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

GB 28366-2012

**Food additive -- 2-ethyl-4-hydroxy-5-methyl-3 (2H)-furanone
(English Translation)**

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1 Scope

This standard is applicable to 2-ethyl-4-hydroxy-5-methyl-3-methyl-2-propene, a food additive made from diethyl oxalate and ethyl chloroacetate (2H) -furanone.

2.1 Chemical name

2-ethyl-4-hydroxy-5-methyl-3 (2H) -furanone

2.2 Molecular formula

C₇H₁₀O₃

2.4 Relative molecular mass

142.15 (according to the 2007 international relative atomic mass)

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 Color yellow State liquid Place the sample in a colorimetric tube with a visual method Observed Aroma sweet fruity, caramel flavor, Scottish milky - 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 2-ethyl-4-hydroxy-5-methyl-3 (2H) -furanone Content, w /% $\geq$ 96.0
Appendix A Refractive index (20 ° C) 1.508 ~ 1.514 GB/T 14454.4 Relative density (25 °C/25 °C) 1.133 ~ 1.143 GB/T 11540 Appendix A Determination of 2 - ethyl - 4 - hydroxy - 5 - methyl - 3 (2H) - furanone 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 2-ethyl-4-hydroxy-5-methyl-3 (2H) -furanone Typical gas chromatograms (area normalization) See Appendix B.

Appendix B

Food Additive 2-Ethyl-4-hydroxy-5-methyl-3 (2H) -furanone Typical Gas Chromatography (Area normalization method) B.1 Food Additive 2-Ethyl-4-hydroxy-5-methyl-3 (2H) -furanone Typical Gas Chromatography Food additives 2-ethyl-4-hydroxy-5-methyl-3 (2H) -furanone Typical gas chromatograms are shown in Figure B.1.

Figure B.1 Food Additive 2-Ethyl-4-hydroxy-5-methyl-3 (2H) -furanone Typical Gas Chromatography

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

B.2.2 Stationary phase. modified polyethylene glycol.

B.2.3 Film thickness. 1.0 μ m.

B.2.4 chromatographic furnace temperature. 80 °C constant temperature 1min, and then linear program temperature from 80 °C ~ 220 °C, the rate of 10 °C/min, 220 °C constant Temperature 20min.

B.2.5 Inlet temperature. 240 ° C.

B.2.6 Detector temperature. 240 ° C.

B.2.7 Detector. Hydrogen flame ionization detector.

B.2.8 Carrier gas. nitrogen.

B.2.9 Carrier gas flow rate. 20 mL/min.

B.2.10 Injection volume. about 3 μ L.

B.2.11 Split ratio. 1/243.