



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

GB 1886.203-2016

**National Food Safety Standard -- Food Additives -- Isoamyl
Isovalerate**

食品安全国家标准 食品添加剂 异戊酸异戊酯

(English Translation)

Issued on: August 31, 2016

Implemented on: January 1, 2017

Issued by: National Health and Family Planning Commission

Table of Contents

- 1 Scope
- 2 Chemical name, molecular formula, structural formula and relative molecular mass
 - 2.1 Chemical name
 - 2.2 Molecular formula
 - 2.3 Structural formula
 - 2.4 Relative molecular mass
- 3 Technical requirements
 - 3.1 Sensory requirements
 - 3.2 Physical and chemical indicators

1 Scope

This standard applies to isovaleric acid and isoamyl alcohol as raw materials by chemical reaction of the food additive isoamyl isovalerate.

2.1 Chemical name

3-methylbutyl 3-methylbutyrate, 3-methylbutyl 2-methylbutyrate, 2-methylbutyl 3-methylbutyrate

2.2 Molecular formula

C₁₀H₂₀O₂

2.3 Structural formula

3-Methyl Butyrate 3-Methyl Butyl 2-Methyl Butyric Acid 3-Methyl Butyl 3-Methyl Butyric Acid 2-Methyl Butyl

2.4 Relative molecular mass

172.27 (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 and colorless State liquid the sample was placed

in a colorimetric tube and visually observed Aroma fragrance, apple - 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 is fully dissolved in 10 mL of 70% by volume ethanol. GB/T 14455.3 Isoamyl isovalerate content, w /% ≥ 98.0 (sum of three isomers) Appendix A Acid value (in KOH)/(mg/g) ≤ 2.0 GB/T 14455.5 Refractive index (20 ° C) 1.411 ~ 1.414 GB/T 14454.4 Relative density (25 ° C/25 ° C) 0.851 ~ 0.857 GB/T 11540 Appendix A Determination of isoamyl isovalerate 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.

Food additives and isoamyl isovalerate are shown in Appendix B for gas chromatograms and operating conditions.

Appendix B

Food additives - Isoamyl isovalerate Gas chromatograms and operating conditions (Area normalization method) B.1 Food additive isopentyl isovalerate Gas chromatogram Food additive isopentyl isovalerate Gas chromatogram shown in Figure B.1.

Description.

1 - 2 - methyl butyrate 3 - methyl butyl ester;

2 - 3 - methyl butyrate 3 - methyl butyrate;

3 --- 3-methyl butyrate 2-methylbutyl ester.

Figure B.1 Food additive Isovalerate Gas chromatogram

B.2 Operating conditions B.2.1 Column. capillary column, length 30m, inner diameter 0.45mm.

B.2.2 Stationary phase. 100% dimethylpolysiloxane.

B.2.3 Film thickness. 2.55 μm .

B.2.4 Chromatographic furnace temperature. linear program temperature from 75 °C to 180 °C, the rate of 3 °C/min.

B.2.5 Inlet temperature. 210 ° C.

B.2.6 Detector temperature. 210 ° C.

B.2.7 Detector. Hydrogen flame ionization detector.

B.2.8 Carrier gas. nitrogen.

B.2.9 Pre-column pressure. 35 kPa.

B.2.10 Injection volume. 0.2 μL .

B.2.11 Split ratio. 30. 1.