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

**GB 34460-2017**

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**Feed additive - L-sodium ascorbate**

饲料添加剂 L-抗坏血酸钠

**Issued on: October 14, 2017**

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## Foreword

GB 34460-2017 was issued on 14 October 2017 by the General Administration of Quality Supervision, Inspection and Quarantine and the Standardization Administration of the People's Republic of China, and has been in force since 1 May 2018.

The document is a compulsory national standard: the absence of the /T in the designation marks it as mandatory rather than recommended.

## 1 Scope

China's compulsory product standard for L-sodium ascorbate used as a feed additive - vitamin C in the form of its sodium salt. Animals under intensive husbandry are given vitamin C for the same reason people are, but the difficulty is that ascorbic acid is one of the least stable compounds put into feed: it oxidises on contact with moisture, air, light and the trace metals present in mineral premixes, and a batch can lose much of its activity between mixing and feeding. The sodium salt is used because it is less acidic and keeps better in a compound feed, and because it dissolves readily in water it can also be given through a drinking line. Since the animal is dosed on the assumption that the declared content is real, the standard's job is to make that number verifiable: it fixes the appearance, the assay range, the loss on drying, the specific rotation - which is what distinguishes the biologically active L-form from its mirror image - the pH of a solution, and limits on heavy metals and arsenic. It specifies the requirements, test methods, inspection rules, labelling, packaging, transport, storage and shelf life of the feed additive L-sodium ascorbate, and applies to the product made from L-ascorbic acid. Being a GB without the /T suffix, it is mandatory.

This standard specifies the requirements, test methods, inspection rules, labelling, packaging, transport, storage and shelf life of the feed additive L-sodium ascorbate.

This standard applies to the feed additive L-sodium ascorbate prepared from L-ascorbic acid as the raw material.

Chemical name: L-sodium ascorbate, also known as sodium vitamin C. Molecular formula:  $C_6H_7NaO_6$ . Relative molecular mass: 198.11, according to the 2007 international relative atomic masses. The structural formula is given in the standard.

## 2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document, including all amendments, applies.

GB/T 601 Chemical reagent - Preparations of standard volumetric solutions; GB/T 602 Chemical reagent - Preparations of standard solutions for impurity; GB/T 603 Chemical reagent - Preparation of reagent solutions for use in test methods.

GB/T 6682 Water for analytical laboratory use - Specification and test methods; GB/T 9724 Chemical reagent - General rule for the determination of pH.

GB 10648 Feed label; GB/T 14699.1 Feeding stuffs - Sampling.

### 3.1 Appearance and properties

The product is a white to slightly yellow crystal or crystalline powder, odourless. It is fairly stable in the dry state; on exposure to light the colour deepens, and after absorbing moisture, or in aqueous solution, it slowly oxidises and decomposes. It is readily soluble in water, very slightly soluble in ethanol, and insoluble in trichloromethane or ether.

### 3.2 Technical indices

The product shall meet the requirements of Table 1, which fixes the assay range of L-sodium ascorbate on the dry basis, a maximum loss on drying, the permitted range of specific rotation on the dry basis, the permitted pH range of a 10 per cent aqueous solution, and maximum values for heavy metals calculated as lead and for total arsenic.

## 4 Test methods

The reagents and water used in the test methods of this standard are, unless otherwise stated, analytical grade reagents and grade three water as specified in GB/T 6682.

4.1 Sensory examination: a suitable quantity of the sample is placed in a clean, dry white porcelain dish, and its colour and state are observed and its odour smelled under natural

light.

4.2 Identification tests: the sample is subjected to a set of identification reactions - a reduction test with alkaline cupric tartrate solution, the flame test for the sodium ion, a precipitation test with potassium pyroantimonate, and an infrared spectrophotometric determination whose spectrum shall agree with the reference spectrum given in Annex A.

4.3 Determination of the L-sodium ascorbate content: the sample is titrated with standard iodine solution, the end point being judged from the colour of the starch indicator, and the content is calculated from the volume consumed against a blank titration.