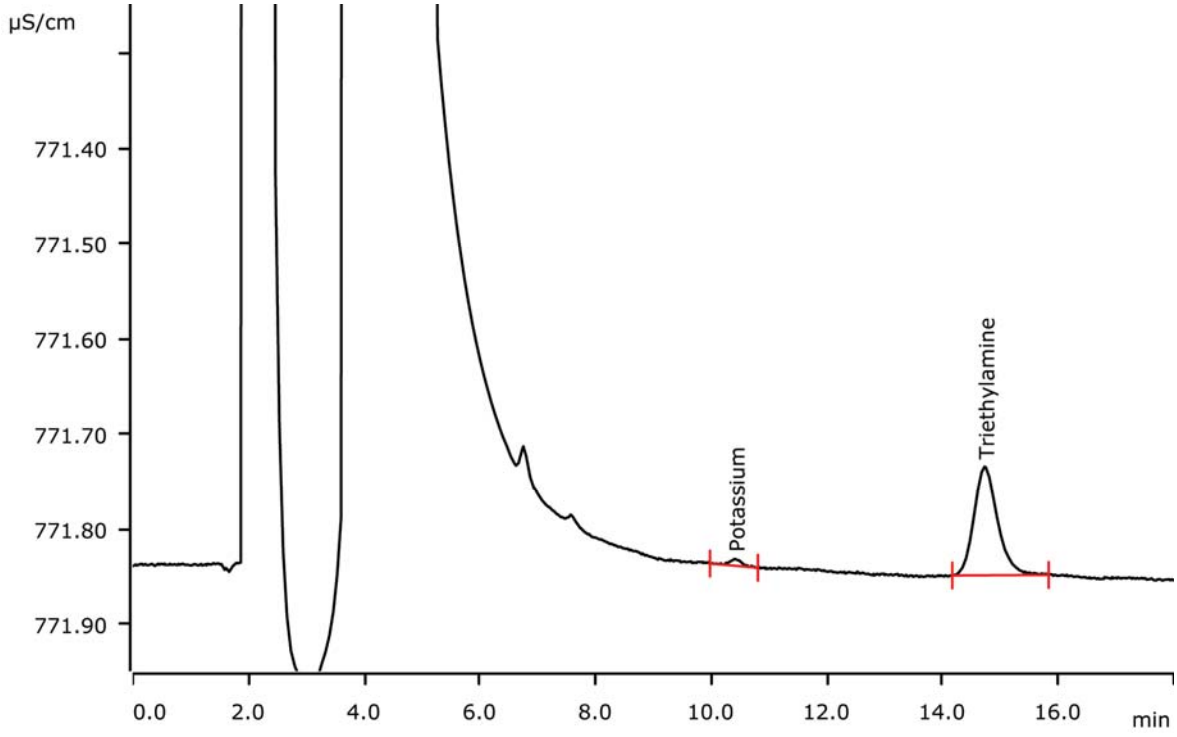
IC Application Note C–165

Triethylamine in aqueous 1,3,5-trioxane solution applying direct conductivity detection



1,3,5-Trioxane is the cyclic trimer of formaldehyde. It is used for producing polyacetal thermoplastics, e.g., polyoxymethylene (POM) as well as solid fuel tablets. Aqueous 1,3,5-trioxane solutions are often accompanied by triethylamine traces, for which reason the amine has to be quantified. This is achieved on a Metrosep C 3 - 250/4.0 column with subsequent direct conductivity detection.

Results

Cation	Concentration [mg/L]	Recovery [%]
Potassium	n.q.	-
Triethylamine	1.13	102

Metrohm

Sample

Aqueous 1,3,5-trioxane solution

Sample preparation

Direct injection

Columns

Metrosep C 3 - 250/4.0	6.1010.430
Metrosep RP 2 Guard/3.5	6.1011.030

Solutions

Eluent	2.5 mmol/L nitric acid

Analysis

Direct conductivity detection

Parameters

Flow rate	1.0 mL/min
Injection volume	20 µL
P_{max}	15 MPa
Recording time	18 min
Column temperature	35 °C

Instrumentation

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