

Quantification of Volatile Organic Compounds in Water Using ITEX-GC-MS

Roger Simon, Katell Monteleone

Brechbühler AG, Steinwiesenstrasse 3, 8952 Schlieren, Switzerland
info@brechbuehler.ch

The analysis of volatile organic compounds (VOCs) at trace levels in drinking water is crucial to ensure water quality and compliance with regulatory standards. This study presents a robust analytical method utilizing the Thermo Scientific™ TriPlus RSH ITEX system coupled with a Thermo Scientific™ TRACE™ 1610 gas chromatograph (GC) and a Thermo Scientific™ ISQ™ 7610 mass spectrometer.

The method employs the ITEX tool with a Tenax GR trap for large-volume injections, combined with splitless desorption for optimal sensitivity. Internal standards, prepared with concentrations ranging from 0.01 to 5 µg/l, allow for precise quantification over a wide range of VOCs, including challenging compounds such as dichloromethane and MTBE.



Results demonstrate exceptional linearity ($R^2 > 0.99$) for all analyzed compounds, with detection limits as low as 0.01 µg/l for most. This innovative approach, leveraging automated systems and simplified sample preparation, sets a new standard for drinking water analysis.