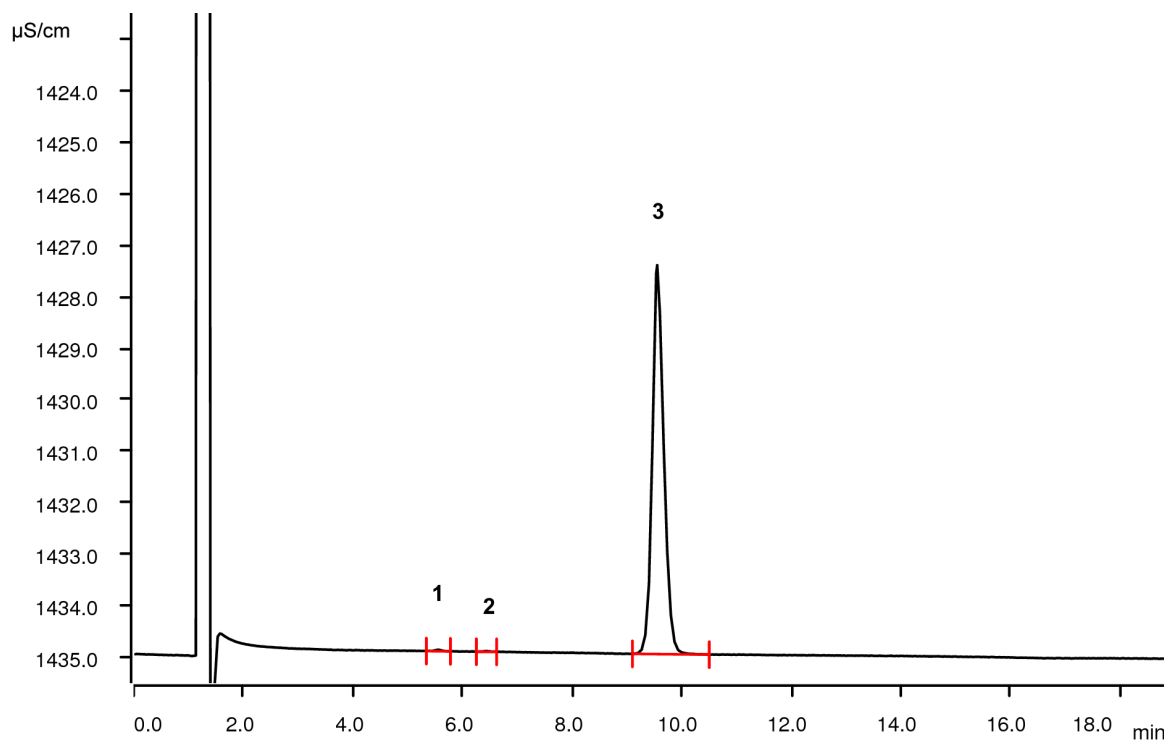


Potassium in potassium bitartrate as per USP



Within the scope of the USP monograph modernization, potassium is determined in potassium bitartrate applying cation chromatography with direct conductivity detection. The USP41 monograph for “Potassium bitartrate” does not yet mention an assay for potassium. The separation is performed on a Metrosep C 6 - 150/4.0 column (L76). The assay of potassium is performed with two commercially available products according to USP definitions. All acceptance criteria are fulfilled.

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	15.0	0.12	100	1.18

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

Sample

Potassium hydrogen tartrate (potassium bitartrate)

Sample preparation

Stock solution: 180.3 mg dissolved in 50 mL ultrapure water.

15.0 mg/L sample solution: dilute 1 mL of stock solution to 50 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 M Ω ·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

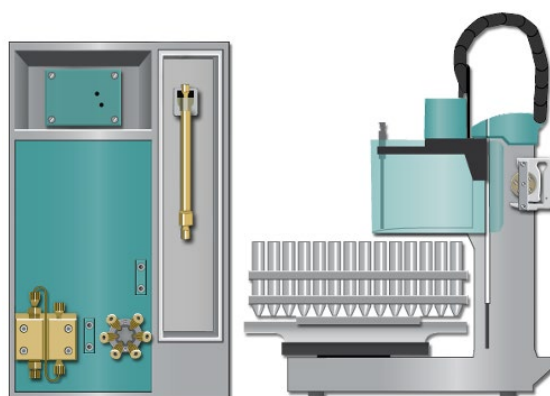
930 Compact IC Flex Oven/Deg	2.930.2160
IC Conductivity Detector	2.850.9010
858 Professional Sample Processor	2.858.0020

Analysis

Direct conductivity detection

Parameters

Flow rate	0.9 mL/min
Injection volume	20 μ L
P _{max}	20 MPa
Total recording time	19 min
Column temperature	30 °C



Calibration

Level	Potassium [mg/L]
Level 1	3.00
Level 2	7.50
Level 3	11.25
Level 4	15.00
Level 5	18.75
Level 6	22.50
Correlation coefficient	0.9993 (NLT = 0.999)

NLT = not less than