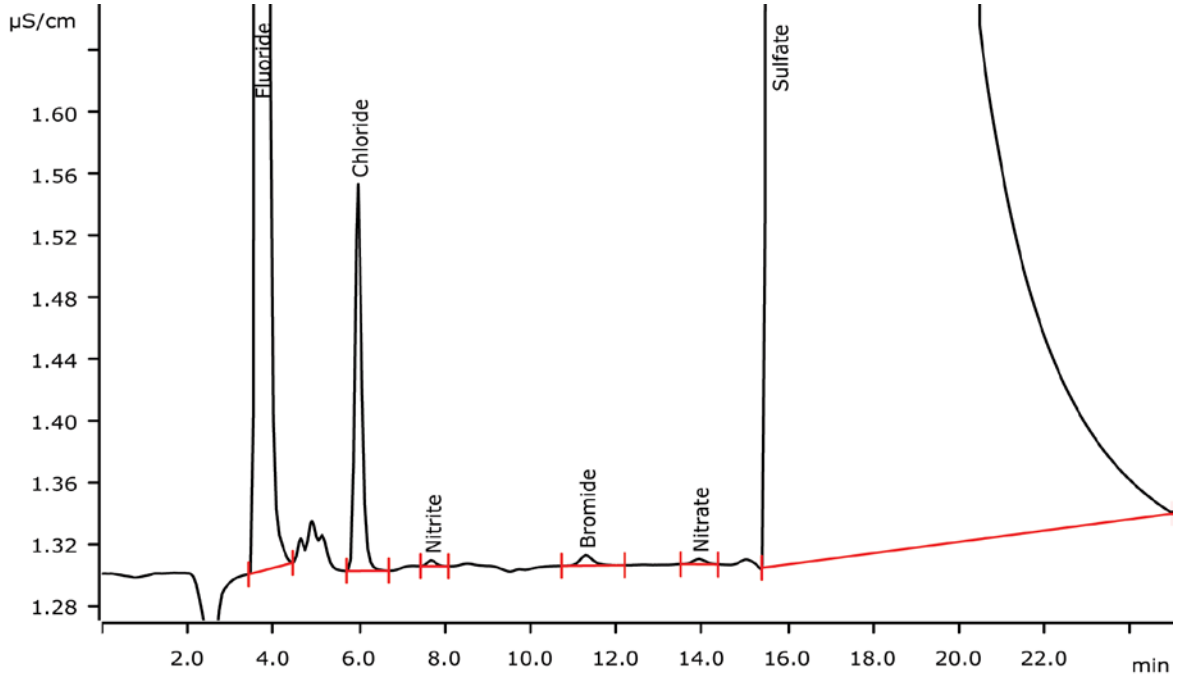
IC Application Note S–329

Anions in FGD gypsum according to VGB-M 701e



Flue gas desulfurization (FGD) gypsum is produced in power stations. VGB-M 701e (2008) describes aqueous extraction methods for the ion chromatographic determination of chloride in FDG gypsum. Following the VGB sample preparation, other anions than chloride can be determined.

Results

Anion	Concentration*) [mg/kg]	Concentration**) [mg/L]	RSD [%] n = 3
Fluoride		1.52	-
Chloride	27.6	0.123	0.05
Nitrite		0.004	-
Bromide		0.015	-
Nitrate		0.006	-

*) according to VGB-M 701 e

**) in the extract

Metrohm

Sample

Gypsum

Sample preparation

Extraction according to VGB-M 701e.

Columns

Metrosep A Supp 16 - 150/4.0	6.1031.420
Metrosep A Supp 16 Guard/4.0	6.1031.500

Solutions

Eluent	7.5 mmol/L sodium carbonate 0.75 mmol/L sodium hydroxide
Suppressor regenerant	100 mmol/L sulfuric acid
Rinsing solution	STREAM

Analysis

Conductivity detection after sequential suppression

Instrumentation

930 Compact IC Flex Oven/SeS/PP/Deg	2.930.2560
IC Conductivity Detector	2.850.9010
858 Professional Sample Processor	2.858.0020
800 Dosino	2.800.0010
MSM Rotor A	6.2832.000
IC Equipment: MiPT	6.5330.180

Parameters

Flow rate	0.8 mL/min
Injection volume (MiPT)	50 µL
P_{max}	20 MPa
Recording time	25 min
Column temperature	45 °C

Calibration MiPT

Calibration range	Factor of 20
Standard solution:	0.2 mg/L each
1. Level	4 µL = 0.2 mg/L
2. Level	8 µL = 0.4 mg/L
3. Level	20 µL = 1.0 mg/L
4. Level	40 µL = 2.0 mg/L
5. Level	80 µL = 4.0 mg/L