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CCS D43



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

**GB/T 17417.1-2010**

Replacing GB/T 17417.1-1998

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**Method for chemical analysis of rare earth ores - Part 1:  
Determination of rare earths**

稀土矿石化学分析方法 第1部分：稀土分量测定

**Issued on: November 10, 2010**

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

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### Foreword

GB/T 17417 "Methods for chemical analysis of rare earth mineral" is divided into two parts.

--- Part 1. Determination of the rare earth component;

--- Part 2. Determination of the amount of scandium. This section GB/T Part of 117,417. This Part replaces GB/T 17417.1-1998 "Methods for chemical analysis of rare earth mineral by cation exchange resin separation enrichment inductive coupling The plasma emission spectrometry combined rare earth component. " This section compared with the GB/T 17417.1-1998, the main changes are as follows:

--- Modify the standard Chinese name;

--- Modify the standard English name;

--- Increased alert, warning of the content;

--- Increasing the purity of the reagents used and experimental water requirements;

--- Increasing the particle size of the sample and drying requirements;

--- Increased verification test content. Appendix A of this section is informative appendix. This section presents the People's Republic of China Ministry of Land Resources. This part of the National Standardization Technical Committee under the jurisdiction of Land and Resources. This section is responsible for drafting. National geology test center. This section is drafted. Hubei Institute of Geology. The main drafters of this section. Zhao Zhifei, Fang Jindong, Tangxing Min. This part of the standard replaces the previous editions are.

--- GB/T 17417.1-1998. Methods for chemical analysis of rare earth ores Part 1. Determination of rare earth component Warning. Use of this portion of the staff should have practical experience in regular laboratory work. This section does not point out all possible security asked question. Users have the responsibility to take appropriate safety and health practices and to ensure compliance with the conditions relevant national regulations.

### 1 Scope

GB/T 17417.1-2010 is the Chinese national standard on method for chemical analysis of

rare earth ores - part 1: determination of rare earths, 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 73.060.99, CCS D43. 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 17417 provisions of this part of the determination of 15 rare earth elements in rare earth mineral component content. This section applies to the rare earth ore, also applies to beryllium ore, lithium, rubidium, cesium minerals, zirconium ores and rocks rare earth element component

15 Determination. Determination of rare earth oxide ranges.  $0.\mu\text{g/g} \sim 2 \times 10^5\mu\text{g/g}$ .

## 2 Normative references

The following documents contain provisions which, through

GB/T 17417 in this part of the reference in terms 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 Principle

3 Sample after oxidation of the molten sodium, extracted with water, the formation of a rare earth element hydroxide precipitate, triethanolamine masking iron, aluminum, plus EGTA Complex of calcium, barium, filtered, and the rare earth element hydroxide precipitate was dissolved 2mol/L hydrochloric acid, after strong acid cation exchange resin separation enrichment, again With 3.5mol/L hydrochloric acid elution, the eluent volume after evaporation, inductively coupled plasma emission spectrometer rapid determination of 15 rare earth oxide Content.

## 4 Reagents

Unless otherwise indicated in the analysis are consistent with the use of analytical reagents and GB/T 6682 water analytical laboratory.

- 4.1 sodium peroxide.
- 4.2 ascorbic acid.
- 4.3 hydrochloric acid (0.6mol/L).
- 4.4 hydrochloric acid (1.25mol/L).
- 4.5 hydrochloric acid (3.5mol/L).
- 4.6 nitric acid (1.25mol/L).
- 4.7 Sodium hydroxide solution (10g/L).
- 4.8 triethanolamine solution (5%).
- 4.9 EGTA solution (0.1mol/L).
- 4.10 HCl - hydrogen peroxide solutions. solution c (HCl) = 2mol/L, phi (H<sub>2</sub>O<sub>2</sub>) = 0.2%.
- 4.11 Nitrate eluent. Weigh 1g of ascorbic acid (4.2), 20g tartaric acid, is added to 1000mL containing nitric acid (4.6) in the beaker, Stir to dissolve spare.
- 4.12 tartaric acid solution (30g/L).