INTERNATIONAL STANDARD

ISO 3054

Third edition
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Oil of lavandin Abrial (*Lavandula angustifolia* Miller × *Lavandula latifolia* Medikus), French type

*Huile essentielle de lavandin Abrial (*Lavandula angustifolia *Miller* × Lavandula latifolia *Medikus), type France*

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 3054 was prepared by Technical Committee ISO/TC 54, *Essential oils*.

This third edition cancels and replaces the second edition (ISO 3054:1987), which has been technically revised.

Annexes A and B of this International Standard are for information only.

Oil of lavandin Abrial (*Lavandula angustifolia* Miller × *Lavandula latifolia* Medikus), French type

1 Scope

This International Standard specifies certain characteristics of the oil of lavandin Abrial (*Lavandula angustifolia* Miller × *Lavandula latifolia* Medikus), principally produced in France, in order to facilitate assessment of its quality.

NOTE This oil is also known commercially as oil of lavandin abrialis.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO/TR 210, *Essential oils — General rules for packaging, conditioning and storage*

ISO/TR 211, *Essential oils — General rules for labelling and marking of 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 refractive index*

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

ISO 709, *Essential oils — Determination of ester value*

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

ISO 1242, *Essential oils — Determination of acid value*

ISO 11024-1, *Essential oils — General guidance on chromatographic profiles — Part 1: Preparation of chromatographic profiles for presentation in standards*

ISO 11024-2, *Essential oils — General guidance on chromatographic profiles — Part 2: Utilization of chromatographic profiles of samples of essential oils*

3 Term and definition

For the purposes of this International Standard, the following term and definition applies.

3.1
oil of lavandin Abrial
essential oil obtained by steam distillation of the freshly cut flowering tops of a particular clone of lavandin (*Lavandula angustifolia* Miller × *Lavandula latifolia* Medikus), of the Lamiaceae family, principally produced in France

NOTE For information on CAS numbers, see the introduction in ISO 4720.

4 Requirements

4.1 Appearance

Clear mobile liquid.

4.2 Colour

Pale yellow.

4.3 Odour

Characteristic, resembling lavender, with a camphoraceous note.

4.4 Relative density at 20 °C, d_{20}^{20}

Minimum: 0,887
Maximum: 0,897

4.5 Refractive index at 20 °C

Minimum: 1,460 0
Maximum: 1,466 0

4.6 Optical rotation at 20 °C

Between – 5° and – 2°.

4.7 Miscibility in ethanol, 70 % (volume fraction), at 20 °C

It shall not be necessary to use more than 4 volumes of ethanol, 70 % (volume fraction), to obtain a clear solution with 1 volume of essential oil.

NOTE Sometimes opalescence can be observed if the solvent addition continues.

4.8 Acid value

Maximum: 1,0

4.9 Ester value

Minimum: 77, corresponding to an ester content of 27 % expressed as linalyl acetate.

Maximum: 108, corresponding to an ester content of 38 % expressed as linalyl acetate.

4.10 Chromatographic profile

Analysis of the essential oil shall be carried out by gas chromatography. In the chromatogram obtained, the representative and characteristic components shown in Table 1 shall be identified. The proportions of these components, indicated by the integrator, shall be as shown in Table 1. This constitutes the chromatographic profile of the essential oil.

4.11 Flashpoint

Information on the flashpoint is given in annex B.

Table 1 — Chromatographic profile

Component	Minimum %	Maximum %
1,8-Cineole	6	11
Limonene	0,5	1,5
cis-β-Ocimene	1,5	3
trans-β-Ocimene	3	7
Camphor	7	11
Linalool	26	38
Linalyl acetate	20	29
Terpinen-4-ol	0,3	1
Borneol	1,5	3,5
Lavandulol	0,4	1,2
Lavandulyl acetate	1	2

NOTE The chromatographic profile is normative, contrary to typical chromatograms given for information in annex A.

5 Sampling

See ISO 212.

Minimum volume of test sample: 25 ml.

NOTE This volume allows each of the tests specified in this International Standard to be carried out at least once.

6 Test methods

6.1 Relative density at 20 °C, d_{20}^{20}

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 ethanol, 70 % (volume fraction), at 20 °C

See ISO 875.

6.5 Acid value

See ISO 1242.

6.6 Ester value

See ISO 709.

Test portion: 2 g.
Molar mass of linalyl acetate: 196,29.
Saponification time: 30 min.

6.7 Chromatographic profile

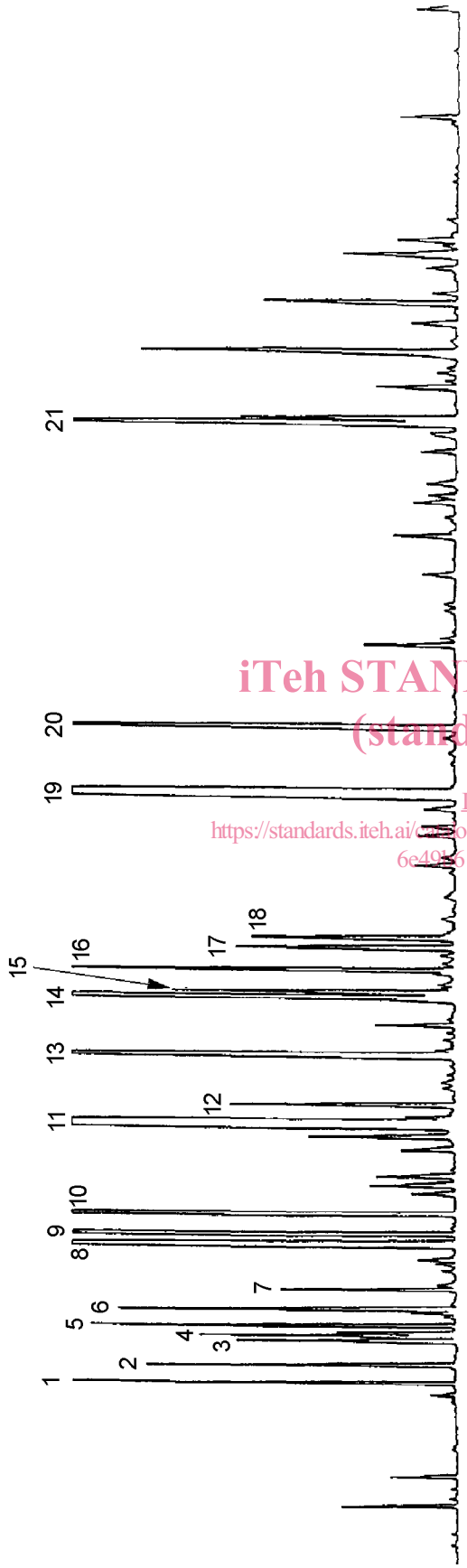
See ISO 11024-1 and ISO 11024-2.

7 Packaging, labelling, marking and storage

See ISO/TR 210 and ISO/TR 211.

Annex A
(informative)

Typical chromatograms of the analysis by gas chromatography of the essential oil of lavandin Abrial (*Lavandula angustifolia* Miller × *Lavandula latifolia* Medikus), French type



Peak identification

1 α-Pinene
2 Camphene
3 1-Octen-3-ol
4 3-Octanone
5 β-Pinene
6 Myrcene
7 Hexyl acetate
8 1,8-Cineole + limonene
9 *cis*-β-Ocimene
10 *trans*-β-Ocimene
11 Linalool
12 1-Octen-3-yl acetate
13 Camphor
14 Borneol
15 Lavandulol
16 Terpinen-4-ol
17 α-Terpineol
18 Hexyl butyrate
19 Linalyl acetate
20 Lavandulyl acetate
21 β-Caryophyllene

Operating conditions

Column: capillary; length 50 m; internal diameter 0,32 mm
Stationary phase: polydimethyl siloxane (OV 101®)
Film thickness: 0,25 µm
Oven temperature: temperature programming from 65 °C to 170 °C at a rate of 1,5 °C/min
Injector temperature: 200 °C
Detector temperature: 220 °C
Detector: flame ionization type
Carrier gas: hydrogen
Volume injected: 0,2 µl
Split ratio: 100/1

Figure A.1 — Typical chromatogram taken on an apolar column