BS ISO 16385:2014

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Essential oil of molle (*Schinus areira* L.), Argentinean type

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BS ISO 16385:2014

INTERNATIONAL STANDARD

ISO 16385

First edition
2014-09-01

Essential oil of molle (*Schinus areira* L.), Argentinean type

*Huile essentielle de baie rose (*Schinus areira *L.), type Argentine*

Reference number
ISO 16385:2014(E)

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Foreword

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 54, *Essential oils*.

Introduction

This International Standard considers the requirements that the essential oil obtained by water vapor distillation of the fruits of molle (*Schinus areira* L.) Argentinean type shall meet.

It is a natural product with an intraspecific variability characterized by the preponderance of phellandrenes and limonene as major components. The table of essential oil composition reflects this feature.

INTERNATIONAL STANDARD ISO 16385:2014(E)

Essential oil of molle (*Schinus areira* L.), Argentinean type

1 Scope

This International Standard specifies certain characteristics of the essential oil of molle (*Schinus areira* L.), Argentinean type, intended for facilitating the assessment of its quality.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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 11024 (all parts), *Essential oils — General guidance on chromatographic profiles*

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*

3 Terms and definitions

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

3.1
essential oil of molle (*Schinus areira* L.)
essential oil obtained by steam distillation of the fruits of *Schinus areira* L., of the Anacardiaceae family

Note 1 to entry: For information on CAS number, see ISO/TR 21092[2].

4 Requirements

4.1 Appearance

Clear mobile liquid.

4.2 Colour

Light yellow.

4.3 Odour

Fresh and characteristic of phellandrene.

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

Minimum: 0,850

Maximum: 0,885

4.5 Refractive index at 20 °C

Minimum: 1,475 0

Maximum: 1,488 0

4.6 Optical rotation at 20 °C

Between +30° and +75°.

4.7 Miscibility in ethanol 90 % (volume fraction) at 20 °C

It shall not be necessary to use less than 4,5 volumes or more than 6,5 volumes of ethanol 90 % (volume fraction) to obtain a clear solution with 1 volume of essential oil.

4.8 Chromatographic profile

Carry out the analysis of the essential oil by gas chromatography. Identify, in the chromatogram obtained, the representative and characteristic components shown in Table 1. 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 %
Myrcene	1,0	14,0
Phellandrene (α+β)	35,0	60,0
Limonene	10,0	25,0
Sabinene	n.d.[a]	8,0
Terpinen-4-ol	n.d.[a]	1,5
α-Cadinol	0,5	3,0
Germacrene D	0,2	0,5
α-Humulene	0,0	0,5
Elemol	0,0	0,5

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

[a] Not detectable.

4.9 Flashpoint

Information on the flashpoint is given in Annex B.

5 Sampling

Sampling shall be performed in accordance with 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}

Determine the relative density in accordance with ISO 279.

6.2 Refractive index at 20 °C

Determine the refractive index in accordance with ISO 280.

6.3 Optical rotation at 20 °C

Determine the optical rotation in accordance with ISO 592.

6.4 Miscibility in ethanol 90 % (volume fraction) at 20 °C

Determine the miscibility in ethanol in accordance with ISO 875.

6.5 Chromatographic profile

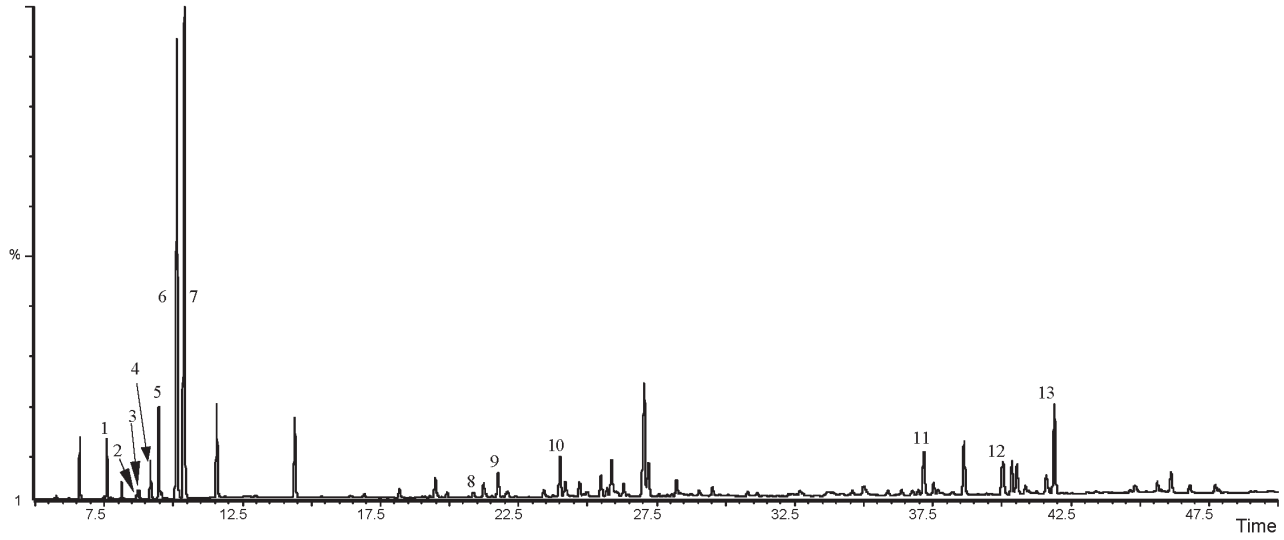
Determine the chromatographic profile in accordance with ISO 11024.

7 Packaging, labelling, marking, and storage

These items shall be in accordance with ISO/TR 210 and ISO/TR 211.

Annex A
(informative)

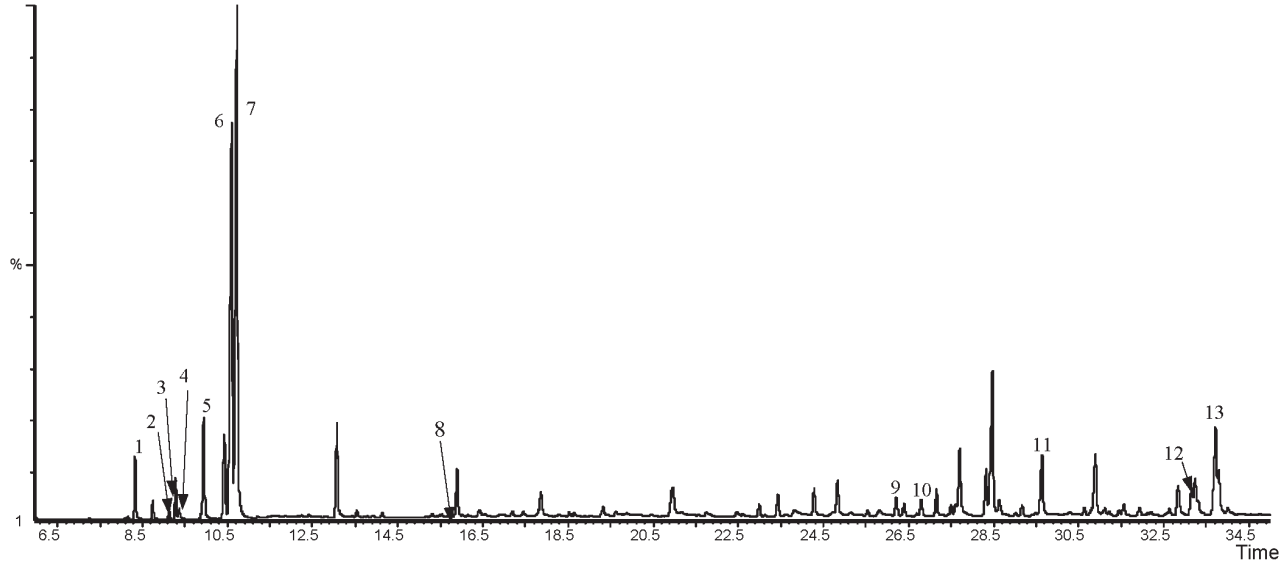
Typical chromatogram of the analysis by gas chromatography of the essential oil of molle (*Schinus areira* L.) Argentinean type



Peak identification		**Operating conditions**
1	α-Pinene	Column: capillary, fused silica, length 60 m, internal diameter 0,25 mm
2	β-Pinene	Stationary phase: polyethylene glycol [SP-20 000[a]]
3	Sabinene	Film thickness: 0,25 µm
4	Myrcene	Oven temperature: temperature programming from 90 °C to 225 °C at a rate of 3 °C/min
5	α-Phellandrene	Injector temperature: 255 °C
6	Limonene	Detector temperature: 275 °C
7	β-Phellandrene	Detector: flame ionization type
8	Terpinen-4-ol	Carrier gas: Helium
9	α-Humulene	Volume injected: 0,2 µl of a 10 % dilution in ethanol
10	Germacrene D	Carrier gas flow rate: 1,87 ml/min
11	Elemol	Split ratio: 1/100
12	Epi-α-Cadinol	
13	α-Cadinol	

[a] SP-20 000 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.

Figure A.1 — Typical chromatogram taken on a polar column



Peak identification		**Operating conditions**
1	α-Pinene	Column: capillary, fused silica, length 60 m, internal diameter 0,25 mm
2	Sabinene	Stationary phase: 5 % phenyl –95 % methyl silicone
3	Myrcene	Film thickness: 0,25 µm
4	β-Pinene	Oven temperature: temperature programming from 90 °C to 225 °C at a rate of 3 °C/min
5	α-Phellandrene	Injector temperature: 255 °C
6	Limonene	Detector temperature: 275 °C
7	β-Phellandrene	Detector: flame ionization type
8	Terpinen-4-ol	Carrier gas: Helium
9	α-Humulene	Volume injected: 0,2 µl of a 10 % dilution in ethanol
10	Germacrene D	Carrier gas flow rate: 1,87 ml/min
11	Elemol	Split ratio: 1/100
12	Epi-α-Cadinol	
13	α-Cadinol	

Figure A.2 — Typical chromatogram taken on an apolar 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 in 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 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 molle

The mean value is +48 °C.

NOTE Obtained with Setaflash[1)] equipment.

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 this product.

Bibliography

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

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

[3] IRAM 18608-2:2006, *Flavoring products — Essential oils — Essential oil of molle. Part 2: Schinus areira L*

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