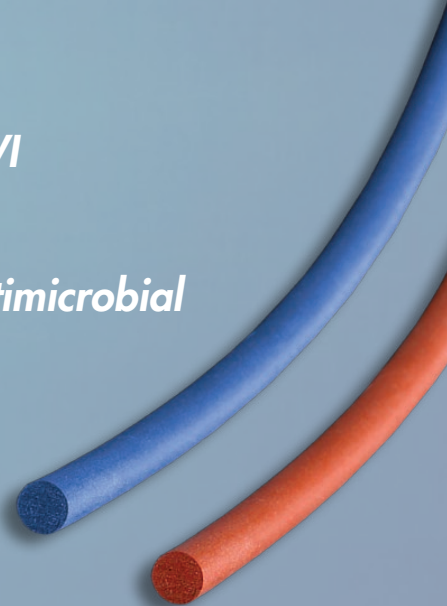


O-Ring Offering and Material Specifications



Products Include:

- *FDA and Class VI*
- *Detectomer®*
- *ionAssure™ Antimicrobial*
- *Cord*
- *Vulcanizing*



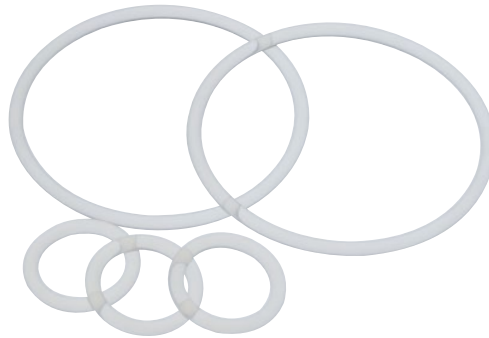
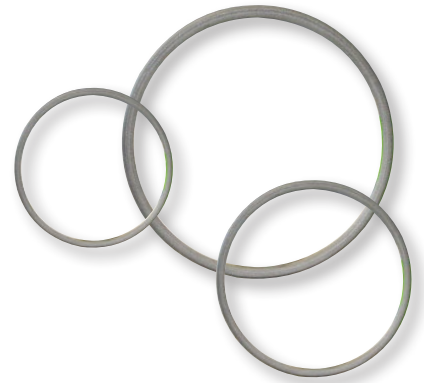
RUBBER FAB
technologies group

A Material Science Company

Rubber Fab's O-Ring Selection

Seal design is an important factor in food, dairy, beverage and pharmaceutical processing. An o-ring is an exceptionally versatile sealing device and Rubber Fab offers AS568 Standard o-rings, metric, DIN and custom sizes in a wide variety of materials. Rubber Fab's extensive inventory includes **FDA (food grade)**, **Class VI (pharmaceutical grade)** and **Detectomer®** o-rings which meet the requirements of the **Food Safety Modernization Act**. Each o-ring shipment has a certificate of conformance ensuring complete lot and batch traceability. Rubber Fab also offers solid cord stock or we can vulcanize (cut and bond) an o-ring to your size specification!

- Platinum-Cured Silicone
- Buna
- Detectomer®
- EPDM
- FKM
- FFKM
- PTFE
- Tuf-Steel®
- FEP Encapsulated EPDM, FKM and Silicone



Why is FDA & Class VI Important When Choosing an Elastomer?

There are many factors to think about when choosing an elastomer for your application. Having o-rings and gaskets that is **FDA Compliant** for use in food applications, **Class VI** tested for pharmaceutical applications or Detectomer® products that meet the requirements of the **Food Safety Modernization Act** means you can be assured that your sanitary o-ring and gasket has been tested to the highest

standards, **reducing downtime**, which means **more uptime**, giving you the best product for your application. Our Detectomer® products meet and exceed the standards set by the **Food Safety Modernization Act**, making it detectable by in-line x-ray inspection and metal detection systems as well as magnetic separators, reducing costly product loss and recalls.

Do You Know About...

DETECTOMER® **The Gasket Champion**

X-ray inspection and metal detection systems provide confidence to food, dairy and pharmaceutical manufacturers by insuring product safety and integrity as outlined by the **Food Safety Modernization Act**. Detectomer® is a full line of metal detectable/x-ray inspectable elastomeric products designed to work with any existing conveyor, pipe line or free fall detection systems. Detectomer® products include **sanitary gaskets, o-rings, cord, sanitary screens, sheet, rod, extrusions, and cam & groove gaskets and screens.**

DETECTOMER®:
Providing Processing Security
Against Elastomeric Contamination.



Rubber Fab Has Cord!

Rubber Fab's cord is the perfect solution for custom o-ring sizes as well as in the field fabrication. Our cord can be ordered in different lengths and vulcanized to make o-rings for applications where a standard size will not fit. **FDA and Class VI** materials are offered in both standard and metric. Our Silicone coated fiberglass cord is perfect for high heat applications.

Available Materials

- Buna
- EPDM
- FKM
- Silicone/Fiberglass
- Silicone
- Metal Detectable
- Metal Detectable/
X-ray Inspectable

We Can Vulcanize

Rubber Fab has the capability to vulcanize or cut and bond o-rings to custom sizes that might not otherwise be available. There are two types of bonding

- Hot Bond (is the stronger bond)
- Cold Bond

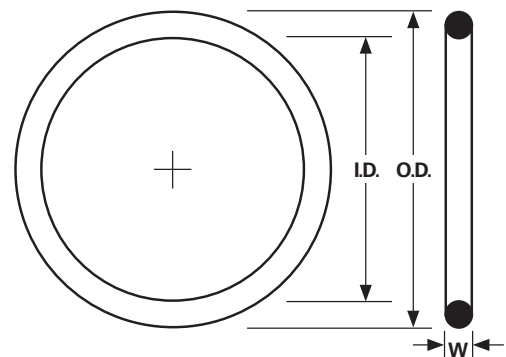
Bonding Agent is dependent of material you are bonding. The two types of cuts we can make are Straight or Blunt and Angled (45 degrees).



How to Measure an O-Ring

There is a simple way to measure an o-ring. Of course we suggest an o-ring cone to make sure that the size is exactly what you need.

- Formula to determine an o-ring diameter is:
Cut length \div 3.1415 = xx – cross section = I.D.



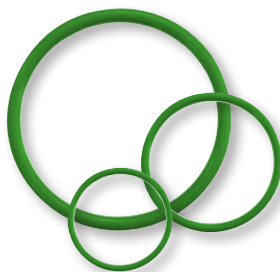
New to Rubber Fab!

ionAssure™ Antimicrobial Treated Products

Rubber Fab is pleased to announce our new **Antimicrobial Technologies** division and the **ionAssure™** line of products. These new gaskets and o-rings integrate a patented and **EPA registered antimicrobial** that is **permanently embedded** in our elastomers for **lasting, potent and long-lasting effectiveness** against a broad spectrum of bacterial contamination including but not limited to **Salmonella, Listeria, and E.coli**.

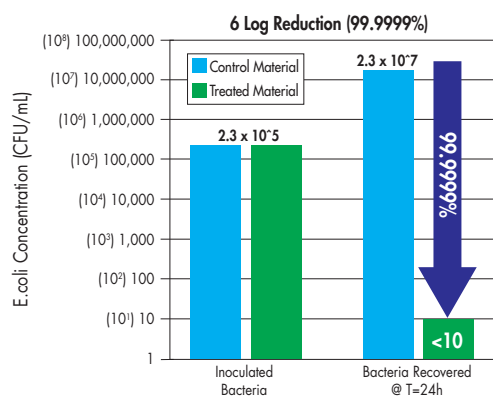
Key Features:

- Highly Effective, Long Lasting
- Chemical Free
- Non-Leaching
- Maintain Cleanliness*
- Permanently Embedded

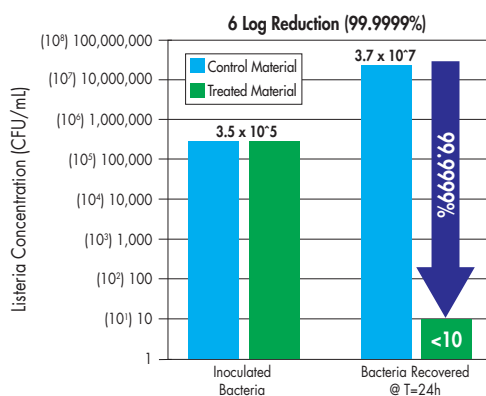


Currently ionAssure™ antimicrobial treated gaskets and o-rings are available in Buna, Platinum-Cured Silicone, Peroxide-Cured Silicone and EPDM. Sizes will range from 1/2" through 4" for gaskets.

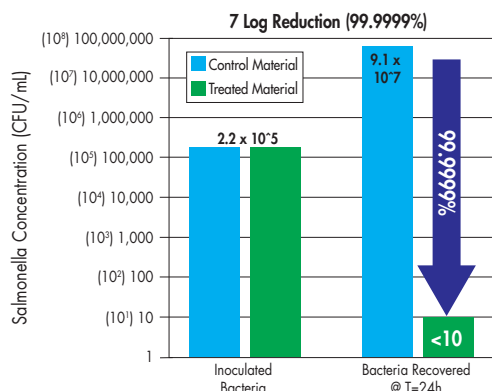
Sample Test Results for E.coli**



Sample Test Results for Listeria**



Sample Test Results for Salmonella**



** Products evaluated in accordance with ASTM-2180 method to test ability to inhibit the growth of microorganisms in a 24 hour period of contact.



*Antimicrobial protection is limited to the treated article and does not protect a user against disease causing bacteria. Always clean products thoroughly after each use and follow recommended maintenance and cleaning procedures.

Rubber Fab's Quad Rings

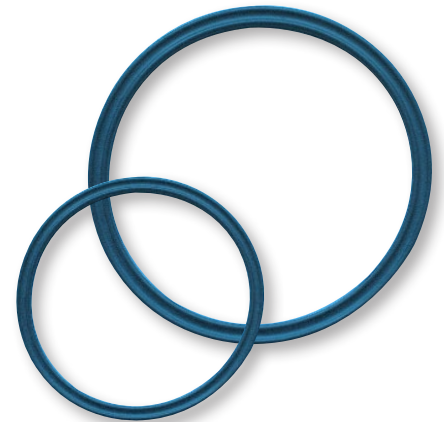
Quad rings are a unique o-ring with a unique profile, **doubling the sealing surface** of a traditional o-ring. This design also provides lower friction and because it has more of a square profile, and can resist spiral twisting.



Quad Ring Profile

Features

- Two sealing surfaces for a positive seal with less friction
- The quad cross-section resists twisting and extrusion
- Twice the surface for sealing which creates a more effective seal with less wear and longer service life.
- Available in Buna, EPDM, FKM, & Silicone, as well as Detectomer® Buna & Silicone



O-Ring Cones

Have an o-ring that you need to replace and you don't know what size it is? Rubber Fab's o-ring cone is **the best solution for sizing o-rings** when you are unsure of what to order. Slide the o-ring down the cone to see what size is needed. Makes for easy measuring as the numbers are printed directly on the cone.



Material Specifications & Applications

Knowing the application in which the o-ring is going to be used is important when selecting your o-ring material. Not all materials will work in any given application and this could cause a seal failure and costly downtime. Below is a description of the materials Rubber Fab carries and applications where it performs best.

Buna - is one of the most versatile of materials due to its resistance to many chemicals. Buna is the material of choice for food applications. Buna's operating temperature is -22°F to 212°F and is available in black and white.

Detectomer® - o-rings are metal detectable/x-ray inspectable o-rings that can be detected by in-line x-ray inspection & metal detection systems. They are available in

- Tuf-Steel®
- Silicone
- Buna
- FKM
- EPDM

EDPM - is a versatile compound that works well in both low & high temperatures. It has an acceptable level when it comes to using

it with steam and water. EPDM temperature range is -58°F to 302°F and is available in black and white.

FKM - is a better grade compound which is well suited for prolonged exposure to oils at high operating temperatures. FKM is also good for steam applications. Operating temperature range is 2°F to 392°F and is available in black, white and brown.

FFKM - combines the great chemical resistance of PTFE & FKM. This perfluoroelastomer is great for chemical plants as it can withstand highly corrosive fluids. FFKM's operating temperature range is -10°F to 599°F.

Continued on the next page

Encapsulated O-Rings

FEP AND PFA Encapsulated O-Rings -

Chemical attack and swelling are the primary causes of o-ring failure. Encapsulated o-rings match the chemical and temperature resistance of solid PTFE o-rings, and possess properties of elasticity and recovery, which are crucial in many sealing applications. Encapsulated o-rings are virtually chemically inert and provide easy cleanup of viscous materials. These o-rings economically and effectively replace Kalrez and other exotic o-ring compounds. Encapsulated o-rings will decrease downtime and hence increase profitability wherever corrosive fluids and gases cause premature seal failure.

Encapsulated o-rings are available in AS568 Dash sizes and metric.

Temperature ranges by elastomer:

- **FEP/PFA Encapsulated FKM:**
-10°F to 300°F
- **FEP Encapsulated Silicone:**
-80°F to 400°F
- **PFA Encapsulated Silicone:**
-80°F to 500°F
- **FEP Encapsulated EPDM:**
-65°F to 300°F



Material Specifications & Applications

PTFE - is a premium grade material that works well in harsh chemical applications because of its low moisture absorption and wide temperature range. Operating temperature range for PTFE is -100°F to 500°F and is available in white.

Platinum-Cured Silicone - is the material of choice in pharmaceutical applications, and in sanitary water systems when PTFE is not feasible due to severely misaligned fittings. Platinum-cured silicone is very flexible at low temperatures. The operating range is

-70°F to 390°F and is available in clear, white and red.

Tuf-Steel® - is a unique 50/50 blend of non-pigmented PTFE and 316L passivated & atomized stainless steel specifically designed for hot oil and steam applications. This specialized gasket has exceptional surface performance, outstanding durability & extended service life in both SIP and WFI applications. Tuf-Steel® is known for its extreme temperature range of -320°F to 550°F and is available in gray.



Rubber Fab's Hose, Hose Assemblies, Tubing, Fittings and Adapters

- High Purity Platinum Silicone Hose, Tubing, Sanitary Molded Ends
- PTFE & FEP Lined Smooth Bore & Convuluted Hose
- Metal Hose
- FDA Rubber Hose
- FDA PVC Hose, Tubing, Sanitary Molded Ends
- Sight Gauges: PTFE & Polysulfone
- Fittings & Adapters: 316L, Special Alloys & Non Metallic

 Standard Number 62-02

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