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

GB 28344-2012

**Food additives -- Ethyl acetoacetate
(English Translation)**

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1 Scope

This standard applies to diacetone or ethyl acetate as raw materials for the preparation of food additives ethyl acetoacetate.

2.1 Chemical name

Ethyl 3-oxobutanoate

2.2 Molecular formula

C₆H₁₀O₃

2.4 Relative molecular mass

130.14 (according to the 2007 International Relative Atomic Quality)

3 Technical requirements

3.1

sensory requirements. should be consistent with the provisions of Table 1.

Table 1 sensory requirements

The project requires a test method Colorless to yellow State liquid Place the sample in a colorimetric tube with visual inspection Observation of law Aroma aroma, sweet and rum - like aroma GB/T 14454.2

3.2

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

Table 2 Physical and chemical indicators

Item Index Test Method Ethyl acetoacetate content (sum of two isomers), w /% $\geq$ 97.5
Appendix A Acid value (in KOH)/(mg/g) $\leq$ 5.0 GB/T 14455.5 Refractive index (20 ° C)
1.418 ~ 1.421 GB/T 14454.4 Relative density (25 °C/25 °C) 1.022 ~ 1.027 GB/T 11540
Appendix A Determination of ethyl acetoacetate 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
implementation of the provisions.

Food Additives Ethyl Acetoacetate Typical Gas Chromatography (Area Normalization) See
Appendix B.

Appendix B

Food Additives Ethyl Acetoacetate Typical Gas Chromatography (Area normalization
method) B.1 Food Additives Ethyl Acetoacetate Typical Gas Chromatography Food
additives Acetoacetate Typical gas chromatograms are shown in Figure B.1.

Description.

1 --- ethyl acetoacetate (enol type);

2 - Ethyl acetoacetate (keto).

Figure B.1 Typical additive for food additive acetoacetate

B.2 Operating conditions B.2.1 Column. capillary column, length 30m, inner diameter
0.32mm.

B.2.2 Stationary phase. (5% phenyl) methylpolysiloxane.

B.2.3 Film thickness. 0.25 μ m.

B.2.4 Chromatography furnace temperature. 105 °C constant temperature.

B.2.5 Inlet temperature. 190 ° C.

B.2.6 Detector temperature. 190 ° C.

B.2.7 Detector. Hydrogen flame ionization detector.

B.2.8 Carrier gas. nitrogen.

B.2.9 Carrier gas flow rate. about 30 mL/min.

B.2.10 Injection volume. 0.2 μ L.

B.2.11 Split ratio. 1/75.