

### **OIV-MA-AS2-04 Ash**

#### Type I method

#### **1. Definition**

The ash content is defined to be all those products remaining after igniting the residue left after the evaporation of the wine. The ignition is carried out in such a way that all the cations (excluding the ammonium cation) are converted into carbonates or other anhydrous inorganic salts.

#### **2. Principle**

The wine extract is ignited at a temperature between 500 and 550°C until complete combustion (oxidation) of organic material has been achieved.

#### **3. Apparatus**

- 3.1. boiling water-bath at 100°C;
- 3.2. balance sensitive to 0.1 mg;
- 3.3. hot-plate or infrared evaporator;
- 3.4. temperature-controlled electric muffle furnace;
- 3.5. dessicator;
- 3.6. flat-bottomed platinum dish 70 mm in diameter and 25 mm in height.

#### **4. Procedure**

Pipette 20 mL of wine into the previously tared platinum dish (original weight  $m_0$  g). Evaporate on the boiling water-bath, and heat the residue on the hot-plate at 200°C or under the infrared evaporator until carbonization begins. When no more fumes are produced, place the dish in the electric muffle furnace maintained at  $525 \pm 25^\circ\text{C}$ . After 15 min or carbonization, remove the dish from the furnace, add 5 mL of distilled water, evaporate on the water-bath or under the infrared evaporator, and again heat the residue to 525°C for 10 min.

If combustion (oxidation) of the carbonized particles is not complete, the following operations are repeated: washing the carbonized particles, evaporation of water, and ignition. For wines with a high sugar content, it is advantageous to add a few drops of

## Ash (Type-I)

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pure vegetable oil to the extract before the first ashing to prevent excessive foaming. After cooling in the desiccator, the dish is weighed ( $m_1$  g).

The weight of the ash in the sample (20 mL) is then calculated as  $p = (m_1 - m_0)$  g.

### 5. Expression of results

The weight  $P$  of the ash in grams per liter is given to two decimal places by the expression:

$$P = 50 p.$$