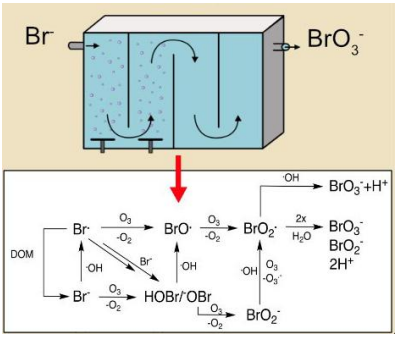
Trace Bromate Analysis in Water

- Highly sensitive: < 2 ppb
- Highest accuracy and precision
- Robust analyser with high uptime
- EPA Method 300.1, EPA Method 317.0, EPA Method 326.0, ISO 11206:2011



Ozone is a commonly applied disinfectant and oxidant in drinking water and has more recently been implemented for enhanced municipal wastewater treatment for potable reuse and ecosystem protection. One drawback is the potential formation of bromate, a possible human carcinogen with a strict drinking water standard of 10 µg/L. The formation of bromate from bromide during ozonation is complex and involves reactions with both ozone and secondary oxidants formed from ozone decomposition, i.e., hydroxyl radical[1].

Determination of bromate needs very sensitive analytical methods. The most widely used methods for the quantification of bromate are based on anion-exchange chromatography coupled with UV/Vis detection.

ISS offers two methods for anion analysis in water based on ion chromatography, suppressed conductivity and UV/Vis detection. While suppressed conductivity detection was found to be well suited for most of anions, UV/Vis detection is a specialized method designed to measure bromate levels in various water samples. In this system, ion chromatography effectively separates bromate ions from other anions in the sample through an ion-exchange column. Following separation, the bromate is detected using post column UV/Vis detection. This analytical method is highly sensitive and selective, allowing for the accurate quantification of trace levels of bromate (LOD: 0.05 ppb). The integration of ion chromatography with UV/Vis detection provides a robust and reliable approach to monitoring and controlling bromate concentrations. Conductivity detector as an option is available.

[1] Environ. Sci. Technol. 2023, 57, 47, 18393–18409