International Standard ISO 5563

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Dried peppermint (*Mentha piperita* Linnaeus) — Specification

*Menthe poivrée (*Mentha piperita *Linnaeus) séchée — Spécifications*

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Foreword

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Dried peppermint (*Mentha piperita* Linnaeus) — Specification

1 Scope and field of application

This International Standard specifies requirements for dried leaves, or broken or rubbed dried leaves, of peppermint.

The term "dried mint" includes dehydrated mint, i.e. artificially dried mint.

It does not apply to dried mint (spearmint), for which requirements are given in ISO 2256.

The recommended procedure for identifying leaves of *Mentha rubra* Hudson is given in annex A, a method for the detection of carvone is given in annex B and recommendations relating to storage and transport conditions are given in annex C.

2 References

ISO 928, *Spices and condiments — Determination of total ash.*

ISO 930, *Spices and condiments — Determination of acid-insoluble ash.*

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

ISO 948, *Spices and condiments — Sampling.*

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

ISO 3588, *Spices and condiments — Determination of degree of fineness of grinding — Hand sieving method (Reference method).*

ISO 6571, *Spices, condiments and herbs — Determination of volatile oil content.*

3 Description

Dried peppermint is constituted of dried leaves, or broken or rubbed dried leaves, of the cultivated perennial *Mentha piperita* Linnaeus var. *piperita* (*M. aquatica* Linnaeus x *M. spicata* Hudson) collected prior to, or at the commencement of, flowering.

The leaves are slightly glossy in appearance. Their colour is dark green on the adaxial surface and lighter on the abaxial surface.

4 Requirements

4.1 Odour and flavour

Dried peppermint, particularly after rubbing, shall have a highly mentholated odour and a spicy, pungent and refreshing flavour. It shall be free from off-flavours (for example mustiness, or other foreign or disagreeable odours or flavours).

4.2 Freedom from insects, moulds, etc.

Dried peppermint shall be free from living insects and moulds, and shall be practically free from dead insects, insect fragments and rodent contamination visible to the naked eye (corrected, if necessary, for abnormal vision) or with such magnification as may be necessary in any particular case. If the magnification exceeds X 10, this fact shall be stated in the test report.

4.3 Extraneous matter

The proportion of leaves of species of mint other than peppermint or parts of other plants shall not exceed the value given in table 1 for extraneous plant material.

The product shall not contain more than 0,5 % (*m*/*m*) of leaves of *Mentha rubra* Hudson (*M. arvensis* Linnaeus x *M. aquatica* Linnaeus x *M. viridis* Linnaeus) having a strong off-odour (of carvone).

A recommended procedure for identifying leaves of *Mentha rubra* Hudson is given in annex A. Annex B gives a procedure for detection of carvone, for use when necessary in checking for or confirming the presence of *Mentha rubra*.

4.4 Particle size

The particle size of crushed peppermint leaves shall be determined by the method specified in ISO 3588.

4.5 Grading

Two grades of dried peppermint can be distinguished according to the size of leaf, i.e.

— grade I, for whole or broken leaves of size greater than 5,6 mm

— grade II, for broken leaves of size between 5,6 and 2,0 mm.

Requirements for the two grades are given in table 1.

Table 1 — Requirements for grades of dried peppermint

Characteristic	Requirement	
	Grade I	Grade II
Proportion of undersize particles, % (m/m), max.	5	10
Proportion of mouldy and insect-damaged particles, % (m/m), max.	5	8
Proportion of brown, pale leaves, % (m/m), max.	5	8
Proportion of extraneous plant material, % (m/m), max.	1	2

4.6 Chemical requirements[1)]

Dried peppermint shall comply with the requirements given in table 2, according to the grade.

Table 2 — Chemical requirements for dried peppermint

Characteristic	Requirement		Method of test
	Grade I	Grade II	
Moisture content, % (m/m), max.	13	14	ISO 939
Total ash, % (m/m) on dry basis, max.	13	15	ISO 928
Acid-insoluble ash, % (m/m) on dry basis, max.	2	2	ISO 930
Volatile oil content, ml/100 g on dry basis, min.	1,0	0,8	ISO 6571
For the detection of the presence of carvone, see annex B.			

5 Sampling

Sample the dried peppermint by the method specified in ISO 948.

6 Methods of test

The samples of dried peppermint shall be tested for conformity to the requirements of this International Standard by the methods of test referred to in 4.3, 4.4, table 1 and table 2.

The ground sample for analysis shall be prepared in accordance with ISO 2825.

7 Packing and marking

7.1 Packing

Dried peppermint shall be packed for transport in cases, or in plywood or fibreboard boxes, or in sacks, in such a manner that the product is loosely packed. Cases and plywood or fibreboard boxes shall be lined with paper to facilitate loose packing. The containers used shall be clean and sound and shall be made of a material which does not affect the product and which protects it from moisture.

7.2 Marking

The container shall be marked or labelled with the following particulars :

a) name of the product, and the trade name or brand name, if any;

b) grade;

c) producing country;

d) code, batch, or test certificate number, or similar means of identification;

e) any other marking required by the purchaser, such as the year of harvest and date of packing (if known);

f) possibly, a reference to this International Standard.

1) Limits for toxic substances will be included later, in accordance with the recommendations of the Joint FAO/WHO Codex Alimentarius Commission.

Annex A

Recommended procedure for identifying leaves of *Mentha rubra* Hudson

Using an appropriate quantity of sample, examine the leaves visually and identify the leaves of *Mentha rubra* Hudson on the basis of the following criteria. By comparison with *Mentha piperita* Linnaeus

- the leaves of *Mentha rubra* Hudson are smaller;
- the leaves are shorter, broader and oval;
- the serration is looser;
- the adaxial and abaxial surfaces of the leaves are usually hairy, especially along the veins;
- the leaves are light greyish green, both on the adaxial and abaxial surfaces;
- the odour, after crushing, is unpleasant, reminiscent of carvone;
- the peduncle is shorter by approximately 1 to 10 mm.

Annex B

Detection of carvone — Thin layer chromatographic method

B.1 Principle

Separation of carvone by thin layer chromatography and detection of carvone by colour reaction with vanillin and from its R_f value.

B.2 Reagents

All reagents shall be of recognized analytical grade. The water used shall be distilled water or water of equivalent purity.

B.2.1 Light petroleum, boiling between 40 and 60 °C.

B.2.2 Carvone, standard 2 % solution in 95 % (V/V) ethanol.

B.2.3 Solvent.

Just before use, mix 90 volumes of hexane with 20 volumes of ethyl acetate.

B.2.4 Indicator solution.

Just before use, prepare a solution containing 3 % of vanillin in a 10 % (V/V) solution of sulfuric acid in 95 % (V/V) ethanol.

B.3 Apparatus

Usual laboratory equipment, and

B.3.1 Developing tank, circular, of height 350 mm and diameter 305 mm.

B.3.2 Absorbent filter paper sheets, medium fine.

B.3.3 Silica gel plates, of dimensions 200 mm × 50 mm and thickness 0,25 mm.

B.3.4 Graduated micropipette, of capacity 25 µl.

B.3.5 Aerosol spray gun, with a facility for attachment to a compressed air line.

B.3.6 Oven, capable of being maintained at 105 ± 2 °C.

B.3.7 Conical flask, of capacity 250 ml, with a ground glass joint.

B.3.8 Filter paper, medium fine, of diameter 90 mm.

B.3.9 Filter funnel, made of glass, of diameter 90 mm.

B.4 Sampling

See clause 5.

B.5 Procedure

B.5.1 Preparation of the apparatus

Wash the developing tank (B.3.1) with distilled water and allow to dry.

B.5.2 Preparation of test sample

Prepare the test sample by the method specified in ISO 2825.

B.5.3 Test portion

Weigh, to the nearest 0,001 g, about 2,0 g of the test sample (B.5.2) into the previously tared conical flask (B.3.7).

B.5.4 Determination

B.5.4.1 Line the developing tank (B.3.1) with the absorbent filter paper (B.3.2) and pour 500 ml of the solvent (B.2.3) into the tank. Cover the developing tank and leave for 12 h to attain equilibrium.

B.5.4.2 Activate the silica gel plates (B.3.3) by placing them in the oven (B.3.6), maintained at 105 ± 2 °C for 1 h.

B.5.4.3 Add to the test portion (B.5.3) in the conical flask, 15 ml of the light petroleum (B.2.1), shake the flask, filter through the filter paper (B.3.8) and evaporate the filtrate. Dissolve the residue obtained in 0,5 ml of the light petroleum (B.2.1).

B.5.4.4 Scrape the silica gel from the edges of the plates (B.3.3) to leave a border of 10 mm. Draw a line, approximately 25 mm from the base, across each plate. Draw a second line, parallel to this baseline and 100 mm from it.

B.5.4.5 Spot, successively, on to the baseline of the plates, 10 µl and 20 µl of the test solution (B.5.4.3) and 2 µl and 4 µl of the standard carvone solution (B.2.2). Place the plates in the developing tank such that the plates are immersed below the baseline in the solvent (B.2.3). After the solvent front has advanced to the second line, remove the plates and allow them to dry in a fume cupboard at room temperature. Lightly spray the plates with the indicator solution (B.2.4), and dry them for 5 min in the oven (B.3.6) maintained at 105 ± 2 °C.