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CCS D53



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

**GB/T 14506.11-2010**

Replacing GB/T 14506.11-1993

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**Methods for chemical analysis of silicate rocks - Part 11:  
Determination of potassium oxide and sodium oxide content**

硅酸盐岩石化学分析方法 第11部分：氧化钾和氧化钠量测定

**Issued on: November 10, 2010**

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Standardization Administration of China**

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### Foreword

GB/T 14506 "Methods for chemical analysis of silicate rocks" 30 consists of the following components.

- Part 1. Determination of water absorption;
- Part 2. Determination of combined water;
- Part 3. Determination of the amount of silica;
- Part 4. Determination of the amount of aluminum oxide;
- Part 5. Determination of total iron content;
- Part 6. Determination of calcium oxide content;
- Part 7. Determination of the amount of magnesium oxide;
- Part 8. Determination of the amount of titanium dioxide;
- Part 9. Determination of the amount of phosphorus pentoxide;
- Part 10. Determination of the amount of manganese oxide;
- Part 11. Determination of the amount of sodium hydroxide and oxide;
- Part 12. Determination of the amount of fluorine;
- Part 13. Determination of sulfur content;

### 1 Scope

GB/T 14506.11-2010 is the Chinese national standard on methods for chemical analysis of silicate rocks - part 11: determination of potassium oxide and sodium oxide content, in the field of mining and minerals. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 10 November 2010 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and

has been in force since 1 February 2011. Classification: ICS 73.080, CCS D53. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

GB/T 14506 provisions of this part of the determination of sodium oxide and potassium silicate rock volume. This section applies to the determination of silicate rocks hydroxide and sodium oxide amount is also applicable to soil and stream sediments hydroxide and oxygen Determination of the amount of sodium. Measuring range. flame photometry, 0.5% to 20% of the amount of sodium hydroxide or oxide. Flame atomic absorption spectrophotometry 0.05% 8% of the amount of sodium hydroxide or oxide.

## 2 Normative references

The following documents contain provisions which, through reference

GB/T 14506 in this section constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section. Laboratory use specifications and test methods GB/T 6682 Analysis

GB/T 14506.1 Silicate rocks - Part 1. Determination of water adsorption

## 3 Flame photometry

3.1 Principle Sample with hydrofluoric acid, sulfuric acid decomposition, make a 1% solution of nitric acid in the flame photometer, potassium with 766nm, 589nm filter with sodium Rays in the air - acetylene flame measured absorbance, calculate the amount of potassium oxide and sodium.

3.2 Reagents Unless otherwise stated in this section are consistent with the use of analytical reagent and GB/T 6682 analytical laboratory use in the analysis.

3.2.1 hydrofluoric acid ( $\rho=1.15\text{g/mL}$ ). Warning

--- toxic and corrosive hydrofluoric acid, the operation should wear gloves to prevent skin contact.

3.2.2 sulfuric acid (11).

3.2.3 nitric acid (11).

3.2.4 hydroxide standard solution.

a) standard stock solution of potassium hydroxide (1.00mg/mL). Weigh 1.5829g burning High Purity 2h through 500 °C ~ 600 °C Potassium (KCl), placed in a beaker, dissolved in water and transferred to 1000mL volumetric flask, dilute to the mark, shake;

b) potassium standard solution (100.0µg/mL). dispensing 20.0mL hydroxide standard solution [3.2.4a)], set 200mL Volumetric flask, dilute to the mark, shake.

### 3.2.5 sodium hydroxide standard solution.

a) standard stock solution of sodium hydroxide (1.00mg/mL). Weigh 1.8859g after 500 °C ~ 600 °C burning of high-purity chlorine 2h Sodium (NaCl), placed in a beaker, dissolved in water and transferred to 1000mL volumetric flask, dilute to the mark, shake;

b) sodium hydroxide standard solution (100.0µg/mL). dispensing 20.0mL standard solution of sodium hydroxide [3.2.5a)], set 200mL Volumetric flask, dilute to the mark, shake.