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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Oil of rosemary (*Rosmarinus officinalis* Linnaeus)

*Huile essentielle de romarin (*Rosmarinus officinalis *Linnaeus)*

Reference number
ISO 1342 : 1988 (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 approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 1342 was prepared by Technical Committee ISO/TC 54, *Essential oils.*

It cancels and replaces ISO Recommendation R 1342 : 1971, of which it constitutes a technical revision.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Oil of rosemary (*Rosmarinus officinalis* Linnaeus)

1 Scope and field of application

This International Standard specifies certain characteristics of oil of rosemary (*Rosmarinus officinalis* Linnaeus), with a view to facilitating the assessment of its quality.

2 References

ISO 210, *Essential oils — Packing.* [1)]

ISO 211, *Essential oils — Labelling and marking containers.* [2)]

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 — Determination of miscibility with 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.*

3 Definition

oil of rosemary : The oil obtained by steam distillation of the twigs and blossoming tips of *Rosmarinus officinalis* Linnaeus.

4 Requirements

4.1 Appearance

Clear, mobile liquid.

4.2 Colour

France, North Africa, Portugal	Spain
Almost colourless to pale yellow.	Pale yellow to pale yellowish green.

4.3 Odour

Characteristic, refreshing, pleasant, more or less camphoraceous according to the origin.

4.4 Relative density at 20/20 °C

	France, North Africa, Spain	Portugal
Minimum...	0,895	0,860
Maximum...	0,920	0,880

4.5 Refractive index at 20 °C

Minimum...	1,467 0	1,466 0
Maximum...	1,474 0	1,475 0

4.6 Optical rotation at 20 °C

Since the optical rotation of this essential oil can vary according to its origin and the harvest time, the values given are indicative only.

Between...	− 3°	− 4°
and...	+16°	+25°

4.7 Miscibility with 80 % (*V*/*V*) ethanol at 20 °C

Miscible with less than 10 volumes.	Miscible with less than 20 volumes.

1) At present at the stage of draft. (Revision of ISO/R 210-1961.)

2) At present at the stage of draft. (Revision of ISO/R 211-1961.)

4.8 Acid value

	France, North Africa, Spain	Portugal
Maximum...	1,0	1,0

4.9 Ester value

Minimum...	2	2
Maximum...	20	10

4.10 Ester value after acetylation

Minimum...	30	19
Maximum...	76	56

4.11 Flash point

41 °C (as a guide only)

4.12 Chromatographic profile

See the annex for typical chromatograms for the principal origins.

5 Sampling

See ISO 212.

Minimum volume of final sample : 50 ml

NOTE — This volume is sufficient to carry out, at least once, each of the tests specified in this International Standard.

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 with 80 % (*V*/*V*) ethanol at 20 °C

See ISO 875.

6.5 Acid value

See ISO 1242.

6.6 Ester value

See ISO 709.

Saponification time : 30 min

6.7 Ester value after acetylation

See ISO 3794.

7 Packing, labelling and marking

See ISO 210 and ISO 211.

Annex

Chromatographic profile and typical chromatograms

(This annex does not form part of the Standard.)

Chromatographic profile (Portugal)

Constituent	min.	max.
α-Pinene		
Camphene		
β-Pinene		
Myrcene		
Limonene		
1,8-Cineole		
γ-Terpinene		
p-Cymene		
Terpinolene		
Camphor		
Terpinene-1 ol-4		
α-Terpineol		
Borneol		
Verbenone		

The corresponding limits will be added later.

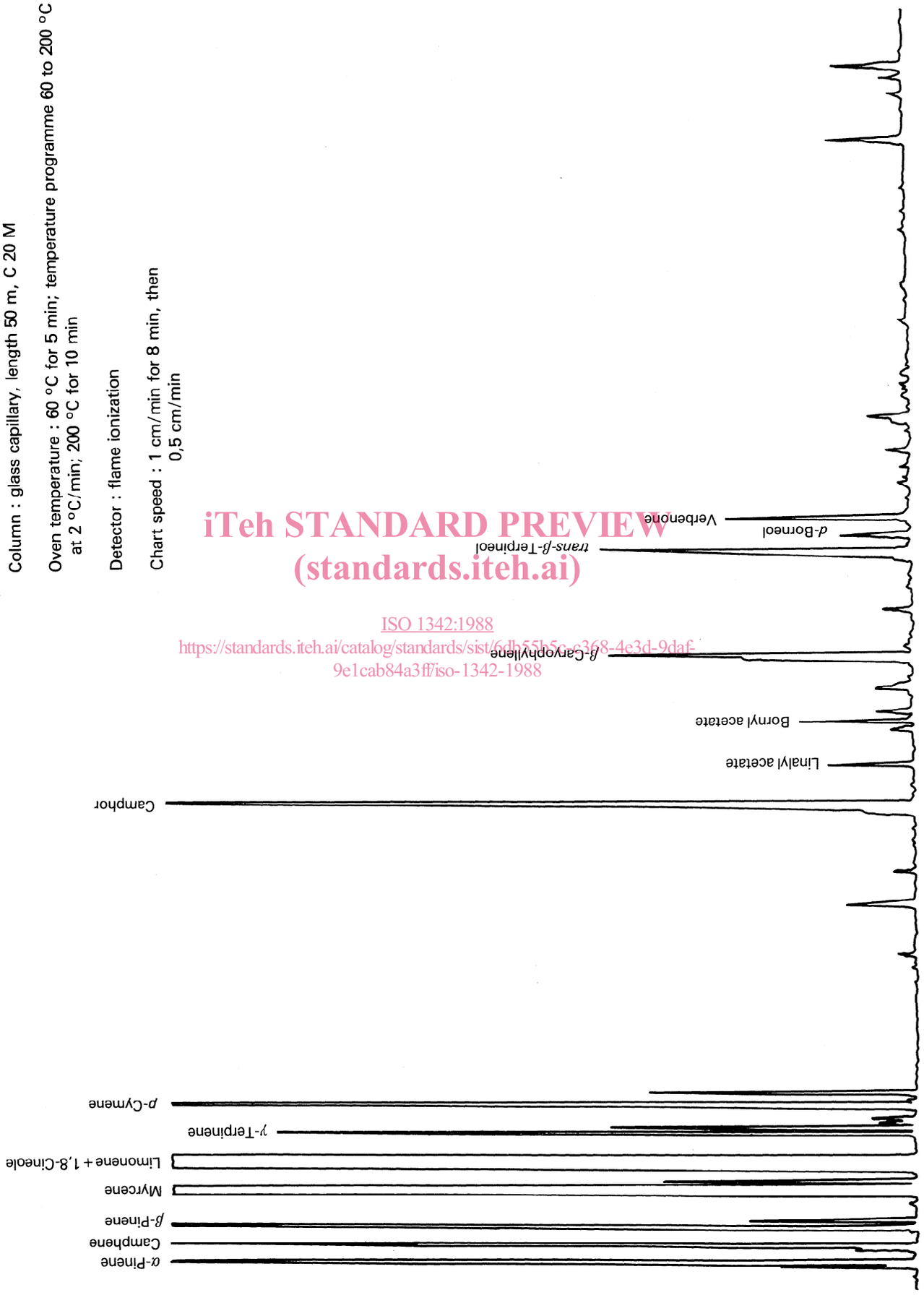
Sample : oil of rosemary, Portugal

Column : glass capillary, length 50 m, C 20 M

Oven temperature : 60 °C for 5 min; temperature programme 60 to 200 °C at 2 °C/min; 200 °C for 10 min

Detector : flame ionization

Chart speed : 1 cm/min for 8 min, then 0,5 cm/min



Sample : oil of rosemary, Portugal

Column : packed, steel, length 4 m

Stationary phase : C 20 M Chromosorb W 80/100, 15 %

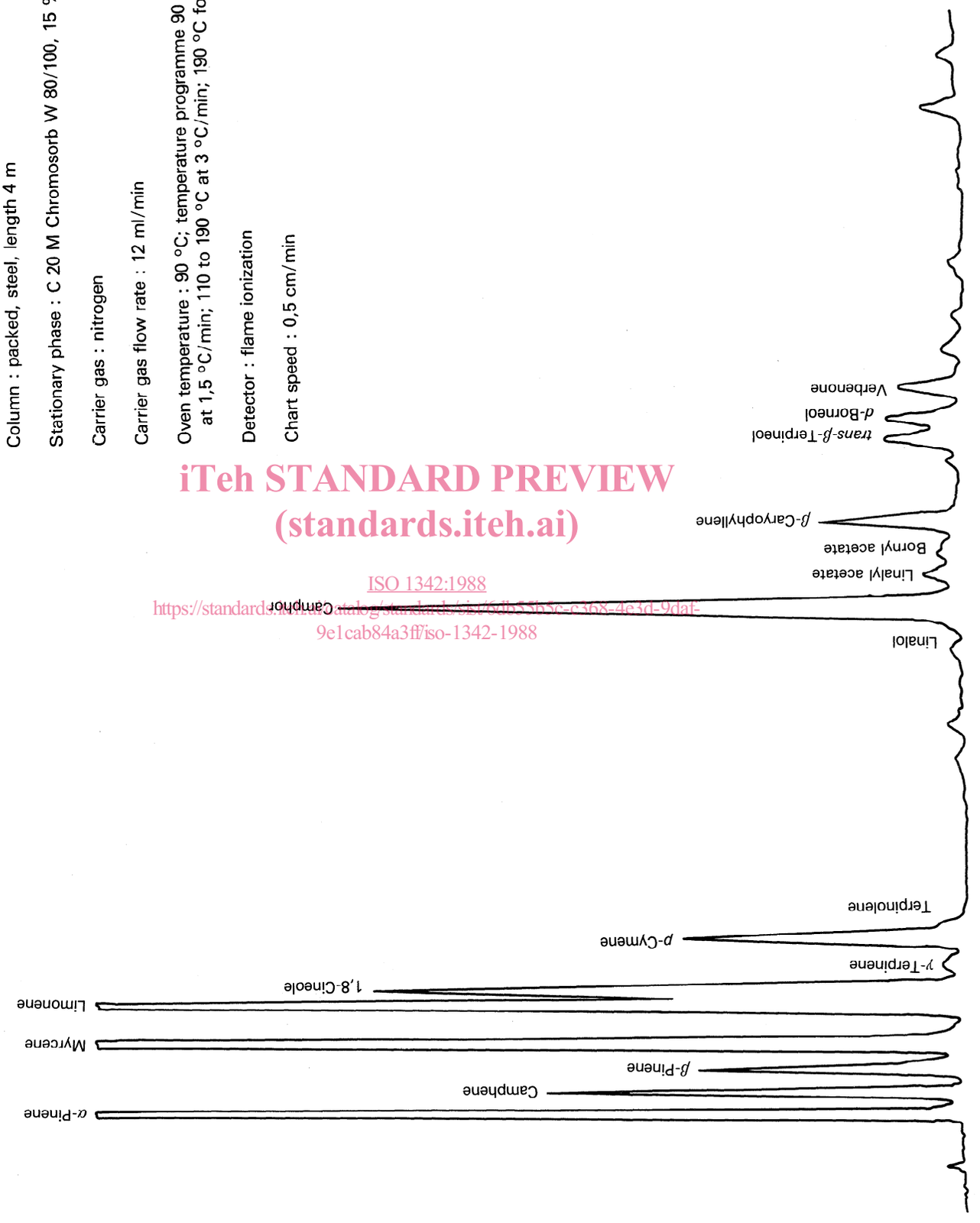
Carrier gas : nitrogen

Carrier gas flow rate : 12 ml/min

Oven temperature : 90 °C; temperature programme 90 to 110 °C at 1,5 °C/min; 110 to 190 °C at 3 °C/min; 190 °C for 5 min

Detector : flame ionization

Chart speed : 0,5 cm/min



Sample : oil of rosemary, France

Column : fused silica capillary, length 50 m, internal diameter 0,32 mm

Stationary phase : OV 101 (polydimethyl siloxane)

Injector : glass with division
Split : 1/100

Carrier gas : helium

Carrier gas flow rate : 1 ml/min

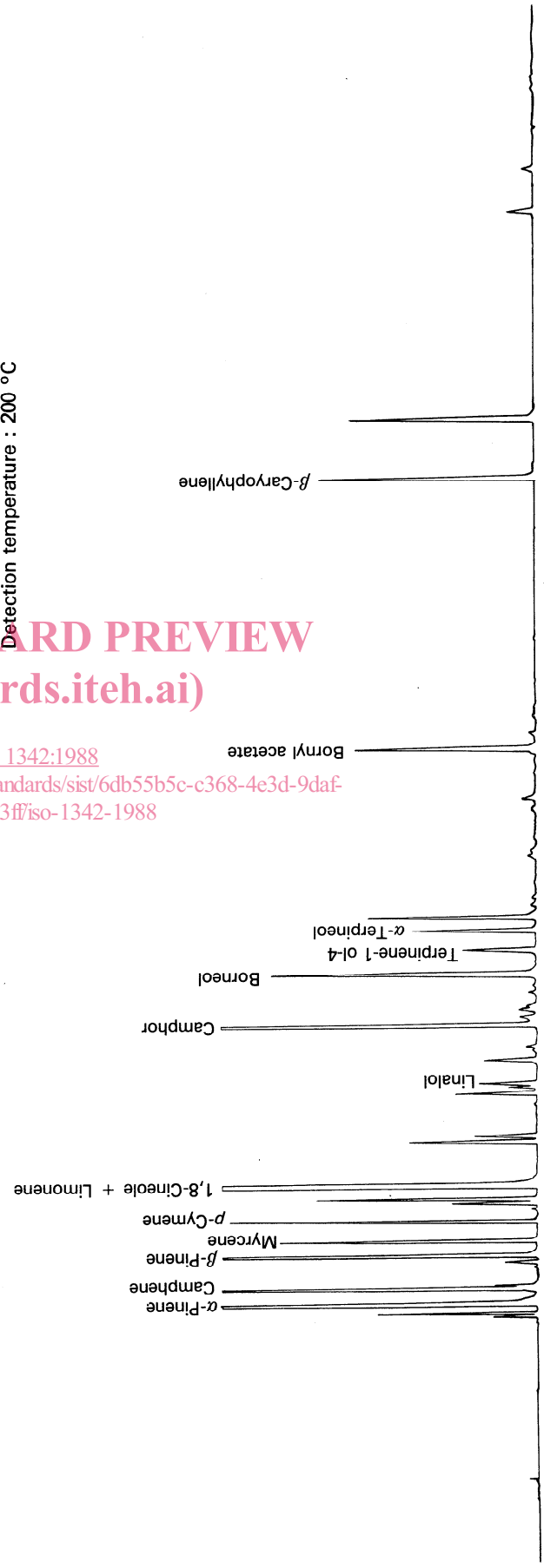
Injection temperature : 200 °C

Volume injected : 0,05 µl

Oven temperature : 65 °C; temperature programme 65 to 190 °C
at 1,5 °C/min

Detector : flame ionization

Detection temperature : 200 °C



Sample : oil of rosemary, Spain

Column : fused silica capillary, length 50 m, internal diameter 0,32 mm

Stationary phase : OV 101 (polydimethyl siloxane)

Injector : glass with division
Split : 1/100

Carrier gas : helium

Carrier gas flow rate : 1 ml/min

Injection temperature : 200 °C

Volume injected : 0,05 µl

Oven temperature : 65 °C; temperature programme 65 to 190 °C at 1,5 °C/min

Detector : flame ionization

Detection temperature : 200 °C