

Measuring Sodium Hypochlorite/Sodium Bisulfite in Water Effluent

Applied Analytics Application Note No. AN-058

Application Summary

Analytes:	Sodium Hypochlorite (NaOCl), Sodium Bisulfite (NaHSO₃)
Detector:	OMA-300 Process Analyzer
Process Stream:	Water Effluent from Waste-water Treatment
Typical Measurement Range:	0-200 ppm Sodium Hypochlorite, 0-200 ppm Sodium Bisulfite

Introduction

Most of the water that is used by residential houses, industries, and businesses cannot be released into the environment without being treated first. Mother nature can cope with minute quantities of waste and pollution in our wastewater but would be unable to handle the incredibly large amount of wastewater we produce every day if it were not treated first. Before wastewater can be released into the environment, it must be treated at a water treatment plant in order to decrease the amount of pollutants in the water to an amount that nature can handle.

Disinfection by chlorine and chlorine containing compounds is one of the most common forms of wastewater treatment. Chlorine or chlorine containing compounds (such as sodium hypochlorite) are added to wastewater as a treatment for contaminants. The chlorination process does however lead to the formation of unwanted chlorine-based byproducts in the water. After the water is chlorinated, these unwanted chlorine-based byproducts are removed through a dechlorination process. Sodium bisulfite is a commonly used chlorine scavenger used for the dichlorination process.

The OMA-300 Process Analyzer can be used to monitor the levels of both sodium hypochlorite (NaClO) and sodium bisulfite (NaHSO₃) in the wastewater during the dechlorination process. Through this measurement, plants can optimize the amount of sodium bisulfite that is added during dechlorination. The OMA-300 Process Analyzer continuously outputs sodium hypochlorite and sodium bisulfite readings, providing new measurements every 5 seconds.

System Benefits

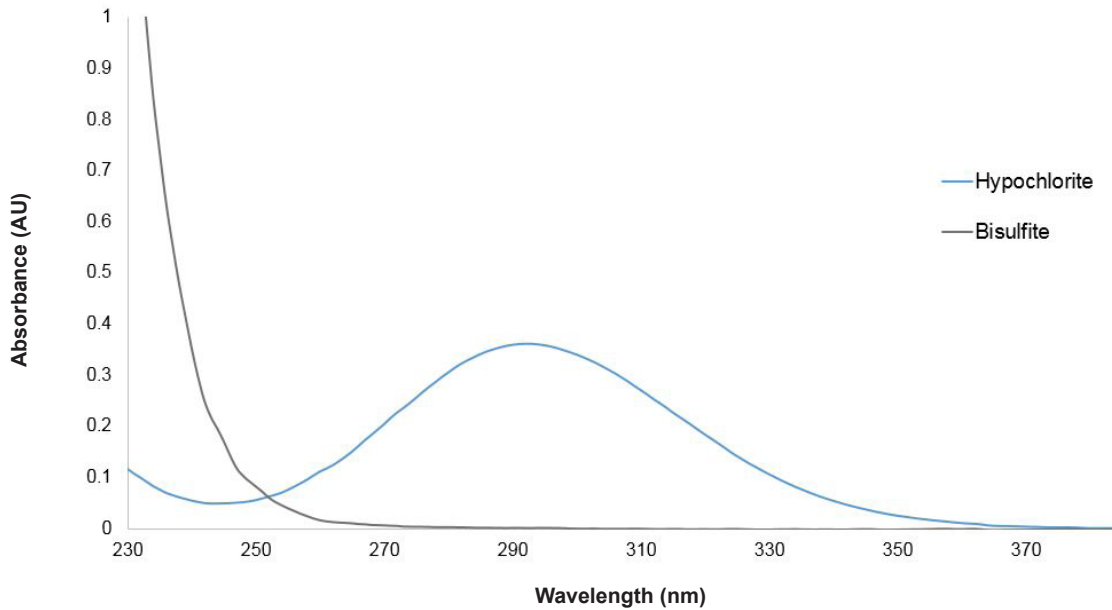
- » Continuously measures sodium hypochlorite and sodium bisulfite levels in wastewater streams using UV-Vis spectrophotometer
- » Totally solid-state build with no moving parts — modern design for low maintenance
- » Additional software benches for up to 4 chemical analytes
- » Ultra-safe fiber optic design with no sample gas inside analyzer unit — world's safest solution for this application

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Absorbance Spectra of Sodium Hypochlorite and Sodium Bisulfite



Further Reading

Subject	Location
OMA-300 H2S Analyzer Data sheet	https://aai.solutions/documents/AA_DS001B_OMA300H2S.pdf
Human Machine Interface Data sheet	https://aai.solutions/documents/AA_DS202A_HMI.pdf
nova II™ Spectrophotometer [UV-Vis model] Data Sheet	https://aai.solutions/documents/AA_DS201A_novall.pdf



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