ThermoFisher SCIENTIFIC

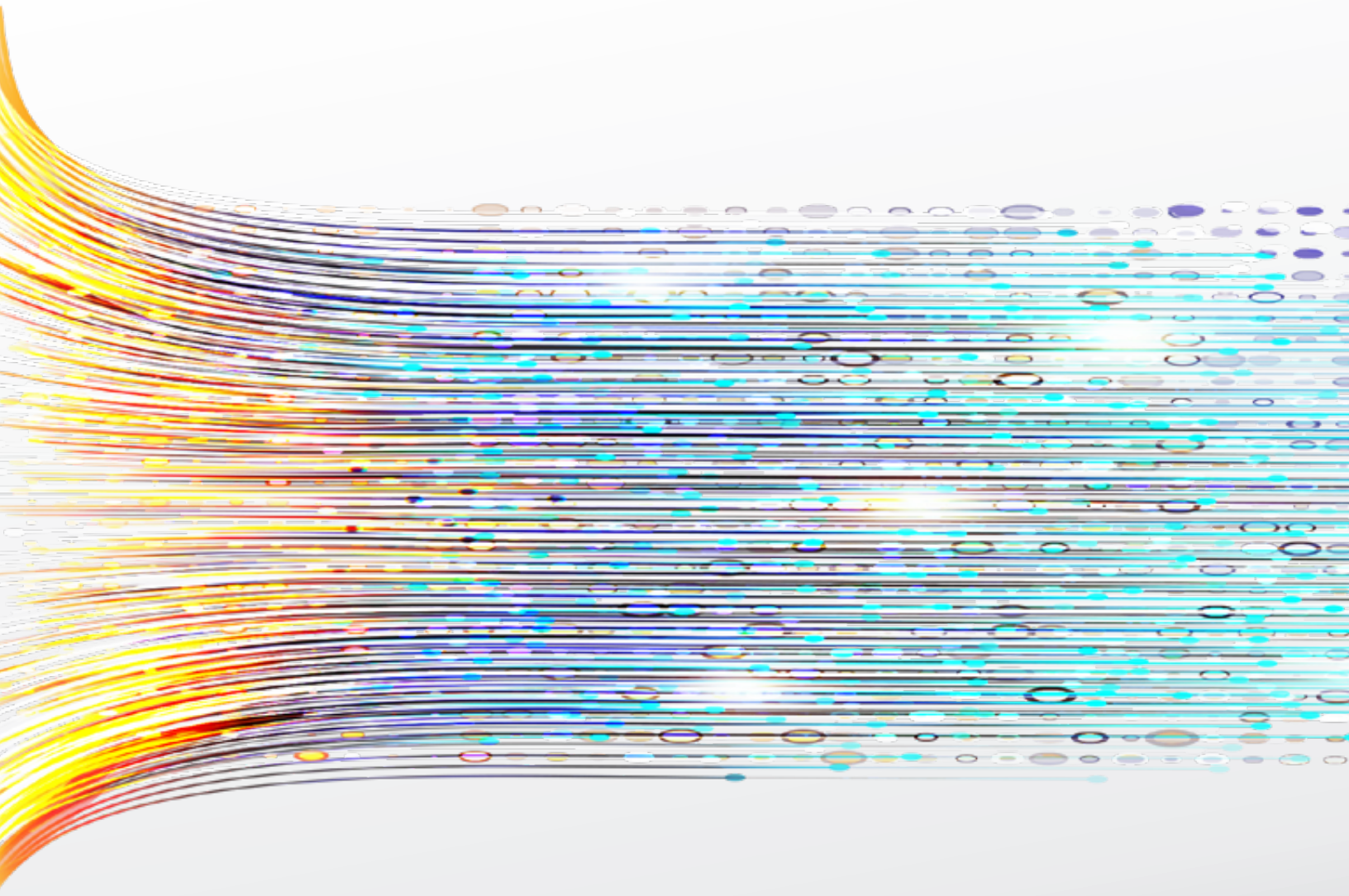
Ignite your productivity

iCAP MSX single quadrupole ICP-MS



Ignite productivity and transform your workflow

The Thermo Scientific™ iCAP™ MSX Inductively Coupled Plasma Mass Spectrometer (ICP-MS) consistently produces accurate data with maximized instrument uptime. Experience powerful detection capability without compromising matrix robustness to simplify your analysis, even with difficult samples.



Uncompromised **sensitivity** Matrix **robustness**

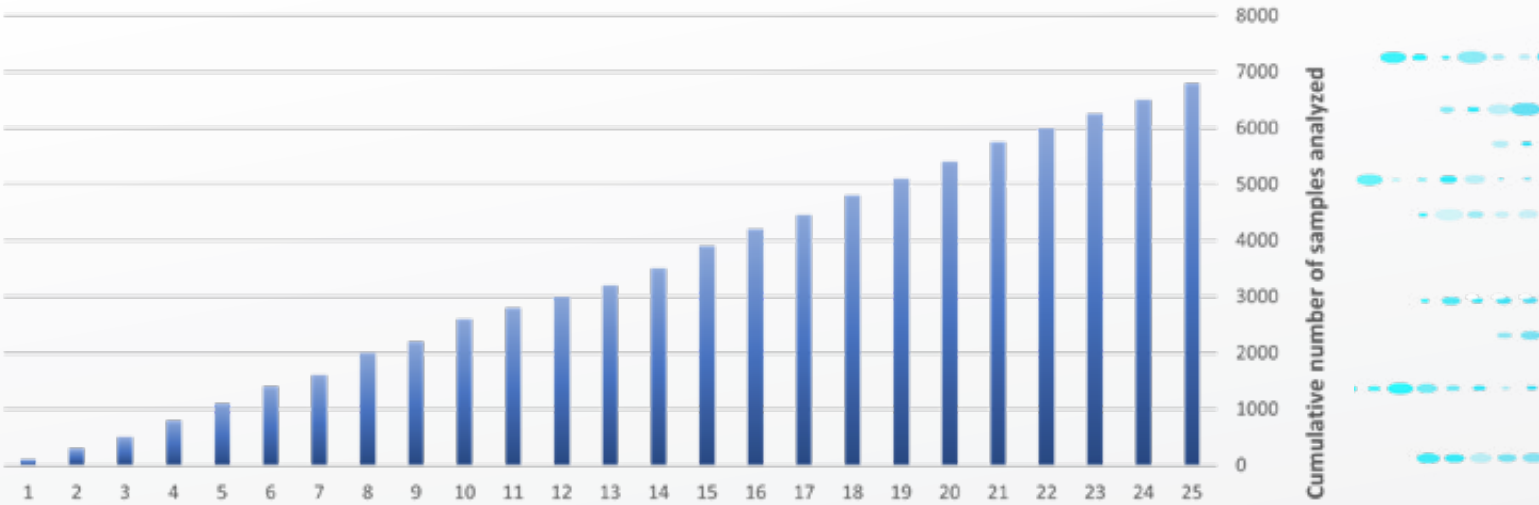
Ultimate **efficiency**



Consistent results and stability with unique matrix robustness

The high matrix performance ensures maximized instrument uptime due to the infrequent need for user maintenance and minimal analytical drift.

Dramatically reduce user maintenance to increase instrument uptime. Over 6000 samples analyzed over a span of 8 weeks without any sample introduction maintenance or cone cleaning.



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

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

Seamless interface control

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

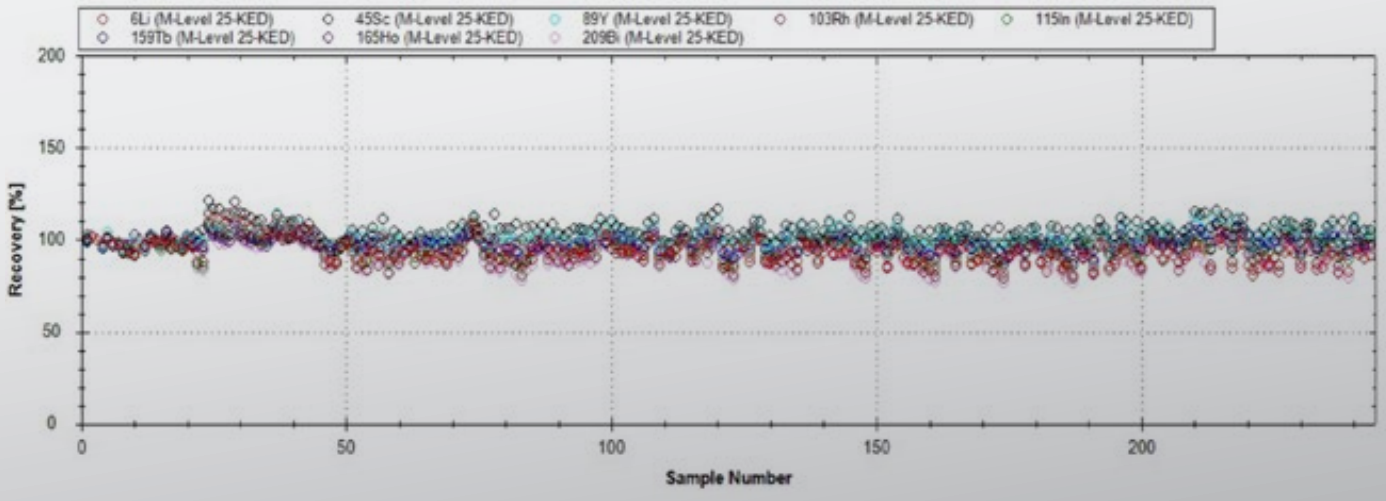
- Improved detection capability in challenging matrix
- Highest sensitivity for your sample type
- Simple instrument operation via a fully software-controlled system

Integrated argon humidifier

Enhance productivity and robustness with a fully integrated argon humidifier.

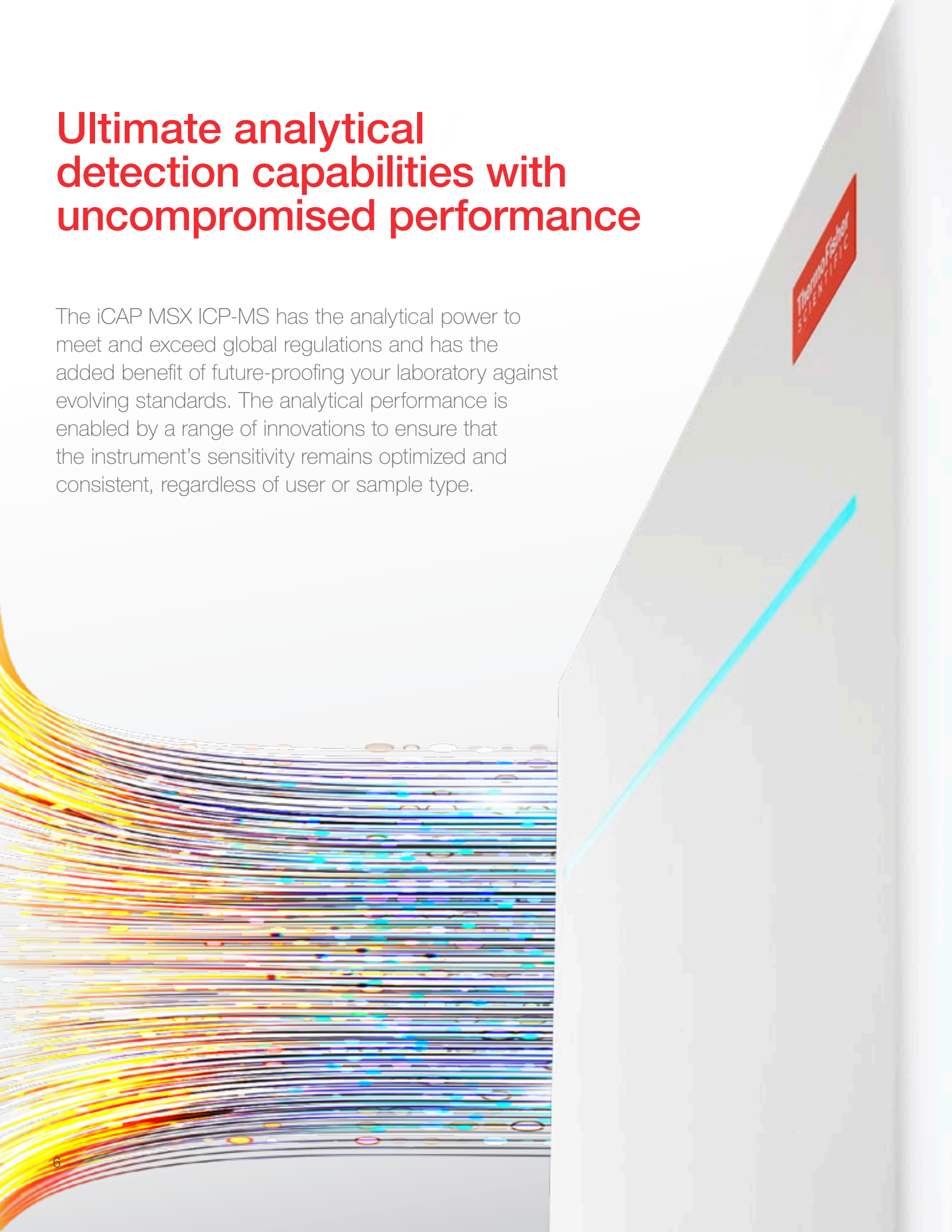
- Increased productivity with software switching between dry and humidified plasma
- Minimized analytical drift from prevention of salt build up on nebulizer and torch
- Clear visual indicators for humidifier status

Deliver right first time results in high matrix samples without drift or QC failures. Soil and wastewater analysis over 12 hrs with IMH and AGD-25, demonstrating minimal analytical drift in a high matrix.



Ultimate analytical detection capabilities with uncompromised performance

The iCAP MSX ICP-MS has the analytical power to meet and exceed global regulations and has the added benefit of future-proofing your laboratory against evolving standards. The analytical performance is enabled by a range of innovations to ensure that the instrument's sensitivity remains optimized and consistent, regardless of user or sample type.



Intellilens™ for optimal performance

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

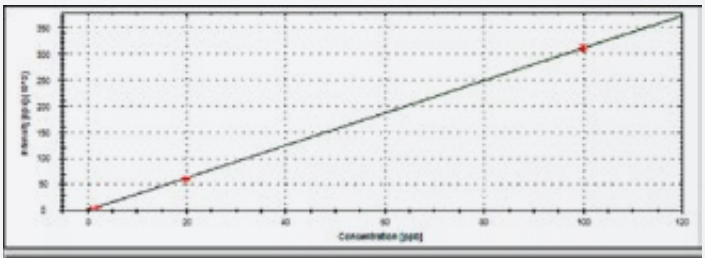
- Optimize sensitivity per analyte with intelligent tuning algorithms
- Integrated within autotunes for simplicity and ease-of-use
- Automated set-up without user instrument interaction

High sensitivity with interface design and control

Advance control of the of the interface and forevacuum boost analytical performance.

- Sensitivity or matrix tuning to provide the correct parameters for different samples
- Potential applied to skimmer cone, adjusted to optimize performance
- Raised interface vacuum further increases sensitivity

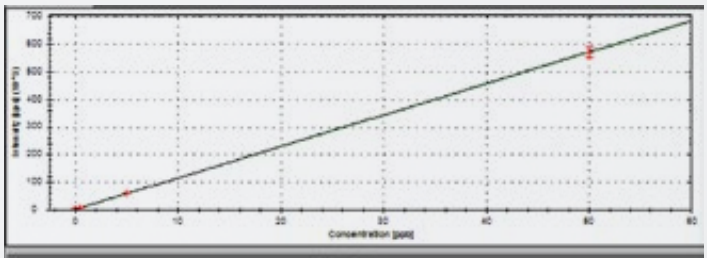
Reach As LOD of 0.0024 ppb in whiskey



f(x) = b*x + a

Parameter	Value	Confidence Delta at 90	StdErr	Rel. StdErr [%]
b	3,093.028	+/-9.458	6.408	0.207
a	45.000	+/-0.000	0.000	0.000
R²	1.000			
BEC	0.0145 ppb			
IDL(LOD)	0.0024 ppb			
RSE	1.761 %			

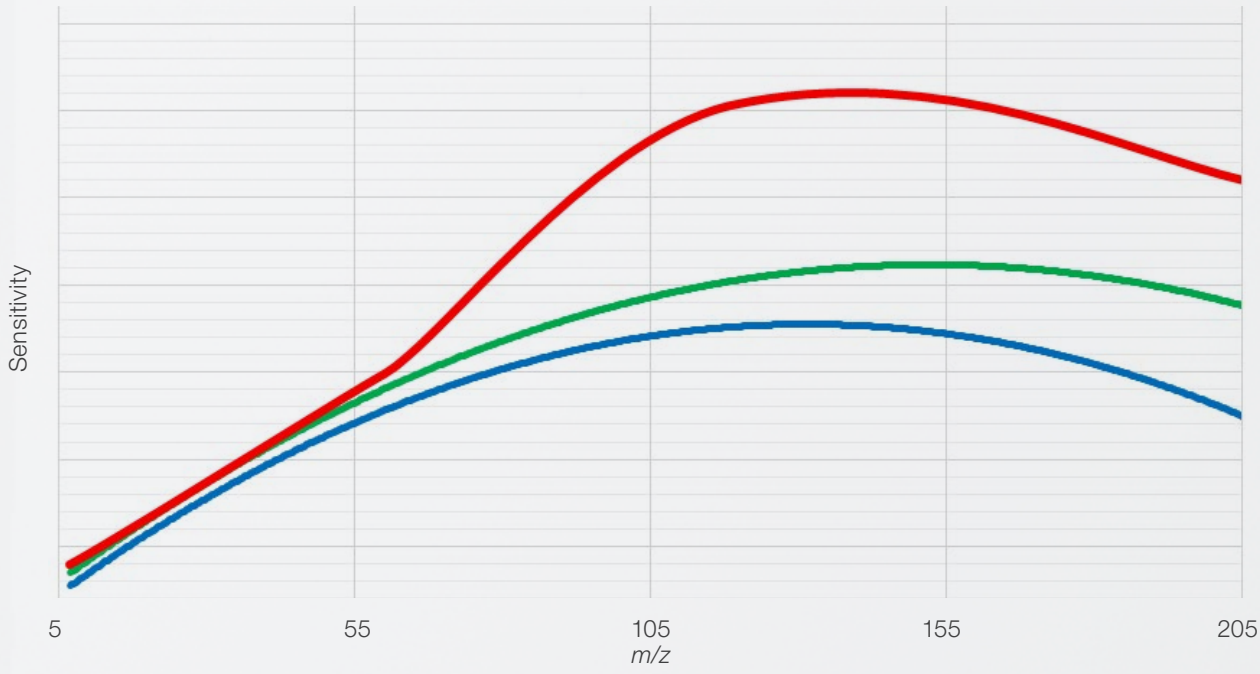
Achieve Pb LOD of 0.0048 ppb in soil



f(x) = b*x + a

Parameter	Value	Confidence Delta at 90%	StdErr	Rel. StdErr [%]
b	11,401.033	+/-61.880	37.785	0.331
a	50.033	+/-0.000	0.000	0.000
R²	1.000			
BEC	0.0044 ppb			
IDL(LOD)	0.0048 ppb			
RSE	5.820 %			

Ensure detection limit requirements are consistently achieved: Sensitivity specifications: Sensitivity of iCAP MSX ICP-MS (red) compared to other ICP-MS instruments (green and blue)



Optimized efficiency and streamlined workflows for maximum productivity

The iCAP MSX ICP-MS enables optimized productivity of your analysis from sample to results, to maximize your laboratory 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. You can be assured that you are meeting the demands for accurate analysis and traceable data with robust and reliable automated processes.



Workflows designed for efficiency

- Save time with Get Ready, which can pre-program the instrument to be ready and operational when the samples are ready for analysis.
- Optimal instrument up-time is provided by the Thermo Scientific™ HAWK™ Consumable and Maintenance Assistant which notifies the analyst when important maintenance activities are required.
- Ensure QCs pass consistently by monitoring instrument performance trends to recognize when impromptu maintenance may be necessary.

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



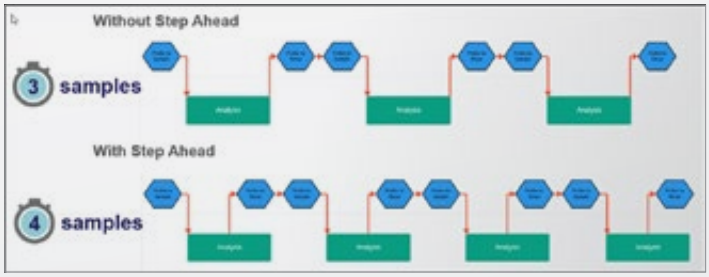
Unique user experience

- Reduce training requirements with Qtegra ISDS Software which is used with all ICP technologies from Thermo Fisher Scientific.
- Increase productivity with one software application, removing the need to navigate to different applications to execute analytical work.
- Clear visibility of instrument status from anywhere in the lab with comprehensive status LEDs.

Step Ahead

- Increase productivity as the cycle time of analysis is significantly reduced.
- Ensure efficient workflows as analysis and preparation of the next sample are executed in parallel to save time.
- Save on utilities such as argon with reduced analysis times.

Analyze more samples in a given time frame: The Thermo Scientific™ iSC-65 Autosampler fully integrates with the iCAP MSX ICP-MS and Qtegra ISDS Software to provide increased productivity with the Step Ahead feature.



Increased productivity with single analysis mode

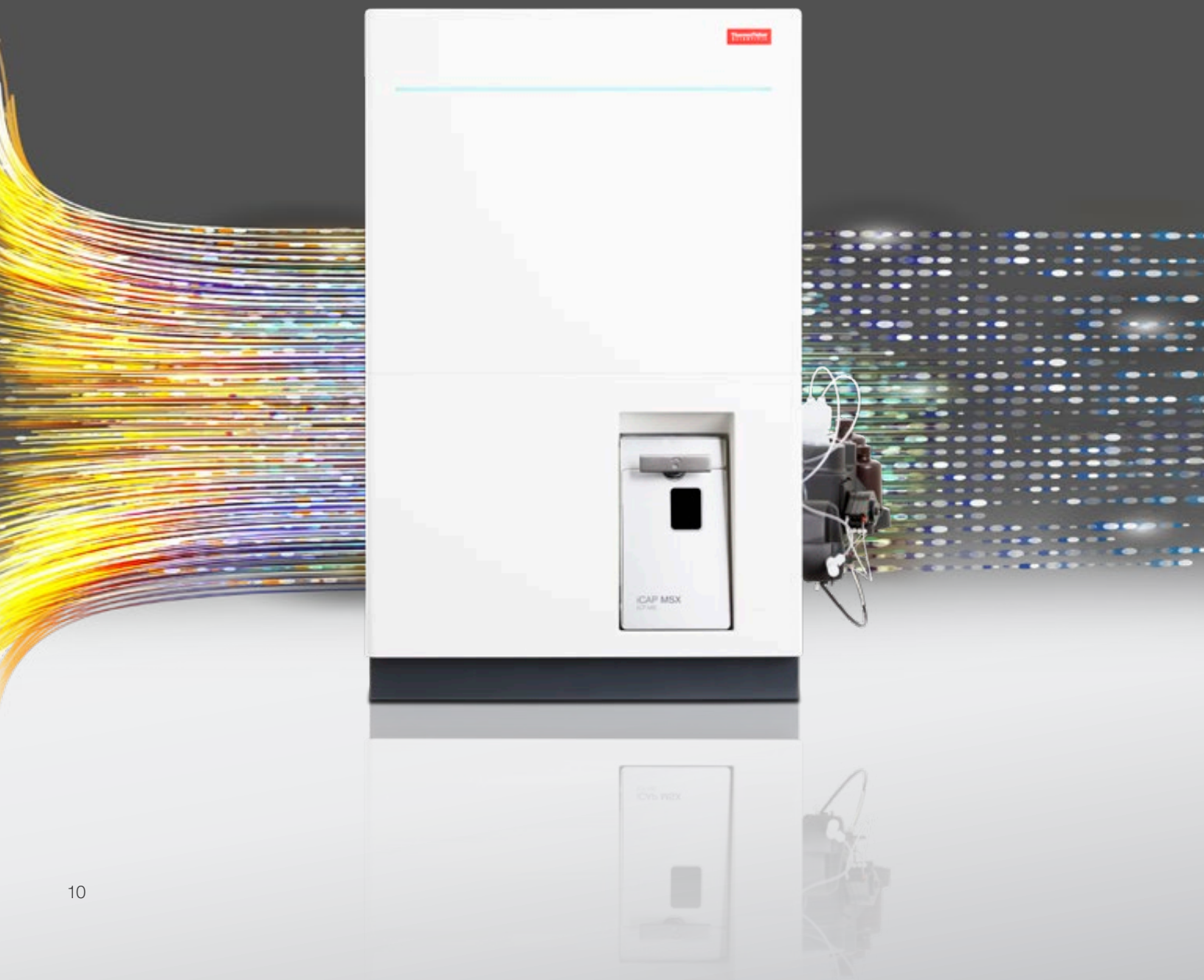
- Interference-free analysis is provided by Single HeKED analysis, which effectively removes interferences across the entire mass range.
- Fast analysis time with no CRC gas changes for commonly encountered interferences.
- Simplicity of single measurement mode to reduce instrument start-up time and method set-up and development.

Produce right first results: Single HeKED analysis mode: Proven technology for routine applications 55 elements, 2.5 min/sample in natural waters

Element	CRM SLRS-6 River water n=40		CRM LGC-6026 Hard drinking water – metals n=40	
	Mass fraction (µg/kg)	Recovery (%)	Mass fraction (µg/kg)	Recovery (%)
Al	33.9 ± 2.2	108.3 ± 5	199.9 ± 6.1	Outside calibration range
Sb	0.3372 ± 0.0058	103.8 ± 4	4.99 ± 0.17	105.0 ± 3
As	0.57 ± 0.08	109.6 ± 9	10.00 ± 0.31	109.2 ± 2
Ba	14.3 ± 0.48	100.5 ± 4	116.1 ± 3.5	104.8 ± 3
Be			5.08 ± 0.26	101.6 ± 9
Cd			4.98 ± 0.15	112.0 ± 3
Cr	0.252 ± 0.012	118.9 ± 3	50.0 ± 1.9	118.3 ± 3
Co	0.053 ± 0.012	113.5 ± 3	4.88 ± 0.17	116.2 ± 3
Cu	24.0 ± 1.8	108.8 ± 3	2017 ± 56	Outside calibration range
Fe	84.5 ± 3.6	87.7 ± 2	198.4 ± 5.5	91.4 ± 3
Pb	0.170 ± 0.026	89.1 ± 3	9.98* ± 0.14	90.6 ± 5
Li			11.24 ± 0.58	112.5 ± 5
Mn	2.12 ± 0.10	113.8 ± 4	48.4 ± 1.5	119.0 ± 2
Mo	0.215 ± 0.018	83.8 ± 6	4.77 ± 0.25	98.7 ± 6
Ni	0.617 ± 0.022	89.1 ± 6	19.00 ± 0.72	90.6 ± 3
Se			10.19 ± 0.59	86.6 ± 3
Sr	40.72 ± 0.32	100.0 ± 3	491 ± 20	107.5 ± 5
U	0.0699 ± 0.0034	88.3 ± 5	4.95 ± 0.40	95.8 ± 3
V	0.352 ± 0.006	88.5 ± 3	4.96 ± 0.15	111.1 ± 3
Zn	1.76 ± 0.12	108.3 ± 5	621 ± 19	Outside calibration range

The flexibility to handle diverse elemental analysis needs

From environmental, food, and pharmaceuticals to materials and petrochemicals, the iCAP MSX ICP-MS confidently delivers high-quality results whatever the sample source. And with simplified method development and analysis tools, it can be easily integrated into any laboratory workflow.



Efficient workflows for environmental analysis

Measure both trace and major elements with an efficient and powerful high-throughput workflow, without comprising regulatory compliance.

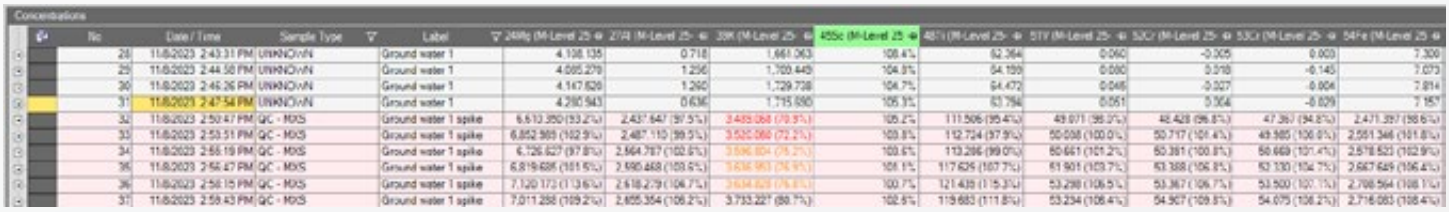
- Pre-defined AGD modes combined with He KED collision cell interference removal ensure reliable results.
- Integrated toolset for automated monitoring of analytical quality and corrective actions.
- Visual flagging of results for simple and efficient data review.

Powerful sensitivity for food and beverage testing

Powerful analytical capabilities ensure the rapid, robust measurement of both toxic and essential elements in food samples, regardless of concentration or matrix.

- Comprehensive set of QC features to produce accurate, reliability results to meet and exceed compliance of global food safety legislation and regulations.
- Instrument monitoring ensures consistent performance for accredited laboratories.
- Couple with ion chromatography (IC) or high-performance liquid chromatography (HPLC) for the speciation of critical elements to provide in-depth analytical insights.

Save time on data review: Clear flagging of data within Qtegra ISDS Software highlights data falling outside user-defined criteria



Advanced matric robustness for industrial samples

Achieve consistent results even when analyzing the most challenging samples, including complex organic chemicals, metals and alloys and novel samples associated with the lithium battery and clean energy sectors.

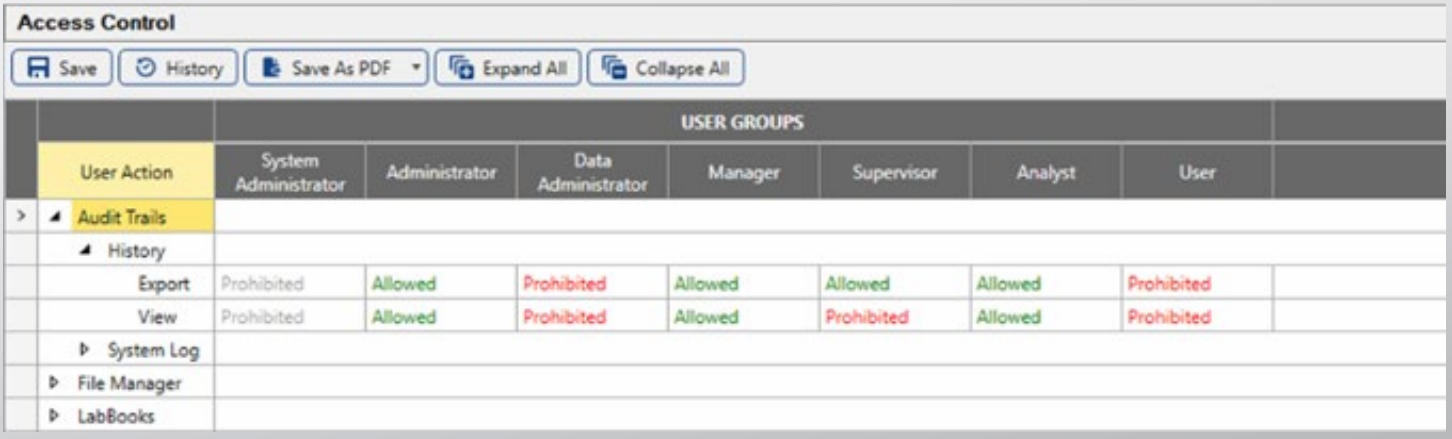
- Robust plasma-generation capability for high-quality results even when analyzing complex sample matrices.
- Flexible sample introduction configurations to support variable sample matrixes and achieve precise results.
- Eliminate polyatomic interferences to achieve accurate results with the unique Qcell collision reaction technology.

Ensure traceability for pharmaceutical compliance

Simple method validation, data security and traceability to meet global regulatory standards, including FDA, U.S. Pharmacopeia <232> and <233>, and ICH Q3D.

- Full system qualification including installation and operational qualification.
- Integrated audit trails for the tracking and control of electronic records.
- Customizable access control to facilitate high-level data security for regulatory compliance.

Tools to support regulatory compliance: The Qtegra ISDS Software has a extensive range of features to support compliance including customizable access control



ThermoFisher SCIENTIFIC

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**

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