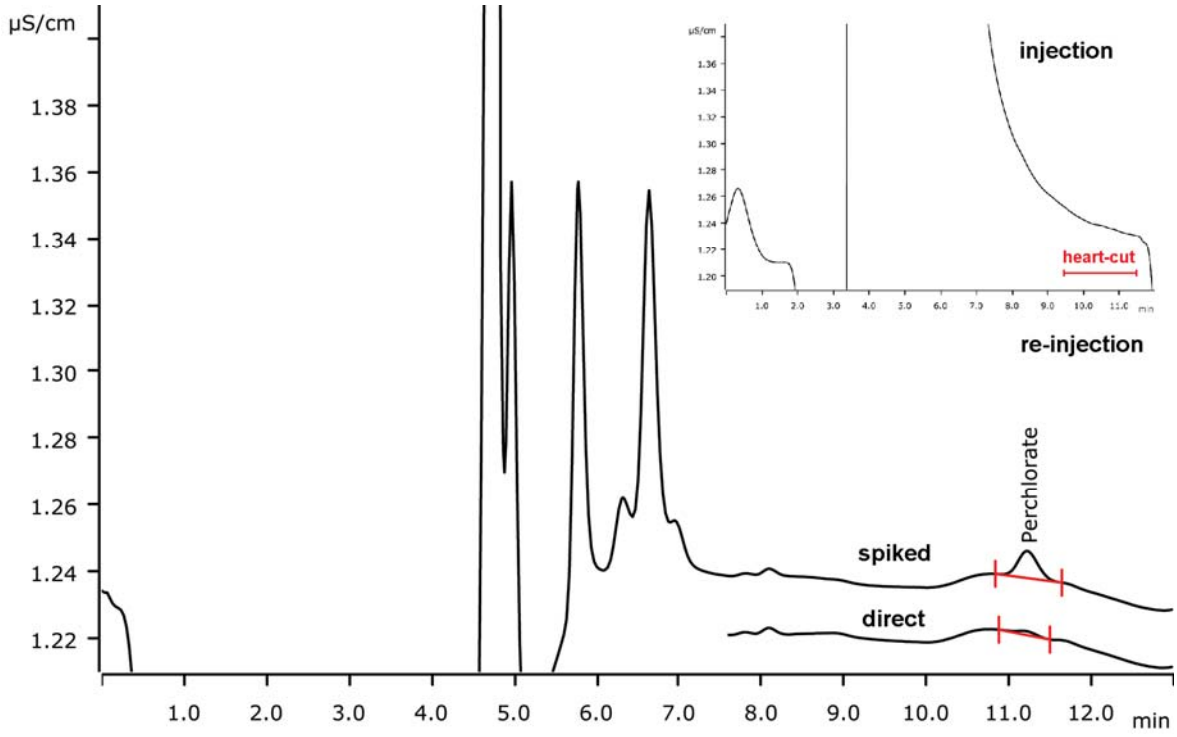
IC Application Note S–342

Trace perchlorate in drinking water according to ISO 19340 applying Annex B



Perchlorate in water is mainly due to anthropogenic sources such as fertilizers, fireworks, rocket fuel, etc. Trace analysis of perchlorate in water samples is a critical task. The high content of standard anions leads to large peaks that interfere with the very small perchlorate peak. In the heart-cut technique, the perchlorate fraction – widely freed of interfering anions – is re-injected onto the column thus providing a sharp peak.

Results

	Perchlorate [µg/L]	RSD [%]	Recovery [%]
Sample	0.07*)	8.7	-
Sample spiked (1.0 µg/L)	1.04	0.6	97

*) result below the calibration range

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Sample

Drinking water

Sample preparation

Direct injection.

Columns

Metrosep A Supp 5 - 100/4.0	6.1006.510
Metrosep A Supp 4/5 Guard/4.0	6.1006.500

Solutions

Eluent	10 mmol/L sodium carbonate
Suppressor regenerant	100 mmol/L sulfuric acid
Rinsing solution	Ultrapure water

Instrumentation

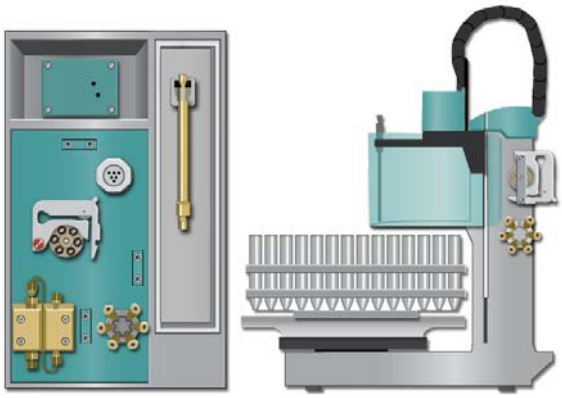
930 Compact IC Flex Oven/SeS/PP/Deg	2.930.2560
IC Conductivity Detector	2.850.9010
858 Professional Sample Processor	2.858.0030
MSM-HC Rotor A	6.2842.000

Analysis

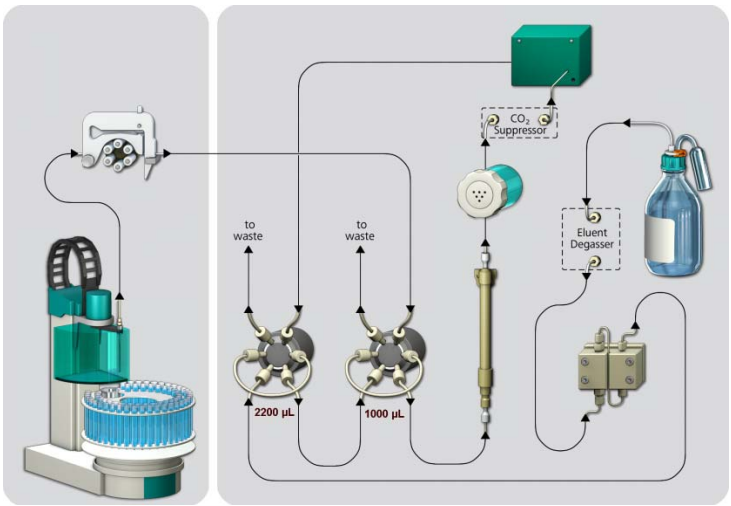
Conductivity detection after sequential suppression

Parameters

Flow rate	0.8 mL/min
Injection volume	1000 µL
Re-injection volume	2200 µL
P_{max}	15 MPa
Heart-cut (after injection)	9.5 - 11.5 min
Recording time (re-injection)	13 min
Column temperature	60 °C



System setup



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