

ICS 77.120.90
CCS H 14;D42

YS

**NONFERROUS METALS INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

YS/T 514.4-2009

Replacing YS/T 514.7-2006

**Method for chemical analysis of high-titanium slag and rutile.
Part 4: Determination of silicon dioxide content. Gravimetric
analysis and molybdenum blue spectrophotometry**

高钛渣、金红石化学分析方法 第4部分：二氧化硅量的测定 称量法、钼蓝分光光度法(有黑印，不清晰)

(English Translation)

Issued on: December 4, 2009

Implemented on: June 1, 2010

Issued by: Ministry of Industry and Information Technology

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Foreword

YS/T 514 "high titanium slag and rutile chemical analysis method" is divided into 10 parts.

--- Part 1. Determination of titanium dioxide content of ammonium ferric sulfate titration;

--- Part 2. Determination of total iron content of dichromate method;

--- Part 3. Determination of sulfur content of high frequency infrared absorption method;

--- Part 4. Determination of the amount of silica weighing method, the molybdenum blue spectrophotometric method;

--- Part 5. aluminum oxide content - EDTA titration;

--- Part 6. Determination of a manganese oxide content by flame atomic absorption spectrometry;

--- Part 7. calcium oxide, magnesium oxide content - Flame atomic absorption spectrometry;

--- Part 8. Determination of the amount of phosphorus antimony molybdenum blue spectrophotometric method;

--- Part 9. calcium oxide, magnesium oxide, manganese oxide, phosphorus, chromium oxide and vanadium pentoxide content - Inductively coupled plasma Daughters emission spectrometry;

--- Part 10. Determination of the amount of carbon frequency infrared absorption method.

This section YS/T Part 4 514.

The partial replacement of YS/T 514.7-2006 "high titanium slag and rutile - The gravimetric

method for chemical analysis of the determination of silicon dioxide content." this portion of YS/T 514.7-2006 compared to the main changes are as follows.

--- Increased molybdenum blue spectrophotometric method;

--- Increasing the repeatability limit and quality assurance and control provisions.

The non-ferrous metal part by the National Standardization Technical Committee and centralized.

This section is responsible for drafting unit. Zunyi Titanium Co., Ltd., China Nonferrous Metals Industry Standards and Metrology Institute for Quality.

Participated in the drafting of this section. Jinchuan Group Co., Ltd. Fushun Titanium.

1 Method, weighing method

1 Scope

YS/T 514 This part provides high titanium slag and rutile determination of the amount of silica.

This section applies to high titanium slag and rutile in the determination of the amount of silica. Measuring range. 1.00% to 10.00%.

2 Method summary

Sample with sodium carbonate - sodium peroxide mixed flux melt, leaching with dilute acid, silicic acid heated to dehydration, washing the filter through after 1000 °C Burning precipitated silica. Then treated with hydrofluoric acid, the silicon tetrafluoride to silicon vaporized form is removed. Quality before and after treatment with hydrofluoric acid Difference calculation of the percentage of silica.

3 Reagents

Unless otherwise indicated in the analysis using only recognized as analytical grade reagents and distilled or deionized water or equivalent purity.

3.1

sodium carbonate - sodium peroxide mixed flux. 3 parts of anhydrous sodium carbonate and 2 parts of sodium peroxide mix.

3.2

hydrofluoric acid (rho about 1.15g/mL).

3.3

nitric acid (rho about 1.42g/mL).

3.4

HCl (1 + 1).

3.5

sulfate (1 + 1).

3.6

sulfate (5 + 1).

3.7

Hydrogen peroxide (1 + 9).

3.8

ammonium thiocyanate solution (50g/L).

3.9

washing solution. Pipette 45mL sulfuric acid (rho about 1.84g/mL) was slowly added 950mL of water, and mix. After cooling peroxide was added 5mL Hydrogen (3.7), and mix.

4 Sample

4.1

Sample size should be less than 90μm.

4.2

Sample required in advance at 105 °C ~ 110 °C drying 2h, placed in a desiccator, cool to room temperature.

5.1 Sample

Weigh 0.5g sample, accurate to 0.0001g.

5.2 Determination of the number of Determination to do 3 parts of the sample parallel to the mean value.

5.3 Blank test

Along with sample blank test.