

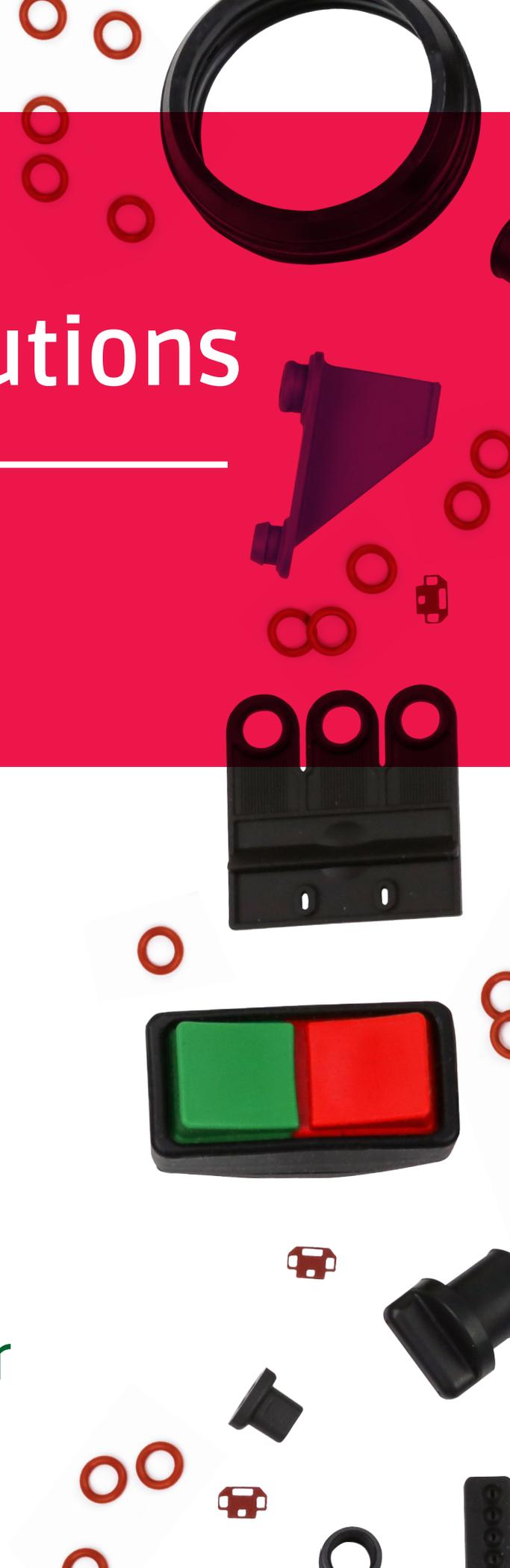
# Complete Sealing Solutions

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Manufacturing  
Design Engineering  
Quality Assurance

 Apple Rubber

[applerubber.com](http://applerubber.com)



# Parts and Seals for Medical Applications

From face seals to custom shapes, our capabilities enable Apple Rubber to create virtually any type of custom seal or part for your medical applications. Apple Rubber also offers medical-grade elastomers such as silicone, Viton® fluoroelastomer (FKM) and EPDM rubber for medical applications. Such elastomers feature improved chemical resistors, excellent (450°F/230°C) heat resistance, and low permeability to gases.



Seals for medical devices



Silicone parts and seals for medical appliances



O-Rings for surgical tools

## Silicone Properties

- » Wide temperature range (-94°F to 400°F) with excellent long-term temperature resistance and low temperature flexibility
- » Resistance to damaging effects of UV light, ozone, weather and lubricants
- » Hydrophobic properties
- » Excellent dielectric behavior
- » Biocompatible and inert
- » Radio opaque
- » Autoclave, ETO and Gamma Sterilization
- » Neutral odor and taste
- » Dimensional stability in adverse conditions
- » Excellent resistance to long-term compression set
- » Design advantages — available in any color and density, translucent to solid

## From simple seals to the most complex parts

Apple Rubber utilizes a host of sophisticated technologies and processes — including LSR capabilities — to consistently manufacture the high quality components you demand.

- » Seals for medical appliances
- » Medical pump seals
  - Feeding devices
  - Seals for non implantable medical devices
  - O-Rings for dialysers
  - IV components
  - Implant materials
  - Certification to USP Class 6 and ISO 10993 is available

# Products

As a leading designer and manufacturer of seals and elastomeric products, Apple Rubber has the experience, products and capabilities to deliver the exact sealing solution for your applications. From design through manufacturing to certification, Apple Rubber is the industry leader in seal design.

## O-Rings in Stock-Including AS-568\* Standard and ISO 3601 Metric Sizes

Apple Rubber stocks the largest inventory of seals in the industry. Standards. Metrics. Unusual sizes. This means most of your o-ring requirements can be shipped immediately, saving you time and money.

## MicroSeals™ and MicrOrings™

Innovative, tiny o-rings were introduced by Apple Rubber to solve the problem of sealing in today's microminiature applications. We offer over 1,000 sizes of MicrOring™ seals, from as small as .008" up to .039" I.D. We also produce a full range of microminiature MicroSeals™, including composite seals.

## Custom Molded Shapes

We can assist you in custom designing unusual, all-rubber shaped seals specifically for your application, including microminiature shapes for your smaller designs. Apple will be with you at every step – from design to prototype and through production.



- A. The largest inventory of seals in the industry (including AS-568\* o-rings)
- B. Over 1,000 sizes of MicrOring™ seals as small as .008" (plus custom MicroSeals™)
- C. Largest selection of non-standard o-rings

\*Please check the latest standard for current version.

## The Right Materials and Hardnesses

Apple Rubber has the materials for most applications, from standard to hard-to-find, including Viton®, Fluorosilicone and Teflon®. If you're having difficulty finding softer durometer, high-temperature or other unique compounds, you'll find them at Apple Rubber.

### FilterSeal™

Our innovative FilterSeals™ are custom designed for your unique application. By combining an elastomer and filter media, a multi-function seal is created. This one part now provides cost and time savings because there is one part to purchase and install instead of two.

### Silicone Housing (Face) Seals

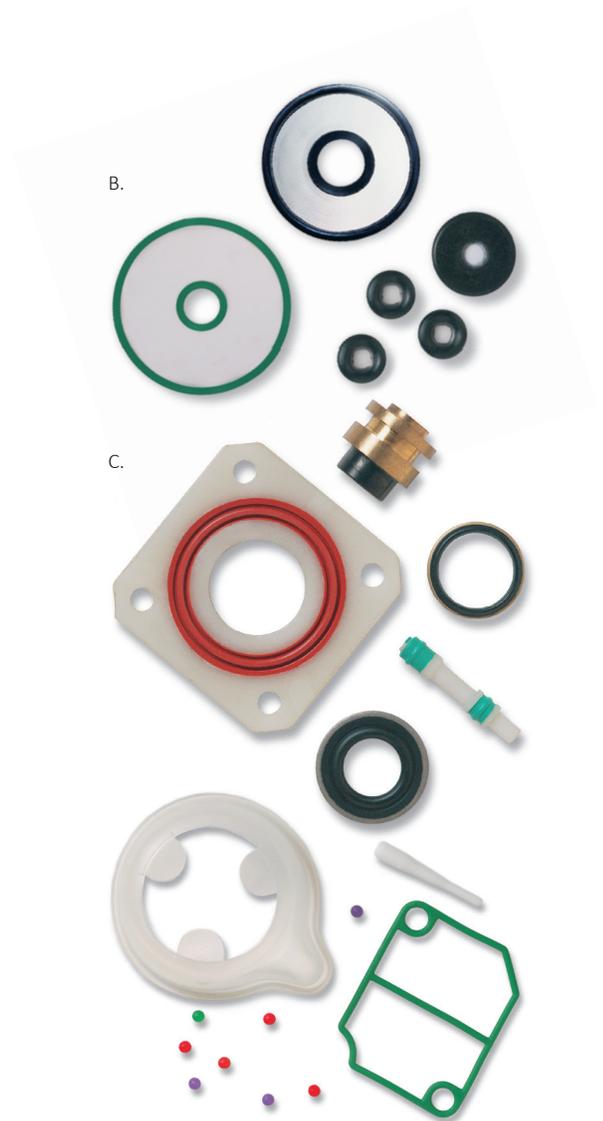
Custom designed for your specific housing, our superior silicone housing (face) seals outperform flat gaskets and other gasketing methods. They are available in a range of hardnesses for plastic or metal housings.

### Composite Seals

Complicated parts such as rubber-bonded-to-plastic and rubber-bonded-to-metal may be your sealing solution. These composites seals are often easier to install and allow for automatic assembly to reduce installation time and costs.

### Quality Certifications

- » ISO 9001
- » AS 9100
- » ROHS Compliance
- » REACH



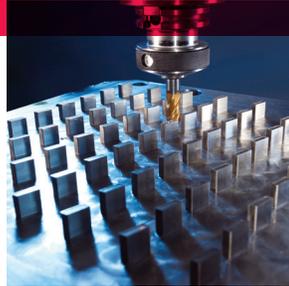
A. Custom designed FilterSeals™ operate as seal and filter in one  
B. Rubber-bonded to metal or plastic composite seals  
C. Silicone parts and seals

# Services

From design engineering and fast prototyping to customized quality assurance, Apple Rubber provides a personalized solution to ensure all of your project specifications are met. As the industries we serve evolve, we are focused on providing the best solutions for tomorrow as well as today.



ISO Class 7 (10,000) Cleanroom



Custom tooling and o-ring molds for fast prototyping



Advanced testing and quality control systems in AppleLab™



Sophisticated CAD systems for design engineering

## ISO Class 7 (10,000) Cleanroom

Apple Rubber's expanded facilities include our ISO Class 7 (10,000) Cleanroom of more than 1,000 square feet. We can perform complete cleanroom processes including production, cleaning and packaging.

## Complete Manufacturing

Apple Rubber's complete manufacturing capabilities mean fast response to your sealing needs for large or small runs. Whatever the requirement, Apple has the tools to get the job done.

- » Molding
- » Bonding
- » Transfer
- » Machining
- » Liquid injection
- » Compression molding

## Direct Service

With Apple Rubber, you deal direct with the manufacturer and eliminate the middleman, giving you distinct advantages:

- » Manufacturing in the USA
- » Knowledgeable account executives
- » Lower lead times
- » Experienced seal design engineers

## Liquid Injection Molding

Our closed loop injection molding of two part liquid silicone is a highly controlled process for the manufacturing of seals with superior consistency and quality. With performance in a wide temperature range, these seals are used in a growing number of applications including housing seals, o-rings, connector seals, automotive and medical.

## Prototyping

Custom-engineered prototypes are an Apple Rubber specialty. Utilizing advanced processes and sophisticated CAD systems, we can help you drastically reduce the design and development cycle. Single cavity o-ring molds can be cut the same day for quick prototypes.

## AppleLab™ Comprehensive Testing

We offer comprehensive, careful testing of your seals through AppleLab™ one of the most stringent quality assurance programs in the industry. We are the rare seal company to offer quality assurance that routinely includes both dimensional and material validation. And because we offer full documentation, our program may allow you to reduce or eliminate costly incoming inspection.

## Automated O-Ring Inspection

Fully automated o-ring inspection system allows for 100 percent inspection if required.

## Research and Development

If you require a truly unique solution, Apple Rubber has the resources to explore and develop new designs, materials and processes. We can provide reverse engineering of the compound you currently use to identify polymers, composition, specific gravity, fluid and heat aging and low temperature properties.

## One Source for All Your Sealing Needs

Apple Rubber stocks AS568 and ISO 3601 standard sizes, most common metric sizes, plus a wide variety of non-standard o-ring sizes. Our materials meet mil-spec, medical and automotive specifications.

Apple Rubber offers expert custom molding for non-standard rubber products. With in-house tooling, we save more time and resources compared to offshore operations. We offer expertise at any level of production, from prototype to high volume tooling.

When you call Apple Rubber, you deal directly with the manufacturer. Our experienced staff provides complete and comprehensive service to help you get the correct product for your application.

## Full Line of Quality Apple Rubber Products

### Products:

O-Rings — standards, metrics, MicrOrings®, MacOrings®

LSR (Liquid Silicone Rubber)

Composite seals (rubber bonded to plastic or metal)

Custom-molded seals and shapes

Medical seals

Thermobonded seals

FilterSeal™

Military specs

Standard and exotic materials

### Services:

Design capabilities

Prototyping and production runs

Full quality-control laboratory

Class 10,000 (7) Cleanroom

ISO 9001 / AS 9100 Certifications

ITAR Registered



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