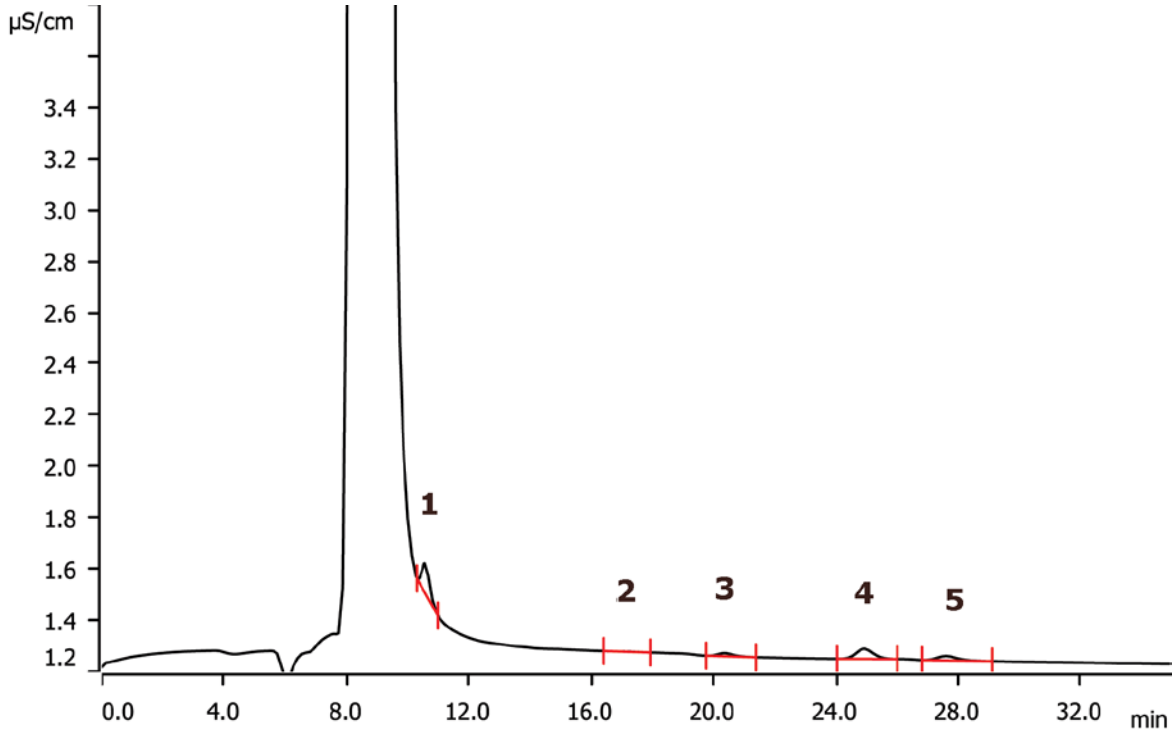
IC Application Note S–356

Inorganic anions in monoethylene glycol from natural gas process



Monoethylene glycol is used for dehydration of the natural gas prior to the liquefaction and has to be checked for its purity on routine basis. Inorganic anions and their corresponding acids are corrosive. Therefore they have to be kept at minimum level. The separation is performed on a microbore Metrosep A Supp 16 - 250/2.0 column and quantified by conductivity detection after sequential suppression.

Results

Anion		Concentration [mg/L]	Anion		Concentration [mg/L]
1	Chloride	0.306	4	Sulfate	0.035
2	Bromide	< 0.010	5	Phosphate	0.403
3	Nitrate	0.114			

Metrohm

Sample

Monoethylene glycol from LNP process

Sample preparation

Dilution 1:10 with ultrapure water.

Columns

Metrosep A Supp 16 - 250/2.0	6.1031.230
Metrosep A Supp 16 Guard/2.0	6.1031.600

Solutions

Eluent	7.5 mmol/L sodium carbonate 0.75 mmol/L sodium hydroxide
Suppressor regenerant	100 mmol/L sulfuric acid
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
858 Professional Sample Processor	2.858.0020
MSM Rotor A	6.2832.000
Adapter sleeve for Suppressor Vario	6.2842.020

Parameters

Flow rate	0.2 mL/min
Injection volume	20 µL
P_{max}	16 MPa
Recording time	35 min
Column temperature	45 °C