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

GB/T 14454.4-2008

**Fragrance/Flavor substances -- Determination of refractive
index**

(English Translation)

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Foreword

GB/T 14454, Fragrance/Flavor substances - General test methods, comprises the following parts:

- Part 1: Fragrance/Flavor substances - Preparation of test samples;
- Part 2: Fragrance/Flavor substances - Method for valuation of odour;
- Part 4: Fragrance/Flavor substances - Determination of refractive index;
- Part 5: Fragrance/Flavor substances - Determination of optical rotation;
- Part 6: Fragrance/Flavor substances - Quantitative evaluation of residue on evaporation;
- Part 7: Fragrance/Flavor substances - Determination of freezing point;
- Part 11: Fragrance/Flavor substances - Determination of content of phenols;
- Part 12: Fragrance/Flavor substances - Method for determination of trace chlorinated compounds;
- Part 13: Fragrance/Flavor substances - Determination of carbonyl value and carbonyl compounds content;

-- Part 14: Fragrance/Flavor substances - Preparation of standard solution test solution and indicator solution;

-- Part 15: Oil of sassafras - Determination of safrole and isosafrole content - Gas chromatographic method on packed columns.

This Part is Part 4 of GB/T 14454.

This Part modifies and adopts ISO 280:1998, Fragrance/Flavor substances - Determination of refractive index. Compared with ISO 280:1998, the major technical differences of this Part are as follows:

-- the sampling method and repeatability of ISO 280:1998 are deleted;

-- Annex A is added.

This Part is a revision of GB/T 14454.4-1993, Fragrance/Flavor substances - Determination of refractive index. Compared with GB/T 14454.4-1993, the major changes of this Part are as follows:

-- the sampling method of GB/T 14454.4-1993 is deleted;

-- the conversion formula of refractive indexes at temperature t' and t is added;

Fragrance/Flavor substances -

Determination of refractive index

1 Scope

This Part of GB/T 14454 specifies the method for the determination of refractive index of fragrance/flavor substances.

This Part applies to the determination of refractive index of fragrance/flavor substances.

2 Normative references

The provisions in following documents become the provisions of this Part through reference in this Part. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Part. However, parties who reach an agreement based on this Part are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 14454.1, Fragrance/Flavor substances - Preparation of test samples (GB/T 14454.1-2008, ISO 356:1996, MOD)

3 Terms and definitions

For the purposes of this Part of GB/T 14454, the following terms and definitions apply.

3.1

refractive index

ratio of the sine of the angle of incidence to the sine of the angle of refraction, when a ray of light of defined wavelength passes from air into the essential oil kept at a constant temperature

NOTE: The wavelength specified is $589.3 \text{ nm} \pm 0.3 \text{ nm}$ corresponding to the D1 and D2 lines of the sodium spectrum.

4 Principle

According to the type of instrument used, either the angle of refraction is directly measured or the limit of total reflection is observed, the oil being maintained under conditions of isotropism and transparency.

5.1 All reagents used are analytically pure reagents, and water is distilled water or

water of equivalent purity.

5.2.3 Benzyl benzoate, of refractive index 1.568 5 at 20°C.

5.2.4 1-Bromonaphthalene, of refractive index 1.658 5 at 20°C.

6 Apparatus

Commonly-used laboratory apparatus, especially the following apparatus:

6.1 Refractometer, allowing direct readings of refractive indices between 1.300 0 and

1.700 0 to be made with an accuracy of $\pm 0.000 2$.

6.2 Thermostat or apparatus for temperature maintenance, which ensures a
circulation of water through the refractometer, thus keeping the instrument at the
reference temperature to within $\pm 0.2^{\circ}\text{C}$.

6.3 Light source, sodium light.

NOTE: Diffused daylight or light from an electric lamp may be used for refractometers fitted with
an achromatic compensator.

7.1 Preparation of test sample

Prepare the test sample in accordance with GB/T 14454.1. Bring the test sample to

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