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Essential oils — Determination of peroxide value

Huiles essentielles — Détermination de l'indice de peroxyde

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Foreword

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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 documents 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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/TC 54, *Essential oils*.

Essential oils — Determination of peroxide value

1 Scope

This International Standard specifies a method for the determination of the peroxide value in an essential oil. The peroxide value is a measure of the oxidation present.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 212, *Essential oils — Sampling*

ISO 356, *Essential oils — Preparation of test samples*

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

3 Terms and definitions

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

3.1
peroxide value
Ip
number that expresses, in millimoles (or milliequivalents), the quantity of peroxide contained in 1 000 ml of the substance

4 Principle

It is a redox titration of the iodometry type. The iodide ions added to the essential oil oxidize when reacting with peroxides, obtaining iodine which is titrated with thiosulphate. It can be carried out by volumetric or potientiometric titration.

Potientiometric titration is particularly recommended for highly coloured essential oils for which are difficult to appreciate the end point of the coloured indicator (e.g. vetiver essential oil).

5 Reagents

During the analysis, only reagents of recognized analytical grade and reverse osmosis or distilled or deionized water of Grade 3, as defined in ISO 3696, should be used.

5.1 Trichloromethane (chloroform), 99 % (volume/fraction), or cyclohexane, 99,5 % (volume/fraction) for laboratories with restrictions on the use of chloroform.

5.2 Glacial acetic acid, 99,5 % (volume/fraction). Degassed in an ultrasonic bath or by purging with a current pure and dry inert gas (carbon dioxide or nitrogen).

5.3 Potassium iodide, saturated solution of potassium iodide in deionised water, freshly prepared. The solution must remain saturated (undissolved crystals must be present). The solution has to be kept protected from light.

