

The world's most chemical resistant rubber up to 325 °C

# Fluorezi®

## O-rings



 **NewDealSeals®**  
High Performance O-Rings and Seals



### Who we are

NewDealSeals, a family owned company, was founded in 1994. With a sound business model based on strong family ties, we have created a unique sense of solidarity, flexibility and commitment that underpin our long-term focus on clients, staff, suppliers and the community at large.

### What we make

We design, develop and manufacture the highest quality O-rings and sealing components in the industry. Over 100,000 different sealing components are manufactured each year, from standard O-rings to complex sealing products, each available in a wide number of different dimensions, shapes and materials.

### Key facts



25+ years experience



In-house Engineering



Material laboratory



Trusted OEM supplier

# General perfluoroelastomer information

NewDealSeals is often asked to come up with an alternative to DuPont Kalrez® perfluoroelastomers. This has led us to develop and launch Fluorezi®, a product that is described in this brochure. We believe that Fluorezi® is the best perfluoroelastomer-alternative currently available.

## History of perfluoroelastomer

In 1957, DuPont introduced the first commercial fluoroelastomer (abbreviated as FKM).

It was sold under the trade name Viton® (Viton® A). This fluoroelastomer has a fluorine content of 66%.

Since this time, fluoroelastomer use has increased steadily in line with the introduction of requirements that are more stringent. DuPont was forced to come up with a new type of elastomer that would satisfy the ever more stringent demands of the industry.

In 1968, DuPont introduced Kalrez®, the first commercial perfluoroelastomer (abbreviated as FFKM). DuPont applied for a patent for this perfluoroelastomer.

FFKM has a fluorine content of more than 71%. These perfluoroelastomers with a higher fluorine content have a better chemical and heat resistance than standard fluoroelastomers. Perfluoroelastomers can be economical when the costs of seal failure are high, involving downtime and replacement costs, environmental emissions or spills, the safety of people, or the contamination of products.

In fact, perfluoroelastomers resist over 1,800 different chemicals while offering the high temperature stability of Teflon® / P.T.F.E. (320 °C).

DuPont skilfully utilised its position as a monopolist in the worldwide sealing industry. It produced both the raw material and the finished products (sealing parts), because this was more profitable.

In 1988, the perfluoroelastomer patent held by DuPont expired. Subsequently, other raw material producers like 3M, Solvay and Daikin were able to enter the perfluoroelastomer market. These companies offered similar raw materials. For example:

- > Dupra® (Daikin Industries)
- > Dyneon® (3M Company)
- > Tecnoflon® PFR (Solvay Plastics)



> 100.000 parts



plier

## Perfluoroelastomer info continued ...

Several suppliers of sealing solutions decided to do business with one of these raw material suppliers, introduced perfluoroelastomers under their own brand name and adopted the high price level applicable for DuPont Kalrez®. Some of these suppliers are:

- > Chemraz® (Greene, Tweed & Company)
- > solast® (Trelleborg Sealing Solutions)
- > Parofluor® (Parker)
- > Simriz® (Freudenberg Sealing Technologies)

NewDealSeals has received an increased number of requests in which it is asked to come up with a cost-effective alternative to DuPont Kalrez® and the perfluoroelastomer alternatives referred to above. As a result, NewDealSeals developed and launched Fluorezi®, its own perfluoroelastomer, in 2010.

### EXPERTISE

Since being founded in 1994, NewDealSeals has been advising companies on the use of elastomers, drawing on the extensive knowledge it has gained from many different industries, the producers of elastomers and professional literature on the subject.

NewDealSeals has been relentless in its efforts to achieve improvements in the manufacture of perfluoroelastomer parts. This has resulted in the introduction of Fluorezi® back in 2010.

NewDealSeals Fluorezi® sealing solutions are being used successfully in high-performance environments in several application areas, including the maritime industry, the chemical processing industry, the oil and gas industry and the pharmaceutical industry.

### THE BENEFITS OF FLUOREZI®

NewDealSeals Fluorezi® has the following advantages in comparison with other established perfluoroelastomer sealing solution suppliers:

- > Lower costs for a comparable high level of quality, by using the same raw material suppliers as established companies
- > A high and consistent quality
- > Flexibility (single-piece and large-series production)
- > Customized service
- > A short delivery time

# Industries



Fluorezi® perfluoroelastomers bring all these benefits to a wide range of applications required by equipment manufacturers and end users in many different industries:

- › Chemical processing
- › The pharmaceutical and food industries
- › Oil and gas
- › Hydrocarbon processing
- › Semiconductor and nanotechnology
- › Lacquer, print and coatings
- › The aerospace and aviation industries
- › The maritime industry
- › Power generation

# Key chemical resistance

Fluorezi® is resistant to the following chemical groups:

- › Concentrated alkalis and bases
- › Alcohols and aldehydes
- › Ketones, esters and ethers
- › Halogens and strong oxidizing media
- › Hydraulic and fuel oils and fuels
- › Organic solvents
- › Hot water and steam
- › CIP and SIP cleaning media
- › Aliphatic and aromatic amines
- › Ethylene oxide and propylene oxide



For more detailed information, please see the Chemical Compatibility Guide (Pages 34-85) in our Technical Handbook: The World's Best O-ring Handbook. Contact our sales department if you do not have a copy yet. ([sales@newdealseals.com](mailto:sales@newdealseals.com))



[View PDF](#)



# Product Range

## O-RINGS

O-rings provide engineers with a high-performance sealing element in a wide range of static and dynamic applications. NewDealSeals offers O-rings according to the following standards:

- > AS 568A American standard
- > DIN 3701 German standard
- > BS 1806/ BS 4518 British standard
- > JIS B2401 Japanese standard
- > NFT47-501 French standard
- > SMS 1568 Swedish standard
- > ISO 3601 International standard

Moulded O-rings in non-standard sizes are available according to customer specifications.

## CUSTOM-MOULDED PARTS

Specific parts are designed, developed and produced in conjunction with customers to ensure that all requirements are satisfied. NewDealSeals offers custom-moulded parts in virtually any shape.

The physical characteristics of perfluoroelastomers require careful design input from engineers at NewDealSeals. NewDealSeals perfluoroelastomer custom-moulded parts are a typical area of proven success in even the most hostile of environments.







# Fluorezi® overview

Fluorezi® Compounds	KEY FEATURES	TEMPERATURE RANGE	PRICE LEVEL
<b>40 series</b>	General purpose Good chemical resistance	Minimum -10 °C/-15 °C Maximum +240 °C/+250 °C	€
<b>41 series</b>	High thermal resistance	Minimum -10 °C/-15 °C Maximum +320 °C/+330 °C	€ €
<b>42 series</b>	Very high thermal resistance	Minimum -10 °C/-15 °C Maximum +330 °C/+340 °C	€ € €
<b>43 series</b>	Best chemical resistance	Minimum -10 °C/-15 °C Maximum +240 °C/+250 °C	€ € € €
<b>45 series</b>	Great low temperature resistance	Minimum -40 °C/-45 °C Maximum +240 °C/+250 °C	€ € € € €
<b>48 series</b>	Explosive decompression resistant	Minimum -10 °C/-15 °C Maximum +240 °C/+250 °C	€ € €

# Fluorezi® comparison

Fluorezi® Compounds	KALREZ®	ISOLAST®	SIMRIZ®	CHEMRAZ®	PAROFLUOR®	PERLAST®
<b>40 series</b>	6375	J9440	495 485	-	V8787-75	-
<b>41 series</b>	4079 1050LF	J8325	-	-	V8545-75	G75TX
<b>42 series</b>	7075	-	-	-	-	-
<b>43 series</b>	-	J9503	-	-	-	-
<b>45 series</b>	-	-	-	505	-	-
<b>48 series</b>	0090	-	-	-	-	-

Interested?

Would you like to receive a sample or more information? Please send your enquiry to:  
sales@newdealseals.com or scan the QR-code:



# Fluorezi® Material data

## GENERAL PURPOSE / HIGH CHEMICAL RESISTANT FFKM (40 SERIES)

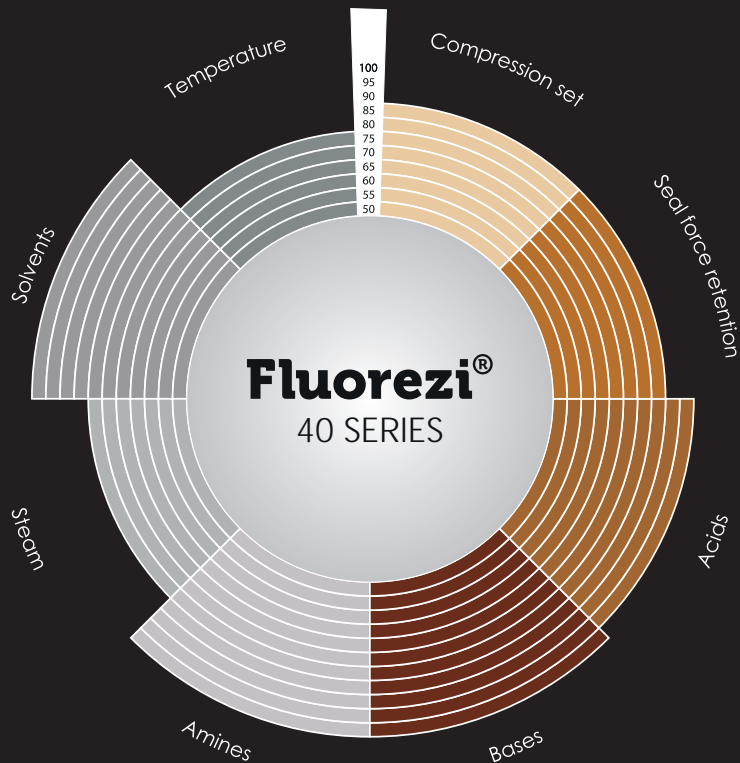
Equivalent to Kalrez® 6375, Isolast® J9440, Simriz® 495, Simriz® 485, Parofluor® V8787-75

Typical Physical Properties	Method	4075B
Hardness (Shore A)	ASTM D2240	75
Color		Black/White
Compression Set (% 70 hr @ 200 °C)	ASTM D395B	23
Maximum Continuous Service Temperature (°C)		240
Maximum Service Temperature (°C) - short term		250

The 40 series compound provides the chemical processing industry an economic solution with excellent chemical resistance. This compound has improved acid resistance and thermal stability, which facilitates excellent performance even under harsh chemical conditions. It is also ideal for wet chemical fluid handling, cleaning and chemical etching processes.

The 4075B compound is a FFKM compound and additionally has a high purity, low metal ion content with low extractable in a wide range of chemicals. The 4075B compound is ideal for wet process electronics manufacturing in the semiconductor, flat panel display and aerospace industries.

40 SERIES



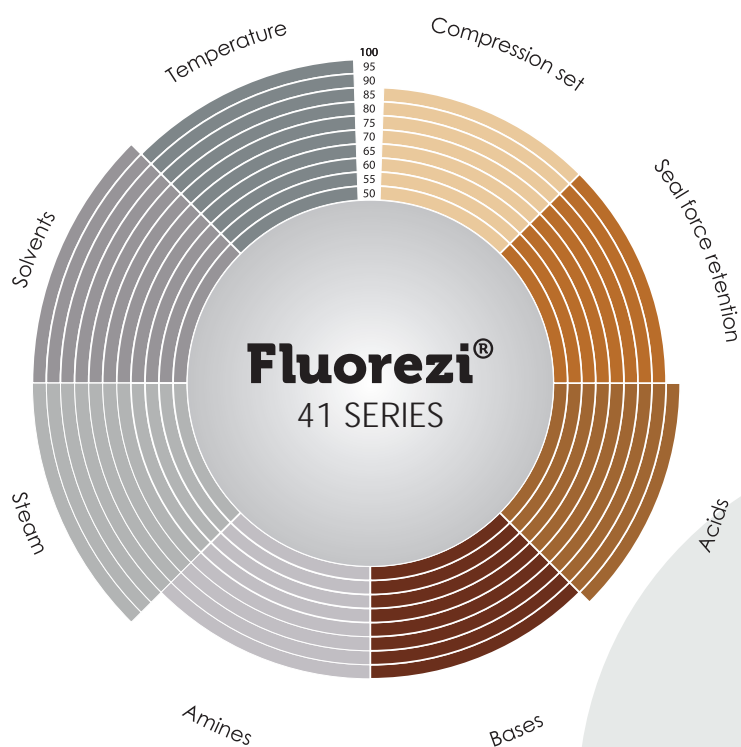
## HIGH TEMPERATURE RESISTANT FFKM (41 SERIES)

Equivalent to Kalrez® 4079 & Kalrez® 1050LF, Isolast® J8325, Parafluor® V8545-75, Perlast® G75TX

Typical Physical Properties	Method	4175B
Hardness (Shore A)	ASTM D2240	75
Color		Black
Compression Set (% 70 hr @ 200 °C)	ASTM D395B	21.8
Maximum Continuous Service Temperature (°C)		320
Maximum Service Temperature (°C) - short term		330

The 41 series is a technically advanced high temperature perfluoroelastomer. It is designed to meet the challenges of higher temperature applications. Its fully fluorinated back bone structure provides a very broad chemical and thermal stability.

The 4175B compound is very suitable for use in a large number of different semiconductor process environments. Examples include rapid thermal processing, dry etch, wet etch and wet clean. It is also an excellent product for chemical sealing applications. It exhibits low weight loss in reactive plasmas and has a high tolerance to temperature fluctuations.



# Fluorezi® Material data

## ULTRA HIGH TEMPERATURE RESISTANT FFKM (42 SERIES)

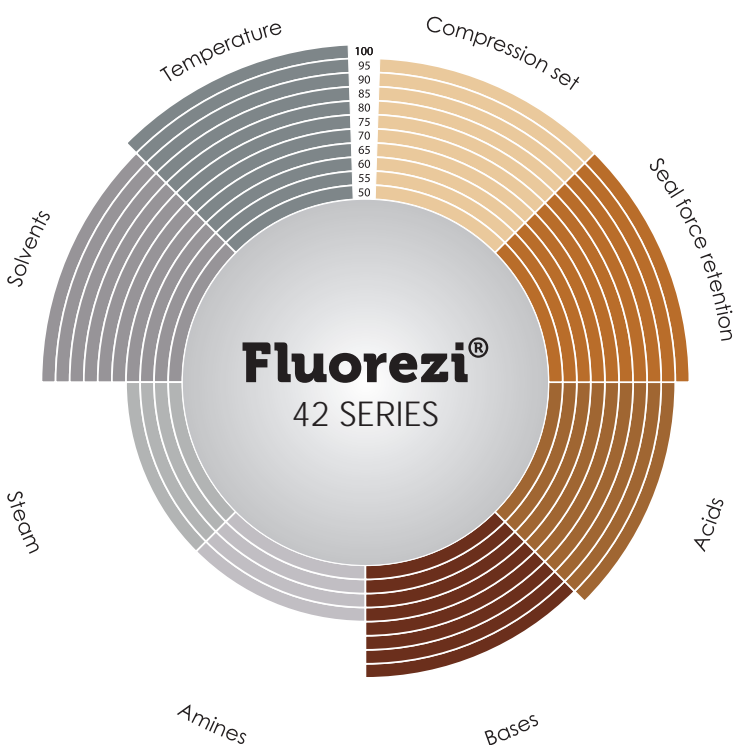
Equivalent to Kalrez® 7075

Typical Physical Properties	Method	4275B
Hardness (Shore A)	ASTM D2240	75
Color		Black
Compression Set (% 70 hr @ 275 °C)	ASTM D395B	12.7
Maximum Continuous Service Temperature (°C)		330
Maximum Service Temperature (°C) - short term		340

### 42 SERIES

The 42 Series is a technically advanced high temperature perfluoroelastomer. It is designed to meet the challenges of higher temperature applications. Its fully fluorinated back bone structure provides a very broad chemical and thermal stability. The 42 Series has an improved thermal resistance in comparison to the 41 Series. The 42 series is not suitable for high temperature steam and water.

The 4275B compound is very suitable for use in a large number of different semiconductor process environments. Examples include rapid thermal processing, dry etch, wet etch and wet clean. It is also an excellent product for chemical sealing applications. It exhibits low weight loss in reactive plasmas and has a high tolerance to temperature fluctuations.

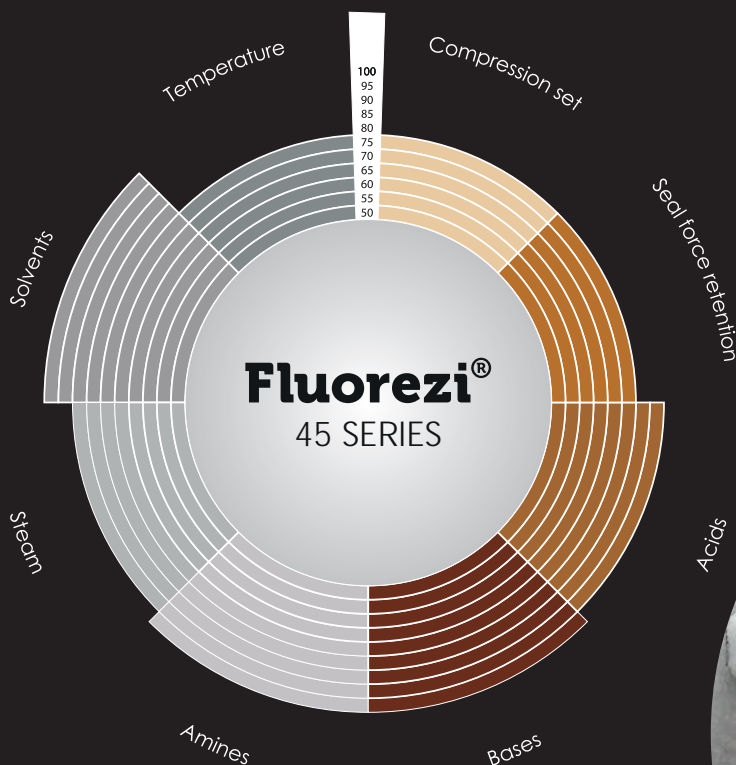


## LOW TEMPERATURE FFKM (45 SERIES)

Equivalent to Chemraz® 505

Typical Physical Properties	Method	4575B
Hardness (Shore A)	ASTM D2240	75
Color		Black
TR10 value (°C)	AST< D 1329	-30
Maximum Continuous Service Temperature (°C)		240
Maximum Service Temperature - short term (°C)		250
Minimum Continuous Service Temperature (°C)		-35
Minimum Service Temperature - short term (°C)		-45

The 4575A compound is a low temperature perfluoroelastomer. It has been designed specifically to meet the challenging demands of applications that require the chemical resistance of perfluoroelastomers in low temperature environments. Its fully fluorinated backbone structure provides very broad chemical and thermal stability. It has a low compression set, excellent chemical resistance, good mechanical properties and outstanding thermal stability.





## EXPLOSIVE DECOMPRESSION RESISTANT FFKM (48 SERIES)

Equivalent to Kalrez® 0090

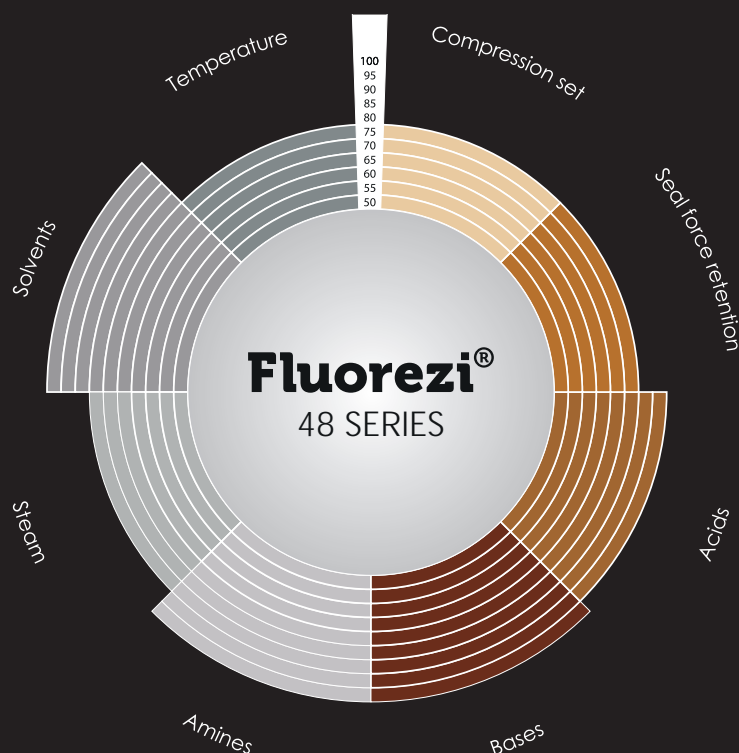
Typical Physical Properties	Method	4890B
Hardness (Shore A)	ASTM D2240	90
Color		Black
TR10 value (°C)	AST< D 1329	-5
Tensile Strength at Break (MPa)	ASTM D412	16.7
Elongation at Break (%)	ASTM D412	257
Compression Set (% , 70 hr @ 200 °C)	ASTM D395B	30.0
Maximum Continuous Service Temperature (°C)		240
Maximum Service Temperature - short term (°C)		350

48 SERIES

The 4890A compound is an explosive decompression resistant perfluoroelastomer. It has been designed specifically to meet the challenging demands of oil and gas applications that require the chemical resistance of perfluoroelastomers together with high explosive decompression resistance. 4890A has been tested according to NORSOK M710 and passed at the

highest possible rating of "0000". Its fully fluorinated backbone structure provides very broad chemical and thermal stability. It has a low compression set, excellent chemical resistance, good mechanical properties and outstanding thermal stability.

Please contact our sales department for any additional information.





# Products



O-rings



PTFE Seals



Rubber moulded parts



Oil-Seals and V-Rings



Custom machined plastic parts



Metallic Seals



Profiles & Extrusions



Gaskets



Special Seals

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