

# **Effect of Bromide and Ammonia on the Formation of Ozonation and Chlorination by-Products**

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摘要.

## **Abstract**

The objective of this investigation was performed to assess the effects of bromide and ammonia concentrations on the formation of ozonation and chlorination by-products including bromate, trihalomethanes (THMs), and haloacetic acid (HAAs). The results of this investigation reveal that increasing bromide, ozone dosage, and decreasing ammonia concentrations would enhance the bromate formation. Bromate formation was inhibited by ammonia significantly when the bromide concentration was introduced above 1.0 mg/L. Moreover, the range of percent of bromide incorporation for bromate was between 1.2 and 2.3%. Bromide would generate more bromide-containing species of THMs and HAAs formation indicating the higher bromine incorporation factor (BIF) value of THMs and HAAs. Ammonia reduced the THMs and HAAs formation obviously, but the effect of ammonia on BIF value is insignificant. Results of the factor analysis suggest that the principle parameters such as ozone, bromide, and reaction time should be utilized for developing the kinetics-based model for bromate prediction.