HIGH QUALITY, RELIABLE ION ANALYSIS SOLUTIONS FOR EVERY IC CHALLENGE

THERMO SCIENTIFIC
DIONEX PRODUCT PORTFOLIO

Thermo SCIENTIFIC

IC INSTRUMENTS MADE FOR PROBLEM SOLVERS

As IC chromatographers, you are problem solvers, ensuring that everyone has access to healthy, clean and safe products and resources. Your IC instruments support you in this mission. The instruments in your laboratory must work seamlessly together to solve complex problems. Ion chromatography systems are highly interconnected within your laboratory ecosystem and must work reliably to keep your mission intact.

We offer an unsurpassed combination of products, support and solutions to address your current application needs and give you the confidence that you will be prepared to meet tomorrow's challenges. Our products deliver the performance you have come to expect from a company that has been setting the standard for over 40 years. We are committed to providing you with the right tools to tackle the analytical demands that come your way.

Thermo Scientific™ Dionex™ Aquion™ IC System

Simple. Reliable. Cost effective.

Reliable system for simple ion analysis, straightforward operation and great value

Thermo Scientific™ Dionex™ Integrion™ HPIC™ System

Easy to use. Proven uptime. Investment protection. Faster run times.

Efficient and highly configurable system, adaptable to your workflow changes

Thermo Scientific™ Dionex™ ICS-4000 Capillary HPIC™ System

Always ready. Reduced waste.

Always on IC system that requires low reagent use and reduces waste generation

Thermo Scientific™ Dionex™ ICS-5000+ HPIC™ System

Handles complex samples. Versatile. Faster run times.

Highly versatile system with flexibility and performance, a modular design and configurations to meet your toughest IC challenges

THE DIONEX AQUION IC SYSTEM

The Dionex Aquion IC system provides a reliable foundation for IC analysis. Built on a compact platform with the aim of maintaining low operating costs, it uses proven technologies to deliver reliable results.

"I run a small environmental testing lab that performs basic ion analysis on drinking water samples. We need a system we can rely on when we need to generate results."

FEATURES

Proven, reliable technologies
Integrated, preconfigured, factory plumbed and tested for immediate productivity

Dual-piston pump design
Reduces pulsations allowing high-sensitivity detection and excellent flow rate, accuracy and precision

Multiple suppressors
Electrolytic or chemical suppression

Column format support
Flexible flow rate that supports 2, 3, 4 and 5 mm column formats

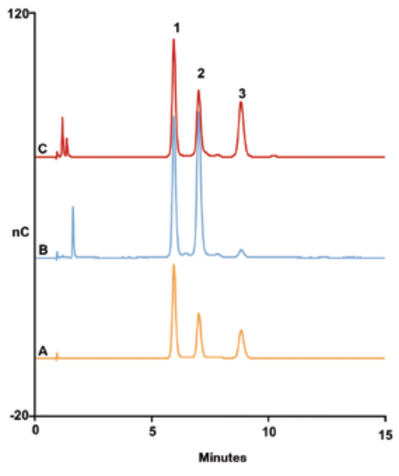
Cost-effective
Ultimate in productivity for low cost per analysis while maintaining high-sensitivity results

THE DIONEX INTEGRION HPIC SYSTEM

The Dionex Integrion HPIC system is designed for those running the same method for an extended time, offering the best performance and reliability at the lowest ongoing cost.

"As the owner of a specialist IC laboratory, I require impeccable routine performance in a compact instrument. Changing market needs mean that my current instrument may no longer be suitable for me one day. Although I can't predict the direction that the market will evolve over the next five years, I need to avoid having to buy new instruments. I need both performance and protection for my new IC."

Simple Sugar Analysis in Fruit Juices



Sample: A: Food Sugars Standard
B: Apple Juice
C: Orange Juice

Sample Prep.: 10,000x dilution with deionized water, filter, 0.2 µm

Peaks:

1. Glucose
2. Fructose
3. Sucrose

FEATURES

Easy to use

Intuitive, flow-path-based plumbing with simplified fittings

Local language support

Detachable tablet that speaks your language for accelerated learning

Reagent-Free™ capability

Ensures consistent results for both isocratic and gradient conditions and allows you to use high-efficiency 4 µm particle size columns

Consumables smart monitor

Enables proactive system wellness maintenance with consumable tracking and diagnostic remote monitoring capabilities*

Troubleshooting videos

Convenient troubleshooting videos to maintain instrument uptime

Reliable and reproducible results

Sensitive system with precise, accurate results from day to day, operator to operator and lab to lab

Upgradeable components

Detectors
Electrolytic sample preparation and water purification
Electrolytic suppression
Auxiliary valves
Low pressure degas
RFID* consumables tracking
Eluent generation
Front panel control

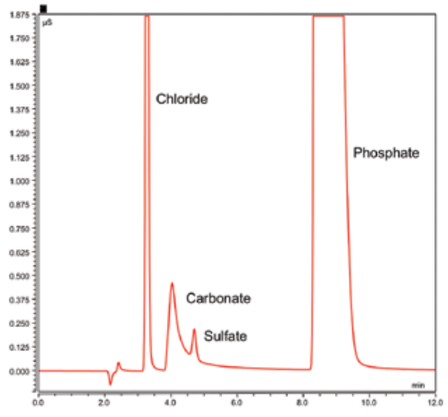
* The wireless transmitter devices may not be authorized as required by the laws of your country; and these features will not be, offered for sale or lease, or sold or leased, until proper authorization is obtained. Please consult your local sales representative for details.

THE INTEGRATED DIONEX ICS-4000 CAPILLARY HPIC SYSTEM

The integrated Dionex ICS-4000 Capillary HPIC system offers increased sensitivity for precious samples in addition to cost savings due to low eluent consumption and minimal waste production.

"A lot of our costs come from waste disposal because of our remote location, so we need a system that generates minimal waste."

Anions in Powerplant Water by CapIC



FEATURES

Always ready analysis

Start runs quickly by minimizing calibration and equilibration times with a system that is always on

Prolong system lifetime by avoiding abrupt startups and shutdowns that can strain your system

Increased sensitivity

Benefit from increased mass sensitivity using capillary columns for applications with limited sample volumes

Reduced waste

Reduce reagent usage and produce less waste with a system that consumes only 15 mL of water per day

Reduced eluent usage

Use less eluent with the Eluent Generation Cartridge (EGC), which lasts for 18 months under continuous operation

Increased throughput

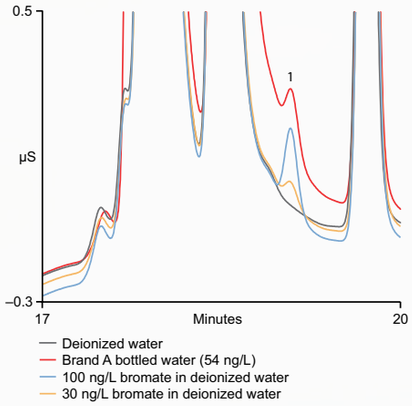
Shorten run times using high-pressure capability with smaller particle size columns that can be run at faster flow rates on a high-pressure capable system up to 5000 psi

THE DIONEX ICS-5000+ HPIC SYSTEM

The Dionex ICS-5000+ HPIC system is the top-of-the-line and ultimate in performance. It is designed to address the full range of IC applications, so you can tackle both the most basic analyses and the most complex challenges with the confidence that you have the best system available.

"I oversee a contract testing lab that receives samples with requests for analyses that can vary wildly from one day to the next. I may have to determine routine ions one day and trace level water contaminants the next. I need a system that will give me the flexibility to handle whatever samples are sent my way."

Determination of Trace Bromate in a Bottled Water Sample Using 2-D Ion Chromatography



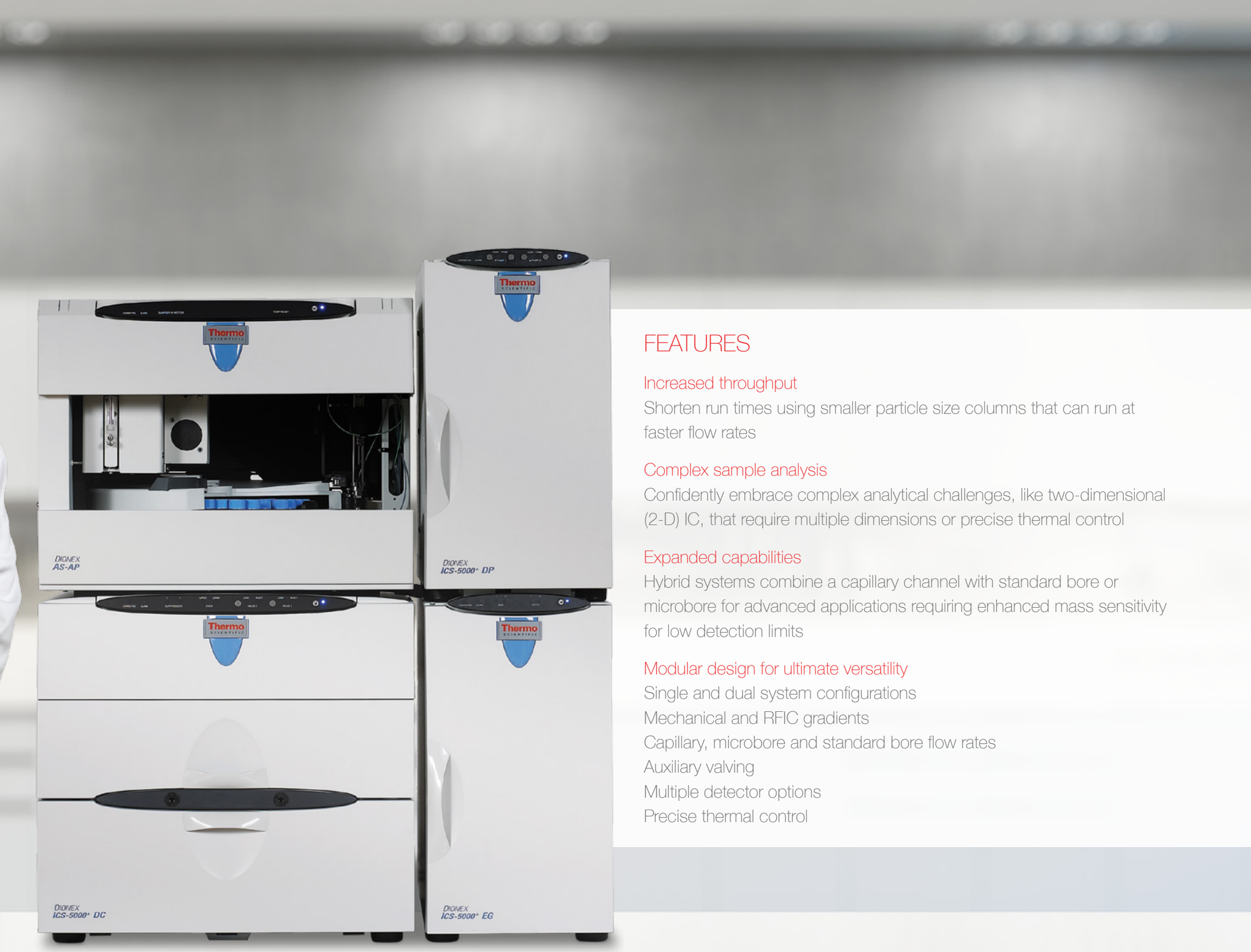
A. First-Dimension Conditions

Column:	IonPac® AG19, AS19, 4 mm
Eluent:	10–60 mM KOH (EGC-KOH)
Flow Rate:	1.0 mL/min
Injection Vol.:	1000 µL
Temperature:	30 °C
Suppressor:	ASRS® 300, 4 mm

B. Second-Dimension Conditions

Column:	IonPac® AS20 (0.4 × 250 mm)
Eluent:	35 mM KOH (EGC-KOH)
Flow Rate:	10 µL/min
Temperature:	30 °C
Detection:	Suppressed conductivity, Anion Capillary Electrolytic Suppressor, ACES™ 300
Concentrator:	IonSwift™ MAC-200, capillary 2500 µL of 1st dimension suppressed effluent (7.5 to 10 minutes)
Peak:	1. Bromate

28224



FEATURES

Increased throughput

Shorten run times using smaller particle size columns that can run at faster flow rates

Complex sample analysis

Confidently embrace complex analytical challenges, like two-dimensional (2-D) IC, that require multiple dimensions or precise thermal control

Expanded capabilities

Hybrid systems combine a capillary channel with standard bore or microbore for advanced applications requiring enhanced mass sensitivity for low detection limits

Modular design for ultimate versatility

Single and dual system configurations
Mechanical and RFIC gradients
Capillary, microbore and standard bore flow rates
Auxiliary valving
Multiple detector options
Precise thermal control

START YOUR IC ANALYSIS OFF ON THE RIGHT FOOT

The quality of your sample preparation sets the tone for the rest of your laboratory operations, from your workflow to the integrity of your results. Busy laboratories, like yours, deal with samples that come in every form, from solid to liquid to gas. The right sample preparation techniques provide reliable and accurate results. You need automated solutions that seamlessly fit into the flow of your lab and eliminate time-consuming manual sample preparation methods.

Matrix elimination

Remove interfering matrix ions and organic contaminants using off-line Thermo Scientific™ Dionex™ OnGuard™ II Cartridges, Thermo Scientific™ Dionex™ InGuard™ II Cartridges and Thermo Scientific™ Dionex™ IonPac™ Guard Columns

Automated dilution

Eliminate time consuming manual steps with the Dionex Chromeleon AutoDilution feature combined with the Dionex AS-AP Sample Conductivity and pH Accessory to detect and automatically adjust samples that fall out of calibration range

Air monitoring

URG Air Samplers can easily collect, prepare and quantify ionic pollutants on a continuous basis by separating and collecting volatiles and particulate matter

Combustion IC

Automates halogen and sulfur content analysis in difficult-to-process samples such as ores, coal, printed circuit boards, solders, plastics and petroleum products

CONSERVE RESOURCES BY AUTOMATING THE FLOW OF YOUR LAB

Your time is valuable and so is the time of your technicians. The more your laboratory instruments can work for you, the better. This is why we've developed a full portfolio of autosampler technologies to automate processes. From simple injections to complex sample preparation, there is a solution to complement the needs of your lab.

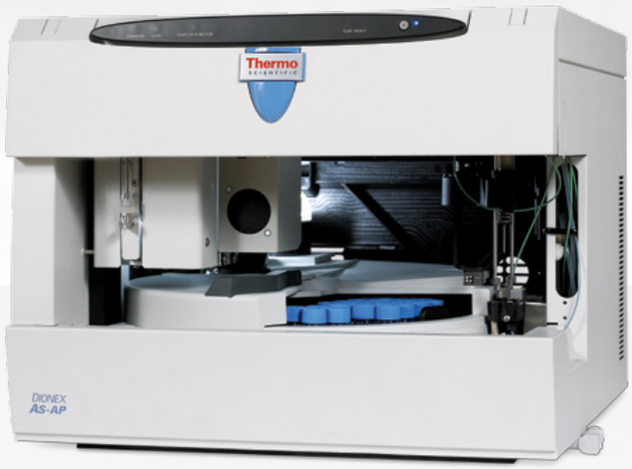
Our autosampler technologies range from high-precision-at-a-low-cost to high-speed, high-volume technologies that can double throughput using simultaneous injection techniques. Select the level of automation your IC application requires to maintain the flow of your lab and conserve valuable technician resources.

Thermo Scientific™ Dionex™ AS-HV

Simplifies low-level analysis with state-of-the-art design, customizable fluidics and trace-compatible materials

Thermo Scientific™ Dionex™ AS-AP

Elevates workflow with a full suite of automation capabilities that are flexible, customizable and easy to use



Thermo Scientific™ Dionex™ AS-DV

High-end instrument at an affordable price that does not sacrifice performance

Cost-effective solution for the water analysis laboratory

COLUMN CHEMISTRIES THAT SET OUR SYSTEMS APART

At the heart of our ion chromatography systems is a unique set of column chemistries that provide high selectivity and efficiency with excellent peak shape and resolution. You will see peaks you have never seen before using our wide variety of column options that accommodate a wide range of applications.

Our polymeric columns address a variety of chromatographic separation modes including ion exchange, ion exclusion, reversed-phase ion pairing and ion suppression. In addition, the Virtual Column Separation Simulator is like installing a virtual IC expert in your lab. With the ability to predict chromatography under a wide range of experimental conditions and immediately reveal the effects of varying eluent compositions and temperatures, it is an invaluable tool that gives you the confidence to choose the right column for your method.

FEATURES

Quality guarantee

We develop, manufacture, test and perform quality control on all of our IC columns

Wide variety of column options

The breadth of our column portfolio allows us to guarantee the right chemistry for your sample

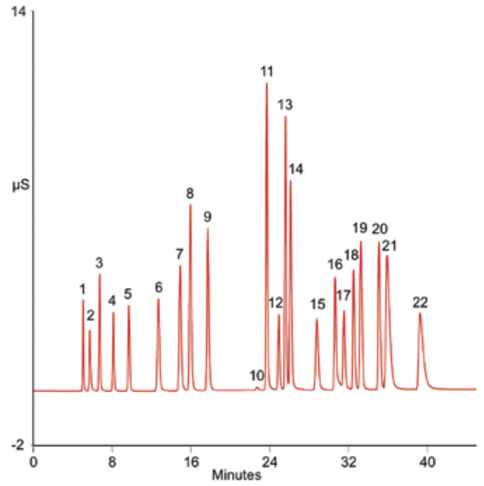
Flexible format

Standard bore, microbore and capillary formats for ultimate application flexibility

Virtual Column Separation Simulator

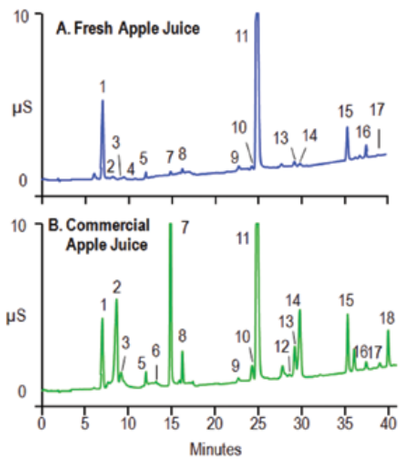
Models IC separations for real-world samples using known retention data and IC-specific retention algorithms, allowing you to confidently choose the right column for your method

Analysis of 22 Environmental Anions
Dionex IonPac™ AS19-4 µm (4 x 250 mm)



Peaks:		mg/L
1.	Fluoride	2.0
2.	Acetate	10.0
3.	Formate	10.0
4.	Bromate	20.0
5.	Chloride	6.0
6.	Nitrite	15.0
7.	Chlorate	25.0
8.	Bromide	25.0
9.	Nitrate	25.0
10.	Carbonate	-----
11.	Sulfate	25.0
12.	Malonate	25.0
13.	Selenate	25.0
14.	Oxalate	25.0
15.	Iodide	30.0
16.	Thiosulfate	25.0
17.	Chromate	25.0
18.	Phosphate	30.0
19.	Fumarate	30.0
20.	Arsenate	30.0
21.	Thiocyanate	30.0
22.	Perchlorate	30.0

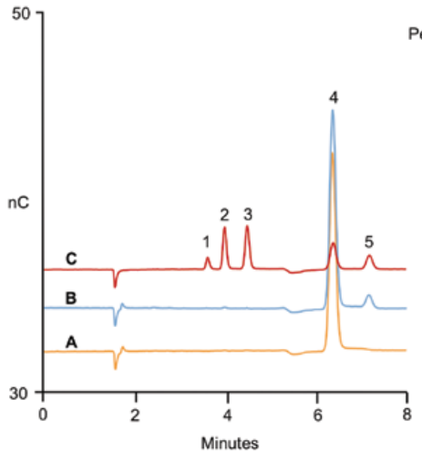
Separation of Organic Acids in Apple Juice
Dionex IonPac AS11-HC Column (4 x 250 mm)



Peaks:

1. Quinate
2. Lactate
3. Acetate
4. Propionate
5. Formate
6. Pyruvate
7. Galacturonate
8. Chloride
9. Nitrate
10. Succinate
11. Malate
12. Fumarate
13. Sulfate
14. Oxalate
15. Phosphate
16. Citrate
17. Isocitrate
18. *cis*-Aconitate

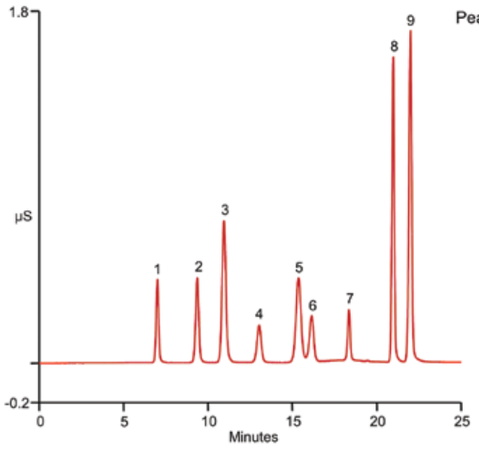
Analysis of Lactose and Lactulose in Raw Unpasteurized Milk in <8 min
Dionex CarboPac™ SA10-4 µm



Peaks:

		A	B	mg/L
1.	Sucrose	--	--	
2.	Galactose	--	--	
3.	Glucose	--	--	
4.	Lactose	3.75	3.77	
5.	Lactulose	--	0.48	

Separation of Six Common Cations and Methylamines
Dionex IonPac CS19 Column (2 x 250 mm)



Peaks:

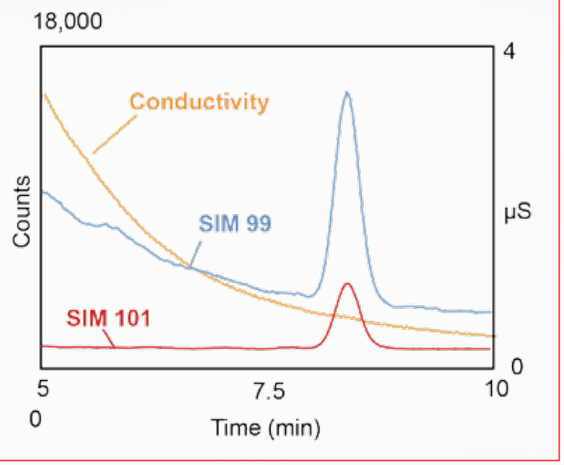
1. Lithium
2. Sodium
3. Ammonium
4. Methylamine
5. Potassium
6. Dimethylamine
7. Trimethylamine
8. Magnesium
9. Calcium

ENHANCED DETECTION FOR CHALLENGES THAT ARE BIGGER THAN IC

Complex sample analysis requires both sensitive detection and removal of any matrix interferences. In addition to those challenges, distinguishing between chemical forms of an element is critical for food, environmental and pharmaceutical applications because different forms of an element can exhibit different physicochemical properties, including varying toxicities.

To meet these challenges, we provide single-vendor solutions that combine the unique properties of ion chromatography with technologies like Mass Spectrometry (MS) or Inductively Coupled Plasma Mass Spectrometry (ICP-MS).

Perchlorate Detection in Drinking Water using IC-MS



Ion Chromatography - Inductively Coupled Plasma Mass Spectrometry (IC-ICP-MS)

Combines the sensitive elemental detection of inductively coupled plasma mass spectrometry with the metal-free fluidic flow path of IC for elemental speciation analysis to acquire the necessary chemical information for speciation analysis

Ion Chromatography - Mass Spectrometry (IC-MS)

Combines the sensitivity and selectivity of IC with the specificity and sensitivity of MS and is optimized for low mass ions using a single software platform

SPEND MORE TIME ON SCIENCE AND LESS TIME MANAGING DATA

A Chromatography Data System or CDS is vital for efficient and reliable operation of any modern chromatography laboratory. It should manage all the analytical processes from instrument control to raw data storage and processing to generating results.

Your laboratory environment is different from all others. You have your own unique challenges, and we want those challenges to be your science, not your data handling system. Our mission is to provide a CDS that delivers a superior user experience that fits in with your existing chromatography workflows and gives you better results, faster.

Whether your workflow needs are basic or complex, from fully compliant routine analyses to totally flexible research workflows or anything in between, our Dionex Chromeleon CDS software can be configured to cover them all.

FEATURES

Thermo Scientific™ eWorkflow™ Downloads

Easy method setup with eWorkflow downloads for error-free sequence setup from a single online location

Cobra™ Peak Detection

Get results faster with automated and optimized integration of your chromatogram with the Cobra Peak Detection algorithm

Simplified administration

Centralize administration of licenses, users and network resources; organize and archive data; and distribute resources across your network or between laboratories

Thermo Scientific AppsLab

Access to our library of analytical applications

Mobile connection

Control your instruments and view data from mobile devices

Industry-leading, multi-vendor control

Support for 400 different instrument modules from more than 15 manufacturers

Regulatory compliance

Automated software and instrument qualification routines, qualification monitoring, and our comprehensive security tools to ensure compliance

CHOOSE YOUR PARTNER TO ENSURE A HEALTHIER, CLEANER AND SAFER TODAY AND TOMORROW

Dionex Aquion IC System

Simple analysis

Electrolytic or chemical suppression

Reliable platform

Dionex Integrion HPIC System

Routine analysis

Tablet with local language control

Remote monitoring

Consumables tracking

High-pressure capable up to 5000 psi

Electrolytic or chemical suppression

Automated Eluent Generation (RFIC™)

Versatile detector options

Dionex ICS-4000 Capillary HPIC System

Always ready, routine analysis

High-pressure capable up to 5000 psi

Electrolytic or chemical suppression

Consumes only 15 mL of water per day

Eluent Generation Cartridge lasts for 18 months under continuous operation

Increased sensitivity for precious samples

Versatile detector options

Dionex ICS-5000+ HPIC System

Advanced analysis

Well-suited for method development

Ultimate performance

Capillary, microbore, or standard flow rates

Single and dual configurations

Electrolytic or chemical suppression

Mechanical and RFIC gradients

Automated Eluent Generation (RFIC)

High-pressure capable up to 5000 psi

Versatile detector options

OUR PROMISE TO YOU

We help scientists meet the challenges they face in the lab or in the field every day. From routine analysis to new discoveries, our innovations help professionals do the science they need to do, the way they want to do it. Our high-end analytical instruments, laboratory equipment, software, services, consumables and reagents help our customers solve complex analytical challenges and increase laboratory productivity.

Whatever the challenge, we are there.

UNITY LAB SERVICES

We take serving science seriously, providing a single source for integrated lab service, support and supply management. Our customized service offerings and world-class service experts have the flexibility and experience to uniquely address your business needs.

As your laboratory partner, Unity Lab Services maximizes your ability to focus on science and drive innovation by providing you with what you need, when you need it.

Let our expertise complement yours.

SERVICE OPTIONS TAILORED FOR YOUR LAB

Our selection of service options is provided to help lower the cost of ownership, improve instrument uptime and give you greater peace of mind.

3-YEAR INSTRUMENT WARRANTY

Cost of parts, labor and travel for the first year
Cost of parts for the second and third year

SUPPRESSOR WARRANTIES

Dionex ERS 500 Electrolytically Regenerated Suppressor: 6 months
Dionex AAERS 500 Anion Electrolytically Regenerated Suppressor: 6 months
Dionex CES 300 Capillary Electrolytic Suppressor: 12 months
Dionex CRS 500 Chemically Regenerated Suppressor: 24 months
Dionex AES Atlas Electrolytic Suppressor: 3 months

THERMO SCIENTIFIC DIONEX PRODUCT PORTFOLIO

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