Investigating TriHaloMethanes with respect to humidity

Conference or Workshop Item

How to cite:

For guidance on citations see FAQs.

© 2009 The Authors

Version: Version of Record

Copyright and Moral Rights for the articles on this site are retained by the individual authors and/or other copyright owners. For more information on Open Research Online’s data policy on reuse of materials please consult the policies page.

oro.open.ac.uk
Investigating FAIMS Response to Trihalomethanes with Respect to Humidity

1. Introduction

The detection of volatile organic compounds (VOCs) in various environments has become increasingly important due to their potential impact on human health and the environment. One such VOC is chloroform, which is a known human carcinogen. In this study, we investigate the response of a FAIMS (Field-Assembled Ion Mobility Spectrometer) device to trihalomethanes (THMs) in the presence of different levels of humidity.

2. Trihalomethanes and FAIMS

Trihalomethanes (THMs) are a group of compounds formed during the disinfection of water with chlorine. They are of concern due to their potential carcinogenic effects. FAIMS is a mass spectrometer that can detect these compounds. In this study, FAIMS was used to measure the response to THMs under varying humidity conditions.

3. Experimentation

The limit of detection of the THMs and the FAIMS response with respect to concentration were the primary objectives of this study. The THMs were generated using a reaction between chlorine and precursors in a water matrix. The FAIMS device was then used to detect the THMs under different humidity conditions.

4. Data Processing

The data obtained from the FAIMS device was analyzed to determine the limit of detection for THMs under varying humidity conditions. The results indicated that the limit of detection increased as the humidity increased.

5. Conclusion

This study investigates the response of FAIMS to THMs under varying humidity conditions. The results highlight the importance of considering humidity in the detection of THMs. Further studies are needed to understand the exact mechanism by which humidity affects FAIMS detection.