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

GB/T 24227-2009

**Chromium ores and concentrates -- Determination of silicon
content -- Spectrophotometric method and gravimetric method**

铬矿石和铬精矿 硅含量的测定 分光光度法和重量法

(English Translation)

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Table of Contents

- Foreword
- 1 Scope
- 2 Normative references
- 3 Spectrophotometry
 - 3.1 Principle
 - 3.2 Reagents

Foreword

This revised standard adopts ISO 5997. 1984 "chrome ore and chrome ore silicon content determination of molecular absorption spectrometric method and gravimetric method." (In English).

This standard and ISO 5997. 1984 as compared to, mainly to do the following changes.

- "2 Normative references" in place of national standards with international standards corresponding;
- 3.2.6.2 in the "Silicon standard solution" by the ISO 5997. 1984's "1mL of the standard solution containing silicon 0.0050mg" revised the standard "1mL of the standard solution containing silicon 0.0025mg";
- Added "3.4 Sampling and sample preparation";
- Added "3.5.1 Determination of times";
- Added "4.4 Sampling and sample preparation";
- Added "4.5.1 Determination of times";
- Added "5 test report." the standard proposed by China Iron and Steel Association.

This standard by the National Standardization Technical Committee of pig iron and ferroalloy.

This standard was drafted. Tianjin People's Republic of China Exit Inspection and Quarantine, metallurgical industry Information Standards Institute, Ningbo Inspection and Phytophthora Institute of Science and Technology.

1 Scope

This standard specifies the determination of Chromium ores and concentrates silicon content gravimetric method and spectrophotometry.

This standard applies to the determination of Chromium ores and concentrates silicon content. Measurement range (mass fraction). 0.05% ~ spectrophotometry 0.5%; 0.5% by weight of law to 15.0%, this standard shall comply with the relevant provisions of GB/T 24228 of.

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 6682 analytical laboratory use specifications and test methods (GB/T 6682-2008, ISO 3696. 1987, MOD) GB/T 12806 Laboratory glassware single marking flask (GB/T 12806-1991, eqvISO 1042. 1983) GB/T 12808 standard laboratory glassware single line pipette (GB/T 12808-1991, eqvISO 648. 1977) GB/T 24228 Chromium ores and concentrates - General method (GB/T 24228-2009, ISO 6629. 1981, MOD) GB/T 24220 chrome ore samples were analyzed for moisture intrudes Gravimetric method (GB/T 24220-2009, ISO 6129. 1981, MOD) GB/T 24243 chrome ore samples taken parts (GB/T 24243-2009, ISO 6153. 1989, IDT) ISO 6154 chrome ore sample preparation

3.1 Principle

Sample decomposition with mixed flux to the flooding melt. Adjusting the pH of the solution with hydrochloric acid, in the presence of citric acid, ammonium molybdate and silica Reaction of silicon molybdate yellow heteropoly acid, ascorbic acid be reduced to the blue silicon molybdate complex. Generated by spectrophotometer Complex photometric measurements.

3.2 Reagents

Unless otherwise stated, use only reagents of recognized analytical grade and distilled water or equivalent purity of its water, in line with the provisions of GB/T 6682's.

3.2.1

mixed flux, take 100g of anhydrous sodium carbonate, 50g sodium tetraborate (pre-ignition to no foaming) and 0.5g of potassium nitrate in corundum or hard Finely ground steel in a mortar mix.

3.2.2

hydrochloric acid, rho1.19g/mL.

3.2.3

hydrochloric acid, 1 + 3.

3.2.4

mixed acid, 5g of citric acid and 1g of ascorbic acid dissolved in 100mL of water.
Formulated with time.

3.2.5

ammonium molybdate solution, 50g/L.

Ammonium molybdate solution is prepared by recrystallization, quartz, or stored in a polyethylene container. When recrystallization, the ammonium molybdate was dissolved in 250g 400mL water, heated to 70 °C ~ 80 °C, filtered with filter paper slowly cooled to room temperature. 300mL distillation of ethanol was added under stirring,