

A strong combination



Coupling of Metrohm ion chromatography and mass spectrometry

Get more out of your analysis data!

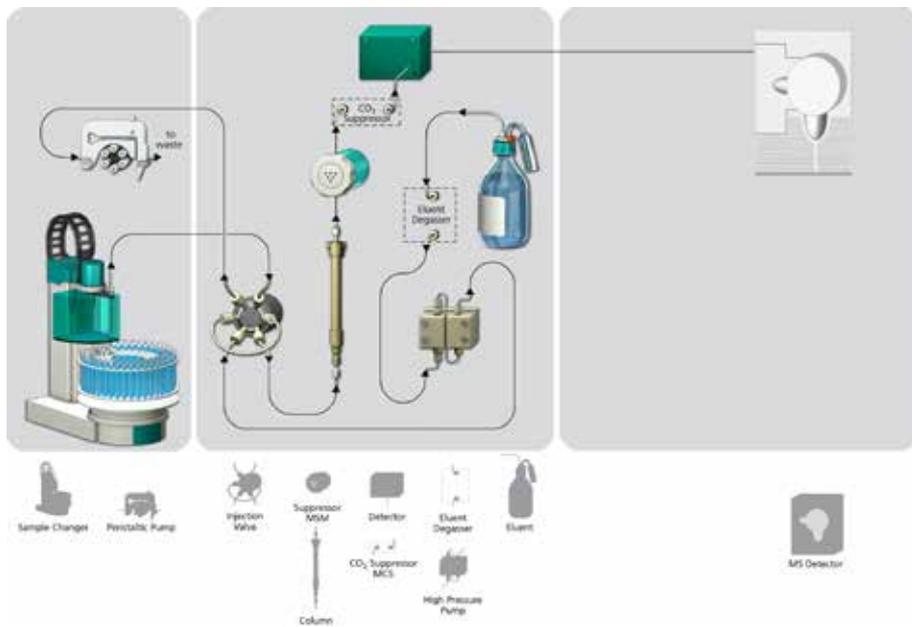
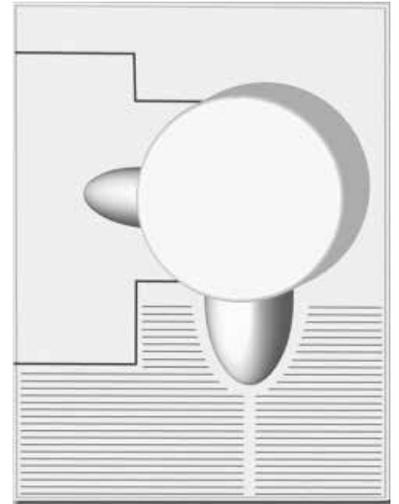
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What's really in the sample and in what concentration? The coupling of ion chromatography and mass spectrometry gives the answer. While the concentration of the analytes is determined via the conductivity, the measurement with the mass spectrometer also provides information on their mass. Via IC-MS,...

Typical application examples from environmental or forensic analysis include detecting trace levels of anions, cations, and polar substances in complex matrices like soil samples or residues from explosions:

- peaks can be verified with two complimentary detection techniques
- molecules and fragments can be quantified
- unknown substances can be identified

- Anions and oxoanions, e.g. chloride and perchlorate
- Cations and amines, e.g. potassium and ethanol-amine
- Polar sulfur and nitrogen compounds, e.g. thiocyanate and azide



The benefits of IC-MS with Metrohm

- **Unique suppressor technology for reliable results**

Metrohm ion chromatographs are extremely robust: Organic modifiers can be added directly to the eluent, as the suppressor is 100% solvent-stable. This means that there is no need to add modifiers later to increase the sample evaporation. The 100% pressure stability of the suppressor guarantees robust and reliable analysis results.

- **No matrix effects**

Contaminated samples are not a problem for IC-MS solutions with Metrohm IC: Automated sample preparation techniques from Metrohm and custom chromatographic conditions guarantee an effective separation of challenging components in the sample preventing matrix effects. A diverter valve ensures that the sample stream is only delivered to the MS if you are expecting analytes of interest. This helps to prevent the MS from being contaminated.

- **Lowest detection limits, even for small ions**

With an MS, you can connect a highly sensitive detector in series to the traditional ion chromatography detectors (conductivity, UV/VIS, or amperometry), thus increasing the sensitivity of your analytics significantly. Even very small ions such as chloride (m/z 35) can be detected with an MS optimized for small masses.

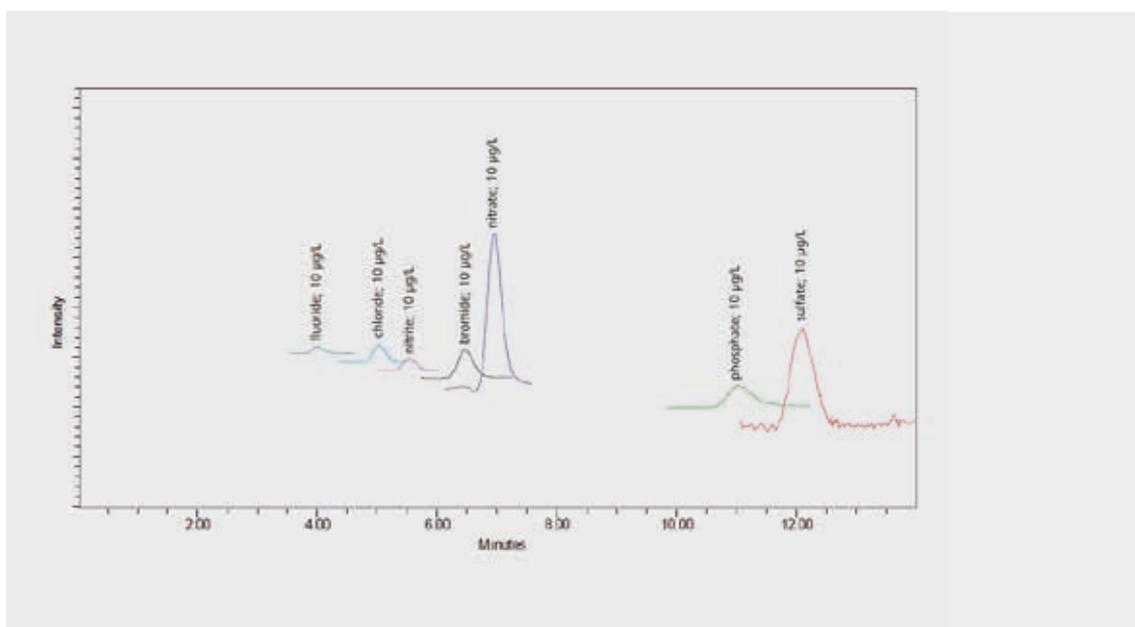


Figure 1: Standard anions (10 µg/L); column: Metrosep A Supp 5 - 100/4.0; eluent: 3.2 mmol/L sodium carbonate, 1.0 mmol/L sodium bicarbonate, 10% acetonitrile; flow rate: 0.6 mL/min; injection volume: 20 µL; column temperature: 30 °C; sequential suppression; detection: SIR (ES-)

Why ion chromatography from Metrohm?

Easy to use, very robust, highest measuring sensitivity, and outstanding service and support – that's Metrohm ion chromatography. You will also benefit from these advantages:

- Automated sample preparation techniques (Inline Ultrafiltration, Inline Dialysis, etc.) for more convenience, time savings, and reproducible results
- Metal-free flow path – no risk of contamination when detecting ultra-traces and transition metals
- Robust and reliable hardware guarantees maximum instrument availability, in particular during routine operation
- Excellent performance, minimal noise, and low running costs thanks to the Metrohm suppressor technology
- Intelligent monitoring of all system parameters with warning and intervention limits prevents operator errors
- Swiss quality – 3 year instrument warranty and 10 year warranty on the anion suppressor



www.metrohm.com

 **Metrohm**