INTERNATIONAL STANDARD

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Essential oils — Preparation of test samples

Huiles essentielles — Préparation des échantillons pour essai

Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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.

International Standard ISO 356 was prepared by Technical Committee ISO/TC 54, *Essential oils*.

This second edition cancels and replaces the first edition (ISO 356:1977), which has been technically revised.

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Essential oils – Preparation of test samples

1 Scope

This International Standard gives general guidance for the preparation of samples of essential oils submitted to a laboratory for analysis.

It is applicable, in particular, to those essential oils that cannot be analysed directly; that is those which are solid or partially solid at room temperature or those which are cloudy due to the presence of water or suspended particles.

This method cannot be used for samples for determination of water.

2 Principle

Filtration of the essential oil, if necessary liquefied by heating at a suitable temperature, after addition of magnesium sulfate or sodium sulfate with a view to eliminating the water and the insoluble substances.

3 Apparatus

Usual laboratory apparatus and, in particular, the following.

3.1 Oven.

3.2 Conical flasks.

3.3 Suitable filtration equipment.

4 Reagent

4.1 Magnesium sulfate, recently desiccated and neutral or **sodium sulfate**, recently desiccated.

To desiccate the magnesium sulfate or sodium sulfate, heat to a constant mass at 180 °C to 200 °C (temperature taken in the continuously stirred material). Grind to a fine powder and keep in a dry flask with an airtight closure.

5 Procedure

5.1 Essential oils which are solid or partially solid at ambient temperature

Liquefy the essential oil by placing it in the oven (3.1) maintained at the lowest temperature at which liquefaction may be obtained in less than 10 min. This temperature is usually about 10 °C above the presumed freezing point. During this operation, especially in the case of essential oils containing aldehydes, avoid allowing air to enter the container holding the essential oil. To achieve this, loosen, but do not remove, the stopper. Pour the liquefied essential oil into a dry conical flask (3.2), previously warmed in the oven to the temperature indicated above, so that the flask is filled to not more than two-thirds of its capacity.

During all subsequent operations, the oil shall be kept at the lowest temperature at which it will remain liquid.

5.2 Essential oils which are liquid at the ambient temperature

Transfer the essential oil to a dry conical flask (3.2) at the same temperature, so that the flask is filled to not more than two-thirds of its capacity.

5.3 Treatment of the essential oil

In the two cases indicated, (5.1) or (5.2), add to the flask a mass of the dehydrating agent [magnesium sulfate or sodium sulfate (4.1)] equal to about 15 % of the mass of the essential oil. Shake vigorously from time to time over a period of at least 2 h. Filter the sample.

Verify the action of the dehydrating agent by adding about 5 % of magnesium sulfate or sodium sulfate.

Wait 2 h then filter.

The dehydrating agent should still be in a powdery form and the oil should be clear and limpid.

In the first case (5.1), carry out the filtration in the oven at the appropriate temperature (see 5.1), but do not keep the oil in the oven longer than is necessary.

NOTE 1 These operations should immediately precede the analysis. If not, the filtered oil should be kept in a cool place protected from strong light, in a previously dried, well-filled container fitted with an airtight closure.

NOTE 2 In certain cases, to be specified in the relevant International Standard, the metallic phenolates which colour the essential oil should be eliminated by agitation with citric or tartaric acid.

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Descriptors: fruit and vegetable products, essential oils, sampling, test specimens, specimen preparation.

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