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**Essential oil of tarragon (*Artemisia  
dracunculus* L.)**

*Huile essentielle d'estragon (Artemisia dracunculus L.)*

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# Contents

	Page
Foreword .....	iv
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Specifications</b> .....	<b>1</b>
4.1 Appearance .....	1
4.2 Colour .....	1
4.3 Odour .....	2
4.4 Relative density $d_{20}^{20}$ .....	2
4.5 Refractive index at 20 °C .....	2
4.6 Optical rotation at 20 °C .....	2
4.7 Miscibility in ethanol 90 % (volume fraction) at 20 °C .....	2
4.8 Acid value .....	2
4.9 Chromatographic profile .....	2
4.10 Flashpoint .....	2
<b>5 Sampling</b> .....	<b>3</b>
<b>6 Test methods</b> .....	<b>3</b>
6.1 Relative density $d_{20}^{20}$ .....	3
6.2 Refractive index at 20 °C .....	3
6.3 Optical rotation at 20 °C .....	3
6.4 Miscibility in 90 % (volume fraction) ethanol at 20 °C .....	3
6.5 Acid value .....	3
6.6 Chromatographic profile .....	3
<b>7 Packaging, labelling, marking and storage</b> .....	<b>3</b>
<b>Annex A (informative) Typical chromatograms of the analysis by gas chromatography of the essential oil of tarragon (<i>Artemisia dracunculus</i> L.)</b> .....	<b>4</b>
<b>Annex B (informative) Flashpoint</b> .....	<b>7</b>
<b>Bibliography</b> .....	<b>8</b>

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 10115 was prepared by Technical Committee ISO/TC 54, *Essential oils*.

This second edition cancels and replaces the first edition (ISO 10115:1997) which has been technically revised.

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# Essential oil of tarragon (*Artemisia dracunculus* L.)

## 1 Scope

This International Standard specifies certain characteristics of the essential oil of tarragon (*Artemisia dracunculus* L.), intended to facilitate 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 degrees 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 1242, *Essential oils — Determination of acid value*

## 3 Terms and definitions

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

### 3.1

#### **essential oil of tarragon**

essential oil obtained by steam distillation of the leaves of tarragon (*Artemisia dracunculus* L.), of the Asteraceae family

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

## 4 Specifications

### 4.1 Appearance

Mobile, clear liquid.

### 4.2 Colour

Colourless to pale yellow.

### 4.3 Odour

Characteristic, with a hint of aniseed.

### 4.4 Relative density $d_{20}^{20}$

Minimum: 0,918.

Maximum: 0,950.

### 4.5 Refractive index at 20 °C

Minimum: 1,508.

Maximum: 1,518.

### 4.6 Optical rotation at 20 °C

Between + 2° and + 6°.

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

In order to obtain a clear solution with 1 volume of essential oil, no more than 4 volumes of ethanol 90 % (volume fraction) ethanol shall be required.

### 4.8 Acid value

Maximum: 1.

### 4.9 Chromatographic profile

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Carry out the analysis of the essential oil by gas chromatography. On the obtained chromatogram, identify the representative and characteristic components listed in [Table 1](#) below. The percentage of each of these components, indicated by the integrator, shall be within the limits figuring in [Table 1](#). This whole constitutes the “chromatographic profile” of the essential oil.

**Table 1 — Chromatographic profile**

Component	Minimum	Maximum
	%	%
α-Pinene	0,5	2,0
Limonene	2,0	7,0
(Z)-β-Ocimene	5,0	13,0
(E)-β-Ocimene	6,0	12,0
Estragole	68,0	84,0
Methyleugenol	n.d. <sup>a</sup>	< 1,0

NOTE The chromatographic profile is normative, contrary to typical chromatograms given for information in [Annex A](#).

<sup>a</sup> Not detectable.

### 4.10 Flashpoint

Information concerning the flashpoint is given in [Annex B](#).

## 5 Sampling

Sampling shall be performed in accordance with ISO 212.

Minimum volume of the 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 $d_{20}^{20}$

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 90 % (volume fraction) ethanol at 20 °C

Determine the miscibility in accordance with ISO 875.

### 6.5 Acid value

Determine the acid value in accordance with ISO 1242.

### 6.6 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)

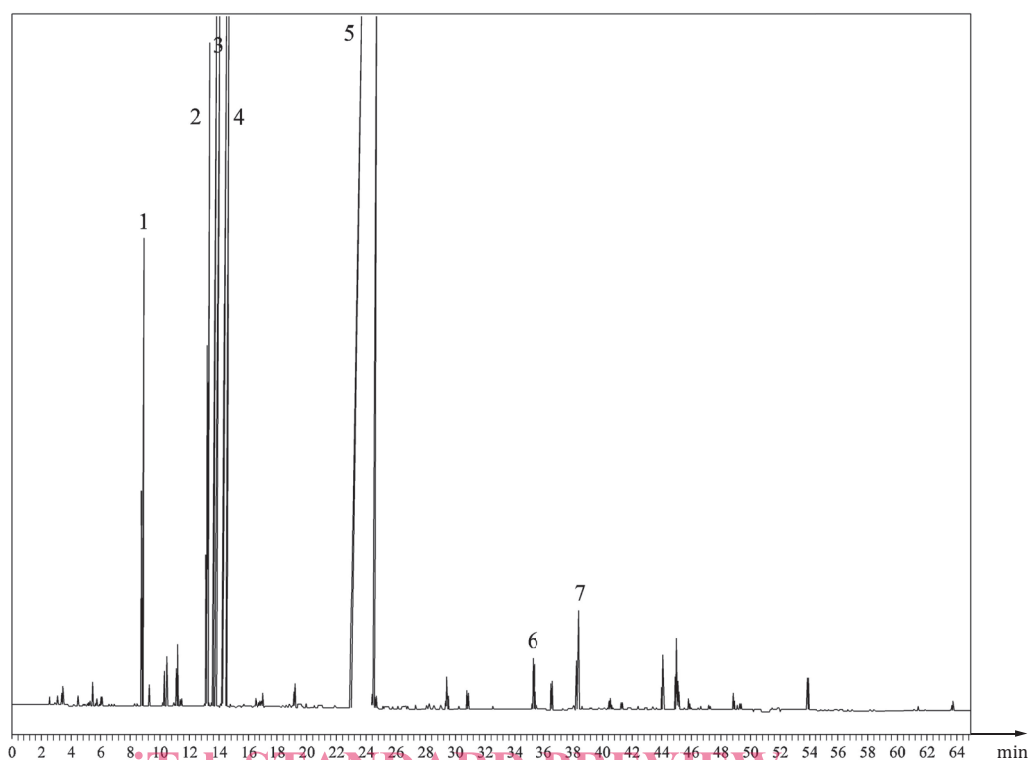
**Typical chromatograms of the analysis by gas chromatography of  
the essential oil of tarragon (*Artemisia dracunculus* L.)**

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**Peak identification****Operating conditions**

1	$\alpha$ -Pinene	Fused silica capillary column (HP-101®) length 50 m, internal diameter 0,2 mm
2	Limonene	100 % dimethylpolysiloxane
3	(Z)- $\beta$ -Ocimene	Film thickness: 0,2 $\mu$ m
4	(E)- $\beta$ -Ocimene	Oven temperature: programming temperature isothermal at 65 °C for 5 min, then from 65 °C to 95 °C at the rate of 2 °C/min, then isothermal at 95 °C for 5 min, then from 95 °C to 160 °C at the rate of 2,5 °C/min, then from 160 °C to 200 °C at the rate of 3 °C/min, then isothermal at 20 °C for 26 min
5	Estragole	Injector temperature: 230 °C
6	Eugenol	Detector temperature: 250 °C (flame ionization detector)
7	Methyleugenol	Carrier gas: hydrogen
		Volume injected: 0,2 $\mu$ l
		Carrier gas flow rate: 1,2 ml/min (constant flow rate)
		Split ratio: 1/100

NOTE HP-101® 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 an apolar column**