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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Oil of spearmint (*Mentha spicata* Linnaeus)

*Huile essentielle de menthe verte ou de menthe crépue (*Mentha spicata *Linnaeus)*

Reference number
ISO 3033 : 1988 (E)

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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 approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 3033 was prepared by Technical Committee ISO/TC 54, *Essential oils.*

This second edition cancels and replaces the first edition (ISO 3033 : 1975), of which it constitutes a technical revision.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Printed in Switzerland

Oil of spearmint (*Mentha spicata* Linnaeus)

1 Scope and field of application

This International Standard specifies certain characteristics of oil of spearmint (*Mentha spicata* Linnaeus), with a view to facilitating the assessment of its quality.

2 References

ISO/R 210, *Essential oils — Packing.*

ISO/R 211, *Essential oils — Labelling and marking containers.*

ISO 212, *Essential oils — Sampling.*

ISO 279, *Essential oils — Determination of relative density at 20 °C (Reference method).*

ISO 280, *Essential oils — Determination of the refractive index.*

ISO 592, *Essential oils — Determination of optical rotation.*

ISO 875, *Essential oils — Evaluation of miscibility in ethanol.*

ISO 1271, *Essential oils — Determination of carbonyl value — Free hydroxylamine method.*

3 Definition

oil of spearmint : The oil obtained by steam distillation of the flowering tops of *Mentha spicata* Linnaeus, of which only the varieties or hybrids yielding an essential oil of high carvone content are considered for the purpose of this International Standard.

4 Requirements[1)]

4.1 Appearance

Clear, mobile liquid.

4.2 Colour

Almost colourless to pale greenish-yellow.

4.3 Odour and flavour

Giving the impression of freshness and recalling the odour of the leaf.

4.4 Relative density at 20/20 °C

Minimum : 0,920.

Maximum : 0,937.

4.5 Refractive index at 20 °C

Minimum : 1,485 0.

Maximum : 1,491 0.

4.6 Optical rotation at 20 °C

Range from − 60° to − 45°.

4.7 Miscibility in 80 % (*V*/*V*) ethanol at 20 °C

The miscibility in 80 % (*V*/*V*) ethanol shall be 1 volume in 1 volume to give a clear solution.

4.8 Carbonyl value

Minimum : 200, corresponding to a carbonyl compounds content of 55 % (*m*/*m*) expressed as carvone.

4.9 Chromatographic profile

Evaluate the quantities of the following characteristic constituents of the oil from the chromatographic profile obtained.

1) These requirements concern oil of spearmint with high carvone content.

The proportion of these constituents, calculated as a fraction of the sum of all peak areas, and taking all response factors as equal, will be specified later.[1)]

- α-pinene
- β-pinene
- myrcene
- limonene
- menthone
- β-bourbonene
- β-caryophyllene
- dihydrocarvone
- carvone

4.10 Flash point

63 °C, as an indication only.

5 Sampling

See ISO 212.

Minimum volume of final sample : 50 ml. This volume allows each of the tests specified in this International Standard to be carried out at least once.

6 Methods of test

6.1 Relative density at 20/20 °C

See ISO 279.

6.2 Refractive index at 20 °C

See ISO 280.

6.3 Optical rotation at 20 °C

See ISO 592.

6.4 Miscibility in 80 % (V/V) ethanol at 20 °C

See ISO 875.

6.5 Carbonyl value

See ISO 1271.

Mass of test portion : 1 g

Maintain under reflux for : 3 h

6.6 Typical chromatograms

See the annex, for information.

6.7 Chromatographic profile

To be completed later.

6.8 Flash point

To be completed later.

7 Packing, labelling and marking

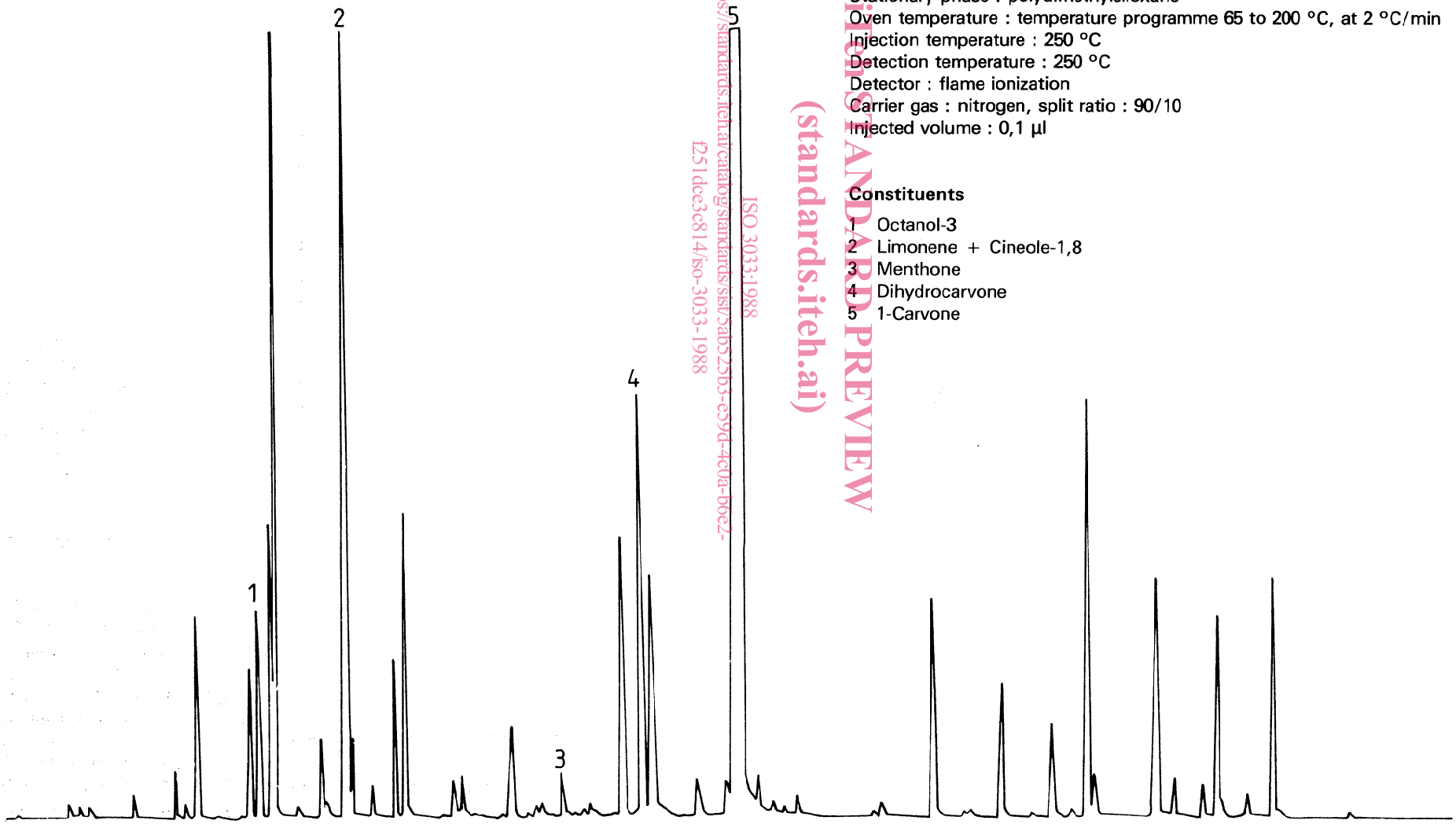
See ISO/R 210 and ISO/R 211.

1) The minimum and maximum values for each of the constituents listed will be given following trials which are now taking place.

Annex

Typical chromatograms

(This annex does not form part of the standard.)



Sample : oil of spearmint

Column : fused quartz capillary, length 50 m, ϕ 0,3 mm
Stationary phase : polydimethylsiloxane
Oven temperature : temperature programme 65 to 200 °C, at 2 °C/min
Injection temperature : 250 °C
Detection temperature : 250 °C
Detector : flame ionization
Carrier gas : nitrogen, split ratio : 90/10
Injected volume : 0,1 µl

Constituents

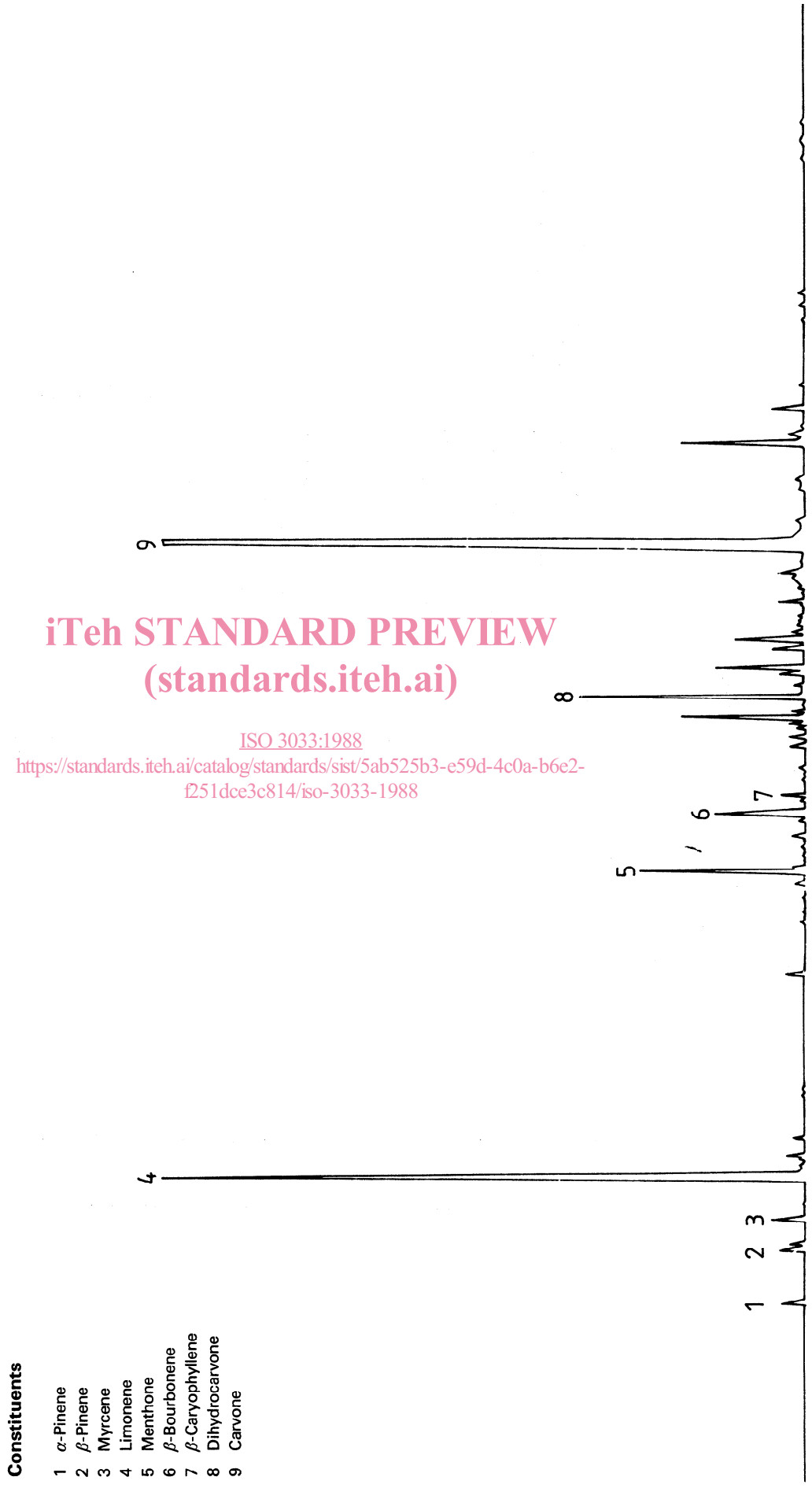
1 Octanol-3
2 Limonene + Cineole-1,8
3 Menthone
4 Dihydrocarvone
5 1-Carvone

Sample : oil of spearmint

Column : fused silica capillary, length 50 m, diameter 0,3 mm
Stationary phase : FFAP
Oven temperature : temperature programme : 65 to 215 °C, at 2 °C/min
Injection temperature : 250 °C
Detection temperature : 250 °C
Carrier gas : nitrogen
Detector : flame ionization
Injected volume : 0,1 µl
Split ratio : 90/10

Constituents

1 α-Pinene
2 β-Pinene
3 Myrcene
4 Limonene
5 Menthone
6 β-Bourbonene
7 β-Caryophyllene
8 Dihydrocarvone
9 Carvone



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Descriptors : essential oils, spearmint, specifications.

Price based on 4 pages