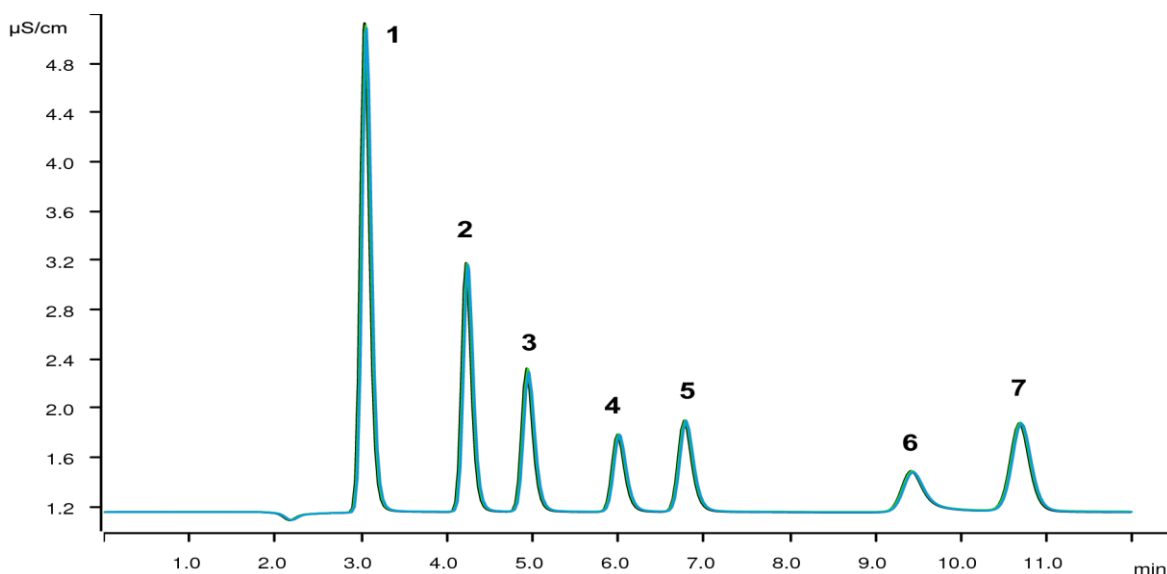


STREAM – the perfect way of MSM rinsing – even with iron and aluminum in the matrix



The STREAM (suppressor treatment reusing eluent after measurement) is applied since quite some time. The suppressor rinsing with suppressed eluent is advantageous over ultrapure water rinsing: a smaller water dip, faster MSM equilibration, and the avoidance of an additional water supply are just a few. Injecting samples containing iron in the matrix under sulfuric acid regeneration yields reduced peak areas and broader peaks for phosphate. Switching to a regenerant based on sulfuric and oxalic acid allows full regeneration of the MSM. The overlay above shows three subsequently taken chromatograms after more than 300 injections of 10 mg/L iron(II) onto one single MSM chamber. No difference in peak shape or peak area is observed.

Results

Anion	Concentration [mg/L]	Anion	Concentration [mg/L]
1 Fluoride	1.0	5 Nitrate	1.0
2 Chloride	1.0	6 Phosphate	1.0
3 Nitrite	1.0	7 Sulfate	1.0
4 Bromide	1.0		1.0

Sample

Standard solution containing Al(III) and Fe(II)

Sample preparation

None

Columns

Metrosep A Supp 5 - 100/4.0	6.1006.510
Metrosep A Supp 5 Guard/4.0	6.1006.500

Solutions

Eluent	3.2 mmol/L sodium carbonate 1.0 mmol/L sodium hydrogen carbonate
Suppressor regenerant	500 mmol/L sulfuric acid 200 mmol/L oxalic acid
Rinsing solution	STREAM

Parameters

Flow rate	0.7 mL/min
Injection volume	20 μ L
P _{max}	15 MPa
Recording time	12 min
Column temperature	30 °C

Analysis

Conductivity detection after sequential suppression

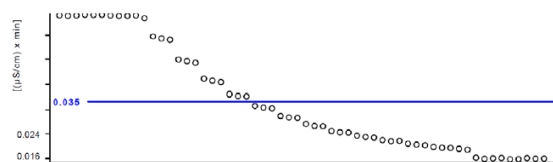
Instrumentation

930 Compact IC Flex Oven/SeS/Deg	2.930.2460
IC Conductivity Detector	2.850.9010
858 Professional Sample Processor	2.858.0020
800 Dosino	2.800.0010
IC equipment: Dosino Regeneration	6.5330.190
MSM Rotor A	6.2832.000
Adapter sleeve for Suppressor Vario	6.2842.020



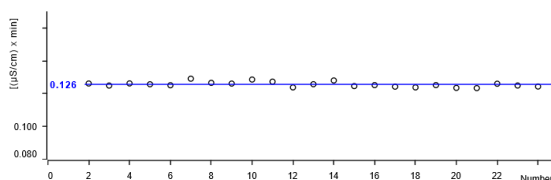
Standard regenerant

Reduction of phosphate peak area with 500 mmol/L sulfuric acid regenerant.



Sulfuric and oxalic acid regenerant

Constant phosphate peak area with sulfuric and oxalic acid regenerant.



Abs. std. dev. [(μ S/cm)min]	0.002
Rel. std. dev. [%]	1.23
No. of injections	24

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