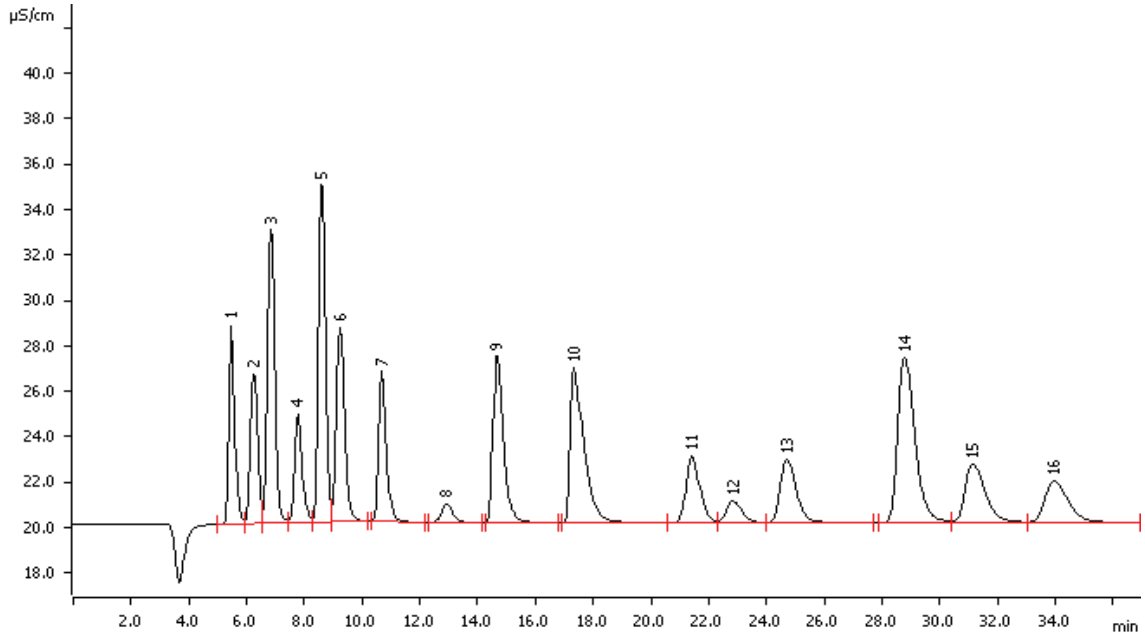
IC Application Note S–289

Determination of eight organic acids besides the standard anions on the Metrosep A Supp 16 - 250/2.0 column



The Metrosep A Supp 16 material is a high-capacity phase. It excels in high resolution and has the ability to load high sample concentrations. On the long version of the 2 mm column (250/2.0), 15 components are separated with a high sensitivity. Compared to the same application on the 4 mm column, a higher response and a much lower eluent consumption can be observed.

Results

	Anion	[mg/L]
1	Fluoride	2.0
2	Glycolate	10.0
3	Formate	10.0
4	Lactate	10.0
5	Chloride	5.0

	Anion	[mg/L]
6	MSA *)	10.0
7	Nitrite	5.0
9	Bromide	10.0
10	Nitrate	10.0
11	Malate	10.0

*) Methylsulfonate

	Anion	[mg/L]
12	Succinate	10.0
13	Malonate	10.0
14	Sulfate	10.0
15	Phosphate	10.0
16	Maleate	10.0

Metrohm

Method description

Sample

Standard solution

Sample preparation

Direct injection

Column

Metrosep A Supp 16 - 250/2.0	6.1031.230
Metrosep A Supp 16 Guard/2.0	6.1031.600

Solutions

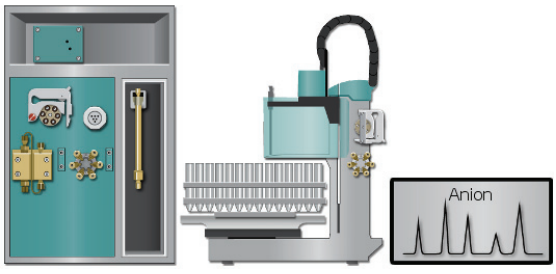
Eluent	7.5 mmol/L sodium carbonate 0.75 mmol/L sodium hydroxide
Regenerant	100 mmol/L sulfuric acid
Rinsing solution	Ultrapure water

Analysis

Suppressed conductivity

Parameters

Flow rate	0.2 mL/min
Injection volume	20 µL
P_{max}	16.0 MPa
Recording time	37 min
Column temperature	65 °C

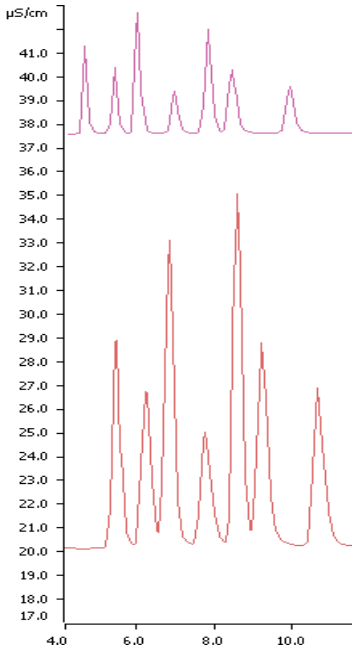


Instrumentation

850 Professional IC Anion	2.850.2010
800 Dosino	2.800.0010
858 Professional Sample Processor	2.858.0020

Comparison 2 mm vs. 4 mm column

Identical conditions
upper trace: 4 mm column
lower trace: 2 mm column



The 2 mm column shows higher response (peak height and area).