

FFKM SIMRIZ® HIGH PERFORMANCE MATERIAL IN EXTREME CONDITIONS

SIMRIZ® 498 THE ULTIMATE FFKM MATERIAL

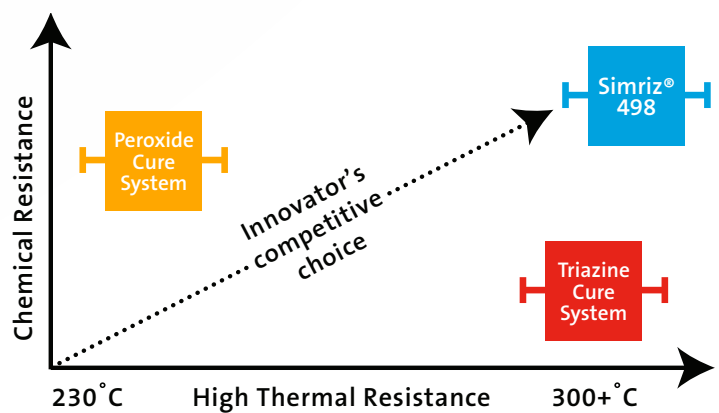
UNIQUE MATERIAL STRUCTURE PROVIDES RELIABLE SEALING PERFORMANCE IN ALL ENVIRONMENTS.

Simriz® 498 is the ultimate FFKM material outperforming every other FFKM material on the market. Its unique patented material structure provides an outstanding long-term performance in nearly every environment. No matter if it's extreme temperatures up to 325°C or harsh chemicals or even overheated steam and hot water, Simriz® 498 is the best match.

Withstanding such extreme conditions combined with a cost efficient structure, Simriz 498 defines a new era in the global O-ring market.

BENEFITS

- Superior long-term performance in extreme temperatures
- Broad resistance in a wide range of harsh chemical environments
- Outstanding performance in steam and hot water
- Cost efficient



FREUDENBERG-NOK
INNOVATING TOGETHER

www.sealsonline.com

PERFLUOROELASTOMER (FFKM) SEALS

DESIGNED FOR THERMAL STABILITY AND NEARLY UNIVERSAL PROTECTION AGAINST CHEMICAL ELEMENTS, FREUDENBERG'S PROPRIETARY FAMILY OF SIMRIZ® PERFLUOROELASTOMER COMPOUNDS OFFER PREMIER SEALING PERFORMANCE.

Material Property	Simriz® Compound								
	134	481	484	485	486	495	498	501	Z7257
Color	black	black	black	black	white	black	black	black	black
Hardness, Shore A	90	70	75	75	75	75	80	77	79
Temp. Range in °C	-15°C to +230°C	-30°C to +230°C	-20°C to +230°C	-7°C to +230°C	-7°C to +230°C	-7°C to +230°C	-6°C to +325°C	-6°C to +325°C	-2°C to +320°C
Tensile Strength (psi)	3,118	2,480	3,205	2,690	2,620	2,600	2,700	1,971	1,949

SUPERIOR THERMAL RESISTANCE

Simriz® perfluoroelastomers provide unique sealing solutions for numerous aerospace applications. Simriz® 498 and Z7257 were developed for high-temperature aerospace applications like jet engines and APUs. Simriz® 498 offers superior compression set resistance at temperatures to 325°C, with performance far exceeding any competitive materials. Simriz® 498 exhibits heat resistance to 325°C. Simriz® 498 and Z7257 meet the AMS7257 specifications and are compatible with Mobil Jet Oil 254 and BP Turbo Oil 2197.



SIMRIZ® 501

The newly developed Simriz® 501 is designed to exceed the requirements of AMS7257. It offers superior O-ring lifetime and reliability.

- AMS 7257 (QPL listed)
- Excellent resistance against inorganic and organic acids

AEROSPACE

CHEMICAL PROCESS

POWER GENERATION



SIMRIZ® Z7257

Simriz® Z7257 is well known in the aerospace engine market. It offers extensive flight testing in high temperature aerospace applications.

- AMS 7257 (QPL listed)
- Resistance to splitting at high squeeze under high temperatures.

AEROSPACE

STRONG CHEMICAL RESISTANCE

Simriz® perfluoroelastomer compounds accommodate a wide variety of industrial sealing requirements and are also available in custom-molded shapes. For chemical processing and other heavy industrial applications, Simriz® 495 and 498 demonstrate excellent chemical compatibility in demanding environments. At very low temperatures Simriz® 481 is recommended, while Simriz® 498 is a superior high-temperature compound. Simriz® 485 is a general purpose low-cost compound for many applications. Simriz® 495 exhibits improved acid resistance.



SIMRIZ® 481

Its outstanding performance in low temperature combined with broad resistance to harsh chemicals makes Simriz® 481 the ideal match for nearly every application in the chemical process industry, especially where low temperatures are expected.

- Broad chemical resistance
- Low temperature resistance

CHEMICAL PROCESS

OIL & GAS EQUIPMENT



SIMRIZ® 484

Simriz® 484 offers broad resistance to harsh chemicals as well as high temperatures, making it the material of choice for Food & Beverage or Pharmaceutical application.

- Meets 3-A® sanitary standard
- FDA compliant
- USP class VI compliant

FOOD & BEVERAGE

CHEMICAL PROCESS

PHARMACEUTICAL



SIMRIZ® 495

Simriz® 495 performs well in a wide variety of harsh chemicals and under overheated steam and hot water conditions. Especially in strong acids and oxidizers.

- Strong acids
- Strong oxidizers
- Steam and hot water

CHEMICAL PROCESS

OIL & GAS EQUIPMENT



SIMRIZ® 485

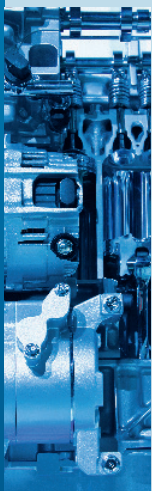
The combination of outstanding performance in harsh chemical environments and high temperatures at a competitive price makes Simriz® 485 universally applicable.

- General purpose
- Best value performance
- Broad chemical resistance

CHEMICAL PROCESS

OIL & GAS EQUIPMENT

POWER GENERATION



SIMRIZ® 134

In addition to protection against a wide variety of harsh chemicals and stability in steam and hot water, Simriz® 134 offers outstanding resistance against rapid gas decompression (RGD) in high pressure applications.

- 90 Shore A Hardness
- RGD Applications
- NORSOK M-710 (rev. 2)

CHEMICAL PROCESS

OIL & GAS EQUIPMENT

POWER GENERATION



SIMRIZ® 486

Simriz® 486 is a high purity, white color material that provides broad resistance to harsh chemicals and exceptional temperatures.

- Color: White
- FDA compliant
- USP class VI compliant

FOOD & BEVERAGE

CHEMICAL PROCESS

PHARMACEUTICAL

FREUDENBERG SEALING TECHNOLOGIES IN-DEPTH MATERIAL EXPERTISE

With its unique portfolio of products and services, Freudenberg Sealing Technologies is one of the world's leading specialists in sealing technologies. The company has developed its expertise over decades, and its material and technology competencies have defined it as a proven supplier and innovative development and service partner to the auto industry and many other sectors. Sealing solutions from Freudenberg are paving the way for electric mobility and many other promising applications – including the production of renewable energy, its transmission, and its distribution and storage.

Freudenberg-NOK Sealing Technologies runs the business operations of Freudenberg Sealing Technologies in the Americas. The company is a joint venture between Freudenberg and NOK Corp. In Japan, it is headquartered in Plymouth, Mich. and operates more than 20 facilities across the Americas.

Freudenberg Sealing Technologies is the largest business unit in the Freudenberg Group, with 15,000 employees and revenue of about 2.3 billion euros. In 2018, the entire global Freudenberg Group reported revenue of about 9.4 billion euros and employed more than 49,000 individuals in around 60 countries in a range of business fields, including seals and vibration control technology, nonwovens and filtration, household products, specialties and other products.

More information about Freudenberg Sealing Technologies at www.fst.com.



FFKM SIMRIZ® HIGH PERFORMING MATERIAL IN EXTREME CONDITIONS

Simriz® stands out for its broad chemical stability, similar to that of PTFE, combined with the rubbery-elastic qualities of an elastomer. They are used wherever extreme safety standards are in force and high maintenance as well as repair expenditures exceed the costs of the seals.

Values for the customer:

- > **Without equal** - patented cross-linking system provides superior performance beyond the limits of other competitor FFKM products
- > **Vertically integrated** - Freudenberg-NOK Sealing Technologies is the only vertically integrated O-ring manufacturer
- > **Cost efficient** - as the only vertically integrated O-ring manufacturer down to the monomers, Freudenberg-NOK Sealing Technologies is able to provide the most cost efficient FFKM O-rings