



Determination of **sinapic, coniferyl, syringic aldehydes** and **vanillin** in cognac and brandy

INTRODUCTION

The presence or absence of aromatic aldehydes — sinapic, coniferyl, syringic aldehydes, and vanillin — in a sample, as well as their concentrations and relative proportions, makes it possible to assess the authenticity and quality of brandy and cognac and to detect counterfeits.

The method is used for the determination of the mass concentration of aromatic aldehydes in samples of **brandy, cognac** and **cognac spirits** by capillary electrophoresis.



MEASUREMENT METHOD

The measurement method is based on capillary zone electrophoresis. The components are detected by intrinsic absorption at a wavelength of 373 nm.

MEASUREMENT RANGE

The measurement range for the aromatic aldehydes is **0.2–50 mg/L**.

Phenolcarboxylic acids such as syringic, ferulic, salicylic, coumaric, vanillic, ellagic, p-hydroxybenzoic, caffeic, protocatechuic and gallic acids as well as preservatives – sorbic and benzoic acids do not deteriorate determination of aromatic aldehydes.

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® operating system with Elforun software installed.

Lumex Instruments kit, order **No. 0300001541**.

EXAMPLES OF REAL ANALYSES

BGE: borate

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

Injection: 600 mbar \times s

Voltage: 25 kV

Temperature: 20 °C

Detection: 373 nm

Sample: brandy (dilution factor – 2)

Found (mg/L):

1 – sinapic aldehyde (0.5)

2 – coniferyl aldehyde (0.4)

3 – syringic aldehyde (1.6)

4 – vanillin (0.6)

