### INTERNATIONAL STANDARD

ISO 22855

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# Fruit and vegetable products — Determination of benzoic acid and sorbic acid concentrations — High performance liquid chromatography method

Fruits, légumes et produits dérivés — Détermination des teneurs en acides benzoïque et sorbique — Méthode par chromatographie liquide à haute performance

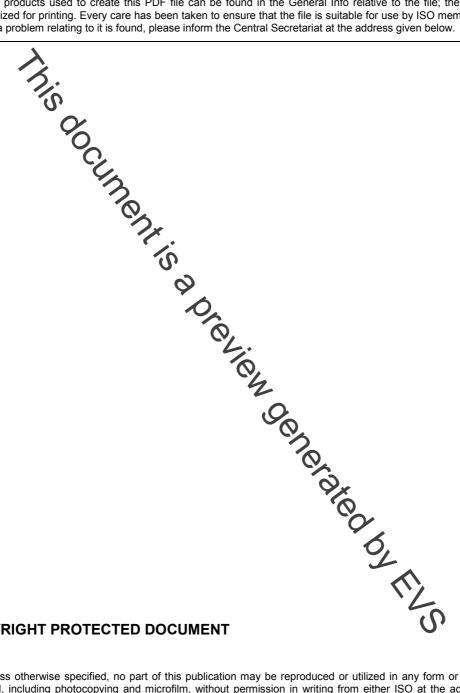


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#### **Foreword**

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ISO 22855 was prepared by Technical Committee ISO/TC 34, Food products, Subcommittee SC 3, Fruit and vegetable products.

This corrected version of ISO 22855:2008 incorporates the following corrections:

- In 3.5 and 3.6, the concentrations of the stock solutions have been changed from 100 mg/ml to 1 g/l, and the texts have been reworded.
- The hyphen between high and performance in "high performance liquid chromatography" has been removed.

## Fruit and vegetable products — Determination of benzoic acid and sorbic acid concentrations — High performance liquid chromatography method

#### 1 Scope

This International Standard specifies a method using high performance liquid chromatography for the determination of the concentration of benzoic and sorbic acids in fruit and vegetable juices.

NOTE This method is based on IFU method 63 [2].

#### 2 Principle

Extraction of benzoic acid and/or sorbibacid from a test portion using a mixture of ammonium acetate buffer solution and methanol, under acidic conditions.

The concentration of benzoic and/or sorbie acid is determined by means of high performance liquid chromatography (HPLC) using a reverse phase summ and ultraviolet (UV) detector.

#### 3 Reagents and materials

Use only reagents of recognized analytical grade, unless therwise specified, and water of HPLC grade.

- 3.1 Acetic acid (CH<sub>3</sub>COOH), glacial.
- **3.2** Methanol (CH<sub>3</sub>OH), for HPLC.
- **3.3** Ammonium acetate (CH<sub>3</sub>COONH<sub>4</sub>), 0,01 mol/l solution.

Dissolve 0,771 g of ammonium acetate in 1 l of water.

3.4 Ammonium acetate/acetic acid (CH<sub>3</sub>COONH<sub>4</sub>/CH<sub>3</sub>COOH), buffer solution

Mix 1 000 volume parts of ammonium acetate solution (3.3) with 1,2 volume parts of acetic acid (3.1).

**3.5** Benzoic acid (C<sub>6</sub>H<sub>5</sub>COOH), stock solution.

Dissolve 100 mg of benzoic acid in 40 ml of methanol (3.2) and make up to the mark with water in a 100 ml volumetric flask, to obtain the stock solution,  $\rho(C_6H_5 COOH) = 1 g/l$ .

**3.6** Sorbic acid [CH<sub>3</sub>(CH:CH)<sub>2</sub>COOH], stock solution.

Dissolve 100 mg of sorbic acid in 40 ml of methanol (3.2) and make up to the mark with water in a 100 ml volumetric flask, to obtain the stock solution,  $\rho[CH_3(CH:CH)_2COOH] = 1$  g/l.

**3.7** Potassium hexacyanoferrate(II), trihydrate,  $K_4[Fe(CN)_6]\cdot 3H_2O$ .