

ICS 77.120.99

CCS H14



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

GB/T 16484.12-2009

Replacing GB/T 16484.12-1996

**Chemical analysis methods of rare earth chloride and light rare
earth carbonate - Part 12: Determination of sulfate radical**

氯化稀土、碳酸轻稀土化学分析方法 第12部分：硫酸根量的测定

Issued on: October 30, 2009

Implemented on: May 1, 2010

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;
Standardization Administration of China**

Table of Contents

- 1 Scope
- 2 Principle of the method
- 3 Reagents
- 4 Instrument
- 5 Sample
- 6 Analysis

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 16484.12-2009 is the Chinese national standard on chemical analysis methods of rare earth chloride and light rare earth carbonate - part 12: determination of sulfate radical, 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, sulfate amount of light rare earths. This section applies to the rare earth carbonate, sulfate amount of light rare earth chloride determination. Measurement range. 0.025% to 0.50%.

2 Principle of the method

Sample was melted anhydrous sodium carbonate, pH adjusted with hydrochloric acid to pH1.5 ~ pH2.0, under conditions in the presence of a stabilizer, and barium sulfate Formation of barium sulfate suspension in a spectrophotometer at 400nm wavelength measured absorbance.

3 Reagents

3.1 anhydrous sodium carbonate.

3.3 hydrochloride ($\rho=1.19\text{g/mL}$).

3.4 hydrochloric acid (1 + 19). Ammonia 3.5 (1 + 1).

3.6 sodium chloride solution (300g/L). Glycerin 3.7 (1 + 1).

3.8 barium chloride solution (250g/L).

3.9 sulfate standard stock solution. Weigh 1.4786g cooled to room temperature by 110°C and bake in the dryer 1h baseline sodium home In 100mL beaker, add water to dissolve 50mL clear, transferred to 1000mL volumetric flask, dilute with water to volume, and mix. This solution 1mL containing 1mg sulfate.

3.10 sulfate standard solution. Pipette 10.00mL sulfate standard stock solution (3.9), placed in 100mL flask, diluted with water To volume, and mix. This solution 1mL containing 100µg sulfate.

3.11 pairs nitrophenol indicator (1g/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.