International Standard 3849

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Oil of Ceylon citronella

Huile essentielle de citronnelle type Ceylan

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

International Standard ISO 3849 was developed by Technical Committee ISO/TC 54, *Essential oils*, and was circulated to the member bodies in March 1980.

It has been approved by the member bodies of the following countries :

Austria	France	Portugal
Brazil	India	South Africa, Rep. of
Bulgaria	Italy	Sri Lanka
Canada	Korea, Rep. of	USSR
Egypt, Arab Rep. of	Netherlands	

No member body expressed disapproval of the document.

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Oil of Ceylon citronella

1 Scope and field of application

This International Standard specifies certain characteristics of oil of Ceylon citronella, with a view to facilitating the assessment of its quality.

2 References

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

ISO/R 211, *Essential oils — Labelling and marking 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 875, *Essential oils — Evaluation of miscibility in ethanol.*[1)]

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

ISO 1279, *Essential oils — Determination of carbonyl compounds content — Hydroxylammonium chloride method.*

ISO 3793, *Essential oils — Estimation of primary and secondary free alcohols content by acetylation in pyridine.*

3 Definition

oil of Ceylon citronella : The product obtained by steam distillation of the fresh or partly dried leaves and stems of *Cymbopogon nardus* (Linnaeus) W. Watson var. *nardus*, cultivated in Sri Lanka (Ceylon).

4 Specifications

4.1 Appearance

Clear, mobile liquid.

4.2 Colour

Pale yellow to pale brownish yellow.

4.3 Odour

Characteristic of oil of Ceylon citronella.

4.4 Relative density at 20/20 °C

Minimum : 0,894

Maximum : 0,910

4.5 Refractive index at 20 °C

Minimum : 1,479 0

Maximum : 1,487 0

1) At present at the stage of draft. (Revision of ISO/R 875.)

4.6 Optical rotation at 20 °C

Range $-22°$ to $-12°$.

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

The miscibility in 80 % (V/V) ethanol at 20 °C shall be 1 volume in 2 volumes to give a clear solution.

4.8 Ester value after acetylation

Minimum : 157

Maximum : 200

4.9 Carbonyl value

Minimum : 18 — corresponding to 5 % of carbonyl compounds, expressed as citronellal.

Maximum : 55 — corresponding to 15 % of carbonyl compounds, expressed as citronellal.

4.10 Primary and secondary alcohols content

To be added later.

5 Sampling

See ISO 212.

Minimum volume of final sample : 50 ml.

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 Ester value after acetylation

See ISO 1241.

Saponification time : 1 h 30 min

Volume of acetic anhydride : 15 ml

Relative molecular mass (M_r) = 154,2

6.6 Carbonyl value

See ISO 1279.

Test portion : 4 g

Standing time : 15 min

Calculate the carbonyl value, expressed in milligrams of KOH per gram of oil, by the formula

$$\frac{C}{100} \times \frac{56,1}{M_r} \times 1\,000 = \frac{561\,C}{M_r}$$

where

C is the percentage of carbonyl compounds, expressed as citronellal;

M_r is the relative molecular mass of citronellal (154,2).

Express the carbonyl value to the nearest whole number.

6.7 Primary and secondary alcohols content

See ISO 3793.

Test portion : 1 g

Relative molecular mass (M_r) = 154,2

7 Packing, labelling and marking

See ISO/R 210 and ISO/R 211.