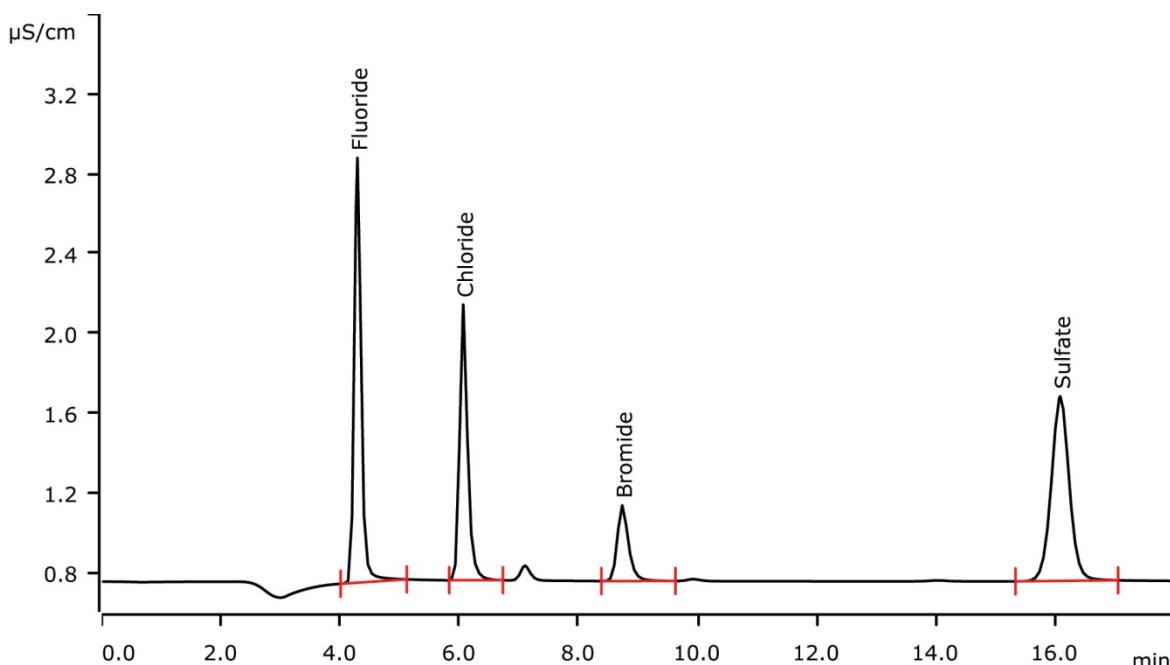


Analysis of a liquid mixed standard with Metrohm Combustion IC



This Application Note shows the determination of fluoride, chloride, bromide, and sulfur (as sulfate) in an ethanolic standard solution containing haloorganic (4-halobenzoic acids; F, Cl, and Br) and sulfurorganic compounds (3-(cyclohexylamino)-1-propanesulfonic acid) by Metrohm Combustion IC applying flame sensor technology and Inline Matrix Elimination.

Results

	Mean [mg/kg]	RSD [%] (n = 15)	Recovery [%] (n = 15)
Fluoride	42.6	0.9	96.1
Chloride	49.1	0.7	101.5
Bromide	51.9	0.7	97.6
Sulfate	45.8	1.0	99.8

Sample

4-fluorobenzoic acid, 2-chlorobenzoic acid, 2-bromobenzoic acid, and 3-(cyclohexylamino)-1-propanesulfonic acid in ethanol

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	Detector outlet
Absorption solution	100 mg/L hydrogen peroxide

Analysis

Conductivity after sequential suppression

Parameters

Flow rate	0.7 mL/min
Injection volume	50 µL
P _{max}	15 MPa
Recording time	18 min
Column temperature	30 °C

Combustion parameters

Argon	100 mL/min
Oxygen	300 mL/min
Oven temperature	1050 °C
Post-combustion time	60 s
Initial volume of absorption solution	2.0 mL
Water inlet	0.1 mL/min

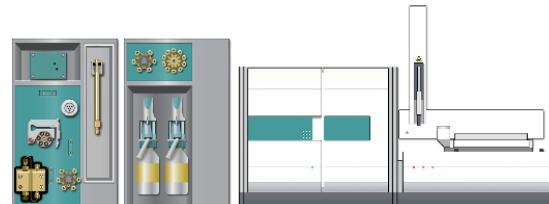
Instrumentation

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 50
Standard solution	
All ions	500 µg/L
1. Level	10 µg/L = 4 µL
2. Level	20 µg/L = 8 µL
3. Level	50 µg/L = 20 µL
4. Level	100 µg/L = 40 µL
5. Level	250 µg/L = 100 µL
6. Level	500 µg/L = 200 µL



www.metrohm.com

 **Metrohm**