
**Oil of blue chamomile [*Chamomilla
recutita* (L.) Rauschert syn. *Matricaria
chamomilla* auct.]**

*Huile essentielle de camomille bleue [Chamomilla recutita (L.)
Rauschert syn. Matricaria chamomilla auct.]*

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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.

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

ISO 19332 was prepared by Technical Committee ISO/TC 54, *Essential oils*.

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Oil of blue chamomile [*Chamomilla recutita* (L.) Rauschert syn. *Matricaria chamomilla* auct.]

1 Scope

This International Standard specifies certain characteristics of the oil of blue chamomile [*Chamomilla recutita* (L.) Rauschert syn. *Matricaria chamomilla* auct.], in order to facilitate assessment of its quality.

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/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 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 Terms and definitions

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

3.1

oil of blue chamomile

essential oil obtained by steam distillation from the fresh or dried flower-heads or flowering tops of blue chamomile [*Chamomilla recutita* (L.) Rauschert syn. *Matricaria chamomilla* auct.] produced mainly in Hungary and Egypt.

NOTE For information on the CAS number, see ISO/TR 21092.

4 Requirements

4.1 Appearance

Slightly viscous, clear liquid.

4.2 Colour

Egyptian type	Hungarian type
Greenish blue to dark blue	Dark blue

4.3 Odour

Characteristic.

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

	Egyptian type	Hungarian type
Minimum	0,910	0,910
Maximum	0,970	0,950

4.5 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.

Table 1 — Chromatographic profile

Component	Egyptian type		Hungarian type	
	Minimum %	Maximum %	Minimum %	Maximum %
<i>trans</i> - β -Farnesene	15	35	20	51
α -Bisabolol oxide B	2	8	2	21
Bisabolone oxide A	2	6,5	1	4
α -Bisabolol	1	10	15	40
Chamazulene	2	5	5	22
α -Bisabolol oxide A	35	50	2	27

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

4.6 Flashpoint

Information on the flashpoint is given in Annex B.

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 Chromatographic profile

See ISO 11024-1 and ISO 11024-2.

7 Packaging, labelling, marking and storage

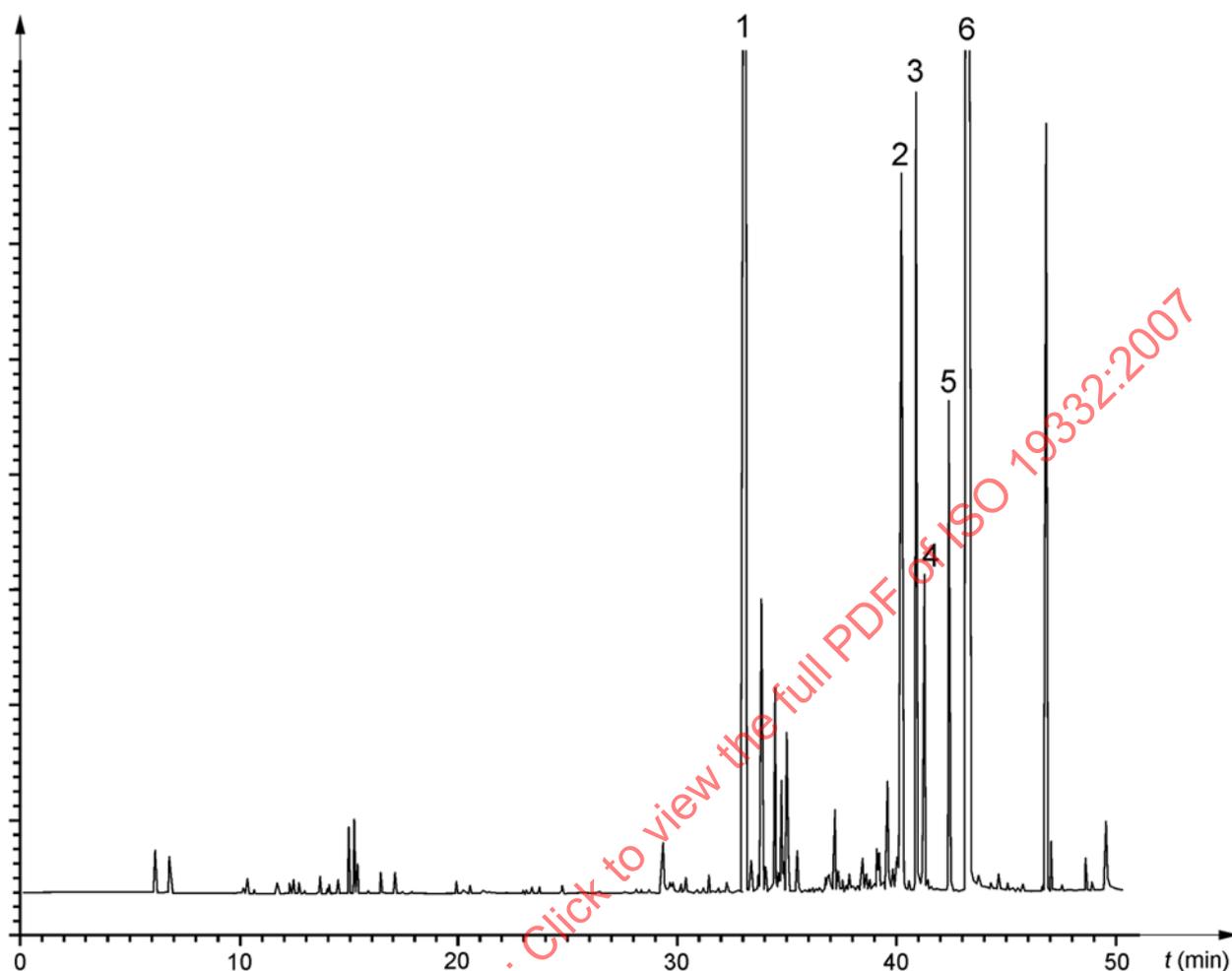
See ISO/TR 210 and ISO/TR 211.

Annex A
(informative)

Typical chromatograms of the analysis by gas chromatography of the essential oil of blue chamomile [*Chamomilla recutita* (L.) Rauschert syn. *Matricaria chamomilla* auct.]

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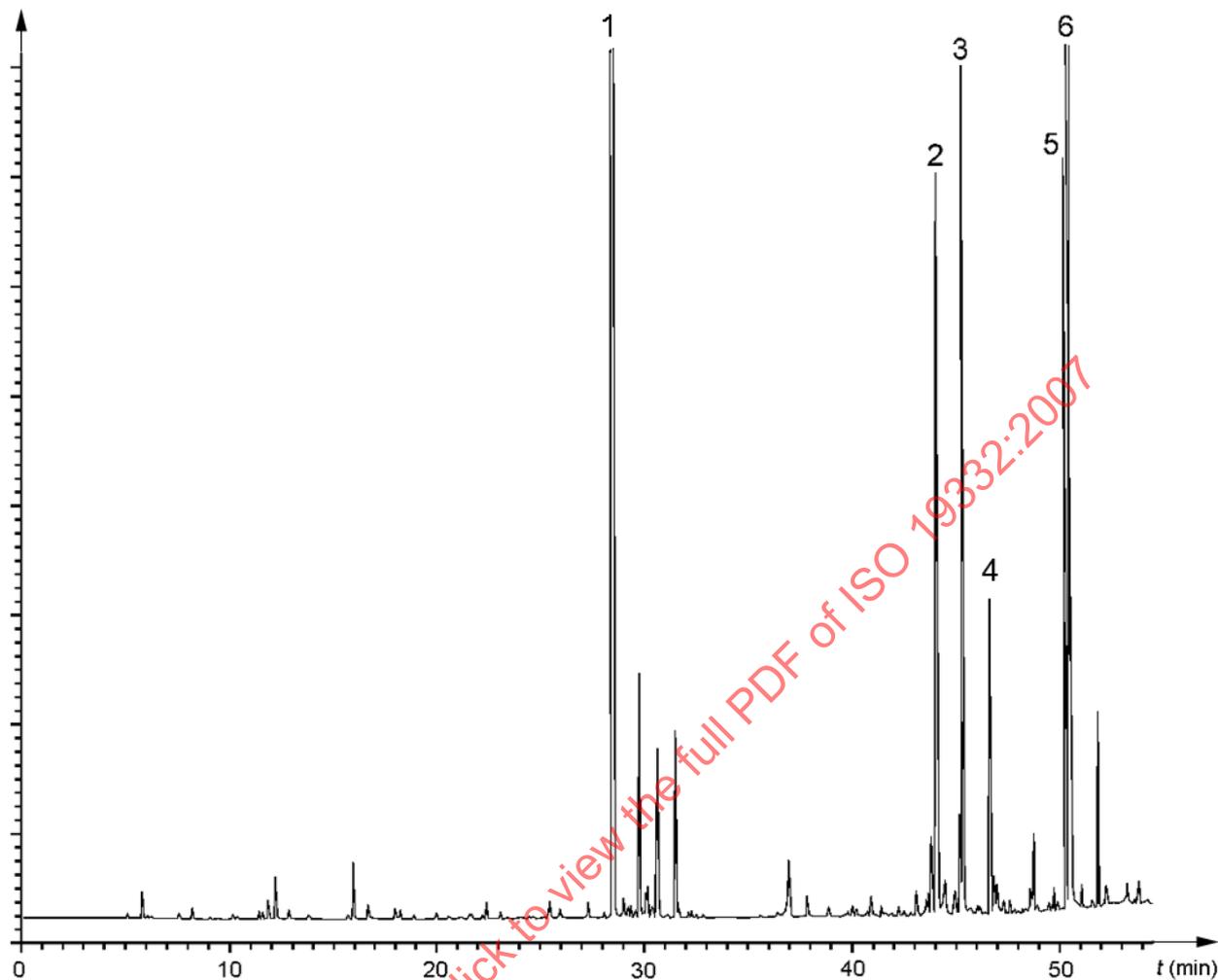
A.1 Essential oil of blue chamomile, Egyptian type



Peak identification	Operating conditions
1 <i>trans</i> - β -Farnesene	Column: fused silica capillary, length 30 m, internal diameter 0,25 mm
2 α -Bisabolol oxide B	Stationary phase: polydimethyl siloxane [SPB™ –1 (SE-30®) ¹]
3 Bisabolone oxide A	Film thickness: 0,25 μ m
4 α -Bisabolol	Oven temperature: temperature programming from 50 °C to 180 °C at a rate of 3 °C/min and
5 Chamazulene	180 °C to 220 °C at a rate of 10 °C/min
6 α -Bisabolol oxide A	Injector temperature: 260 °C
	Detector temperature: 280 °C
	Detector: flame ionization type
	Carrier gas: helium
	Volume injected: 1 μ l
	Carrier gas flow rate: 1 ml/min
	Split ratio: 1/50

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

1) SPB™ –1 (SE-30®) is an example of a suitable product available commercially. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by ISO of this product.

**Peak identification**

- 1 *trans*- β -Farnesene
- 2 α -Bisabolol oxide B
- 3 Bisabolone oxide A
- 4 α -Bisabolol
- 5 Chamazulene
- 6 α -Bisabolol oxide A

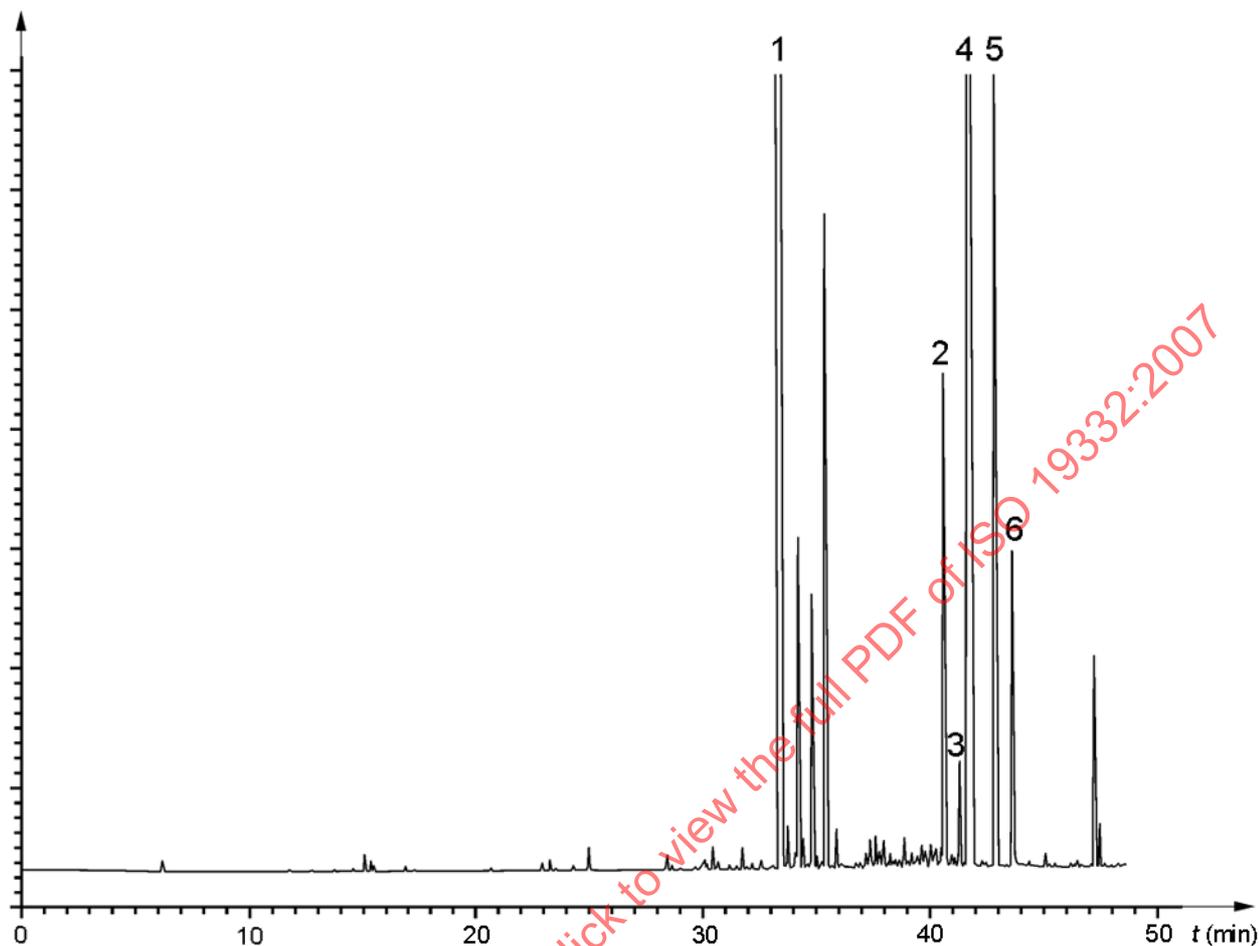
Operating conditions

Column: fused silica capillary, length 30 m, internal diameter 0,25 mm
 Stationary phase: polyethylene glycol [Supelcowax™ –10® 2)]
 Film thickness: 0,25 μ m
 Oven temperature: temperature programming from 50 °C to 180 °C at a rate of 3 °C/min and
 180 °C to 220 °C at a rate of 10 °C/min
 Injector temperature: 260 °C
 Detector temperature: 280 °C
 Detector: flame ionization type
 Carrier gas: helium
 Volume injected: 1 μ l
 Carrier gas flow rate: 1 ml/min
 Split ratio: 1/50

Figure A.2 — Typical chromatogram taken on a polar column

2) Supelcowax™ –10® is an example of a suitable product available commercially. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by ISO of this product.

A.2 Essential oil of blue chamomile, Hungarian type



Peak identification

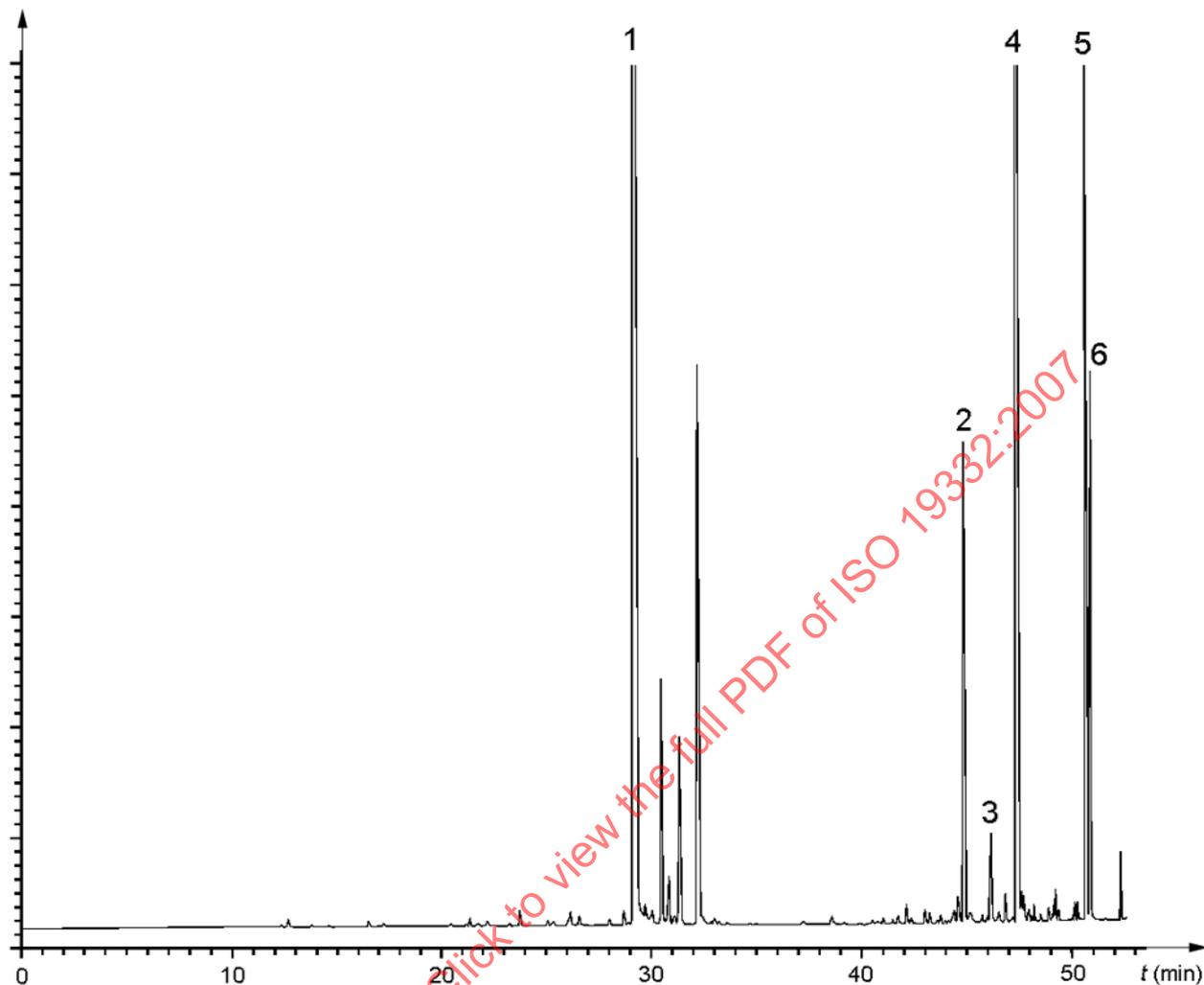
- 1 *trans*- β -Farnesene
- 2 α -Bisabolol oxide B
- 3 Bisabolone oxide A
- 4 α -Bisabolol
- 5 Chamazulene
- 6 α -Bisabolol oxide A

Operating conditions.

Column: fused silica capillary, length 30 m, internal diameter 0,25 mm
 Stationary phase: polydimethyl siloxane [SPB™ –1 (SE-30®)³]
 Film thickness: 0,25 μ m
 Oven temperature: temperature programming from 50 °C to 180 °C at a rate of 3 °C/min and
 180 °C to 220 °C at a rate of 10 °C/min
 Injector temperature: 260 °C
 Detector temperature: 280 °C
 Detector: flame ionization type
 Carrier gas: helium
 Volume injected: 1 μ l
 Carrier gas flow rate: 1 ml/min
 Split ratio: 1/50

Figure A.3 — Typical chromatogram taken on an apolar column

3) SPB™ –1 (SE-30®) is an example of a suitable product available commercially. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by ISO of this product.

**Peak identification**

- 1 *trans*- β -Farnesene
- 2 α -Bisabolol oxide B
- 3 Bisabolone oxide A
- 4 α -Bisabolol
- 5 Chamazulene
- 6 α -Bisabolol oxide A

Operating conditions

Column: fused silica capillary, length 30 m, internal diameter 0,25 mm
 Stationary phase: polyethylene glycol [Supelcowax™ –10⁴]
 Film thickness: 0,25 μ m
 Oven temperature: temperature programming from 50 °C to 180 °C at a rate of 3 °C/min and
 180 °C to 220 °C at a rate of 10 °C/min
 Injector temperature: 260 °C
 Detector temperature: 280 °C
 Detector: flame ionization type
 Carrier gas: helium
 Volume injected: 1 μ l
 Carrier gas flow rate: 1 ml/min
 Split ratio: 1/50

Figure A.4 — Typical chromatogram taken on a polar column

4) Supelcowax™ –10⁴ is an example of a suitable product available commercially. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by ISO of this product.