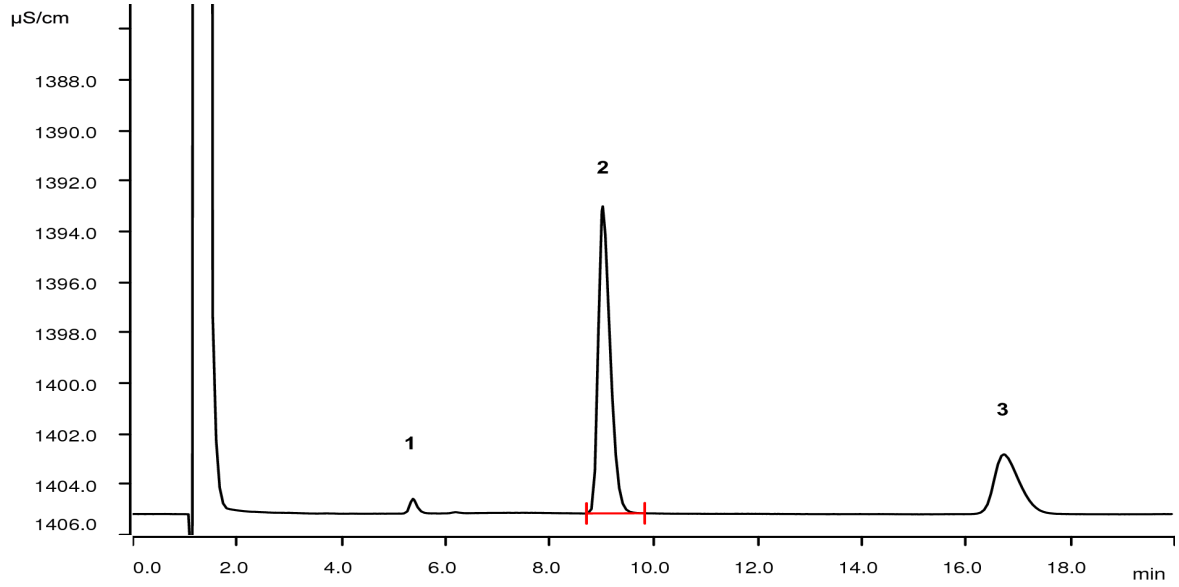
IC Application Note C–185

Potassium in potassium bicarbonate and potassium chloride effervescent tablets for oral suspension as per USP



Within the scope of the USP monograph modernization, potassium is determined in potassium bicarbonate and potassium chloride effervescent tablets for oral suspension applying cation chromatography with direct conductivity detection. The separation is performed on a Metrosep C 6 - 150/4.0 column (L76). All acceptance criteria are fulfilled. The USP41 monograph for "Potassium bicarbonate and potassium chloride effervescent tablets for oral suspension" performs the assay of potassium by atomic absorption spectroscopy.

Results

	Cation	Sample weighed in [mg/L]	Conc. measured [mg/L]	RSD [%, N = 2] (NMT = 1.0%)	Recov. [%] (90%...110%)	Tailing (NMT = 2.0)
3	Potassium	15.0	15.7	0.15	104.8	1.3

1 sodium, 2 calcium; not quantified. NMT = not more than

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Sample

Potassium bicarbonate and potassium chloride effervescent tablets for oral suspension.

Sample preparation

Stock solution: 50 g dissolved in 2000 mL ultrapure water. 15.0 mg/L sample solution: dilute 1.533 mL of stock solution to 500 mL with ultrapure water.

Columns

Metrosep C 6 - 150/4.0	6.1051.420
Metrosep C 6 Guard/4.0	6.1051.500

Solutions

Eluent	4.0 mmol/L nitric acid
Diluent	Ultrapure water (dionized water, NLT resistivity 18 MΩ•cm and less than 20 ppb Total Organic Carbon at 20 °C)
Standard	15.0 mg/L potassium from USP potassium chloride RS in Diluent

Instrumentation

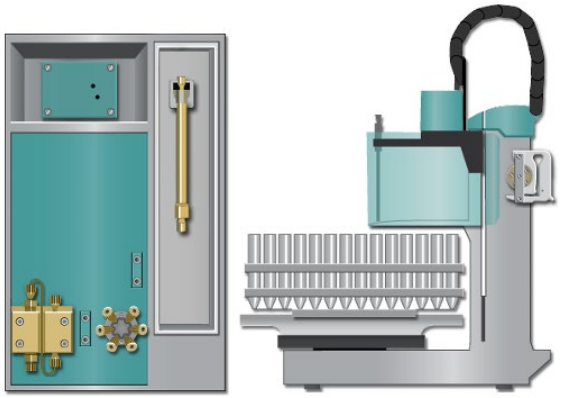
930 Compact IC Flex Oven/Deg	2.930.2160
IC Conductivity Detector	2.850.9010
858 Professional Sample Processor	2.858.0020

Analysis

Direct conductivity detection

Parameters

Flow rate	0.9 mL/min
Injection volume	20 µL
P_{max}	20 MPa
Total recording time	20 min
Column temperature	30 °C



Calibration

	Potassium [mg/L]
Level 1	3.75
Level 2	7.50
Level 3	11.25
Level 4	15.00
Level 5	18.75
Level 6	22.50
Correlation coefficient	0.9999 (NLT = 0.999)

NLT = not less than

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