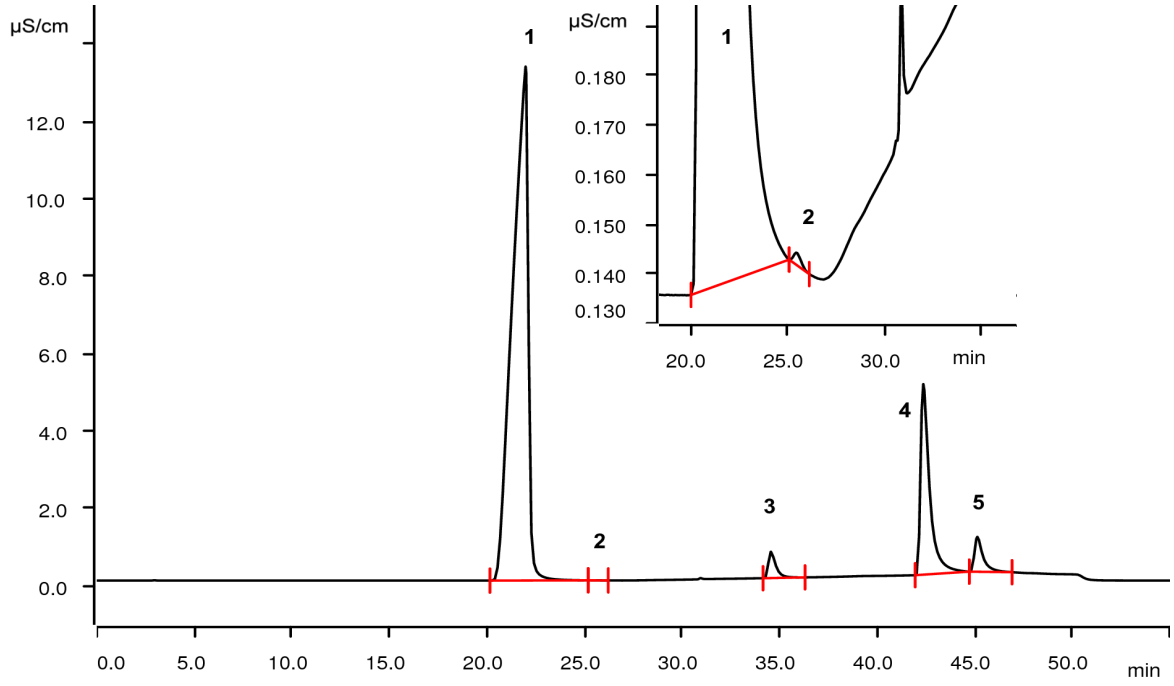
IC Application Note CS–018

Metrosep C Supp 2 - 250/4.0: Cations in wastewater applying a Dose-in gradient



Cation analysis by IC in wastewater is a proven method. Limiting factor is often the Na/NH_4 separation. High sodium concentrations may make ammonium determination impossible due to peak overlapping. The use of sequential suppression and a Dose-in gradient improve the Na/NH_4 separation and enables determination of low ammonium concentrations.

Results

	Cation	Concentration
1	Sodium	12.076 [g/L]
2	Ammonium	1.21 [mg/L]
3	Potassium	432.5 [mg/L]
4	Magnesium	1.377 [g/L]
5	Calcium	435.2 [mg/L]

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Sample

Wastewater

Sample preparation

Dilution 1:100 and subsequent filtration with 0.2 µm.

Columns

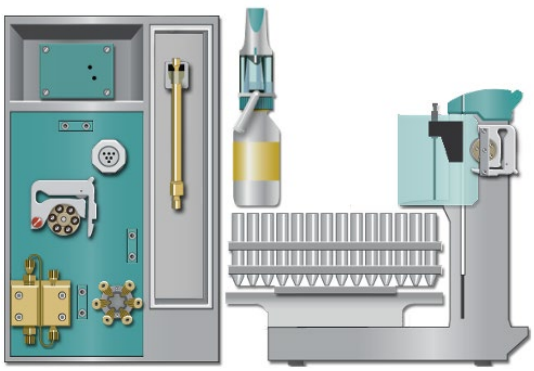
Metrosep C Supp 2 - 250/4.0	6.01053.430
Metrosep C Supp 2 Guard/4.0	6.01053.500

Solutions

Eluent A	1.25 mmol/L nitric acid 12.5 µg/L rubidium
Eluent B	12.5 mmol/L nitric acid 125 µg/L rubidium
Eluent concentrate	100 mmol/L nitric acid 1 mg/L rubidium
Suppressor regenerant	70 mmol/L sodium carbonate 70 mmol/L sodium hydrogen carbonate
Rinsing solution	STREAM

Instrumentation

930 Compact IC Flex Oven/SeS/PP/Deg	2.930.2560
IC Conductivity Detector	2.850.9010
919 IC Autosampler Plus	2.919.0020
800 Dosino	2.800.0010
MSM-HC Rotor C	6.2842.200
IC equipment: Dose-in Gradient	6.5330.150



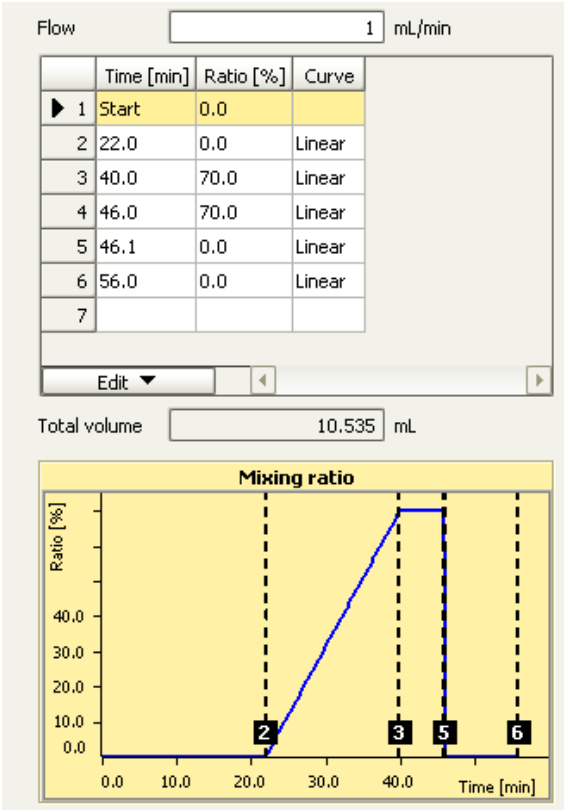
Analysis

Conductivity detection after sequential suppression

Parameters

Flow rate	1.0 mL/min
Injection volume	20 µL
P_{max}	25 MPa
Recording time	55 min
Column temperature	40 °C

Dose-in Gradient



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