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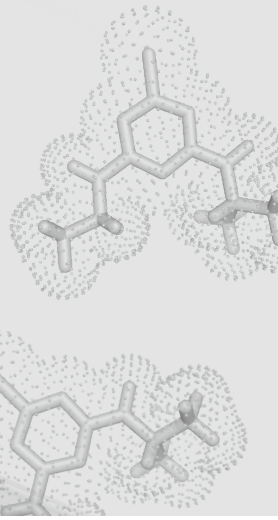
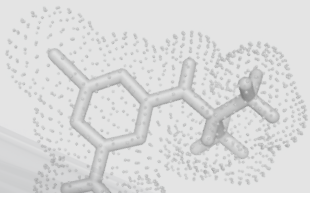
IC-MS/MS: Polar Contaminants Quantitation in Water Solution Guide

Your lab, your challenges— our solutions to help you address them





- Address today's and upcoming analytical challenges
- Develop robust, sensitive, reliable quantitation workflow solutions
- Achieve organizational profitability goals
- Discover an easy-to-implement workflow solution from sample prep to report generation
- Experience easy-to-access support
- Meet regulatory concerns and guidelines

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Challenges
with analyzing polar contaminants

- **Requires derivatization: LC-MS/MS, GC-MS/MS**
  - Time consuming and can be costly
- **No derivatization required: use of alternative LC column phase**
  - Thermo Scientific™ HILIC, Thermo Scientific™ Hypercarb™ Porous Graphitic Carbon and Thermo Scientific™ Acclaim™ HPLC columns
  - Time consuming maintenance of column in order to retain analytes of interest

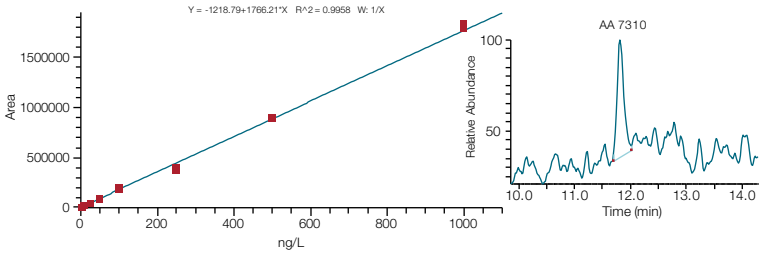
Ion chromatography
For better results, faster

- **Performance**
  - Achieve versatile and efficient analyses through comprehensive application solutions and interactive wellness features
- **Throughput**
  - High pressure capabilities enable faster analysis without compromising data quality
- **Reproducibility**
  - Automated eluent generation eliminates error-prone manual eluent preparation and achieves better method reproducibility

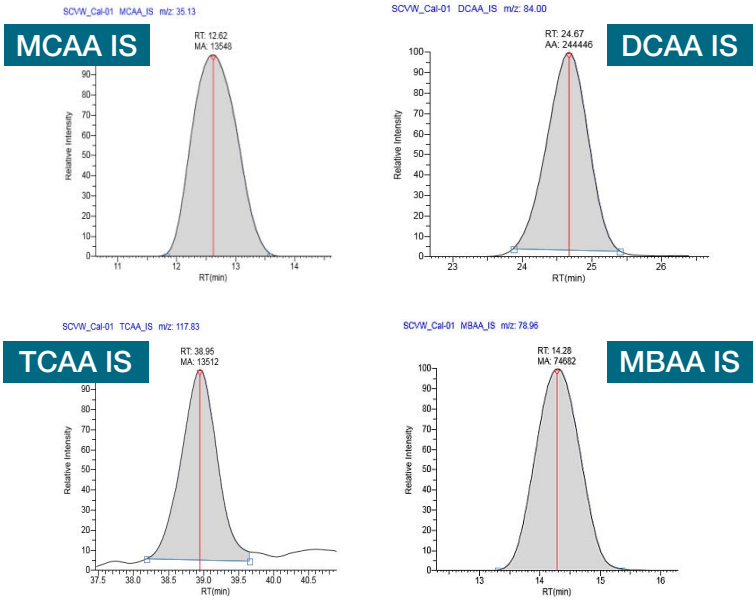
Thermo Scientific™ Dionex™ Integrion™ HPIC™ system

Thermo Scientific™ Dionex™ ICS-6000 HPIC™ system

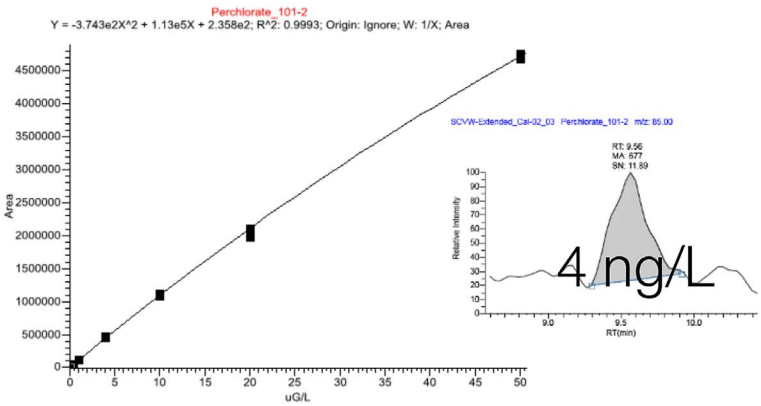
Glyphosate in drinking water



Haloacetic acids in drinking water

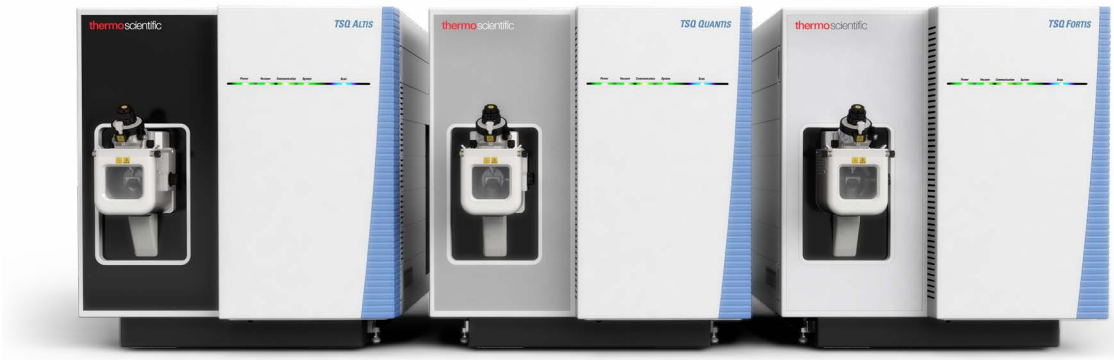


Perchlorate in drinking water



Robust mass spectrometry
Confident quantitation

Triple quadrupole mass spectrometry



Thermo Scientific™ TSQ Altis™ triple quadrupole mass spectrometer

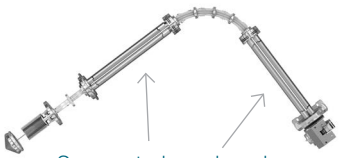
Thermo Scientific™ TSQ Quantis™ triple quadrupole mass spectrometer

Thermo Scientific™ TSQ Fortis™ triple quadrupole mass spectrometer

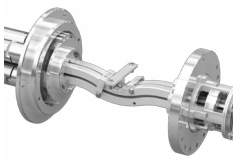
- **AIM+ technology**
  The next step in precision design ensures ultimate performance in ion management, inception to detection, from the Thermo Scientific™ OptaMax™ NG ion source housing to the enhanced electron multiplier. AIM+ incorporates segmented quadrupoles and enhanced RF electronics to further optimize ion management precision, reliability, speed, and reproducibility.
- **Easy Maintenance**
  – No need to break vacuum for basic cleaning and maintenance

Critical features enable quantitation

- **Sensitivity**
  – Enabled by segmented hyperbolic quads with H-SRM capability (0.2/0.4 Da FWHM)
- **Robustness**
  – Enabled by ion beam guide and neutral blocker with OptaMax NG ion source
- **Speed**
  – Enabled by Active Q2, and new RF electronics, operate at up to 600 SRMs/sec

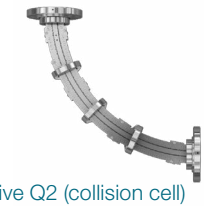


Segmented quadrupoles



Ion beam guide with neutral blocker

OptaMax NG ion source



Active Q2 (collision cell)

TraceFinder and Chromeleon software
Enabling confident quantitation

Highlights of Thermo Scientific™ TraceFinder™ software

- **Intuitive and easy**
  – From method development to automated report generation
- **Template-driven workflows**
  – With customized templates
- **Compound databases**
  – For SRM workflows
- **Method forge**
  – Ensures easy and fast access to hundreds of molecules

Highlights of Thermo Scientific™ Chromeleon™ Chromatography Data System (CDS) software

- **Productivity**
  – With industry leading multi-vendor control
- **Secured**
  – Controlled user access; enable compliance with GxP and 21 CFR Part 11
- **Simplified use**
  – One click workflows with customized templates
- **Streamlined quantitation**
  – Enabled by data processing and library screening
- **Faster time to report**
  – With integral report designer with customizable, spreadsheet-based report templates

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Service and application support

Unity™ Lab Services

- Single source for integrated lab service, support, and supply management
- Complete portfolio of services and support solutions
- Enabling users to improve productivity, reduce total cost of ownership, and ensure performance
- Help with instrument and equipment acquisition to disposition

Application support

- Regional demonstration laboratories to centers of excellence support
- Global marketing teams to customer solution centers
- Extensive network of experienced and expert scientists to support your workflows

Thermo Fisher Scientific enables success for every environmental safety lab focused on targeted quantitation

Partnership to ensure your success

Enables your lab with the capability to address key challenges:

Application Notes:

- Reproducible quantitation workflows of perchlorate in water with IC-MS/MS
- Robust, reproducible quantitation workflows of haloacetic acids, bromate, and dalapon in water according to EPA Method 557
- Polar pesticides in water at low ng/L levels by ion chromatography coupled to triple quadrupole mass spectrometer
- Fast routine analysis of polar pesticides in foods by suppressed ion chromatography and mass spectrometry
- LC- and IC-MS technologies and workflows to improve pesticide analysis—application compendium

Presentations, Posters, and Blogs:

- Ion Chromatography coupled to MS, powerful approach for polar pesticides determination
- A quick and routine analysis of polar pesticides in water by suppressed ion chromatography and mass spectrometry
- Fast analysis of polar pesticides in water by IC-MS/MS
- The analysis of polar ionic pesticides using ion-exchange chromatography coupled to mass spectrometry: turning negatives into positives
- IC-MS: The solution to the problem analysis of polar pesticides
- The role of ion chromatography in food safety laboratories

Webpages:

- Thermo Scientific Confident Quantitation for triple quadrupole instruments
- Thermo Scientific TSQ Altis triple quadrupole MS
- Thermo Scientific TSQ Quantis triple quadrupole MS
- Thermo Scientific TSQ Fortis triple quadrupole MS
- Thermo Scientific Dionex Integrion HPIC system

Find out more at
thermofisher.com/confidentquantitation

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