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**CHEMICAL INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

HG/T 2520-2006

Phosphorous acid for industrial use

工业亚磷酸

(English Translation)

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Foreword

This standard is not equivalent to Japanese standard JISK 8063-1994 "Reagent phosphorous acid" (Japanese version).

This standard replaces HG/T 2520-1993 "phosphorous acid".

The main technical differences between this standard and HG/T 2520-1993 are as follows.

- ADD superior product index in requirements (3.2 in this standard).

This standard was proposed by China Petroleum and Chemical Industry Association.

This standard shall be centralized by the National Standardization Technical Committee - Inorganic Chemistry Chemical Branch (SAC/TC63/SC1).

Main drafting organizations of this standard. Hangzhou Daming Chemical Co., Ltd., and Tianjin Chemical Research & Design Institute.

1 Scope

This standard specifies the industrial phosphorous acid's requirements, test methods, inspection rules, signs, labels, packaging, transport, and storage.

This standard applies to phosphorous acid for industrial use. The product is mainly used as production raw materials of phosphorous acid, synthetic fibres and organophosphorus pesticides etc. It is also used in the production of high-efficient

water treatment agent - amino trimethylene phosphonic acid.

Molecular formula. H_3PO_3

Relative molecular mass. 81.99 (according to 2001 international relative atomic mass)

2 Normative References

The following documents contain provisions which, through reference in this standard, become provisions of this standard. For dated references, their subsequent amendments (excluding corrections) or revisions do not apply to this standard. However, the parties who enter into agreement based on this standard are encouraged to investigate whether the latest versions of these documents are applicable. For undated reference documents, the latest versions apply to this standard.

GB/T 190-1990 Labels for Packages of Dangerous Goods

GB/T 191-2000 Packaging - Pictorial Marking for Handling of Goods (eqv ISO 780.1997)

GB/T 1250 Rules for expression and judgment of limiting values

GB/T 3049-1986 Chemical products for industrial use. General method for determination of iron content. 1,10-Phenanthroline spectrophotometric method (eqv ISO 6685.1982)

GB/T 6678 General principles for sampling chemical products

GB/T 6682-1992 Water for analytical laboratory use - Specification and test methods (eqv ISO 3696.1987)

HG/T 3696.1 Inorganic chemicals for industrial use. Preparations of standard and

4.4.1 Method summary

In nitric acid medium, chloride ions in test solution and silver nitrate form insoluble silver chloride. When chloride ion content is low, within a certain time, the silver chloride is shown in suspension, so that the solution is cloudy. The turbidity of the test solution is compared with the standard turbidity solution.

4.4.2.3 Chloride standard solution. 1 mL of the solution contains 0.010 mg of chlorine

(Cl).

PIPETTE 1.00 mL of chloride standard solution that is prepared according to HG/T

3696.2 PLACE in 100 mL volumetric flask. USE water to dilute to the mark. SHAKE

evenly.

4.4.3 Analysis steps

For superior product, WEIGH (3.00 ± 0.01) g of sample; for first-class product and qualified product, WEIGH (0.50 ± 0.01) g of sample. PLACE in 50mL colorimetric tubes. ADD 20mL of water to dissolve. Then ADD 2 mL of nitric acid solution and 2 mL of silver nitrate solution. USE water to dilute to the mark. SHAKE evenly. PLACE for 10min. The turbidity must not be greater than the standard turbidity solution.

The standard is - for superior product, PIPETTE 3.00mL of chloride standard solution; for first-class product, PIPETTE 5.00mL of chloride standard solution; for qualified product, PIPETTE 10.00mL of chloride standard solution. PLACE in 50mL colorimetric tubes. It is treated as same as the test sample at the same time.

4.5.1 Method summary

Same as Chapter 2 of GB/T 3049-1986.

4.5.2 Reagents

Chapter 3 of GB/T 3049-1986 and;

4.5.3 Instruments

The turbidity of the test solution is compared with the standard turbidity solution.

4.6.2.3 Magnesium mixed solution. WEIGH 5.5 g of magnesium chloride and 7 g of

ammonium chloride. PLACE in 200 mL beaker. ADD 65 mL of water to dissolve. Then ADD 35 mL of ammonia solution. PLACE for 24 h. FILTER if necessary.

4.6.2.4 Phosphate standard solution. 1 mL of solution contains 0.1 mg of phosphate

(PO₄).

PIPETTE 10.00 mL of phosphate standard solution that is prepared according to HG/T 3696.2. PLACE in 100 mL volumetric flask. USE water to dilute to the mark. SHAKE evenly.

4.6.3.1 Preparation of test solution

WEIGH (1.00±0.01) g of sample. PLACE in 100 mL volumetric flask. USE water to dilute to the mark. SHAKE evenly.

4.6.3.2 Determination

PIPETTE 10mL od solution. PLACE in 25 mL colorimetric tube. ADD 5 mL of aqueous ammonia solution and 5mL of magnesium mixture solution. USE water to dilute to the mark. SHAKE evenly. PLACE for 10min. The turbidity shall not be greater than the standard turbidity solution.

The standard is - for superior product, PIPETTE 1.00mL of chloride standard solution; for first-class product, PIPETTE 2.00mL of chloride standard solution; for qualified product, PIPETTE 6.00mL of phosphate standard solution. PLACE in 25mL colorimetric tubes. USE hydrochloric acid solution to adjust pH~2. It is treated as same as the test sample at the same time.

4.7.1 Method summary

In hydrochloric acid medium, sulphate in test solution and barium chloride form insoluble barium sulphate and is shown in suspension, so that the solution is cloudy. The turbidity of the test solution is compared with the standard turbidity solution.

4.7.2 Reagents

use shall comply with the requirements of the standard.