

ICS 77.120.99

CCS H14



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

GB/T 16484.8-2009

Replacing GB/T 16484.8-1996

**Chemical analysis methods of rare earth chloride and light rare
earth carbonate - Part 8: Determination of sodium oxide content
- Flame atomic absorption spectrometry**

氯化稀土、碳酸轻稀土化学分析方法 第8部分：氧化钠量的测定 火焰原子吸收光谱法

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Quarantine of the People's Republic of China;
Standardization Administration of China**

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Foreword

GB/T 16484-2009 "rare earth chloride and light rare earth carbonate chemical analysis method" is divided into 22 parts.

- Part 1. Determination of cerium oxide content of ammonium ferrous sulfate titration;
- Part 2. europium oxide content - Inductively Coupled Plasma Mass Spectrometry;
- Part 3. 15 with a rare earth element oxide component measured by inductively coupled plasma atomic emission spectrometry;
- Part 4. Determination of thorium oxide content arsenazo III spectrophotometry;
- Part 5. Determination of barium oxide by inductively coupled plasma atomic emission spectrometry;
- Part 6. Determination of calcium oxide content by flame atomic absorption spectrometry;
- Part 7. Determination of magnesium oxide content - Flame atomic absorption spectrometry;
- Part 8. Determination of the amount of sodium oxide flame atomic absorption spectrometry;
- Part 9. Determination of the amount of nickel oxide by flame atomic absorption spectrometry;
- Part 10. Determination of manganese oxide content by flame atomic absorption spectrometry;
- Part 11. Determination of lead oxide content by flame atomic absorption spectrometry;
- Part 12. Determination of the amount of sulfate;
- Part 13. Determination of the amount of ammonium chloride distillation - titration;

1 Scope

GB/T 16484.8-2009 is the Chinese national standard on chemical analysis methods of rare earth chloride and light rare earth carbonate - part 8: determination of sodium oxide content - flame atomic absorption spectrometry, in the field of metallurgy. 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 30 October 2009 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 May 2010.

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GB/T 16484 provisions of this part of the determination of rare earth chloride, sodium carbonate light rare earth oxide content. This section applies to the determination of rare earth chloride, sodium carbonate light rare earth oxide content. Measuring range. 0.05% to 2.00%.

2 Principle of the method

The sample was dissolved in nitric acid or hydrochloric acid. In acid medium, with air - acetylene flame, using the standard addition method in the atomic absorption spectrometer wave Long 589.0nm sodium measured absorbance, the amount of sodium oxide sample calculations.

3 Reagents and materials

3.1 Hydrogen peroxide (30%).

3.2 nitric acid (1 + 1), pure class distinctions.

3.3 oxalic acid (50g/L), pure class distinctions.

3.4 Storage standard sodium hydroxide solution. Weigh 1.8858g burning after 400 °C ~ 450 °C to crackle-free sodium chloride (pure class distinctions, placed Desiccator, cool to room temperature) in 500mL beaker, add water, 200mL dissolve. Moved into 1000mL volumetric flask, dilute to the mark with water Degree, shake. 1mL solution containing 1mg sodium oxide.

3.5 sodium hydroxide standard solution. Pipette 20.00mL sodium hydroxide standard stock solution (3.4) in 100mL flask, diluted with water to the mark Degree, shake. This solution 1mL containing 200µg sodium oxide.

3.6 sodium oxide standard solution. Pipette 5.00mL sodium hydroxide standard stock solution (3.4) in 100mL flask, diluted with water to the mark Degree, shake. This solution 1mL containing 50 μ g sodium oxide.

3.7 sodium hydroxide standard solution. Pipette 10.00mL sodium oxide standard solution (3.6) in 100mL volumetric flask, dilute to the mark, shake uniform. This solution 1mL containing 5 μ g sodium oxide.

4 Instrument

Atomic absorption spectrometer, with a sodium hollow cathode lamp. Under optimum conditions the instrument, those who can reach the following indicators can be used.

--- Characteristic concentration. measurement of the sample solution with the matrix phase in the same solution, wherein the sodium concentration is not more than 0.0062 μ g/mL.

--- Precision. measuring the absorbance of the standard solution 10 times the highest concentration, the absorbance of the standard deviation does not exceed an average of 1.0%; most Low concentrations of the standard solution (not a zero standard solution) absorbance measured 10 times, and the standard deviation should not exceed the maximum average absorption solution 0.5% luminosity.

--- Linear curve. The curve is divided into five sections according to concentration, absorbance difference between the absorbance difference between the highest and the lowest segment of the segment Ratio of not less than 0.7.

5 Sample

5.1 Preparation of rare earth chloride sample. A sample was crushed, quickly placed in a weighing bottle immediately weighed.

5.2 Preparation of light rare earth carbonate sample. weigh the sample immediately after the opening.