MOVE TO A HIGHER STANDARD OF SPECIATION

NexION ICP-MS Speciation Solution
Better insights through better technology

Since many trace metals have a number of species with varying properties—often with profound differences in mobility, bioavailability, and/or toxicity—discerning one form from another in a sample has become essential in the food, environmental and clinical research industries.

Speciation analysis of this type is best performed using advanced hyphenated techniques—coupling effective separation with highly sensitive detection/quantification. And no one offers a more integrated, flexible, and accurate speciation solution than PerkinElmer. Take your speciation analysis to the next level with the NexION® ICP-MS Speciation Solution.

Separation. Detection. Operation. Integration.

The NexION Speciation Solution brings together our industry-leading Altus™ LC Systems technology and the revolutionary NexION® ICP-MS in a seamlessly integrated platform that can be fully controlled with a single, intuitive software for the simplest, most streamlined operator experience available.

HIGHLIGHTS

- Fully integrated chromatography/ ICP-MS system

- Choice of front ends—including LC, GC and even 3rd-party IC systems

- Intuitive, unified software platform to run all components

- Complete speciation solution spanning instrumentation, software, expertise, service and training

TYPICAL ELEMENTS OF INTEREST:

Arsenic
Selenium
Mercury
Chromium
Antimony
Bromine
Iodine

PerkinElmer®
For the Better

ULTIMATE
DETECTION FOR
ACCURATE SPECIATION

The best-in-class solution for speciation analysis

INTEGRATION
OPERATION
Waters® Empower® 3 Software Simplest, most streamlined operator experience offering control of your entire system

SEPARATION	DETECTION
Altus LC Systems Proven separation technology delivering greater sample insights and reproducible results	**NexION ICP-MS** Most robust, flexible instrument in the industry

NexION ICP-MS:
The perfect tool to determine total elemental concentration

With an array of patented technologies designed to minimize maintenance even when working with heavy matrix samples and high total dissolved solids (TDS) mobile phase compositions, NexION is the world's most robust ICP-MS platform.

Triple Cone Interface Produces the industry's most tightly focused ion beam and prevents sample deposition on internal components, an important consideration when running high TDS mobile phases.

Quadrupole Ion Deflector Turns positively charged ions 90° into the Universal Cell and filters off all neutrals for greater stability and consistency. Combined with the Triple Cone Interface, the QID is ideal when high-salt mobile phases are required for chromatographic analyses.

Free-Running RF Plasma Generator Features no moving parts for reliable, robust performance, and instantly changes to accommodate any plasma— ideal when organic solvents are required to optimize the chromatography.

NexION's unique Triple Cone Interface and Quadrupole Ion Deflector are so effective at removing un-ionized material that it is the only ICP-MS on the market with a cell that never needs cleaning or replacing, maximizing instrument uptime and return on investment.

The industry's only TRUE Reaction Cell

NexION gives you superior, more targeted interference removal making it ideal for speciation where only a single element is typically being measured. With the only reaction cell that allows you to use a variety of pure reactive gases (including ammonia, oxygen and methane), NexION lets you select the best gas for your element of interest and measure the lowest detectable levels when combined with the appropriate chromatographic conditions. No matter what your element(s) of interest, you can now eliminate all interferences and generate the most accurate, reliable, reproducible results—all with the sensitivity you need for ppt detection limits.

Flexible, open sample introduction area

To allow you to create an ideal speciation analysis system tailored to your needs, NexION can be coupled with various front-end chromatographic separation technologies (LC, GC, IC). These options can be quickly and easily switched out and connected through the large, open sample introduction area.
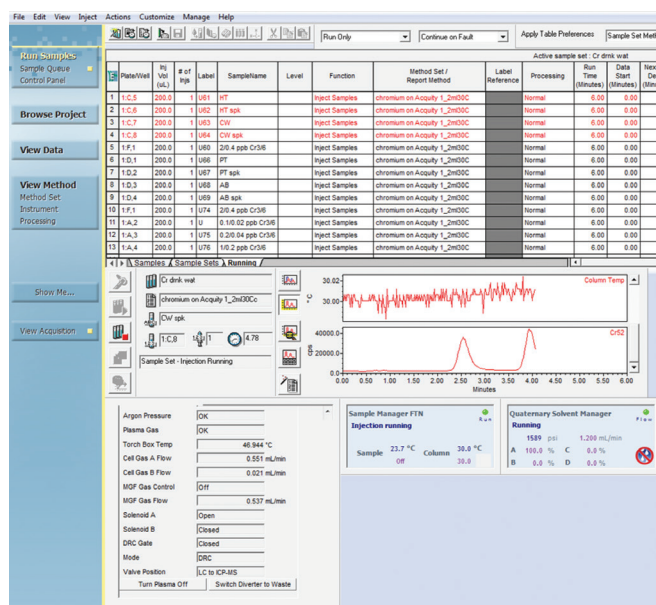
EASY OPERATION AND CONFIDENT SPECIATION ANALYSIS

Empower® 3

Empower® 3 Software:
Optimizing both the user experience and workflow efficiency

At the center of the system is the industry's most versatile and intuitive Chromatography Data Software (CDS)— Empower® 3 software. The software package includes the NexION platform in its user interface specifically for speciation analysis and simplifies every measurement with:

- Proven analytical methodologies
- Efficient workflow tools
- Species-specific calibrations
- Extensive reporting capabilities
- Multiple post-run review options
- Simultaneous data acquisition and reviewing windows
- Complete control of all system components from a single PC
- Traceable, consistent data processing for full regulatory compliance, mitigating potential risks

With all the functionality you need, Empower® 3 software brings together your raw data, meta data and test results under one umbrella to enable more repeatable data processing and comprehensive reporting. Combine that with built-in audit traceability, and you can expect the highest degree of confidence in data integrity to mitigate risk.

Empowering your science with a one-of-a-kind interface

Flexible and easy to use, Empower® 3 software delivers extraordinary results with minimal training, workflow reengineering, or additional software modules to support new instruments or techniques.

The single-window, user-centric QuickStart™ interface is customizable based on the unique needs of every user in your lab—from novice to expert. It even allows you to create a library of the most frequently used entries unique to your lab—allowing for fast, easy, and consistent data entry.
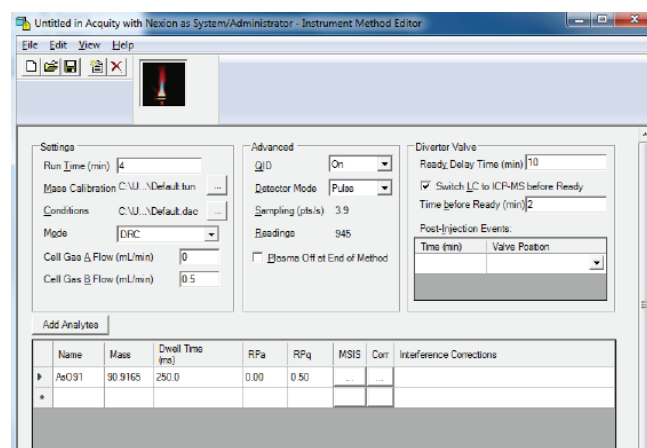
The software also provides:

- Customizable reports
- Integrated custom fields and calculations
- Online help
- Industry-leading security and data integrity

Other highlights of the software include:

Innovative peak detection algorithm (ApexTrack™) Precisely identifies the beginning and ending of peaks for the most accurate, consistent results with little or no manual intervention.

Diverter valve control Lets you choose which solution goes to the nebulizer—the HPLC eluent or the uptake from the ICP-MS peristaltic pump—so you can warm up and optimize your ICP-MS while equilibrating your HPLC column, maximizing system uptime while minimizing ICP-MS maintenance.

A typical view during the data acquisition step of a sample analysis.

Empower® 3 software puts all method information for your speciation analysis at your fingertips for greater control and faster, easier operation.

CLEARER SEPARATION
FOR BETTER SPECIATION

Altus LC Systems:
Rugged, reliable performance for more reproducible results

Speciation starts with sample separation. And Altus LC Systems offer the ideal front-end chromatography platform with robust, trouble-free operation, exceptional performance, and a variety of automated features that make them easy to use.

From simple system startup to tool-free maintenance, Altus LC Systems are easy to use and maintain and can streamline and simplify every aspect of your lab operations for greater efficiencies and cost savings.

Get more meaningful insights into every sample and future-proof your speciation system with a cutting-edge LC system designed around a proven technology already at work in thousands of laboratories around the world.

The freedom and flexibility to design your ideal speciation solution

While the Altus LC remains the most popular front-end component of the NexION ICP-MS Speciation Solution, it is by no means your only option. The system gives you ultimate flexibility with the freedom to choose from a broad array of vendors, technologies and platforms:

Existing HPLC systems Empower® 3 supports the control of a wide range of existing HPLC instrumentation. Seize the opportunity to optimize underutilized assets in the lab by placing an existing HPLC at the front end of your speciation solution.

Clarus GC instruments Create a powerful, reliable GC/ICP-MS speciation system by integrating the proven performance and analytical capabilities of PerkinElmer's world-class Clarus GC family.

Popular GC and IC platforms Select your preferred Empower® 3 software-driven gas chromatography or ion chromatography instrument for integration into the NexION ICP-MS Speciation Solution.

Learn more at: www.perkinelmer.com/speciation

For Research Use Only. Not for Use in Diagnostic Procedures.

For a complete listing of our global offices, visit www.perkinelmer.com/ContactUs