

# ION CHROMATOGRAPH - ION CHROMATOGRAPHY SYSTEM



# **Ion Chromatograph - Ion Chromatography Instrument**

The Ion chromatography system is an essential analytical instrument for the separation, identification, and quantification of ionic species in liquid samples, including anions, cations, organic acids, and inorganic ions. The process involves passing a liquid sample through a specialized chromatographic column where ions are separated based on their interaction with a stationary phase, followed by highly sensitive detection.

Ion Chromatograph is widely used across many fields due to its high accuracy, excellent reproducibility, and low detection limits, making it ideal for both routine and trace-level analysis.

## **Introducing the Toron-IC™ Series**

The Toron-IC™ Ion Chromatograph series offers a comprehensive range of modular IC systems designed for laboratories that demand flexibility, analytical precision, and long-term operational stability.

The Toron-IC™ range scales from compact single-channel instruments to advanced high-pressure, multi-detector platforms, ensuring they can grow with your laboratory's analytical needs.

Each system is built with integrated precision pumping technology, chemically inert flow paths, advanced temperature control, and intelligent software to deliver consistent separation performance. Furthermore, multiple detector options—including conductivity, amperometric, and UV detectors—allow for configuration tailored to specific analytical goals.

## **Key Benefits of Choosing Toron-IC™**

- **Modular and Scalable Design:** Easily expand from single-channel operation to multi-channel functionality without the need to replace the core instrument.
- **High-Precision Performance:** Advanced pumping systems ensure stable flow at high pressures, leading to superior separation efficiency and reproducibility.

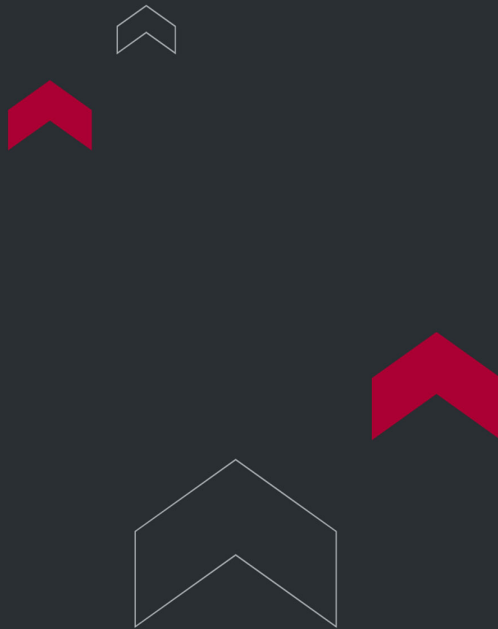
- **Diverse Detector Compatibility:** Configure your system with conductivity, amperometric, or UV detectors to support a broad range of analytical methods.
- **Chemically Inert Flow Paths:** Metal-free PEEK flow paths ensure broad chemical compatibility (pH 0–14) and eliminate sample contamination risks.
- **Stable Baseline:** Integrated vacuum degassing and temperature-controlled modules enhance baseline stability and improve detection sensitivity.
- **Intelligent Software:** User-friendly control software streamlines method setup, data processing, reporting, and compliance workflows.
- **Reliability:** Built with industrial-grade components and precise temperature management for consistent performance in high-throughput environments.

## **Toron-IC™ Applications Across Industries**

Toron-IC™ systems are essential tools across numerous sectors, including:

- **Water Analysis (Drinking/Wastewater):** Determines common inorganic ions, such as fluoride, chloride, nitrate, sulfate, bromate, perchlorate, and ammonium.
- **Food and Beverage Testing:** Analyzes nutritional components, organic acids, sugars, carbohydrates, iodide, and thiocyanate in products like infant formula, coffee, and processed foods.
- **Environmental Monitoring:** Measures ions in surface/groundwater, atmospheric particulates (PM2.5, PM10, TSP), soil extracts, and solid waste leachates.
- **Petrochemical/Energy:** Identifies inorganic anions in oilfield wastewater and determines total halogens, sulfur, and nitrogen in petroleum via combustion IC.
- **Pharmaceuticals:** Quantifies active ingredients, impurities, and ionic components in drug raw materials and finished products.
- **Electronics and Semiconductor:** Performs ionic contamination analysis for ultrapure process water, circuit boards, and semiconductor materials.
- **Battery and Energy Storage:** Detects anions in lithium battery electrolytes and raw materials for quality control and performance assessment.

- Materials Analysis (Halogen/Polymer): Determines total fluorine, chlorine, bromine, iodine, and sulfur in polymers and plastics using combustion IC.
- Forensics and Public Security: Analyzes explosive residues, oxidizers, and trace inorganic ions in security and investigative applications.



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