TORONTECH

ION CHROMATOGRAPH – TORON-IC™ 300+

Ion Chromatograph – Toron-IC™ 300+

Toron-IC™ 300+ is a next-generation, intelligent dual-channel ion chromatograph engineered to deliver high efficiency and accuracy in demanding analytical environments. By utilizing fully independent channels for anions and cations, the system enables simultaneous detection without mutual interference, significantly boosting laboratory throughput and streamlining workflows.

Built on a robust platform featuring advanced eluent generation and high-pressure pumping, the Toron-IC™ 300+ ensures stable baselines, low detection limits, and exceptional repeatability through precision conductivity detection. With integrated touch-screen control, intelligent safety monitoring, and optional automation capabilities, this system is perfectly adapted for both routine quality control and advanced research applications.

APPLICATIONS

Ion Chromatograph – Toron-IC™ 300+ Applications


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Ion Chromatograph

The Toron-IC™ 300+ Ion Chromatograph is widely utilized for critical analytical tasks across major industries:

- Environmental Monitoring: Delivers comprehensive analysis of inorganic anions and cations in drinking water, wastewater, surface water, and complex environmental samples.
- Food & Beverage Testing: Essential for the precise determination of preservatives, additives, organic acids, and ionic contaminants to verify product safety and quality.
- Pharmaceutical & Biotechnology: Supports rigorous quality control and impurity profiling for raw materials, intermediates, and finished drug products.
- Chemical & Industrial Analysis: Enables the monitoring of ionic species within chemical formulations, process streams, and industrial materials to ensure production consistency.
- Energy & Power Generation: Critical for analyzing ions in boiler water, cooling water, and power plant systems to prevent corrosion and maintain efficiency.
- Academic & Research: Provides the high-performance capabilities needed for advanced method development, ion separation studies, and multi-component analysis.

FEATURES

Ion Chromatograph – Toron-IC™ 300+ Key Features

Performance & Precision

- True Dual-Channel Architecture: Independent anion and cation channels operate simultaneously without cross-interference, ensuring maximum sample throughput.
- Precision Conductivity Detection: A digital, temperature-controlled conductivity cell provides ultra-low noise and high linearity for accurate measurements from ppb to ppm levels.
- Ultra-Pure Online Ion Purification: Minimizes baseline noise, significantly improving the signal-to-noise ratio and accommodating lower water quality requirements.
- Integrated Heating & Thermal Insulation System: Multi-point temperature control stabilizes columns, suppressors, and detectors, guaranteeing reproducible results regardless of environmental variations.

Operational Efficiency

- Built-In Dual-Membrane Eluent Generator: Eliminates the need for degassing tubing and capture columns by generating precise eluents from pure water, supporting pressures up to 30 MPa.
- Advanced Degassing & Gas–Liquid Separation: An integrated gas-liquid separator and continuous vacuum degasser ensure stable flow and consistent detector response.
- High-Pressure, Metal-Free Flow Path: PEEK pump heads and tubing offer chemical inertness across the entire pH range (0–14) and are compatible with reversed-phase solvents.

Usability & Safety

- 10-Inch HD Touchscreen Interface: Features real-time flow path visualization and complete instrument control, enhancing usability and system oversight.
- Comprehensive Safety Monitoring: Built-in alarms for leakage, pressure, eluent consumption, and system faults increase operational safety.
- Optional Dual-Channel Autosampler: Allows for unattended operation with high injection repeatability for both anion and cation channels.
- Mobile App Connectivity: Provides remote status monitoring and control via a smartphone application for enhanced operational flexibility.

TECHNICAL SPECIFICATIONS

Ion Chromatograph – Toron-IC™ 300+ Technical Specifications

Parameter	Specification
Model	Toron-IC™ 300+
System Type	Dual-channel Ion Chromatograph
Pump Type	Two-stage peristaltic + piston pump
Maximum Pressure	42 MPa
Flow Rate Range	0.001–12 mL/min
Flow Accuracy	≤±0.07%
Flow Stability	≤0.09%
Pressure Display Accuracy	≤0.1 MPa
Conductivity Cell Volume	≤0.4 μL
Conductivity Range	0–50,000 μS/cm
Resolution	0.0020 nS/cm
Baseline Noise	≤0.0002 μS/cm
Baseline Drift	≤0.001 μS / 30 min
Linearity	≥0.999
Repeatability (Qualitative)	≤0.05%
Repeatability (Quantitative)	≤0.06%
Suppressor Type	Self-regenerating micro-membrane
Suppression Capacity	200 μeq/min (anion), 100 μeq/min (cation)

Parameter	Specification
Eluent Types	KOH, NaOH, LiOH, MSA
Eluent Concentration Range	0.1–100 mM
Column Temperature Range	Ambient +5 to 60 °C
Temperature Stability	≤0.1 °C/h
Degassing Efficiency	≥90% at 1.0 mL/min
Display	10-inch HD LCD touch screen
Power Consumption	320 W
Dimensions (W × D × H)	580 × 487 × 635 mm
Weight	52 kg
Optional Accessories	Dual-channel autosampler, mobile app

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