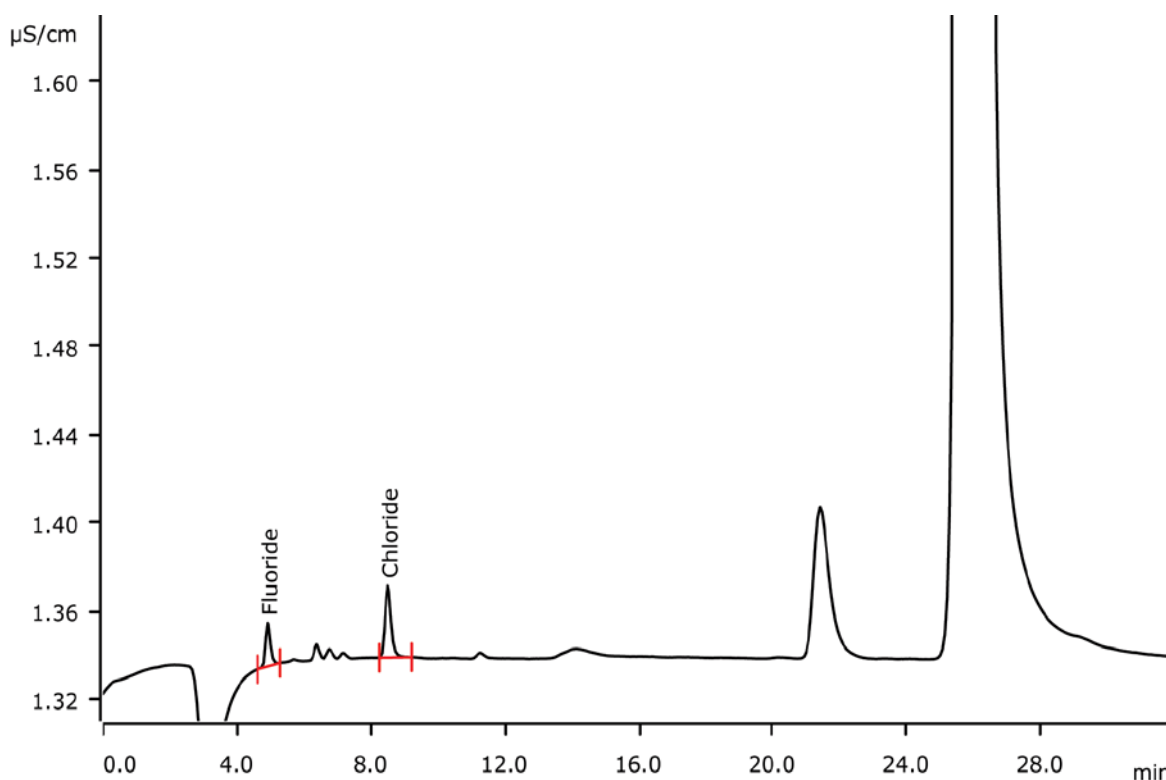


Fluoride and chloride in sodium carbonate solution



Fluoride and chloride traces have to be analyzed in a sodium carbonate solution. A simple dilute-and-shoot method is applied. The high-capacity column Metrosep A Supp 16 - 250/4.0 and conductivity detection after sequential suppression is applied. Fluoride and chloride recovery are 103 and 93%, respectively. The method detection limit (MDL) is calculated by repetitive injections of a $10 \mu\text{g/kg}$ standard solution as $\text{MDL} = 3.143 \times \text{std. dev.}$

Results

Anion	Concentration [$\mu\text{g/kg}$]	RSD [%] n = 7	Recovery [%]	MDL [$\mu\text{g/kg}$]
Fluoride	101.6	1.4	103	0.41
Chloride	434.4	3.0	93	0.58

Sample

1% sodium carbonate solution

Sample preparation

Dilution 1:50

Columns

Metrosep A Supp 16 - 250/4.0	6.1031.430
Metrosep RP 2 Guard/3.5	6.1011.030

Solutions

Eluent	7.5 mmol/L sodium carbonate 0.75 mmol/L sodium hydroxide
Suppressor regenerant	200 mmol/L sulfuric acid
Rinsing solution	STREAM

Analysis

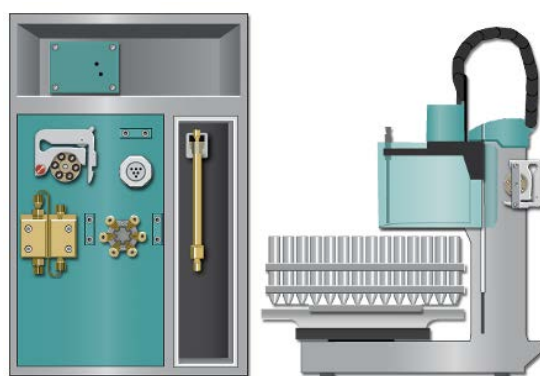
Conductivity detection after sequential suppression

Instrumentation

940 Professional IC Vario ONE/SeS/PP	2.940.1500
IC Conductivity Detector	2.850.9010
858 Professional Sample Processor	2.858.0020
MSM Rotor A	6.2832.000

Parameters

Flow rate	0.8 mL/min
Injection volume	100 µL
P _{max}	20 MPa
Recording time	32 min
Column temperature	45 °C



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