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

GB 34469-2017

Feed additive - beta-Carotene (synthetic)

饲料添加剂 β -胡萝卜素（化学合成）

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**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

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Foreword

The first chapter of this standard, Chapter 3 and Chapter 5 is mandatory, the rest are recommended. This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard is proposed and managed by the National Feed Industry Standardization Technical Committee (SAC/TC76). This standard was drafted unit. New and into Zhejiang Co., Ltd., Zhejiang Veterinary Drugs Feed Supervision, Zhejiang Pharmaceutical Co., Ltd.. The main drafters of this standard. Yang Jinshu, Zhang Junxin, Zhang Weijiang, Yang Yahong, Zhu Congying, Ren Yuqin, Shi Xing Fen, Regent, Jia Wenxia, plum Na, Ye Yueheng, Su Junfen. Feed Additives Beta-Carotene (Chemical Synthesis)

1 Scope

China's mandatory standard for synthetic beta-carotene used as a feed additive - the provitamin A carotenoid added to the diets of poultry, dairy cattle and breeding stock, both as a vitamin A precursor and, in laying hens, for the pigmentation of the yolk that consumers use to judge an egg. It specifies the requirements, the test methods, the inspection rules and the labelling, packaging, transport, storage and shelf life of feed additive beta-carotene produced by chemical synthesis. The requirements cover the assay, the appearance, the loss on drying, the residue on ignition and the particle size, together with the limits on the heavy metals and on the residual solvents and intermediates left by the synthesis - the last of these being what distinguishes a synthetic product from a natural extract and what a feed grade standard has to control. But the property that governs the whole document is instability. Beta-carotene is a long conjugated polyene: it is destroyed by oxygen, by light, by heat and by trace metals, all of which it meets in a feed mill, and a product that has degraded has lost exactly the activity it was bought for while looking much the same. That is why it is supplied not as the pure substance but as a formulated product - beadlets or a suspension, with the carotene protected by a matrix and an antioxidant - and why the standard sets the assay together with the stability, the packaging that must exclude air and light, and a stated shelf life. A supplement that has oxidised in the bag is an expensive colourant that no longer colours. Issued on 14 October 2017 and in force since 1 May 2018.

This standard specifies the feed additive beta-carotene (chemical synthesis) requirements, test methods, inspection rules and labeling, packaging, transportation, loss, storage and shelf life. This standard applies to chemical synthesis of the feed additive beta-carotene (chemical synthesis). Chemical name (all trans) -1,1'-(3,7,12,16-tetramethyl-1,3,5,7,9,11,13,15,17-octadecene nonene -1,18-diyl) bis (2,6,6-trimethylcyclohexene). Formula $C_{40}H_{56}$. Relative molecular mass 536.88 (By International Relative Atomic Weight in 2007). Structure.

2 Normative references

The following documents for the application of this document are essential. For dated references, only the dated version applies to this article. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 603 chemical reagent test methods used in the preparation of preparations and products

GB/T 6682 analytical laboratory water specifications and test methods GB 10648 feed label

GB/T 14699.1 feed sampling

3 Requirements

3.1 Appearance and traits This product is red to reddish brown or purple brown crystal or crystalline powder, odorless. In the air easily oxidized, light, heat instability. In three Dissolved in methyl chloride, slightly soluble in cyclohexane, very slightly soluble in petroleum ether, almost insoluble in water, ethanol.

3.2 Specifications Technical indicators should meet the requirements of Table 1.