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

GB 29967-2013

**Food additive -- Triethyl citrate
(English Translation)**

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 - 2.1 Chemical Name
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1 Scope

This standard applies to citric acid and ethanol for raw materials of food additives triethylcitrate.

2.1 Chemical Name

Hydroxy-1,2,3 propane tricarboxylic acid triethyl ester Formula 2.2 C₁₂H₂₀O₇

2.4 Relative molecular mass

276.29 (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 Color colorless to pale yellow color of the sample is placed over the inner tube, were visually observed State oily liquid Faint fruity 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 Triethyl citrate content, w /% ≥ 99.0 Appendix A Refractive index (20 °C) 1.440 ~ 1.446 GB/T 14454.4 the relative density (25 °C/25 °C) 1.136 ~ 1.140 GB/T 11540 Acid value (in dollars KOH)/(mg/g) ≤ 1.0 GB/T 14455.5 Heavy Metals (as

Pb)/mg/kg $\leq$ 10 GB/T 5009.74 Moisture content /% $\leq$ 0.25 GB/T 6283 Appendix A
Content Determination Triethyl citrate 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 According to GB/T 11538-2006 provisions in 11.4,
shall comply with the requirements.

Food additives triethylcitrate gas chromatograph (area normalization method) See
Appendix B.

Appendix B

Food additive gas chromatogram triethyl citrate (Area normalization method) B.1 food
additive gas chromatogram Triethyl citrate

Figure B.1.

Figure B.1 food additive gas chromatogram Triethyl citrate

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

B.2.2 stationary phase. 5% phenyl methyl polysiloxane.

B.2.3 film thickness. 0.45 μm .

B.2.4 chromatography oven temperature. 240 $^{\circ}\text{C}$ constant temperature.

B.2.5 inlet temperature. 280 $^{\circ}\text{C}$.

B.2.6 detector temperature. 300 $^{\circ}\text{C}$.

B.2.7 Detector. Hydrogen flame ionization detector.

B.2.8 carrier gas. nitrogen.

B.2.9 carrier gas flow rate. 1.6 mL/min.

B.2.10 Injection volume. 0.2 μL .

B.2.11 split ratio. 30?1.