



DETERMINATION OF **INORGANIC ANIONS** IN AQUEOUS MATRICES ACCORDING TO EPA 6500 AND ASTM D6508-15 TEST METHODS

EPA 6500
ASTM D6508-15

INTRODUCTION

These test methods are applicable for determination of the dissolved inorganic anions: fluoride, bromide, chloride, nitrite, nitrate, *ortho*-phosphate, and sulfate in aqueous matrices using capillary ion electrophoresis with indirect UV detection. The methods can be applied to **drinking water**, **wastewater**, and **ground water**.

MEASUREMENT METHOD

The measurement method is based on capillary zone electrophoresis with indirect UV detection at the wavelength of 254 nm.

MEASUREMENT RANGE

Anions	Measurement range, mg/L
Chloride, bromide, nitrite, sulfate, nitrate, <i>ortho</i> -phosphate	0.1–50
Fluoride	0.1–25

EQUIPMENT AND REAGENTS

The CAPEL capillary electrophoresis system is used in measurements. Data acquisition, collection, processing and output are performed using a personal computer running under WINDOWS® XP/7/8/10 operating system with installed dedicated software package ELFORUN. All reagents must be of analytical grade or better.

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EXAMPLES OF REAL ANALYSES

BGE: chromate, with TTAOH, CHES, and calcium gluconate

Capillary: $L_{\text{eff}}/L_{\text{tot}}$ 50/60 cm, ID 75 μm

Injection: 300 mbar x sec

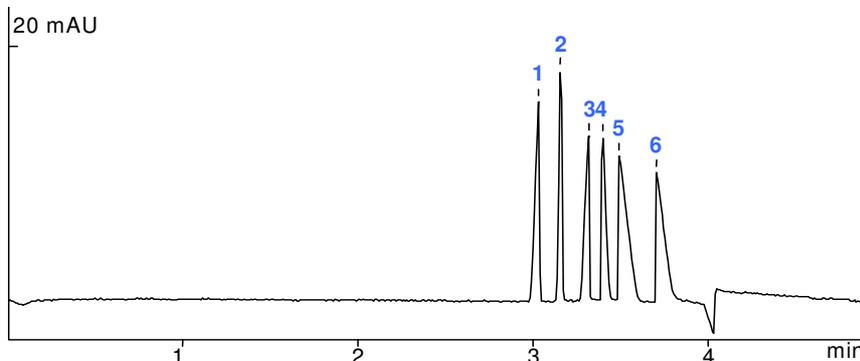
Voltage: – 15 kV

Temperature: 25 °C

Detection: 254 nm, indirect

Sample: test solution

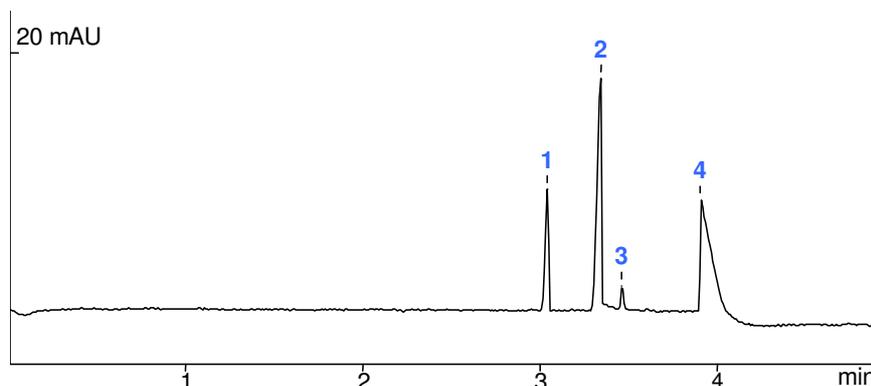
- 1 – chloride (20 mg/L)
- 2 – nitrite (20 mg/L)
- 3 – sulfate (20 mg/L)
- 4 – nitrate (20 mg/L)
- 5 – fluoride (10 mg/L)
- 6 – phosphate (20 mg/L)



Sample: tap water

Measurement results:

- 1 – chloride (7.78 mg/L)
- 2 – sulfate (26.3 mg/L)
- 3 – nitrate (1.66 mg/L)
- 4 – carbonate



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To get more specific information, please contact the representative by sales@lumexinstruments.com