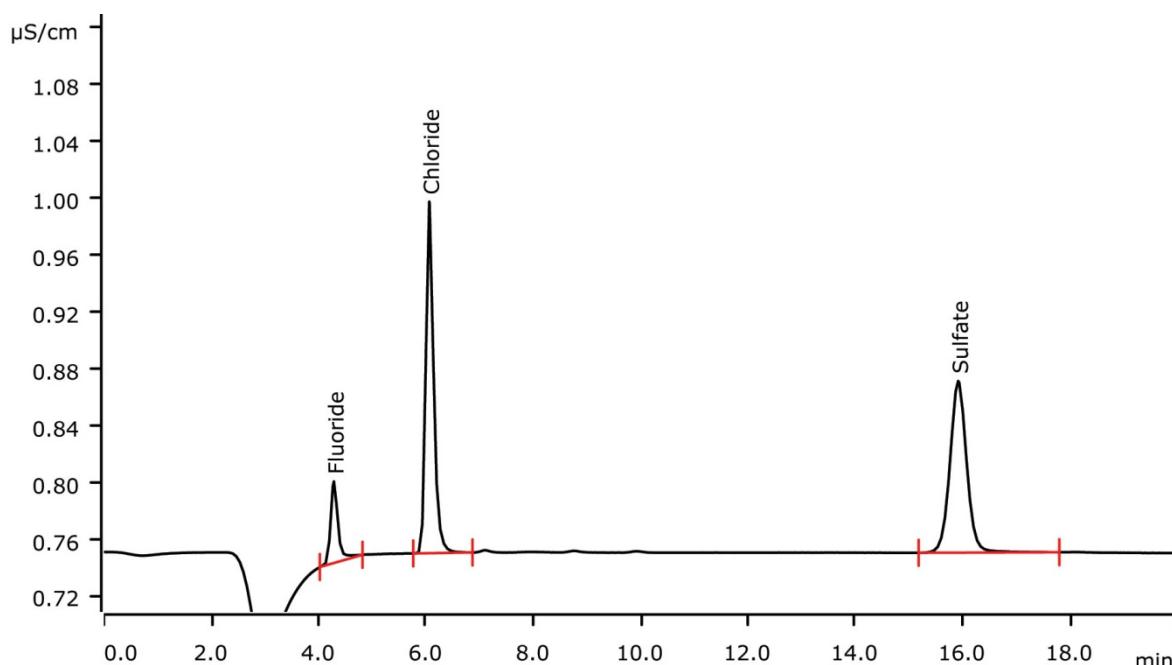


Chloride and sulfur in cyclohexane applying Metrohm Combustion IC



Cyclohexane is an important organic solvent. Recycled cyclohexane needs to be checked for traces of, e.g., chloride and sulfate. Metrohm Combustion IC applying flame sensor technology and Inline Matrix Elimination is the method of choice.

Results

	Concentration [mg/kg]
Fluoride	n.q.
Chloride	14.6
Sulfate	10.9

Sample

Cyclohexane diluted with n-hexane (1:1)

Sample preparation

Combustion with flame sensor technology, intelligent Partial-Loop Injection (MiPT) with Inline Matrix Elimination

Columns

Metrosep A Supp 5 - 150/4.0	6.1006.520
Metrosep A Supp 4/5 Guard/4.0	6.1006.500
Metrosep A PCC 1 HC/4.0	6.1006.310

Solutions

Eluent	3.2 mmol/L sodium carbonate 1.0 mmol/L sodium hydrogen carbonate
Suppressor regenerant	100 mmol/L sulfuric acid
Rinsing solution	Ultrapure water
Absorption solution	100 mg/L hydrogen peroxide

Parameters

Flow rate	0.7 mL/min
Injection volume	50 µL
P _{max}	15 MPa
Recording time	20 min
Column temperature	30 °C

Combustion parameters

Argon	100 mL/min
Oxygen	300 mL/min
Oven temperature	1050 °C
Post-combustion time	120 s
Initial volume of absorption solution	2.0 mL

Analysis

Conductivity after sequential suppression

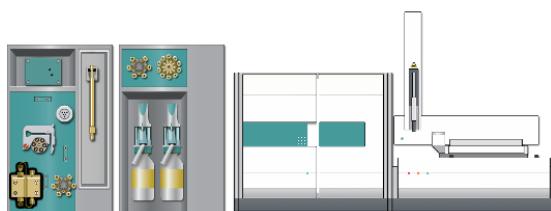
Instrumentation

881 Compact IC pro – Anion – MCS	2.881.0030*
IC Conductivity Detector	2.850.9010*
920 Absorber Module	2.920.0010*
Combustion Module	2.136.0700*
Autosampler MMS 5000	2.136.0800
Kit for liquid samples	6.7303.000

* available as 881 Metrohm Combustion IC (2.881.3030)

Calibration MiPT

Calibration range	Factor of 16.6
Standard solution	
Chloride	3.0 mg/L
Sulfate	10.0 mg/L
1. Level	0.18 / 0.60 mg /L = 12 µL
2. Level	0.30 / 1.00 mg /L = 20 µL
3. Level	0.60 / 2.50 mg /L = 40 µL
4. Level	0.90 / 3.50 mg /L = 60 µL
5. Level	1.50 / 5.00 mg /L = 100 µL
6. Level	3.00 / 10.0 mg /L = 200 µL



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