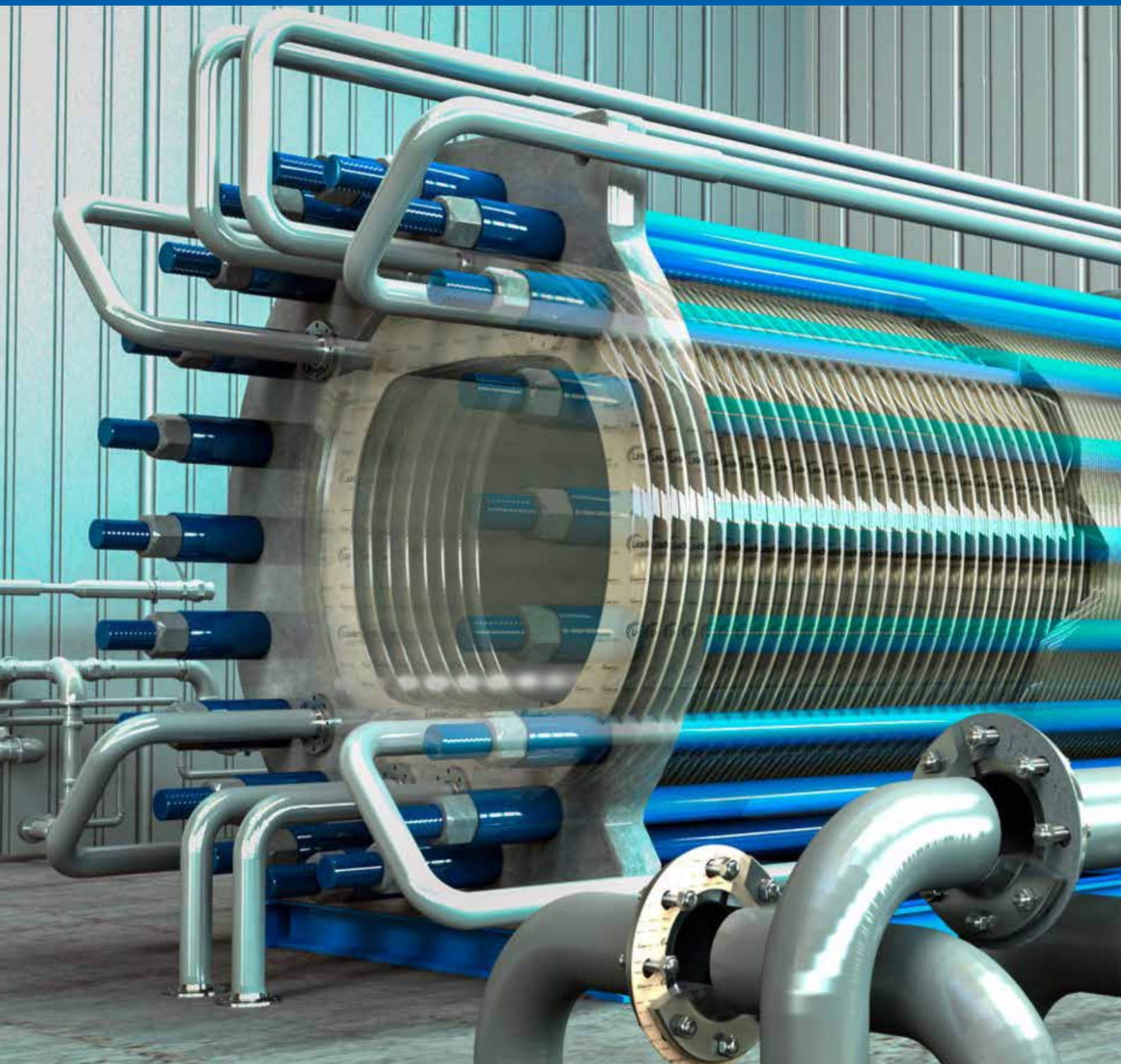
ERIKS

Suitable
for hydrogen

Flange gasket solutions for hydrogen applications



Overview

ERIKS Flange Gaskets Division offers a range of products that can be used for hydrogen applications. Our range spans from standardised flanges to custom solutions for electrolyser and fuel cells, vessels, and heat exchangers.

Our selection featured below highlights leading materials and designs from our flange gaskets range that are hydrogen-compatible. 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, 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, 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 core value proposition for hydrogen solutions

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.

Proven specialism

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

Our product portfolio includes:

- Gaskets
- Flow Control
- Sealing & Polymer
- Industrial Hoses
- Engineered Plastics
- Hydraulics

Efficient delivery

By leveraging advanced digital tools and supply chain solutions, we make sure you get the right products at the right time and place to keep your operations running smoothly.

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.

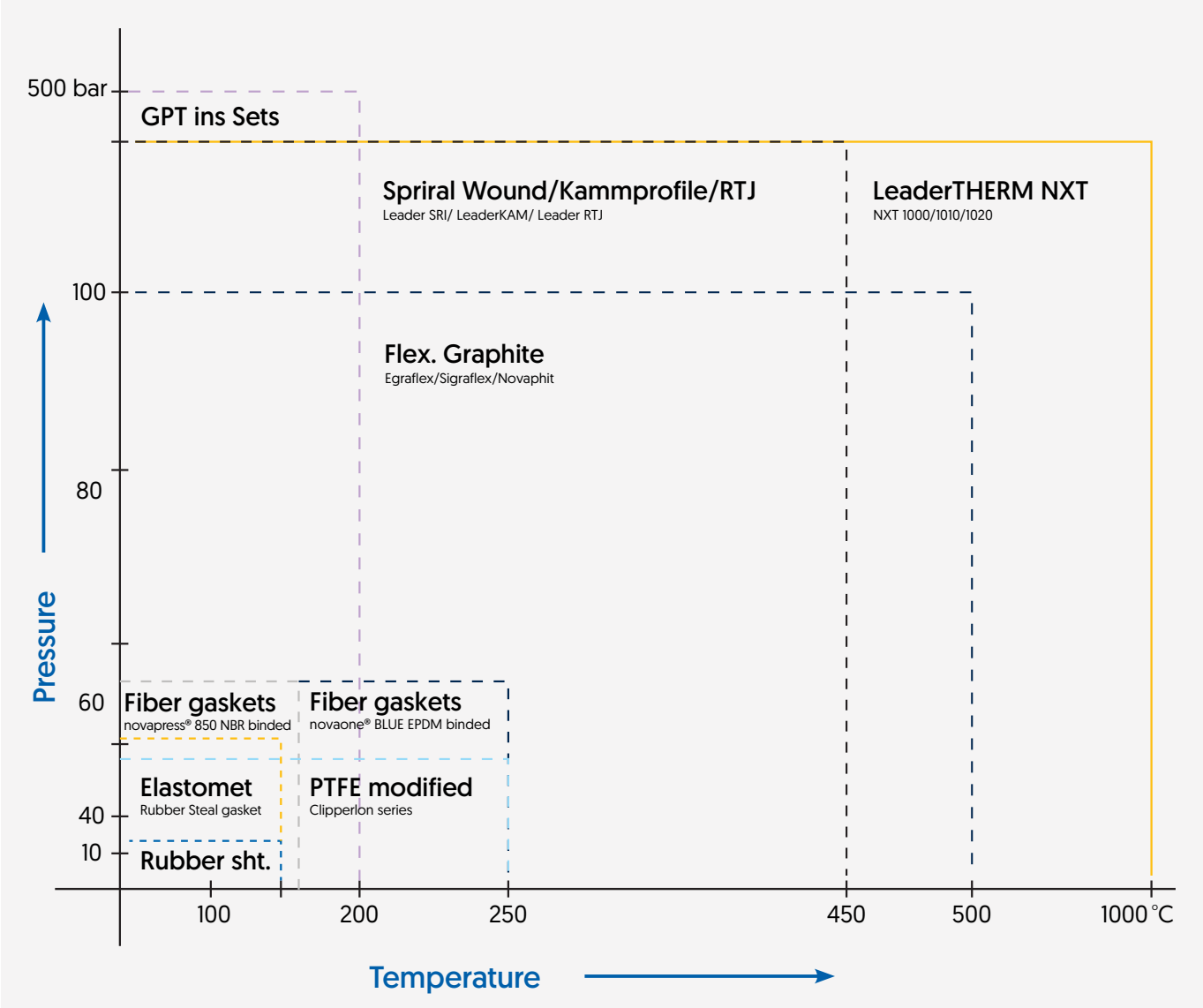
Our recommended flange gasket assortment for hydrogen environments

Application temperature / pressure (PT) advice table*

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

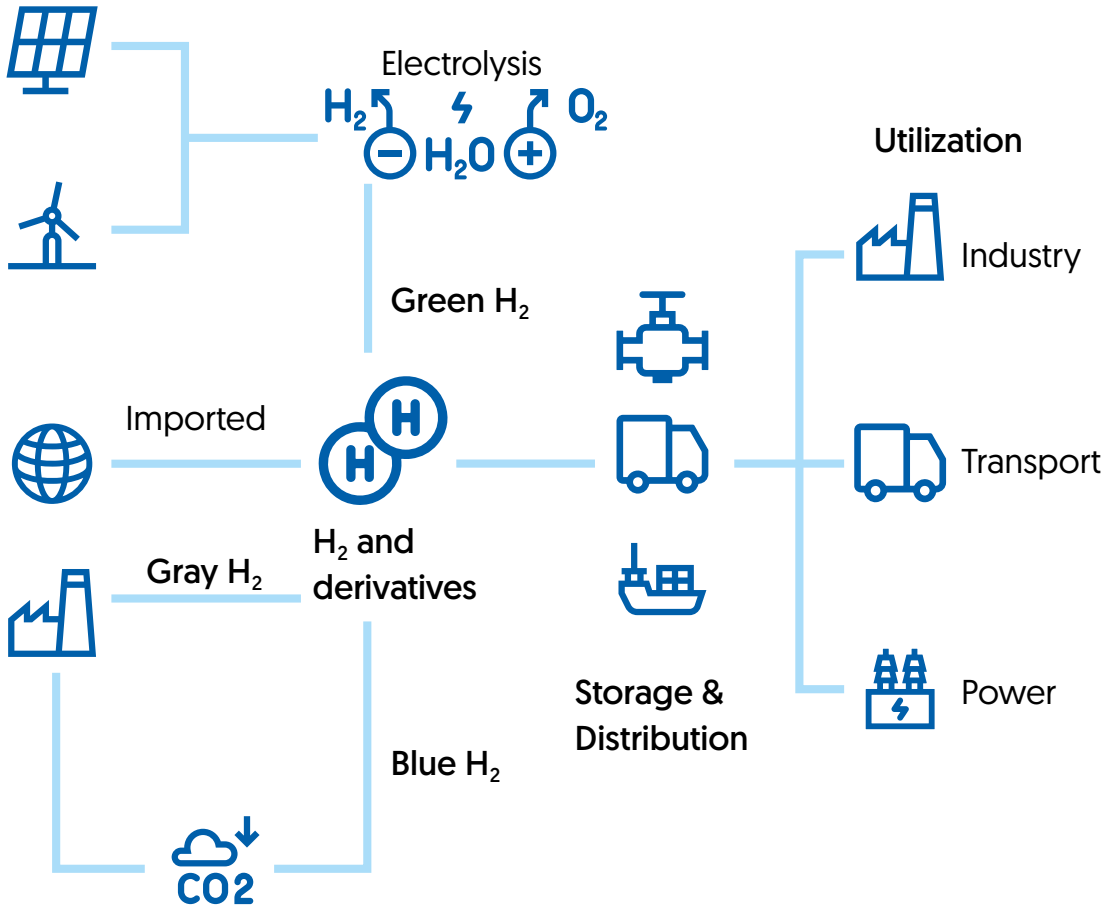
Application recommendation graph

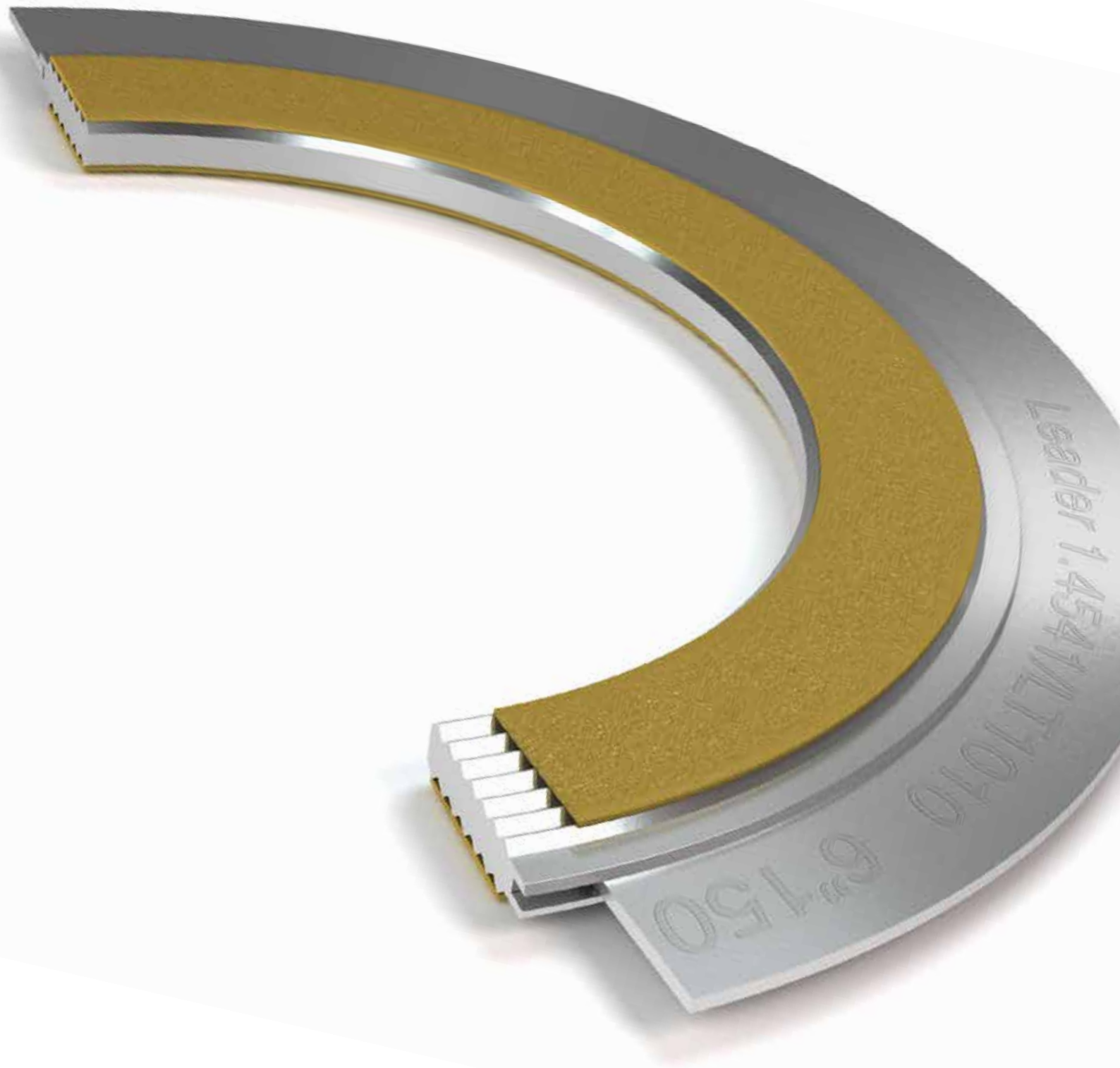


* Depending on the construction, always consult the chemical resistance chart or reach out to our Application Engineers for advice.

ERIKS flange gasket solutions for the entire hydrogen value chain

ERIKS flange gaskets are essential for companies at all stages of the hydrogen and derivatives value chain. They are suitable for OEMs specialising in hydrogen production equipment, companies operating this machinery, and those involved in the safe storage, distribution, and usage of these energy carriers — whether in industry, transport solutions, or power generation.




Leader 1.4541/AISI 321 6x150

Elastomer rubber sheet gaskets

Suitable for hydrogen

1.

Materials:
EPDM, Neoprene (CR), NBR, FKM/Viton®, Silicone.

Pressure:
Up to 10 bar (flanged connection)

Temperature:
Up to 150°C depending on compound

Features:
Available in various hardnesses. Always check chemical and temperature resistance to ensure the correct choice of elastomer or compound for your application. Our specialists are available to support you in this.

Applications:
- Stand pipe gasket
- EN/ASME/special dimensions
- Steel and plastic piping
- Equipment and electrolysers
- Low seating stress
- Good adaptability to uneven surfaces

Fibre sheet gaskets

Suitable for hydrogen

2a.

Materials:
Frenzelit Novapress style 880
High-quality aramid fibers, special fillers bonded with NBR showing excellent combination of adaptability and mechanical stability with moderate chemical resistance.

Pressure:
Up to 100 bar

Temperature:
Up to 200°C

Features:
Very high adaptability to flange unevenness. Extra features available with special inner eyelet technology for outstanding low-leakage performance on standard pipe gaskets.

Applications:
- Stand pipe gasket EN/ASME
- Tongue/groove construction
- Special dimensions
- Boilers
- Pressure testing

PFAS free

Alternative quality Novapress 850 NBR binded fibre gasket material, offering even better leakage properties for non-standard flange applications, such as gas meters and transmission boxes.

Fibre sheet gaskets

Suitable for hydrogen

2b.

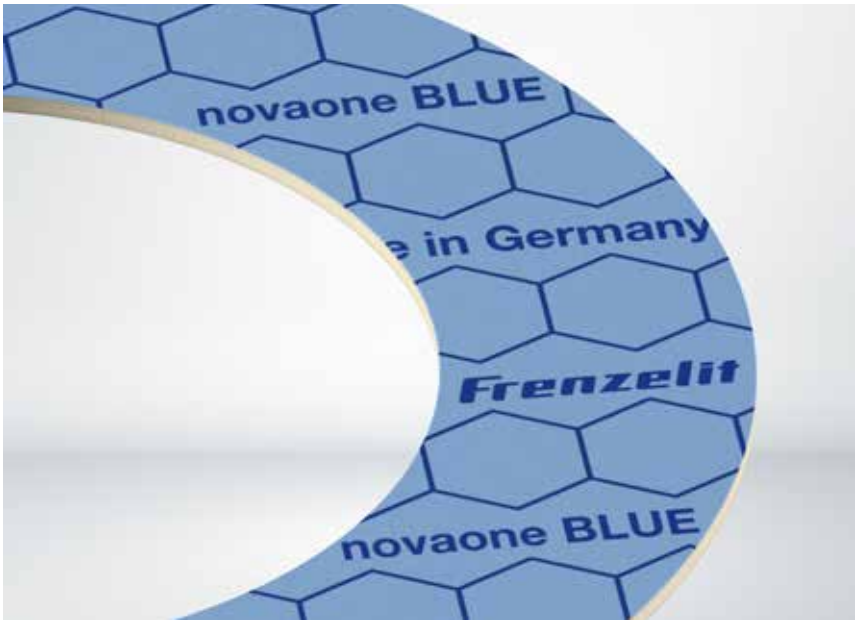
Materials:
Frenzelit novaone® BLUE fiber gasket material based on high-performance fibers and functional fillers based on EPDM.

Pressure:
Up to 60 bar

Temperature:
Up to 250°C

Features:
Due to the EPDM binder, this fibre sheet offers improved chemical and temperature resistance compared to traditional materials for enhanced chemical applications, including a 40% potassium hydroxide solution at 100°C in alkaline electrolysis processes. Using special welding techniques, large gasket sizes are possible, up to 3 metres in diameter. Equipped with Gasket Code Technology for complete traceability.

Applications:
- Stand pipe gasket EN/ASME
- Male/female flange construction
- Electrolysers (resistant against potassium hydroxide)
- Special dimensions
- Boilers
- Pressure testing



PFAS free

Modified PTFE gaskets

Suitable
for hydrogen

3.

Applications:
- Flanged pipes (DIN/ANSI)
- Special dimensions
- Electrolysers (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

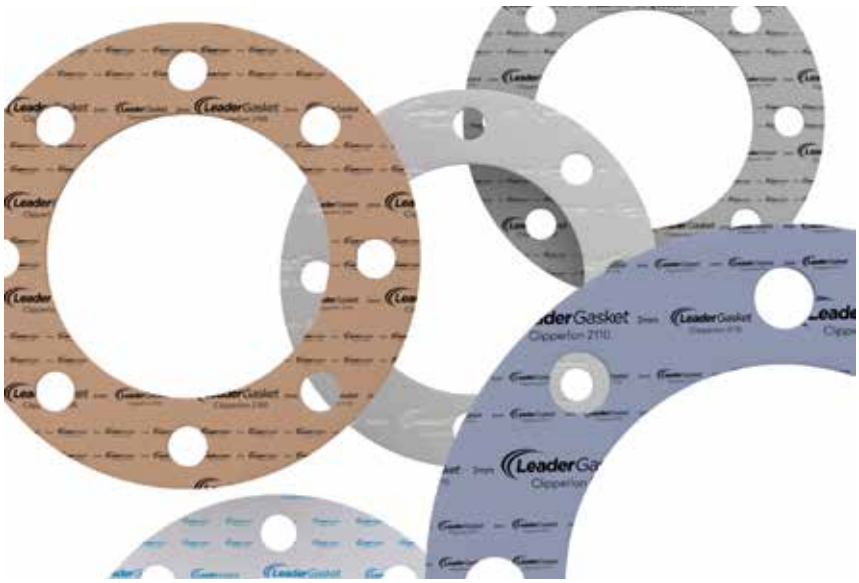
Materials:
Engineered PTFE gasket material family offering exceptional chemical resistance.

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 electrolysers and fuel cells, offering exceptional chemical resistance and stability under low seating stresses.



Reinforced graphite gaskets

Suitable for hydrogen

4.

Temperature Range:
-200°C to 550°C

Pressure:
Up till 200 bar

Characteristics:

- High flexibility
- Minimal hot creep
- Suitable for varying temperatures and pressures

Preferred assortment graphite gaskets in hydrogen applications:

- SGL Sigraflex HD
- Frenzelit Novaphit SSTC Graphite
- Leader Elastagraph

Applications:

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

Semi-metallic gaskets: Kammprofile gasket

Suitable for hydrogen

5a.

Types:
LeaderKAMM and Kammprofile gaskets

Temperature Range:
- -250°C to +450°C (graphite insert or layer)
- -250°C to +230°C (PTFE insert or layer)
- -250°C to +1000°C (LeaderTHERM NXT insert or layer)

Pressure:
Up to >200 bar

Benefits:
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

Semi metallic gasket: Leader Spiral Wound Gasket Types SR/SRI

Suitable for hydrogen

5b.

Variants:
Spiral wound gasket with outer and or inner ring made out of various grades of steel alloy depending on the application.

Temperature Range:
- -250°C to +450°C (graphite filler)
- -250°C to +230°C (PTFE filler)
- -250°C to +1100°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.

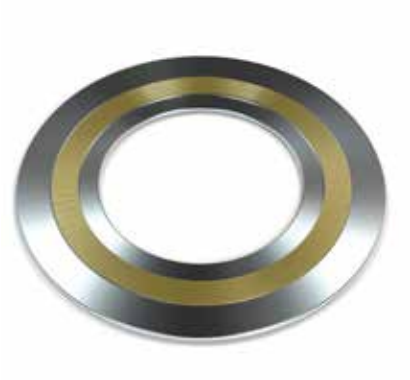
(e)PFE filler in combination Alloy 904 H inner ring regularly used in a potassium hydroxide environment.

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

LeaderTHERM NXT high temperature sealing

Suitable for hydrogen

6.



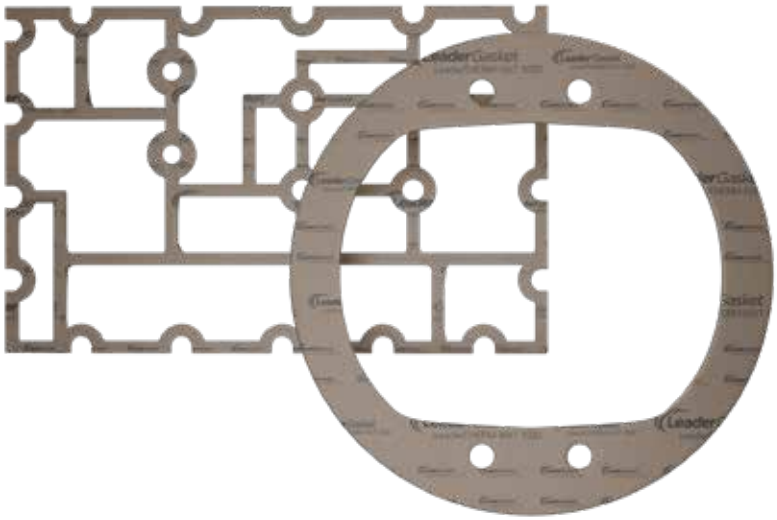
Engineered phlogopite material with high temperature and chemical resistance, suitable for use up to 1000°C. Electrically and thermally insulating, with low weight loss, it is ideal for extreme conditions and provides the lowest leakage performance in its category. LeaderTHERM NXT is available in sheet 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 insolating
- Non-ageing

Applications:

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



Metal gaskets

Suitable
for hydrogen

7.

Variants:
Ring type joints (Leader RTJ), metal spring C-seals, and O-rings.

Temperature Range:
-100°C to +650°C (RTJ), diverse for metal seals

Pressure:
>400 bar (RTJ), extremely high for metal seals

Advantages:
Precision-machined, exceptional for heavy-duty applications, optimal for high-temperature and high-pressure environments, special flange constructions.

Applications:
- Piping (RTJ)
- Special flange contruction (C seals Metal OR)
- Very high pressures
- Refinery
- Oil and gas exploration
- Petrochemicals
- High-pressure valves
- Gas/hydrogen compressors

Special service oxygen-cleaned manufacturing and packaging

Suitable for hydrogen

8.

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.

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's 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

Get in touch to learn how ERIKS can optimise your hydrogen applications.

Any questions? Our Application Engineers are here to assist you in selecting the right gasket for your specific application. They focus on essential factors like safety, leak resistance, durability, and ease of installation. Reach out to us at **gaskets@eriks.nl**

Visit the Dutch Hydrogen website:
eriks.nl/nl/industrieen/energie/waterstof/

ERIKS
Nederland

Visiting address

Toermalijnstraat 5

1812 RL Alkmaar

The Netherlands

Contact

T +31 88 855 85 58

E info@eriks.nl

Follow ERIKS online:

www.eriks.nl/socialmedia

www.eriks.nl

shop.eriks.nl

Let’s make industry work better

ERIKS