

Measuring Chlorine Dioxide

Applied Analytics Application Note No. AN-041



Application Summary

Analytes: **ClO₂** (chlorine dioxide)

Detection Technology: **Model OMA-300 Process Analyzer**

Process Stream: **chlorine dioxide**

Introduction

Chlorine dioxide is an extremely common bleaching agent in the pulp and paper world. Since ClO₂ becomes explosive when exposed to light or heat, it has to be produced on site at the paper mill. The on-site generator produces ClO₂ from sodium chlorite or sodium chlorate, and the gas is then sent to a water absorption tower to create the bleaching agent solution.

The cost of this process can be dramatically reduced if the generator is operated to produce the correct amount of ClO₂ for the bleaching agent without overkill and if the bleaching agent verifiably contains the right ClO₂ concentration for proper bleaching. Additionally, the tail gas from the production process needs to be monitored to ensure that the facility is not releasing chlorine dioxide into the atmosphere.

The OMA system provides continuous online measurement of ClO₂ concentration at each of these sampling points. This solid state, fast-response instrument provides a more elegant and more powerful solution than traditional analyzers for this specific application. With robust multiplexing capabilities, a single OMA unit can be configured to monitor all of these sampling points.

Measurements Performed

- » ClO₂ concentration in bleaching agent solution
- » ClO₂ concentration in ClO₂ generator product gas
- » ClO₂ concentration in tail gas from generator vent gas scrubber

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Further Reading

Subject	Location
OMA-300 Process Analyzer Data sheet	http://www.a-a-inc.com/documents/AA_DS001A_OMA300.pdf
Advantage of Collateral Data Technical Note	http://www.a-a-inc.com/documents/AA_TN-202_CollateralData.pdf



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