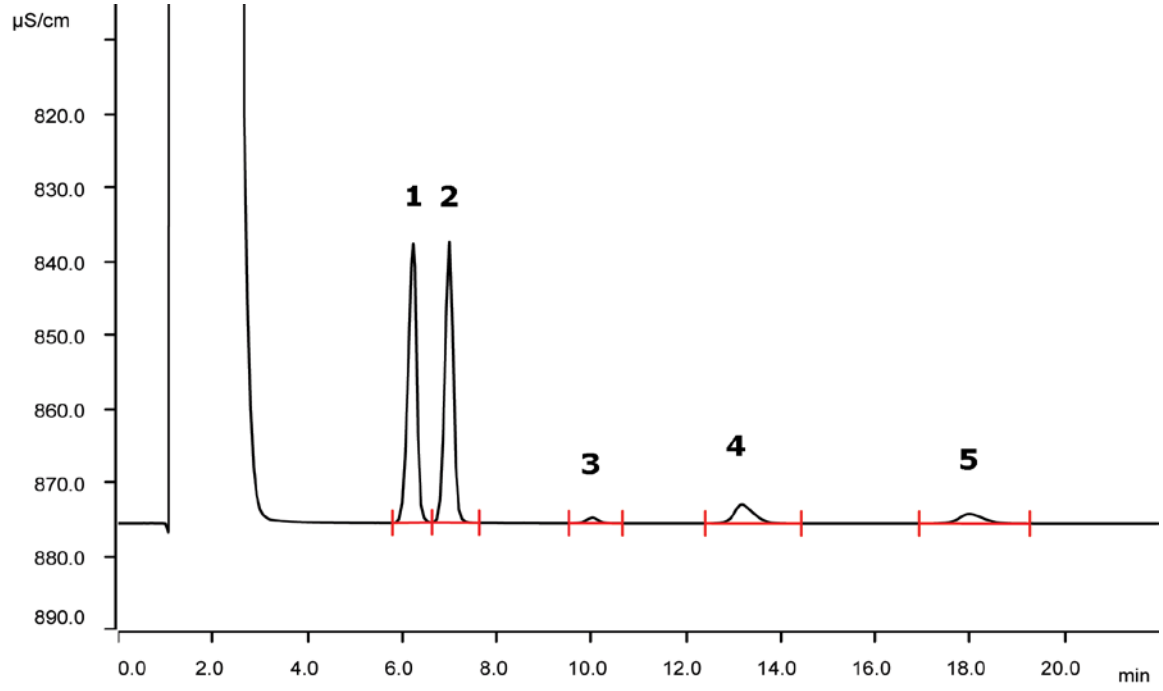
IC Application Note C–172

Cations in snow collected on an open field



Cation content in snow depends strongly on the sampling location. Samples from remote locations are expected to have very low cation concentrations. This application shows the analysis of a snow sample from an open field in a farming region. The separation is performed on a microbore Metrosep C 6 - 100/2.0 column applying direct conductivity detection. The relatively high ammonium content might be explaned by cattle farms nearby the sampling site.

Results

	Cation	Conentration [mg/L]
1	Sodium	1.04
2	Ammonium	0.91
3	Potassium	0.05
4	Calcium	0.20
5	Magnesium	0.06

Metrohm

Sample

Fresh snow sample

Sample preparation

Direct injection of the melted sample after Inline Ultrafiltration

Columns

Metrosep C 6 - 100/2.0	6.01051.210
Metrosep C 6 Guard/2.0	6.01051.600

Solutions

Eluent	1.7 mmol/L nitric acid 1.7 mmol/L dipicolinic acid

Analysis

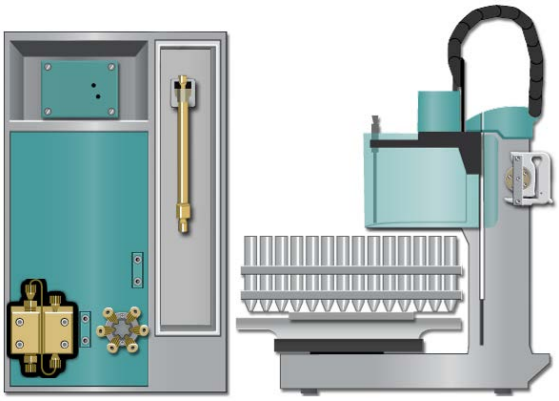
Direct conductivity detection

Instrumentation

930 Compact IC Flex Oven/Deg	2.930.2160
IC Conductivity Detector	2.850.9010
858 Professional Sample Processor	2.858.0020

Parameters

Flow rate	0.25 mL/min
Injection volume	250 µL
P_{max}	20 MPa
Recording time	22 min
Column temperature	30 °C



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Version 1, published in April 2017