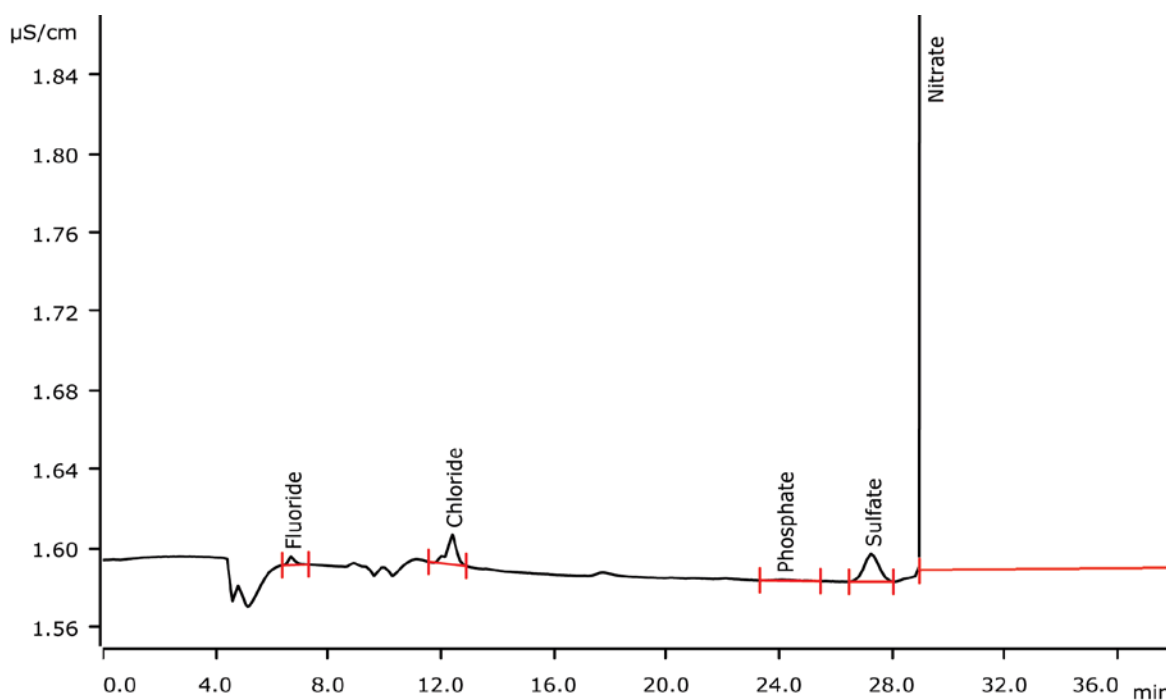


Anions in electronic grade nitric acid on a high-capacity column



Electronic grade nitric acid is required to contain only low mg/L concentrations of other anions. Ion chromatographic determination of such trace anions requires a high-capacity column as well as a special eluent that elutes nitrate after all other anions of interest. This goal is achieved by applying a strong carbonate/hydrogen carbonate eluent on a Metrosep A Supp 16 - 250/4.0 column.

Results

| Anion | Concentration in the acid [mg/L] |
|-----------|-------------------------------------|
| Fluoride | 1.24 |
| Chloride | 18.25 |
| Phosphate | 3.95 |
| Sulfate | 45.47 |

Nitrate not quantified

Sample

Electronic grade nitric acid

Sample preparation

Dilution 1:1000 with ultrapure water.

Columns

| | |
|------------------------------|------------|
| Metrosep A Supp 16 - 250/4.0 | 6.1031.430 |
| Metrosep A Supp 16 Guard/4.0 | 6.1031.500 |

Solutions

| | |
|-----------------------|--|
| Eluent | 10.0 mmol/L <u>sodium carbonate</u> 4.0 mmol/L <u>sodium hydrogen carbonate</u> |
| Suppressor regenerant | 100 mmol/L <u>sulfuric acid</u> |
| Rinsing solution | STREAM |

Parameters

| | |
|--------------------|------------|
| Flow rate | 0.6 mL/min |
| Injection volume | 20 µL |
| P _{max} | 20 MPa |
| Recording time | 38 min |
| Column temperature | 25 °C |

Analysis

Conductivity detection after sequential suppression

Instrumentation

| | |
|--------------------------------------|------------|
| 940 Professional IC Vario ONE/SeS/PP | 2.940.1500 |
| IC Conductivity Detector | 2.850.9010 |
| 858 Professional Sample Processor | 2.858.0020 |
| MSM-HC Rotor A | 6.2842.000 |

