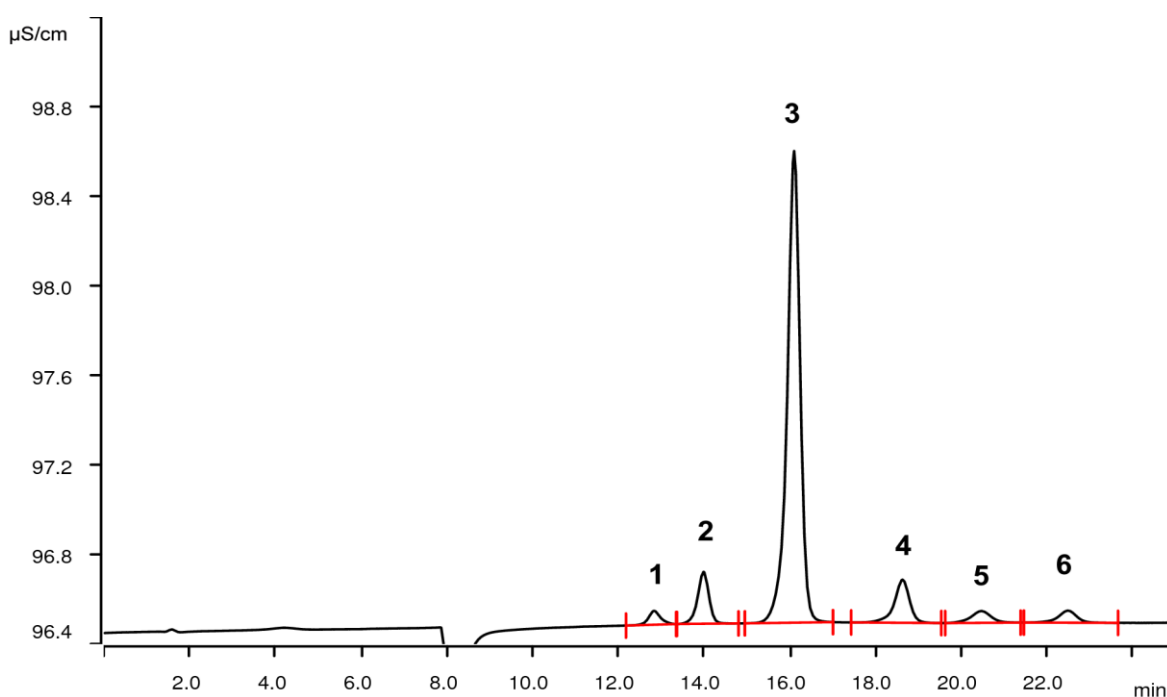


Organic acids in gas sweetening solvent by ion-exclusion chromatography with inverse suppression



Acidic gas sweetening solvents are used to remove acid gases such as H₂S and CO₂ from streams. Typically, amines are applied as alkaline components in these solvents. The determination of organic acids (glycolic, acetic, formic, propionic, and butyric acid) is achieved by ion-exclusion chromatography with conductivity detection after inverse suppression.

Results

	Conc. [mg/L]	RSD [n = 3]		Conc. [mg/L]	RSD [n = 3]
1 Glycolic acid	186.1	0.61	4 Propionic acid	714.0	0.77
2 Formic acid	325.5	0.90	5 unknown	-	-
3 Acetic acid	5124.4	0.31	6 Butyric acid	311.5	3.84

Sample

Amine for gas sweetening solvent

Sample preparation

1g sample dissolved in 200 mL of ultrapure water.

Columns

Metrosep Organic Acids - 250/7.8	6.1005.200
Metrosep Organic Acids Guard/4.6	6.1005.250

Solutions

Eluent	0.5 mmol/L sulfuric acid
Suppressor regenerant	10 mmol/L lithium chloride
Rinsing solution	STREAM

Analysis

Conductivity detection after inverse suppression

Parameters

Flow rate	0.5 mL/min
Injection volume	20 μ L
P _{max}	7 MPa
Recording time	25 min
Column temperature	30 °C

Instrumentation

930 Compact IC Flex Oven/ChS/PP/Deg	2.930.2360
IC Conductivity Detector	2.850.9010
919 IC Autosampler plus	2.919.0020
MSM Rotor A	6.2832.000
Adapter sleeve for Suppressor Vario	6.2842.020

