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

**GB 1886.191-2016**

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**National Food Safety Standard -- Food Additives -- Citral**

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People's Republic of China, State Food and Drug Administration**

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### 1 Scope

This standard applies to Litsea cubeba oil or lemon grass oil as a raw material obtained by a single off, or to pentaenoic acid and isopentenol or dehydrogenated camphor Alcohol as raw material by chemical reaction of the food additive citral.

#### 2.1 Chemical name

alpha-citral (geran). (E) -3,7-dimethyl-2,6-octadiene-1-aldehyde beta-citral (orange aldehyde). (Z) -3,7-dimethyl-2,6-octadiene-1-aldehyde

#### 2.2 Molecular formula

C<sub>10</sub>H<sub>16</sub>O

#### 2.3 Structural formula

alpha-Citral (geraniol) beta-citral (orange aldehyde)

#### 2.4 Relative molecular mass

152.24 (according to the.2007 International Relative Atomic Quality)

#### 3.1 sensory requirements

Sensory requirements shall comply with the requirements of Table 1.

#### Table 1 sensory requirements

The project requires a test method Color pale yellow State liquid The sample was placed in a colorimetric tube and visually observed A strong aroma of lemon - like aroma GB/T 14454.2

### 3.2 Physical and chemical indicators

Physical and chemical indicators should be consistent with the provisions of Table 2.

#### Table 2 Physical and chemical indicators

Item Index Test Method Solubility (25 ° C) 1 mL The sample was completely dissolved in 7 mL of 70% by volume ethanol. GB/T 14455.3 Citral content, w /%  $\geq 96.0$  (cis-trans isomer) Appendix A Acid value (in KOH)/(mg/g)  $\leq 5.0$  GB/T 14455.5 Refractive index (20 ° C) 1.486 ~ 1.490 GB/T 14454.4 Relative density (25 degrees C/25 degrees C) 0.885 ~ 0.891 GB/T 11540

### Appendix A Determination of citral content

A.1 Instruments and equipment A.1.1 chromatograph. according to GB/T 11538-2006 in Chapter 5 of the provisions.

A.1.2 Column. Capillary column.

A.1.3 Detector. Hydrogen flame ionization detector.

A.2 Determination method Area normalization method. according to GB/T 11538-2006 10.4 determination of content.

A.3 repeatability and result representation According to GB/T 11538-2006 11.4 provisions, should meet the requirements.

The gas chromatogram and operating conditions of the food additive citral are given in Appendix B.

### Appendix B Food additive - Citral gas chromatogram and operating conditions

(Area normalization method)

B.1 Food additive citral (single) gas chromatogram B.1.1 Food additive citral (single) gas chromatogram The food additive citral (single) gas chromatogram is shown in Figure B.1.

Description.

1 --- beta-citral (orange aldehyde);

2 --- alpha-citral (geraniol);

3 --- beta-carnosine.

Figure B.1 Food additive citral (single) gas chromatogram

B.1.2 Operating conditions B.1.2.1 Column. capillary column, length 60m, inner diameter 0.32mm.

B.1.2.2 Stationary phase. phenyl arylene polymer.

B.1.2.3 Film thickness. 1  $\mu\text{m}$ .

B.1.2.4 Chromatographic Furnace Temperature. The linear temperature is from 80 ° C to 230 ° C at a rate of 3 ° C/min and then at 230 ° C for 3 min.

B.1.2.5 Inlet temperature. 250 ° C.

B.1.2.6 Detector temperature. 300 ° C.

B.1.2.7 Detector. Hydrogen flame ionization detector.

B.1.2.8 Carrier gas. nitrogen.

B.1.2.9 Pre-column pressure. 81 kPa.

B.1.2.10 Injection volume. 0.2  $\mu\text{L}$ .

B.1.2.11 Split ratio. 100. 1.

B.2 Food Additive Citral (Synthetic) Gas Chromatography B.2.1 Food additive citral (synthetic) gas chromatogram Food additive citral (synthetic) gas chromatogram shown in Figure B.2.

Description.

1 --- beta-citral (orange aldehyde);

2 --- alpha-citral (geraniol).

Figure B.2 Food additive citral (synthetic) gas chromatogram

B.2.2 Operating conditions B.2.2.1 Column. capillary column, length 30m, inner diameter 0.25mm.

B.2.2.2 Stationary phase. 100% dimethylpolysiloxane.

B.2.2.3 Film thickness. 0.25  $\mu\text{m}$ .

B.2.2.4 Chromatographic furnace temperature. 120 degrees C constant temperature.

B.2.2.5 Inlet temperature..200 ° C.

B.2.2.6 Detector temperature. 250 ° C.

B.2.2.7 Detector. Hydrogen flame ionization detector.

B.2.2.8 Carrier gas. nitrogen.

B.2.2.9 Pre-column pressure. 0.08 MPa.

B.2.2.10 Injection volume. 0.2 uL.

B.2.2.11 Split ratio. 80. 1.

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