

ICS 77.120.99

CCS H 04



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

GB/T 15676-2015

Replacing GB/T 15676-1995

Terms for rare earths

稀土术语

Issued on: September 11, 2015

Implemented on: April 1, 2016

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

Table of Contents

Foreword	III
1 Scope	1
General terms 1	2
3 Rare earth minerals and concentrate	5
4 Rare earth metal compound (smelting separation products)	7
4.1 Single rare earth	7
4.2 Misch	9
4.3 Single rare earth oxide	9
4.4 Mixed rare earth oxide	11
5 Rare earth alloy	15
5.1 Rare Earth Ferroalloy	15
5.2 Nonferrous alloys of rare earth	16
5.3 Other rare earth alloy	17
6 Rare Earth Functional Materials	17
6.1 Rare earth permanent magnet material	17
6.3 Rare earth luminescent material	25
6.5 Rare earth magneto-optical material	30
6.7 Giant magnetostrictive material	32
6.9 Rare earth magnetic refrigeration material	32

Foreword

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

This standard replaces GB/T 15676-1995 "rare-earth terms."

This standard compared with GB/T 15676-1995, in addition to editorial changes, the major technical changes are as follows.

--- Reg modified structure, standards are divided into "general terms of rare earth, rare earth minerals and enrichment, and rare earth metal compounds, rare earth

Alloys, rare earth functional materials, application of rare earth products, rare earth production technology, rare earth recyclables "eight parts, instead of the original standard

"Usually the term rare earth, rare earth minerals and enrichment of rare earth alloy and cast iron, rare earth products, the application of rare earth products, Production

Engineering

Arts, part inspection and analysis of eight rare earths other common terminology

Definitions ";

--- Original standard of "rare earth alloy and cast iron" clauses were moved "rare earth metal" and "application of rare earth products" clauses, the original standard

"Rare earth products" reg refinement as "rare earth metals and their compounds" and "Rare Earth Functional Materials" reg;

--- An increase of rare earth functional materials reg, presented by category of rare earth permanent magnetic materials, rare earth hydrogen storage materials, rare earth polishing materials, rare earth made

Light materials and other related terms (see 6.1 and 6.16);

--- Increased RE reg recyclables by category given rare earth waste gas, waste and other related terms (see 9.1 to 9.4);

--- Delete the original standard "test analysis of commonly used terms and definitions" section (see Chapter 8 of the 1995 edition);

--- Delete the original standard of "rare earth other aspects of the terms and definitions" (see the 1995 edition, Chapter 9);

--- A total of 30 entries deleted, an increase of 275 entries.

This standard by the National Standardization Technical Committee of rare earth (SAC/TC229) and focal points.

This standard is mainly drafted by: Baotou Rare Earth Research Institute, the National Product Quality Supervision and Inspection Center of rare earth, rare earth Metallurgy and Riko functional material

Materials National Engineering Research Center Co., Ltd., Technical and Economic Research Institute of Nonferrous Metal, Iron and Steel Research Institute of Functional Materials, Beijing industrial

1 Scope

This standard specifies the general terms of rare earth, rare earth minerals and enrichment, and rare earth metal compounds, rare earth alloy, rare earth functional materials

Materials, application of rare earth products, rare earth production technology, rare earth recyclables and other commonly used terms and definitions related aspects.

This standard applies to the production, use, testing, distribution, research and teaching in areas such as rare earth, as a unified technical term basis.

2.1 RE rareearth

Periodic table of elements from the lanthanide atomic number 57-71, namely lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), promethium (Pm), samarium (Sm), europium (Eu), gadolinium (Gd), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb), lutetium (Lu) and atomic order number 21

General of scandium (Sc), 39 yttrium (Y) a total of 17 elements. Usually represented by the symbol RE, it is a set of elements similar chemical properties. Currently

In the rare earth industry and product standards, generally refers to a rare earth promethium (Pm), 15 elements scandium (Sc) other than the addition.

2.2 Rare Earth Elements rareearthelements

See 2.1.

2.3 Light Rare Earth lightrareearthelements

General lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd) 4 elements.

2.4 Rare Earth middlerareearthelements

General samarium (Sm), europium (Eu), gadolinium (Gd) 3 elements.

2.5 HREE heavyrareearthelements

Terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb), lutetium (Lu), yttrium (Y) 8 elements in general.

2.6 Cerium RE cerium-grouprareearthelements

Cerium (Ce) consisting mainly of a group of rare earths, including lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), samarium (Sm), europium (Eu) 6 elements.

2.7 Yttrium group rare earth yttrium-grouprareearthelements

Yttrium (Y) consisting mainly of a group of rare earths, including gadolinium (Gd), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb),

Lutetium (Lu), yttrium (Y) 9 elements.

2.8 Lanthanide contraction lanthanidecontraction

Atomic radius and ionic radius of the lanthanide elements with increasing atomic number gradually decrease. Causes of the lanthanides

In each additional proton nucleus, there will be a corresponding 4f electrons into orbit, while the 4f electrons of the inner electron nuclear shield is better, because

This increases with the atomic number, the effective nuclear charge increases, check the outermost electron attraction enhancements make atomic radius and ionic radius gradually reduced.

chinastandards.org · PREVIEW