



HYDROGEN

ADVANCED SOLUTIONS

Sealing solutions for hydrogen transport, storage, and production.

Developed for the diffusion characteristics of hydrogen and extreme operating environments. With verified performance data, standards-compliant design, and project-specific certification—engineered for long-term tightness and reliable connections in H₂-systems.

**THE SMART
GASKETEERS**

IDT-GASKETS.COM



HYDROGEN PRODUCTION

Proven alkaline electrolysis (AEL) and pioneering PEM (proton exchange membrane) electrolysis are two groundbreaking technologies in the dynamic field of hydrogen production.

AEL operates at pressures of up to 40 bar and temperatures between 40 and 90 °C. Plants often have a diameter of >1.5 m. PEM electrolyzers operate at pressures of up to 40 bar and temperatures between 20 and 100 °C.



To seal the individual cells of alkali electrolyzers, we recommend gaskets made of Unifluor® 7553—a high-quality biaxially orientated PTFE filled with barium sulfate. Its high temperature and chemical resistance guarantee reliable sealing and high functionality. Gasket characteristics with [DIN EN 13555] enable calculations in accordance with DIN EN 1591-1, so that strength and tightness verification can be carried out for all common thicknesses.

For modern PEM systems, we offer customized solutions based on PTFE, modified PTFE, PFA, or FKM. These materials are characterized by an excellent property profile, very good chemical resistance, and wide operating temperature ranges.

Therefore, they are particularly suitable for a reliable sealing performance and high functionality of PEM electrolyzers.

The individual cell designs of the manufacturers always require precise seal designs. Our expertise in research and development and our in-house engineering enable us to carefully analyze and solve individual problems.

With the possibility of a universal PFAS restrictions, we are simultaneously researching solutions using fluorine-free polymers.



HYDROGEN IS THE FUTURE— WE KEEP IT SEALED.

SPECIFY PRODUCTS. SECURE CONNECTIONS. REDUCE RISKS.

Efficiency, safety, and sustainability—the benchmarks of the hydrogen economy. Our gaskets ensure leak-tight performance throughout hydrogen production, transport and storage.

With our LE-Safe gaskets, risks are under control because you reliably control oxygen as a potential source of danger during electrolysis.

HYDROGEN TRANSPORT & STORAGE

We recommend our Advanced Products for flange connections in hydrogen transport and storage as well as plant peripherals in hydrogen production. These include high-quality, long-term stable gaskets that are not prone to embrittlement and already take oxygen into account as a potential hazard in hydrogen production.

In addition to suitability for use in hydrogen atmosphere, our Advanced Products feature standard and H₂ gasket characteristics in accordance with DIN EN 13555.

OUR H₂ PRODUCT RANGE



KAMMPROFILE GASKET LE-SAFE

[WS 1.4404 | KD01, KD20, KD30]

Gasket made of a serrated stainless steel core and a graphite layer on both sides, bonded using the adhesive-free LE-SAFE process. Requiring low minimum gasket stress. Suitable for very high surface stress and pressure limits as well as extreme operating conditions [e.g., cryogenic, oxygen, hydrogen]. Test report from the Federal Institute for Materials Research and Testing [BAM] available.

Additional oxygen compatible materials are available [e.g., 1.4828, Hastelloy, etc.].



CORRUGATED METAL GASKET LE-SAFE

[WS 1.4404 | WD20]

Gasket made of a corrugated stainless steel core and a graphite layer on both sides, bonded using the adhesive-free LE-SAFE technology and a stainless steel inner eyelet. High tightness, excellent adaptability and compensating capacity even at low surface stresses. The inner eyelet prevents contamination of the operating medium.

Suitable for very high pressure limits and extreme operating conditions [e.g., cryogenic, oxygen, hydrogen]. Test report from the Federal Institute for Materials Research and Testing [BAM] available.

Additional oxygen compatible materials are available [e.g., 1.4828, Hastelloy, etc.].



ENVELOPE GASKET

[WS 1.4404 | ED01]

Gasket made of a corrugated stainless steel core with an envelope and internal diffusion barrier made of modified PTFE.

Combines the outstanding material properties of PTFE with the excellent properties of the corrugated stainless steel core. Technical tightness is achieved even at low surface stress.



FLAT GASKET UNIFLUOR®

[WS 7745 | FD11]

Optimized ePTFE gasket with a homogeneous inner eyelet made of modified PTFE and a highly compressed centering edge. For stress-sensitive connections with extremely low leakage rates at extremely low surface stresses and the highest requirements for product purity.



FLAT GASKET SIGRAFLEX® MF

[WS 3870 | FD10]

Graphite gasket with stainless steel foil on both sides, thin PTFE layer, and inner eyelet. Excellent sealing properties, suitable alternative to standard PTFE gaskets.

Meets demanding leakage requirements.



FLAT GASKET SIGRAFLEX® HOCHDRUCK PRO

[WS 3888 | FD01]

Graphite gasket with adhesive-free stainless steel foil inserts. Robust, high strength, and easy to handle. Meets demanding leakage requirements.



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