



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

GB 1886.137-2015

**National Food Safety Standard -- Food Additives -- Sixteen
aldehyde (also known as Bayberry aldehyde)**

食品安全国家标准 食品添加剂 十六醛（又名杨梅醛）

(English Translation)

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1 Scope

This standard applies to acetophenone, alpha- chloro ethyl acetate as raw materials by a chemical reaction of the food additive sixteen aldehyde (or aldehyde aka arbutus Strawberry aldehyde).

2.1 Chemical Name

2,3-epoxy-3-methyl-3-phenyl-ethyl or 3-methyl-3-phenyl glycidic acid ethyl ester Formula
2.2 C₁₂H₁₄O₃

2.4 Relative molecular mass

206.24 (according to 2007 international relative atomic mass)

3.1 Sensory requirements

Sensory requirements shall comply with the requirements of Table 1.

Table 1 Sensory requirements

Project requires test methods Colorless to pale yellow color Liquid state the sample was placed in a cuvette, were visually observed Aroma has a strong fruity strawberry 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) 1mL sample soluble in 4mL70% (volume fraction) ethanol GB/T 14455.3 Sixteen aldehyde content (sum of cis and trans isomers), w /% >= 98.0 Appendix A Acid value (in dollars KOH)/(mg/g) <= 2.0 GB/T 14455.5 Refractive index (20 °C) 1.5040 ~ 1.5130 GB/T 14454.4 the relative density (25 °C/25 °C) 1.086 ~ 1.096 GB/T 11540 Appendix A Determination of aldehyde content of sixteen A.1 instruments and equipment A.1.1 chromatograph. According to GB/T 11538-2006 provisions in Chapter 5.

A.1.2 Column. capillary column.

A.1.3 Detector. Hydrogen flame ionization detector.

A.2 Determination

Area normalization method. According to GB/T 11538-2006 10.4 Determination.

A.3 repeatability and results are shown Performed according to GB/T 11538-2006 11.4 provisions.

Food Additives sixteen formaldehyde gas chromatograph (area normalization method) See Appendix B.

Appendix B

Food additives sixteen gas chromatogram of the aldehyde (Area normalization method) B.1 food additives sixteen gas chromatogram of the aldehyde Food Additives sixteen aldehyde gas chromatography is shown in Figure B.1.

Explanation.

1 --- trans - sixteen aldehyde;

2 --- cis - sixteen aldehyde.

Figure B.1 food additives sixteen aldehyde gas chromatogram

B.2 operating conditions B.2.1 Column. capillary column length 30m, an inner diameter of 0.53mm.

B.2.2 stationary phase. 100% dimethyl polysiloxane.

B.2.3 film thickness. 1.5μm.

B.2.4 chromatography oven temperature. 160 °C constant temperature 10min, then a linear temperature program from 160 °C ~ 250 °C, the rate of 5 °C/min.

B.2.5 Inlet temperature. 250 °C.

B.2.6 detector temperature. 250 °C.

B.2.7 Detector. Hydrogen flame ionization detector.

B.2.8 carrier gas. nitrogen.

B.2.9 carrier gas flow rate. 7mL/min.

B.2.10 Injection volume. about 0.2 μ L.

B.2.11 split ratio. 60.1.