O-Ring Compound Selections - Stock and Special Order

It is important to make the right O-Ring compound selection for any given application. O-Rings are a vital component in any mechanical system, and the material they are made from will have a major impact on the system's performance. Different types of O-Rings are formulated with different compounds to provide different properties and characteristics, so selecting the right material is critical. O-Ring compounds must be chosen based on the application's temperature, media compatibility, and pressure requirements to ensure that the system performs as expected and that the O-Ring will not fail prematurely. With the right selection, O-Rings can provide reliable, leak-free performance for many years.

Buna-N Nitrile O-Rings (NBR)

Buna-N O-Rings / Nitrile O-Rings / NBR: Buna-N O-Rings are the most widely used o-ring material in the world because of low cost, good mechanical performance with resistance to water, most basic oils, lubricants and some fuels, many pneumatic, hydraulic systems, propane, natural gas and the default choice for basic applications. Buna-N o-rings are not recommended for exposure to sunlight, UV light, ozone and general outdoor weathering or hash chemicals, acids, keytones and many others. Lowest cost highest inventory general purpose commodity NBR compound. Compare to Parker N1470-70 and N0674-70 and Parco 4200-70 and 4900-70.

Applications: General purpose sealing, Air Tools, Hydraulic fluids, Petroleum based oils, fuels, L.P. gases, Cold Water, Silicone greases and oils, Di-ester base lubricants (MIL-L-7808), Ethylene glycol base fluids (Hydrolubes) and Hydraulic Fluidsand in static and dynamic applications.
Avoid: Brake fluids, ozone and UV light

Operating temperature: -40° to +250F°

- B70 Standard 70 Duro Buna-N - AS-568 Buna-N O-Rings (Stock) | Metric Buna-N O-Rings (Stock)

- FDAB70 FDA 70 Duro Black- AS-568 Buna-N FDA O-Rings (Stock) | Metric Buna-N FDA O-Rings (8-10 Weeks)
- WN70 FDA 70 Duro White - AS-568 FDA O-Rings (Stock) | Metric FDA O-Rings (8-10 Weeks)
- B70-NSF FDA/NSF 70 Duro Black- AS-568 O-Rings (8-10 Weeks) | Metric O-Rings (8-10 Weeks)
- B90 Hard 90 Duro Buna-N - AS-568 Buna-N O-Rings (Stock) | Metric Buna-N O-Rings (Stock)
- B50 Extra Soft Buna-N - AS-568 Buna-N 50 O-Rings (Stock) | Metric Buna-N 50 O-Rings (8-10 Weeks)
- B70-C Standard 70 Duro Colors - AS-568 O-Rings (Stock) | Metric O-Rings (8-10 Weeks)
- B70-MS Mil-Spec Black- AS-568 O-Rings (6-8 Weeks)
- B30 Buna-N 30 Duro Black- AS-568 O-Rings (8-10 Weeks) | Metric O-Rings (8-10 Weeks)
- B40 Buna-N 40 Duro Black- AS-568 O-Rings (8-10 Weeks) | Metric O-Rings (8-10 Weeks)
- B60 Buna-N 60 Duro Black- AS-568 O-Rings (8-10 Weeks) | Metric O-Rings (8-10 Weeks)
- B80 Buna-N 80 Duro Black- AS-568 O-Rings (8-10 Weeks) | Metric O-Rings (8-10 Weeks)
- B70-LT Low Temp Buna-N 70 Duro Black- AS-568 O-Rings (8-10 Weeks) | Metric O-Rings (8-10 Weeks)
- B70-25732 Aerospace AMS-P-25732 Buna-N Black- AS-568 O-Rings (8-10 Weeks)
- B75-83461 AMS-R-83461 75 Duro Buna-N Black- AS-568 O-Rings (8-10 Weeks)
- B75-83461 AMS-R-83461 75 Duro Buna-N Black- AS-568 O-Rings (8-10 Weeks)
- B75-5510 AMS-P-5510 90 Duro Black- AS-568 O-Rings (8-10 Weeks)
- B70-IL PTFE Internally Lubricated 70 Duro Black- AS-568 O-Rings (8-10 Weeks)
- B70-UL UL Listed 70 Duro Black- AS-568 O-Rings (1-2 Weeks)
- B70-PC Peroxide-Cured 70 Duro Black- AS-568 O-Rings (8-10 Weeks)

EPDM O-Rings (EPR, EPM) Ethylene Propylene Diene Monomer

Ethylene-Propylene / EPDM O-Rings: Ethylene propylene rubber is an elastomer prepared from ethylene and propylene monomers (ethylene propylene copolymer). Our stock O-Ring compoundare made with an amount of a third (diene) monomer (ethylene propylene diene terpolymers). Ethylenepropylene-diene rubber (EPDM) produced using a third monomer and is particularly useful when sealing phosphate-ester hydraulic fluids and in brake systems that use fluids having a glycol base. EPDM has outstanding resistance to heat, water and steam, alkali, mild acidic and oxygenated solvents, ozone, and sunlight; but it is not recommended for gasoline, petroleum oil and grease, and hydrocarbon environments. This popular rubber compound is usually the first choice for low torque drive belt applications.

Applications: Cold and Hot Water, Steam up to 400°F (149°C), Various Water / Municipalities Applications, Household Appliances, Glycol based brake fluids up to 300°F (149°C), Many organic and inorganic acid, Cleaning agents, soda alkali, potassium alkali, Phosphate-ester based hydraulic fluids (HFD-R), Silicone Oil, Silicone Grease, Many polar solvents (alcohols, ketones, esters), Ozone resistant, aging resistant, weather resistant, Outdoor Applications and Electrical Insulators..
Avoid: Mineral oil products (oils, greases and fuels), Solvents, Aromatic Hydrocarbons, Liquefied Petroleum Gas (LPG), Lubricating Oils, Petroleum Base Gasoline

Operating temperature: -65° to +300F°

Use Only O-Ring Silicone Lubricating Grease 3oz Tube on EPDM

- E70 - FDA EPDM 70 Duro - AS-568 O-Rings (Stock) | Metric O-Rings (Stock)
- E70-NSF - FDA/NSF EPDM 70 Duro - AS-568 O-Rings (Stock) | Metric O-Rings (8-10 Weeks)
- E70-E454 - National Aerospace Standard 1613 EPDM 80 Duro - AS-568 O-Rings (8-10 Weeks)
- E70-PC - Peroxide Cured EPDM 70 Duro - AS-568 O-Rings (1-2 Weeks) | Metric O-Rings (8-10 Weeks)
- E70-PC-NSF - Peroxide Cured NSF/FDA EPDM 70 Duro - AS-568 O-Rings (8-10 Weeks) | Metric O-Rings (8-10 Weeks)
- WE70-USP - USP Class VI, 3A-Dairy, USDA, and FDA Compliant EPDM 70 Duro Off-White - AS-568 O-Rings (8-10 Weeks)
- E50 - Sulfur-Cure FDA EPDM 50 Duro - AS-568 O-Rings (4-8 Weeks) | Metric O-Rings (8-10 Weeks)
- E60 - Sulfur-Cure FDA EPDM 60 Duro - AS-568 O-Rings (4-8 Weeks) | Metric O-Rings (8-10 Weeks)
- E80 - Sulfur-Cure FDA EPDM 80 Duro - AS-568 O-Rings (4-8 Weeks) | Metric O-Rings (8-10 Weeks)

FEPM Aflas® O-Rings (Tetrafluoroethylene Propylene, FEPM)

Aflas® (Asahi Glass Co., Ltd.) Excellent resistance to a wide variety of aggressive chemicals. Aflas is known for its use in oil field applications and its electrical resistance properties. This elastomer is a copolymer of tetrafluoroethylene (TFE) and propylene. Its

chemical resistance is excellent across a wide range of aggressive media. Recommended for oils and lubricants, hydraulic and brake fluids, transmission and power steering fluids, sour oil and gas (H2S), amine corrosion inhibitors, ozone, steam, acids, bases, alcohols, and a variety of other chemicals. Temperature range: -25° to +450°F (+500°F short term).

Operating temperature: -25° to +450F°

- A75 Aflas Black 80 Duro - AS-568 Aflas O-Rings (Stock) | Metric Aflas O-Rings (10-12 Weeks)
- A75-MS Aflas Black 75 Duro AMS 7255 - AS-568 Aflas O-Rings (3-6 Weeks)
- A85 Aflas Black 85 Duro RGD Resistant - AS-568 Aflas O-Rings (3-6 Weeks)
- A90 Aflas Black 90 Duro - AS-568 Aflas O-Rings (3-6 Weeks)
- A85 Aflas Black 85 Duro RGD Resistant - AS-568 Aflas O-Rings (3-6 Weeks)

Highly Saturated Nitrile O-Rings (HSN, HNBR)

Hydrogenated Nitrile Butadiene Rubber (HNBR) has better resistance to high temperatures, superior physical properties, and improved chemical resistance over traditional nitrile compounds. It also has better resistance to ozone, sunlight, and other atmospheric conditions. Obtained by hydrogenerating the nitrile copolymer, HNBR fills the gap left by NBR and FKM elastomers when high temperature conditions require high tensile strength while maintaining excellent resistance to motor oil, ATF, sour gas, amine/oil mixtures, oxidized fuels and lubricating oils. Green HSN is commonly used in refrigerant R134a applications.

Operating temperature: -40° to +300F°

- H70 HNBR 70 Duro Green - AS-568 HNBR O-Rings (Stock) | Metric HNBR O-Rings (Stock)
- H70 HNBR 70 Duro Black - AS-568 O-Rings (1-8 Weeks) | Metric O-Rings (8-10 Weeks)
- H80 HNBR 80 Duro Black - AS-568 O-Rings (1-8 Weeks) | Metric O-Rings (8-12 Weeks)
- H90 HNBR 90 Duro Black - AS-568 O-Rings (1-8 Weeks) | Metric O-Rings (8-12 Weeks)

FFKM Perfluoroelastomer Simriz® O-Rings

High-Performance Materials For Extreme Requirements, Simriz® Perfluoroelastomer compounds provide reliable sealing in a wide range of applications including; automotive, chemical processing, petroleum refining, semiconductor, aerospace, medical, pharmaceutical, food and drug processing, and etc.

- General Purpose Perfluoroelastomer (FFKM) O-Rings for Basic Applications
- Simriz® perfluoroelastomers demonstrate a wide range of temperature stability
- Fully fluorinated monomers in Simriz® compounds provide superior protection against chemical attack
- Simriz® possesses the resilience of an elastomer with chemical resistance approaching that of PTFE
- Simriz® O-rings and molded shapes are available in many different Simriz compounds

Perfluoroelastomers contain an even higher amount of fluorine than FKM. They have improved resistance to high temperatures and chemicals and even withstand environments where Oxygen-Plasma are present for many hours. Certain grades have a maximum continuous service temperature of 610°F (320°C). They are commonly used to make O-rings that are used in applications that involve contact with hydrocarbons or highly corrosive fluids, or when a wide range of temperatures is encountered. We provide Simriz® O-Rings from Freudenberg (Simrit) do to the unique durability of the product and the genuine care the people from Freudenberg have given us and the users of our O-Rings. Others are commonly referred to as Kalrez® O-Rings (DuPont Dow), Chemraz® O-Rings (Greene, Tweed & Co.), Isolast® O-Rings (Trelleborg Sealing Solutions), and lesser quality brands such as Perlast (Precision Polymer Engineering), GPlast (Gapi) and Markez® (Marco).

Operating temperature: See Below

- FFKM - General Purpose FFKM 75 Duro - AS-568 O-Rings (Stock) | Metric O-Rings (4-6 Weeks)
- FFKM-484 - Simriz® 484 FDA Compliant FFKM Black - AS-568 O-Rings (8-10 Weeks)
- FFKM-485 - Simriz® 485 Chemical Resistant FFKM Black (-14°F to 446°F) - AS-568 O-Rings (Stock)
- FFKM-486 - Simriz® 486 Chemical Resistant FFKM White (+25°F to 446°F) - AS-568 O-Rings (8-10 Weeks)
- FFKM-498 - Simriz® 498 High-Temperature FFKM Black (-23°F to 617°F) - AS-568 O-Rings (Stock)

Fluoroelastomer (FPM, FKM, Viton®) O-Rings

Fluorocarbon FKM & Viton® O-Rings: Chemical resistant Fluorocarbon FKM O-Rings exhibit exceptional resistance to chemicals, oils, temperature extremes, low compression set, low gas permeability and excellent aging characteristics. It has a good resistance to ozone, high temperatures, oxygen, mineral oil, synthetic hydraulic fluids, fuels, aromatics and many organic solvents and chemicals.

Applications include: Hydraulic Oil, Petroleum Base, Silicone oil and grease, Mineral and vegetable oil and grease, Aliphatic hydrocarbons (fuel, butane, propane, natural gas), Aromatic hydrocarbons (benzene, toluene), Chlorinated hydrocarbons (trichlorethylene and carbon tetrachloride), Chlorine Water, Gasoline, Fuels, Liquefied Petroleum Gas (LPG), Natural Gas, Propane, Diesel Oil, High vacuum, ozone and weather.
Avoid: Ketones, hot water, steam, Brake Fluid, alkalis, and Skydrol® fluids, Ammonia gas, amines, alkalis, Skydrol 500, Methyl Ethyl Ketone (MEK), Low molecular organic acids (formic and acetic acids)
Designed to meet or exceed the properties of these popular FKM Compounds: V747-75, V700-75, 19357, V14-75, 9009-75, F13664, 514AD and 9500-75

Operating temperature: -20° to +400F°

- V75 -Chemical Resistant Black 75 Duro - AS-568 FKM O-Rings (Stock) | Metric FKM O-Rings (Stock)
- BV75 - Chemical Resistant Brown 75 Duro - AS-568 FKM O-Rings (Stock) | Metric FKM O-Rings (4-6 Weeks)
- GV75 - Chemical Resistant Green 75 Duro - AS-568 FKM O-Rings (Stock) | Metric FKM O-Rings (8-10 Weeks)
- V90 - Chemical Resistant Black 90 Duro - AS-568 FKM O-Rings (Stock) | Metric FKM O-Rings (8-10 Weeks)
- FDABV75 - Chemical Resistant Brown FDA 3A 75 Duro - AS-568 FKM O-Rings (Stock) | Metric FKM O-Rings (10-14 Weeks)
- V75-MS - Mil-Spec Chemical Resistant Black 75 Duro - AS-568 FKM O-Rings (Stock)
- CV75 Viton® Extreme Chemical Resistant ETP 75 Duro - AS-568 O-Rings (Stock) | Metric O-Rings (4-6 Weeks)
- V60 - Chemical Resistant Black 60 Duro - AS-568 O-Rings (6-8 Weeks) | Metric O-Rings (10-12 Weeks)
- BV60 - Chemical Resistant Brown 60 Duro - AS-568 O-Rings (6-8 Weeks) | Metric O-Rings (10-12 Weeks)

- FDARV - Chemical Resistant Red FDA 3A 75 Duro - AS-568 O-Rings (6-8 Weeks) | Metric O-Rings (10-14 Weeks)
- V75-UL - UL Approved For Fuel/Alcohol Black 75 Duro - AS-568 O-Rings (6-8 Weeks) | Metric O-Rings (10-14 Weeks)
- V75-GFLT - Viton GFLT® FKM Black 75 Duro - AS-568 O-Rings (8-10 Weeks)
- V95-RGD - Rapid Gas Decompression FKM 95 Duro - AS-568 O-Rings (8-10 Weeks)

Fluorosilicone O-Rings - Aerospace & Automotive Applications (FVMQ)

Fluorosilicone O-Rings / FVMQ: Fluorosilicone combines the good high and low temperature stability of silicone with the fuel, oil, and solvent resistance of fluorocarbons. FVMQ is unparalleled for aerospace fuel systems, auto fuel emission control systems and to meet or exceed government, military, aerospace, automotive, industrial and commercial specifications. However, due to relatively low tear strength, high friction and limited abrasion resistance of these materials, they are generally not used in dynamic applications. They are also not recommended for exposure to brake fluids, hydrazine, or ketones.

Operating temperature: -76° to +392F° (-60° to +200C°)

- FS70 - Blue Fluorosilicone M25988/1 AMS 25988 Cl1 GR70 Duro - AS-568 FKM O-Rings (Stock)
- FS60 - Blue Fluorosilicone M25988/3 AMS 25988 Cl1 GR60 Duro - AS-568 FKM O-Rings (8-12 Weeks)
- FS75 - Blue Fluorosilicone M25988/2 AMS 7273 GR60 Duro - AS-568 FKM O-Rings (8-12 Weeks)
- FS80 - Blue Fluorosilicone M25988/4 AMS 25988 Cl1 GR80 Duro - AS-568 FKM O-Rings (8-12 Weeks)

Neoprene O-Rings (CR, Chloroprene)

Neoprene® O-Rings / CR: Neoprene is reasonably priced and features good resistance to petroleum oils, ozone, sunlight and oxygen aging, relatively low compression set, good resilience and outstanding physical toughness. It is the preferred sealing material for the refrigeration industry because of its resistance to ammonia and Freon®.

Applications include: CR is resistant to refrigerants, ammonia, Freon® (R12, R13, R21, R22, R113, R114, R115, R134A), silicone oils, water, ozone, vegetable oils, alcohols, and low-pressure oxygen.
Avoid: very low resistance to mineral oils

Operating temperature: -40° to +225F°

- C70 - Neoprene Black 70 Duro - AS-568 O-Rings (Stock) | Metric O-Rings (8-10 Weeks)
- C50 - Neoprene Black 50 Duro - AS-568 O-Rings (8-10 Weeks) | Metric O-Rings (8-10 Weeks)
- C60 - Neoprene Black 60 Duro - AS-568 O-Rings (8-10 Weeks) | Metric O-Rings (8-10 Weeks)
- C80 - Neoprene Black 80 Duro - AS-568 O-Rings (8-10 Weeks) | Metric O-Rings (8-10 Weeks)

PTFE Polytetrafluoroethylene (AKA Teflon® O-Rings)

Polytetrafluoroethylene (PTFE) O-rings: Temperature & Chemical Resistant PTFE is a popular O-Ring material which is White in color. The PTFE O-Rings for use in applications which require a chemically resistant and non-compressible material. PTFE is the chemically inert of the O-ring materials. It is resistant to most chemicals including acids, bases, oils, steam and other chemicals. It is also very tough and abrasive resistant. However the material is not easily compressed, and therefore may not seal as easily as some of the other polymers. Its outstanding tear resistance and abrasive resistance result in its slippery surface properties that make it advantageous for use in seals in moving systems such as mass spectrometer probes and valves.

Operating temperature: -100° to +500F°

- TEF - Polytetrafluoroethylene (PTFE) O-Rings - AS-568 O-Rings (Stock) | Metric O-Rings (6-8 Weeks)

Silicone O-Rings FDA (VMQ)

Silicone O-Rings / VMQ: In the Silicone family, you will find compounds which are superior as static seals in extreme temperature conditions. Standard compounds handle operating temperatures -85º to +400ºF. Silicone compounds are popular in food and medical applications because they are very clean and do not impart odor or taste. Special Phenyl silicones can be used down to -148°F.

Operating temperature: -75° to +400F°

- S70 - FDA Silicone (VMQ) 70 Duro - AS-568 O-Rings (Stock) | Metric O-Rings (Stock)
- S30 - FDA Silicone (VMQ) 30 Duro - AS-568 O-Rings (3-10 Weeks) | Metric O-Rings (8-10 Weeks)
- S40 - FDA Silicone (VMQ) 40 Duro - AS-568 O-Rings (3-10 Weeks) | Metric O-Rings (8-10 Weeks)
- S40-MS - Mil-Spec Silicone (VMQ) 40 Duro - AS-568 O-Rings (8-10 Weeks)
- S50 - FDA Silicone (VMQ) 50 Duro - AS-568 O-Rings (3-10 Weeks) | Metric O-Rings (8-10 Weeks)
- S50 - FDA USP Class VI Silicone (VMQ) 50 Duro - AS-568 O-Rings (8-10 Weeks)
- S50-MS - Mil-Spec Silicone (VMQ) 50 Duro - AS-568 O-Rings (8-10 Weeks)
- S60-MS - Mil-Spec Silicone (VMQ) 60 Duro - AS-568 O-Rings (8-10 Weeks)
- S70 - FDA Compliant, 3-A Certified Silicone (VMQ) 70 Duro - AS-568 O-Rings (3-10 Weeks)
- S70 - FDA Silicone (VMQ) 70 Duro White - AS-568 O-Rings (3-10 Weeks) | Metric O-Rings (3-10 Weeks)
- S70-MS - Mil-Spec Silicone (VMQ) 70 Duro - AS-568 O-Rings (8-10 Weeks)
- S70- AMS7267 - Aerospace Silicone (VMQ) 70 Duro - AS-568 O-Rings (8-10 Weeks)
- S80 - FDA Silicone (VMQ) 80 Duro - AS-568 O-Rings (3-10 Weeks) | Metric O-Rings (3-10 Weeks)
- S80-MS - Mil-Spec Silicone (VMQ) 80 Duro - AS-568 O-Rings (8-10 Weeks)

Urethane Cast Disogrin O-Rings (Polyurethane) High Performance

The strongest O-Ring material making it a popular choice in wear applications where abrasives, high pressure, and movement are present. Manufactured by the top polyurethane seal and component producers, with strong materials and extensive product expertise. TODI Polyurethane is the material of choice to create longevity in products due to its resistance to abrasion and performance in punishing environments. Typically called out as "cast" urethane O-rings, these parts perform well in quick disconnects, high pressure hydraulic and water applications and in nail or riveting

equipment. Particularly recommended for hydraulic systems where high pressures, shock loads, wide metal tolerances, or abrasive contamination is anticipated. Not recommenced for acids, ketones, and chlorinatied hydrocarbons. Some urethanes are also sensitive to water and humidity.

Operating temperature: -115° to +250F°

- UC70 - Urethane Cast Disogrin 70 Duro - AS-568 O-Rings (Stock)
- UC90 - Urethane Cast Disogrin 90 Duro - AS-568 O-Rings (Stock)

Urethane O-Rings EU (Polyurethane)

General Purpose EU Polyurethane rubber is notable for its combination of hardness with elasticity, outstanding abrasion resistance and tear strength. Elastomeric urethane rubber, not to be confused with thermoplastic polyurethane, is often referred to as the "millable gum" urethane. Polyurethane is a moderately expensive material whose use is usually limited to applications that require its outstanding physical properties. Common end use applications are industrial seals, Air Guns, Paintball Markers, pneumatic applications, and other high dynamic applications.

Operating temperature: -30° to +180°F

- U70 - Urethane EU 70 Duro - AS-568 O-Rings (Stock)
- U90 - Urethane EU 90 Duro - AS-568 O-Rings (Stock)

Teflon® PTFE Encapsulated O-Rings FKM or Silicone

Seamless and uniform Teflon® FEP encapsulation which completely encloses a core material of either silicone or Viton® elastomer. Matches the chemical and temperature resistance of solid PTFE O-Rings and possesses the elasticity and recovery properties of the core elastomer which are crucial in many sealing applications.

Operating temperature: FKM -10° to +300°F - Silicone -80° to +500°F

- TEV - Teflon® Encapsulated FKM O-Rings - AS-568 O-Rings (Stock) | Metric O-Rings (3-6 Weeks)
- TES - Teflon® Encapsulated Silicone O-Rings - AS-568 O-Rings (Stock) | Metric O-Rings (3-6 Weeks)

Viton® Extreme Chemical Resistant ETP O-Rings

Super Chemically Resistant Viton® ETP O-Rings - Extreme Chemical Resistant Fluorocarbon provides significantly improved chemical resistance compared to standard FKM A type fluoroelastomers. CV75 Viton® Extreme is so chemically resistant it can be considered a cost-effective to FFKM Perfluoroelastomer alternative for some applications with temperatures below 400°F. CV75 Viton® Extreme can also be considered as an alternative to other perfluoroelastomers like Chemraz®, Kalrez®, Perlast®, Isolast®, Parofluor®, and most certainly Markez®.

CV75 Viton® Extreme is a premium peroxide cured fluoroelastomer that exhibits the broadest fluids resistance of any FKM fluoroelastomer. It is resistant to aliphatic/aromatic hydrocarbons, polar fluids, hydraulic fluids, fuels/alcohols, strong bases, organic amines, and high pH fluids.

Operating Temperature: -8 to 482°F

- CV75 - Viton® Extreme Chemical Resistant ETP 75 Duro - AS-568 O-Rings (Stock) | Metric O-Rings (6-8 Weeks)
- CV90 - Viton® Extreme Chemical Resistant ETP 90 Duro - AS-568 O-Rings (4-6 Weeks) | Metric O-Rings (4-6 Weeks)