

Sealing & Gasket Solutions

for hydrogen applications

ERIKS


Suitable
for hydrogen



Suitable
for hydrogen

Making industry
perform better



We design, manufacture and supply components that improve the efficiency, reliability and sustainability of our customers' processes and products.

How we make the entire hydrogen value chain perform better

At ERIKS, we drive the clean energy economy forward with smart, reliable, and safe solutions for the hydrogen industry. Our unmatched expertise in product and application knowledge, combined with comprehensive supply chain services and a dedicated team of specialists, ensures both efficiency and sustainability throughout the entire hydrogen value chain.



Wide assortment

ERIKS offers a comprehensive range of hydrogen-safe components and custom engineering solutions to optimise performance. Our portfolio includes both own brands and leading A brands, ensuring diverse options to meet your specific needs.

Our product portfolio includes:



Sealing & Polymer



Gaskets



Flow Control



Industrial Hoses



Engineered Plastics



Power Transmission



Tools, Maintenance & Safety



Team of specialists

Our specialists provide smart, hands-on solutions and work closely with you to achieve your hydrogen technology goals.

By combining our extensive industry knowledge, advanced services, and a holistic approach, ERIKS empowers the hydrogen revolution with expertise and innovation.

ERIKS Sealing & Gasket solutions

for the entire
hydrogen value chain

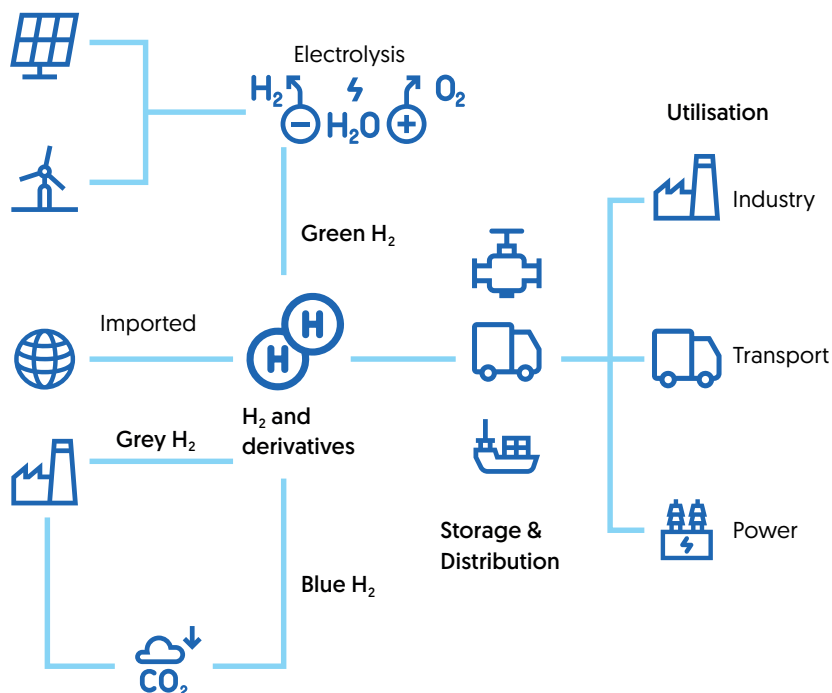


Our Sealing, Polymer & Gaskets division offers a range of products and materials that can be used or are specially designed for hydrogen applications. Our range spans from products for standardised flanges and O-rings up to custom solutions for electrolyser and fuel cells, vessels and heat exchangers.

The selection featured in this brochure highlights leading materials and designs from our seals & gaskets range that are hydrogen-compatible or specific elastomer materials tailored to hydrogen - or hydrogen production related - applications. We base our choices on a thorough analysis of each application to ensure the perfect fit for your needs.

Thanks to our widespread distribution and manufacturing hubs across Europe and APAC, we are geared up to supply any size or design you require, right when you need it.

At ERIKS, we stay ahead of the curve, serving clients who demand reliable hydrogen application products. Our gaskets and seals, rigorously tested and proven suitable, now carry the “H₂ Suitable” badge, making them easily identifiable as a trusted choice for your hydrogen-related needs.



ERIKS recommended materials

for hydrogen



Application material / temperature / pressure (PT) advice table*

Material	Temperature (up till)	Pressure (up till)
Rubber (steel insert) EPDM/HNBR/CR/NBR depending on media	150°C	10 bar (40bar)*
Fluor polymer based rubber FKM/FEPM	200°C	40 bar*
Novapress® Fibre sheet 880 NBR bonded (gas-tight, high stability)	200°C	100 bar*
Novaone® Fibre sheet BLUE EPDM bonded (alkali acid res.)*	250°C	60 bar*
Leader Clipperlon Modified Leader PTFE series (highest chemical resistance)*	260°C	85 bar*
Novaphit® Frenzelit reinforced graphite	450°C	100 bar*
Sigraflex SGL HD reinforced graphite	450°C	100 bar*
Leader Spiral Wound SRI (high-pressure blowout-safe)	500°C	350 bar*
Leader Kammprofile KAM (high-pressure blowout-safe)	500°C	400 bar*
LeaderTHERM NXT modified phlogopite	1000°C	100 bar*
Leader RTJ solid metal or (plated) metal C and o-rings	500°C	>400 bar*

* Depending on the construction, always consult the chemical resistance chart or reach out to our Application Engineers for advice.



ERIKS recommended materials

for Alkaline environments



Several rubber sealing materials have been designed specifically for a sustainable performance of an electrolyser stack performance. For high oxygen concentration at elevated temperatures a fluoropolymer based material is required. With both FEPM 70 223204 and FKM ETP 70 514405 we present two high performance materials answering to all Electrolyser stack cell requirements. Our PFAS free EPDM 70 559748 presents a combination of strong KOH resistance, gas tightness and insulating properties.



ERIKS recommended materials

Elastomer/compound assortment



Electrolysers

Our solutions are designed for electrolysers where a combination of gas tightness, effective sealing properties, dielectric performance, and a wide temperature range is essential for sealing stack cells. Tailored towards sealing KOH, H₂ and O₂!

- **Extruded rubber profiles**
- **O-rings**
- **Rubber custom (drawing) parts**

ERIKS compound # Material

559748/559756 EPDM 80
559777 EPDM 70
223204 FEPDM 75
514405 FKM 75

High-pressure applications

These products are suitable for compressed hydrogen storage in tanks operating at 350 bar and 700 bar, as well as compressors for mobile hydrogen applications.

- **O-rings**
- **Rubber custom parts**
- **Multi-piece double acting compact piston/rod seals****

ERIKS compound # Material

866506 HNBR 70
886245 HNBR 90
514940 FKM 90
559037 EPDM 90

Low-pressure applications

Designed for use in gas installations, gas equipment and appliances. Our solutions effectively limit hydrogen permeation through sealing materials. All products are tested in accordance with DVGW ZP5101 standards

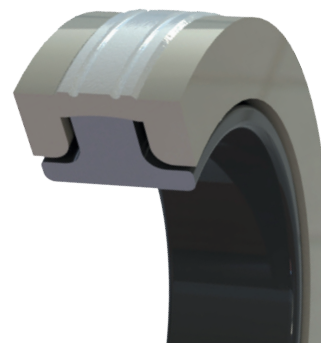
- **O-rings**
- **Rubber customer (drawing) parts**

ERIKS compound # Material

514774 FKM 75
900742 VAMAC 60
886264 HNBR 60

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** Depending on the construction, always consult the chemical resistance chart or reach out to our Application Engineers for advice.*



ERIKS recommended materials

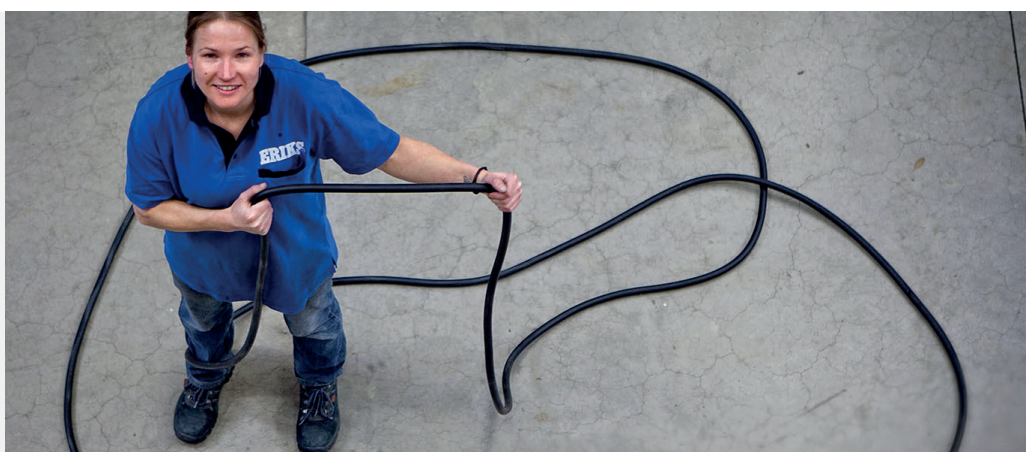
Elastomer/compound assortment



Examples of Stack Elastomer Seals

Rubber products made from Electrolyser stack sealing materials offering

- Standard moulded O-rings, according all available standards or custom sizes
- Cosm-O-Rings (Large O-rings in sizes without limits)
- Large gaskets (profile rings, or custom parts)



Gaskets

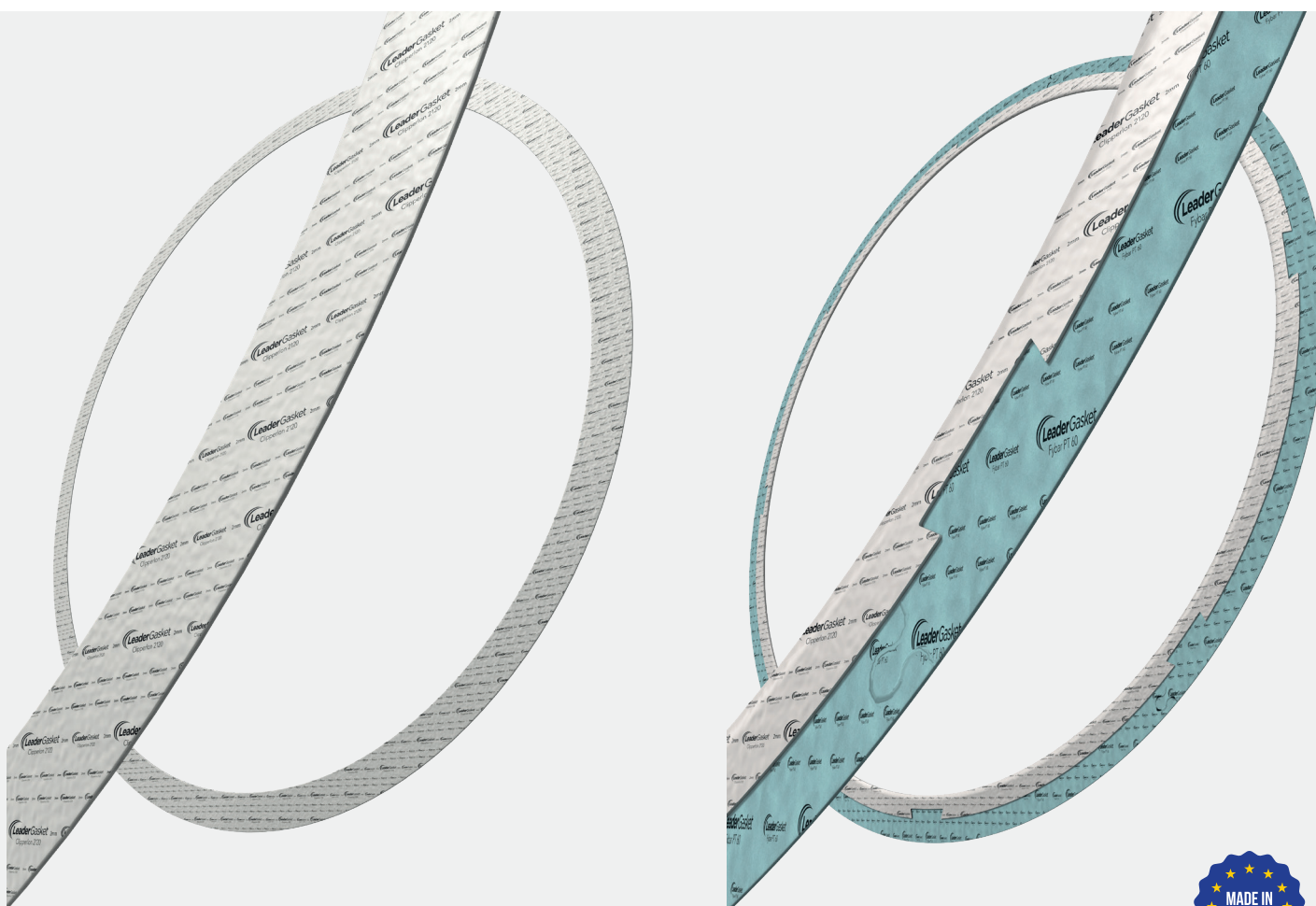
for Electrolysers



ERIKS develops, engineers and manufactures your tailor made gasket solutions for Electrolyser Stacks

Design examples of Stack Gaskets:

- PTFE modified One Piece or Welded
- Combi Gasket Fibre/modified PTFE
- Combi Gasket Fibre/Engineered Elastomer



Gaskets

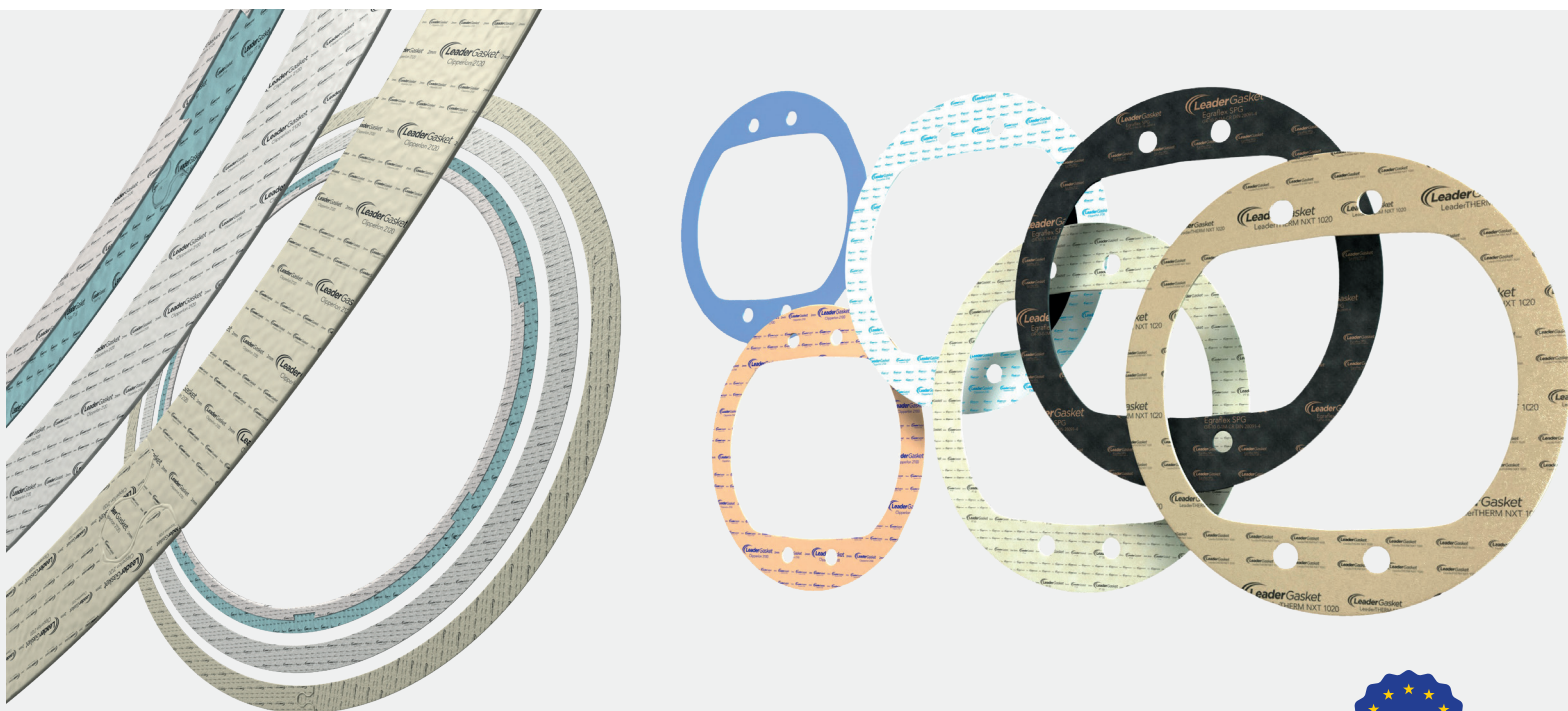
for Electrolysers



As a manufacturer of modified PTFE, we can manufacture materials to customer specifications

Advantages

- Modified PTFE compounds to customer/application design material values
 - > PQR
 - > QS min
 - > Leakage
 - > Modulus of elasticity
 - > Compression values (curves)
- Special Design Welding for large dimensions
- Efficient manufacturing and less waste material by unique patented production process
- PFAS free alternatives available



Gaskets

Modified PTFE



Materials	Engineered PTFE gasket material family offering exceptional chemical resistance.
Variants	Clipperlon style 2100, Clipperlon style 2110, Clipperlon style 2120 (biaxially oriented filled sheet version) and 2130 (100% pure expanded sheet version).
Pressure	Up till 55 bar
Temperature	Up to 275°C
Features	Suitable for hydrogen electrolyzers and fuel cells, offering exceptional chemical resistance and stability under low seating stresses. Big size gasket in welded construction. Special compound grades with improved PQR and Leakage Characteristics possible.

Applications

- Flanged pipes (DIN/ANSI)
- Special dimensions
- Electrolysers (Stack and standard gaskets) (chemical resistance)
- Glass, ceramic, or plastic flanges (2110)
- Enamelled pipe flanges (2110)
- Heat exchangers
- Equipment
- Low surface stress sealing (2110)
- Highly aggressive media
- Full pH range
- Damaged sealing surfaces (2110/2130)
- Pressure-sensitive components



Gaskets

Fibre sheet

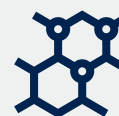


Materials	Rubber bonded NBR Fibre sheet gasket with fillers suitable for moderate chemical and temperature applications
Variants	Leader Gasket PT 20/30/50/60 Fibersheet
Pressure	Up till 55 bar
Temperature	Up to 250°C
Features	Upgraded variants based on EPDM/CSM elastomer with upgraded chemical and temperature resistance and PFAS free

Applications

- Stack gaskets in combination of PTFE
- Stand pipe gasket EN/ASME
- Tongue/groove construction
- Special dimensions
- Boilers
- Pressure testing

Also available
variants:



**PFAS
free**



Gaskets

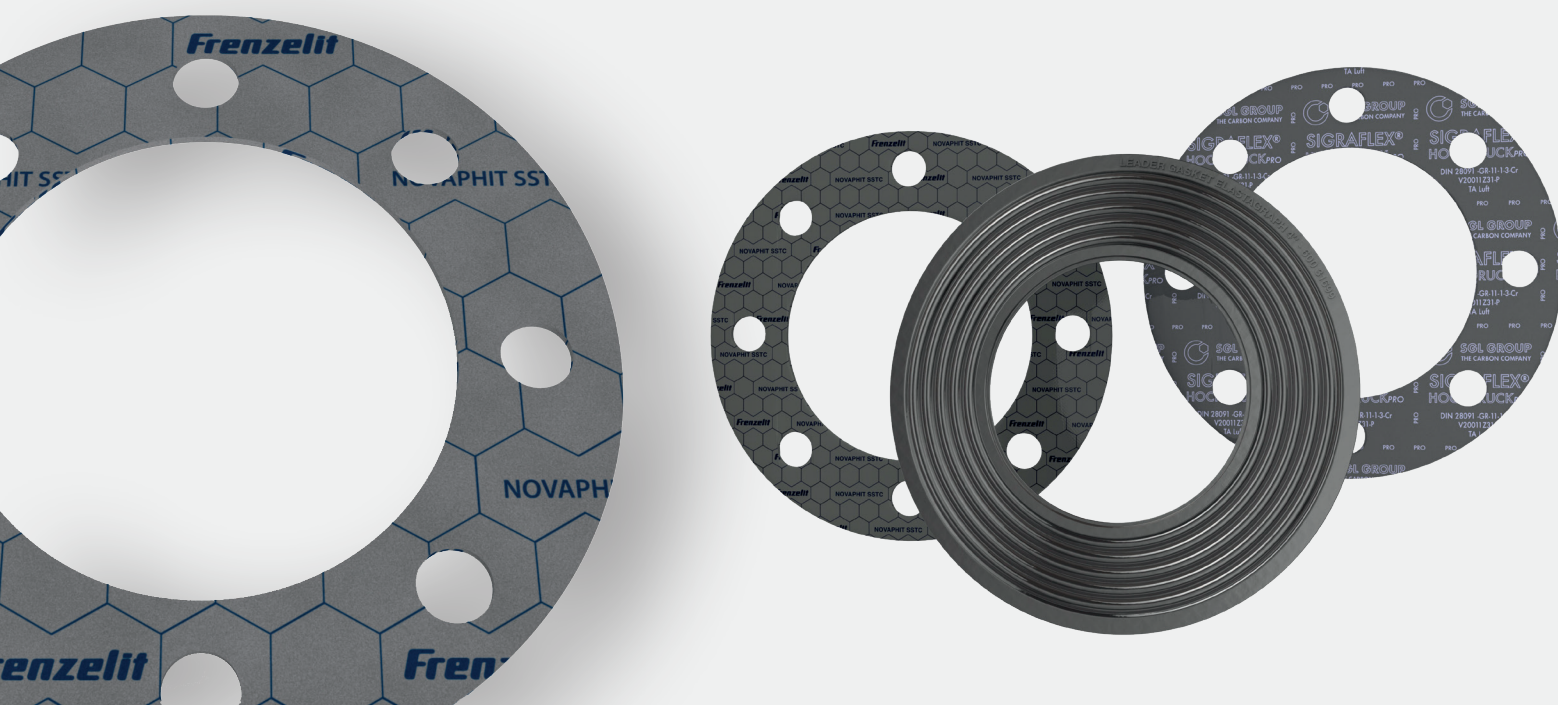
Reinforced graphite



Materials	Metal re-inforced (SS316/NR perforated or foil) Graphite sheet material with purity 98%; high thermal and chemical and thermal resistance
Variants	Leader Gasket Egraflex/Elastagraph
Pressure	Up till 75 bar
Temperature	Up to 500°C
Advantages	Elastagraph Emission Reducing Gaskets by unique configuration

Applications

- Emission reduction (Elastagraph)
- Flanged pipes (DIN/ASME)
- Special sizes and configurations
- Equipment/heat exchangers
- High chemical resistance
- Compensates for flange irregularities



Gaskets

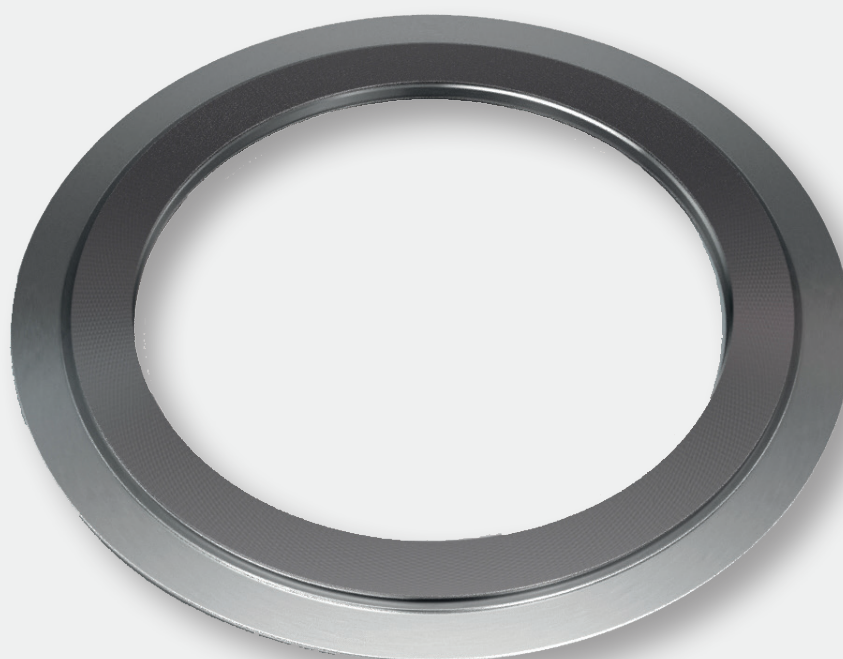
Semi-metallic, LeaderKAMM Kammprofile



Variants	LeaderKAMM Kammprofile gaskets with outer and/or inner ring(s) made from various grades of steel alloy depending on the application. Types KB/KV.
Temperature Range	-250°C to +260°C (PTFE insert or layer) -250°C to +500°C (graphite insert or layer) -250°C to +1000°C (LeaderTHERM NXT insert or layer)
Pressure	Up to >200 bar
Features	High resilience, fire-safe, ideal for high-pressure applications, pipelines, heat exchangers, and high-pressure equipment.

Applications

- Flanged pipes (DIN/ANSI)
- Grooved flanges
- Heat exchangers
- Equipment
- Boilers
- High pressure applications



Gaskets

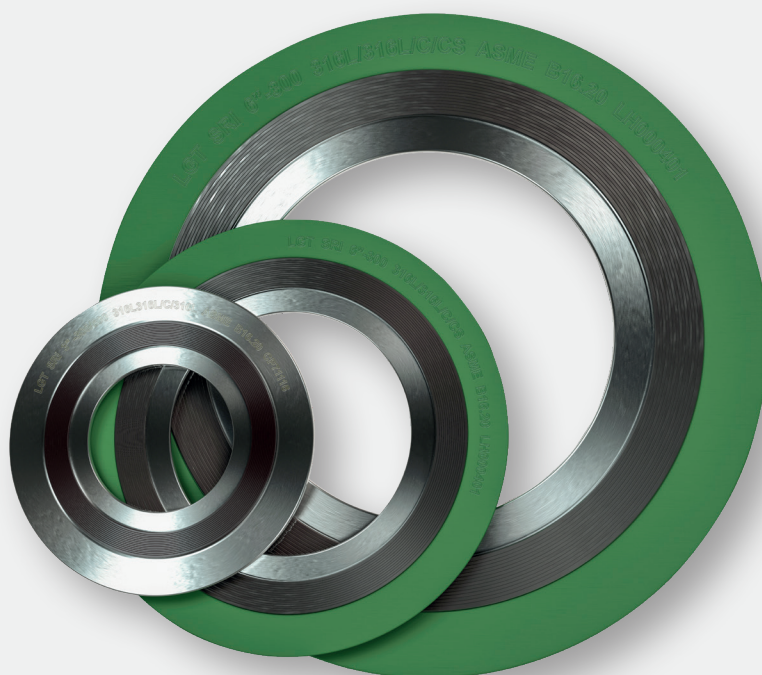
Semi-metallic, Leader Spiral Wound



Variants	Spiral wound gasket with outer and/or inner ring[s] made from various grades of steel alloy depending on the application. Types SR/SRI.
Temperature Range	-250°C to +260°C (PTFE filler) -250°C to +500°C (graphite filler) -250°C to +1000°C (LeaderTHERM NXT insert or layer)
Advantages	Blow out safe gasket with good recovery, exceptional for heavy-duty applications, optimal for high-temperature and high-pressure environments, special flange constructions. (e)PFE filler in combination Alloy 904 H inner ring regularly used in a potassium hydroxide environment.

Applications

- Piping (EN/ASME)
- In the event of temperature fluctuations
- Tongue and groove construction
- Heat exchangers
- Pressurised equipment
- Steam boilers
- High pressures
- Blow-out resistant



Gaskets

LeaderTHERM NXT, high temperature



Engineered phlogopite material with high temperature and chemical resistance, suitable for use up to 1000°C. Electrically and thermally insulating, with low weight loss, it is ideal for extreme conditions and provides the lowest leakage performance in its category. LeaderTHERM NXT is available in sheet and foil form [style 1020], as a layer material on LeaderKAM [Kammprofile] style 1010, and as a filler material for Leader SRI/SRI spiral wound gaskets [style 1000].

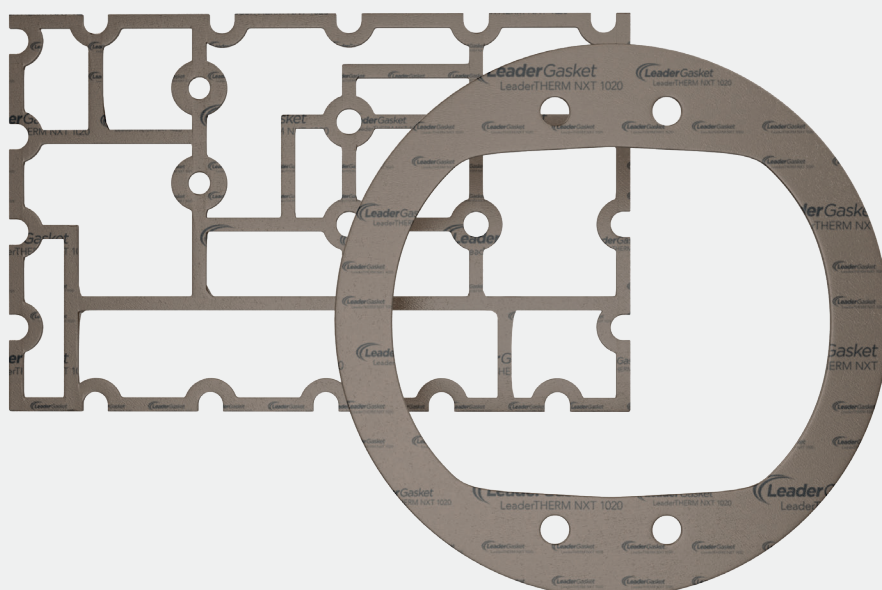
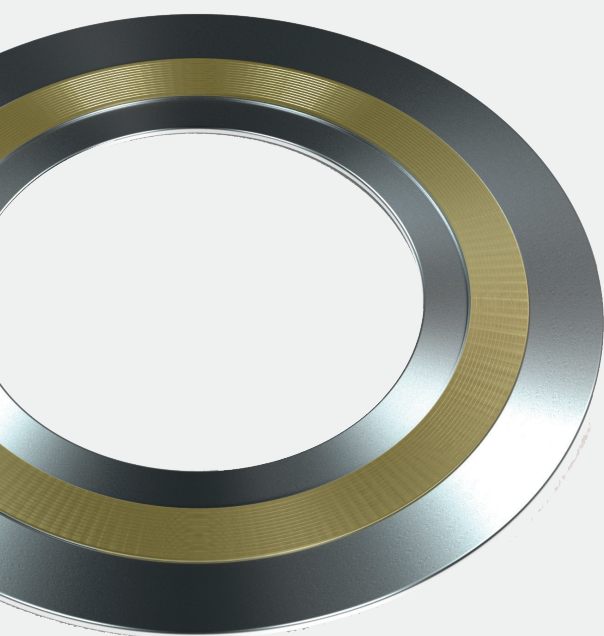
Sealing

characteristics

- Extreme temperature gasket material
- Effective tightness even at high-temperatures (up to 1000°C/1832°F) and pressures
- Low weight loss in extreme conditions
- Oxidation-resistant
- PFAS/PTFE-free
- Sustainable solution that uses organic ingredients
- Outstanding chemical resistance
- Electrically and thermal insulating
- Non-ageing

Applications

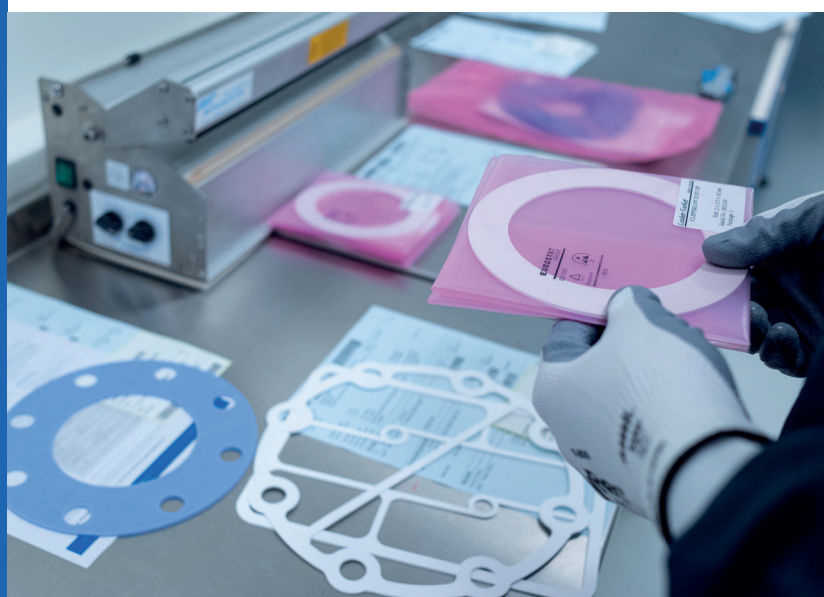
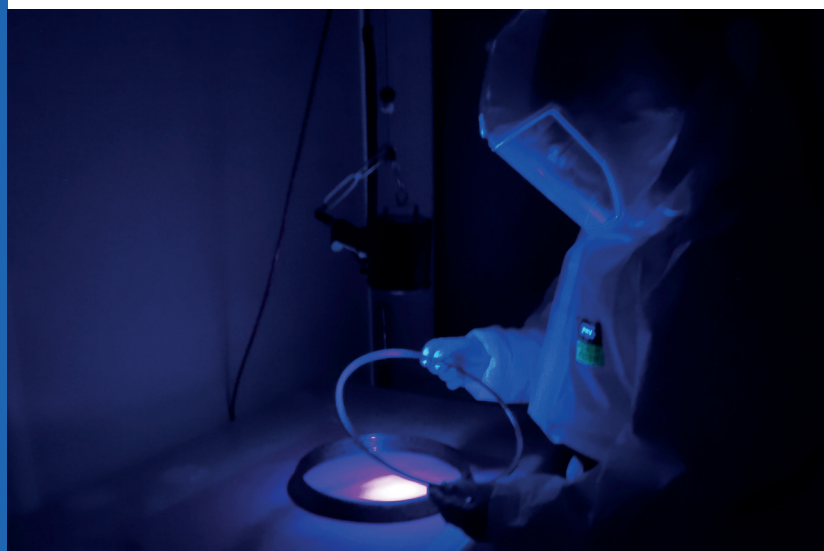
- High temp. Electrolysers (e.g. SOEC)
- Turbo chargers
- Electrical isolation
- High temperature gas boilers and equipment
- NOx containing applications
- Power generation
- Blow-out resistance (1000 SPW and 1010KAMM)



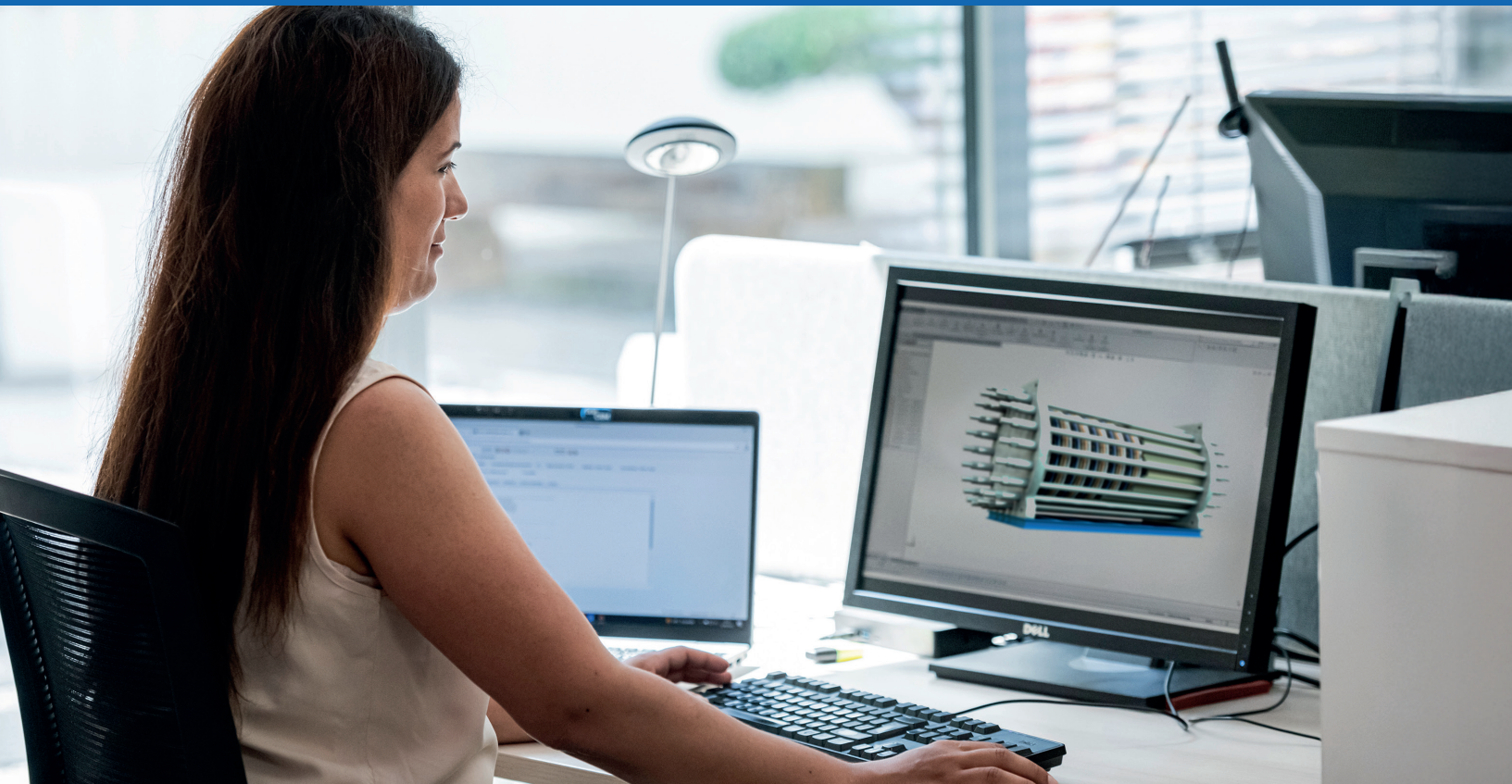
Special service oxygen-cleaned manufacturing and packaging

For oxygen service, in accordance with BAM regulations, dust- and grease-free manufacturing and packaging is often required. ERIKS and Leader Gasket offer this service where the gaskets are manufactured, inspected by blacklight, and packaged in a specially conditioned environment. Additionally, double packaging with a clear 'oxygen service' label guarantees correct handling for the required applications.

For elastomeric products with high cleanliness requirements, ERIKS produces products in Clean Manufacturing Facilities, according to strict protocols for the high-end industries. These products are subjected to various postproduction cleanroom processes to guaranty lowest outgassing or presence of particles. Subsequently these products are cleanroom double packed.



Partner with ERIKS for advanced hydrogen sealing solutions



At ERIKS, we support your energy transition projects with specialised expertise in the rapidly evolving field of hydrogen, produced through electrolysis technology. We provide tailored solutions using our in-depth knowledge of sealing, polymer, and gasketing technologies.

Here is how we can help

- PFAS-free elastomer compounds and high-performance gasket materials
- Gasket and torque value calculations for optimal performance
- Large size gaskets in one piece construction
- Condition monitoring of seating stresses and leakage risks
- Tightening and leakage performance analysis using FMEA



Sealing & Polymer

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Get in touch

and learn how ERIKS
can optimise your
hydrogen applications

Any questions? Our Application Engineers are here to assist you in finding the right seal or gasket for your specific application. They focus on essential factors like safety, leak resistance, durability, and ease of installation.

Interested in
learning more?



Making industry
perform better

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