International Standard

ISO 9842

Essential oil of rose (*Rosa x damascena* Miller)

*Huile essentielle de rose (*Rosa x damascena *Miller)*

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Contents

Page

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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

This third edition cancels and replaces the second edition (ISO 9842:2003), which has been technically revised.

The main changes are as follows:

— the structure of the document has been changed;

— “oil” has been replaced by “essential oil” throughout the whole document, including the title;

— in Table 1, the temperature has been changed from 20 °C to 25 °C for relative density and refractive index and optical rotation measurements;

— in Table 2, additional compounds and ranges, [(8Z)-Heptadecene, (9Z)-Nonadecene and Methyleugenol], have been added;

— in Table 2, the “Turkey peasant type” has been deleted;

— in Annex A, the operating conditions and chromatograms obtained on the polar phase have been modified;

— in Annex A, the statement related to a polar column recommended against an apolar column has been moved from typical chromatograms on the polar phase to typical chromatogram on the apolar phase;

— in Annex A, the operating conditions and chromatograms obtained on the apolar phase have been added.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Essential oil of rose (*Rosa x damascena* Miller)

1 Scope

This document specifies certain characteristics of the essential oil of rose (*Rosa x damascena* Miller) cultivated in Turkey, Morocco and Bulgaria, of the Rosaceae family, in order to facilitate assessment of its quality.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 210, *Essential oils — General requirements and guidelines for packaging, conditioning and storage*

ISO 211, *Essential oils — General requirements for labelling and marking of containers*

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 1041, *Essential oils — Determination of freezing point*

ISO 11024 (all parts), *Essential oils — General guidance on chromatographic profiles*

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
essential oil of rose
essential oil obtained by water-steam distillation of the fresh flowers of *Rosa x damascena* Miller, of the Rosaceae family, cultivated in Turkey, Morocco and Bulgaria

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

4 Requirements (all origins)

4.1 General requirements

Essential oil of rose (*Rosa x damascena* Miller) shall meet the requirements and follow the test methods given in Table 1.

Table 1 — Requirements for essential oil of rose (*Rosa x damascena* Miller)

Characteristics	Requirements	ISO test method
Appearance	Liquid or more or less crystallized	—
Colour	Light yellow	—
Odour	Floral, rosy	—
Relative density at 25 °C	0,848 0 to 0,880 0	ISO 279
Refractive index at 25 °C	1,450 to 1,468	ISO 280
Optical rotation at 25 °C	Range from −6° to −1,8°	ISO 592
Freezing point	Range from + 16 °C to 23,5 °C.	ISO 1041

4.2 Chromatographic profile

Carry out the analysis of the essential oil by gas chromatography. Determine the chromatographic profile in accordance with the ISO 11024 series. For the chromatogram obtained, the representative and characteristic components are shown in Table 2. The proportions of these components, indicated by the integrator, shall be as shown in Table 2. This constitutes the chromatographic profile of the essential oil.

Table 2 — Chromatographic profiles

Component	Bulgaria		Turkey		Morocco	
	min. (%)	max. (%)	min. (%)	max. (%)	min. (%)	max. (%)
Ethanol	n.d.	3,0	n.d.	4,5	n.d.	3,0
2-Phenylethanol	n.d.	2,5	n.d.	3,0	n.d.	3,0
Citronellol	20,0	34,0	28,0	47,0	30,0	47,0
Nerol	5,0	12,0	3,0	12,0	3,0	11,0
Geraniol	14,0	22,0	6,0	29,0	6,0	23,0
Methyleugenol	0,80	3,0	1,0	5,0	1,0	6,0
(8Z)-Heptadecene	0,1	0,35	0,08	0,35	0,08	0,25
Heptadecane	1,0	2,5	0,8	3,0	0,6	4,0
(9Z)-Nonadecene	1,5	4,0	1,0	4,5	1,0	4,5
Nonadecane	8,0	15,0	6,0	16,0	7,0	16,0
Heneicosane	3,0	5,5	2,0	5,5	2,0	5,5

n.d. Not detected.

NOTE The chromatographic profile specified in this table is required, contrary to the typical chromatograms given for information in Annex A (see Figures A.1 to A.4).

5 Flashpoint

Information on the flashpoint is given in Annex B.

6 Sampling

Sampling shall be performed in accordance with ISO 212. The minimum volume of the test sample is 25 ml.

NOTE This volume allows each of the tests specified in this document to be carried out at least once.

7 Packaging, labelling, marking and storage

The packaging, labelling, marking and storage shall be in accordance with ISO 210 and ISO 211.