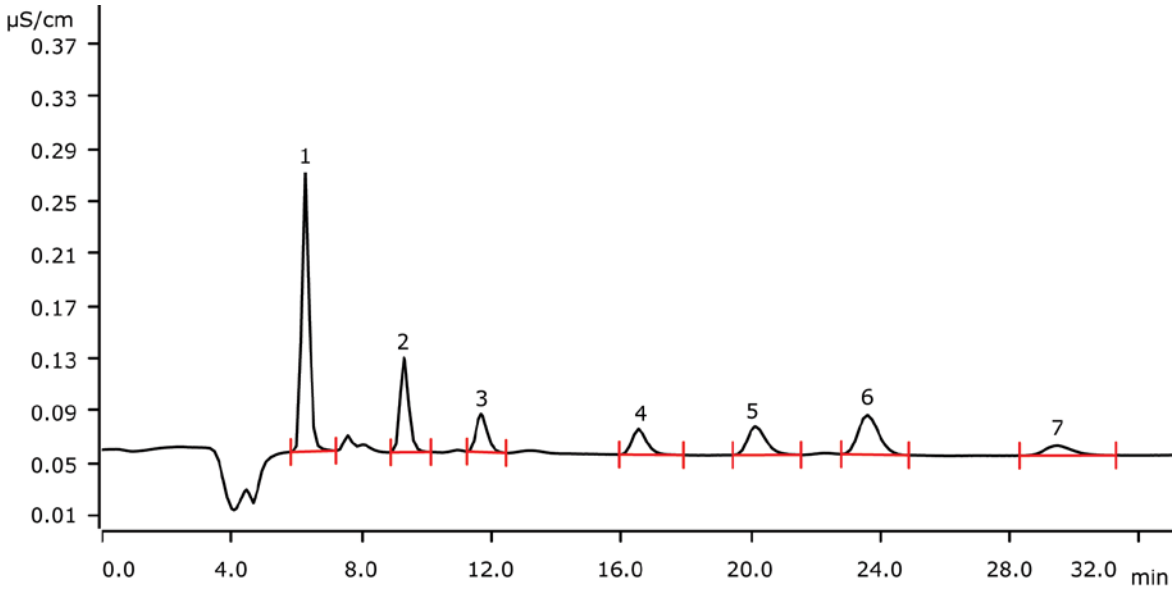
IC Application Note S–336

Trace anions on Metrosep A Supp 16 - 250/2.0 after Inline Preconcentration and Matrix Elimination (MiPCT-ME)



Intelligent Preconcentration Technique with Matrix Elimination (MiPCT-ME) is used for trace determination of the seven standard anions. On a microbore Metrosep A Supp 16 - 250/2.0 column, the analysis is concluded within 33 minutes with high recovery rates. The detection limits are in the low ng/L range (calculated by MagIC Net) using a preconcentration volume of 2000 µL.

Results

	Anion 0.5 µg/L	Recovery [%]	LOD [µg/L]		Anion 0.5 µg/L	Recovery [%]	LOD [µg/L]
1	Fluoride	97	0.001	5	Nitrate	99	0.005
2	Chloride	98	0.002	6	Sulfate	99	0.003
3	Nitrite	98	0.003	7	Phosphate	97	0.012
4	Bromide	99	0.005				

Metrohm

Sample

0.5 µg/L QC standard

Sample preparation

Intelligent Preconcentration Techique with Matrix Elimination (MiPCT-ME)

Columns

Metrosep A Supp 16 - 250/2.0	6.1031.230
Metrosep A Supp 16 Guard/2.0	6.1031.600
Metrosep A PCC 2/4.0	6.1006.330

Solutions

Eluent	7.5 mmol/L sodium carbonate 0.75 mmol/L sodium hydroxide
Suppressor regenerant	100 mmol/L sulfuric acid
Rinsing solution	STREAM

Analysis

Conductivity detection after sequential suppression

Parameters

Flow rate	0.25 mL/min
Injection volume (MiPCT-ME)	2000 µL
P_{max}	16 MPa
Recording time	33 min
Column temperature	45 °C

Instrumentation

940 Professional IC Vario ONE/SeS/PP	2.940.1500
IC Conductivity Detector	2.850.9010
858 Professional Sample Processor	2.858.0010
2 x 800 Dosino	2.800.0010
MSM Rotor A	6.2832.000
Adaptor sleeve Suppressor Vario	6.2842.020
IC equipment: MiPCT-ME	6.5330.160

Schematic setup