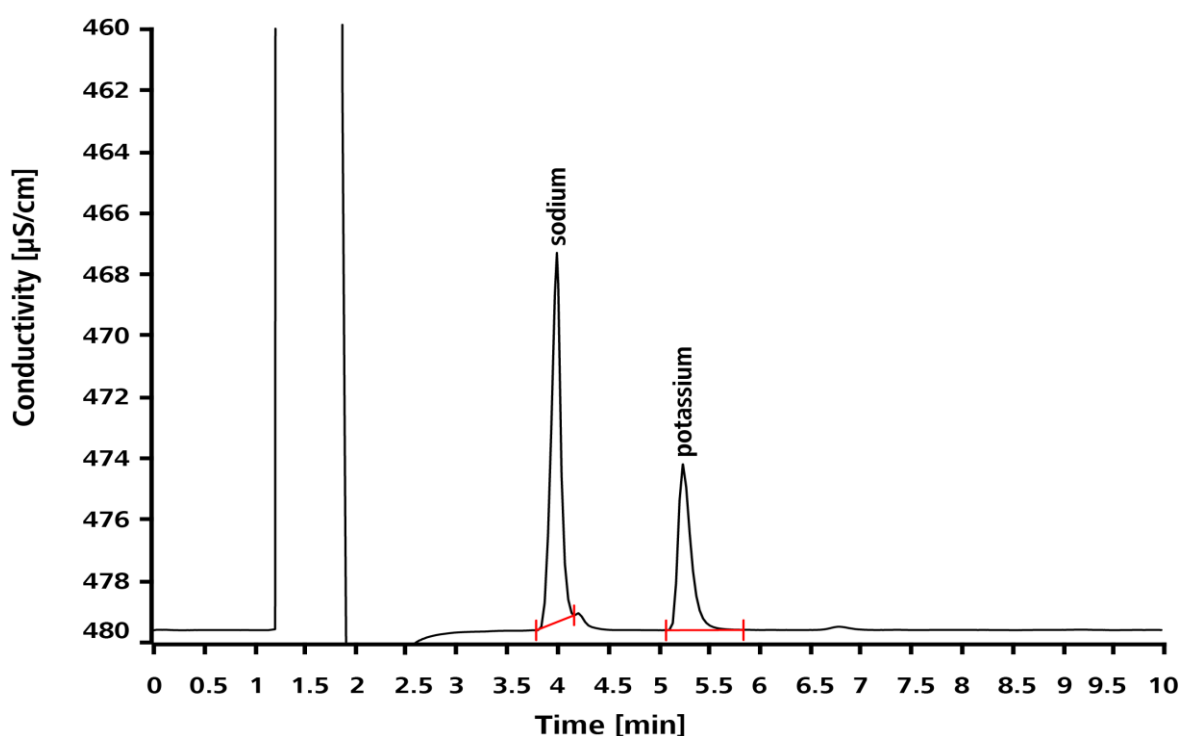


# Sodium and potassium in polyol applying IC after Inline Matrix Elimination



The chemical reaction of a polyisocyanate with polyols yields polyurethanes. Impurities in the polyol raw material have great impacts on the reaction rates and compromise the quality of the end product. In polyols, alkali metals belong to the most critical impurities, because they act as strong catalysts. Here, the determination of the two cations is shown after Inline Matrix Elimination. The latter protects the analytical column from the polyol matrix. Quantification is achieved using conductivity detection.

## Results

Cations	Conc. [mg/kg]	Conc. spiked [mg/kg]	RSD [%, n = 10]	Recovery [%, n = 3]
Sodium	11.8	16.6	0.9	93
Potassium	18.0	22.7	0.5	95

## Sample

Polyol sample

## Sample preparation

2 g of sample are dissolved in 20 mL of 50% acetone in ultrapure water. Injection after Inline Matrix Elimination.

## Columns

Metrosep C 4 - 150/2.0	6.1050.220
Metrosep C 4 Guard/2.0	6.1050.600
Metrosep C PCC 1 HC/4.0	6.1010.310
Metrosep I Trap 1 - 100/4.0	6.1014.200

## Solutions

Eluent	1.7 mmol/L nitric acid 0.7 mmol/L dipicolinic acid 20% acetone
Transfer solution	Ultrapure water

## Analysis

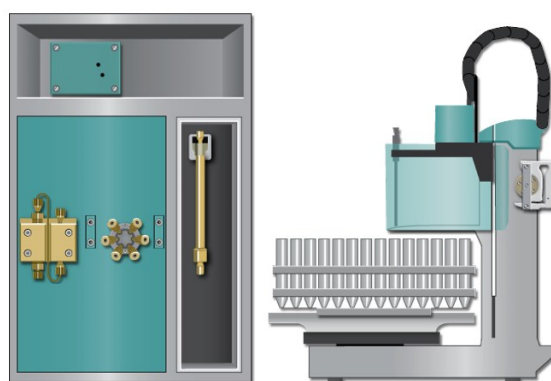
Direct conductivity detection

## Instrumentation

940 Professional IC Vario ONE	2.940.1100
IC Conductivity Detector	2.850.9010
858 Professional Sample Processor	2.858.0020
800 Dosino	2.800.0010
Transfer tubing 10 mL	6.1825.270
Dosing Unit 10 mL	6.3032.210

## Parameters

Flow rate	0.9 mL/min
Injection volume	40 µL
P <sub>max</sub>	20 MPa
Recording time	10 min
Column temperature	Room temperature



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