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

GB/T 16484.2-2009

Replacing GB/T 16484.2-1996

**Chemical analysis methods of rare earth chloride and light rare
earth carbonate - Part 2: Determination of europium oxide
content - Inductively coupled plasma mass spectrometry**

氯化稀土、碳酸轻稀土化学分析方法 第2部分：氧化铕量的测定 电感耦合等离子
体质谱法

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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 16484.2-2009 is the Chinese national standard on chemical analysis methods of rare earth chloride and light rare earth carbonate - part 2: determination of europium oxide content - inductively coupled plasma mass 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. Classification: ICS 77.120.99, CCS H14. 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 16484 provisions of this part of the determination of earth chloride and light rare earth carbonate, europium oxide content. This section applies to the determination of earth chloride and light rare earth carbonate, europium oxide content. Measurement range. 0.010% to 0.50%.

2 Principle of the method

The sample was dissolved in nitric acid in acid medium, ionized argon plasma source, directly measured by mass spectrometry. Within the determination Correction standard method.

3 Reagents and materials

3.1 nitric acid (1 + 1).

3.2 nitric acid (1 + 19).

3.3 cesium internal standard solution. Weigh 0.1270g cesium chloride, add 10mL water, dissolved completely, add 10mL of nitric acid (3.1) and transferred to 100mL Volumetric flask, dilute with water to volume, and mix. 1mL solution containing 1mg cesium. Then this solution was gradually diluted with 1mL of nitric acid (3.2) Internal standard solution containing 1μg of cesium.

3.4 europium oxide standard stock solution. Weigh 0.1000g 1h at 900 °C burning europium oxide [w1 (REO) > 99.5%, Eu₂O₃ / REO > 99.99%], placed in 100mL beaker, add 10mL of nitric acid (3.1), low heat to dissolve completely, remove the cooled and transferred to 100mL volumetric flask, dilute with water to volume, and mix. This solution 1mL containing 1000μg europium oxide.

3.5 europium oxide standard solution. Pipette 5mL europium oxide standard stock solution (3.4) in 100mL flask, diluted with nitric acid (3.2) to Volume, and mix. This solution 1mL containing 50µg europium oxide.

3.6 europium oxide standard solution. Pipette 2mL europium oxide standard solution (3.5) in 100mL flask, with nitric acid (3.2) diluted to the mark Degree, and mix. This solution 1mL containing 1µg europium oxide.

3.7 argon (> 99.99%).

4 Instrument

Inductively coupled plasma mass spectrometry. mass resolution better than (0.8 ± 0.1) amu.

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. Step

6 Analysis

6.1 Sample Table 1 sample was weighed, accurate to 0.0001g.