INTERNATIONAL STANDARD

ISO 6571

Second edition
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Spices, condiments and herbs — Determination of volatile oil content (hydrodistillation method)

Épices, aromates et herbes — Détermination de la teneur en huiles essentielles (méthode par hydrodistillation)

Reference number
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Foreword

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 6571 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 7, *Spices, culinary herbs and condiments*.

This second edition cancels and replaces the first edition (ISO 6571:1984) of which it constitutes a technical revision.

Spices, condiments and herbs — Determination of volatile oil content (hydrodistillation method)

1 Scope

This International Standard specifies a method for the determination of the volatile oil content of spices, condiments and herbs.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 939, *Spices and condiments — Determination of moisture content — Entrainment method*

ISO 2825, *Spices and condiments — Preparation of a ground sample for analysis*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
volatile oil content
all the substances entrained by steam under the conditions specified in this International Standard

NOTE The volatile oil content is expressed in millilitres per 100 g of dry product.

4 Principle

An aqueous suspension of the product is distilled. The distillate is collected in a graduated tube containing a measured volume of xylene to fix the volatile oil. The organic and aqueous phases are then allowed to separate and the total volume of the organic phase read. The volatile oil content is calculated after deducting the volume of xylene.

5 Reagents

Use only reagents of recognized analytical grade and only distilled water or water of at least equivalent purity.

5.1 Xylene.

5.2 Cleaning solutions.

5.2.1 Acetone (for fatty residues).

5.2.2 Liquid detergent (used at the concentration recommended by the manufacturer) or a **solution of sulfuric acid and potassium dichromate** (see the warning) prepared by slowly adding, while stirring continuously, one volume of concentrated sulfuric acid to one volume of saturated potassium dichromate solution and by passing the mixture, after cooling, through a fritted glass filter.

WARNING — Avoid any contact of this solution with the skin and mucous membranes.

6 Apparatus

Usual laboratory equipment, and in particular the following.

6.1 Distillation apparatus, made of strong glass having a low coefficient of thermal expansion[1)].

The apparatus comprises the following components connected by ground glass joints.

6.1.1 Round-bottom flask, with a ground neck, of capacity 500 ml or 1 000 ml, according to the product concerned (see Annex A).

6.1.2 Condenser system, comprising the following components joined together (see Figure 1):

a) a vertical tube (AC), the base of which has a ground joint to fit the flask (6.1.1);

b) a bent tube (CDE);

c) a vertical bulb condenser (FG);

d) an assembly consisting of a tube with a side-arm (K) provided with a ground stopper (K′), a pear-shaped enlargement (J), a tube graduated in divisions of 0,05 ml (JL), a spherical enlargement (L) and a three-way tap (M) connected to the vertical tube (AC) by an inclined tube (O) provided with a safety tube (N), if necessary topped by the steam trap (6.1.3).

1) This apparatus corresponds to the type described in the *European Pharmacopoeia* (V 5.89), 2.8.12.