

ALKY-ONE® Gasket

Product Information Bulletin



The ALKY-ONE® gasket is specifically designed to reduce your flange replacement costs, reduce your leakage rate, and enhance the safety of your workers.

THE PROBLEM:

Anhydrous Hydrogen Fluoride (AHF) is used as a chemical catalyst in the reaction that combines C3 and C4 olefins and isobutane to produce alkylates, an important component of gasoline. AHF readily reacts with any available moisture to create the corrosive and toxic Hydrofluoric (HF) Acid.

This material is so hazardous, OSHA lists the Permissible Exposure Limit (PEL) to 3-ppm averaged over an 8-hour shift, while the National Institute for Occupational Safety and Health (NIOSH) lists the IDLH (Immediately Dangerous to Life or Health) concentration at 30-ppm. This hazard level arguably makes HF Acid alkylation units the single most dangerous sealing application in modern refining.

Given this hazard, the first requirement of a gasket for HF Acid units must be the ability to provide a tight, positive seal to prevent the leakage of HF Acid.

THE SOLUTION:

A year-long research and development project established a menu of “ideal” characteristics for HF Acid gaskets by drawing upon years of experience, trial and error, refinement, and mathematical analysis. The result is the ALKY-ONE® gasket, which is uniquely designed for HF Acid alkylation. Subsequent comparison testing to other gaskets confirms the ALKY-ONE® gasket:

- Offers five times as much deformation of the barrier pillow, giving better conformance to the flanges to eliminate flange corrosion.
- Achieves full compression with only half the bolt load required by other gaskets.
- Has ten years of field usage, proving dramatic improvement in flange protection and leak prevention.

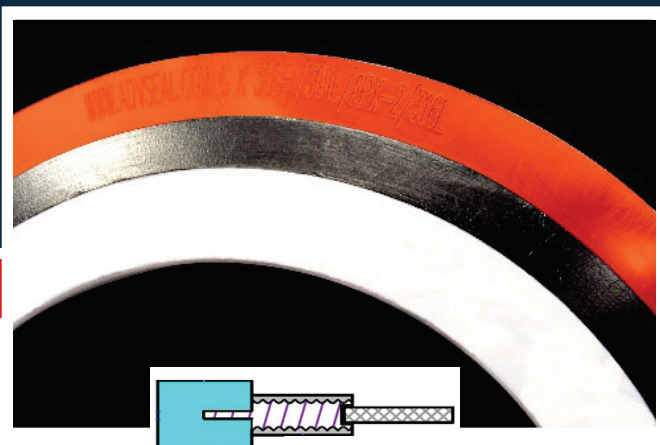
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Advanced Sealing

Flange Erosion and Corrosion in Hydrofluoric Service

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100% expanded PTFE Barrier Pillow prevents chemical intrusion and pooling.

SOLUTION FOR: Flange Erosion and Corrosion in Hydrofluoric Service⁽¹⁾

LGG Industrial is proud to present Advanced Sealing's latest breakthrough in sealing technology for alkylation units - the ALKY-ONE® gasket. This gasket's unique, patented features ensure that it will seal quicker and tighter than any other alky-service gasket. The unique, integrally attached Barrier Pillow, made from 100% expanded PTFE, prevents acid intrusion and pooling on flange faces, reducing or eliminating the need to replace eroded flanges.

PROPRIETARY SEALING ELEMENT FEATURES:

- Standard Monel 400 construction.
- Other metallurgy per customer request.
- KAG® design with the lowest recorded leak rate.⁽²⁾
- SGL Sigraflex APX2 flexible graphite facings with the lowest oxidation rates.⁽³⁾

- Normal service temperature ranges from cryogenic to 550°F.
- Proven Fire-Safe to API 6FB by Yarmouth Research Lab.⁽²⁾
- Available for ASME B16.5 and ASME B16.47 flanges.
- Attachment ring assures permanent retention of the Barrier Pillow.

NOW AVAILABLE: ALKY-ONE® Heat Exchanger Gaskets

Flange not using ALKY-ONE®



Severe Flange Corrosion

Flange using the ALKY-ONE®



No Corrosion with ALKY-ONE®



ISO 9001:2015 Certified

⁽¹⁾ ALKY-ONE® gaskets are covered by U.S. Patent Nos. 10,774,963, 10,161,549, and 9,388,924

⁽²⁾ Yarmouth Research - Document available on request

⁽³⁾ Polycarbon - Document available on request

The properties and application parameters shown throughout this data sheet are typical. Your specific application should not be undertaken without independent study and evaluation for suitability. For specific application recommendations consult with LGG Industrial. Failure to select proper sealing products could result in property damage and/or serious personal injury.



For solutions that impact your plant,
contact LGG Industrial or your nearest
LGG Industrial location.