OIV-MA-BS-20 Propanol-2-ol Determination by gas chromatography

Type IV method

Introduction

This assay is not part of the official determinations provided by the international regulations, but is quite often requested since propan-2-ol is not a natural constituent of fermented beverages of vinous origin. It may be added to the alcohol during its denaturation. The presence (or more accurately lack thereof) of this compound must be verifiable. In addition it may be present in various alcoholic beverages.

1. Purpose

Determination of propan-2-ol in alcoholic beverages of vitivinicultural origin

2. Principle, apparatus

1. The separation of propan-2-ol from ethanol is carried out by means of gas chromatography.
2. Apparatus

- Gas chromatograph equipped with a flame ionization detector.
- Classic stainless steel column 6 m long and with an internal diameter of 2 mm.
- Stationary phase: for example, coated with diglycerol at 5% on Chromosorb P 60-80 mesh (0.22 to 0.32 mm).

It is also possible to use a mixture of phases known as the ESD: Erytritol, sorbitol, diglycerol respectively at 1%, 2.5%, and 5% weight of the support (it can be used in other phases: porapak, poraplot, etc.)

- Nitrogen R * carrier gas (Air Liquide standard). - Isothermal temperature 80°C.

The settings of the various gas flows must be performed to obtain proper performance of the chromatograph.

3. Sample preparation

For a qualitative test, the sample of the alcoholic beverage can be injected directly into the gas chromatograph (1 to 2 µl).

For accurate dosing is possible to use an internal standard separated from the other alcohols such as pentan-1-ol.

Its content must be the same order of magnitude as that of the propan-2-ol.

4. Assay

Depending on whether the purpose is to detect the presence of the propan-2-ol or measure it, a reference solution of propan-2-ol must be injected into the pure alcohol, its content depending on the required dose (in principle several grams per litre).

For accurate dosing the internal calibration method will be applied using pentan-1-ol.

5. Expression of results

The concentrations of propan-2-ol will be calculated using the traditional method in gas chromatography with the use of an internal standard (c.f. volatile substances) and expressed in g/hl of alcohol at 100% vol.