International Standard 7353

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Oil of rosewood — Determination of α-terpineol content — Gas chromatographic method on packed columns

Huile essentielle de bois de rose — Détermination de la teneur en α-terpinéol — Méthode par chromatographie en phase gazeuse sur colonne remplie

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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.

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 7353 was prepared by Technical Committee ISO/TC 54, *Essential oils*.

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.

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Oil of rosewood — Determination of α-terpineol content — Gas chromatographic method on packed columns

0 Introduction

Since the description of methods of analysis by gas chromatography is very long, it is considered useful to establish general methods on the one hand, giving detailed information on all the recurrent parameters, apparatus, products, methods, formulae, etc., and on the other hand standards with short details on the determination of specific constituents in the essential oils, giving only those operating conditions specific to the pertinent determination.

This is the case with the present International Standard, which refers to the general standard ISO 7359 for the general paragraphs.

1 Scope and field of application

This International Standard specifies a gas chromatographic method on packed columns for the determination of the α-terpineol content of oil of rosewood [*Aniba rosaeodora* A. Ducke var. *amazonica* A. Ducke, *Aniba parviflora* (Meissner) Mez, *Aniba rosaeodora* A. Ducke var. *rosaeodora*, *Ocotea caudata* (C. G. Nees) Mez].

2 References

ISO 356, *Essential oils — Preparation of test sample.*

ISO 7359, *Essential oils — Analysis by gas chromatography on packed columns — General method.*

3 Principle

Analysis by gas chromatography under specified conditions of a small quantity of oil of rosewood on a packed column. Determination of the α-terpineol content using the internal standard method.

4 Reagents and products

4.1 Reference substance: α-terpineol, freshly distilled, of purity at least 99 %, determined by chromatography under the test conditions.

4.2 Internal standard: methyl benzoate, freshly distilled, of purity at least 99 %, determined by chromatography under the test conditions.

4.3 Solvent: toluene, freshly distilled, of purity at least 99 %, determined by chromatography under the test conditions.

NOTE — Toluene may deposit carbon inside the detector.

5 Apparatus

5.1 Chromatograph, recorder and integrator.

See ISO 7359.

5.2 Column, of length 3 to 4 m and internal diameter 2 to 4 mm. Stationary phase: polyethylene glycol 20 000.

5.3 Detector, flame ionization or thermal conductivity type.

6 Preparation of test sample

See ISO 356.

7 Operating conditions

7.1 Temperatures

— Oven:

isotherm between 120 and 150 °C.

— Injection system:

about 170 °C.

— Detector:

about 170 °C.

7.2 Carrier gas and auxiliary gases flow rates

See ISO 7359.

8 Column performance

8.1 Chemical inertness test

Carry out the test as specified in ISO 7359.

8.2 Column efficiency

Determine the column efficiency as specified in ISO 7359.

The efficiency shall be at least 4 000 theoretical plates determined on the α-terpineol peak under the test conditions.

9 Determination of retention indexes

See ISO 7359.

For information only, the relevant retention indexes are as follows:

toluene	about 1 060
methyl benzoate	about 1 630
α-terpineol	about 1 690

10 Methods of determination

10.1 Determination of response factor

Determine the response factor as specified in ISO 7359, using the α-terpineol (4.1) as the reference substance and the methyl benzoate (4.2) as the internal standard.

10.2 Test solution

Prepare a test solution by weighing, to the nearest 0,001 g, a mixture of about 950 mg of the essential oil with about 50 mg of the methyl benzoate and diluting this mixture with the toluene (4.3) in the proportion 1 : 10.

10.3 Internal standard method

Carry out the determination of the α-terpineol content of the test solution as specified in ISO 7359.

11 Expression of results

See ISO 7359.

NOTE — A typical chromatogram is shown, for information only, in the annex.

12 Test report

See ISO 7359.

Annex

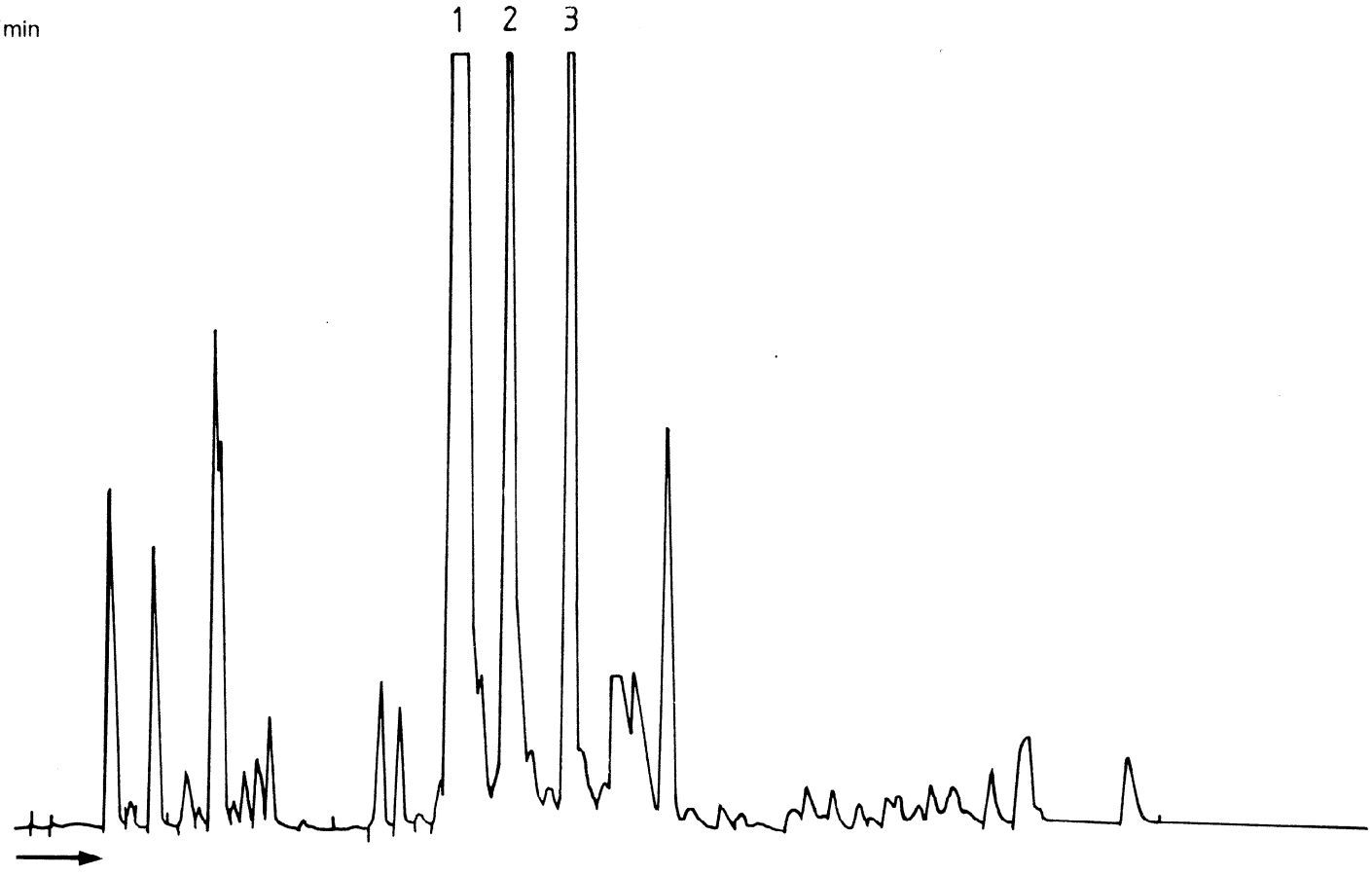
Typical chromatogram

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

Sample: oil of rosewood, Brazil

Column: packed glass column, length 2 m, diameter 2 mm
Injected volume: 0,3 µl
Stationary phase: Carbowax 20 M on Chromosorb W 80-100 mesh AWDMCS
Oven temperature: temperature programming 65 to 220 °C, at 4 °C/min
Injection temperature: 220 °C
Detection temperature: 220 °C
Carrier gas: nitrogen, flow rate 10 ml/min
Detector: flame ionization detector
Sensitivity: $10^4 \times 2$

1 Linalol
2 Methyl benzoate
3 α-Terpineol



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