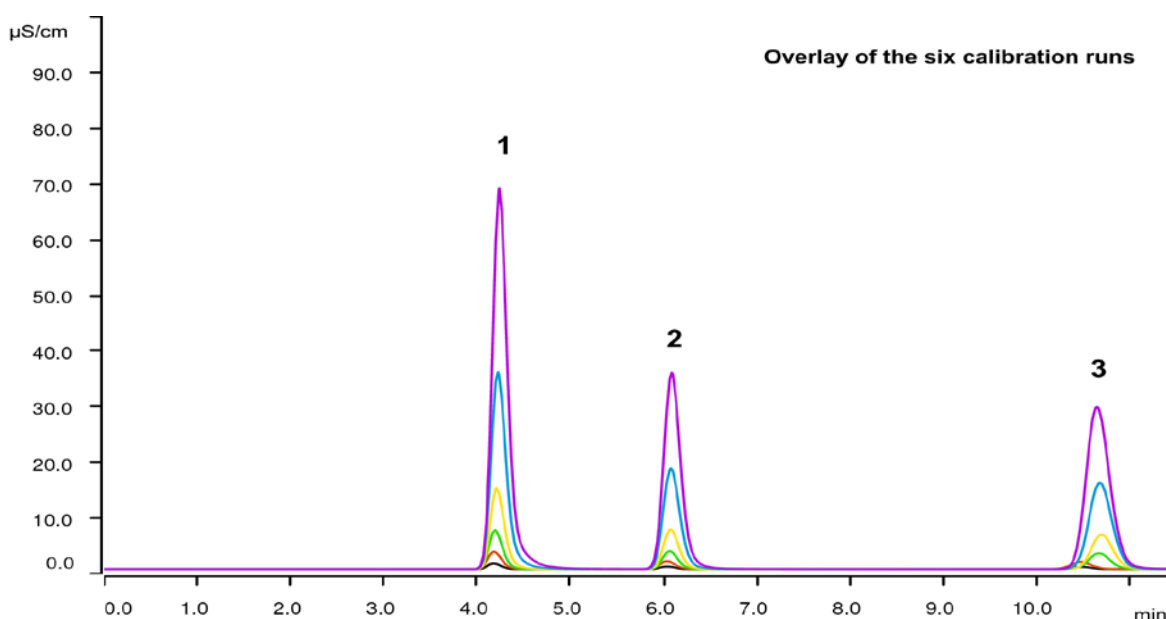


# Combination of Inline Dilution with subsequent Inline Ultrafiltration and automatic calibration



Metrohm Inline Sample Preparation (MISP) is a collection of versatile, time- and cost-effective techniques reducing manual sample preparation. This Application Note describes the combination of Inline Dilution with Inline Ultrafiltration. Samples are automatically diluted and subsequently filtered before injection. MagIC Net allows to run intelligent dilution by checking results and rediluting the sample if the result is out of the calibration range. Also the multipoint calibration is performed by automatically diluting the stock standard solution. In this way, an automatic calibration of each analyte is effectively achieved.

## Results

Anion	Calibration RSD [%]	Calibration Corr. Coeff.	Dilution 1:50 RSD [n = 10, %]	Dilution 1:50 Recovery [%]
1 Chloride	1.423	0.99996	2.18	101.1
2 Nitrate	2.128	0.99992	1.88	102.5
3 Sulfate	1.536	0.99995	1.42	100.6

## Sample

Mixed standard stock solution (1000 mg/L of each anion)

## Sample preparation

Metrohm Inline Dilution Technique (MIDT) with subsequent Metrohm Inline Ultrafiltration.

## Columns

Metrosep A Supp 5 - 100/4.0	6.1006.510
Metrosep A Supp 5 Guard/4.0	6.1006.500

## Solutions

Eluent	3.2 mmol/L sodium carbonate 1.0 mmol/L sodium hydrogen carbonate
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
800 Dosino	2.800.0010
741 Magnetic Stirrer	2.741.0010
IC equipment: Inline Dilution	6.5330.120
IC equipment: Inline Ultrafiltration	6.5330.130
MSM Rotor A	6.2832.000
Adapter sleeve for Suppressor Vario	6.2842.020

## Parameters

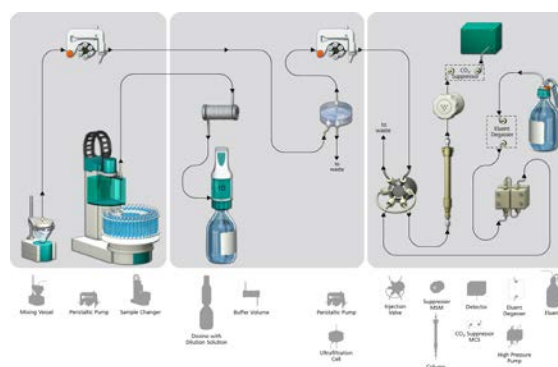
Flow rate	0.7 mL/min
Injection volume	20 µL
P <sub>max</sub>	15 MPa
Recording time	11.5 min
Column temperature	45 °C
Final dilution volume	7 mL

## Calibration

Stock standard solution	50.0 mg/L of chloride, nitrate, and sulfate each	
Dilution factor	Calibration level	
Calibration level	Dilution factor	Concentration
Level 1	1	50.0 mg/L
Level 2	2	25.0 mg/L
Level 5	5	10.0 mg/L
Level 10	10	5.00 mg/L
Level 20	20	2.50 mg/L
Level 50	50	1.00 mg/L

## Setup scheme

The installation is done according to the AB 376 ProfIC Vario 6 Anion.



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