

EVERY ELEMENT UNDER CONTROL

Solution for Water Elemental Analysis based on ICP-MS following European Regulations

When preset methods and productivity tools combine with high-performance ICP-MS, the results are extraordinary

ICP-MS is widely used for trace element analysis of water, offering low detection limits, accurate quantitative results for all regulated elements, and high sample throughput.

But many laboratories have not yet switched to ICP-MS or are not using it to its full potential. This is due to limitations in dynamic range or control of interferences, complex method development, or limited throughput.

The new Agilent solution for water analysis addresses these limitations by enabling you to:

- Reduce analysis time while analyzing major and trace analytes in a single run with the Solution-Ready Agilent 7800 ICP-MS system and complete hardware set-up.
- Meet the regulations and accelerate your lab accreditation with guaranteed method fully validated, including SOP and implementation checklist with detailed analysis and verified steps.
- Cut down your method development and set-up times from months or weeks to just a few days thanks to the validated method implementation, onsite training, and support by Agilent's experts engineers.
- Maximize throughput and productivity while allowing better long-term stability for high matrix samples with ISIS 3 discrete sampling system, SPS 4 autosampler, and consumables.



Water Analysis SOP with the Agilent 7800 ICP-MS

- Method for water quality analysis following the European Standard EN ISO 17294-1 & 2
- Sample preparation according to ISO 15587
- Method developed and validated with partner lab fully accredited (ISO 17025)
- Wide range of environmental matrices supported: waters, wastes, sediments, soils.

For more information, visit:
www.agilent.com/chem/water-solution

Accurate, reliable, quantitative results for all regulated elements in drinking water, surface water, groundwater and eluates

Several key issues must be solved to simplify routine water analysis and ensure accurate results with simple, variable, high-matrix samples:

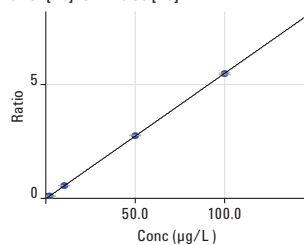
- Total dissolved solids (TDS) levels can be high, due to minerals in the source water.
- Major elements (Na, Ca) can be present at 100s mg/L (ppm). Which is over the range of some ICP-MS instruments.
- Chloride (HCl) must be added to samples to retain Hg, and HCl helps stabilize other elements such as As, Se, Sb, and Ag.
- Some analytes such as Be, As, Se, Cd, and Hg are poorly ionized, meaning that they have relatively low sensitivity, especially with a less robust plasma.
- Many elements suffer from polyatomic interferences.

The 7800 ICP-MS uses optimized hardware to address these issues. The robust plasma improves ionization (oxide ratio at 1.2%), while High Matrix Introduction (HMI) technology extends matrix tolerance (up to 3% TDS). The wide dynamic range detector measures all major and trace analytes in a single run. Helium (He) cell mode (where permitted) reduces interferences, including Cl-based polyatomic ions from the addition of HCl. This ensures accuracy and removes the need for correction equations.

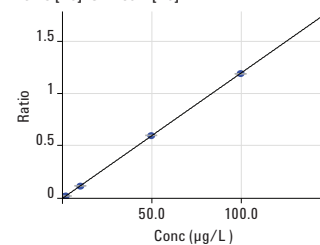
Simplify water analysis workflow

- Standard operating procedure
- Preset method for water analysis
- Implementation checklist
- Onsite method implementation, training and support
- Auto-optimization tools
- QC, tune, and sample analysis reports
- Optional ISIS 3 for fast discrete sampling

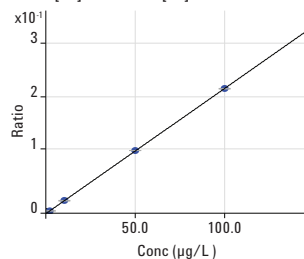
52 Cr [He] ISTD:45 Sc [He]



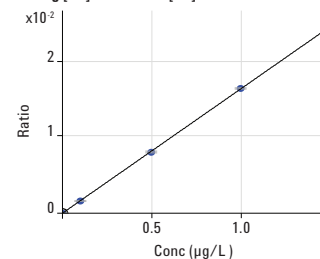
75 As [He] ISTD:89 Y [He]



111 Cd [He] ISTD:115 In [He]



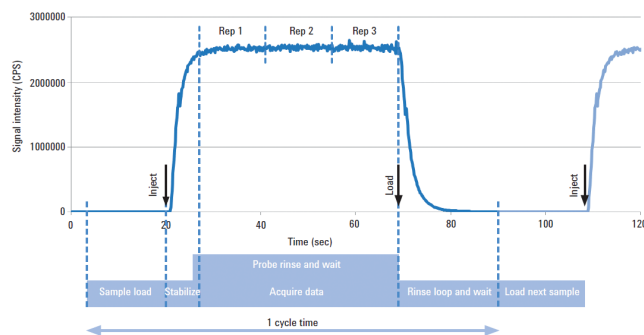
202 Hg [He] ISTD:193 Ir [He]



Helium mode calibrations for low level trace elements

High throughput to lower your argon cost!

The Agilent Integrated Sample Introduction System (ISIS 3) provides high throughput discrete sampling (DS) for the 7800 ICP-MS, reducing sample run times to less than 90 s, without compromising interference removal.



Agilent ISIS 3 reduces run times to less than 90 seconds per sample

For more information, go to:
www.agilent.com/chem/water-solution

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