

# APPLICATION NOTE



**ProCeas®**

THE NEW  
GENERATION OF GAS  
ANALYZERS FOR  
CHLORINE PRODUCTION

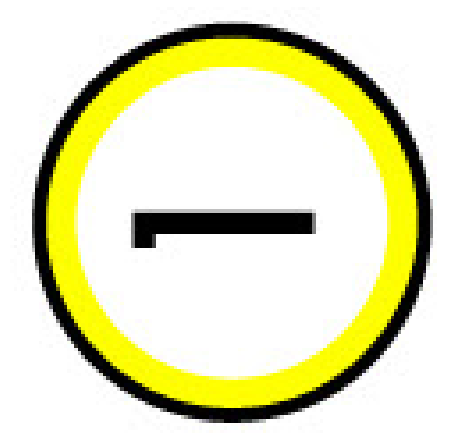
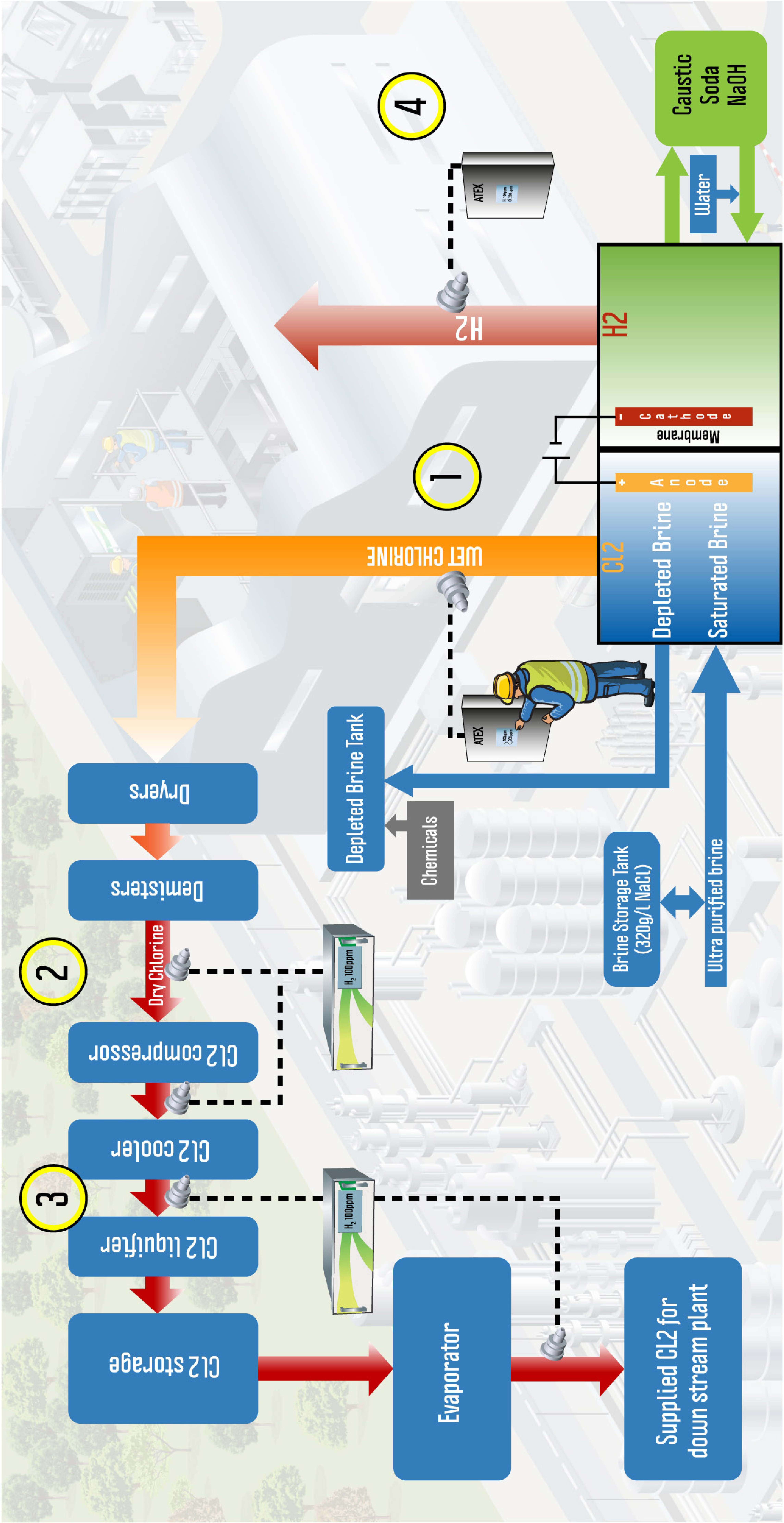
 Accurate &  
low detection limit

 Fast response time &  
direct measurement

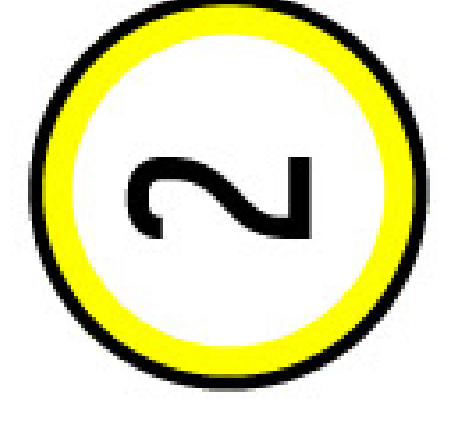
 Low maintenance &  
no drift

 For wet & dry chlorine

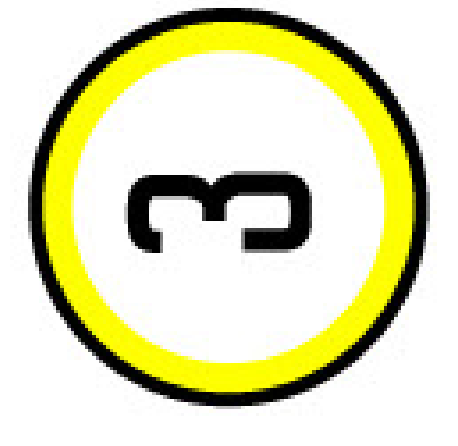




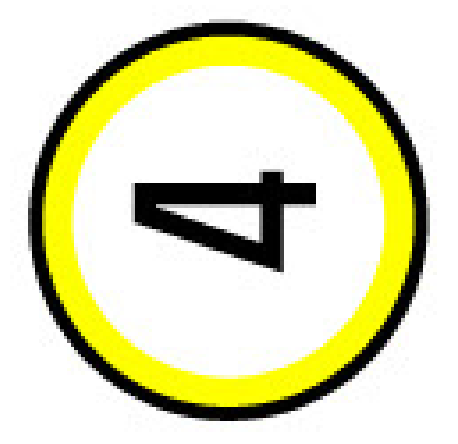
1 ProCeas® H<sub>2</sub>, O<sub>2</sub> in wet chlorine



2 ProCeas® H<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub>O in dry chlorine



3 ProCeas® H<sub>2</sub>, O<sub>2</sub>, CO<sub>2</sub> in dry chlorine



4 ProCeas® H<sub>2</sub> impurities



## WHY DO YOU NEED TO CONTROL TRACES IN CHLORINE PRODUCTION?

At the different steps of the chlorine alkali process, some gas components can be found at trace level. Their concentrations can fluctuate over time and are depending on process parameters. Species like O<sub>2</sub>, CO<sub>2</sub>, H<sub>2</sub>O are tracked in the chlorine gas matrix to insure the efficiency of the production process, and H<sub>2</sub> is measured to avoid the explosion of the installation.



## PROCEAS® GAS ANALYZER TECHNOLOGIES

### Optical Feedback Cavity Enhanced Absorption Spectroscopy

The ProCeeas® is an enhanced TDL analyzer. It uses the patented OFCEAS technique, based on extractive absorption spectroscopy. This laser based technology is able to measure directly gases down to ppb levels of concentration, with an unforeseen quality of measurement in terms of accuracy and repeatability.

OFCEAS is also the only laser technique to measure directly hydrogen down to 3ppm, giving a real time measurement of H<sub>2</sub> at startup with up to 10 measures per second.

### Unique sampling system

ProCeeas® is combined with a specific sampling system using only components compatible with the aggressive chlorine gas. Using no stainless-steel tubes and no pump. But composed of tubing and connections in PVDF and PFA. Our long-term experience in the industry allowed us to optimize our sampling to measure in dry and wet chlorine.

### Self-calibration

ProCeeas® has an integrated self-calibration of the measurement system, featuring no zero and span drift over time. ProCeeas® is able to analyze a large range of gases with limited maintenance costs.



## ProCeas® KEY FEATURES

- Accurate and low detection limit (3ppm for H<sub>2</sub>)
- Sampling system adapted to dry and wet chlorine
- No Zero drift and no Span drift
- No regular calibration required
- Multigas analyser possibilities (H<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub>O, CO<sub>2</sub>)
- Fast response time (T10-90 starting from 3 seconds)
- Direct measurements of H<sub>2</sub>
- ATEX enclosures available

## ProCeas® GAS ANALYZER IN CHLORINE

Is a complete pre-calibrated single or multicomponent (H<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub>O, CO<sub>2</sub>, etc.) laser infrared spectrometer for measurement of process gases.

IMPURITIES	RANGE <sup>A</sup>	LOD <sup>B</sup>
H <sub>2</sub>	0-5%	3ppm
O <sub>2</sub>	0-5%	1ppm
CO <sub>2</sub>	0-5%	1ppm
H <sub>2</sub> O	0-1000ppm	10ppb

<sup>A</sup> adjustable range on request

<sup>B</sup> limit of detection 3 sigma 60 seconds

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