

ION CHROMATOGRAPH - TORON-IC™ 120+



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Toron-IC™ 120+ Ion Chromatograph is a sophisticated analytical instrument, offering precise and dependable ion analysis for research, industrial, and environmental settings. This advanced system excels at the accurate separation, identification, and quantification of both anions and cations, utilizing highly sensitive conductivity detection to cover concentration ranges from ppb to ppm.

Designed for stability and minimal manual operation, the Toron-IC™ 120+ features intelligent safety monitoring, automated conductivity range control, and chemically inert fluid paths for consistent, long-term performance. Its compact footprint, combined with optional high-precision autosampling and powerful data processing software, makes it a highly capable solution for both routine testing and complex analytical challenges.

APPLICATIONS

Ion Chromatograph - Toron-IC™ 120+ Applications



The Ion Chromatograph – Toron-IC™ 120+ is a versatile instrument employed across various sectors for comprehensive ion analysis. Key applications include:

- **Environmental Monitoring:** Essential for determining inorganic anions and cations in diverse water sources such as drinking water, wastewater, surface water, and groundwater.
- **Food & Beverage Testing:** Used to analyze and quantify preservatives, additives, and potential ionic contaminants in food and drink products.
- **Pharmaceutical & Chemical Industries:** Integral to quality control, ensuring the purity of raw materials, intermediates, and final products.
- **Power Generation & Electronics:** Crucial for monitoring ionic impurities in critical materials like boiler water, ultrapure water, and electronic-grade chemicals.
- **Research & Academic Laboratories:** Supports advanced research, method development, and specialized ion separation studies.



FEATURES

Ion Chromatograph - Toron-IC™ 120+ Key Features

The Toron-IC™ 120+ is engineered for exceptional performance in ion chromatography, offering a suite of features designed for accuracy, stability, and ease of use.

Core Analytical Capabilities and Design Excellence:

- **Advanced Ion Chromatograph Design:** At its core, the system utilizes an advanced ion chromatograph design specifically optimized for the simultaneous and sequential analysis of both anions and cations. This ensures high-resolution separation and accurate, reliable quantification across a wide range of sample matrices.
- **Chemically Inert PEEK Flow Path:** The entire fluidic path, from injection to detection, is constructed from chemically inert Polyetheretherketone (PEEK). This metal-free composition guarantees compatibility with aggressive eluents, including those at extreme pH levels (pH 0–14), preventing corrosion and minimizing adsorption, which is critical for trace analysis.

Enhanced Detection and Signal Stability:

- **Automatic Range Conductivity Detector:** The integrated conductivity detector features an automatic ranging capability, seamlessly covering an expansive concentration range from trace ppb (parts per billion) levels up to high ppm (parts per million) levels. This eliminates the need for manual range switching or complex recalibration, streamlining method development and improving measurement precision across varying sample loads.
- **Self-Regenerating Electrolytic Suppressor:** A key component for high-sensitivity analysis, the self-regenerating electrolytic suppressor ensures a remarkably stable and low baseline. By continuously regenerating the suppressor with water electrolysis, it eliminates the need for external regenerant chemicals, significantly reducing operating costs and maintenance time while maximizing signal-to-noise ratio.
- **Gas-Liquid Separator:** To maintain absolute signal integrity, a highly efficient gas-liquid separator is incorporated. This crucial component effectively removes micro-bubbles that can form in the eluent or flow path, eliminating associated baseline noise and interference, thereby ensuring superior signal stability and reliable peak integration.

Intelligent Control and Automation:

- **Intelligent Software Algorithms:** The system is governed by powerful, intelligent software that incorporates advanced algorithms for data processing. These include sophisticated baseline deduction and filtering routines specifically designed to compensate for and minimize any drift related to gradient elution methods, thus improving peak shape and quantitation accuracy, especially in complex analyses.
- **Optional High-Performance Autosampler:** For high-throughput laboratories and demanding applications, an optional high-performance autosampler is available. This accessory provides precise, repeatable, and fully automated injection control, minimizing manual errors and maximizing sample processing efficiency.
- **Programmable Startup and Warm-Up:** The Toron-IC™ 120+ offers a convenient programmable startup and warm-up function. This feature allows users to schedule the system to automatically power on, stabilize the detector, and equilibrate the column before the operator arrives, maximizing lab productivity and ensuring the instrument is ready for immediate use.

Uncompromising Safety and Reliability:

- **Real-Time Safety Monitoring:** Comprehensive real-time safety monitoring is built into the system to protect both the instrument and the laboratory environment. This includes a robust pressure alarm system, a liquid leakage alarm with detection sensors, and an eluent level alarm. In the event of a critical failure, the system is designed to perform an immediate and automatic shutdown to prevent damage and ensure operational safety.

TECHNICAL SPECIFICATIONS

Ion Chromatograph - Toron-IC™ 120+ Technical Specifications

Parameter	Specification
Instrument Type	Ion Chromatograph
Detection Method	Auto-range conductivity detection

Parameter	Specification
Detection Range	0-50,000 $\mu\text{S/cm}$
Resolution	$\leq 0.0020 \text{ nS/cm}$
Baseline Noise	$\leq 0.001 \mu\text{S/cm}$
Baseline Drift	$\leq 0.01 \mu\text{S}$
Linearity	≥ 0.999
Quantitative Repeatability	$\leq 0.5\%$
Minimum Detectable Concentration	$\text{Cl}^- \leq 0.0005 \mu\text{g/mL}$; $\text{Li}^+ \leq 0.0005 \mu\text{g/mL}$
Pump Type	High-pressure, low-pulse dual-piston pump
Maximum Pump Pressure	42 MPa
Flow Rate Range	0.001 - 12 mL/min
Flow Accuracy	$\leq 0.1\%$
Column Heater Range	Ambient +5 $^{\circ}\text{C}$ to 85 $^{\circ}\text{C}$
Temperature Stability	$\leq 0.1 \text{ }^{\circ}\text{C/h}$
Suppressor Type	Self-regenerating electrolytic micro-membrane
Detector Cell Volume	$\leq 0.4 \mu\text{L}$
Autosampler (Optional)	Up to 120 vials (2 mL), multiple vial size options
Injection Volume	1 - 1000 μL
Carry-Over	$\leq 0.001\%$
Power Consumption	150 W
Dimensions (W $\times$ D $\times$ H)	360 $\times$ 500 $\times$ 560 mm

Parameter	Specification
Net Weight	30 kg



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