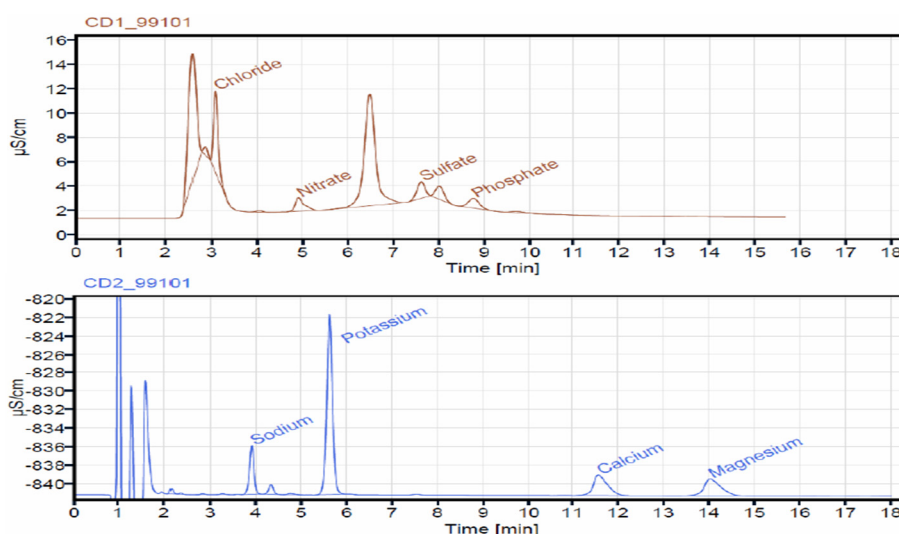


Metrohm IC Driver for OpenLab CDS: Anion and cation analysis in a soft drink

Determination of anions and cations in a soft drink: The dual channel IC system with inline eluent production is controlled by OpenLab along with data acquisition capabilities.



Anion and cation chromatogram of the soft drink acquired by OpenLab CDS.

OpenLab CDS is the newest generation of chromatography data systems from Agilent, combining chromatography and mass spectrometry in a single software platform. The Metrohm IC Driver for OpenLab CDS integrates Metrohm IC instrumentation for full control and data acquisition. The present application describes the simultaneous analysis of anions and cations in a soft drink with a dual channel IC system. Eluent is prepared by applying Inline Eluent Production.

Results

Analyte	Result [mg/L]	Analyte	Result [mg/L]
1 Fluoride	n.d.	5 Nitrate	59.1
2 Chloride	99.3	6 Sulfate	67.5
3 Nitrite	n.d.	7 Phosphate	145.2
4 Bromide	n.d.	8 Iodide	n.d.
9 Lithium	n.d.	12 Potassium	905.1
10 Sodium	99.2	13 Calcium	172.3
11 Ammonium	n.q.	14 Magnesium	81.0

Sample

Soft drink

Sample preparation

200 mL soft drink diluted with 380 mL ultrapure water and 20 mL ethanol.

Anion columns

Metrosep A Supp 17 - 150/4.0	6.01032.420
Metrosep A Supp 17 Guard/4.0	6.01032.500

Cation columns

Metrosep C 4 - 150/4.0	6.1050.420
Metrosep C 4 Guard/4.0	6.1050.500

IC Solutions

Anion eluent	5.0 mmol/L sodium carbonate 0.2 mmol/L sodium hydrogen carbonate
Regenerant	100 mmol/L phosphoric acid
Rinsing	STREAM
Cation eluent	1.7 mmol/L nitric acid 0.7 mmol/L dipicolinic acid

Instrumentation

940 Professional IC Vario TWO/SeS/PP	2.940.2500
2 x IC Conductivity Detector	2.850.9010
858 Professional Sample Processor	2.858.0020
941 Eluent Production Module	2.941.0010
800 Dosino	2.800.0010
MSM Rotor A	6.2832.000
Adapter sleeve for Suppressor Vario	6.2842.020
Metrohm IC Driver 1.0 for OpenLab CDS	6.6080.100
OpenLab CDS 2.4 (Agilent)	

Anion analysis

Conductivity detection after sequential suppression

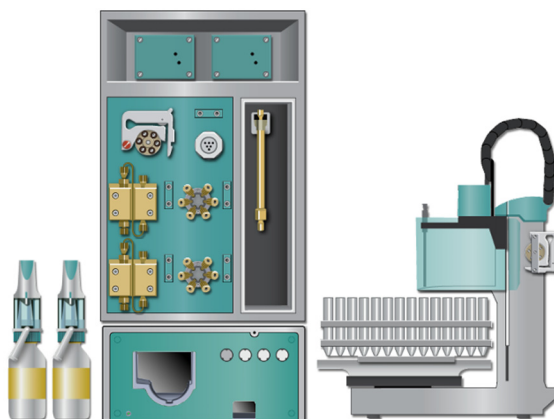
Cation analysis

Direct conductivity detection

Parameters

Flow rate	1.2 mL/min
Injection volume	20 µL
P _{max} (anions)	18 MPa
P _{max} (cations)	25 MPa
Column temperature	30 °C
Recording time	19 min

Parameters are valid for both anions and cations, if not mentioned otherwise.



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