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

GB/T 8573-2010

**Determination of available phosphorus content for compound
fertilizers**

复混肥料中有效磷含量的测定

(English Translation)

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Foreword

This Standard is one of the series of standards for compound fertilizer test methods.

These series of national standards are listed below.

- GB/T 8571-2008 "Preparation of laboratory samples for compound fertilizers";
- GB/T 8572-2010 "Determination of total nitrogen content for compound fertilizers titrimetric method after distillation";
- GB/T 8573-2010 "Determination of available phosphorus content for compound fertilizers";
- GB/T 8574-2010 "Determination of potassium content for compound fertilizers potassium tetraphenylborate gravimetric method";
- GB/T 8576-2010 "Determination of free water for compound fertilizers - Vacuum oven method";
- GB/T 8577-2010 "Determination of free water for compound fertilizers - Karl Fischer method";
- GB/T 24890-2010 "Determination of chloride content for compound fertilizers";
- GB/T 24891-2010 "Determination of particle size for compound fertilizers".

This Standard replaces GB/T 8573-1999 "Determination of available phosphorus content for compound fertilizers".

Main difference between this edition and the previous edition is. the standard format is rewritten according to the rules of standardization work.

This Standard is proposed by China Petroleum and Chemical Industry Association.

This Standard is under the jurisdiction of National Technical Committee on Fertilizers and Soil Conditioners of Standardization Administration of China (SAC/TC 105).

Responsible drafting organizations of this Standard. National Center for Quality Supervision and Testing of Fertilizers (Shanghai), Stanley Fertilizer Co., Ltd.

Main drafters of this Standard. Zhang Minghong, Liu Yun, Wu Juan, Gao Jinhua.

This Standard was first issued in 1988 and revised for the first time in 1999.

Determination of available

phosphorus content for compound fertilizers

1 Scope

This Standard specifies the extraction and determination method for water-soluble phosphorus content and available phosphorus content for compound fertilizers and specifies the calculation method for the percentage of water-soluble phosphorus in available phosphorus.

This Standard applies to compound fertilizers containing phosphorus (including mixed fertilizers), does not apply to compound fertilizers, such as ammonium phosphate, nitric acid phosphate and potassium dihydrogen phosphate, that are synthesized by chemical method.

2 Normative references

The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. For dated reference, subsequent amendments to (excluding corrections to), or revisions of, any of these publications do not apply.

However, the parties to agreements based on this Standard are encouraged to investigate the possibility of applying the most recent editions of the standards. For undated references, the latest edition of the normative document referred to applies.

GB/T 8571 Preparation of laboratory samples for compound fertilizers

HG/T 2843 Chemical fertilizer products - Standard volumetric standard reagent and indicator solutions for chemical analysis

3 Principle

USE water and ethylenediamine tetraacetic acid disodium (EDTA) solution to extract water-soluble phosphorus and available phosphorus from compound fertilizers. In acid medium, orthophosphate ions in the extract react with quimociac reagent and produce yellow quinoline phosphomolybdate precipitates. USE quinoline phosphomolybdate gravimetric method to determine the phosphorus content.

7.1 The water-soluble phosphorus content (w1) and available phosphorus content (w2),

expressed as the mass fraction of phosphorus pentoxide (P_2O_5), are calculated according to formulas (1) and (2)

where.

m1 - in determination of water-soluble phosphorus, the value of the mass of the quinoline phosphomolybdate precipitates obtained, in grams (g);

m2 - in determination of water-soluble phosphorus, the value of the mass of the quinoline phosphomolybdate precipitates obtained in the blank test, in grams (g);

0.03207 - the coefficient for converting the mass of quinoline phosphomolybdate to

the mass of phosphorus pentoxide;

mA - in determination of water-soluble phosphorus, the value of the mass of the sample, in grams (g);

250 - the value of the total volume of the sample solution, in milliliters (mL);

m3 - in determination of available phosphorus, the value of the mass of the quinoline phosphomolybdate precipitates obtained, in grams (g);

m4 - in determination of available phosphorus, the value of the mass of the quinoline phosphomolybdate precipitates obtained in the blank test, in grams (g);

mB - in determination of available phosphorus, the value of the mass of the sample, in grams (g).

The calculation results are expressed as two digits after the decimal point, and the arithmetic mean of the parallel determination results is taken as the determination result.

7.2 Allowable difference

The absolute difference between parallel determination results is not more than 0.20 %;

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