



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

GB 1903.13-2016

**Food additive -- Levocarnitine
(English Translation)**

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1 Scope

This standard applies to the food nutrient fortifier Levocarnitine (L-carnitine), which is made through chemical synthesis, using epichlorohydrin or ethyl 4- chloroacetoacetate as raw material, OR through microbial fermentation, using betaine as raw material.

2 Chemical name, structural formula, molecular

formula, relative molecular mass

2.1 Chemical name

(R)-3-carboxy-2-hydroxy-N,N,N-trimethylpropylammonium hydroxide inner salt

2.3 Molecular formula

C₇H₁₅NO₃

2.4 Relative molecular mass

161.20 (according to 2011 international relative atomic mass)

3.1 Sensory requirements

Sensory requirements shall meet the requirements of Table 1.

Appendix A

Inspection method

A.1 General provisions

For the reagents and water used in this standard, unless otherwise specified, they all refer to the analytical reagents and the grade-3 water, which are specified in GB/T 6682. The standard solutions used in the test, the standard solutions for impurity determination, the preparations and products, are prepared in accordance with GB/T 601, GB/T 602, GB/T 603, unless otherwise specified. The solution used in the test refers to an aqueous solution, when it is not specified which solvent is used to prepare it.

A.2 Identification test

Use the potassium bromide smear method, to determine the infrared absorption spectrum, in accordance with GB/T 6040. The measured infrared spectrum shall be consistent with the standard L-carnitine spectrum (see Figure B.1).

A.3.1 Reagents and materials

A.3.1.1 Glacial acetic acid.

A.3.1.2 Standard titration solution of perchloric acid: $c(\text{HClO}_4) = 0.1 \text{ mol/L}$.

A.3.2 Instruments and equipment

Potentiometric titrator: Equipped with glass electrodes.

A.3.3 Analytical procedures

Weigh about 0.1 g (accurate to 0.0001 g) of the specimen, which had been dried to constant weight. Add 20 mL of glacial acetic acid. Use perchloric acid standard titration solution, to perform potentiometric titration. The titration result is corrected by a blank test.

A.3.4 Result calculation

The mass fraction w_1 of L-carnitine content (calculated on a dry basis) is calculated according to formula (A.1):

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