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**GB**

NATIONAL STANDARD OF THE  
PEOPLE'S REPUBLIC OF CHINA

**GB 1886.330-2021**

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**National food safety standard - Food additives -**

**Ammonium dihydrogen phosphate**

食品安全国家标准 食品添加剂 磷酸二氢铵

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**Issued by: National Health Commission of the People's Republic of  
China;  
State Administration for Market Regulation.**

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# National food safety standard - Food additives - Ammonium dihydrogen phosphate

## 1 Scope

This Standard applies to the food additive ammonium dihydrogen phosphate that is produced with liquid ammonia and the food additive phosphoric acid (including wet-process phosphoric acid) as raw materials.

## 2 Molecular formula and relative molecular mass

### 2.1 Molecular formula

$\text{NH}_4\text{H}_2\text{PO}_4$

### 2.2 Relative molecular mass

115.02 (according to the international relative atomic mass in 2018)

## 3 Technical requirements

### 3.1 Sensory requirements

Sensory requirements shall be in accordance with Table 1.

**Table 1 – Sensory requirements**

### 3.2 Physical and chemical indicators

Physical and chemical indicators shall be in accordance with Table 2.

**Table 2 – Physical and chemical indicators**

## Appendix A

### Inspection method

**WARNING:** Some reagents which are used in the test method of this Standard are toxic or corrosive, so, be careful when operating! If necessary, perform it in a fume hood. If it splashes on the skin or eyes, use plenty of water to rinse immediately; if it is serious, seek medical attention immediately.

#### A.1 General provisions

The reagents and water that are used in this Standard, when no other requirements are specified, refer to analytical reagents and grade-III water which is specified in GB/T 6682. The standard titration solution, the standard solutions, preparations and products for impurity determination, which are used in the test, are all prepared in accordance with the provisions of GB/T 601, GB/T 602, and GB/T 603, when no other requirements are specified. The used solution, if not indicated which solvent is used, refers to aqueous solution.

#### A.2 Identification test

##### A.2.1 Reagents and materials

**A.2.1.1** Nitric acid solution: 1+8.

**A.2.1.2** Ammonia solution: 1+1.

**A.2.1.3** Sodium hydroxide solution: 40 g/L.

**A.2.1.4** Silver nitrate solution: 17 g/L.

**A.2.1.5** Litmus red test paper.

##### A.2.2 Identification method

###### A.2.2.1 Identification of phosphate ion

Weigh 1.0 g of the sample; dissolve it in 20 mL of water; add silver nitrate solution, to produce a yellow precipitate. This precipitate is soluble in ammonia solution or nitric acid solution.

###### A.2.2.2 Identification of ammonium ion

$$w_1 = \frac{(V_1 - V_2) \times c \times M}{m \times 1\,000} \times 100\% \quad \dots\dots\dots (A.1)$$

Where:

$V_1$  – the volume of sodium hydroxide standard titration solution that is consumed by the titration sample solution, in milliliters (mL);

$V_2$  – the volume of sodium hydroxide standard titration solution that is consumed by the titration blank sample solution, in milliliters (mL);

$c$  – the concentration of the sodium hydroxide standard titration solution, in moles per liter (mol/L);

$M$  – the molar mass of ammonium dihydrogen phosphate ( $1/2\text{NH}_4\text{H}_2\text{PO}_4$ ), in grams per mole (g/mol) ( $M = 57.51$ );

$m$  – sample mass, in grams (g).

1 000 – conversion factor.

The test result is based on the arithmetic mean of the parallel determination results. The absolute difference between two independent determination results that are obtained under repeatability conditions is not more than 0.3%.

## **A.4 Determination of pH (10 g/L aqueous solution)**

### **A.4.1 Reagents and materials**

Carbon dioxide-free water.

### **A.4.2 Instruments and apparatuses**

Acidity meter: resolution of 0.01 pH, equipped with glass electrode and saturated calomel electrode (or composite electrode).

### **A.4.3 Analysis steps**

Weigh  $1.00 \text{ g} \pm 0.01 \text{ g}$  of the sample; place it in a 100 mL beaker; use carbon dioxide-free water to dissolve; transfer it into a 100 mL volumetric flask; use carbon dioxide-free water to dilute to the mark; shake well. Pour into a dry beaker; use a calibrated acidity meter to measure the pH of the sample solution.

The test result is based on the arithmetic mean of the parallel determination results. The absolute difference between two independent determination results that are obtained under repeatability conditions is not more than 0.1.

## **A.5 Determination of lead (Pb)**

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