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CCS D31

**SN**

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

**SN/T 3100.1-2012**

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**Iron ores. Determination of total iron content. Automatic  
photometric titration method  
(English Translation)**

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### Foreword

SN/T 3100 "Determination of total iron content of iron ore" Expected divided into several sections.

This section SN/T 3100 Part 1.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section proposed and managed by the National Certification and Accreditation Administration Committee.

### 1 Scope

SN/T 3100 This section specifies the method of total iron ore Determination automatic photometric titration.

This section applies to the determination of total iron content in iron ores. Measurement range. 27% to 72% (by mass).

### 2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 1361 iron ore analysis methods General rules and regulations Laboratory use specifications and test methods GB/T 6682 Analysis GB/T 10322.1 iron ore sampling and sample preparation methods

### 3 Method summary

Fusion with sodium peroxide in a sample, the melt water-leached, filtered, ferric hydroxide precipitate is dissolved with sulfuric acid. In sulfuric acid medium trichloride Titanium

reducing ferric ion, sodium tungstate as an indicator to remove excess titanium trichloride with cerium sulfate solution. In N- phenyl anthranilate as indicator, titrate with cerium sulfate solution of divalent iron by photometric titration curve obtained total iron content.

## 4 Reagents

Unless otherwise noted, all reagents were of analytical grade and water for the three water GB/T 6682 regulations.

### 4.1

high iron. purity > 99.99%.

### 4.2

sodium peroxide.

4.3 30% hydrogen peroxide.

### 4.4

titanium trichloride solution (15% to 20%).

### 4.5

sulfate ( $\rho = 1.84\text{g/mL}$ ).

### 4.6

sulfate (13).

### 4.7

sulfate (18).

### 4.8

sulfuric acid (199).

### 4.9

Sodium hydroxide solution (1g/L). Weigh 1g of sodium hydroxide, dissolved in 1000mL water. Stored in a plastic bottle.

### 4.10

titanium trichloride solution (5%). Measure 30mL solution of titanium trichloride (4.4), was added a solution of 50mL sulfuric acid (4.7), diluted with water to 100mL, mix and store in a brown reagent bottle. Formulated with time.

### 4.11

iron standard solution (0.05000mol/L). Weigh 2.7923g high iron (4.1) in the 400mL beaker, 200mL sulfur Acid solution (4.6), cover the surface of the pan, over low heat to dissolve completely 1mL solution of hydrogen peroxide (4.3), heated to boiling, in time to make the

excess peroxide Hydrogen (to no small bubbles), cooled and transferred to 1000mL volumetric flask, dilute with water to the mark.