COEI-1-ALCVIT Rectified alcohol of viti-vinicultural origin

1. Objective, Origin and Scope of Application

Alcohol obtained exclusively by distillation and rectification from wine, grape marcs, wine sediments, or fermented raisins.

Rectified alcohol of viti-vinicultural origin constitues a constituent of some spirits and special wines.

2. Composition

At a temperature of 20 °C, 100 parts of this alcohol contain at least 96 parts ethanol.

Note: The tests and controls described below in italics are not mandatory and are performed only upon request.

3. Properties

Colorless, clear, volatile liquid with a penetrating odor and fiery taste. It is flammable and burns without smoke and with a blue flame.

It should be distilled completely at between 78 and 79 °C.

3.1. Solubility

Neutral alcohol is miscible in water in all proportions with a notable release of heat and contraction of volume. It is also mixable with in acetone, chloroform, ethyl ether, glycerol, and an equal volume of castor oil.

3.2. Characterization Procedure

- Slowly heat a mixture of 1 ml neutral alcohol, twenty drops of concentrated sulfuric acid (R) and 10 g of sodium acetate (R) in a test tube. A strong, characteristic odor of ethyl acetate will be released.
- Mix several drops of alcohol and 1 ml of concentrated sulfuric acid (R), then add several drops of 10 pp 100 potassium dichromate solution. The liquid will become green and emit the odor of ethanal.
- Dilute 0.5 ml of alcohol with 4.5 ml of water. Add 1 ml of 1M sodium hydroxide solution, then slowly add 2 ml of iodized potassium iodide (R). An odor of iodoform will be produced, following by the formation of a yellow precipitate.

3.3. Determination of Viti-vinicultural Origin

This analysis is carried out by measuring the ethanol 14C/12C ratio (scintillation) in accordance with the method described in the Spirits Compendium.

3.4. If necessary, the viti-vinicultural source of the alcohol can be determined using isotopic methods detailed in the Compendium of Wine and Must Analysis Methods.

4. Tests

Test are identical to those for rectified alcohol of agricultural origin , but with the following content limits:

4.1. Methanol

Maximum content 50 g/hl of ethanol at 100% by volume.

4.2. Acidity

Maximum acetic acid content 1.5 g/hl of ethanol at 100% by volume.

4.3. Esters

Maximum content of ethyl acetate 1.3 g/hl of ethanol at 100% by volume (or 5 g/hl).

4.4. Aldehydes

Maximum ethanal content 0.5 g/hl of ethanol at 100% by volume.

4.5. Superior Alcohols

Maximum content 0.5 g/hl of ethanol at 100% by volume.

4.6. Preparing the solution for tests

Using 10 ml of dilute hydrochloric acid (R), take up the residue left by evaporating 100 ml of alcohol during the dry extract analysis. After heating for several minutes in a 100 °C water bath to stimulate dissolution of this residue, decant the acid solution in a 25 ml volumetric flask, and wash the dish three times with 5 ml of water and filled to 25 ml.

4.7. Heavy metals

Place 5 ml of the prepared solution in a test tube in accordance with paragraph 4.6. Add 2 ml of pH 3.5 (R) buffer solution, 7.5 ml of water and 1.2 ml of thioacetamide reagent (R). The solution should not yield any white or black precipitate nor any brown or coloring. At the very least, any coloring produced should be no more intense than that obtained using the general method (heavy metals content expressed in terms of lead, after 50% concentration of the alcohol, should be 0.5 mg/l).

4.8. Lead

Using the method set forth in the Compendium, conduct the quantitative lead analysis on the solution prepared for testing (under paragraph 4.6) (lead content should be less than 0.5 mg/l).

4.9. Mercury

Carry out the quantitative mercury analysis on the solution prepared for testing (under Paragraph 4.6), implementing the technique described in the annex (mercury content should be less than 0.2 mg/l).

4.10. Arsenic

Conduct the quantitative arsenic analysis on the solution prepared for testing (Paragraph 4.6), using the method described in the annex (Arsenic content should be less than 0.5 mg/kg).

5. Storage

Alcohol should be stored in inert containers which will not give off metals, ions or plastics constituents.

The containers as well as the storage methods must comply with safety standards.