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

GB/T 16661-2018

Replacing GB/T 16661-2008

Cerium carbonate

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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 16661-2008 "Barium Carbonate". The main technical changes of this standard compared with GB/T 16661-2008 are as follows:

- Increased the scope of application of the standard (see Chapter 1);
- Added normative references GB/T 14635, GB/T 17803 (see Chapter 2);
- Modified the contents of the normative reference file GB/T 12690, and modified "GB/T 12690 (all parts)" to GB/T 12690.7 Determination of non-rare rare earth impurities in rare earth metals and their oxides - Determination of silicon content Spectrophotometry" (see Chapter 2, Chapter 2 of the.2008 edition);
- Revised the reference content of the normative reference document GB/T 16484, "GB/T 16484.19 rare earth chloride, rare earth carbonate chemistry Analytical method for determination of total amount of rare earth oxides" was revised to "GB/T 16484 (all parts)" (see Chapter 2,.2008 edition) chapter 2);
- Added "character grade" (see Chapter 3);
- Added grade 023245 and its corresponding technical indicators (see 3.2);
- Revised the technical index of iron (Fe_2O_3) content in grade 023240, modified the original iron (Fe_2O_3) content to not more than 0.001% The content of iron (Fe_2O_3) is not more than 0.002% (see 3.2, 3.1 of.2008 edition);
- Modified the technical indicators of non-rare earth impurity magnesium (MgO) content in grades 023240, 023235, 023230, the original grade Magnesium (MgO) content in 023240 is not more than 0.002% modified to not more than 0.005%, magnesium (MgO) content in grade 023235 Not more than 0.003% is modified to not more than 0.01%, and the magnesium (MgO) content of grade 023230 is not more than 0.003%. More than 0.01% (see 3.2, 3.1 of the.2008 edition);

--- Revised the technical indicators of non-rare earth impurity sodium (Na_2O) and zinc (ZnO) content in grades 023240, 023235, the original grade 023240, the content of sodium (Na_2O) is not more than 0.02%, modified to not more than 0.01%, and the content of zinc (ZnO) is not more than 0.005%. Changed to not more than 0.003%; the original grade 023235 sodium (Na_2O) is not more than 0.05% modified to not more than 0.02%, zinc The (ZnO) content is not more than 0.008% and is modified to be no more than 0.005% (see 3.2,

3.1 of the 2008 edition);

---Modified the technical index of chlorine (Cl^-) content in grade 023240, and modified the original chlorine (Cl^-) content to not more than 0.03% to be small At 0.05% (see 3.2,

1 Scope

China's national product standard for cerium carbonate. It specifies the requirements, the test methods, the inspection rules, and the marking, packaging, transport, storage and quality certificate for cerium carbonate produced by chemical means, used mainly for polishing powder, for the oxygen storage component of automotive exhaust catalysts, for pigments in engineering plastics, and in glass, ceramics and electronic abrasives. Cerium is the cheapest and the most abundant of the rare earths, and cerium carbonate is the form in which it is shipped to the plants that convert it into something useful. Almost all of it becomes cerium oxide, and the two largest destinations are unglamorous and enormous. Cerium oxide is the polishing compound for optical and display glass, where nothing else combines the same chemical and mechanical action on a silica surface. And it is the oxygen storage component of the three-way catalyst on a petrol engine, where cerium cycles between the trivalent and tetravalent states to buffer the oxygen concentration through the fuel-air fluctuations of real driving - without it the catalyst only works at exactly stoichiometric mixture, which an engine never holds. Both applications are decided by the purity and the calcination behaviour of the carbonate, so the standard sets the grades by cerium oxide content and the maximum content of the other rare earths and of the non-rare-earth impurities, along with the loss on ignition, the moisture and the physical characteristics. The test methods are referred to the analytical standards of the rare earth series, and the inspection rules and the certificate close the document. Issued on 7 June 2018 and in force since 1 March 2019, it replaces GB/T 16661-2008.

This standard specifies the requirements, test methods, inspection rules and signs, packaging, transportation, storage and quality certificates of barium carbonate. This standard is applicable to strontium carbonate obtained by chemical method, mainly used for polishing powder, rare earth oxygen storage material for automobile exhaust gas purification catalyst, engineering plastic Material pigments, glass, ceramics, electronic abrasive materials, etc.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 8170 Numerical Rounding Rules and Representation and Determination of Limit Values

GB/T 12690.7 Determination of non-rare rare earth impurities in rare earth metals and their oxides - Determination of silicon content Degree method

GB/T 14635 Chemical analysis of rare earth metals and their compounds - Determination of total

GB/T 16484 (all parts) Chemical analysis method of rare earth chloride and light rare earth carbonate

GB/T 17803 Rare Earth Product Grade Representation Method

GB/T 18115.2 Chemical analysis method for rare earth impurities in rare earth metals and their oxides ,,,,,, Determination of , , , , and

3 Requirements

3.1 Product brand The product is divided into chemical components.

$\text{Ce}_2(\text{CO}_3)_3 \cdot n\text{H}_2\text{O} \cdot 4\text{N}_5$, $\text{Ce}_2(\text{CO}_3)_3 \cdot n\text{H}_2\text{O} \cdot 4\text{N}$, $\text{Ce}_2(\text{CO}_3)_3 \cdot n\text{H}_2\text{O} \cdot 3\text{N}_5$, $\text{Ce}_2(\text{CO}_3)_3 \cdot n\text{H}_2\text{O} \cdot 3\text{N}$, $\text{Ce}_2(\text{CO}_3)_3 \cdot n\text{H}_2\text{O} \cdot 2\text{N}$, five grades, the product designation method should conform to GB/T 17803 Provisions.

3.2 Chemical composition The chemical composition of the product shall comply with the requirements of Table 1. If there are special requirements, the supplier and the buyer may negotiate separately.