AS 5027—2002
ISO 7609:1985

Australian Standard™

Essential oils—Analysis by gas chromatography on capillary columns—General method

Standards Australia

This Australian Standard was prepared by Committee CH-021, Essential Oils. It was approved on behalf of the Council of Standards Australia on 14 June 2002 and published on 27 June 2002.

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Australian Association of Certification Bodies

Australian Society of Cosmetic Chemists

Australian Society of Perfumers and Flavourists

Cosmetic Toiletry Fragrance Association of Australia

Essential Oil Producers Association

New South Wales Agriculture

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Essential oils––Analysis by gas chromatography on capillary columns––General method

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PREFACE

This Standard was prepared by the Standards Australia Committee CH-021, Essential Oils. This Standard is identical with and has been reproduced from ISO 7609:1985 (Reconfirmed in 1998), *Essential oils—Analysis by gas chromatography on capillary columns—General method.*

The objective of this Standard is to specify a general method for the analysis of essential oils by gas chromatography on capillary columns for the purpose of determining the content of a specific constituent and/or searching for a characteristic profile.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

(b) In the source text, 'this International Standard' should read 'this Australian Standard.'

(c) A full point substitutes for a comma when referring to a decimal number.

(d) Substitute 'mL' for 'ml' wherever it appears.

The ISO documents listed as normative references in Clause 2 have not been adopted as Australian Standards.

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AUSTRALIAN STANDARD

Essential oils — Analysis by gas chromatography on capillary columns — General method

0 Introduction

Since the description of methods of analysis by gas chromatography is very long, it is considered useful to establish general methods on the one hand, giving detailed information on all the recurrent parameters, apparatus, products, methods, formulae, etc., and on the other hand standards with short details on the determination of specific constituents in the essential oils, giving only those operating conditions specific to the pertinent determination.

These short-version standards will either refer to the present International Standard for gas chromatographic analyses on capillary columns or to ISO 7359 for analyses on packed columns.

1 Scope and field of application

This International Standard specifies a general method for the analysis of essential oils by gas chromatography on capillary columns for the purpose of determining the content of a specific constituent and/or searching for a characteristic profile.

2 References

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

ISO 7359, *Essential oils — Analysis by gas chromatography on packed columns — General method.*

3 Principle

Analysis by gas chromatography under specified conditions of a small quantity[1] of essential oil on a column of small diameter but great length, the inside wall of the column having been previously coated either directly with a specified stationary phase or with an impregnated support (column coated internally with impregnated support).

If required, identification of the different constituents from their retention indexes.

Quantitative determination of specific constituents by measurement of peak areas.

4 Reagents and products

During the analysis, unless otherwise specified, use only reagents of recognized analytical grade and freshly distilled products.

4.1 Carrier gas: hydrogen[2], helium or nitrogen, according to the type of detector used. If detectors are used which require carrier gases other than those mentioned, the carrier gas shall be specified.

4.2 Auxiliary gases: any gases suitable for the detector used. For a flame ionization detector air and hydrogen of high purity.

4.2 Product for checking the chemical inertness of the column: linalyl acetate, of purity at least 98 %.

4.3 Products for checking the efficiency of the column.[3]

4.3.1 Linalol, of purity at least 99 % determined by chromatography.

4.3.2 Methane, of purity at least 99 % determined by chromatography.

4.4 Reference substance, corresponding to the constituent to be determined or detected. The reference substance will be indicated in each relevant International Standard.

4.5 Internal standard.

The internal standard will be specified in each relevant International Standard; it shall elute as near as possible to the con-

1) Take care to ensure that the injected test portion does not saturate the column.

2) Strict observance of safety regulations is essential when using this gas.

3) Other products may be used to check the efficiency of the column; they will be specified in each relevant International Standard.