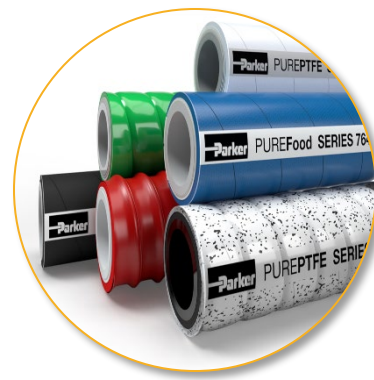


# Specifying Hose for Food and Beverage Applications





## Introduction

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- Food Grade Hose Overview
- Specifying Process

## How to Select the Right Hose for the Application

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- Construction Considerations
- Safety
- Technical Specifications
- Cleanliness Factors
- Quality Standards and Compliance

## Parker's PURE Hose Product Offering

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# What Makes a Food Grade Hose Unique?



Food and beverage grade hoses are exclusively manufactured to preserve the quality of food products and prevent contamination from exposure to foreign elements.


Food and beverage hoses are tested for strength as well as their reaction with cleaning and sanitary solvents and their absorption of fats and oils.



There is a broad range of applications in the industry – from dairies to distilleries to grain silos – so a wide variety of hoses have been developed to meet various requirements.

**So how do you spec the right hose for your application?**



- 
- Are you concerned with high temperatures?
  - Does the hose need to be resistant to fats and/or oils?
  - Do you need increased flexibility?
  - Do you need the hose to withstand specific cleaning processes?
  - Is abrasion resistance important to you?
  - Does the weight of the hose matter?
  - Are you concerned about hose marks on the floor?
  - What type of cover does the tubing or hose in your application need (i.e. smooth or aesthetic so it is easy to grip)?



# Hose Construction Considerations



## Inner Tube

You do not want a hose interior that will react with or break down when it comes in contact with the fluid because that could lead to hose failure. Some inner tubes are lined with UHMWPE or are PTFE to increase chemical compatibility.



## Reinforcement

Wire reinforcement layers can be made of metal or textile depending on the flexibility and strength required. The reinforcement also dictates the pressure capabilities, kink resistance, strength and weight of the hose. Furthermore, reinforcement is key for pressure design and helical wires for vacuum rated hoses.



## Hose Cover

Environmental dangers could come in the form of abrasion, wear, temperature and even sunlight. The exact material chosen will depend on where and how the hose is to be used. If the hose is going to be somewhere with more extreme environmental environments, then it will need to be made of a more robust material. When selecting a cover, corrugated covers offer additional flexibility and force to flex.

# Material Choice: Rubber vs PVC

## Rubber

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- Tougher and more rugged
- Performs better at high and low temperatures
- Ideal for high pressure applications
- More flexible
- Longer service life on high usage, demanding applications



Which is better for your application?

## PVC

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- Not flexible when used in lower temperature applications
- Loses integrity at high temperatures
- Lighter weight
- More susceptible to kinks



# Chemical and Material Resistance

## Non-Toxic, Non-Metal

Metal components are susceptible to corrosion, which can lead to contamination. Rubber offer an inherent resistance to corrosion.

## Compatibility

Hoses are manufactured from non-toxic compounds to ensure chemical resistance.

## Odorless

Hoses do not transfer any smells or tastes to the product being conveyed.

## Sterilization and Reusability

Some hoses (depending on application) can be cleaned and used again – a money saver.





# Flexibility of Hose Plays a Factor

Flexibility is a property that varies greatly depending on the type of plastic or rubber material and its construction. A food grade flexible hose must provide durability and ease of handling.



## Safety Matters

A lower force to flex makes the hose “safer” and easier to work with.

## What affects flexibility?

Factors that affect flexibility include durometer (softness or hardness), force-to-bend, size, wall thickness, reinforcement style, and temperature.

## What’s the application?

Situations involving robotics or circumstances where the tubing is repeatedly moved require special consideration.



# Is Kink-Free Resistance Important?



If your application calls for the hose to bend around machinery, its resistance to kinking and collapsing upon itself must be considered. Sometimes a very flexible material – silicone, for instance – can address the issue.

However, some heavy-duty food grade hoses contain an internal stainless-steel helix, to prevent the hose from being crushed or kinked.



# Safety: Flammability and Anti-friction



Tubing and hose applications can involve high temperatures or electricity, leading to concerns about fire safety and flammability. Do you know what will happen to the tubing or hose if it catches on fire? Might it emit fumes? Self-extinguish? Is it non-flammable? It all depends on the material. A hose that has low coefficient of friction equals outstanding impact strength.

**Important Elements to Keep Your Employees Safe**





# Weight Concerns

The overall weight of the tubing, reinforced hose and/or assembly components used in your application must be examined. You'll want to make sure you don't create a situation where a hose assembly's weight pulls on other components such as fitting connections.





# Pressure Factors

Hose pressure does not impact the nutritional profile of the product. Vitamins, minerals, nutrients and food enzymes remain intact. Flavor, color and texture also are unaffected by pressure. Good quality food grade hoses can sustain high pressure supply. However, exceeding the pressure rating could lead to hoses bursting which may cause damage, injury, and downtime.



# Temperature Requirements

Just as hoses have pressure ratings, they also have temperature range ratings. If a hose is used in conditions that are too hot for it, it could lead to the materials breaking down or even melting.

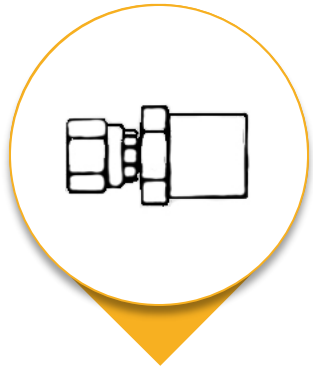
- Can it withstand the temperature of the product traveling through it?
- Will it lay next to other equipment that throws off heat?
- Will it be outside and subject to both heat and cold, plus variable sunlight?
- Will it need to operate and remain flexible below freezing?





# Cleanliness

Besides selecting the right hose material, there are three critical points to be observed when it comes to ensuring safe and hygienic hose lines, including:



**Fitting  
Selection**



**Cleaning and  
Disinfection**



**Regular  
Inspections**

When selecting a hose and fitting system, you should consider not only the initial purchase price but also possible follow-up costs resulting from a lack of hygiene, production stoppages or insufficient industrial safety.

# Don't Forget About Fittings and Clamps Selection

- Softer tubing work best with barb style fittings. Clamps are typically needed when barbed fittings are used, and they, too, come in various styles and materials.
- Harder tubing materials are better suited to push-to-connect and compression fittings. O-rings and/or the fitting's surfaces seal the tubing ends for leak-free connections.
- In the case of a hose assembly with a permanently-attached, stainless steel barbed fitting, a collar is typically used.





# Crimp vs Internal Expansion

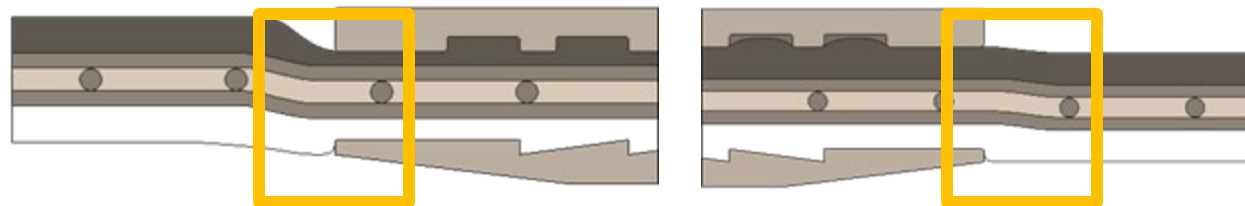
## Crimp

- Best on hard-wall or soft-wall hoses
- Properly crimped hose wall will cause disruption
- Wire helix resists collapse

## Internal Expansion

- Best on soft-wall, acceptable on hard-wall hoses
- Properly expanded insertions will cause little disruption to hose wall
- Wire helix acts as internal shell

### Critical Areas



# Standards / Compliances

The Food and Drug Administration (FDA)



NSF International



The U.S. Department of Agriculture (USDA)



ISO 9001:2015



Good Manufacturing Practice Regulations (GMP)



The United States Pharmacopeia (USP)



**From baked goods to distilling spirits to the facilities in which they are processed, Parker can help optimize your manufacturing process**



# Addressing Industry Demands

- With increasing competition, changes in customer demand, stricter safety regulations and the increasing power of retailers, the pressure you face is real.
- Parker products can optimize your processes and provide the high-quality products your customers expect, lowering your total cost of ownership and always keeping your personnel and customers safe.



# Why Parker Food Grade Hose

## Simple

Parker's PURE color coded hose allows for simple product selection.



## Safe

We strive to keep consumers and team members safe



## Clean

Produced on stainless steel mandrels the clean inert tube is made of FDA-compliant materials.



# PURE Food & Beverage Hose

- Cleans and safely transfers a variety of foods, beverages and sanitary materials
- Specifically engineered with inert tube rubber compounds that are ideal for food-grade hoses
- Available in a range of colors, pressures, sizes, and temperature capabilities
- Exceeds all necessary industry standards
- Includes suction capability and kink resistance
- Features extended usability and convenient cleaning

**PURE**

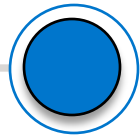
Food & Beverage Hose

*Simple. Clean. Safe*

**Parker**

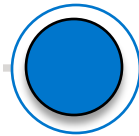
# Hose Cover Options For Any Application

**PURE**



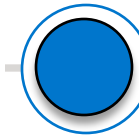
## **PURE Standard**

High grade, UV and ozone resistant, vulcanized rubber, smooth cover



## **PURE PRO**

Abrasion resistant, corrugated, non-marking, low friction, easy to clean



## **PURE PLUS**

premium offering, deep corrugation, external PVC helix, crush resistant, most flexible

# PureBev

Series 7630, 7630P, 7630PL



High quality, flexible, low permeation, delivery and custom hose designed for a wide variety of non-fatty food products including beer and wine.



Red EPDM cover; Pro has an UHMWPE film and corrugated finish, Plus has an external PV deep corrugation cover



150 – 250 PSI



White Butyl tube, phthalates free



-40° F to +248° F



Textile piles, galvanized helix wire



1 to 4" I.D.





# PureBev CR

## Series 7631 and 7632



High quality, flexible, low permeation delivery and suction hose designed for a wide variety of non-fatty food products including beer and wine.



Purple EPDM cover, smooth finish,  
UV and Ozone resistant



150 – 250 PSI



White Butyl tube, phthalates free



-40° F to +248° F



Textile piles, thermoplastic helix wire



1 to 3" I.D.



# PureSpirits

## Series 7650P



Premium quality, extra flexible, low permeation delivery and suction hose designed for a variety of spirits with an alcohol concentration up to 99%.



Green UHMWPE cover with a UHMWPE film, corrugated, abrasion resistant, additional external thermoplastic helix



150 PSI



White UHMWPE tube, phthalates free



-31° F to +212° F



Textile piles, galvanized helix wire



3/4" to 4" I.D.



# PUREFood & Transfer

High Quality, Flexible Delivery Suction

Designed for:

- Dairy products
- Cooking oils
- Dry abrasives
- Oily sauces



**Parker**

# PureTransfer

## Series 7620



High quality, flexible, anti-static, delivery and suction hose designed for dry food products.



Black EPDM cover, smooth finish, UV and Ozone resistant, conductive



90 PSI



Abrasion resistant white Nitrile tube, phthalates free



-13° F to +176° F



Textile piles, galvanized helix wire



1 to 4" I.D.



# PureFood

## Series 7640 and 7640P



High quality, flexible, delivery and suction hose designed for both fatty and non-fatty food products.



Blue EPDM cover; Pro is blue EPDM with a UHMWPE protective cover and corrugated



150 PSI



White Nitrile tube, phthalates free



-13° F to +176° F



Textile piles, galvanized helix wire



1 to 4" I.D.





# PUREPTFE

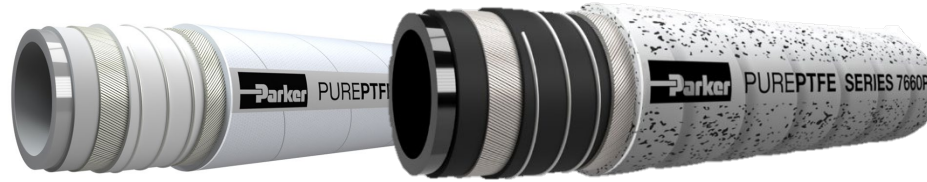
**Chemical and Solvent Transfer**

**Designed for:**

- **Chemicals**
- **Cosmetics**
- **Pharmaceuticals**

# PurePTFE

## Series 7660 and 7660P



High quality, flexible, delivery and suction hose designed for cosmetic, chemical, pharmaceutical, and food applications.



White XXX cover



PTFE Nitrile tube



Textile piles, stainless steel wire helix



150 - 250 PSI



-40° F to +302° F



1/2" to 2" I.D.



# PUREWashdown

## Washdown and Sanitation

### Designed for:

- **Breweries**
- **Dairies**
- **Wineries**
- **Meat & poultry processing plants**
- **Packing house**
- **General industrial**



**Parker**



# PureWash

## Series 7680



Flexible, lightweight, medium pressure washdown hose for hot water and mild chemicals in cleaning and general industrial washdown applications.



White or Blue EPDM cover, smooth finish, UV and Ozone resistant



300 PSI



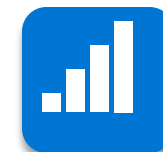
White EPDM tube; FDA Compliant



-40° F to +212° F



Multiple textile piles



1/2 to 1" I.D.



# Parker's GMP Certification



## Top Reasons To Consider Good Manufacturing Practice Certified Food-Grade Hoses

- Factory cleanliness, material traceability and quality systems are in place and active
- The whole hose meets FDA requirements for the materials of construction, not just the tube.
- The product will not absorb media, nor will the media extract any non-regulated/non-permissible substance.
- No layer of the hose will migrate nor contain any substance that will migrate into the media.

### Certified Hoses

#### **BUTYL tube**

PUREBev SERIES 7630  
PUREBev SERIES 7630P  
PUREBev SERIES 7630PL  
PUREBev CR SERIES 7631  
PUREBev CR SERIES 7632

#### **UHMWPE tube**

PUREspirits SERIES 7650P

#### **PTFE tube**

PUREPTFE SERIES 7660  
PUREPTFE SERIES 7660P

### Soon to be Certified

#### **NITRILE tube**

PUREFood SERIES 7640  
PUREFood SERIES 7640P



