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

GB 34457-2017

Feed additive-Tricalcium phosphate

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10 Lead (Pb)/(mg/kg) $\leq$

10.0 Sulfate (calculated as SO₂-4) /% $\leq$ 5.0

18.0 Loss on drying (H₂O) /% $\leq$

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 Feed Station, Sichuan Province, China Feed Industry Association, Guizhou Province Feed Supervision. The main drafters of this standard. Bai Fan, Wang Liwen, Zhang Jian Yong, Zeng Xiaofang, Wei Min, Qian Xin Shen, Zhang Jing, Zhao Gui, Li Yun, Wang Yu-ping. Feed additives tricalcium phosphate

1 Scope

GB 34457-2017 is the Chinese national standard on feed additive-tricalcium phosphate, in the field of agriculture. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 14 October 2017 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 May 2018. Classification: ICS 65.120, CCS B46. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the requirements of feed additives tricalcium phosphate, test methods, inspection rules, labeling, packaging, transportation, storage and shelf life. This standard applies to high temperature sintering, chemical precipitation, calcium phytate hydrolysis feed additive tricalcium phosphate. Molecular formula. $\text{Ca}_3(\text{PO}_4)_2$

2 Normative references

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

GB/T 5917.1 forage particle size determination two sieve screening method

GB/T 6435 Determination of moisture in feed Determination of calcium in feed GB/T 6436-2002

GB/T 6682 analytical laboratory water specifications and test methods

GB 10648 feed label Determination of total arsenic in feedstuffs GB/T 13079-2006

GB/T 13080 Determination of lead in feed - Atomic absorption spectrometry Determination of fluoride in feed - Ion selective electrode method

GB/T 13088 Determination of chromium in feed

GB/T 14699.1 feed sampling

3 Requirements

3.1 Appearance and traits Color consistent, powdery, odorless, insoluble in water, soluble in dilute hydrochloric acid or dilute nitric acid.

3.2 Specifications Technical indicators should be consistent with the provisions of Table 1.

Table 1 technical indicators Project Indicators Calcium (Ca) /% $\geq$

30.0 Total phosphorus (P) /% $\geq$

4.2.1 Reagents and materials

4.2.1.1 Glacial acetic acid.

4.2.1.2 hydrochloric acid solution. Hydrochloric acid = 1 1.

4.2.1.3 ammonia solution. Ammonia water = 23.

4.2.1.4 ammonium oxalate solution (100g/L). Weigh 10g ammonium oxalate, add water 100mL dissolved.

4.2.1.5 silver nitrate solution (17g/L). Weigh 1.7g silver nitrate, 100mL water dissolved.

4.2.1.6 nitric acid solution. Nitric acid water = 18.

4.2.2 Analysis steps

4.2.2.1 Identification of calcium ions Weigh the sample 0.1g, add 5mL glacial acetic acid dissolved (4.2.1.1), boiled and cooled and filtered, the filtrate was added 5mL ammonium oxalate solution (4.2.1.4) Produce a white precipitate. This precipitate should be dissolved in hydrochloric acid solution (4.2.1.2).

4.2.2.2 Identification of phosphate Weigh the sample 0.1g, dissolved in 10mL water, add 1mL silver nitrate solution (4.2.1.5), a yellow precipitate, the precipitate should be dissolved Ammonia solution (4.2.1.3) or nitric acid solution (4.2.1.6), insoluble in glacial acetic acid (4.2.1.1).

4.3 calcium content determination

4.3.1 Analysis steps

4.3.1.1 Preparation of test solution Weigh the sample 0.5g (accurate to 0.0001g), placed in a 100mL beaker, moistened with a small amount of water and add 10mL hydrochloric acid solution and 20mL distilled water, cover the surface dish to boil, when the solution volume is less than 20mL, add a small amount of distilled water to 30mL, a total of boiling 10min. After cooling into 250mL volumetric flask, water to volume, shake, dry filtration (discard the first 20mL filtrate). This solution is a test Solution A, used for the determination of calcium content and total phosphorus content.

4.3.1.2 Preparation of blank test solution In addition to not adding the sample, the amount of other reagents added and the preparation of the test solution exactly the same, and the same sample with the same treatment.

4.3.2 Determination Pipette Pipette 10mL Test Solution A and blank test solution were

placed in 250mL Erlenmeyer flask. According to GB/T 6436- 2002, Chapter 13.2 and Chapter 14 of the method of determination and calculation.

4.4 Determination of total phosphorus content

4.4.1 Principle In acidic medium, with Quimociac as precipitating agent, all the phosphate in the sample solution forms quinoline phosphomolybdate to precipitate, Filter, drying, weighing, calculation of total phosphorus content.

4.4.2 Reagents and materials

4.4.2.1 hydrochloric acid solution. Hydrochloric acid = 1 4.

4.4.2.2 Sodium molybdate.

4.4.2.3 Citric acid.

4.4.2.4 Nitric acid.

4.4.2.5 Quinoline.

4.4.2.6 Acetone.

4.4.2.7 Quimociac solution Weigh 70g of sodium molybdate (4.4.2.2) was dissolved in 100mL of water (solution a); Weigh 60g of citric acid (4.4.2.3) was dissolved in 150mL Water and 85 mL nitric acid (4.4.2.4) (solution b); pour solution a into solution b with stirring (solution c); add in 100 mL water 35mL of nitric acid (4.4.2.4) and 5mL of quinoline (4.4.2.5) (solution d); the solution d into solution c, after 12h, with glass crucible Crucible filtration, then add 280mL acetone (4.4.2.6), diluted with water to 1000mL, mix. Store in polyethylene bottle.

4.4.3 Instruments and Equipment

4.4.3.1 glass sand crucible diameter 5 μ m ~ 15 μ m.

4.4.3.2 electric oven temperature.

4.4.4 Analysis steps Pipette 20mL test solution A (4.3.1.1) and blank test solution (4.3.1.2) were placed 250mL beaker, add Water to a total volume of about 100mL, add 50mL Quimociac solution (4.4.2.7), cover the watch glass, in (75 $\pm$ 5) °C water bath heat insulation 30s (During the process of adding reagent and heating, no open flame or stirring shall be allowed to avoid agglomeration). Cool to room temperature during cooling Stirring three times to four times, with a pre-(180 $\pm$ 5) °C or (250 $\pm$ 10) °C constant weight of glass sand crucible suction filtration of the supernatant by decantation Wash the bottle washing sedimentation 5 times to 6 times, each time about 20mL of water, and finally the precipitate was moved into the glass sand crucible, washed with water 3 times ~ 4 times. The glass frit crucible together with the precipitate is placed in a thermostatic oven, dried at (180 $\pm$ 5) °C