

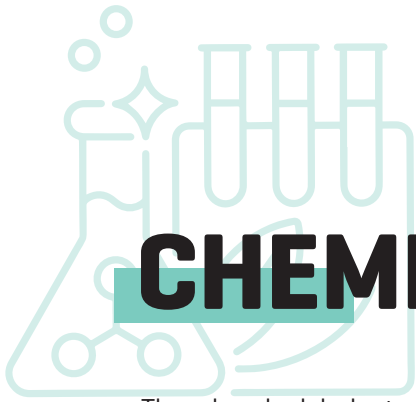


# ADVANCED SOLUTIONS



Advanced Solutions are products that provide the greatest benefit for reliable safety and efficiency in critical applications.

In developing these solutions, we take an approach that integrates customer requirements, exceptional quality, and application-driven innovation.



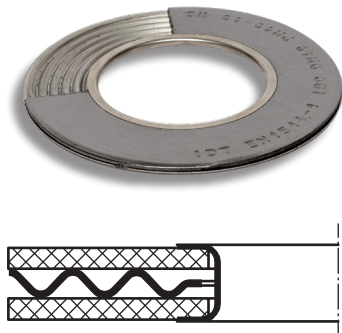
# CHEMICAL INDUSTRY

The chemical industry is expert in using diverse manufacturing processes to transform natural resources into products and materials that deliver better solutions for customers and consumers. Its current challenge is the development of sustainable energy resources and raw material supplies. Sealing solutions must reliably meet the varied and growing requirements of the chemical industry. Process efficiency and dependable plant availability are just as important as sustainability and safety. Gaskets from our Advanced Solutions portfolio have been developed precisely for this purpose. They combine proven standards and innovative technologies while allowing a high level of flexibility.

## ADVANCED TECHNOLOGY

The high-performance LE-SAFE gaskets have a metallic carrier and a soft layer of expanded pure graphite. Both components are held together by an adhesive-free bond, which is unlike conventional semi-metallic gaskets. This new technology was developed to minimize the risks adhesives pose to plant safety. For use in oxygen-carrying equipment and components, we follow a defined O<sub>2</sub>-Clean process. In our production process we only use graphite materials from individual batches that have been tested by the German Federal Institute for Materials Research and Testing [BAM]. In our cleanroom facility, we check for contamination under strictly controlled environmental conditions. The products then undergo cleaning, final inspection, and packaging, with O<sub>2</sub>-usage clearly marked on very single package. This eliminates and reduces contamination while significantly reducing the risk of unexpected fires and ensuring the complete traceability of the products.

### Corrugated Metal gasket [LE-SAFE], adhesive-free // profile: WD20 // material code: 1.4571/WS 3803



The corrugated stainless steel ring on this gasket is bonded to graphite layers on both sides without the use of adhesive. The gasket is also edged with an inner eyelet. The corrugated geometry of the carrier causes a high compression of the non-metallic material at the crests, a low diffusion cross-section, increased blow-out resistance and improved stability and handling. The gasket provides a tight seal even at low seating stresses. The capacity for adjustment and compensation is high. The pitch of the crests, which is reliably 3 mm across all nominal widths with our optimized production technology, is crucial for the optimum functionality of the gasket. Proof of the required leakage rate according to TA Luft [2021] can be provided by means of a calculation according to DIN EN 1591-1. Application parameters are from -200°C to 450°C [up to 550°C for brief periods] and max. 160 bar.

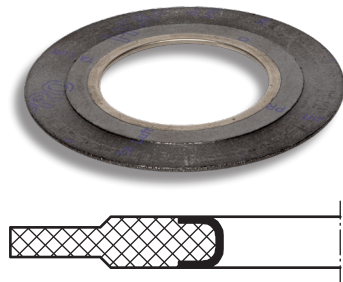
### Kammprofile gasket [LE-SAFE], adhesive-free // various profiles, with/without centering ring



The grooved stainless steel carrier on this gasket is bonded to graphite layers on both sides without the use of adhesive. The profile of the core is optimally matched with the thickness of the graphite layer. Kammprofile gaskets have a low minimum seating stress but are also suitable for high seating stresses. Proof of the required leakage rate according to TA Luft [2021] can be provided by means of a calculation according to DIN EN 1591-1. The application parameters are -200°C to 450°C [up to 550°C for brief periods] and max. 400 bar.

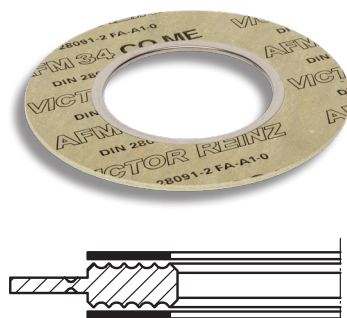
## ADVANCED STANDARD

### SIGRAFLEX® HochdruckPRO flat gasket // profile: FD11 // material code: WS 3888



This high-quality graphite flat gasket has proven itself in apparatus and pipeline applications. It has a sandwich-like and is pre-compressed in the outer area. Due to the reduced surface area, lower surface pressures are required during installation. Proof of the required leakage rate according to TA Luft [2021] can be provided by means of a calculation according to DIN EN 1591-1. Application parameters are from -200°C to 450°C [up to 550°C for brief periods] and max. 250 bar.

### Aramid Fiber flat gasket AFM 34 CO ME® // profile: FD10 // material code: WS 3133



This special aramid fiber gasket features an innovative coating [CO] to optimize surface adaptation and is manufactured in combination with a metallic edging [ME] made of 0.10 mm thick stainless steel 1.4571 and a special flanging process. As a result, this blow-out-proof flat gasket made of AFM 34 CO ME® is characterized by significantly improved micro-adaptation and leakage, offers maximum gas tightness even at low surface pressures and thereby meets even the most stringent legal leakage specifications. Proof of the required leakage rate according to TA Luft [2021] can be provided by means of a calculation according to DIN EN 1591-1. Application parameters are from -50°C to 150°C [up to 200°C for brief periods] and max. 100 bar.

## **OPERATING DATA INFORMATION**

The pressure specifications are to be seen as orientation values. It is advisable to verify the functionality of the flange connection by means of mathematical proof, e.g.: according to DIN EN 1591-1.

Semi-metallic gasket combinations can generally be used up to 450 °C without any problems. At temperatures >450°C, however, the combustion of the graphite accelerates exponentially. They can usually be used up to 550 °C, but we then recommend consulting your gasket manufacturer.