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

GB/T 11540-2008

**Fragrance/Flavor substances -- Determination of relative
density**

(English Translation)

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Table of Contents

Foreword...	3
1 Scope...	4
2 Normative references...	4
3 Terms and definitions...	4
4 Principles...	5
5 Reagents...	5
6 Instruments...	5
7 Specimen preparation...	5
8 Operating procedures...	6
9 Results expression...	6
10 Test report...	8
Appendix A (Normative) Densitometer operating procedures...	9
Appendix B (Normative) Westphal scale method...	10

Foreword

This standard is modified using ISO 279.1998 "Essential oils - Determination of relative density at 20 °C - Reference method", the main differences between this standard and ISO 279.1998 are as follows.

- DELETE the sampling method of ISO 279.1998;
- ADD the determination of the relative density of single and synthetic fragrance substance, as well as the conversion formula of relative density at t' temperature and t temperature;
- ADD the densitometer operating procedures (Appendix A) and Westphal scale method (Appendix B).

This standard is the combination and revision of GB/T 11540-1989 "Single and synthetic fragrance substance - Determination of the relative density" and GB/T 14455.4-1993 "Essential oils - Determination of relative density". The main change of this standard is the addition of densitometer operating procedures.

The Appendix A, Appendix B of this standard are normative appendixes.

This standard was proposed by the China Light Industry Federation.

This standard shall be under the jurisdiction of the National Spice Cosmetics Standardization Technical Committee.

This standard was responsibly drafted by Shanghai Institute of Spices.

1 Scope

This standard specifies the method of determining the relative density of spices at a certain temperature.

This standard applies to the determination of the relative density of essential oils, single and synthetic spices.

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. For the dated references, the subsequent amendments (excluding corrections) or revisions do not apply to this Standard; however, parties who reach an agreement based on this Standard 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 Spices - Specimen preparation (GB/T 14454.1-2008, ISO 356.1996, MOD)

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1

Relative density

The ratio of the mass of spices of a certain volume to the mass of the distilled water of the same volume at same temperature, at a certain temperature (t °C).

Note: It is represented by the symbol , without unit.

3.2

Absolute density

8.1 Preparation of density bottle

Carefully WASH the density bottle (6.1), then USE ethanol, acetone to rinse it sequentially, USE the dry air stream to dry the inner wall of the density bottle.

If necessary, USE dry cloth or filter paper to wipe the outer wall clean.

When the temperature of the balance chamber and that of the density bottle reach a balance, if there is a bottle plug, WEIGH the mass of the density bottle containing the bottle plug, accurate to 0.001 g (essential oil), 0.0002 g (single and synthetic spices).

8.2 Weighing of distilled water

INJECT the density bottle full of distilled water (5.2).

IMMERSE the density bottle in a water bath (6.2). After 30 minutes, ADJUST the water level to the mark if necessary. If there is bottle plug, ADD the plug, USE dry cloth or filter paper to wipe out the wall dry.

When the temperature of the balance chamber and that of the density bottle reach a balance, if there is a bottle plug, WEIGH the mass of the density bottle containing the bottle plug, accurate to 0.001 g (essential oil), 0.0002 g (single and synthetic spices).

8.3 Spice weighing

EMPTY the density bottle, CLEAN and DRY it as described in 8.1.

USE the specimen instead of distilled water, OPERATE in accordance with the provisions of 8.2.

Densitometer operating procedures are as described in Appendix A.

Westphal scale method is as described in Appendix B.

9.1 USE the formula (1) to calculate the relative density .

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