

ICS 67.220.20
CCS C 54;X40



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

GB 28310-2012

**Food additive β -carotene (fermentation)
(English Translation)**

Issued on: January 1, 1970

Implemented on: January 1, 1970

Issued by: Ministry of Health of the People's Republic of China

Table of Contents

- 1 Scope
- 2 Molecular formula, structural formula, relative molecular mass
 - 2.1 Molecular formula
 - 2.2 Structural formula
 - 2.3 Relative molecular mass
- 3 Technical requirements

1 Scope

This standard applies to the filamentous fungus *Bacillus thuringiensis* (Blakesleatrispora) fermentation of food additives derived from beta-carotene.

2.1 Molecular formula

C₄₀H₅₆

2.3 Relative molecular mass

536.88 (according to 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 dark red to brown red State crystalline or crystalline powder Take appropriate sample in a clean, dry white porcelain dish Natural light, observe the color and state

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 Total beta-carotene content (calculated as C₄₀H₅₆), w /% ≥ 96.0 Appendix A, A.3 Absorbance ratio A₄₅₅/A₄₈₃ 1.14 ~ 1.19 A₄₅₅/A₃₄₀ ≥ 0.75 Appendix A, A.4 Burning residue, w /% ≤ 0.2 Appendix A A.5 Ethanol, w /% ≤ Ethyl acetate, w /% ≤ 0.8 (alone or both) Isopropanol, w /% ≤ 0.1 Isobutyl acetate, w /% ≤ 1.0 Appendix A, A.6

Lead (Pb)/(mg/kg) $\leq$ 2 GB 5009.12 Total arsenic (in As)/(mg/kg) $\leq$ 3 GB/T 5009.11 Note. The commercial beta-carotene product should be in line with this standard beta-carotene as raw material, can be added in line with the requirements of food additives quality requirements Rubber, antioxidant and/or edible vegetable oil, dextrin, starch, the total beta-carotene content and absorbance ratio meet the identification value.

Appendix A

Testing method

A.1 General provisions the reagents and water used in the standard, when not specified in other requirements, refer to the analytical reagent and the third class specified in GB/T 6682-2008 water. Standard titration solution used in the test, the standard solution for the determination of impurities, preparations and products, without any other requirements, GB/T 601, GB/T 602, GB/T 603. The solution used in the test refers to water when it is not specified with the formulation of the solvent Solution.

A.2 Identification test A.2.1 Solubility test A.2.1.1 Reagents and materials A.2.1.1.1 Ethanol.

A.2.1.1.2 Vegetable oil.

A.2.1.2 Analysis steps at room temperature to take a certain amount of samples were added to a certain amount of water, ethanol and vegetable oil, shake 0.5min ~ 5min, observe the sample of the dissolution of the situation. beta-carotene is almost insoluble in water and ethanol [(solute/solvent)]