

# Ignite your confidence

iCAP MTX triple quadrupole ICP-MS



# Technology that delivers definitive results without operational complexity

The Thermo Scientific™ iCAP™ MTX Triple Quadrupole Inductively Coupled Plasma Mass Spectrometer (ICP-MS) is a high-performance instrument which can be integrated into any elemental analysis laboratory. From sample to result the iCAP MTX ICP-MS fulfils the most demanding application requirements with effortless efficiency.

When your analysis demands the highest levels of detection power and accuracy, you need to rely on more advanced analytical methods. Adding sophistication to your analysis should not come at the cost of unwanted and unnecessary complexity.

Uncompromised **confidence**

Matrix **robustness**

Ultimate **efficiency**



# Consistent results and stability with unique matrix robustness

In demanding analytical laboratories, it is essential to produce the highest quality data with minimal down time, even with highly variable and complex samples. The iCAP MTX ICP-MS provides unique matrix robustness without compromising sensitivity, for right first-time results.

## Intelligent Matrix Handling (IMH)

IMH reduces exposure of the instrument to the sample matrix when analyte detection is not taking place

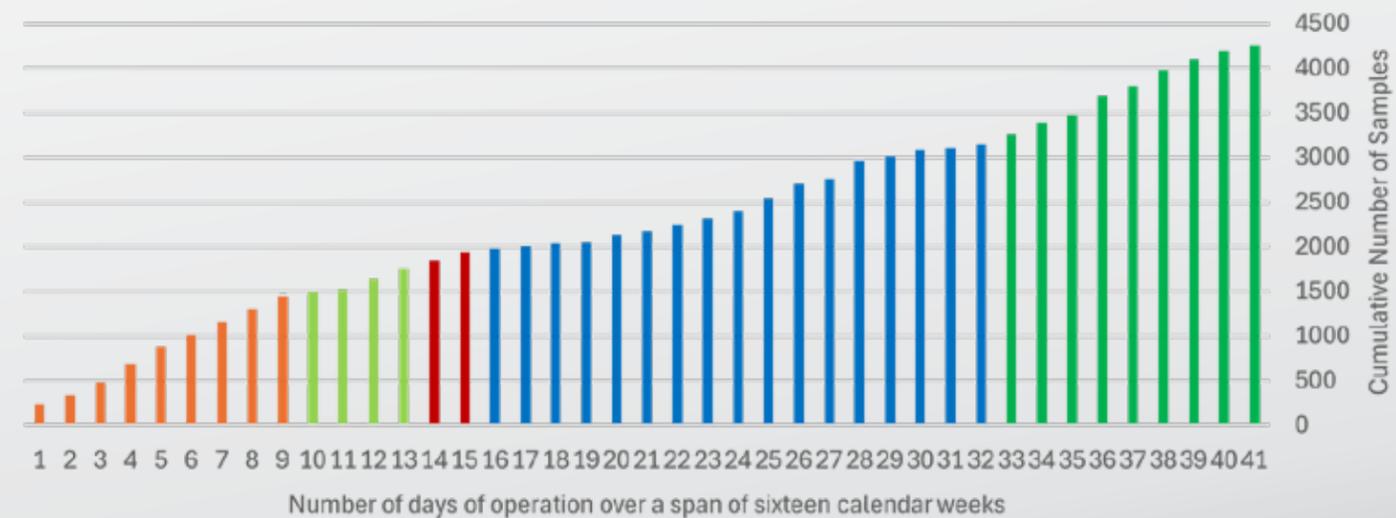
- Confidently analyze samples without QC failures
- Longer analytical runs with minimal interruptions
- Increased productivity and reduced maintenance

## Seamless interface control

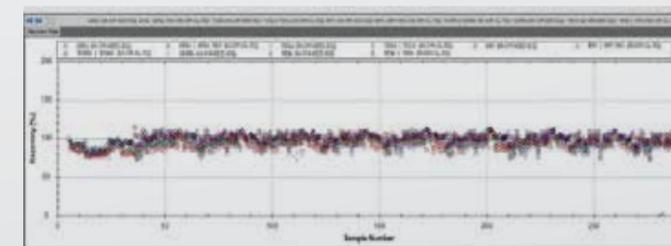
Achieve the optimal balance of sensitivity to matrix tolerance with control of skimmer potential and forevacuum pump

- Improved detection capability in challenging matrix
- Highest sensitivity for your sample type
- Simple instrument operation via a fully software-controlled system

**Minimize cone cleaning even when analyzing a range of challenging sample types. More than 4000 samples of varying types were analyzed over a span of 16 weeks with no cone cleaning**



**Ensure consistent results when analyzing high matrix samples. Whole blood analysis over 15 hours using IMH and easyAGD**



## Easy Argon Gas Dilution (AGD)

Easy AGD reduces analytical drift and matrix deposits with a proprietary dilution gas introduction method

- Right first-time analysis to eliminate re-runs
- Prevents matrix deposits with high matrix samples
- Consistent internal standard recovery throughout the analytical run

**Automated control of the argon humidifier located in the easy access sample introduction area**



## Integrated argon humidifier

Enhance productivity and robustness with a fully integrated argon humidifier

- Increase productivity with software switching between dry and humidified plasma
- Minimized analytical drift from prevention of salt build-up on nebulizer and torch
- Clear visual indicators for humidifier status

# Ultimate analytical detection capabilities with uncompromised confidence

The iCAP MTX ICP-MS is powerful enough to analyze any sample at the lowest level – so no application is out of reach. Discover more in your samples with high sensitivity and triple quadrupole detection power. Open up new research possibilities and introduce the potential for scientific breakthroughs.

## IntelliLens™ for optimal performance

The IntelliLens optimizes the optical lens settings per analyte to provide maximum sensitivity across the mass range

- Optimize sensitivity per analyte with intelligent tuning algorithms
- Integrated within autotunes for simplicity and ease-of-use
- Automated set-up without user instrument interaction

## Reaction Finder Method Development Assistant

Develop methods that provide right first-time analysis with advanced interference removal

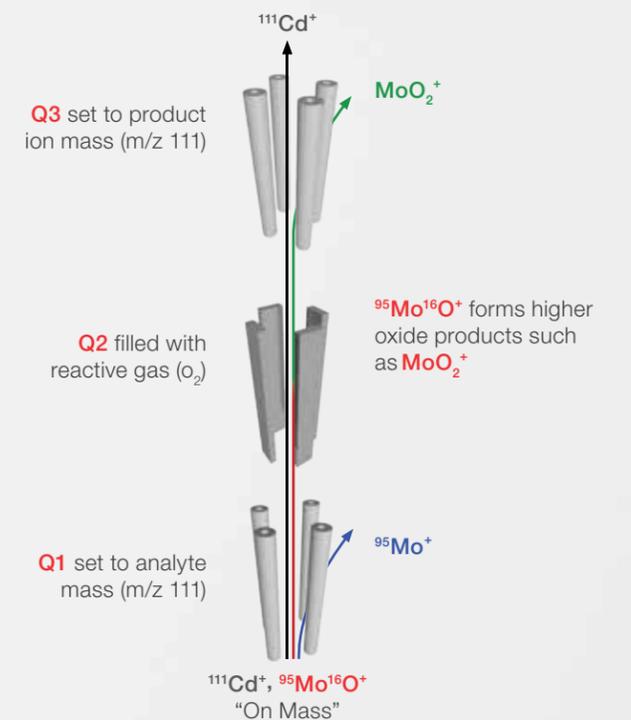
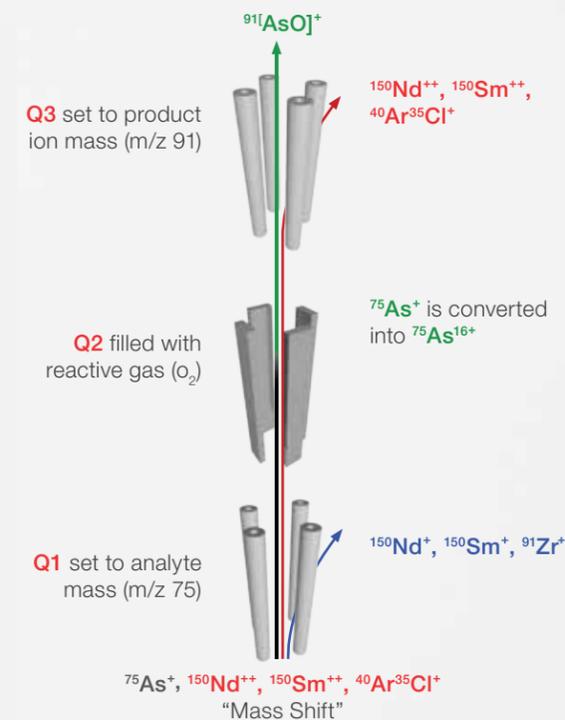
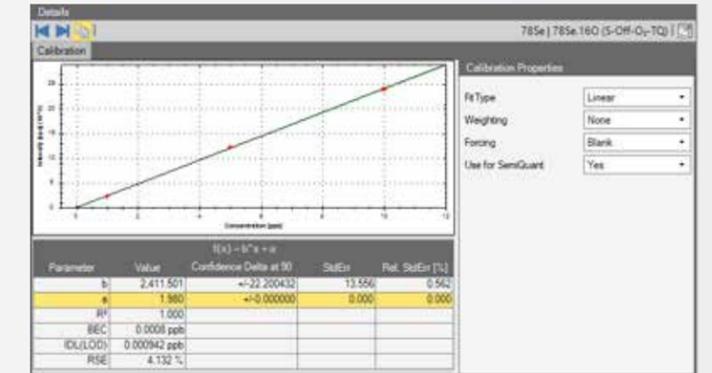
- Reduce method development time with intuitive automated mode selection according to your target analytes
- Simplify method development with built in intelligence, eliminating the requirement for advanced knowledge of complex reaction chemistry
- Ultimate accuracy with SQ and TQ modes for interference removal

## High sensitivity with advanced Interface design and control

Optimal settings to maximize performance with intelligent interface

- Potential applied to skimmer cone, adjusted to optimize performance
- Raised interface vacuum further increases sensitivity
- Sensitivity tuning for maximum performance

Right first-time results with advanced interference removal. Comparison of SQ-KED and TQ-O<sub>2</sub> mode for <sup>78</sup>Se, highlighting how TQ-O<sub>2</sub> mode reduces BEC and IDL significantly with effective interference removal to increase method detection capability



# Optimised productivity with ultimate efficiency

The iCAP MTX ICP-MS ensures the highest levels of analytical productivity combined with ease-of-use to significantly reduce your staff training time. The instrument requires minimal maintenance for operational efficiency. The Thermo Scientific™ Qtegra™ Intelligent Scientific Data Solution (ISDS) Software seamlessly controls your workflow from the initial instrument set-up, throughout daily operation to reporting results. Meet the demands of accurate analysis and traceable data with robust and reliable automated processes.

## Qtegra ISDS Software

The intuitive Qtegra ISDS Software provides your laboratory with streamlined workflows, facilitating the fastest sample to results:

- Increase productivity with one software application, removing the need to navigate to different applications
- Reduce training with a common software platform across all ICP technologies from Thermo Fisher Scientific
- Get Ready workflows can pre-program the instrument for operation, and increasing productivity

## The Thermo Scientific™ HAWK™ Consumable and Maintenance Assistant, Instrument Performance Monitoring

- Operational uptime is maximized with programmable alerts that notify the analyst when maintenance is required
- Manage consumable inventory to ensure your laboratory is equipped for incoming samples
- Instrument performance trends can be easily monitored supporting accreditation

## easyClick Peristaltic Pump

- No manual pump tension arm required
- Auto-tensioning ensures consistent results regardless of the operator
- Extended peristaltic pump tubing lifetime

## Unique user experience

- Clear visibility of instrument status from anywhere in the laboratory with comprehensive status LED
- Reduce time needed to carry out sample introduction maintenance with a system that is operator centric

## Instrument view and plasma TV integrated with the Qtegra ISDS Software



## Ensure instruments are operational and performance is maintained: The HAWK Consumable and Maintenance Assistant alerts the user to perform critical maintenance tasks



## Close coupled easyClick Peristaltic Pump ensures shortest sample path for optimal uptake and wash



# Elevate your element analysis

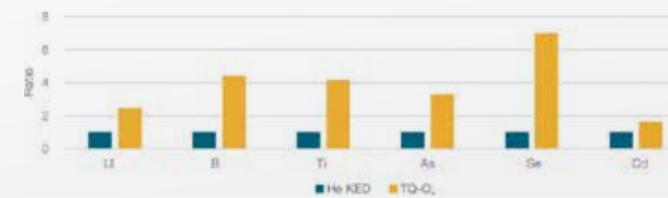


The iCAP MTX ICP-MS is a powerful tool for analyzing complex samples to support research and regulated analysis. The instrument is robust and easy to use, with a compact design and low maintenance requirements to ensure your workflows are fully optimized.

## Clinical research

The iCAP MTX ICP-MS brings confidence to your clinical research, with the capability to analyze complex samples, such as blood and urine. Precise results are obtained with ease using the Reaction Finder to determine the appropriate measurement mode.

### Improve method detection capability with advanced interface removal. Sensitivity comparison between He KED (normalized as 1) and TQ-O<sub>2</sub> mode for selected analytes.



## Geochemistry

In the field of geochemistry, the accurate quantification of trace elements is essential for research and support of mining and prospecting. Matrix-based interferences are efficiently removed, ensuring measurement accuracy whilst uncovering valuable sample insights.

## Pharmaceutical

The iCAP MTX ICP-MS provides simple method development tools to ensure fast analysis of pharmaceutical samples, to expedite research and development decisions. When products and processes transition to routine manufacturing, the technology supports compliance to global regulatory standards, including FDA, U.S. Pharmacopeia <232> and <233>, and ICH Q3D.

## Environmental

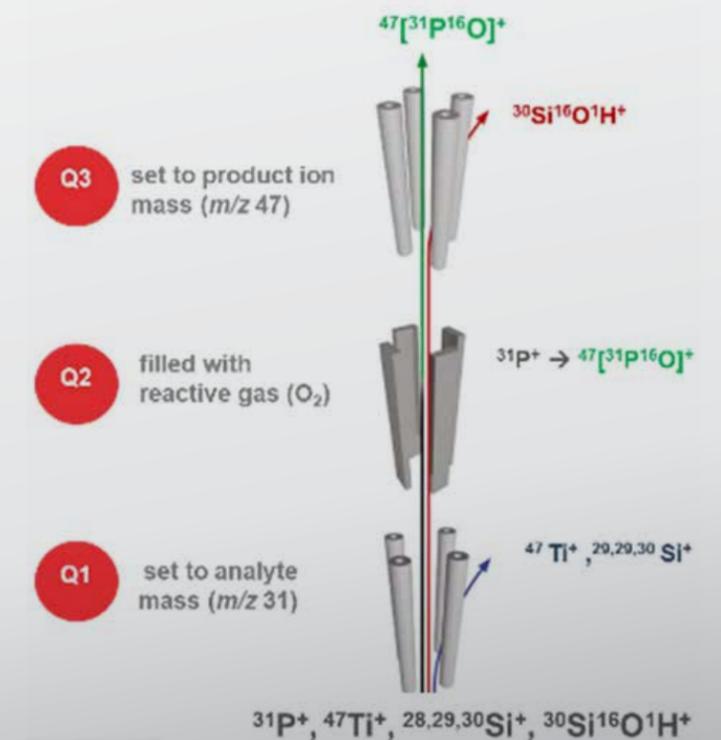
The iCAP MTX ICP-MS is the robust solution for accurately quantifying trace analytes in challenging environmental matrices. A choice of single or triple quadrupole interference removal modes ensures your laboratory can balance optimal productivity with advanced performance.

## Food

When analysing the most challenging samples to support food safety and quality, the iCAP MTX ICP-MS easily produces precise and accurate result. For speciation or nanoparticle characterization, the iCAP MTX ICP-MS utilizes the relevant Qtegra ISDS Plugin to provide the tools required in a simple workflow.

## Materials and metallurgy

For material science and metallurgy, the iCAP MTX ICP-MS supports rapid, accurate analysis of impurities in raw materials and finished products through its robust design and flexible workflows. The instrument's matrix robustness and interference removal capabilities make it the ideal solution for advanced material production and industrial applications, including the rapidly evolving field of energy storage.



# Thermo Scientific iCAP MX Series ICP-MS



## Ignite your productivity

Thermo Scientific iCAP MSX ICP-MS

The Thermo Scientific™ iCAP™ MSX single quadrupole ICP-MS will ignite your productivity, transforming your workflow for the ultimate ICP-MS experience.



## Ignite your confidence

Thermo Scientific iCAP MTX ICP-MS

The Thermo Scientific™ iCAP™ MTX triple quadrupole ICP-MS will ignite your analysis, transforming complex analysis for the ultimate ICP-MS experience.

Learn more at [thermofisher.com/icp-ms](https://thermofisher.com/icp-ms)

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