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CCS H14



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

GB/T 16484.14-2009

Replacing GB/T 16484.14-1996

**Chemical analysis methods of rare earth chloride and light rare earth
carbonate - Part 14: Determination of phosphorus radical content -
Phosphorus-antimonate-molybdenum blue spectrophotometry**

氯化稀土、碳酸轻稀土化学分析方法 第14部分：磷酸根量的测定 钨磷钼蓝分光
光度法

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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 16484.14-2009 is the Chinese national standard on chemical analysis methods of rare earth chloride and light rare earth carbonate - part 14: determination of phosphorus radical content - phosphorus-antimonate-molybdenum blue spectrophotometry, 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 rare earth chloride, carbonate, phosphate amount of light rare earths. This section applies to the rare earth carbonate, phosphate amount of light rare earth chloride determination. Measurement range. 0.0025% to 0.10%.

2 Principle of the method

The sample is dissolved in acid in 0.31mol/L ~ 0.48mol/L HCl medium, phosphorus and antimony paramolybdate generated heteropoly acid, ascorbic acid Reducing phosphorus antimony molybdenum blue complex, measuring absorbance at 705nm wavelength spectrophotometer.

3 Reagents and materials

3.1 Hydrogen peroxide (30%).

3.2 HCl (1 + 1).

3.3 hydrochloric acid (1 + 2).

3.4 hydrochloric acid (1 + 10).

3.5 nitric acid (1 + 1).

3.6 ammonia water (1 + 10), pure class distinctions, stored in plastic bottles.

3.7 paramolybdate (40g/L), pure class distinctions, stored in plastic bottles.

3.8 antimony potassium tartrate solution (3g/L).

3.9 Ascorbic acid (20g/L), with the preparation.

3.10 starch solution (10g/L), with the preparation.

3.11 phosphate standard stock solution. Weigh 0.2863g advance by 105 °C ~ 110 °C drying 1h placed in the dryer to cool to room temperature Superior grade pure potassium dihydrogen phosphate in 250mL beaker, add 100mL water dissolved and transferred to 1000mL volumetric flask, add 20mL of nitric acid (3.5), diluted with water to volume, and mix. This solution 1mL containing 200μg phosphate.

3.12 phosphate standard solution. Pipette 25.00mL phosphate standard stock solution (3.11) into 1000mL volumetric flask, dilute with water Diluted to the mark, add 10mL of nitric acid (3.5), diluted with water to volume, and mix. This solution 1mL containing 5μg phosphate.

3.13 pairs nitrophenol indicator (10g/L).

4 Instrument

Spectrophotometer.

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.