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

GB 22548-2017

Replacing GB/T 22548-2008

Feed additive-Monocalcium phosphate

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1 Scope

GB 22548-2017 is the Chinese national standard on feed additive-monocalcium 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, test methods, inspection rules and labeling, packaging, transportation and storage of the feed additive monocalcium phosphate. This Standard applies to the feed additive monocalcium phosphate that is produced by wet-process phosphoric acid. Molecular formula: $\text{Ca}(\text{H}_2\text{PO}_4)_2 \cdot \text{H}_2\text{O}$ Relative molecular mass: 252.06 (according to the international relative atomic mass in 2007)

2 Normative references

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

GB/T 601, Chemical reagent. Preparations of reference titration solutions

GB/T 602, Chemical reagent. Preparations of standard solutions for impurity

GB/T 603, Chemical reagent. Preparations of reagent solutions for use in test methods

GB/T 6003.1-2012, Test sieves. Technical requirements and testing. Part 1: Test sieves of metal wire cloth

GB/T 6436-2002, Determination of calcium in feed

GB/T 6682-2008, Water for analytical laboratory use. Specification and test methods GB 10648, Feed label

GB/T 13079-2006, Determination of total arsenic in feeds

GB/T 13080-2004, Determination of lead in feeds. Method using atomic absorption spectrometry water which is specified in

GB/T 6682-2008. The standard titration solutions, impurity standard solutions, preparations and products that are used in the test are prepared according to the provisions of GB/T 601, GB/T 602 and

GB/T 603 when no other regulations are specified.

4.3 Sensory test The appearance is judged visually under sufficient natural light.

4.4.1.1 Glacial acetic acid

4.4.1.2 Hydrochloric acid solution: 1+1.

4.4.1.3 Ammonia solution: 1+1.

4.4.1.4 Ammonium oxalate solution: 100 g/L.

4.4.1.5 Silver nitrate solution: 17 g/L.

4.4.2 Identification of calcium ions Take a small amount, about

0.1 g, of sample; add 5 mL of glacial acetic acid to dissolve; boil. Filter after cooling; add 5 mL of ammonium oxalate solution to the filtrate to give a white precipitate. This precipitate is dissolved in a hydrochloric acid solution.

4.4.3 Identification of phosphate radical Take a small amount, about

0.1 g, of the sample; dissolve it in 10 mL of water; add 1 mL of silver nitrate solution to form a yellow precipitate. This precipitate is soluble in excess ammonia solution and insoluble in glacial acetic acid.

4.5 Determination of total phosphorus content

4.5.1 Method summary In the acidic medium, the phosphate radical in the test solution all forms a precipitate with the added quinoxaline ketone precipitant. Calculate the content by filtration, drying, and weighing.

4.5.2 Reagents and materials

4.5.2.1 Hydrochloric acid solution: 1+1.

4.5.2.2 Nitric acid solution: 1+1. is previously constant at $180^{\circ}\text{C} \pm 5^{\circ}\text{C}$ to suction-filter the supernatant; use decantation to wash the precipitate for 5 ~ 6 times. About 20 mL of water shall be used each time; transfer the precipitate to the glass mortar; continue to use water to wash for 3 ~ 4 times. Place the glass mortar in an electrically heated drying oven; bake at $180^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 45 min; take out and place in a desiccator to cool to room temperature; weigh.

4.5.5 Result calculation The total phosphorus content is calculated, in mass fraction of phosphorus (P) w_1 , according to Formula (1): Where: m_1 -- the mass of quinoline phosphomolybdate precipitate that is formed by the test solution, in grams (g); m_0 -- the mass of quinoline phosphomolybdate precipitate that is formed by the blank test solution, in grams (g); m -- sample mass, in grams (g). 0.014 0 -- the conversion coefficient from phosphorus molybdate to phosphorus. Take the arithmetic mean of the parallel determination results as the determination result; the absolute difference between the two

parallel determination results shall not be larger than 0.2%.

4.6 Determination of water-soluble phosphorus content Weigh approximately

0.5 g of the sample, accurate to 0.000 2 g, in a porcelain (or agate) mortar. Add water to grind; add 25 mL of water each time; continuously grind for 4 times; transfer all the aqueous solution to a 250 mL volumetric flask; shake for 30 min (2 times/s); use water to dilute to the mark; shake well. Dry filtration; discard the initial 20 mL of filtrate; pipette 20 mL of the filtrate; place it in a 250 mL beaker. The following operations are determined and calculated according to that which starts from "Add 10 mL of nitric acid solution..." of 4.5.4.3; perform a blank test at the same time.

4.7 Determination of calcium content

4.7.1 Method summary Same as Chapter 10 of GB/T 6436-2002.

4.8.2 Reagents Same as Chapter 4 of GB/T 13083-2002.

4.8.3 Instruments Same as Chapter 5 of GB/T 13083-2002.

4.8.4.1 Preparation of test solution A Weigh about

0.5 g ~

1.00 g of sample, accurate to 0.0002 g, in a 100 mL volumetric flask; add 16 mL of hydrochloric acid solution (1+4); use water to dilute to the mark; shake well.

4.8.4.2 Determination Pipette 25 mL of the test solution; place it in a 50 mL volumetric flask; use total ion buffer solution to dilute to the mark; shake well. Determine and calculate according to Chapter 7 of GB/T 13083-2002.

4.9.1 Method summary Same as Chapter

5.1 of GB/T 13079-2006.

4.9.2 Reagents Same as Chapter

5.2 of GB/T 13079-2006.

4.9.3 Instruments Same as Chapter

5.3 of GB/T 13079-2006.

4.9.4.1 Preparation of test solution B Weigh

5.0 g of sample, accurate to 0.000 2 g; add 20 mL of hydrochloric acid solution (1+1); heat to dissolve; cool; place in a 250 mL volumetric flask; add water to dilute to the mark; shake