

KAFLON SEAL- A company moving forward with continuous innovation and improvements. Our commitment is to satisfy all industries with the optimum combination of low MOQ, best quality and value-added service. Our goal is to be a respectable partner in sealing industry.

We're your source for expertise in virtually every area, including materials, design, prototyping, testing and more. Our ERP system reduces even more costs and save more time. We'll barcode all incoming and outgoing shipments for accurate traceability, easy verification and to streamline your receiving process.



Oil & Gas Industry ——High Performance Elastomer

KAFLON

KAFLON SEAL (XIAMEN) CO.,LTD

Tel:0086-592-5171076

Fax:0086-592-5166562

Sales Manager:Joy Lv

Email:contact@kaflon-seal.com

Add:No. 75 Tian'an Road, Jimei District, Xiamen City, Fujian, China

KAFLON

Company Profile



We focus on customers' needs, rely on the world's leading high-tech polymer technology and multi-domain industry experience. We are committed to providing our customers with superior service and the most competitive anti-leak sealing solution.

Kaflon Seal has achieved ISO/TS16949 quality management system in 2012. In 2013 our O rings have passed RGD test according to Norsok M710. At the same time, we have achieved certification from DNV and Element.

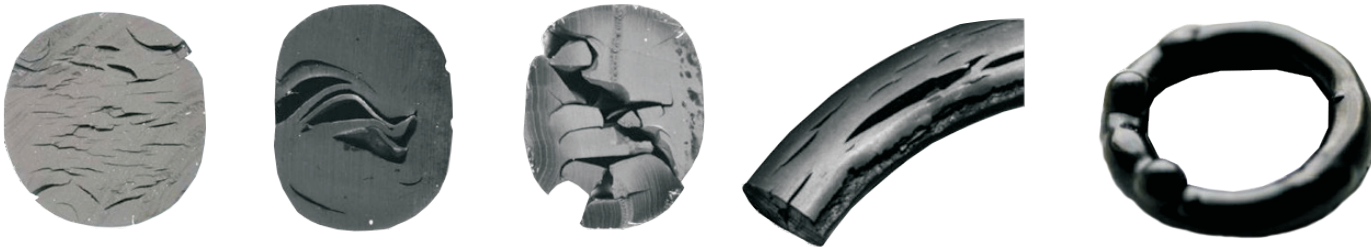
We are working with our partners together and make progress together. In the field of general machinery, engineering machinery, petroleum, chemical and automotive, military, we are proud to use forward-looking innovative thinking and continue to create value for our partners.



What is Explosive Decompression

Gas or gas mixtures in contact with elastomer surfaces can be absorbed under pressure. At high pressure, absorbed gas is in a compressed state. When external pressure is reduced, either rapidly or over a relatively short period of time, the compressed gas rapidly expands within the elastomer. This can lead to crack initiation within the body of the elastomer. These cracks propagate internally, which can cause void formation or cracks to appear on the elastomer surface that significantly reduce seal integrity.

Relying on decade of experience, Kaflon Seal has developed Valast™ high performance elastomer to meet AED requirement by working with leading equipment manufacturers and end users. Meanwhile, we have developed a portfolio of materials suitable for different applications in oil & gas industry.



Material	Code	Hardness	Certificate	Temperature range (°C)	Characteristics
HNBR	RH85	85		-30°C to 160°C -22°F to 320°F	HNBR for general application
HNBR	RV80LT	80		-46°C to 160°C -50°F to 320°F	Excellent low temperature resistance
HNBR	Valast™0095	90	NORSOK M710 Rev.2	-30°C to 160°C -22°F to 320°F	Excellent anti-explosive decompression(AED)performance
FKM	RV75LT	75		-46°C to 220°C -50°F to 428°F	Very good low temperature performance
FKM	RV75B	75		-20°C to 200°C -4°F to 392°F	Ternary fluorine rubber,good resistance to chemical properties
FKM	RV75F	75		-15°C to 220°C 5°F to 428°F	peroxide-cured 70% fluorine fluoroelastomer provide excellent chemistry capability
FKM	Valast™7902	90	NORSOK M710 Rev.3	-20°C to 200°C -4°F to 392°F	Excellent anti-explosive decompression(AED) performance
FKM	Valast™3901	90	NORSOK M710 Rev.3	-46°C to 220°C -50°F to 428°F	Excellent anti-explosive decompression(AED) performance, good low temperature performance
FKM	Valast™4901	90	NORSOK M710 Rev.3	-50°C to 210°C -58°F to 410°F	Excellent anti-explosive decompression(AED) performance, extreme good low temperature performance
FKM	Valast™5902	90	NORSOK M710 Rev.3	-15°C to 210°C 5°F to 410°F	Excellent anti-explosive decompression(AED) performance, good resistance to H ₂ S and alkali
FEPM	XLAF1075	75		-10°C to 230°C 14°F to 446°F	Excellent resistance to high temperature steam, amine, H ₂ S
FFKM	FF2575	75		-15°C to 250°C 5°F to 482°F	Extremely excellent chemical resistance
FFKM	FF3090	75		-15°C to 300°C 5°F to 572°F	High temperature steam(300°C) and amine resistance

Valast™0095



Valast™0095

Qualified to NORSEK M710 Rev.2

Description

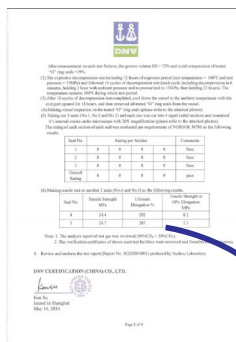
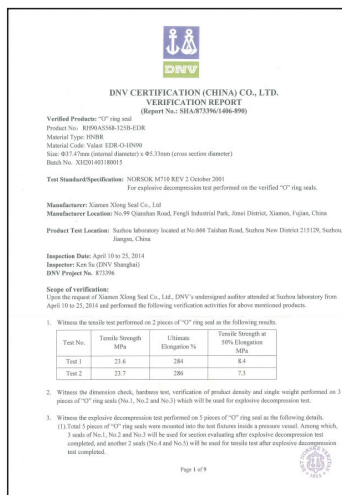
- Valast™ 0095 is HNBR with high performance and formula for applications where anti-explosive decompression resistance (AED) or high pressure resistance is required. It is widely applied in oil and gas exploration, exploitation and transportation equipments.

Characteristics

- Excellent anti-explosive decompression(AED) characteristics
- Excellent wear resistance and mechanical properties
- Wide temperature range: -30°C to 160°C/-22°F to 320°F
- Good resistant to a variety of oils,good performance in acidic media (H₂S) Cost-effective applied in oil&gas compared with other elastomers

Typical application

- Well logging and drilling equipment
- Completion tool
- Wellhead equipment
- Pipeline valve
- Compressor
- O ring, T-seal and customized rubber seals



(2).The explosive decompression test including 72 hours of exposure period (test temperature = 100°C and test pressure = 15MPa) and followed 10 cycles of decompression test (each cycle including decompression in 6 minutes, holding 1 hour with ambient pressure and re-pressurized to 15MPa, then holding 23 hours). The temperature remains 100°C during whole test period.

(3).After 10 cycles of decompression test completed, cool down the vessel to the ambient temperature with the exit port opened for 18 hours, and then removed all tested "O" ring seals from the vessel.

(4).Making visual inspection on the tested "O" ring seals (please refer to the attached photos)

(5).Taking out 3 seals (No.1, No.2 and No.3) and each one was cut into 4 equal radial sections and examined it's internal cracks under microscope with 20X magnification (please refer to the attached photos).

The rating of each section of each seal was evaluated per requirements of NORSEK M710 as the following results.

Seal No.	Rating per Section				Comments
1	0	0	0	0	Pass
2	0	0	0	0	Pass
3	0	0	0	0	Pass
Overall Rating	0	0	0	0	pass

(6).Making tensile test on another 2 seals (No.4 and No.5) as the following results.

Seal No.	Tensile Strength MPa	Ultimate Elongation %	Tensile Strength at 50% Elongation MPa
4	24.4	292	8.2
5	24.7	287	7.3

Valast™7902



Valast™7902

Qualified to NORSEK M710 Rev.3

Description

- Valast™ 7902 is a high performance FKM with special formula for applications where anti-explosive decompression resistance (AED) or high pressure resistance is required. It is widely applied in oil and gas exploration, exploitation and transportation equipments.

Characteristics

- Excellent anti-explosive decompression(AED) characteristics
- Good chemical compability
- High modulus, high strength
- Low compression set,long-term sealing performance

Typical application

- Well logging and drilling equipment
- Completion tool
- Wellhead equipment
- Pipeline valve
- Compressor
- O ring, T-seal and customized rubber seals



O-rings in compound

Valast 7902

supplied by

Xiamen Xlong Seal Co., Ltd

have been tested according to the requirements of

NORSEK M-710 Edition 3 and ISO 23936-2
(Rapid gas decompression resistance)

PASSED

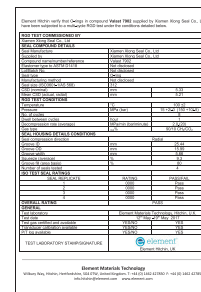
Test gas: 90/10 mol% CH₄/CO₂
Test temperature: 100 ±2 °C
Test pressure: 150 bar (15 MPa)
Number of cycles: 8
Decompression rate: 20.4 bar/minute
Seal Size: 312 (ISO 3601-1/AS 568)

Dr Keyur Somani
Scientist

25th May 2017
Date

Element Hitchin has been assessed to BS EN ISO 9001 by the British Standards Institution (BSI) and is a registered firm under the BSI Quality Assurance scheme for the provision of professional and technical services.

Element Materials Technology
Wilbury Way, Hitchin, Hertfordshire, SG4 0TW, United Kingdom. T: +44 (0) 1462 427850 F: +44 (0) 1462 427851
info.hitchin@element.com www.element.com



Temperature	°C	100 ±2
Pressure	MPa (bar)	15 +2/-0 (150 +10/-5)
No. of cycles		8
Dwell between cycles	hour	1
Decompression rate (average)	MPa/min (bar/minute)	2.0/(20)
Gas type	mol%	90/10 CH ₄ /CO ₂
SEAL HOUSING DETAILS CONDITIONS		
Seal compression direction	Radial	
Groove ID	mm	25.44
Groove OD	mm	15.99
Groove width	mm	5.66
Squeeze (average)	%	9.3
Groove fill (area basis)	%	80
Number of seals tested		4
ISO TEST SEAL RATINGS		
SEAL REPLICATE	RATING	PASS/FAIL
1	0000	Pass
2	0000	Pass
3	0000	Pass
4	0000	Pass

Valast™ 3901

Valast™ 4901



O-rings in compound

Valast 3901

supplied by

Xiamen Xlong Seal Co., Ltd

have been tested according to the requirements of

NORSOK M-710 Edition 3 and ISO 23936-2
(Rapid gas decompression resistance)

PASSED

Test gas: 90/10 mol% CH₄/CO₂
Test temperature: 100 ±2 °C
Test pressure: 150 bar (15 MPa)
Number of cycles: 8
Decompression rate: 20.4 bar/minute
Seal Size: 312 (ISO 3601-1/AS 568)

Dr Keyur Somani 25th May 2017
Scientist Date

Element Hitchin has been assessed to BS EN ISO 9001 by the British Standards Institution (BSI) and is a registered firm under the BSI Quality Assurance scheme for the provision of professional and technical services.

Element Materials Technology
Wilbury Way, Hitchin, Hertfordshire, SG4 0TW, United Kingdom. T: +44 (0) 1462 427850 F: +44 (0) 1462 427851
info.hitchin@element.com www.element.com



Valast™ 3901

Qualified to NORSOK M710 Rev.3

Description

- Valast™ 3901 is high performance FKM with good low-temp characteristics, formulated for applications where anti-explosive decompression resistance (AED) or high pressure resistance is required. It is widely applied in low-temp wellhead, pipeline equipments.

Characteristics

- Excellent AED performance
- Superior resistance to severe chemicals
- Wide temperature range:
-46°C to 220°C/-50°F to 428°F
- Low compression set, long-term sealing performance



Temperature	°C	100 ±2
Pressure	MPa (bar)	15 +2/-0 (150 +10/-5)
No. of cycles		8
Dwell between cycles	hour	1
Decompression rate (average)	MPa/min (bar/minute)	2.0 (20)
Gas type	mol%	90/10 CH ₄ /CO ₂
SEAL HOUSING DETAILS CONDITIONS		
Seal compression direction	Radial	
Groove ID	mm	25.43
Groove OD	mm	15.98
Groove width	mm	5.68
Squeeze (average)	%	9.1
Groove fill (area basis)	%	80
Number of seals tested		4
ISO TEST SEAL RATINGS		
SEAL REPLICATE	RATING	PASS/FAIL
1	0000	Pass
2	0000	Pass
3	0000	Pass
4	0000	Pass

Temperature	°C	100 ±2
Pressure	MPa (bar)	15 +2/-0 (150 +10/-5)
No. of cycles		8
Dwell between cycles	hour	1
Decompression rate (average)	MPa/min (bar/minute)	2.0 (20)
Gas type	mol%	90/10 CH ₄ /CO ₂
SEAL HOUSING DETAILS CONDITIONS		
Seal compression direction	Radial	
Groove ID	mm	25.43
Groove OD	mm	15.98
Groove width	mm	5.68
Squeeze (average)	%	9.1
Groove fill (area basis)	%	80
Number of seals tested		4
ISO TEST SEAL RATINGS		
SEAL REPLICATE	RATING	PASS/FAIL
1	0000	Pass
2	0000	Pass
3	0000	Pass
4	0000	Pass

Typical application

- Well logging and drilling equipment
- Completion tool
- Wellhead equipment
- Pipeline valve
- Compressor
- O ring, T-seal and customized rubber seals



O-rings in compound

VALAST 4901

supplied by

Xiamen Xlong Seal Co., Ltd

have been tested according to the requirements of

NORSOK M-710 Edition 3
(Rapid gas decompression resistance)

PASSED

Test gas: 90/10 mol% CH₄/CO₂
Test temperature: 100 ±2 °C
Test pressure: 150 bar (15 MPa)
Number of cycles: 8
Decompression rate: 20.3 bar/minute
Seal Size: 312 (ISO 3601-1/AS 568)

Conor Rafferty 18th March 2016
Scientist Date

Element Hitchin has been assessed to BS EN ISO 9001 by the British Standards Institution (BSI) and is a registered firm under the BSI Quality Assurance scheme for the provision of professional and technical services.

Element Materials Technology
Wilbury Way, Hitchin, Hertfordshire, SG4 0TW, United Kingdom. T: +44 (0) 1462 427850 F: +44 (0) 1462 427851
info.hitchin@element.com www.element.com



Valast™ 4901

Qualified to NORSOK M710 Rev.3

Description

- Valast™ 4901 is high performance FKM with extreme good low-temp characteristics, formulated for applications where anti-explosive decompression resistance (AED) or high pressure resistance is required. It is widely applied in low-temp wellhead, pipeline equipments.

Characteristics

- Excellent anti-explosive decompression (AED) characteristics
- Superior resistance to severe chemicals
- Excellent water vapor resistance
- Long-term sealing performance in extreme low temperature
- Wide temperature range:
-50°C to 210°C/-58°F to 410°F

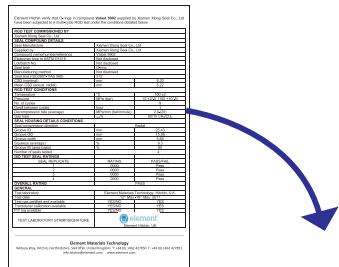


Temperature	°C	100 ±2
Pressure	MPa (bar)	15 +1/-0.5 (150 +10/-5)
No. of cycles		8
Dwell between cycles	hour	1
Decompression rate (average)	MPa/min (bar/minute)	2.03 (20.3)
Gas type	mol%	90/10 CH ₄ /CO ₂
SEAL HOUSING DETAILS CONDITIONS		
Seal compression direction	Radial	
Groove ID	mm	25.40
Groove OD	mm	15.96
Groove width	mm	5.68
Squeeze (average)	%	12.2
Groove fill (area basis)	%	85
Number of seals tested		4
ISO TEST SEAL RATINGS		
SEAL REPLICATE	RATING	PASS/FAIL
1	0000	Pass
2	0000	Pass
3	0000	Pass
4	0000	Pass

Temperature	°C	100 ±2
Pressure	MPa (bar)	15 +1/-0.5 (150 +10/-5)
No. of cycles		8
Dwell between cycles	hour	1
Decompression rate (average)	MPa/min (bar/minute)	2.03 (20.3)
Gas type	mol%	90/10 CH ₄ /CO ₂
SEAL HOUSING DETAILS CONDITIONS		
Seal compression direction	Radial	
Groove ID	mm	25.40
Groove OD	mm	15.96
Groove width	mm	5.68
Squeeze (average)	%	12.2
Groove fill (area basis)	%	85
Number of seals tested		4
ISO TEST SEAL RATINGS		
SEAL REPLICATE	RATING	PASS/FAIL
1	0000	Pass
2	0000	Pass
3	0000	Pass
4	0000	Pass

Typical application

- Well logging and drilling equipment
- Completion tool
- Wellhead equipment
- Pipeline valve
- Compressor
- O ring, T-seal and customized rubber seals

A large offshore oil and gas platform, the Valast™ 5902, is shown at sea. The platform is a complex structure with multiple levels, cranes, and drilling equipment. It is situated in the middle of a blue ocean under a clear blue sky. The platform's name, "Valast™ 5902", is prominently displayed in large, bold, blue letters with a white outline on the left side of the image. The platform itself is primarily white and grey, with yellow accents on some of the cranes and structural elements. A large derrick is visible on the right side of the platform. The overall scene conveys a sense of industrial scale and maritime operations.[illegible]

Valast™5902
Qualified to NORSOK M710 Rev.3

Description

- Valast™5902 is peroxidized cured FKM with formula for applications where anti-explosive decompression resistance (AED) or high pressure resistance is required. It is widely applied in oil and gas exploration, exploitation and transportation equipments.

Characteristics

- Excellent anti-explosive decompression(AED) characteristics
- Universal chemical resistance
- Compared with FEPM, the properties of aromatic hydrocarbon are stronger
- Excellent compatibility to acids (H₂S) , meet NACE TM0187 test requirements
- Compared with traditional FKM, it has better resistance to chemicals, such as methanol, steam, alkali and amine.

Typical application

- Well logging and drilling equipment
- Completion tool
- Wellhead equipment
- Pipeline valve
- Compressor
- O ring, T-seal and customized rubber seals

Chemical Compatibility Guide

Material		Valast™ 0095	Valast™ 7902	Valast™ 3901	Valast™ 4901	Valast™ 5902	RV75B	RV75F	XLAF 1075	FF 2575
Hydrochloric acid strong	>15%	D	A	A	A	A	A	A	A	A
H ₂ S	<1%	A	B	B	B	A	A	A	A	A
	<10%	B	C	C	B	A	C	C	A	A
	<30%	C	D	D	D	B	D	D	A	A
Methane(CH ₄)		A	A	A	A	A	A	A	A	A
Alkanes		A	A	A	A	A	A	A	A	A
Alcohols (except methanol)		A	A	A	A	A	A	A	A	A
Methanol		A	D	D	B	A	B	A	A	A
Biocides(at recommended levels of use)		A	A	A	A	A	A	A	A	A
Brine	Chloride	B	A	A	A	A	A	A	A	A
	Bromide	B	A	A	A	A	A	A	A	A
	alkaline Base -NaOH/KOH	A	B	B	B	A	A	A	A	A
Carbon dioxide(CO ₂)		A	A	A	A	A	B	B	B	B
Corrosion inhibitor	Amines	B	C	C	C	A	C	B	A	A
	Carbonate	A	A	A	A	A	A	A	A	A
Drilling mud	diesel	A	A	A	A	A	A	A	A	A
	ester	C	C	C	C	B	C	C	B	A
	mineral oil	A	A	A	A	A	A	A	A	A
High temp steam		C	B	B	B	A	B	B	A	A
Solvent	Xylene	D	B	B	B	B	A	A	C	A
	Acetone	D	D	D	D	D	D	D	D	A
	MEK	D	D	D	D	D	D	D	D	A
Stratified water		A	A	A	A	A	A	A	A	A

Rating	A very Good suitability	Elastomer shows little or no effect from exposure. Little effect on performance and Physical properties.Very good resistance.
	B Good suitability	Some effects from exposure with some loss of Physical properties. Some chemical swelling.
	C limited suitability	Significant swell and loss of physical properties After exposure. Additional tests should be done.
	D unsuitable to use	The elastomer is unsuitable for application in this media.

The above chemical compatibility is only for reference. Other factors, such as temperature, have a great impact on the application of materials.