
INTERNATIONAL STANDARD



3812

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Essential oils of geranium and rose – Determination of ester value after hot formylation

Huiles essentielles de géranium et de rose – Détermination de l'indice d'ester après formylation à chaud

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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 3812 was drawn up by Technical Committee ISO/TC 54, *Essential oils*, and was circulated to the Member Bodies in June 1975.

It has been approved by the Member Bodies of the following countries :

Australia	India	Thailand
Belgium	Italy	Turkey
Canada	Portugal	U.S.S.R.
France	South Africa, Rep. of	

The Member Body of the following country expressed disapproval of the document on technical grounds :

Netherlands

Essential oils of geranium and rose – Determination of ester value after hot formylation

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a conventional method of determining the ester value after hot formylation, which permits an estimation to be made of the citronellol (rhodinol) content in oils of geranium and rose.

2 REFERENCES

ISO 212, *Essential oils – Sampling.*

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

ISO/R 709, *Determination of ester value and calculation of ester content of essential oils.*

~~ISO/R 1241, *Essential oils – Estimation of free alcohol content by determination of ester value after acetylation.*~~

3 PRINCIPLE

Treatment of the oil by hot formic acid. Determination of the ester value of the formylated oil.

4 REAGENTS

During the analysis, use only reagents of recognized analytical grade, and only distilled water or water of equivalent purity.

In addition to the reagents specified in ISO/R 1241:

4.1 **Anhydrous magnesium sulphate or sodium sulphate**, recently desiccated and powdered.

4.2 **Formic acid**, 900 g/l solution.

Dilute 90 g of formic acid, ρ 1,22 g/ml, with water to 100 ml.

4.3 **Sodium chloride**, 100 g/l aqueous solution.

4.4 **Sodium chloride-sodium carbonate**, aqueous solution.

Dissolve 2 g of sodium carbonate in 100 ml of the sodium chloride solution (4.3).

4.5 **Phenolphthalein**, 2 g/l solution in 95 % (V/V) neutralized ethanol.

5 APPARATUS

Ordinary laboratory equipment, and:

5.1 **Formylation apparatus**, comprising a 100 ml round-bottomed formylation flask connected by a ground glass joint to a glass tube at least 1 m long and with an inside diameter of about 10 mm, to act as an air condenser.

5.2 **Measuring cylinders**, capacity 50 ml, graduated in millilitres.

5.3 **Separating funnels**, capacity 250 ml.

6 SAMPLING

See ISO 212.

7 PROCEDURE

7.1 Preparation of test sample

See ISO 356.

When the oil to be tested is oil of rose, before adding the dehydrating agent wash the oil, using the sodium chloride-sodium carbonate solution (4.4), to eliminate any ethanol that may be present.