



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

GB 1886.128-2015

**National Food Safety Standard -- Food Additives -- Methyl
cyclopentenolone (also known as
3-methyl-2-hydroxy-2-ene-1-one)**

食品安全国家标准 食品添加剂 甲基环戊烯醇酮（又名3-甲基-2-羟基-2-环戊烯-1-酮）

(English Translation)

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1 Scope

This standard applies to methyl furan and formaldehyde and dimethylamine as raw materials by chemical reaction of the food additives methyl cyclopentenol ketone (Also known as 3-methyl-2-hydroxy-2-cyclopenten-1-one).

2.1 Chemical name

3-methyl-2-hydroxy-2-cyclopenten-1-one or 3-methylcyclopentane-1,2-dione

2.2 Molecular formula

C₆H₈O₂

2.3 Structural formula

2.3.1 3-methyl-2-hydroxy-2-cyclopenten-1-one 2.3.2 3-methylcyclopentane-1,2-dione

2.4 Relative molecular mass

112.13 (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 white State crystalline powder Place the sample on a clean white paper and observe it visually Aroma with nuts fragrance, diluted with

maple - licorice - 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 g Samples were dissolved in 5 mL of 90% by volume ethanol. GB/T 14455.3 Methyl cyclopentenolone content, w /% ≥ 95.0 Appendix A Melting range/°C 104.0 ~ 108.0 GB/T 14457.3 Heavy metals (Pb)/(mg/kg) ≤ 10.0 GB 5009.74 Arsenic (As)/(mg/kg) ≤ 3.0 GB 5009.11 or GB 5009.76 Appendix A Determination of methyl cyclopentenolone content A.1 Instruments and equipment A.1.1 Chromatograph. according to GB/T 11538-2006 or GB/T 11539-2008 in Chapter 5 of the provisions.

A.1.2 Column. Capillary column or packed column.

A.1.3 Detector. Hydrogen flame ionization detector.

A.2 Determination method Area normalization method. according to GB/T 11538-2006 or GB/T 11539-2008 10.4 determination of content.

Preparation of the sample. Weigh the sample 1g dissolved in 10mL 95% (volume fraction) of ethanol, shake back.

A.3 repeatability and result representation According to GB/T 11538-2006 or GB/T 11539-2008 11.4 provisions.

Food additive Methyl cyclopentenolone Gas chromatogram (area normalization method) See Appendix B.

Appendix B

Food additive - methyl cyclopentenolone gas chromatogram (Area normalization method)

B.1 Food additive Methyl cyclopentenolone Gas chromatogram Food additives methyl cyclopentenolone gas chromatogram shown in Figure B.1.

Description.

1 --- Ethanol (solvent);

2 --- methyl cyclopentenolone.

Figure B.1 Gas chromatogram of food additives methyl cyclopentenolone

B.2 Operating conditions B.2.1 column. packed column, length 2m ~ 3m, diameter 3mm ~ 4mm.

B.2.2 fixed phase. polyethylene glycol, 5% to 10% coated with pickling, dimethyldichlorosilane treatment of 180 μ m ~ 250 μ m (60 mesh ~ 80 mesh) on white body.

B.2.3 chromatographic furnace temperature. linear program temperature from 80 °C ~.200 °C, the rate of 2 °C/min.

B.2.4 Inlet temperature..200 ° C.

B.2.5 Detector temperature..200 ° C.

B.2.6 Detector. Hydrogen flame ionization detector.

B.2.7 Carrier gas. nitrogen.

B.2.8 Carrier gas flow rate. 20 mL/min to 30 mL/min.

B.2.9 Injection volume. 1 µL.