QUALITEST™

ION CHROMATOGRAPH – QUALI-IC™ 200 (EFFICIENT)

STANDARDS

AOAC 2000.11
AOAC 2001.02
AOAC 2012.20
AOAC 995.13
AOAC 996.04
AOAC 997.08
ASTM D2036
ASTM D5794
ASTM D6832
ASTM D6919
ASTM D7359
ASTM D7994
ASTM D8247
DIN 38409-59
EN 17813
IEC 62321
IPC-TM-650 2.3.28
UOP 991
US EPA 1621
US EPA 1636
US EPA 300.0
US EPA 300.1
US EPA 302.0
US EPA 314.0
US EPA 321.8
US EPA 332.0
US EPA 6860

US EPA 9056
US EPA 9058

Ion Chromatograph – Quali-IC™ 200 (Efficient)

Ion Chromatograph – Quali-IC™ 200 is an intelligent, high-sensitivity analytical system designed for precise ionic separation and quantification in modern laboratories. Engineered around advanced ion chromatography principles, this platform integrates high-pressure pumping, electrochemical detection, and automated sample handling to deliver accurate, repeatable ion analysis across a wide concentration range.

Designed for IC, HPLC, and UHPLC compatibility, the Quali-IC™ 200 combines a highly sensitive electrochemical detector with flexible operating modes and robust system monitoring. Intelligent safety functions, automated injection options, and modular components make this ion chromatograph suitable for routine quality control, regulatory testing, and advanced analytical research.

APPLICATIONS

Ion Chromatograph – Quali-IC™ 200 (Efficient) Applications

The Ion Chromatograph – Quali-IC™ 200 is widely used for ionic analysis in:

- Environmental testing, including anions and cations in water, wastewater, and environmental samples
- Food and beverage analysis, for inorganic ions, additives, and contamination monitoring
- Pharmaceutical and chemical laboratories, supporting raw material verification and impurity profiling
- Petrochemical and industrial process control, monitoring ionic species in production streams
- Academic and research laboratories, requiring high-sensitivity and method-development flexibility

Ion Chromatograph – Quali-IC™ 200 (Efficient)

Standards

The following standards govern the use of Ion Chromatography (IC) in various applications, ensuring accuracy and regulatory compliance.

1. Water and Environmental Monitoring

General Anion Analysis (Water and Wastewater)

- ASTM D2036: Standard testing for fundamental anions (chloride, sulfate, nitrate).
- ASTM D6832: Analysis of both anions and cations, specifically for industrial processes and power generation water.
- ASTM D6919: Covers the determination of dissolved inorganic anions in water and wastewater.
- ASTM D7359: Focuses on measuring trace-level anions in water using suppressed conductivity detection.
- ASTM D7994: Utilizes modern IC techniques for the determination of inorganic anions in water.
- US EPA 300.0 / 300.1: Protocols for measuring inorganic anions (fluoride, chloride, nitrate, nitrite, sulfate) in drinking water and wastewater.
- US EPA 1636: Used for determining inorganic anions in aqueous samples for broad environmental monitoring.
- DIN 38409-59 & EN 17813: European standards for inorganic anion measurement, ensuring compliance in water and wastewater.

Specialized Contaminants and Matrices

- ASTM D5794: Analysis of inorganic anions in atmospheric deposition samples (e.g., rain and snow).
- Perchlorate Detection (Environmental & Drinking Water):
    - US EPA 302.0: Detection of perchlorate in general environmental water samples.
    - US EPA 314.0: Focuses on low-concentration perchlorate detection in drinking water.
    - US EPA 332.0: Specifically uses suppressed conductivity IC for perchlorate analysis in drinking water.
- Disinfection Byproducts:

    - US EPA 321.8: Determination of bromate, bromide, chlorite, and chlorate in drinking water.
- Organic/Inorganic Mix:
    - US EPA 6860: Analysis covering both organic acids and inorganic anions in water.

Solid Waste and Soil Matrices

- US EPA 9056 / 9058: Established protocols for analyzing inorganic anions in soils, solid waste, and their aqueous extracts.

2. Combustion IC (Petrochemicals and Materials)

- ASTM D8247: Used to determine total fluorine, halogens, and sulfur in various materials following a combustion IC procedure.
- US EPA 1621: Procedures for measuring adsorbable organic fluorine, chlorine, and bromine compounds.
- UOP 991: Standard for the analysis of trace halogens and sulfur content in petroleum products.

3. Food, Beverage, and Nutritional Analysis (AOAC)

General Food and Beverage Analysis

- AOAC 995.13: Measurement of chloride, nitrate, and sulfate across diverse food matrices.
- AOAC 996.04: Analysis of both organic acids and inorganic ions present in food and beverage products.
- AOAC 997.08: Detection of bromide and bromate in food and drink items.
- AOAC 2000.11: Focused anion determination for dairy and processed food products.

Specific Nutritional and Safety Concerns

- AOAC 2001.02: Quantification of nitrate and nitrite levels in various foods.
- AOAC 2012.20: Inorganic anion analysis tailored for infant formula and other nutritional supplements.

4. Electronics and Industrial Compliance

- IEC 62321: Standard for determining halogen content in electrical and electronic products, often required for RoHS compliance.
- IPC-TM-650 2.3.28: Method for measuring the level of ionic contamination found on printed circuit boards (PCBs).

FEATURES

Ion Chromatograph – Quali-IC™ 200 (Efficient) Key Features

- High-Sensitivity Electrochemical Detector Supports DC, Pulse, and Scan modes for ultra-low detection limits and broad application coverage
- Multi-Flow Cell Capability Supports up to three flow cells to accommodate diverse analytical requirements
- Advanced Autosampler with Dilution Function Enables micro, partial, and full-loop injection with automatic dilution for high-throughput workflows
- Quad-Pump System Allows operation of up to four different mobile phases, supporting gradient and complex separations
- High-Pressure Analytical Pump Delivers stable flow up to 400 bar (5800 psi) with active pulsation compensation
- Intelligent System Monitoring Includes leak detection, status indicators, and automatic safety interlocks
- Column and Flow Cell Oven Temperature-controlled chamber improves retention stability and analytical repeatability
- Flexible Connectivity and Control LAN, analog, and event-based control with optional mobile interface

TECHNICAL SPECIFICATIONS

Ion Chromatograph – Quali-IC™ 200 (Efficient) Technical Specifications

Parameter	Specification

Model	Quali-IC™ 200
Analytical Technique	Ion Chromatography
Detector Type	Electrochemical (DC / Pulse / Scan modes)
Detector Current Range	10 pA – 25 mA (mode dependent)
Potential Range	-2.50 V to +2.50 V
Noise Level	< 2 pA (1 nA range, filter off)
Column Oven Temperature	Ambient +7 °C to 60 °C
Pump Type	Dual serial piston analytical pump
Maximum Pressure	400 bar / 40 MPa
Flow Rate Range	0.001 – 10 mL/min
Flow Accuracy	< 1%
Flow Precision	< 0.1% RSD
Autosampler Injection Volume	1 µL – 1000 µL
Injection Precision	≤ 0.5%
Carry-Over	≤ 0.001%
Degasser	4-channel membrane degasser
Communication Interfaces	LAN, analog input, event I/O
Voltage	100–240 VAC, 50/60 Hz
Operating Temperature	4–40 °C
Dimensions (W × L × H)	361 × 523 × 208 mm
Weight	Approx. 14 kg

QUALITEST™

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Qualitest USA (Corporate Sales Office)
Toll-Free: 1.877.884.TEST (8378) | Fax: 954.697.8211
E-mail: info@qualitest-inc.com
Address: 8201 Peters Rd., #1000,
Plantation, FL 33324, USA.

Qualitest Canada & International
Tel: +1.905.944.9825 | Fax: +1.905.944.0304
E-mail: sales@qualitest-inc.com
Address: 70 East Beaver Creek Rd., #9, Richmond Hill,
Ontario L4B 3B2, Canada.

Qualitest Latin America (Mexico and LATAM Region)
E-mail: ventas@qualitest-inc.com

Qualitest KSA (Regional Office)
Tel: +966 11 500 6659
Address: Level 7, 3.09, District 3, King Abdullah
Financial District, Riyadh, Saudi Arabia

Qualitest Singapore (ASIA PACIFIC Regional Office)
Tel: +65 6393 5480 | E-mail: singapore@qualitest-inc.com
Address: 50 Raffles Place, Singapore Land Tower,
Level 46, Singapore, 048623.

Qualitest Indonesia (Representative Office)
Tel: +62 21 2985 9522 | Fax: +62 21 2985 9889
E-mail: indonesia@qualitest-inc.com
Address: One Pacific Place Level 11, Jl. Jend. Sudirman,
Kav. 52-53, SCBD Area, Jakarta 12190, Indonesia.

Qualitest FZE (Regional GCC/ME Office)
Tel: +971 4 8819252 | Fax: +971 4 8819262
Email: gcc@qualitest-inc.com
Address: Jafza One, BB 1610, Jebel Ali Free Zone,
PO Box 261440, Dubai, UAE.

Qualitest India
E-mail: india@qualitest-inc.com
Address: 15th Floor, Dev Corpora, Pokhran Road No.1,
Eastern Express Highway, Thane, Maharashtra,
Mumbai, 400601, India

Organizational Member

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