COEI-1-POTCAR Potassium carbonate

Potassium carbonate anhydrous (K_2CO_3, CAS No. 584-08-7)

Potassium carbonate hydrate ($2K_2CO_3 \cdot 3H_2O$, CAS No.: 6381-79-9)

1. Objective, origin and scope of application

The addition of potassium carbonate can be used to deacidify musts and wines.

2. Labelling

The label should indicate the product's purity, lot code, date of manufacture, storage conditions and expiration date.

3. Characteristics

Anhydrous potassium carbonate (K_2CO_3) is the potassium salt of carbonic acid and occurs as a white, odourless, hygroscopic powder. The hydrate form ($2K_2CO_3 \cdot 3H_2O$) occurs as small, white, translucent crystals or granules.

4. Identifying characteristics

- Solubility: Very soluble in water, insoluble in ethanol (95% by vol).
- Carbonate: Potassium carbonate is soluble with effervescence in dilute acetic acid or hydrochloric acid solutions, evolving a colourless gas (CO_2) that, when passed into calcium hydroxide solution, produces a white precipitate immediately.
- Potassium: The presence of potassium imparts a violet colour to a non-luminous flame if not masked by the presence of small quantities of sodium.

5. Tests

The limits are determined according to the values observed during production in line with the good manufacturing practices.

5.1. Desiccation Loss

Through the desiccation of 3 g of potassium carbonate for 4 hours at 180°C, for the anhydrous form, the loss of weight must be lower than 1%, for the hydrate form, the

loss of weight must be between 10,0% and 16,5%.

5.2. Preparing the Solution for Tests

Dissolve 1 g of potassium carbonate in 20 mL water.

5.3. Substances Insoluble in Water

Filter the solution prepared for testing under Paragraph 5.2. on a membrane of cellulose ester with a diameter of the pore lower or equal to 0,5 µm, no residue can be detected.

5.4. Iron

Using the atomic absorption spectrometry technique detailed in chapter II of the *International Oenological Codex*, determine the iron content in the test solution (5.2); the content should be less than 10 mg/kg.

5.5. Lead

Using the technique set forth in chapter II of the *International Oenological Codex*, determine the lead content in the test solution (5.2); the content should be less than 5 mg/kg.

5.6. Mercury

Using the technique described in chapter II of the *International Oenological Codex*, determine the mercury content in the test solution (5.2); the content should be less than 1 mg/kg.

5.7. Arsenic

Using the technique described in chapter II of the *International Oenological Codex*, determine the arsenic content in the test solution (5.2); the content should be less than 3 mg/kg.

5.8. Sodium

Determine the sodium content in the test solution (5.2) using flame photometry described in chapter II of the *International Oenological Codex*; the content should be less than 1%.

5.9. Cadmium

Using the technique described in chapter II of the *International Oenological Codex*, determine the cadmium content in the test solution (5.2); the content should be less than 1 mg/kg.

5.10. Potassium Carbonate Content

Sample: 1 g previously dried.

Analysis: Transfer sample to a beaker and dissolve it in 50 mL water. Add 2 drops of

methyl red TS and, while constantly stirring, slowly titrate with 1 N hydrochloric acid until the solution becomes faintly pink. Heat the solution to boiling, cool, and continue titration until the faint pink colour no longer fades after boiling. The product intended for wine-making should contain a minimum of 98% potassium carbonate.

6. Storage

Potassium carbonate should be stored in airtight containers.