Reinheldt R 7000 ICP-MS/MS

Tandem Triple Quadrupole Mass Spectrometry

Uncompromising Precision. Triple Quadrupole Power.

The **Reinheldt R 7000** represents the pinnacle of analytical performance, engineered for laboratories that demand absolute accuracy in the most complex matrices. By leveraging advanced triple quadrupole technology, the R 7000 eliminates spectral interferences, delivering detection limits and stability that conventional single quadrupole systems simply cannot reach.

Address: Feldstr14, 86922 Eresing Germany. (www.reinheldtgmbh.de)

Technical Excellence: The Reinheldt Advantage

1. Advanced Multi-Mode Collision/Reaction Cell (CRC)

The R 7000 features a high-efficiency hexapole CRC, allowing for the flexible use of kinetic energy discrimination (KED) and specific reaction gases (such as H^2, O^2, or NH^3). This ensures the complete removal of polyatomic interferences, providing a "clean" signal for even the most challenging analytes like Arsenic, Selenium, and Iron.

2. Superior Dual-Quadrupole Architecture

- **Q1 (First Quadrupole):** Operates as a high-precision mass filter, allowing only the target precursor mass to enter the reaction cell.
- **Q2 (Collision/Reaction Cell):** Facilitates controlled ion-molecule reactions.
- **Q3 (Analytical Quadrupole):** Filters the resulting product ions, ensuring a breakthrough in signal-to-noise ratio.

3. Ultra-Stable Ion Source & Interface

Our high-frequency, self-excited RF generator maintains an exceptionally stable plasma, even when directly aspirating high-matrix samples or organic solvents. The optimized interface cone design reduces deposition, extending maintenance intervals and ensuring long-term mass stability.

Key Benefits for Your Laboratory

- **Exceptional Sensitivity:** Achieve parts-per-quadrillion (ppq) detection limits across the periodic table.
- **Matrix Versatility:** Seamlessly switch between environmental water, clinical samples, high-purity chemicals, and food safety testing.
- **High-Throughput Workflow:** Integrated automation compatibility and rapid stabilization times maximize your daily sample capacity.
- **Reinheldt Clarity Software:** An intuitive interface that simplifies method development—from automated tuning to complex data reporting.

Applications

Industry	Capabilities
Environmental	Ultra-trace analysis of heavy metals in seawater and soil extracts.
Semiconductor	Analysis of ppt-level impurities in high-purity process chemicals.
Food & Pharma	Compliance with USP <232>/<233> and stringent food safety regulations.
Geology/Mining	Precise isotope ratio measurements and rare earth element (REE) analysis.

Strategic Solutions for Trace Analysis

Eliminating Mass Overlaps

In traditional ICP-MS, unknown ions enter the cell and create by-product interferences. The R 7000's **MS/MS mode** adds a quadrupole filter before the cell. This ensures that only target ions enter, completely eliminating "ghost peaks" from matrix elements like Zirconium or Tungsten during Arsenic analysis.

Ultra-Trace Sulfur & Phosphorus

Analyzing Sulfur is notoriously difficult due to O^2 interference. The R 7000 uses mass-transfer technology to move $^{32}S^+$ to $^{32}S\ ^{16}O^+$ at mass 48. Because Q1 has already filtered out background ions like $^{48}Ti^+$ and $^{48}Ca^+$, the result is a pure, sub-ppt detection limit.

Contact Information

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