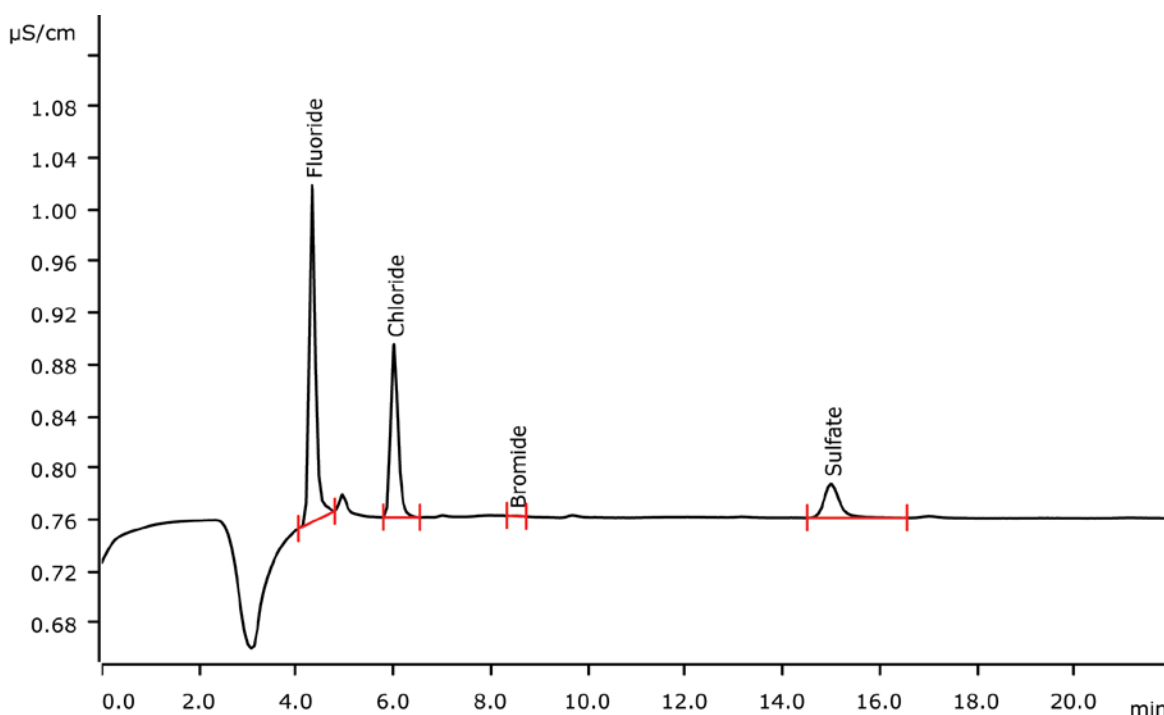


# Halogens in LPG applying Metrohm Combustion IC



A liquefied petroleum gas (LPG) sample consisting of butane and propane is analyzed for fluorine and chlorine content. Fluorine and chlorine originate from perfluorobutane and methylchloride, respectively. 50  $\mu\text{L}$  of the sample is injected in the combustion system using the LPG/GSS Module. The combustion products are analyzed by IC applying intelligent Partial Loop Injection Technique after Inline Matrix Elimination.

## Results

	Mean [ $\mu\text{g/g}$ ]	RSD [%] n = 5
Fluorine	1.88	1.2
Chlorine	1.85	0.9
Bromine	n.d.	-
Sulfate	0.15	1.2

## Sample

Liquefied petroleum gas (LPG)

## Sample preparation

The sample is analyzed by Combustion IC and intelligent Partial Loop Injection Technique 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	STREAM
Absorber solution	100 mg/L hydrogen peroxide

## Parameters

Flow rate	0.7 mL/min
Injection volume (IC)	200 µL (MiPT)
P <sub>max</sub>	15 MPa
Recording time	22 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
Water inlet	0.1 mL/min
Injection Volume (LPG/GSS)	50 µL

## Analysis

Conductivity after sequential suppression

## Instrumentation

930 Compact IC Flex Oven/SeS/PP/Deg	2.930.2560
IC Conductivity Detector	2.850.9010
MSM Rotor A	6.2832.000
Adapter sleeve for Suppressor Vario	6.2842.020
920 Absorber Module	2.920.0010
Combustion Module (oven and gas module)	2.136.0730

