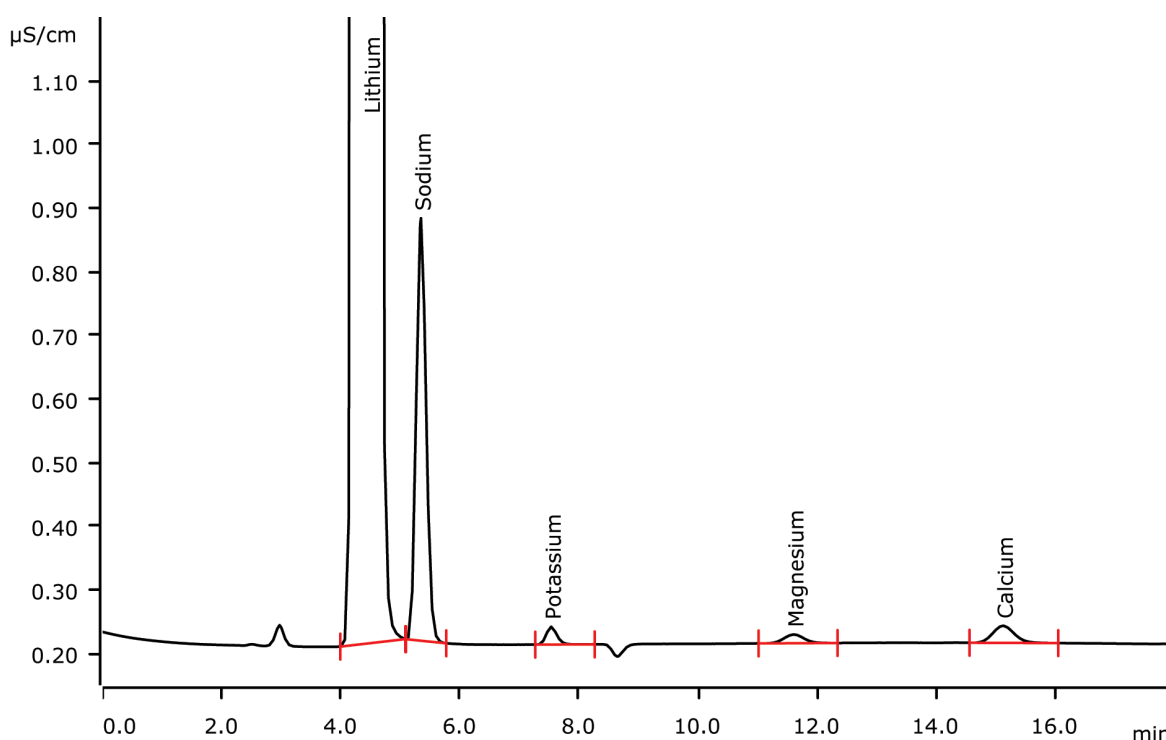


Lithium in acidic leachates from geological resources applying sequential suppression



With the advent of the electric vehicle, rechargeable lithium batteries will become more and more popular and will drive lithium demand. Most important lithium sources are brine lake deposits and hard silicate minerals. This Application Note dedicates to the cation determination in mineral leachates.

Therein, alkali and alkaline earth metals are separated on a Metrosep C Supp 1 - 250/4.0. Then, conductivity detection after sequential suppression is applied.

Results

Cation	Solution [mg/L]	Solid [mg/kg]	Cation	Solution [mg/L]	Solid [mg/kg]
Lithium	164.6	32'800	Magnesium	0.35	67
Sodium	12.9	2'500	Calcium	1.02	197
Potassium	0.81	157			

Sample

Leachate from geological sample

Sample preparation

Dilution 1 : 10 in ultrapure water

Columns

Metrosep C Supp 1 - 250/4.0	6.1052.430
Metrosep C Supp 1 Guard/4.0	6.1052.500

Solutions

Eluent	5.0 mmol/L nitric acid 50 µg/L rubidium
Suppressor regenerant	70 mmol/L sodium carbonate 70 mmol/L sodium hydrogen carbonate
Rinsing solution	Stream

Analysis

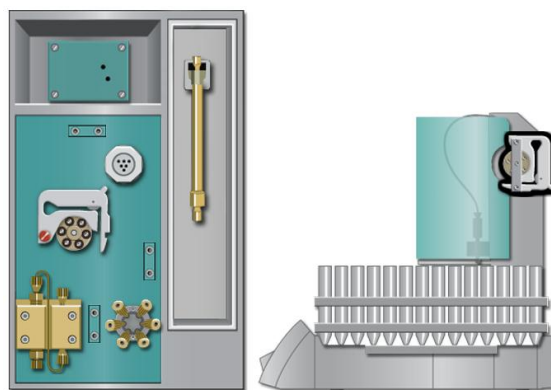
Conductivity detection after sequential suppression

Instrumentation

930 Compact IC Flex Oven/SeS/PP/Deg	2.930.2560
IC Conductivity Detector	2.850.9010
863 Compact Autosampler	2.863.0010
MSM-HC Rotor C	6.2842.200

Parameters

Flow rate	1.0 mL/min
Injection volume	20 µL
P _{max}	15 MPa
Recording time	18 min
Column temperature	40 °C



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