ANALYTICAL EQUIPMENT

LUMEX

DETERMINATION OF VANILLIN, SINAPIC, CONIFERYL, AND SYRINGIC ALDEHYDES IN BRANDIES AND BRANDY SPIRITS

LUMEX Method M 04-53 (2008)

INTRODUCTION

The presence or absence of aromatic aldehydes (vanillin, sinapic, coniferyl and syringic aldehydes) in a sample and also their weight content and proportion allows determination of authenticity and quality of brandies and brandy spirits, and revealing a counterfeit. Together with aromatic aldehydes, it is possible to determine phenolcarbolic acids, such as sinapic, syringic, ferulic, salicylic, cumaric, vanillic, ellagic, *p*-hydroxybenzoic, caffeic, gallic, protocatechuic. Identification and weight content of these acids is an additional criterion of the spirit authenticity.

MEASUREMENT METHOD

Capillary electrophoresis method allows simultaneous determination of all compounds by the method of capillary zone electrophoresis in a borate buffer with direct detection at the 373 nm wavelength.

MEASUREMENT RANGE

Ranges of measurable concentrations for analyzed aldehydes are **0.2–50 mg/L**.

EQUIPMENT AND REAGENTS

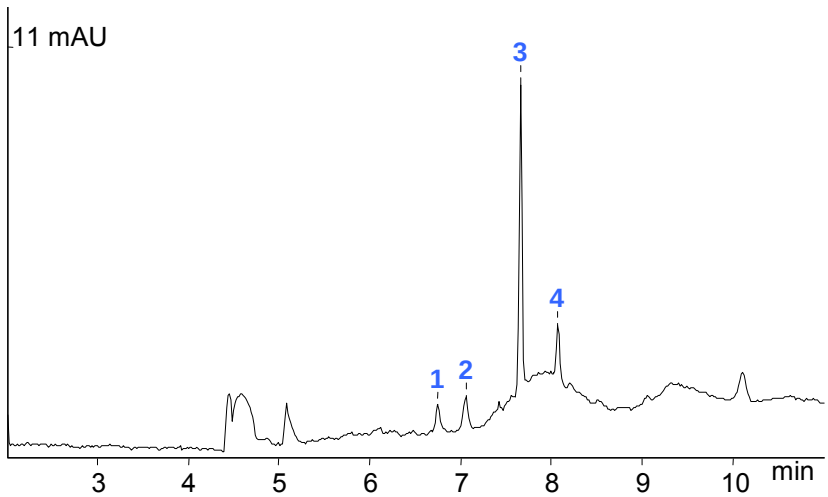
The “CAPEL®-105/105M” capillary electrophoresis system is used in measurements.
Data acquisition, collection, processing and output are performed using a personal computer running under “WINDOWS® 2000/XP” operating system with installed dedicated software package for acquisition and processing of chromatography data.
All reagents must be of analytical grade or higher.

EXAMPLE OF A REAL ANALYSIS

Buffer:	borate
Capillary:	L_{eff}/ L_{tot} 50/60 cm, ID 75 µm
Injection:	600 mbar x sec
Voltage:	+ 25 kV
Temperature:	+ 20 ^{O}C
Detection:	373 nm

Sample: brandy, twofold diluted

Measurement results:
1 – sinapic aldehyde (0.5 mg/L)
2 – coniferyl aldehyde (0.4 mg/L)
3 – syringic aldehyde (1.6 mg/L)
4 – vanillin (0.6 mg/L)



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