BS ISO 8902:2009

Oil of lavandin Grosso (Lavandula angustifolia Mill. x Lavandula latifolia Medik.), French type

ICS 71.100.60

National foreword

This British Standard is the UK implementation of ISO 8902:2009.

The UK participation in its preparation was entrusted to Technical Committee AW/54, Essential oils.

A list of organizations represented on this committee can be obtained on request to its secretary.

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INTERNATIONAL STANDARD

ISO 8902

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Oil of lavandin Grosso (*Lavandula angustifolia* Mill. × *Lavandula latifolia* Medik.), French type

*Huile essentielle de lavandin Grosso (*Lavandula angustifolia *Mill.* × Lavandula latifolia *Medik.), type France*

Reference number
ISO 8902:2009(E)

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ISO 8902 was prepared by Technical Committee ISO/TC 54, *Essential oils*.

This third edition cancels and replaces the second edition (ISO 8902:1999), which has been technically revised.

INTERNATIONAL STANDARD **ISO 8902:2009(E)**

Oil of lavandin Grosso (*Lavandula angustifolia* Mill. × *Lavandula latifolia* Medik.), French type

1 Scope

This International Standard specifies certain characteristics of the essential oil of lavandin Grosso [*Lavandula angustifolia* Mill. × *Lavandula latifolia* Medik.], French type, intended for facilitating the 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 280, *Essential oils — Determination of refractive index*

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

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 Terms and definitions

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

3.1
essential oil of lavandin Grosso
essential oil obtained by steam distillation of the recently cut flowering tops of a specific clone known as the "Grosso" type of lavandin [*Lavandula angustifolia* Mill. × *Lavandula latifolia* Medik.], of the Lamiaceae family, cultivated mainly in the south of France

NOTE For information on the CAS number, see ISO/TR 21092 [2].

4 Requirements

4.1 Appearance

Clear mobile liquid.

4.2 Colour

Light yellow.

4.3 Odour

Characteristic, slightly camphoraceous, lavender-like.

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

Minimum: 0,891

Maximum: 0,899

4.5 Refractive index at 20 °C

Minimum: 1,458

Maximum: 1,462

4.6 Optical rotation at 20 °C

Between – 7° and – 3°.

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

It shall not be necessary to use more than 3 volumes of 70 % (volume fraction) ethanol in order to obtain a clear solution with 1 volume of essential oil.

4.8 Acid value

Maximum 1.

4.9 Chromatographic profile

Carry out the analysis of the essential oil by gas chromatography. Identify in the chromatogram obtained the representative and characteristic components listed in Table 1. The percentage of each of these components, indicated by the integrator, shall lie within the limits given in Table 1. This constitutes the chromatographic profile of the essential oil.

Table 1 — Chromatographic profile

Component	Minimum %	Maximum %
Myrcene	0,3	1,0
Limonene	0,5	1,5
1,8-Cineole	4,0	8,0
cis-β-Ocimene	0,5	1,5
trans-β-Ocimene	not detectable	1,0
Linalool	24	37
Camphor	6,0	8,5
Borneol	1,5	3,5
Lavandulol	0,2	1,0
Terpinen-4-ol	1,5	5,0
α-Terpineol	0,3	1,3
Hexyl butyrate	0,3	0,5
Linalyl acetate	25	38
Lavandulyl acetate	1,5	3,5
NOTE The chromatographic profile is normative, contrary to the typical chromatograms given for information in Annex A.		

4.10 Flashpoint

Information concerning 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 Refractive index at 20 °C

See ISO 280.

6.3 Optical rotation at 20 °C

See ISO 592.

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

See ISO 875.

6.5 Acid value

See ISO 1242.

6.6 Chromatographic profile

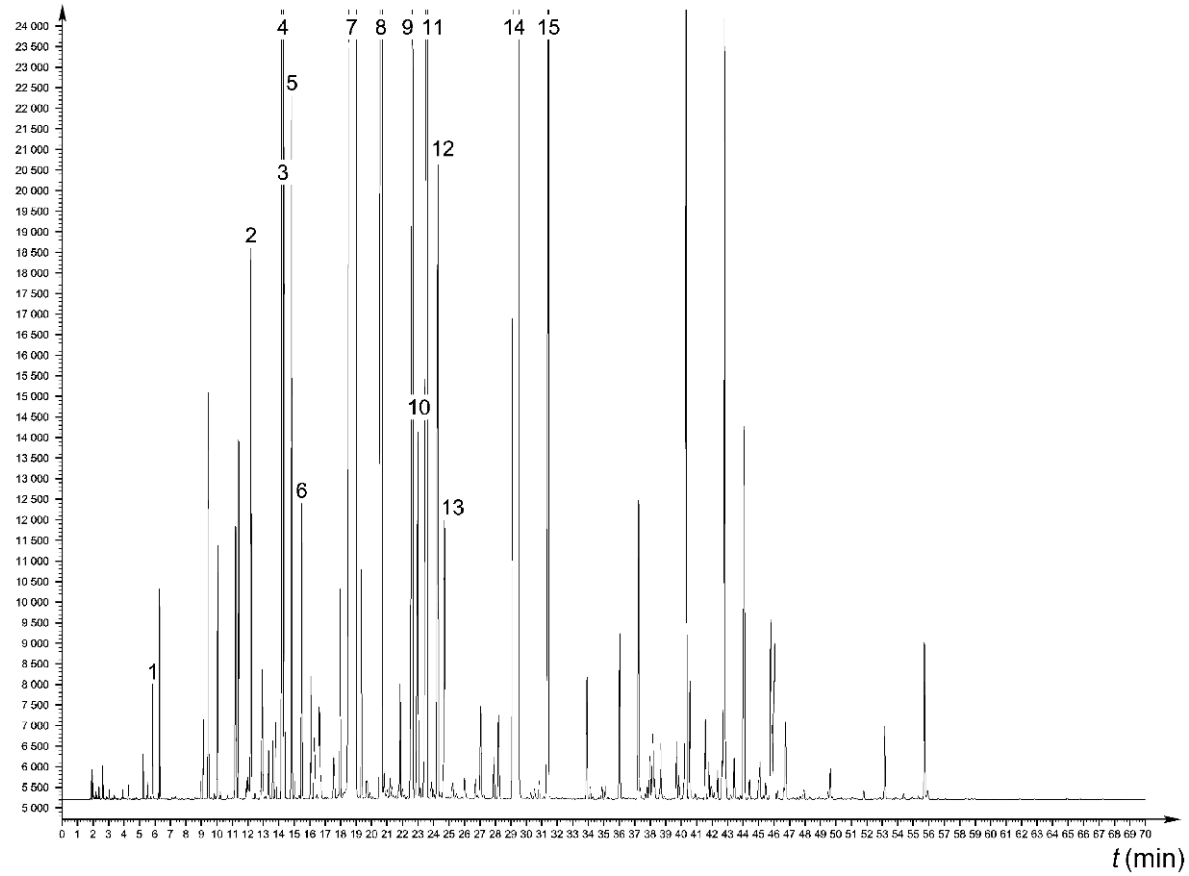
See ISO 11024-1 and ISO 11024-2.

7 Packaging, labelling, marking and storage

See ISO/TR 210 and ISO/TR 211.

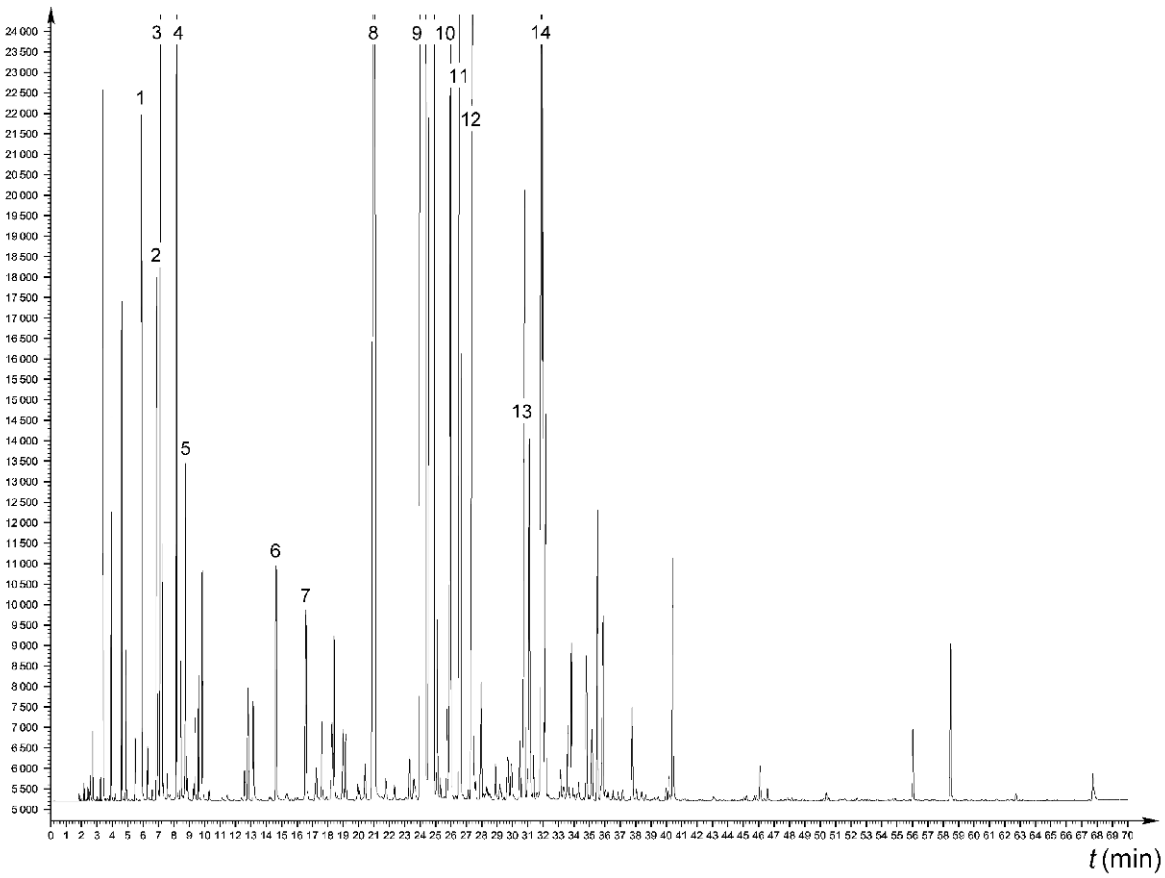
Annex A
(informative)

Typical chromatograms of the analysis by gas chromatography of the essential oil of lavandin Grosso (*Lavandula angustifolia* Mill. × *Lavandula latifolia* Medik.), French type



Peak identification		Operating conditions
1	*cis*-3-Hexenol	Column: silica capillary; length 50 m; internal diameter 0,20 mm
2	Myrcene	Stationary phase: polydimethylsiloxane
3	Limonene	Film thickness: 0,25 µm
4	1,8-Cineole	Oven temperature: programmed from 65 °C to 230 °C at a rate of 2 °C/min
5	*cis*-β-Ocimene	Injector temperature: 230 °C
6	*trans*-β-Ocimene	Detector temperature: 250 °C
7	Linalool	Detector: flame ionization type
8	Camphor	Carrier gas: hydrogen
9	Borneol	Volume injected: 0,2 µl
10	Lavandulol	Split ratio: 1/100
11	Terpinen-4-ol	
12	α-Terpineol	
13	Hexyl butyrate	
14	Linalyl acetate	
15	Lavandulyl acetate	

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



Peak identification		**Operating conditions**
1	Myrcene	Column: silica capillary; length 50 m; internal diameter 0,20 mm
2	Limonene	Stationary phase: polyethylene glycol
3	1,8-Cineole	Film thickness: 0,25 µm
4	*cis*-β-Ocimene	Oven temperature: programmed from 65 °C to 230 °C at a rate of 2 °C/min
5	*trans*-β-Ocimene	Injector temperature: 230 °C
6	*cis*-3-Hexenol coeluted	Detector temperature: 250 °C
7	Hexyl butyrate	Detector: flame ionization type
8	Camphor	Carrier gas: hydrogen
9	Linalool	Volume injected: 0,2 µl
10	Linalyl acetate	Split ratio: 1/100
11	Terpinen-4-ol	
12	Lavandulyl acetate	
13	Lavandulol	
14	α-Terpineol + borneol	

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

Annex B
(informative)

Flashpoint

B.1 General information

For safety reasons, transport companies, insurance companies and people in charge of safety services require information on the flash points of essential oils, which in most cases are flammable products.

A comparative study on the relevant methods of analysis (see ISO/TR 11018 [1]) concluded that it was difficult to recommend a single apparatus for standardization purposes, given that:

— there is a wide variation in the chemical composition of essential oils;

— the volume of the sample needed for certain equipment is incompatible with the high price of essential oils;

— as there are several different types of equipment which can be used for the determination, users cannot be expected to use one specified type only.

Consequently, it was decided to give a mean value for the flashpoint annexed to each International Standard, for information, in order to meet the requirements of the interested parties.

The equipment with which this value was obtained has to be specified.

For further information, see ISO/TR 11018 [1].

B.2 Flashpoint of the essential oil of lavandin Grosso (*Lavandula angustifolia* Mill. × *Lavandula latifolia* Medik.), French type

The indicative value is + 75 °C (see Note 1) or + 78 °C (see Note 2).

NOTE 1 Value obtained with a Setaflash[1)] appliance.

NOTE 2 Value obtained with a Luchaire[1)] appliance.

1) Equipment available commercially. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by ISO of these products.

Bibliography

[1] ISO/TR 11018:1997, *Essential oils — General guidance on the determination of flashpoint*

[2] ISO/TR 21092, *Essential oils — Characterization*

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