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

GB/T 30075-2025

Replacing GB/T 30075-2013

Rare earth activated nitride red phosphors for LED

LED用稀土氮化物红色荧光粉

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents". Drafting.

This document replaces GB/T 30075-2013 "Rare Earth Nitride Red Phosphors for LEDs". Compared with GB/T 30075-2013, except for...

Aside from structural adjustments and editorial changes, the main technical changes are as follows.

a) Added terms and definitions (see Chapter 3);

b) The product categories and brands have been changed from numerical brands to character brands, and the naming rules for brands have been specified in detail (see Chapter 4).

Chapter 3 of the 2013 edition);

c) The emission peak wavelength has been added (see Table 1), and the half-width has been removed (see Table 1 in the 2013 edition);

d) The density technical specifications have been changed, and the phosphor is now divided into two parts based on its composition. LM-09-04-A nitride red phosphor is...

$3.0 \text{ g/cm}^3 \leq \rho \leq 4.2 \text{ g/cm}^3$, LM-09-04-B nitride red phosphor has a content of $2.8 \text{ g/cm}^3 \leq \rho \leq 3.6 \text{ g/cm}^3$ (see...) Table 1 (2013 edition of Table 1);

e) High temperature and high humidity performance and high pressure accelerated aging performance have been added (see Table 1), while thermal stability has been removed (see Table 1 in the 2013 edition);

- f) The test method for thermal stability has been removed (see 5.5 in the 2013 edition);
- g) The method for testing external quantum efficiency has been changed (see 6.1.6, 5.4 in the 2013 version);
- h) Test methods for high temperature and high humidity performance and high pressure accelerated aging performance have been added (see 6.1.7 and 6.1.11);
- i) The sampling rules have been changed (see 7.4, 6.4 in the 2013 edition).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Rare Earth Standardization Technical Committee (SAC/TC229).

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This document was first published in 2013, and this is its first revision.

1 Scope

This document specifies the classification and grades, technical requirements, inspection rules, packaging, marking, and transportation of rare earth nitride red phosphors for LEDs.

The transport, storage, and accompanying documentation describe the experimental methods.

This document applies to red phosphors of rare earth nitrides activated by divalent europium (Eu²⁺) obtained through high-temperature solid-state reaction, primarily used in ultraviolet light.

Or a light-emitting device excited by a blue LED chip.

2 Normative references

GB/T 5838.1

GB/T 8170

GB/T 14634.5

GB/T 20170.1-2006

GB/T 23595

GB 39176

GB/T 39492-2020

3 Terms and Definitions

The terms and definitions defined in GB/T 5838.1 and the following terms and definitions apply to this document.

3.1 thermal quenching

The phenomenon that the luminescence intensity of luminescent materials decreases significantly when the temperature is raised to a certain level.

[Source. GB/T 23595.7-2025, 3.4]

3.2 4 Classification and Brand

The total number of photons corresponding to the fluorescence emitted by the luminescent material when excited and the total number of photons irradiated onto the phosphor sample during excitation. ratio.

[Source. GB/T 39492-2020, 3.1, with modifications]

4.1 Classification

The products are divided into two main categories according to their chemical structure. $(\text{Ca}, \text{Sr}, \text{Ba})_2\text{Si}_5\text{N}_8.\text{Eu}_2$ and $(\text{Ca}, \text{Sr})\text{AlSi}_3\text{N}_3.\text{Eu}_2$.