized film wrap over the hoses, plus an outer wrap of white fiberglass tape.

When tested in accordance with ASTM E84/UL 723 Test for Surface Burning Characteristics of Building Materials (modified to test a single round of beverage bundle), the Flame Spread Index (FSI) and Smoke Developed Index (SDI) are less than 25 and 50 respectively, in compliance with Class 1 or "A" requirements and plenum requirements.

Nominal Specifications											
	Standard	o (1 )	Max.	Weigh	t per Pkg.	Min. Bend	Clamp				
Part Milmhar	Package	Configuration	Bundle OD (in)	(lbs)	(kgs)	Radius (in)	Size (mm)				
975FR-00100012-01	100' Coil	See Below	2.1	79	36	14	See Below				
975FR-00100012-02	200' Reel	See Below	2.1	174	79	14	See Below				
975FR-00100012-05	500' Reel	See Below	2.1	411	187	14	See Below				



#### 975FR-00100012-01/-02/-05

- 10 x 3/8" I.D. x .535" O.D. F/R BARRIER HOSES (#1 – #10)
  FOR SODA OR PUNGENT FLAVOR SYRUP (e.g. ROOT BEER) (14.5 Clamp Size)
- 1 x 1/4" I.D. x .457" O.D. F/R GAS HOSE (13.3 Clamp Size)
- 2 x 3/8" I.D. x .593" O.D. F/R BARRIER "WATER" HOSES (15.7 Clamp Size)
- ALUMINUM WRAP
- FIBERGLASS WRAP

#### Notes:

- 1) 975FR Series beverage bundles are available on special order. The configuration shown above is for illustrative purposes.
- 2) All testing was carried out on finished products rather than material components only. A test report confirming fire and smoke indexes is available.



#### Bev-Seal Ultra® 175 Series Barrier Hose

Oxygen and flavor barrier properties combined with flushability in a yarn-reinforced hose.



- Flushable Glas-Flex<sup>™</sup> Liner Allows changeovers from even the most pungent flavors with simple flushing procedures.
- NSF-Certified Products Certified under standard NSF-51 for food equipment and NSF-61 for drinking water systems.
- **Dual-Barrier Construction** Flushable **Glas-Flex**™ inner liner surrounded by a seamless extruded barrier layer in a polyolefin core tube, reinforced with polyester yarn and protected by a smooth EVA cover.
- **Phthalate Free**





Nominal Specifications											
Part	Standard	Nominal		Working Pro		ight Pkg.	Min. Bend Radius	Clamp Size			
Number	Package	ID (in)	OD (in)	70°F	122°F	(lbs)	(kgs)	(in)	(mm)		
175-04500-XX	500' Boxed Spool	.265	.420	300	150	9.1	4.1	1.75	11.3		
175-06300-XX	300' Boxed Spool	.375	.535	300	150	7.8	3.5	3.00	14.5		
175-08300-XX	300' Wrapped Coil	.510	.675	250	125	8.5	3.9	4.50	18.5		

Individually numbered hoses are available for easy identification of multiple lines on special order. A typical Part Number is 175-04500-XX for a 500 ft. spool of 1/4" size hose, where "XX" indicates the number to be imprinted (use "00" for unnumbered hose).

#### Bev-Seal® 176 Series Barrier Protected - UV Resistant CO2

**Supply Hoses** 

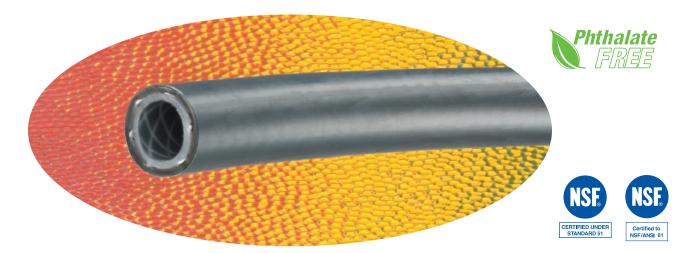


- Hose Suitable For The Transfer Of Pressure Regulated CO2 Gas - Working pressures up to a maximum of 300 psi @ RT based on minimum burst of 1200 PSI.
- Inner contact material is inert Polyethylene which complies with FDA CFR 177.1520 c 3.2a.
- Proprietary Barrier Protected Core Tube Design Resists permeation of the CO2 gas, while at the same time protecting the gas from ingression of external contaminants.
- Unique Duo-Ex WHITE Over BLACK Outer Jacket Provides superior UV resistance and outdoor service life.
- Thicker Wall Construction Provides superior bend radius and kink resistance.
- Exceptional Low Temperature Operating Properties Will bend without cracking at -109°F (-78°C)
- Phthalate Free

**Service Temperature Range:** -109°F (-78°C) to + 140°F (+60°C)

Nominal Specifications												
Part Number	Standard Package	ID (in)	OD (in)	Max. Working Pressure (psi) at 70°F	Weight (lbs)	Weight (kgs)	Min. Bending Radius (in)	Clamp Size (mm)				
176-04502-00	500' Boxed Spool	.265	.457	300	25.1	11.4	1.25	13.3				
176-06302-00	300' Boxed Spool	.380	.593	300	22.9	10.4	2.00	15.7				

<sup>†</sup> Note: Working Pressure decreases as temperature increases. Pressure ratings can only be obtained with proper coupling procedures.



#### Reinforced Bevlex® Plus 180 Series Hose

Reinforced Bevlex® Plus 180 hoses are ideal for pressure lines, while providing good kink resistance. They are recommended for use on filtered water and carbonated water lines where algae growth can be a concern, thus assuring good taste protection properties and pressure performance.

Construction: Glas-Flex™ (PET) liner / Polyester yarn reinforcement / Opaque EVA Silver on Black jacket.

**Service Temperature:** -40°F (-40°C) to 150°F (65.5°C)\*

#### **Features and Benefits:**

- The Glas-Flex<sup>TM</sup> Liner (PET) Is a hard smooth contact surface that is non-porous, non-reactive, odorless, tasteless and provides superior barrier, cleanability and flushability. It offers optimum taste properties with no extraction that could impart taste into the water.
- The Glass-Like Smooth Contact Surface Will not trap water-borne contaminants or provide sites for algae growth.
- Heavy Walled Construction To resist crushing and kinking, and provide ease of handling during installation.
- Bevlex® Plus 180 Hose Offers the purity of the Bev-Seal Ultra® 175 hose with the handling ease of the Bevlex® 170 hose.
- Dual-Walled Silver/Black Layered Opaque Jacket Prevents transmission of light including UV radiation through the hose wall, thus reducing the risk of algae growth in filtered water.
- Phthalate Free

Nominal Specifications												
Part	Standard	Nominal		Max. Working	Weight		Min. Bend	Clamp				
Number	Package			Pressure (psi) at 70°F	(lbs)	(kgs)	Radius (in)	Size (mm)				
180-04100-SIL	100' Boxed Spool	.265	.457	300	5.0	2.3	1.25	13.3				
180-04500-SIL	500' Boxed Spool	.265	.457	300	25.1	11.4	1.25	13.3				
180-06100-SIL	100' Boxed Spool	.375	.593	300	7.6	3.5	2.00	15.7				
180-06300-SIL	300' Boxed Spool	.375	.593	300	22.9	10.4	2.00	15.7				
180-08100-SIL	100' Boxed Spool	.510	.740	250	9.0	4.1	3.50	19.8				
180-08300-SIL	300' Boxed Spool	.510	.740	250	26.9	12.2	3.50	19.8				

Certifications:

FDA Food Contact Compliance CFR (21 CFR 177.1630)

NSF-51 Food Equipment

NSF-61 Drinking Water Components

#### Bev-Flex® 172 Series Polyester-Reinforced Polyethylene Beverage Hose



- Proprietary Core Tube Construction Provides low odor and taste, excellent stress crack resistance and exceptional flexibility . . . makes fitting installation easier.
- Food-Grade Materials Bev-Flex® 172 Series beverage hose is NSF-51/61 certified. Polyethylene material complies with FDA Regulation 21 CFR 177.1520 (c) 3.1 b for food contact under conditions of use D through H in Table 2 of 21 CFR 176.170 (c).
- **Polyester Reinforcement** Provides pressure performance and kink-resistance exceeding that of simple tubing.
- Smooth EVA (Ethylene Vinyl Acetate) Cover Provides increased flexibility.
- Phthalate Free

Nominal	Nominal Specifications												
Part <sup>†</sup>	Standard	Nominal		Working P	Weight		Min. Bend Radius	Clamp Size					
Number	Package	ID (in)	OD (in)	70°F	122°F	(lbs)	(kgs)	(in)	(mm)				
▲ 172-041X4	100' Boxed Coil	.250	.385	250	125	3.0	1.4	1.25	10.5				
▲ 172-048X4	800' Boxed Spool	.250	.385	250	125	26.0	11.8	1.25	10.5				
*172-041X3	100' Boxed Coil	.265	.420	250	125	5.2	2.3	1.25	11.3				
172-045X3	500' Boxed Spool	.265	.420	250	125	21.0	9.5	1.25	11.3				
*172-041X2	100' Boxed Coil	.265	.457	250	125	6.2	2.8	1.10	12.3				
172-045X2	500' Boxed Spool	.265	.457	250	125	25.1	11.4	1.10	12.3				
*172-061X3	100' Boxed Coil	.380	.537	200	100	6.2	2.8	2.00	14.5				
172-063X3	300' Boxed Spool	.380	.537	200	100	17.0	7.7	2.00	14.5				
*172-061X0	100' Boxed Coil	.380	.593	200	100	8.2	3.7	1.75	15.7				
172-063X0	300' Boxed Spool	.380	.593	200	100	22.9	10.4	1.75	15.7				
*172-081X0	100' Boxed Coil	.510	.740	200	100	10.2	4.8	3.00	19.8				
172-083X0	300' Wrapped Coil	.510	.740	200	100	26.9	12.2	3.00	19.8				

<sup>\*100&#</sup>x27; one-piece coils may be available — ideal for kits and bag-in-box racks. † Tracer yarn color coding — substitute for "X": 0 – White; 1 – Red; 2 – Blue.

A New lighter weight hose available on special production run only.

#### Bevlex® 170 Series Polyester-Reinforced Polyethylene Beverage Hose



- **LLDPE Core Tube Construction** Provides excellent resistance to stress cracking.
- Food-Grade Materials Bevlex® 170 Series beverage hose is NSF-51/61 certified. Polyethylene material complies with FDA Regulation 21 CFR 177.1520 (c) 3.1 b for food contact under conditions of use D through H in Table 2 of 21 CFR 176.170 (c).
- Polyester Reinforcement Provides pressure performance and kink-resistance exceeding that of simple tubing.
- Bonded Abrasion-Resistant Copolymer Jacket Will not separate or ripple in tight bends or during installation in conduits.
- Phthalate Free

Nominal	Nominal Specifications											
Part†	Part† Standard Number Package	Nominal		Working P	We	ight	Min. Bend Radius	Clamp Size				
Number		ID (in)	OD (in)	70°F	122°F	(lbs)	(kgs)	(in)	(mm)			
*170-041X2	100' Boxed Coil	.265	.457	300	150	6.2	2.8	1.10	13.3			
170-045X2	500' Boxed Spool	.265	.457	300	150	25.1	11.4	1.10	13.3			
170-045X6	500' Boxed Spool	.265	.517	300	150	34.3	15.6	1.10	14.0			
170-063X0	300' Boxed Spool	.380	.593	300	150	22.9	10.4	1.75	15.7			
170-065X0	500' Reel	.380	.593	300	150	40.4	18.3	1.75	15.7			
170-061X1	100' Boxed Coil	.380	.635	300	150	15.0	6.8	1.75	17.0			
170-063X1	300' Boxed Spool	.380	.635	300	150	45.1	20.5	1.75	17.0			
170-083X0	300' Wrapped Coil	.510	.740	250	125	26.9	12.2	3.00	19.8			
170-085X0	500' Reel	.510	.740	250	125	49.1	22.3	3.00	19.8			

<sup>\*100&#</sup>x27; one-piece coils may be available — ideal for kits and bag-in-box racks. NOTE: 100' lengths may be available for other sizes listed above. Check for availability. † Tracer yarn color coding — substitute for "X": 0 – White; 1 – Red; 2 – Blue.



#### CLEARBRAID® K3150 Series Reinforced PVC Beverage Hose

- Construction Crystal clear Phthalate Free PVC compound, formulated with ingredients in compliance with applicable FDA and CFIA requirements, meets USDA, 3A, NSF, UL, RoHS and USP Class VI criteria. Reinforced with spiraled polyester yarn and longitudinal orange tracer yarns for identification.
- Spiraled Polyester Yarn Reinforcement With Multiple Longitudinal Polyester Yarn – Provides pressure performance and kink-resistance while reducing elongation under pressure... orange tracer yarn provides easy identification.
- Glass Smooth Interior Stays clean and reduces pressure loss.
- Phthalate Free



Nominal Specifications										
DI	0111	Nominal		Working			Wei	ght		Min. Bend
Part Number	Standard	ID	OD	Pressu	ıre (psi)	Cut L	ength	Full	Coil	Radius
Number	Package	(in)	(in)	70°F	122°F	(lbs)	(kgs)	(lbs)	(kgs)	(in)
K3150-03	100'/300' Coil	3/16	.375	250	150	4	1.8	13	5.9	1.75
K3150-04	100'/300' Coil	1/4	.438	250	150	6	2.7	17	7.7	2.00
K3150-05	100'/300' Coil	5/16	.531	250	135	8	3.6	24	10.9	2.50
K3150-06	100'/300' Coil	3/8	.594	225	125	9	4.1	27	12.3	3.00
K3150-08	100'/300' Coil	1/2	.750	200	100	13	5.9	40	18.1	4.00
K3150-10	100'/200' Coil	5/8	.891	200	100	18	8.2	35	15.9	5.00
K3150-12	100'/200' Coil	3/4	1.031	150	85	22	10.0	43	19.5	6.00
K3150-16	100'/200' Coil	1	1.300	125	75	30	13.6	59	26.8	8.00
K3150-20	50'/100' Coil	1 1/4	1.620	100	55	23	10.4	45	20.4	10.00
K3150-24	50'/100' Coil	1 1/2	1.938	100	50	32	14.5	64	29.0	12.00
K3150-32	50'/100' Coil	2	2.490	75	35	47	21.3	94	42.6	16.00

NOTE: Working pressure decreases as temperature increases. Pressure ratings can only be obtrained with proper coupling procedures.

#### POLYSPRING® K7160 Series Reinforced PVC Vacuum & Transfer Hose

- Construction Crystal clear Phthalate Free PVC compound, formulated with ingredients in compliance with applicable FDA and CFIA requirements, meets USDA, 3A, NSF, UL, USP and RoHS criteria. Reinforced with helically-wound spring steel wire.
- Glass smooth interior stays clean and reduces pressure loss.
- Suggested applications collapse- and crush-resistant drain lines; bag-in-box applications.
- Phthalate Free

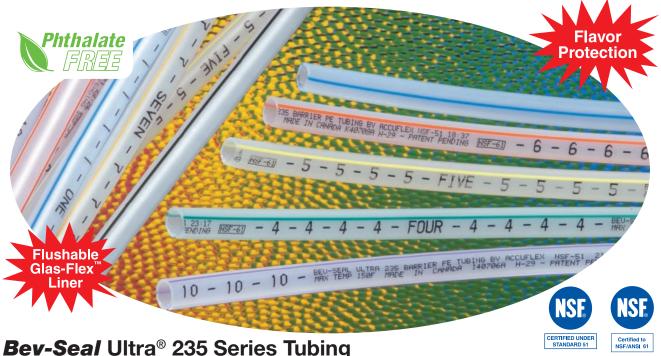


Nominal	<b>Specificat</b>	ions						
Part	Standard	Non	ninal		king re (psi)	We	eight	Min. Bend Radius
Number	Package	ID (in)	OD (in)	70°F	122°F	(lbs)	(kgs)	(in)
K7160-04	100' Coil	1/4	.447	150	70	7	3.3	1
K7160-06	100' Coil	3/8	.600	100	70	11	5.0	1 1/2
K7160-08	100' Coil	1/2	.736	100	70	15	6.9	2
K7160-10	100' Coil	5/8	.861	100	50	19	8.8	2 1/2
K7160-12	100' Coil	3/4	1.028	70	50	25	11.3	3
K7160-16	100' Coil	1	1.290	70	35	33	15.0	4
K7160-20	50' Coil	1 1/4	1.604	70	35	25	11.4	5
K7160-24	50' Coil	1 1/2	1.854	50	30	29	13.1	6
K7160-32	50' Coil	2	2.394	50	30	42	19.1	8
K7160-36	50' Coil	2 1/4	2.750	50	30	59	26.8	9
K7160-40	50' Coil	2 1/2	3.000	50	30	70	31.7	10
K7160-48	50' Coil	3	3.500	50	30	82	37.2	12

NOTE: Working pressure decreases as temperature increases. Pressure ratings can only be obtained with proper coupling procedures.

CAUTION: This product is designed to dissipate static electricity when the metal wire is properly connected to ground, through the coupling and/or other means.

Because we continually examine ways to improve our products, we reserve the right to alter specifications without notice.



Unsurpassed oxygen and flavor protection combined with flushability in a coextruded tube.

- Flushable Glas-Flex™ Liner Allows changeovers from even the most pungent flavors with simple flushing procedures.
- NSF-Certified Products Certified under standard NSF-51 for food equipment and NSF-61 for drinking water systems.
- **Dual-Barrier Construction** Flushable **Glas-Flex**<sup>™</sup> inner liner surrounded by a seamless extruded barrier layer in a coextruded polyolefin tube.
- Phthalate Free

Nominal S	Specificati	ons							
Part	Standard	Nominal		Working Pressure (psi)		Weight per Pkg		Min. Bend	Clamp
Number	Package	ID (in)	OD (in)	70°F	122°F	(lbs)	(kgs)	Radius (in)	Size (mm)
235-05620-XX	1,000' Spool	.190	.313	150	50	23.7	10.8	1.00	8.7
235-06620-XX	500' Spool	.265	.375	125	45	13.2	6.0	1.25	10.0
235-08620-XX	500' Spool	.380	.500	100	40	19.0	8.6	2.25	14.0
235-10620-XX	500' Wrapped Coil	.510	.625	75	30	20.7	9.4	10.00	17.0

Individually numbered and color-coded tubing is available in the standard packaging as well as long-length bulk reels. A typical Part Number is 235-08620-XX for a 500 ft. spool of 3/8" size tubing, where "XX" indicates the number to be imprinted (use "00" for unnumbered tubing). The color coding is in the form of 3 colored strips 120° apart (see photo at right), and number and color coding is as follows:

XX = 01 - Blue; 02 - Black; 03 - Red; 04 - Green; 05 - Yellow; 06 - Orange; 07 - Brown; 08 - White; 09 - Pink; 10 - Purple; 11 - Black; 12 - Red; 13 - Green; 14 - Yellow; 15 - Orange; 16 - Brown, etc.

Note: The "standard packages" are those listed above.



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#### Bevlex® 222/224 Series — Linear low density non-barrier polyethylene tubing



- Polyethylene Construction Taste-free tube lets the true taste come through. NSF-51/61 certified. Tubing complies with FDA Regulation 21 CFR 177.1520 (c) 3.1 b for food contact under conditions of use D through H in Table 2 of 21 CFR 176.170 (c).
- Numbered (224 Series) Promotes proper line connections in multiple tube applications.
- Suggested Applications Syrup transfer, liquor
- **Phthalate Free**

Nominal Specifications													
Part	Standard	Non	ninal	Working Pressure (psi)		Weight		Min. Bend Radius	Clamp Size				
Number	Package	ID (in)	OD (in)	70°F	122°F	(lbs)	(kgs)	(in)	(mm)				
222-0440X2K	2000' Boxed Spool	.170	.250	125	50	24.5	11.1	1.00	7.0				
222-0440X500	500' Boxed Spool	.170	.250	125	50	7.1	3.2	1.00	7.0				
222-0662X500	500' Boxed Spool	.265	.375	125	50	14.7	6.7	1.25	10.0				
222-0862X500	500' Boxed Spool	.380	.500	100	35	20.2	9.2	2.00	14.0				
222-1062X500	500' Wrapped Coil	.510	.625	75	25	24.2	11.0	6.00	17.0				
†224-06620-XX	500' Boxed Spool	.265	.375	125	50	14.7	6.7	1.25	10.0				
†224-08620-XX	500' Boxed Spool	.380	.500	100	35	20.2	9.2	2.00	14.0				
†224-10620-XX	500' Wrapped Coil	.510	.625	75	25	24.2	11.0	6.00	17.0				

Note: 222 Series solid color NSF-51 listed versions are available on special order . . . Minimum quantities will apply. † Number coded 1 – 12

#### Klearon™ K010 Series Clear Food-Grade PVC Tubing









- pound, formulated with ingredients in compliance with applicable FDA and CFIA requirements, meets USDA, 3A, NSF, UL, RoHS and USP Class VI criteria.

Construction - Crystal clear Phthalate Free PVC com-

- Crystal Clarity Enables easy monitoring of flow.
- **Glass Smooth Interior –** Provides minimal flow resistance.
- Available in Several Wall Thicknesses To suit specific needs.
- Tight Dimensional Tolerances Make it easy to get consistent fitting retention with standard fittings.
- **Phthalate Free**

Nominal S	Nominal Specifications													
Part	Standard	Non	ninal	Wor Pressu	king re (psi)	Weight		Min. Bend Radius	Clamp Size					
Number	Package	ID (in)	OD (in)	70°F	122°F	(lbs)	(kgs)	(in)	(mm)					
K010-0406	100' Payout Carton	1/4	3/8	55	20	3.4	1.5	3.5	10.0					
K010-0509	100' Payout Carton	5/16	9/16	60	25	9.4	4.3	3.7	15.7					
K010-0609	100' Payout Carton	3/8	9/16	45	12	4.7	2.1	5.0	15.7					
K010-0610	100' Payout Carton	3/8	5/8	55	20	10.7	4.9	4.5	17.0					
K010-0810	100' Payout Carton	1/2	5/8	30	7	6.0	2.7	7.5	17.0					
K010-0811	100' Payout Carton	1/2	11/16	40	10	9.5	4.3	7.0	19.8					
K010-0812	100' Payout Carton	1/2	3/4	45	12	13.4	6.1	6.0	19.8					
K010-1014	100' Boxed Coil	5/8	7/8	40	10	16.1	7.3	8.0	22.6					
K010-1216	100' Boxed Coil	3/4	1	35	8	18.8	8.5	10.5	27.1					
K010-1620	100' Wrapped Coil	1	1 1/4	25	5	24.1	11.0	12.0	33.1					







# **Bevlex®** 200 Series PVC tubing for bag-in-box soft drink applications and draft beer transfer

- Special dual durometer construction combines a low extraction inner contact surface with a flexible outer layer for excellent kink resistance and taste protection properties.
- Clear Food Grade liner materials free from colorants comply with FDA CFR Title 21 Parts 170 to 199 . . . NSF-51 Listed. Phthalate Free.



**Bevlex®** 200 Series Series Clear PVC tubing for bag-in-box soft drink applications and draft beer transfer

Nomina	Nominal Specifications													
Part	Standard	Non	ninal	Working Pressure		Weight		Min. Bend	Clamp					
Number	Package	ID (in)	OD (in)	70°F	122°F	(lbs)	(kgs)	Radius (in)	Size (mm)					
200-0307*	100' Payout Carton	3/16	7/16	80	26	6.7	3.0	2.0	12.3					
200-0408	100' Payout Carton	1/4	1/2	70	23	8.0	3.6	3.0	13.3					
200-0509*	100' Payout Carton	5/16	9/16	60	20	9.4	4.3	3.7	15.7					
200-0609	100' Payout Carton	3/8	9/16	40	13	7.7	3.5	5.0	15.7					
200-0610*	100' Payout Carton	3/8	5/8	50	16	10.7	4.9	4.5	17.0					

<sup>\*</sup> Available in 500 ft. lengths



# **Bevlex**® 203 Series BLACK PVC BEER TUBING for carbon dioxide supply lines

203-0307	100' Payout Carton	3/16	7/16	80	26	6.7	3.0	2.0	12.3
203-0610	100' Payout Carton	3/8	5/8	50	16	10.7	4.9	4.5	17.0



# **Bevlex**® 204 Series RED PVC BEER TUBING for air supply lines

204-0509*	100' Payout Carton	5/16	9/16	60	20	9.4	4.3	3.7	15.7
204-0610	100' Payout Carton	3/8	5/8	50	16	10.7	4.9	4.5	17.0

<sup>\*</sup> Available in 500 ft. lengths



# **Bevlex**® 209B Series BLUE PVC BEER TUBING for air supply lines

209B-0509* 100' Payout Carton	5/16	9/16	60	20	9.4	4.3	3.7	15.7
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<sup>\*</sup> Available in 500 ft. lengths



# **Bevlex®** 209D (BLUE) and 209R (RED) Series Translucent PVC BEER TUBING for air supply lines

209D-0509*	100' Payout Carton	5/16	9/16	60	20	9.4	4.3	3.7	15.7
209R-0509*	100' Payout Carton	5/16	9/16	60	20	9.4	4.3	3.7	15.7

Accuflex

<sup>\*</sup> Available in 500 ft. lengths



# **Sani-Clean AM**<sup>™</sup> 218 Series Drain Tubing — Added confidence in drain hygiene

**Construction:** Special proprietary compound incorporating an EPA-listed anti-microbial additive which discourages the development of fungal growth on the inner and outer tubing surfaces. The tubing's unique translucent metallic gray color gives it a sanitary appearance, while still allowing a visual inspection of the line while in service. Phthalate Free.

Nomina	l Specificati	ons							
Part	Standard	Nominal		Working Pressure (psi)		Weight		Min. Bend Radius	Clamp Size
Number	Package	ID (in)	OD (in)	70°F	122°F	(lbs)	(kgs)	(in)	(mm)
218-0812	100' Payout Carton	1/2	3/4	45	12	13.4	6.1	6.0	19.8
218-1014	100' Boxed Coil	5/8	7/8	40	10	16.1	7.3	8.0	22.6
218-1216	100' Boxed Coil	3/4	1	39	8	18.8	8.5	9.0	27.1
218-1418	100' Boxed Coil	7/8	1 1/8	30	6	21.4	9.7	10.5	28.6
218-1620	100' Wrapped Coil	1	1 1/4	25	5	24.1	11.0	12.0	33.1

# Anti-microbial drain line tubing inhibits growth of

- Gram positive bacteria
- Gram negative bacteria
- · Fungi, mold and yeast

#### **Drain lines for**

- Ice machines
- Dispensing equipment
- · Condensate drains
- Wherever protection from microorganisms is needed!!!

# Demonstration of the Effectiveness of **Sani-Clean AM**<sup>™</sup> Tubing

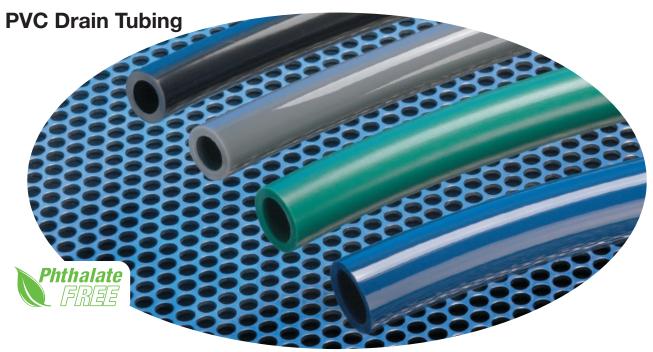
The photos below illustrate the effectiveness of the antimicrobial ingredients present in **Sani-Clean AM**™ tubing. Using test AATCC Method 147-1998, a small cross-section each of regular PVC drain tubing and **Sani-Clean AM**™ tubing were placed on agar in petri dishes, after bacteria had been deposited in stripes over the agar. Traces of the antimicrobial in parts per million diffuse into the agar creating the clear growth-free zone around the tubing. The area of the growth-free zone illustrates the effectiveness of the antimicrobial.







Sani-Clean AM™



Industrial grade PVC tube construction providing lightweight flexibility, kink-resistance and economy. Two basic colors are black and gray, with selected sizes available in blue and green as well. Phthalate Free.

#### 213 Series Black PVC Drain Tubing

Nominal Specifications													
Part	Standard	Non	ninal		rking Ire (psi)	Wei	ight	Min. Bend Radius	Clamp Size				
Number	Package	ID (in)	OD (in)	70°F	122°F	(lbs)	(kgs)	(in)	(mm)				
213-0812	100' Payout Carton	1/2	3/4	45	12	13.4	6.1	6.0	19.8				
213-1014	100' Boxed Coil	5/8	7/8	40	10	16.1	7.3	8.0	22.6				
213-1216	100' Boxed Coil	3/4	1	39	8	18.8	8.5	10.5	27.1				
213-1620	100' Wrapped Coil	1	1 1/4	25	5	24.1	11.0	12.0	33.1				

#### 215 Series Gray PVC Drain Tubing

Nominal Specifications													
Part			Nominal		Working Pressure (psi)		ight	Min. Bend Radius	Clamp Size				
Number	Package	ID (in)	OD (in)	70°F	122°F	(lbs)	(kgs)	(in)	(mm)				
215-0812	100' Payout Carton	1/2	3/4	45	12	13.4	6.1	6.0	19.8				
215-1014	100' Boxed Coil	5/8	7/8	40	10	16.1	7.3	8.0	22.6				
215-1216	100' Boxed Coil	3/4	1	39	8	18.8	8.5	10.5	27.1				
215-1418	100' Boxed Coil	7/8	1 1/8	30	6	21.4	9.7	10.5	28.6				
† 215-1620	100' Wrapped Coil	1	1 1/4	25	5	24.1	11.0	12.0	33.1				

<sup>†</sup> Semi-stock item, may require minimum run of 25,000 feet.

#### **Special Color Coded PVC Drain Tubing**

Nominal Specifications											
Part	Standard	Nominal		Working Pressure (psi)		Weight		Min. Bend Radius	Clamp Size		
Number	Package	ID (in)	OD (in)	70°F	122°F	(lbs)	(kgs)	(in)	(mm)		
Green											
213G-1014	100' Boxed Coil	5/8	7/8	40	10	16.1	7.3	8.0	22.6		
Blue								<u> </u>			
213B-1216	100' Boxed Coil	3/4	1	39	8	18.8	8.5	10.5	27.1		

### Flexible Insulated Drain Hoses

**Featuring** 

## Tigerflex<sup>™</sup> Brand Drain Hose

#### **Features and Benefits:**

- Convoluted Construction Provides exceptional kink resistance that provides a very tight bend radius for difficult installations.
- Smooth Bore Minimizes internal flow restrictions.
- Antimicrobial Insulation Inhibits growth of bacteria and other microorganisms.
- Snug Fitting Insulation Minimizes air entrapment beneath the insulation and condensation that might otherwise form.
- Convenient Sizes Available ID sizes are 1/2", 3/4" and 1" to fit most applications.
- Convenient Lengths hoses are furnished in nominal 72" lengths.
- Phthalate Free

# Flexible Non-Insulated Drain Hoses

**Featuring** 

## Tigerflex<sup>™</sup> Brand Drain Hose

#### **Features and Benefits:**

- Convoluted Construction Provides exceptional kink resistance that provides a very tight bend radius for difficult installations.
- Smooth Bore Minimizes internal flow restrictions.
- Convenient Sizes Available ID sizes are <sup>1</sup>/<sub>2</sub>", <sup>3</sup>/<sub>4</sub>" and 1" to fit most applications.
- Convenient Lengths Hoses are furnished in 100 ft. and 25 ft. lengths.
- Phthalate Free



#### **General Applications:**

• Drains on ice makers and beverage dispensing units

#### **Construction:**

Smooth bore flexible PVC with rigid PVC helix reinforcement.

#### Service Temperature:

-4°F (-20°C) to 150°F (+65°C)



For under-the-counter and fountain head areas; keeps condensation from forming on the Drain Hose and then dripping on floor area.

Nominal Specifications										
Part Number		Non	ninal		Working Pressure (psi)		Vacuum Rating Hg (in) at 68°F		Min. Bending Radius	Weight (lbs/ft)
	ID (in)	ID (mm)	OD (in)	OD (mm)	68°F	104°F	68°F	104°F	at 68°F (in)	(105/11)
A15-DHG050	1/2	12.7	0.67	17.0	38	20	23	13	0.50	0.12
A15-DHG20MM	3/4	20.2	1.06	26.8	36	18	22	12	0.75	0.16
A15-DHG27MM	1	26.5	1.36	34.5	36	18	22	12	1.00	0.25



#### **General Applications:**

 Drains on ice makers and beverage dispensing units

#### **Construction:**

Smooth bore flexible PVC with rigid PVC helix reinforcement.

#### Service Temperature:

-4°F (-20°C) to 150°F (+65°C)



Nominal Specifications										
Part Number	Nominal				Working Pressure (psi)		Vacuum Rating Hg (in) at 68°F		Min. Bending Radius	Weight (lbs/ft)
	ID (in)	ID (mm)	OD (in)	OD (mm)	68°F	104°F	68°F	104°F	at 68°F (in)	(105/11)
DHG050X100	1/2	12.7	0.67	17	38	20	23	13	0.50	0.07
DHG050X25	1/2	12.7	0.67	17	38	20	23	13	0.50	0.07
DHG20MMX100	3/4	20.2	1.06	26.8	36	18	22	12	0.75	0.13
DHG20MMX25	3/4	20.2	1.06	26.8	36	18	22	12	1.00	0.20
DHG27MMX100	1	26.5	1.36	34.5	36	18	22	12	1.00	0.20
DHG27MMX25	1	26.5	1.36	34.5	36	18	22	12	1.00	0.20



## Accu-Cutter<sup>™</sup> Tubing, Hose & Bundle Cutters

- We offer five tools for use in cutting Bundles - Hose - Tubing
   & Slitting Bundle Jacket Covers
- The cutting tools can handle a variety of sizes up to 2-1/2" OD Bundles.

Note: Best Practices require that all hose and tubing be cut clean and square before inserting fittings. The Accuflex Cutting Tools when used properly and blades kept sharp, will cut clean and square.





# Part No. 957-01000-00 One Handed Ratchet Bundle Cutter

- Cuts up to 2 1/2"
   OD Bundles
- Weight 1.4 lbs



# -60



#### Part No.951-01000-00 Bundle Cover Slitter

- Easily slides in from the end between Hose/Tubes and Bundle Jacket.
- Weight 1.4 oz



#### Part No.958-01000-00 Medium Cutter

- Medium Hose and Tubing Cutter
- Cuts up to 1 5/8" Hose and Tubing
- Weight 4.3 oz.



#### Part No. 954-01000-00 Large Cutter

- Large Bundle Hose -Tubing Cutter
- Cuts up to 1 7/8" OD Bundle - Hose and Tubing
- Weight 5.0 oz



#### Part No.959-01000-00 Kuri Snip Cutter

- · Kuri Snip Cutter
- Cuts up to 1/2" OD Hose and Tubing - used to clean and square up ends
- Weight 0.91 oz

## **Replacement Blades**



Part No.957-03000-00 Replacement blade for One Handed Ratchet Cutter

Large Bundle - Hose - Tubing Cutter



Part No.954-03 Replacement blade for Large Cutter

Large Bundle - Hose - Tubing Cutter



Part No.958-03 Replacement blade for Medium Cutter

Medium Hose and Tubing Cutter



Part No. 959-03 Replacement blade for Kuri Snip Cutter

### **Best Practices** — Installation of Bev-Seal Ultra® Lined hose, tubing & bundles









Recently, there has been a major change in the hose and tubing used in beverage dispensing applications.

At the request of the major beverage manufacturers, a flushable design and construction for hose and tubing was developed, tested and approved. Unlike conventional polyethylene hose and tubing, the new product has a liner that eliminates permeation and is flushable. Not just "good enough," but truly flushable.

Used in both Bev-Seal Ultra® Series 175 hose and Series 235 tubing, this liner is made from a relatively hard resin. This introduces some different handling requirements.

Installation of bundles - When pulling a bundle through a chase, the use of a cable puller is highly recommended. This makes the process easier and minimizes the chance of stretching a single line, damaging the liner or reducing the flow rates.

**Cutting –** Sharp tools are necessary, not just for ease of cutting but to better slice through the liner. It is also recommended that, after installing a bundle, the individual ends be trimmed prior to the installation of fittings.

Fitting installation - When installing fittings, use of a water spray as a lubricant will ease the job.

Hot water rinse - After installation, a 10-minute hot

water rinse applied to hose, tubes and bundles is recommended to rinse out any debris and relieve stress in the liner(s).

Sanitizing - The use of standard sanitizers is encouraged, but care should be taken not to exceed the recommended concentration, particularly with strongly alkaline solutions. It is essential that all sanitizers be flushed out thoroughly with a 5 to 10 minute hot water flush.

Pinching off the ends of a hose or tube - Although we recognize that there are some situations that may arise that require this practice, such as during the repair and maintenance of equipment, it is not generally recommended that hose or tubing be pinched off. Doing so, unless followed by a hot water rinse, creates stress in the liner which may lead to premature failure.

Flavor changes - Bev-Seal Ultra® hose and tubing products allow changes from pungent flavors to non-pungent flavors with a relatively simple flushing procedure. It is suggested that the tube or hose carrying the pungent flavor be rinsed out with water until the water runs clear, then be flushed with a mild sanitizer for 10 minutes. The sanitizer can then be flushed out with hot water for 10 to 15 minutes before introducing the new flavor. This procedure is effective with even the most pungent beverages, including fruit flavors.

# Frequently Used Terms

- Barrier A special layer applied to hose or tubing that is designed to prevent permeation or contamination. Advantages: Flavor protection, longer service life. Disadvantage: Stiffer.
- Bundle Multiple tubes and/or hoses wrapped together closely to form a compact unit. Advantages: Easy to install, saves labor. Disadvantage: Lines need barrier protection.
- Cabled bundle Twisted bundle construction to increase overall flexibility. Advantage: Easier to install. Disadvantage: Costs more to produce.
- Flushable The ability to rinse out a previous flavor from a hose or tube. Advantages: Can change flavors without danger of flavor contamination. Disadvantage: Costs more.
- Hose Multi-layered cylindrical shape; has core tube, reinforcement and cover. Advantage: Higher working pressure. Disadvantages: Bulkier and heavier.
- Insulated bundle Bundle with insulation, used in recirc and beer installations. Advantage: Helps keep beverages cold. Disadvantages: Costs more, bulkier.
- Non-Barrier Hose or tubing which does not contain the special barrier layer. Advantages: Costs less.
   Disadvantages: No flavor protection, shorter service life.
- Non-Flushable The inability to rinse out previous flavors from a hose or tube without the danger of flavor contamination. Advantage: Costs less. Disadvantage: May have to replace the hose or tube in order to safely change flavor.
- Permeation The movement of molecules from an area of high concentration to one of low concentration until equilibrium is obtained. Advantage: Rids smoke. Disadvantage: Makes it necessary to use barriers.
- Phthalate Free Manufactured from all phthalate free materials.
- Tubing Cylindrical shape, sometimes called a core tube, no reinforcement. Advantages: Less bulky, lighter weight. Disadvantage: Lower working pressure.
- Uninsulated bundle Bundle with no insulation, used for room temperature runs. Advantages: Less costly, less bulky. Disadvantage: No thermal protection.

# Frequently Asked Questions

**Q:** What is the difference between tubing and hose?

A. Tubing has a simple single wall, and a lower pressure rating. Hose has several layers and is reinforced for higher pressures and, while it is slightly stiffer, it usually has a smaller bend radius.

f Q: What does "Barrier" and "Non-Barrier" mean?

A "Barrier" is a layer in the hose or tube that prevents flavors from permeating through the wall and contaminating other flavors, for example, root beer flavor penetrating into a tube carrying a lemon-lime beverage and contaminating its flavor. A hose or tube that is a "Non-Barrier" product has no such protection from permeation and flavor contamination.

**Q:** What does the term "flushable" refer to?

A. The term "flushable" refers to the ability of a hose or tube to have a flavor rinsed out completely and then begin carrying a new flavor with no taste carryover.

What is the difference between cabled bundles
 and non-cabled bundles?

• Cabled bundles are twisted during assembly to give them greater flexibility. Non-cabled bundles are simply hoses and/or tubes grouped together in parallel bundles. They are fine for short runs, but are fairly stiff and hard to bend.

**Q** • What do you mean when you talk about permeation?

All plastics permeate. This means that molecules of flavor penetrate into the plastic core tubes and, in many cases, they can get all the way through a hose or tube and even get into an adjacent hose or tube. This causes flavor mixing and flavor contamination. Accuflex's dual barrier hoses and tubes are 500+ times less permeable than most plastic hoses and tubes.

What is flavor ingression or cross-tasting, and
 what precautions can be taken to prevent it?

• Organic liquids and vapors can permeate through essentially all plastic and rubber materials to some extent. The rate of permeation is determined by the chemical nature of the organic substance and of the polymeric material. Although polyethylene is a very inert material, containing few extractable components and having excellent resistance to water absorption, it has relatively low resistance to permeation by organic hydrocarbons and oily substances. When a flavor or contaminant permeates from the surrounding environment through the hose or tubing into the contained beverage, flavor ingression or cross-tasting is said to have occurred.

Plastics that display excellent resistance to permeation are considered to be "barrier resins." A layer of these barrier

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# Frequently Asked Questions (continued)

resins can be incorporated into a hose or tube as an overlapping layer or as a seamless co-extrusion. Although very thin when compared to the rest of the hose or tubing wall, the barrier layers offer effective protection against flavor ingression.

When hose or tubing is exposed to cleaning fluids or environmental contaminants, or when the lines are confined in close proximity to each other, as in a bundle or conduit, the flavors of beverages inside the hose or tubing can be affected by flavor ingression or cross-tasting. We recommend that barrier-style hoses, tubing, or bundles be used in these situations.

Q: Do some flavors cross-taste more than others?

Most non-barrier hoses and tubes use polyethylene as the primary material. Polyethylene allows most organic hydrocarbons to permeate relatively quickly without causing any physical change in the polyethylene itself. The rate of permeation is approximately the same for each flavor, but the level at which a given flavor can be detected may vary greatly. Pungent flavors such as root beer, cherry, or strawberry are very strong, and can be detected at very low levels, as compared to non-pungent flavors. Therefore, a pungent flavor will be detected as a contaminant in a non-pungent flavor relatively easily. Furthermore, fruit flavors based on limonene are readily absorbed and held by polyethylene, which releases it slowly to the atmosphere or the beverage contained inside the tube. The high absorption level and slow release are the reasons why fruit flavors are so difficult to flush out of polyethylene hose or tubing.

• Water, syrup or CO<sub>2</sub>... which hose or tube is best for what?

A. The main criteria in choosing the proper hose or tube are the physical conditions such as pressure, temperature, and environment. Particular attention must be paid to pressurized lines such as CO<sub>2</sub> transfer lines in which higher pressures may require the use of hose instead of tubing, keeping in mind that pressure ratings are reduced at higher temperatures.

Secondly, the environment must be considered to determine if there is a need for barrier protection, such as installations in a floor chase or individual lines in a bundle carrying pungent flavors. Water lines in particular must be protected from contamination, whether run inside a bundle or alongside it.

• What size and type of clamp should be used?

A. To obtain uniform compression around the tube or hose, we recommend the use of a stepless ear-type clamp. The clamp must be sized so that it will still slide over the tube after the barbed fitting is inserted, and exert sufficient compression on the materials before the clamp is fully closed. When soft materials are involved, it must be recognized that the clamp will sink into the materials somewhat, perhaps necessitating a smaller sized clamp. When properly sized, the sides of the ear should not be touching each other when the clamp is installed.

How tightly can beverage lines be bent in a permanent installation?

• The minimum bend radius values shown in this catalog represent the smallest curvature to which a product should be exposed in an positive pressure installation at room temperature, as measured in the inside of the curve. Minimum bend radius depends upon diameter, wall thickness, material hardness and elasticity, and application conditions. If negative pressures or elevated temperatures are involved, larger values should be considered. As a general rule of thumb, a minimum bend radius for a hose or tube is 10 times the OD of the product. This is a conservative value and should apply to most products, unless very thin walled hoses or tubes are involved.

Q. What fire regulations must be considered when installing beverage lines?

All beverage lines must be installed in accordance with all applicable regulations and building codes. The most common questions involve the use of lines in ceilings, and, in particular, in plenums. A plenum is an area from which air can be drawn into the living space in a building through the heating or air conditioning systems. A plenum may be a specific air duct, or could be an entire attic area. In the event of a fire, it is important that the materials inside a plenum not generate any significant level of toxic smoke. Halogenated materials such as PVC are of concern in such areas, and should be enclosed in a fire resistant chase.

All materials used in a plenum must be "non-combustible" as defined by standards such as ASTM E-84 in the USA or CAN/ULC S102.2 in Canada. In both of these standards, the maximum values for flame spread and smoke generation are 25 and 50 respectively. Since the primary concerns in the design of beverage hose and tubing are taste integrity and health safety, flame retardant additives cannot be added directly to any components that may be exposed to the beverage. Therefore, the products must contain barrier layers to ensure that no flame retardants migrate to the contact surface. Accuflex's **Bev-Seal** Ultra® Series 235FR, 175FR, and 974FR Fire Resistant tubing, hose and bundles satisfy these requirements with a 0/0 rating.

What is the difference between standardsNSF-51 and NSF-61?

• The National Sanitation Foundation has issued two standards that can relate directly to beverage applications. Standard NSF-51 covers Food Equipment and Related Products, Components and Materials, and includes dispensers and other equipment involved in the preparation, storage or transfer of foods and beverages (including alcoholic beverages). The criteria relate somewhat to FDA regulations. Standard NSF-61 covers Drinking Water System Component – Health Effects, and includes all equipment that comes in contact with drinking water. These criteria are based on EPA guidelines. Many of our hose and tubing products carry both NSF-51 and NSF-61 listings, so that they can be used with both drinking water and prepared beverages.



# Care and storage











# **Storage Precautions**

To assure satisfactory performance when installed on beverage equipment, it is important that hose, tubing and bundles be stored properly prior to installation. It is necessary to guard against conditions which could create odors within the hose or tubing and/or conditions which could lead to degradation or physical damage. Conditions to avoid:

Excessive heat - Storage conditions above 90° F. will cause some odor buildup inside the hose which will necessitate more flushing prior to placing the hose in service.

**Moisture –** Excessive humidity can have an effect on cardboard boxes and spools, reducing their strength and, under extreme conditions, causing mildew and unpleasant odors which could affect the hose.

**Sunlight and weathering –** Although sunlight alone will not adversely affect hose that is still in its original carton, direct prolonged exposure of the product to sunlight could cause some yellowing of the EVA and polyethylene and heat buildup in coils and spools. Avoid outdoor storage of spools or coils.

**Contaminating odors – Make sure the product is** not stored near contaminating odors such as solvent fumes, automobile exhaust fumes, rubber goods, etc. The ambient air could enter the tubing and leave an odor inside.

Rodent or insect attack - Avoid storing hose and tubing in areas where rodents or insects could damage or enter the product.

Crushing due to excessive weight - Hose & tubing bundles: When stacking several coils of bundle product on a pallet, avoid overhangs which could create excessive localized pressure on the coil at the edge of the pallet. Hose and tubing: Pallets may be stacked two high for brief periods of time, provided the top layer of cartons on the lower pallet is suitably protected from damage by the wooden skid of the top pallet. Avoid long term storage of stacks exceeding twelve boxes high or an overall height of eight feet.

# **Handling Precautions**

When installing barbed fittings, ensure that there are no burrs or nicks on the fitting that could damage the tube surface or cause leaks.

If a hose is inadvertently kinked during installation, ensure that the hose or tube is not subjected to any bend at that point that could lead to future kinking. Once

kinked, a hose or tube will be susceptible to future kinking at the same spot.

Hose, tubing and bundle products must always be cut with sharp tools, in order to leave a smooth cut surface. Never use a saw, since it will create contaminating particles that could enter the tubing.

# **Cautionary Statement**

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Hose or tubing used in bent configurations will be subjected to increased abrasion. Hose clamps or couplings may loosen after initial installation and all sections of hose and tubing including connections, couplings, clamps, conductivity and bonding should be inspected frequently, regularly and consistently, and should be replaced, adjusted or re-tightened for the avoidance of leakage, for the prevention of injuries or damages, and for general safety purposes. Except as indicated in its Limited Warranty, Seller shall not be liable or responsible for direct or indirect injuries or damages caused by or attributed to the failure or malfunction of any Products sold or distributed by it.

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