

## AT ASHCROFT, WE UNDERSTAND THE DANGERS OF ACID LEAKS.

That is why we have developed the Acid Leak Detection (ALD) assembly. ALD is a special yellow coating that changes to **red** once it is exposed to acids with a pH of  $\leq 3.0$ , providing visual indication of a leak of process media.

For years, our CASE™ team has helped customers troubleshoot critical applications such as HF Alky. While dangerous acids have been safely used in industrial applications for many years, specifying proper pressure instrumentation for these locations requires unique expertise.

### HF Alky Case Study

**Products:** Media corroding Monel gauge system

**Failure Mode:** HF Alky (hydrofluoric acid)

**Operating Pressure:** 60, 100, 300 & 600 psi

#### The Problem:

Hydrogen Fluoride (HF) is used as a catalyst in the alkylation process - taking short chain olefins (propylene/buylene) and combining with isobutane (all gasses) into larger molecules suitable for motor fuels. This "Alkylate" is used as a blending stock for high octane gasolines. When released in the atmosphere, HF rapidly forms dense vapor clouds that can cause severe burns and injuries to eyes, nose, throat and respiratory system. Therefore, process containment is vital. While Monel offers acceptable resistance to HF, the gauge alone provides only single containment of the process media. Several refineries have contacted our CASE™ team to mitigate this issue. In our most recent case study, we have helped a refinery identify a double containment solution.

#### The Solutions:

The CASE™ team specified a 510 Monel® diaphragm seal welded to a Duragauge® Pressure Gauge. The assembly was heat treated to reduce the risk of stress corrosion cracking in HF Alky. A diaphragm seal also provides double containment. To visually differentiate these assemblies, the gauge dials were marked "For use on HF Alky Only". Additionally, to provide further protection to plant operators, the ALD assembly was recommended. The diaphragm seal is coated with a yellow acid detection paint. If acid should escape from the seal, it will turn **red**. The lower portion of the gauge is also coated with ALD to indicate any leakage in the bourdon tube or welded joints of the gauge system.

**WITH YEARS OF EXPERIENCE, OUR DEDICATED ENGINEERS AND IN-HOUSE METALLURGIST CAN HELP YOU FIND THE BEST INSTRUMENTATION FOR YOUR MOST CHALLENGING APPLICATIONS. CONTACT OUR CASE™ TEAM AT [CASE@ASHCROFT.COM](mailto:CASE@ASHCROFT.COM) OR CALL US AT 203-385-0635**

## Acid Leak Detection (ALD) Assembly

### FEATURES

- Acid sensing component (yellow in photo turns **red** when exposed to acid with a pH ≤ 3)
- Dual containment for safety
- Available with pressure ranges to 10,000 psi
- Gauge welded to seal standard
- Available with Halocarbon<sup>®</sup> fill for oxidizing acids
- Optional orange or yellow gauge case for identification
- Available with Silicone-free **PLUS!**<sup>™</sup> Performance
- Custom dials available

### SPECIFICATIONS

Accuracy:	±1.0% of span (1259, 1279) or ±1.5% of span (T6500)
Process Connection Size:	½ NPT
Case Style:	Solid front with pressure relief back
Pointer:	Micrometer, adjustable, aluminum
Weather Protection:	Hermetically sealed: IP66
Diaphragm Seal Type:	510 Threaded, DF Flanged
Window Material:	Shatterproof glass, acrylic (OPT.)
Tamper Proof Design:	Diaphragm seal welded to gauge socket
Pressure Rating (MAWP):	Vac. to 1,500 psi @ 100°F: (STD.) 1,500 to 10,000 psi @ 100°F: (OPT.)

### WETTED COMPONENTS

Diaphragm:	316L SS, Hastelloy <sup>®</sup> C-276, Monel <sup>®</sup>
Lower Housing: (510 only)	316L SS, Hastelloy <sup>®</sup> C-276, Monel <sup>®</sup>

### NON-WETTED COMPONENTS

Top Housing:	316L SS, Monel <sup>®</sup> (510 only)
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Consult material selector/corrosion guide at [www.ashcroft.com](http://www.ashcroft.com) for acid compatibility



## Acid Leak Detection (ALD) Assembly

ORDERING CODE	Example:	45	ALD	1	S	1P	P	4	G	100#	-XOC
<b>Dial Size</b>											
45 - 4½" Dial (available only with cases 1 and 2)		45									
10 - 100mm Dial (available only with case 3)											
<b>Assembly</b>											
ALD - Acid leak detection			ALD								
<b>Case</b>											
1 - 1279 (available only with dial size 45)				1							
2 - 1259 (available only with dial size 45)											
3 - T6500 (available only with dial size 100mm)											
<b>Bourdon Tube &amp; Gauge Process Connection</b>											
S - 316 SS					S						
P - Monel <sup>®</sup>											
<b>Diaphragm Seal and Material</b>											
1S (510) - 316L SS											
1P (510) - Monel <sup>®</sup> (available only with (P-Monel <sup>®</sup> ) lower housing)						1P					
1H (510) - Hastelloy <sup>®</sup> C-276											
2S (DF) - 316L SS											
2P (DF) - Monel <sup>®</sup>											
2H (DF) - Hastelloy <sup>®</sup> C-276											
2U (DF) - Tantalum											
<b>Lower Housing Material (510 seal only)</b>											
N - No lower housing for DF seal											
S - 316L											
P - Monel <sup>®</sup> (available only with (P-Monel <sup>®</sup> ) diaphragm material)							P				
H - Hastelloy <sup>®</sup> C-276 510 seal											
<b>Process Connection Size and Type</b>											
04 - ½ NPT Male											
1A - 1" 150RF Flange DF seal											
1B - 1" 300RF Flange DF seal											
1C - 1" 600RF Flange DF seal											
1D - 1.5" 150RF Flange DF seal											
1E - 1.5" 300RF Flange DF seal											
1F - 1.5" 600RF Flange DF seal											
2A - 2" 150RF Flange DF seal											
2B - 2" 300RF Flange DF seal											
2C - 2" 600RF Flange DF seal											
2D - 2" 1500RF Flange DF seal											
3A - 3" 150RF Flange DF seal											
3B - 2" 300RF Flange DF seal											
3C - 2" 600RF Flange DF seal											
3D - 2" 900RF Flange DF seal											
3E - 2" 1500RF Flange DF seal											
<b>System Fill Fluid</b>											
G - Glycerin									G		
S - Silicone											
H - Halocarbon <sup>®</sup>											
<b>Range (see data sheet)</b>											
100# - 100 psi										100#	
<b>Options (if in choosing an option(s) must include an "X")</b>											
HP - High pressure seal option for ranges 2,000 psi to 10,000 psi											X
LL - <i>PLUS!</i> <sup>™</sup> Performance (1279, T6500 only)											
NZ - Silicone free <i>PLUS!</i> <sup>™</sup> (1279, T6500 only)											
OC - Orange case (available only with case 1)											OC
PD - Acrylic window (recommended for HF applications)											
YC - Yellow case (available only with case 1)											