INTERNATIONAL STANDARD

ISO 8897

First edition
1991-09-15

Oil of juniper berry (*Juniperus communis* Linnaeus)

Huile essentielle de baies de genévrier (Juniperus communis *Linnaeus*)

Reference number
ISO 8897:1991(E)

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.

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.

International Standard ISO 8897 was prepared by Technical Committee ISO/TC 54, *Essential oils*.

Annex A of this International Standard is for information only.

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Oil of juniper berry (*Juniperus communis* Linnaeus)

1 Scope

This International Standard specifies certain characteristics of oil of juniper berry (*Juniperus communis* Linnaeus), with a view to facilitating the assessment of its quality.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO/R 210:1961, *Essential oils — Packing.*

ISO/R 211:1961, *Essential oils — Labelling and marking containers.*

ISO 212:1973, *Essential oils — Sampling.*

ISO 279:1981, *Essential oils — Determination of relative density at 20 °C (Reference method).*

ISO 280:1976, *Essential oils — Determination of refractive index.*

ISO 592:1981, *Essential oils — Determination of optical rotation.*

ISO 709:1980, *Essential oils — Determination of ester value.*

ISO 875:1981, *Essential oils — Evaluation of miscibility in ethanol.*

ISO 1242:1973, *Essential oils — Determination of the acid value.*

3 Definition

For the purposes of this International Standard, the following definition applies.

3.1 oil of juniper berry: The oil obtained by steam distillation of the berries of *Juniperus communis* Linnaeus, of the cupressaceae family.

4 Requirements

4.1 Appearance

Mobile liquid.

4.2 Colour

Colourless to pale yellow.

4.3 Odour

Characteristic.

4.4 Relative density at 20/20 °C

Minimum: 0,857

Maximum: 0,872

4.5 Refractive index at 20 °C

Minimum: 1,471 0

Maximum: 1,483 0

4.6 Optical rotation at 20 °C

Between − 15° and 0°

4.7 Miscibility in 95 % (*V*/*V*) ethanol at 20 °C

1 volume of the oil shall not require more than 10 volumes of 95 % (*V*/*V*) ethanol at 20 °C to give a clear solution. A slight opalescence may sometimes appear on further addition of solvent.

4.8 Acid value

Maximum: 2

4.9 Ester value

Minimum: 12

4.10 Typical chromatogram

See annex A, for information only.

4.11 Flash point

41 °C (for information only)

5 Sampling

See ISO 212.

Minimum volume of the test sample: 25 ml

NOTE 1 This volume is sufficient to carry out all the tests specified in this International Standard at least once.

6 Methods of test

6.1 Relative density at 20/20 °C

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 95 % (V/V) ethanol at 20 °C

See ISO 875.

6.5 Acid value

See ISO 1242.

6.6 Ester value

See ISO 709.

6.7 Establishment of a typical chromatogram

See annex A (for information only)

6.8 Flash point

Guidance on methods for the determination of flash point will be given in a future Technical Report.

7 Packaging, labelling and marking

See ISO/R 210 and ISO/R 211.

Annex A
(informative)

Typical chromatograms

Sample: oil of Juniper berry

Column: fused silica capillary, length 25 m, internal diameter 0,32 mm

Stationary phase: OV 101

Film thickness: 0,39 µm

Split ratio: 1/100

Detector: flame ionization

Oven temperature:

- initial temperature: 60 °C for 10 min
- programme of temperature rise: 2 °C/min up to 230 °C
- final temperature: 230 °C for 20 min

Injection temperature: 250 °C

Detection temperature: 250 °C

Carrier gas: nitrogen

Injected volume: 0,1 µl

Constituents

1 α-Thujene
2 α-Pinene
3 Camphene
4 Sabinene
5 β-Pinene
6 Myrcene
7 α-Phellandrene
8 *p*-Cymene
9 Limonene
10 γ-Terpinene
11 α-*p*-Dimethylstyrene
12 Terpinolene
13 Linalool
14 *trans*-Pinocarveol
15 1-Terpinen-4-ol
16 α-Terpineol
17 Bornyl acetate
18 α-Cubebene
19 α-Copaene
20 β-Elemene
21 β-Caryophyllene
22 α-Humulene
23 Germacrene-D
24 δ-Cadinene
25 Caryophyllene oxide

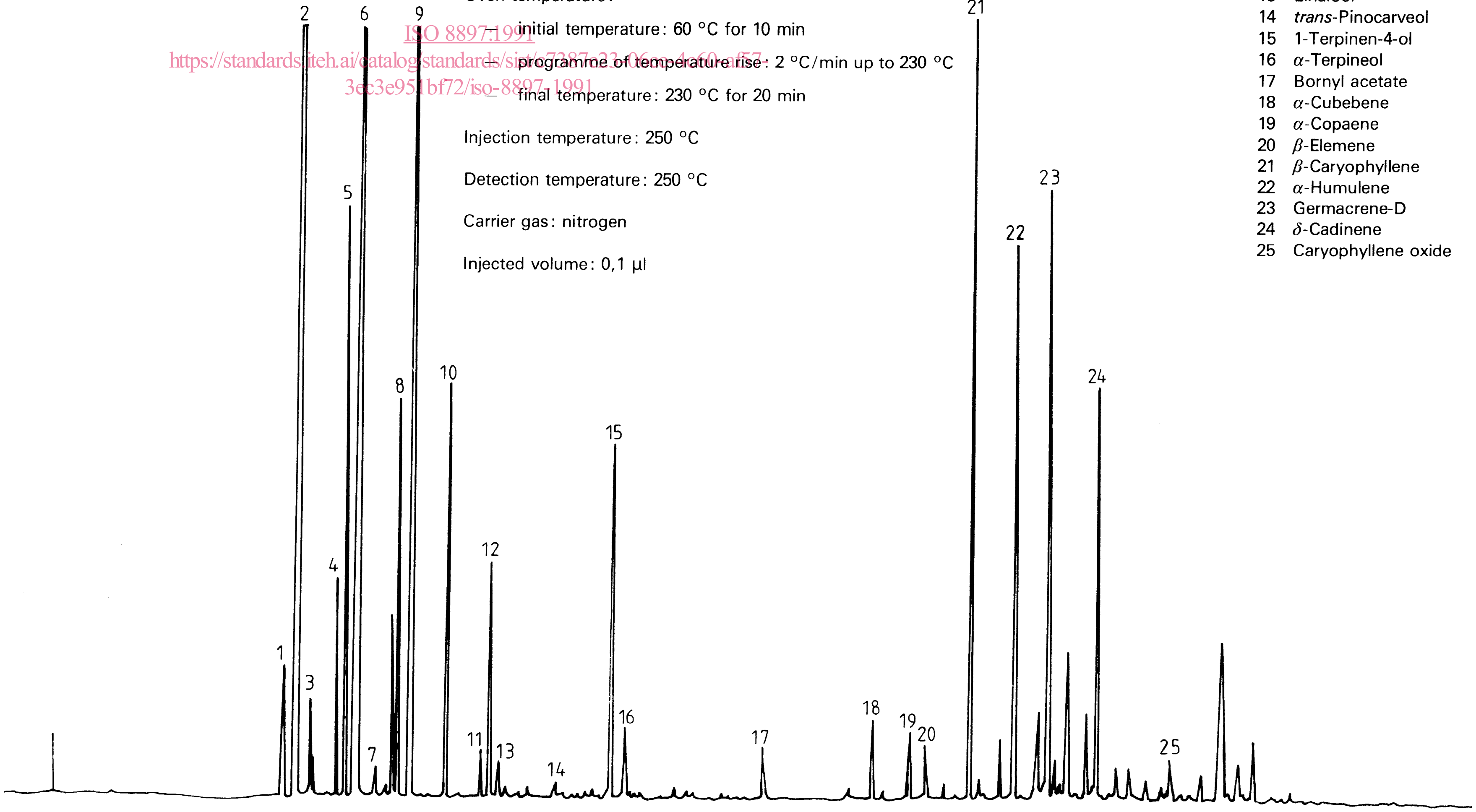

Figure A.1

Sample: oil of Juniper berry

Column: fused silica capillary, length 25 m, (internal) diameter 0,32 mm

Stationary phase: SE 30

Film thickness: 0,39 µm

Split ratio: 1/100

Detector: flame ionization

Oven temperature:

— initial temperature: 60 °C for 10 min

— programme of temperature rise: 3 °C/min up to 230 °C

— final temperature: 230 °C for 30 min

Injection temperature: 250 °C

Detection temperature: 250 °C

Carrier gas: nitrogen

Injected volume: 0,3 µl

Constituents

1 α-Thujene
2 α-Pinene
3 Camphene
4 Sabinene
5 β-Pinene
6 Myrcene
7 α-Phellandrene
8 α-Terpinene
9 p-Cymene
10 Limonene
11 γ-Terpinene
12 Terpinolene
13 1-Terpinene-4-ol
14 α-Terpineol
15 Bornyl acetate
16 α-Cubebene
17 α-Copaene
18 β-Caryophyllene
19 α-Humulene
20 Germacrene-D
21 β-Selinene
22 Bicyclo-germacrene
23 γ-Cadinene
24 δ-Cadinene

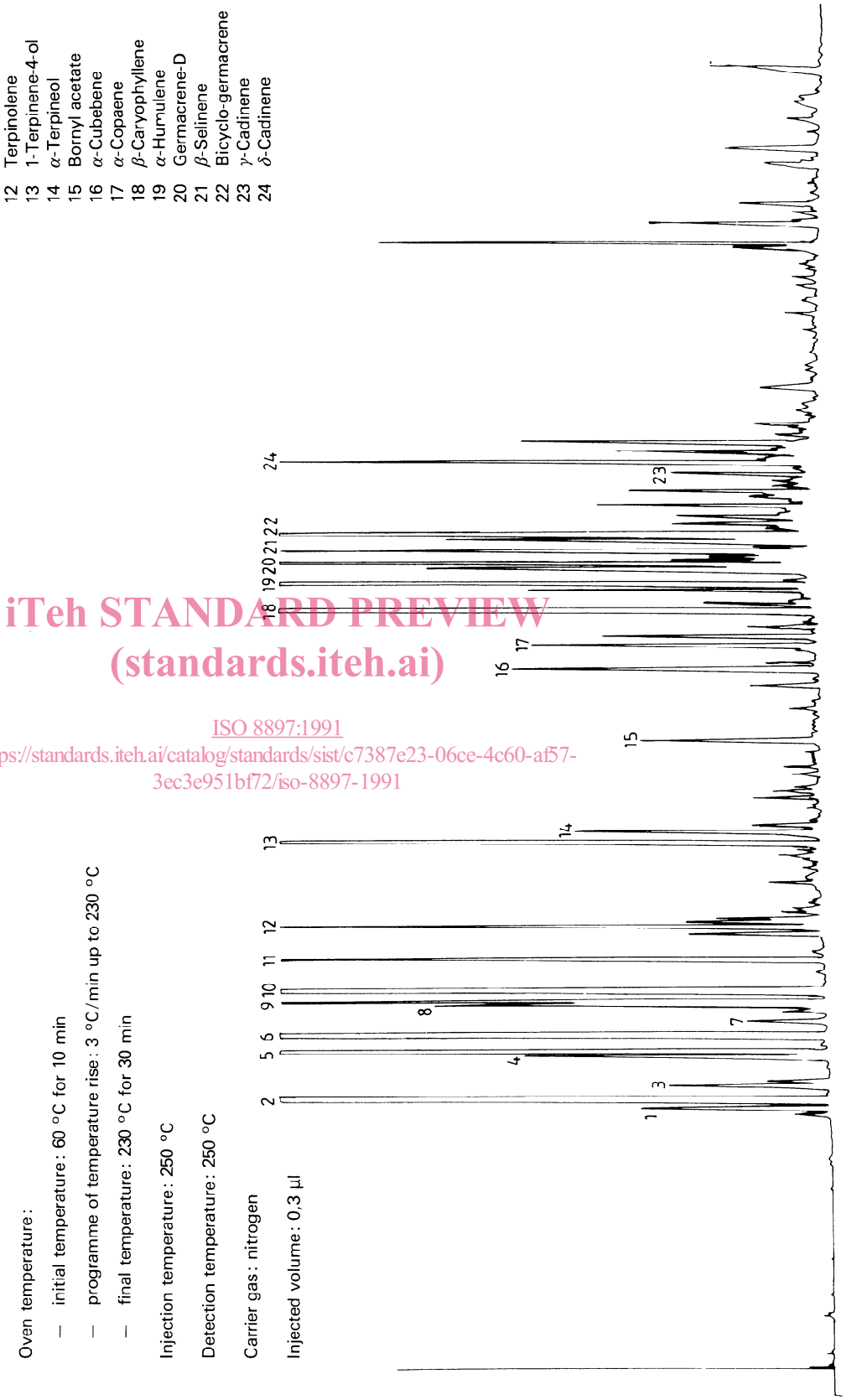

Figure A.2

UDC 665.523.75

Descriptors: essential oils, juniper, specifications.

Price based on 5 pages