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

GB/T 23842-2009

**General method for the determination of silicon content of
inorganic chemicals -- Reduced molybdosilicate
spectrophotometric method**

无机化工产品中硅含量测定通用方法 还原硅钼酸盐分光光度法

(English Translation)

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Foreword

This revised standard adopts ISO 6382. 1981 "General method for determination of silicon content --- reducing silicon molybdate spectrophotometry." Taking into account the differences in the scope and application of the conditions in the use of ISO 6382. 1981, the present standards were amended as appropriate. For technical Differences have been incorporated into the text. We give a list of these technical differences and the reasons in Appendix A and Appendix B of this standard is given in chapter Article number with ISO 6382. 1981 corresponding controls.

The Standard Appendix A, Appendix B and Appendix C are informative appendices.

The standard proposed by China Petroleum and Chemical Industry Association.

This standard by the National Standardization Technical Committee chemical inorganic chemicals Club (SAC/TC63/SC1) centralized.

This standard is mainly drafted by. Fluoride Chemicals Co., Ltd., CNOOC Tianjin Chemical Research & Design Institute.

1 Scope

This standard specifies the general method of inorganic chemical products, silicon content determination --- reducing silicon molybdate salt spectrophotometric method.

This standard applies to the general method of inorganic chemical products Determination of silicon content in. Preparation of the test solution should be analyzed with reference to specific product standard products Accurate, to be tested in the SiO₂ content of the liquid should be in the range of 2μg ~ 200μg, interference limits are given in Appendix C.

2 Normative reference standard

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 6682-2008 analytical laboratory use specifications and test methods (ISO 3696. 1987, MOD) Preparation of HG/T 3696.2 inorganic chemical products, chemical analysis of impurity standard solution Preparations of HG/T 3696.3 inorganic chemical products, chemical analysis Principle 3 in the presence of hydrochloric acid, sodium fluoride-treated sample, so that any form of polysilicon depolymerization. Masking interfering with boric acid fluoride ion, at pH Was 1.1 ± 0.2 , the solution state silicon oxide is formed (yellow) silicon molybdate.

In the presence of oxalic acid, sulfuric acid medium in sufficient strength, the selective reduction of silicon molybdate complexes, to eliminate the interference of phosphate.

The maximum absorption wavelength (815nm) at spectrophotometrically measuring the absorbance of the blue complex.

4 Safety Tips

Reagents and materials used in this standard has a toxic and corrosive, the operation need to be careful! Avoid contact with skin and eyes.

Should immediately wash with water splashing such as the skin or eyes, severe cases should be treated immediately.

5 General Provisions

The criteria used in the analysis of analytical reagent-free silicon as possible, the water is third grade GB/T 6682-2008 specified in Water distillation equipment by secondary quartz distilled water or equivalent purity water, demineralized water is not appropriate. All reagents should store in silicon-free material (such as Polyethylene) bottles made. The reagents used are by analytical reagents used in the tests impurity standard solution, preparations and products, did not indicate in its He requested, according to HG/T 3696.2, HG/T 3696.3 regulations prepared.

6 Reagents

Sulfuric acid solution was 6.1. 1 + 3.

Hydrochloric acid solution was 6.2. 1 + 2.

6.3

boric acid solution. a saturated solution at room temperature (about 48g/L).

6.4

oxalate dihydrate ($\text{H}_2\text{C}_2\text{O}_4 \cdot 2\text{H}_2\text{O}$) solution. 100g/L.

6.5

NaF solution. 20g/L, the solution was stored in bottles made of non-silicon material.

6.6

Dibasic sodium molybdate dihydrate. 140g/L.