INTERNATIONAL STANDARD 4715

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Essential oils — Quantitative evaluation of residue on evaporation

Huiles essentielles — Évaluation quantitative du résidu d'évaporation

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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 4715 was developed by Technical Committee ISO/TC 54, *Essential oils*, and was circulated to the member bodies in August 1977.

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

Australia	India	South Africa, Rep. of
Austria	Italy	Spain
Brazil	Japan	Sri Lanka
Canada	Korea, Rep. of	Thailand
Chile	Netherlands	Turkey
France	Portugal	U.S.S.R.

No member body expressed disapproval of the document.

Essential oils — Quantitative evaluation of residue on evaporation

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for quantitative evaluation of the residue on evaporation of essential oils.

2 REFERENCES

ISO 212, *Essential oils — Sampling.*

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

3 DEFINITION

residue on evaporation of an essential oil : The residue, expressed as a percentage by mass, obtained by eliminating the volatile fraction of the oil by heating on a boiling water bath for the period of time specified in the International Standard for the oil under examination.

4 PRINCIPLE

Evaporation of the volatile fraction of the essential oil on a boiling water bath. Weighing of the residue.

5 APPARATUS

Usual laboratory equipment, and in particular :

5.1 Boiling water bath, with a plate having holes of 70 mm diameter. The water level in the water bath shall be maintained constant, at about 50 mm below the cover (see figure), throughout the test.

5.2 Evaporating dish, of glass, resistant to the test conditions, of uniform thickness from 1 to 1,5 mm, and having other dimensions in accordance with the figure.

Dimensions in millimetres

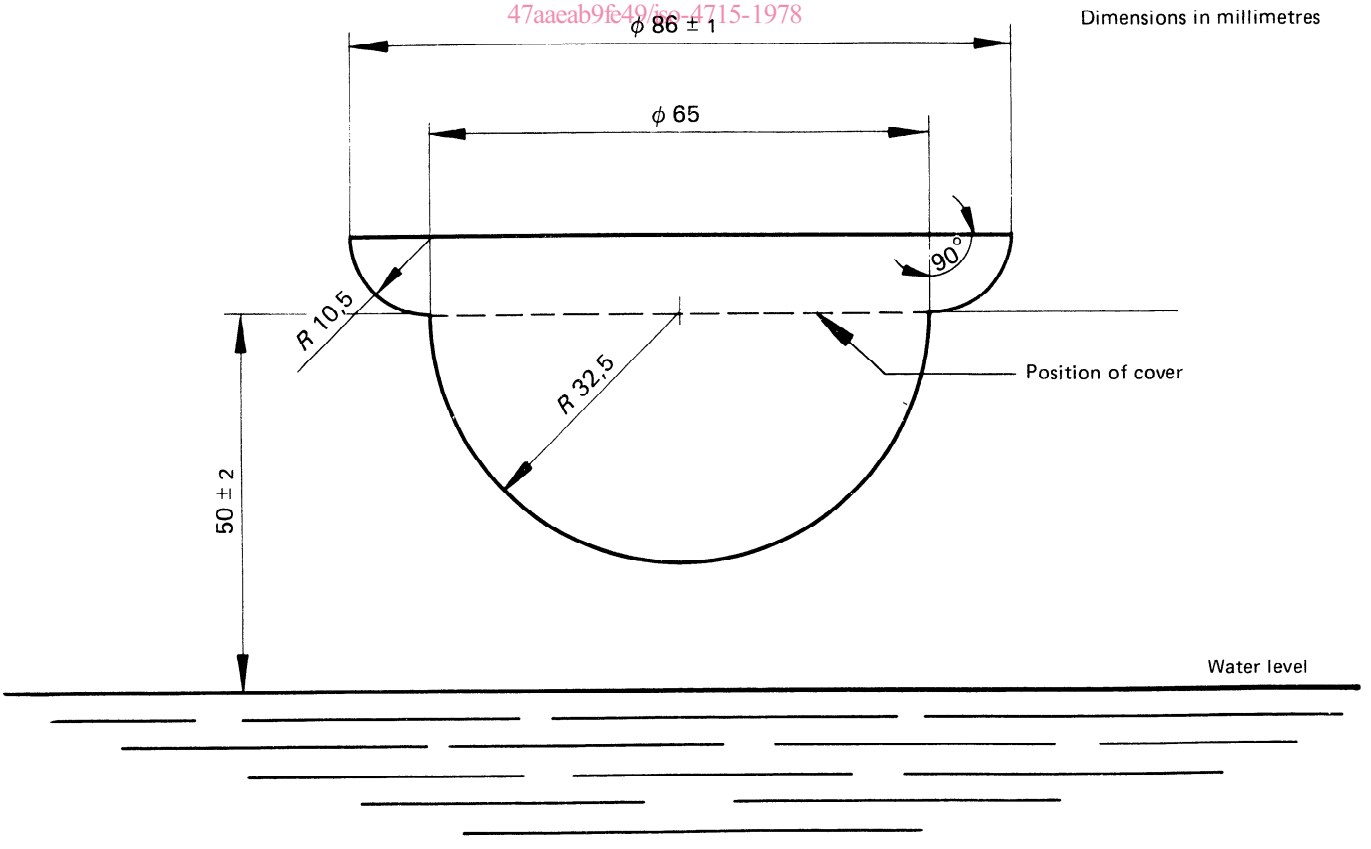

FIGURE — **Evaporating dish in position in the water bath**

5.3 Desiccator, containing an efficient desiccant (such as silica gel).

5.4 Analytical balance.

6 SAMPLING

See ISO 212.

7 PROCEDURE

7.1 Preparation of test sample

See ISO 356.

7.2 Test portion

Weigh into the evaporating dish (5.2), to the nearest 0,001 g, 5 ± 0,05 g of the essential oil, unless a different quantity is stated in the International Standard for the oil under examination.

7.3 Determination

Place the evaporating dish in the water bath (5.1), keeping the latter boiling steadily, and leave it there for the period of time specified in the International Standard for the oil under examination. Carry out the operation in a still atmosphere and without interruption.

After the specified period has elapsed, place the evaporating dish with its contents in the desiccator (5.3), allow it to cool, and weigh to the nearest 0,001 g.

8 EXPRESSION OF RESULTS

The residue on evaporation of the essential oil, expressed as a percentage by mass, is given by the formula

$$\frac{100\, m_1}{m_0}$$

where

m_0 is the mass, in grams, of the test portion;

m_1 is the mass, in grams, of the residue.

Express the result to the first decimal place.

9 TEST REPORT

The test report shall state the method used and the result obtained. It shall also mention any operating conditions not specified in this International Standard, or regarded as optional, as well as any occurrences that might have influenced the result.

The test report shall include all details required for the complete identification of the sample.