

Australian Standard[®]

**Oil of *Backhousia citriodora*, citral type
(lemon myrtle oil)**



This Australian Standard® was prepared by Committee CH-021, Essential Oils. It was approved on behalf of the Council of Standards Australia on 31 May 2011. This Standard was published on 13 July 2011.

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 - Australian Society of Cosmetic Chemists
 - Australian Society of Perfumers and Flavourists
 - Cosmetic Toiletry Fragrance Association of Australia
 - Consumers Federation of Australia
 - Essential Oil Producers Association of Australia
 - N.S.W. Agriculture
 - Southern Cross University
 - The Royal Australian Chemical Institute
 - University of New South Wales
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PREFACE

This Standard was prepared by the Standards Australia Committee CH-021, Essential Oils. The objective of this Standard is to specify certain characteristics of the oil of *Backhousia citriodora*, citral type (lemon myrtle oil), in order to facilitate assessment of its quality.

This Standard incorporates Amendment No. 1 (November 2011). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

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STANDARDS AUSTRALIA

Australian Standard

Oil of *Backhousia citriodora*, citral type (lemon myrtle oil)**1 SCOPE**

This Standard specifies certain characteristics of the oil of *Backhousia citriodora*, citral type (lemon myrtle oil), in order to facilitate assessment of its quality.

2 REFERENCED DOCUMENTS

AS

4550 Essential oils—Sampling

AS/NZS

2106 Methods for the determination of the flash point of flammable liquids (closed cup) (series)

ISO

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

TR 211 Essential oils—General rules for labelling and marking of containers

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

280 Essential oils—Determination of refractive index

356 Essential oils—Preparation of test samples

592 Essential oils—Determination of optical rotation

875 Essential oils—Evaluation of miscibility in ethanol

1271 Essential oils—Determination of carbonyl value—Free hydroxylamine method

TR 11018 Essential oils—General guidance on the determination of the flashpoint

11024 Essential oils—General guidance on chromatographic profiles

11024-1 Part 1: Preparation of chromatographic profiles for presentation in standards

11024-2 Part 2: Utilization of chromatographic profiles of samples of essential oils

3 DEFINITION

For the purpose of this Standard, the following definition applies.

3.1 Oil of *Backhousia citriodora*, citral type (lemon myrtle oil)

Essential oil obtained by steam distillation of the foliage and terminal branchlets of *Backhousia citriodora* F. Mueller.

4 CHARACTERISTICS**4.1 General**

The characteristics of oil of *Backhousia citriodora* (citral type) are set out in Clause 4.2 and 4.9. The flashpoint value is dependent on the equipment used.

NOTE: See Appendix B for further information on flashpoint determination.

4.2 Appearance

Pale yellow to yellow liquid. Mobile at 20°C.

4.3 Odour

Characteristic lemon odour.

4.4 Relative density at 20°C/20°C

When determined in accordance with ISO 279, the ratio of the mass of a given volume of the oil to that of an equal volume of distilled water shall be in the following range:

Minimum: 0.880

Maximum: 0.910

4.5 Refractive index

When measured in accordance with ISO 280 at a wavelength of 589.3 ± 0.3 nm (corresponding with the D line of the sodium spectrum), the refractive index of the oil at 20°C shall be in the following range:

Minimum: 1.4840

Maximum: 1.4910

4.6 Optical rotation

When determined in accordance with ISO 592 the optical rotation of the oil at 20°, using light of wavelength 589.3 ± 0.3 nm (corresponding with the D line of the sodium spectrum) shall be in the range:

−1.5° and +1.5°.

4.7 Miscibility to ethanol

When tested in accordance with ISO 875, one volume of the oil of *Backhousia citriodora* shall completely dissolve in three volumes of 70% (V/V) ethanol at 20°C.

4.8 Citral content

Minimum of 85% citral as measured by gas chromatography.

The following compounds make up the total citral content:

neral, geranial, *cis*-isocitral [systematic name: 3,7-dimethyl-3(Z),6-octadienal], *trans*-isocitral [systematic name: 3,7-dimethyl-3(E),6-octadienal] and *exo*-isocitral [systematic name: 3-methylene-7-methyl-6-octenal].

NOTE: The three isocitrals exist in a dynamic equilibrium with neral and geranial.

4.9 Carbonyl value

Corresponding to 85% minimum of carbonyl compounds content expressed as citral, when determined in accordance with ISO 1271.

4.10 Establishment of chromatographic profile

Analysis of the essential oil shall be carried out by gas chromatography and on the chromatograph obtained the representative and characteristic components shown in Table 1 shall be identified. Preparation of chromatographic profile should be in accordance with ISO 11024, Parts 1 and 2. The proportions of these components as determined by area normalization shall be as shown in Table 1. This constitutes the chromatographic profile of the oil.

NOTE: An example of a typical chromatogram is given in Appendix A.