INTERNATIONAL STANDARD

ISO 9842

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Oil of rose (*Rosa damascena* P. Miller)

Huile essentielle de rose (Rosa damascena *P. Miller*)

INTERNATIONAL ISO

Reference number
ISO 9842:1991(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 9842 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 rose (*Rosa damascena* P. Miller)

1 Scope

This International Standard specifies certain characteristics of essential oil of rose (*Rosa damascena* P. Miller), with a view to facilitating the assessment of its quality.

It applies to oils distilled in industrial installations and not to oils of rose of the "peasant" type, which have different characteristics.

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 1041:1973, *Essential oils — Determination of freezing point.*

ISO 1241:1980, *Essential oils — Determination of ester value after acetylation and evaluation of free alcohols and total alcohols content.*

3 Definition

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

oil of rose: The oil obtained by steam distillation of the flowers of *Rosa damascena* P. Miller.

4 Requirements

4.1 Appearance

Liquid, or more or less crystallized.

4.2 Colour

Light yellow.

4.3 Odour

Characteristic, rosy.

4.4 Relative density at 20/20 °C

Minimum: 0,848

Maximum: 0,862

4.5 Refractive index at 20 °C

Minimum: 1,453 0

Maximum: 1,464 0

4.6 Optical rotation at 20 °C

Between −5° and −2°

4.7 Freezing point

About 20 °C.

4.8 Ester value

Minimum: 7,5

Maximum: 23,5

4.9 Ester value after acetylation

Minimum: 204, corresponding to 71 % (*m*/*m*) alcohols expressed as citronellol

Maximum: 231, corresponding to 77 % (*m*/*m*) alcohols expressed as citronellol

4.10 Chromatographic profile

Evaluate the quantities of the following characteristic constituents of the essential oil on the chromatographic profile obtained.

The proportion of these constituents, calculated in relation to the sum of all peak areas, and assuming identical response factors, shall be as follows:

citronellol	34 % to 44 %
nerol	6 % to 9 %
geraniol	12 % to 18 %
phenylethyl alcohol	2 %

4.11 Flash point

102 °C (for information only).

5 Sampling

See ISO 212.

Minimum volume of 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 Freezing point

See ISO 1041.

6.5 Ester value

See ISO 709.

6.6 Ester value after acetylation

See ISO 1241.

Test portion mass for the total alcohols determination, before acetylation: 2 g ± 0,05 g

Acetylation test portion volume: 5 ml of essential oil

Acetylation time: 3 h

Test portion mass, after acetylation: 2 g ± 0,05 g

Saponification time: 2 h

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)

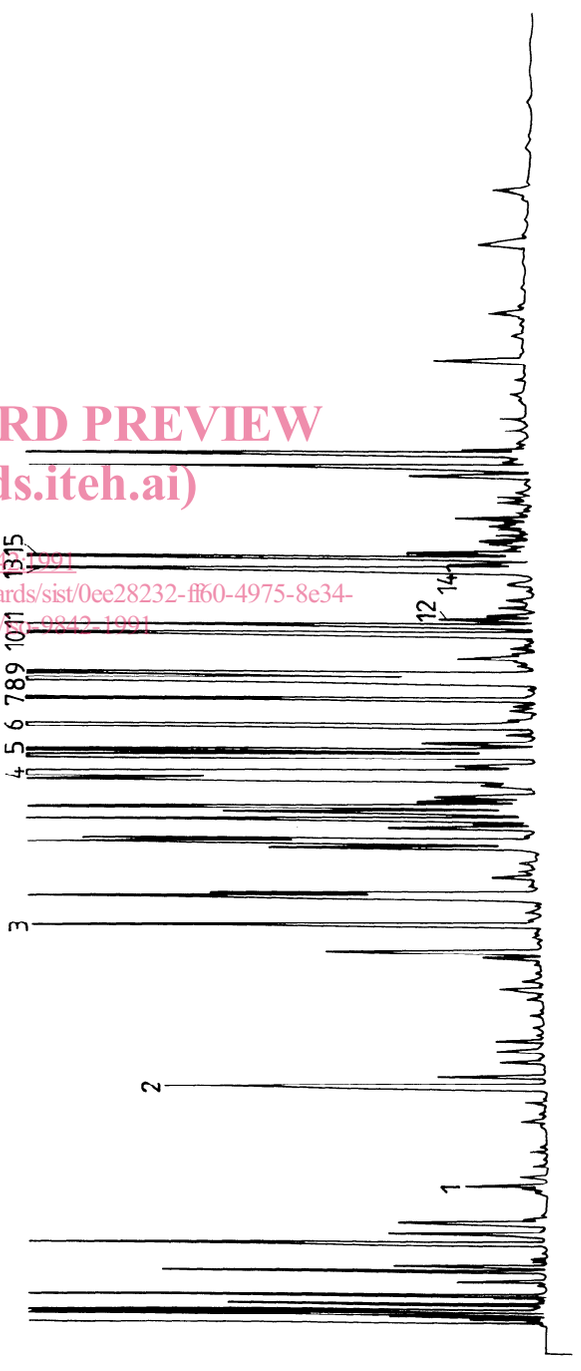
Typical chromatogram

Sample: oil of rose

Column: fused silica capillary, length 25 m, internal diameter 0,3 mm
Stationary phase: polyethylene glycol 20 000
Split ratio: 10/90
Detector: flame ionization
Oven temperature:
— initial temperature: 60 °C for 10 min
— programme of temperature rise: 3 °C/min
— final temperature: 200 °C for 50 min
Injection temperature: 250 °C
Detection temperature: 250 °C
Carrier gas: nitrogen
Volume injected: 0,3 µl

Constituents

1 Ethanol
2 *cis-* and *trans-* Rose oxide
3 Linalool
4 Citronellol
5 Nerol
6 Geraniol
7 Phenylethyl alcohol
8 *n*-C_{19} Alkane
9 *n*-C_{19} Alkene
10 Methyleugenol
11 *n*-C_{20} Alkane
12 *n*-C_{20} Alkene
13 *n*-C_{21} Alkane
14 *n*-C_{21} Alkene
15 Eugenol



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Descriptors: essential oils, rose, specifications.

Price based on 3 pages