
Oil of rosewood, Brazilian type [*Aniba rosaeodora* Ducke or *Aniba parviflora* (Meisn.) Mez.]

*Huile essentielle de bois de rose, type Brésil [*Aniba rosaeodora* Ducke ou *Aniba parviflora* (Meisn.) Mez.]*



Reference number
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Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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 3761 was prepared by Technical Committee ISO/TC 54, *Essential oils*.

This third edition cancels and replaces the second edition (ISO 3761:1997), which has been technically revised. It also cancels and replaces ISO 7353:1985.

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Oil of rosewood, Brazilian type [*Aniba rosaeodora* Ducke or *Aniba parviflora* (Meisn.) Mez.]

1 Scope

This International Standard specifies certain characteristics of the oil of rosewood, Brazilian type [*Aniba rosaeodora* Ducke or *Aniba parviflora* (Meisn.) Mez.], 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 container.*

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 3794, *Essential oils (containing tertiary alcohols) — Estimation of free alcohols content by determination of ester value after acetylation*

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 rosewood, Brazilian type

essential oil obtained by steam distillation of wood from *Aniba rosaeodora* Ducke or *Aniba parviflora* (Meisn.) Mez., of the Lauraceae family

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

4 Requirements

4.1 Appearance

Clear, mobile liquid.

4.2 Colour

Colourless to pale yellow.

4.3 Odour

Characteristic, sweet, recalling the odour of linalol.

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

Minimum: 0,870
Maximum: 0,887

4.5 Refractive index at 20 °C

Minimum: 1 462 0
Maximum: 1,469 0

4.6 Optical rotation at 20 °C

Between -2,50° and +4°.

4.7 Miscibility in ethanol, 60 % (volume fraction), at 20 °C

It shall not be necessary to use more than 9 volumes of ethanol, 60 % (volume fraction), at 20 °C to obtain a clear solution with 1 volume of essential oil.

4.8 Acid value

Maximum: 1

4.9 Ester value

Maximum: 5

4.10 Ester value after acetylation

Minimum: 247, corresponding to 82 % of alcohol content, expressed as linalol (relative molecular mass of linalol $M_r = 154$).

Maximum: 280, corresponding to 96 % of alcohol content, expressed as linalol (relative molecular mass of linalol $M_r = 154$).

4.11 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	Minimum %	Maximum %
α -Pinene	traces	1
1,8-Cineole	traces	3
<i>cis</i> -Linalol oxide (furanoid)	0,5	2
<i>trans</i> -Linalol oxide (furanoid)	0,5	2
Linalol	70	90
α -Terpineol	2	7
Geraniol	0,5	2,5
α -Copaene	traces	3
Benzyl benzoate	0,2	1,6

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

4.12 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 Refractive index at 20 °C

See ISO 280.

6.3 Optical rotation at 20 °C

See ISO 592.

6.4 Miscibility in ethanol, 60 % (volume fraction), at 20 °C

See ISO 875.

6.5 Acid value

See ISO 1242.

6.6 Ester value

See ISO 709.

Saponification time: 1 h.

6.7 Ester value after acetylation

See ISO 3794.

6.8 Chromatographic profile

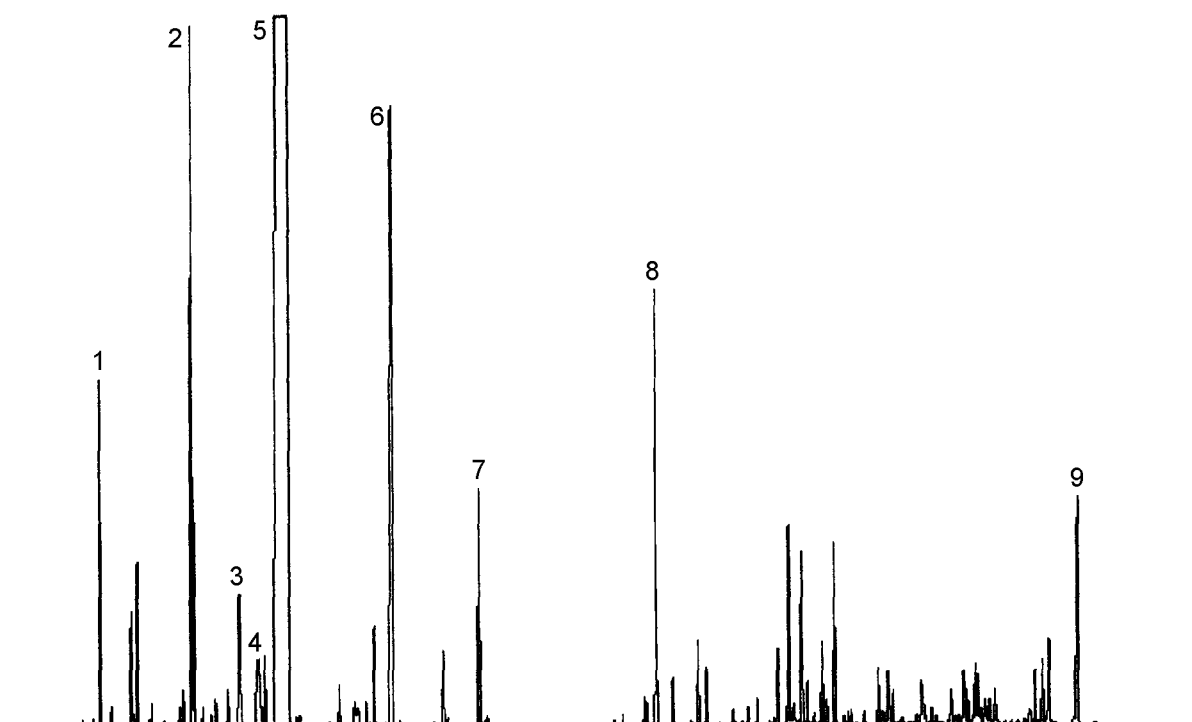
See ISO 11024-1 and ISO 11024-2.

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 rosewood, Brazilian type [*Aniba rosaeodora* Ducke or *Aniba parviflora* (Meisn.) Mez.]



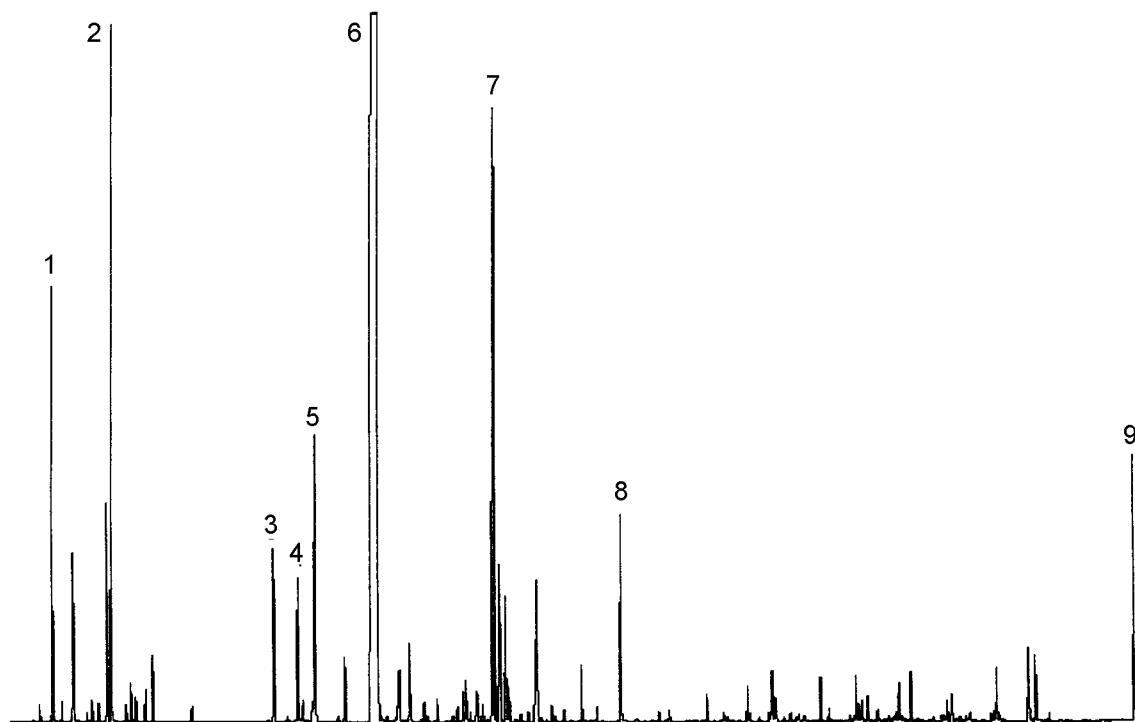
Peak identification

- 1 α -Pinene
- 2 1,8-Cineole
- 3 *cis*-Linalol oxide (furanoid)
- 4 *trans*-Linalol oxide (furanoid)
- 5 Linalol
- 6 α -Terpineol
- 7 Geraniol
- 8 α -Copaene
- 9 Benzyl benzoate

Operating conditions

Column: capillary; length 50 m; internal diameter 0,2 mm
 Stationary phase: poly(dimethyl siloxane)
 Film thickness: 0,25 μ m
 Oven temperature: temperature programming from 65 °C to 230 °C at a rate of 2 °C/min
 Injector temperature: 230 °C
 Detector temperature: 250 °C
 Detector: flame ionization type
 Carrier gas: hydrogen
 Volume injected: 0,2 μ l
 Carrier gas flow rate: 1,1 ml/min
 Split ratio: 1/100

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

**Peak identification**

- 1 α -Pinene
- 2 1,8-Cineole
- 3 *cis*-Linalol oxide (furanoid)
- 4 *trans*-Linalol oxide (furanoid)
- 5 α -Copaene
- 6 Linalol
- 7 α -Terpineol
- 8 Geraniol
- 9 Benzyl benzoate

Operating conditions

Column: capillary; length 50 m; internal diameter 0,2 mm
 Stationary phase: poly(ethylene glycol) (Carbowax 20 M®)
 Film thickness: 0,25 μ m
 Oven temperature: temperature programming from 65 °C to 230 °C at a rate of 2 °C/min
 Injector temperature: 230 °C
 Detector temperature: 250 °C
 Detector: flame ionization type
 Carrier gas: hydrogen
 Volume injected: 0,2 μ l
 Carrier gas flow rate: 1,1 ml/min
 Split ratio: 1/100

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 flashpoints of essential oils, which in most cases are flammable products.

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

- there is wide variation in the chemical composition of essential oils;
- the volume of the sample needed to meet certain requirements would be too costly for high-priced 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 in an informative annex to each International Standard, in order to meet the requirements of the interested parties.

The equipment with which this value was obtained should be specified.

For further information, see ISO/TR 11018.

B.2 Flashpoint of the oil of rosewood, Brazilian type

The mean value is +67 °C.

NOTE Obtained with "Setaflash" equipment.

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Bibliography

- [1] ISO/TR 11018, *Essential oils — General guidance on the determination of flashpoint*
- [2] ISO/TR 21092, *Essential oils — Characterization*

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