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

GB/T 9727-2007

Replacing GB/T 9727-1988

**Chemical reagent -- General method for the determination of
phosphate**

化学试剂 磷酸盐测定通用方法

(English Translation)

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Foreword

This standard and ISO 6353-1. 1982 "Reagents for chemical analysis - Part 1. General test method" non-equivalent.

This standard replaces GB/T 9727-1988 "General method for the determination of phosphate chemical reagents." this standard did not differ from the 1988 edition of the standard in technical content, according to GB/T 1.1-2000 requirements, just to do some editing Modifications.

The standard proposed by China Petroleum and Chemical Industry Association.

This standard by the National Standardization Technical Committee Chemistry Chemicals Branch (SAC/TC63/SC3) centralized.

This standard was drafted. Sinopharm Chemical Reagent Co., Ltd.

1 Scope

This standard specifies the use Extraction - Determination of phosphate phosphorus molybdenum blue colorimetric common method.

This standard applies to chemical agents trace determination of orthophosphate. Spectrophotometric or visual colorimetric detection range in butyl acetate for 0.2 μ g/mL ~ 2 μ g/mL (in PO₄ dollars).

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including

errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 602 Determination of impurities in chemical reagents prepared standard solution (GB/T 602-2002, ISO 6353-1. 1982, NEQ) with GB/T 603 chemical reagent test method Preparations of articles (GB/T 603-2002, ISO 6353-1 with. 1982, NEQ) GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-1992, neq ISO 3696. 1987) GB/T 9721 Chemicals General molecular absorption spectrophotometry (UV and visible part)

3 PRINCIPLE OF THE METHOD

The concentration of Ba (HNO₃) is 0.4mol/L ~ 1.4mol/L solution of nitric acid, phosphoric acid and ammonium molybdate quantitatively, generating phosphomolybdate Acid (phosphorus molybdenum yellow), phosphorus and molybdenum may be butyl acetate from 1.0mol/L ~ 1.4mol/L nitric acid solution quantitatively extracted, thereby interfering with the compound Excess reagent was arsenate and molybdate separation. Added stannous chloride - ascorbic acid solution, the phosphorus reduced to phosphorus molybdenum yellow and molybdenum blue. According phosphorus molybdenum blue Shades of color that can be used visual colorimetry or spectrophotometry phosphate.

4 Reagents and materials

Unless otherwise specified in this standard, the standard solution, preparations and products, according to GB/T 602, the provisions of the preparation of GB/T 603, the experimental Water should be consistent with GB/T 6682 water in three specifications, are the mass fraction of the solution used in "%" represents.

5 Instruments

5.1

General laboratory equipment.

5.2

Spectrophotometer shall comply with GB/T 9721's.

6.1 Visual colorimetry

Sampling according to product standards and the preparation of test solution (if necessary with 2 drops of saturated 2,4-dinitrophenol indicator solution as indicator the solution was adjusted pH value). Test solution of 10mL, 10mL added nitric acid solution (13%), then the solution of Ba acidity (H⁺) was 1.0mol/L ~ 1.2mol/L.

Add 2mL ammonium molybdate solution (100g/L), placed 20min. Butyl acetate was added 10mL accurate extraction rested stratification. The aqueous phase was discarded, the organic phase was washed with a solution (5%) hydrochloric acid and washed twice, each 5mL, the aqueous phase was separated. Stannous chloride in the organic phase was added 0.2mL - ascorbic acid Solution, gently shake rested stratification. The aqueous phase was discarded, ethanol is added 1mL, shake. The organic phase was blue with the standard colorimetric solution