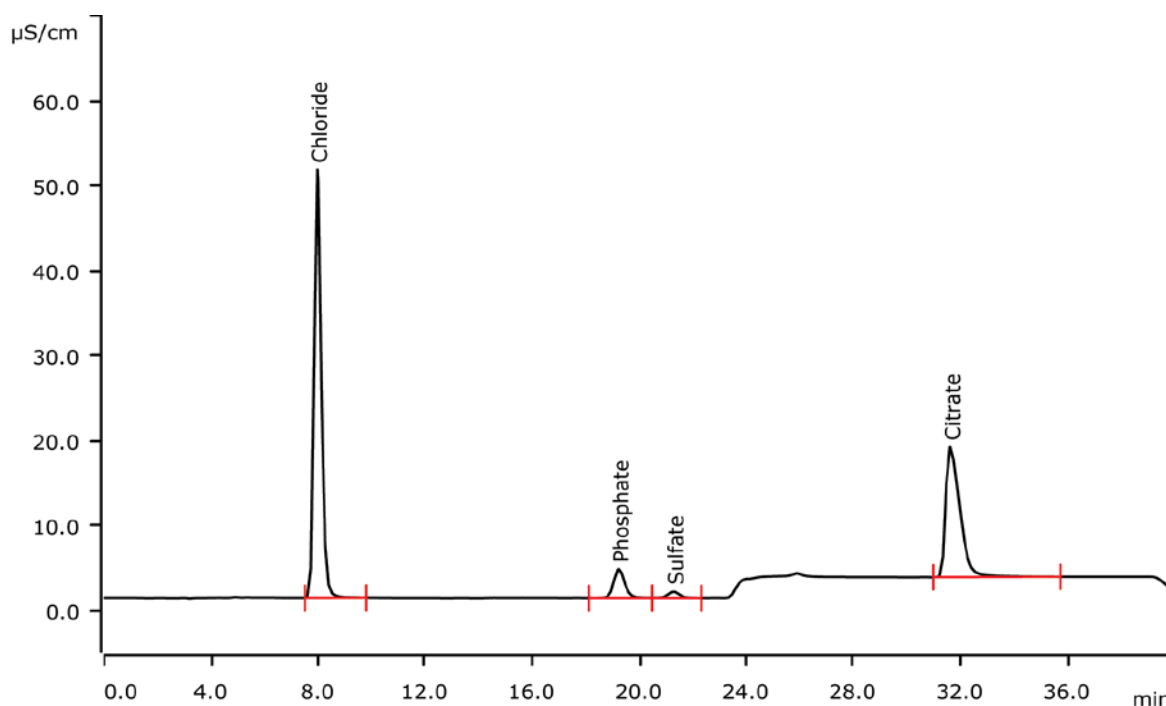


Shorter citrate retention times in beverage analysis using a step gradient



Anion determinations in citric acid-containing beverages require a quiet long analysis time due to the strong retention of citrate. To shorten analysis time, a step gradient is applied.

Results

Anion	Concentration [g/kg]	RSD [%] n = 3
Chloride	0.676	0.26
Phosphate	0.247	0.12
Sulfate	n.q.	-
Citrate	2.221	1.25

Sample

Lemon- and lime-containing soft drink

Sample preparation

Gravimetric dilution 1 : 10, filtration through 0.2 µm

Columns

Metrosep A Supp 7 - 150/4.0	6.1006.620
Metrosep A Supp 4/5 Guard/4.0	6.1006.500

Solutions

Eluent A	Ultrapure water
Eluent B	72 mmol/L sodium carbonate
Suppressor regenerant	100 mmol/L sulfuric acid
Rinsing solution	STREAM

Analysis

Conductivity detection after sequential suppression

Instrumentation

940 Professional IC Vario ONE/SeS/PP/HPG	2.940.1540
IC Conductivity Detector	2.850.9010
858 Professional Sample Processor	2.858.0020
MSM-HC Rotor A	6.2842.000

Parameters

Flow rate	0.7 mL/min
Injection volume	20 µL
P _{max}	15 MPa
Recording time	40 min
Column temperature	45 °C

Gradient profile

	Time [min]	Eluent A [%]	Eluent B [%]	Curve	Flow
1	Start	95	5		0.7
2	19.0	95	5	Linear	0.7
3	19.1	70	30	Step	0.7
4	35.0	70	30	Linear	0.7
5	35.1	95	5	Step	0.7
6	40.0	95	5	Linear	0.7
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