

## CROMATOGRAFO IÓNICO DIONEX. Modelo ICS-2100

1. ¿Cómo deben llegar las muestras para ser analizadas?
2. ¿Cómo podemos describir el equipo en las publicaciones?
3. Fotos del equipo
4. Descripción del equipo
5. Aplicaciones

### 1. ¿Cómo deben llegar las muestras para ser analizadas?

- Las muestras deben ser líquidas y se requiere un volumen mínimo de 5 mL.
- Se recomienda filtrar a través de  $0,45\mu\text{m}$  durante el muestreo puede eliminar bacterias y materia particulada. La actividad bacteriana y la adsorción de los aniones sobre la materia particulada pueden causar una conversión de los aniones (por ejemplo nitrato, nitrito, ortofosfato).
- Las muestras se deben conservar en la oscuridad a una temperatura de  $2^{\circ}\text{C}$  a  $8^{\circ}\text{C}$  para el transporte.

### 2. ¿Cómo podemos describir el equipo en las publicaciones?

#### Distintas Formas Resumidas para el análisis general de aniones.

- a) Anion concentrations (chloride, nitrate, nitrite, phosphate, and sulfate were analyzed using a Dionex ICS-2100 ion chromatography (IC) with an AS19 column and Potassium hydroxide as eluent.
- b) IC (anions) (Thermo Scientific, Dionex ICS 2100), Column: IonPac AS19, 2 x 250mm; Eluent: 10mM from 0 to 10 min, 10-45mM KOH from 10 to 40min; Flow rate: 1 mL/min; Column temperature:  $30^{\circ}\text{C}$ ; Suppressor: ASRS300, 4mm, suppressor current 120mA; Inj. Volume: 25  $\mu\text{L}$ . Standard solutions of inorganic anion were purchased as different ppm anionic concentration standards from Aldrich and were diluted as required with mili-Q water. Water treated with a Millipore (Bedford, MA, USA) Milli-Q system was used to prepare standard solutions and eluents.
- c) Dionex ICS-2100 ion chromatographs were used throughout this work. Instrument control and data acquisition were performed using Chromeleon<sup>®</sup> software. The ICS-2100 instruments were used in conjunction with a Dionex AS. A 25  $\mu\text{L}$  sample loop was employed for all the work. The ICS-2100 system was used for the separation and suppressed conductivity detection of anions. Separation was performed on a 4 mm Dionex IonPac AS19 column (250 mm, 4 mm ID) used with a Dionex AG19 guard

column (50 mm, 4 mm ID), coupled to a Dionex ASRS300, 4mm suppressor. Hydroxide eluent gradients were generated online using the Dionex EluGen III KOH cartridge. A continuously regenerated anion trap column (Dionex CR-ATC) was plumbed inline after the eluent generator cartridge. The optimised hydroxide eluent gradient was: 0–10 min: 10 mM isocratic; 10–25 min: gradient from 10 to 45 mM. Standard solutions of inorganic anion were purchased as different ppm anionic concentration standards from Aldrich and were diluted as required with mili-Q water. Water treated with a Millipore (Bedford, MA, USA) Milli-Q system was used to prepare standard solutions and eluents.

### **Equipment (for anion)**

1.- A Thermo Scientific™ Dionex ICS-2100 Reagent-Free™ Ion Chromatography (RFIC™) system was used in this work. The Dionex ICS-2100 system is an integrated ion chromatograph that includes:

- Eluent Generator KOH.
- Column Heater.
- Pump Degas.
- Dionex EGIII KOH Cartridge.
- Conductivity detector (DS6 heated conductivity cell).
- Thermo Scientific Dionex CR-ATC Continuously Regenerated Anion Trap Column.
- Columns Dionex IonPac AG19 guard 4x50 mm + Dionex IonPac AS19 Analytical 4x250mm-

2.- Thermo Scientific Dionex AS Autosampler.

### **Operating Conditions:**

The IonPacAS19 Analytical Column in combination with the AG19 Guard Column is designed for the analysis of inorganic anions including chloride, nitrate, sulfate, and phosphate. The selectivity of the IonPacAS19 Guard plus Analytical Column set has been to separate the common anions using hydroxide gradients.

- Injection volume: 25µL
- Columns: Dionex IonPac AG19 guard 4x50 mm + Dionex IonPac AS19 Analytical 4x250mm
- Eluent Source: Dionex EGIII KOH Cartridge
- Eluent: Potassium hydroxide 10 mM from 0 to 10 minutes and 10 to 45 mM from 10 to 25 minutes.
- Flow rate: 1mL/min

- Column Heater: 30°C
- Conductivity detector: 35°C.
- Suppressor: Anion Self-Regenerating Suppressor (ASRS300, 4mm).
- Suppressor Mode: AutoSuppression Recycle.

### 3. Fotos del equipo



### 4. Descripción del equipo

- Cromatógrafo iónico con detector de conductividad.
- Generador de Eluyente para aniones KOH.
- Horno termostatzador para columnas.
- Detector de conductividad eléctrica DS6.
- Automuestreador Dionex AS.
- Precolumnas y columnas para aniones y cationes (AG19 y AS19 para aniones; CG16 y CS16 para cationes).
- Software Chromeleon®.

### 5. Aplicaciones

- Determinación de fluoruros, cloruros, nitritos, nitratos, fosfatos y sulfatos en aguas
- Determinación de sodio, litio, potasio, amonio, calcio y magnesio en aguas

Para más información visitar la página web del fabricante. (<http://www.dionex.com/en-us/products/ion-chromatography/ic-rfic-systems/ics-2100/lp-72593.html>)