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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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**Essential oils -- Analysis by gas chromatography on chiral
capillary columns -- General method**

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Table of Contents

Foreword

1 Scope

2 Normative references

3 principle

4 Reagents and products

4.1 gas

5 instruments

5.1 Chromatograph equipped with an injection system, a suitable detector and a program warmer.

5.2 capillary column, made of inert material, diameter $\leq 0.53\text{mm}$, length $10\text{m} \sim 60\text{m}$.

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the translation method identical with the international standard ISO 22972.2004 "Essential oil chiral capillary gas chromatography GC

law".

The documents of our country that are consistent with the corresponding international documents that are normative references in this standard are as follows.

Common method for gas chromatographic analysis of essential oil capillary columns (ISO 7609.1985, IDT);

Preparation of spice samples (ISO 356.1999, MOD).

This standard proposed by the China Light Industry Federation.

This standard by the National Spice cosmetics Standardization Technical Committee (SAC/TC257) centralized.

This standard was drafted unit. Shanghai Institute of spices, Anhui Fengle spice limited liability company, Aipu spices Group Co., Ltd., Wuhan

Yellow Crane Tower Flavor and Fragrance Co., Ltd., Shanghai Institute of Technology.

1 Scope

This standard specifies the general method of capillary gas chromatography analysis of

essential oils, the purpose is to determine the essential oil containing chiral compounds

The specific enantiomeric excess or distribution.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

ISO 356 essential oil sample preparation (Essential oils-Preparation of test samples)

ISO 7609.1985 essential oil capillary gas chromatography common method
(Essential oils-Analysis by gas chromatography on capillary columns-General method)

3 principle

Essential oils are analyzed by gas chromatography under certain conditions and the columns used are of suitable diameter and length and the inner wall of the column is previously impregnated directly

Bonded chiral stationary phase or filled with a carrier containing the chiral stationary phase.

Different chiral components of interest in human oils are identified with standard materials and, if necessary, their retention indices measured

The relative proportion of one component enantiomer.

4 Reagents and products

In the analysis, unless otherwise specified, only approved analytical grade reagents.

4.1 gas

4.1.1 Carrier gas. Hydrogen, helium or nitrogen, or any other gas, depending on the type of detector used.

If a detector requires the use of a carrier gas other than the above gases, it shall be described in the test report.

4.1.2 Replenishment of Detector (Auxiliary Gas) All suitable gases, depending on the detector used.

--- For flame ionization detector, the use of air and high purity hydrogen;

--- For quality detector, use high-purity helium.

4.2 Reference material (standard) in accordance with the pure and mixed enantiomer to be determined.

5.1 Chromatograph equipped with an injection system, a suitable detector and a program warmer.

Injecting and testing systems should be equipped with separate temperature control devices.

5.2 capillary column, made of inert material, diameter $\leq 0.53\text{mm}$, length $10\text{m} \sim 60\text{m}$.

Note. An ordinary chiral stationary phase is based on substituted beta-cyclodextrin (eg, 1,3,6-per-methylated beta-cyclodextrin, placed on OV101?? at 10% concentration).