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# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

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Replacing GB/T 20169-2006

## Mixed rare earth oxide of ion-absorbed type rare earth ore

离子型稀土矿混合稀土氧化物

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#### **Foreword**

This Standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard replaces GB/T 20169-2006 Mixed rare earth oxide of ionabsorbed type rare earth ore.

Compared with GB/T 20169-2006, the major technical changes in this Standard are as follows:

- ADD the character grade (SEE Chapter 3);
- COMBINE eight grades into five grades (SEE Chapter 3);
- LIST the Y<sub>2</sub>O<sub>2</sub> indicator in each grade individually (SEE Table 1);
- DELETE the  $\frac{\text{La}_2 \, \text{O}_3}{\text{REO}}$  indicator in each grade (SEE Table 1 in 2006 edition);
- MODIFY the  $\frac{Nd_2O_3}{REO}$  indicator in each grade to (Pr<sub>6</sub>O<sub>11</sub> + Nd<sub>2</sub>O<sub>3</sub>) content indicator (SEE Table 1);
- MODIFY the  $\frac{Sm_2O_3+Gd_2O_3}{REO}$  indicator in each grade to  $(Sm_2O_3+Gd_2O_3)$  content indicator (SEE Table 1);
- MODIFY the Al<sub>2</sub>O<sub>3</sub> content in non-rare earth impurities from 1.2% to 1.5% (SEE Table 1);
- ADD the assessment indicator of each grade for non-rare earth impurity SiO<sub>2</sub> (SEE Table 1); and
- ADD the assessment indicator of each grade for loss on ignition (SEE Table 1).

This Standard was proposed by and shall be under the jurisdiction of the National Technical Committee for Standardization of Rare Earth (SAC/TC 229).

Major drafting organizations of this Standard: Jiangxi South Rare Earth Hightech Co., Ltd, and Guangdong Zhujiang Rare Earth Co., Ltd.

Main drafters of this Standard: Chen Feiyu, Tao Yong, Zhang Shaofu, Xie Liyun, Wen Shijie, Jin Yanhua and Wang Shuying.

# Mixed rare earth oxide of ion-absorbed type rare earth ore

# 1 Scope

This Standard specifies the requirements, test methods, inspection rules, and symbols, packaging, transport, storage and quality certificate for the mixed rare earth oxide of ion-absorbed type rare earth ore.

This Standard **is applicable to** the mixed rare earth oxide of ion-absorbed type rare earth ore prepared by using the chemical method, where ion-absorbed type rare earth ore is used as the raw material. The mixed rare earth oxide of ion-absorbed type rare earth ore is mainly used as the raw material for grouping rare earth aggregates or separating single rare earth compounds.

#### 2 Normative references

The following documents are essential to the application of this document. For dated references, only the editions with the dates indicated are applicable to this document. For undated references, only the latest editions (including all the amendments) are applicable to this document.

GB/T 8170 Rules of rounding off for numerical values & expression and judgement of limiting values

GB/T 12690.2 Chemical analysis methods for non-RE impurity of rare earth metals and their oxides - Determination of ignition loss content of rare earth oxides - Gravimetric method

GB/T 12690.3 Chemical analysis methods for non-RE impurity of rare earth metals and their oxides - Determination of water content of rare earth oxides - Gravimetric method

GB/T 14635 Rare earth metals and their compounds - Determination of total rare earth contents

GB/T 16484.12 Chemical analysis methods of rare earth chloride and light rare earth carbonate - Part 12: Determination of sulfate radical

GB/T 17803 Designation system for rare earth products

- **3.3.1** The product is light yellow or brownish yellow powder according to different rare earth compositions.
- **3.3.2** The product shall be clean, without any visible inclusions.

#### 4 Test methods

#### 4.1 Chemical compositions

- **4.1.1** The method for analyzing the total amount of rare earth shall be in accordance with the provisions of GB/T 14635.
- **4.1.2** The method for analyzing the alumina content shall be in accordance with the provisions of GB/T 18882.2.
- **4.1.3** The method for analyzing the water content shall be in accordance with the provisions of GB/T 12690.3.
- **4.1.4** The method for analyzing the loss on ignition shall be in accordance with the provisions of GB/T 12690.2.
- **4.1.5** The method for analyzing the sulfate radical (SO<sub>4</sub><sup>2</sup>-) shall be in accordance with the provisions of GB/T 16484.12. The silicon dioxide (SiO<sub>2</sub>) shall be analyzed in accordance with the method negotiated by the Supplier and the Demander.
- **4.1.6** The method for analyzing the content of rare earth oxide components shall be in accordance with the provisions of GB/T 18882.1.

#### 4.2 Rounding off for numerical values

PERFORM in accordance with the provisions of GB/T 8170.

#### 4.3 Appearance quality

Visual inspection.

# 5 Inspection rules

#### 5.1 Check and acceptance

#### 5.1.1 Check

The products shall be inspected by the Supplier's Quality Inspection Department, so as to ensure that the product quality is in line with the provisions of this Standard. In addition, FILL in the quality certificate.

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