

ICS 77.120.99

CCS H14



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

GB/T 14634.7-2010

**Test methods of rare earth three-band phosphors for
fluorescent lamps - Part 7: Determination of temperature
quenching**

灯用稀土三基色荧光粉试验方法 第7部分：热猝灭性的测定

Issued on: August 9, 2010

Implemented on: May 1, 2011

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;
Standardization Administration of China**

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Foreword

GB/T 14634 "light rare earth trichromatic phosphors Test Method" is divided into seven sections.

- Part 1. Determination of relative brightness;
- Part 2. Determination of emission peak and color performance;
- Part 3. Determination of thermal stability;
- Part 4. Electric sensing particle size distribution measurement;
- Part 5. Determination of density;
- Part 6. Determination of specific surface area;
- Part 7. Determination of thermal quenching. This is Part 7. This part of the National Standardization Technical Committee rare and centralized. This section is responsible for drafting units. Jiangmen City Branch Hang Industrial Co., Ltd.. Participated in the drafting of this section. Xiamen Topstar New Materials Co., Ltd. Hangzhou Daming fluorescent material. The main drafters of this section. Hoang Thuy sweet, Chen Rao, Wen Chun Joan. Test methods of rare earth trichromatic phosphor lamps Part 7. Determination of thermal quenching

1 Scope

GB/T 14634.7-2010 is the Chinese national standard on test methods of rare earth three-band phosphors for fluorescent lamps - part 7: determination of temperature quenching, in the field of metallurgy. 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 9 August 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 May 2011. Classification: ICS 77.120.99, CCS H14. 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 14634 provisions of this part of the light rare earth trichromatic phosphors Determination of thermal quenching. This section applies to three-color phosphor lamp thermal quenching Determination of rare earths.

2 Principle of the method

Quenching using thermal analysis system to 253.7nm as the excitation wavelength, relative luminance samples tested at room temperature, chromaticity coordinates, and The sample was placed in 200 °C constant temperature of the sample chamber until the temperature reaches 200 °C and re-heated 20min, once again test specimen relatively bright Degrees, chromaticity coordinates, compared with the value of the test at room temperature, it is determined (or calculated) relative luminance, thermal quenching of chromaticity coordinates.

3 Instruments and apparatus

3.1 Analysis of thermal quenching system. the spectral range of 200nm ~ 800nm; maximum operating temperature of the temperature control device is not lower than 250 °C, accuracy $\pm 1.5\%$.

3.2 Oven. with hot air circulation.

3.3 Sample dish. made of stainless steel, the inner diameter of 20mm ± 0.5 mm, depth 3.0mm ± 0.1 mm.

4 Sample

Samples should be tested at 105 °C 2h drying in an oven (3.2) and placed in a dry environment cooled to room temperature alternate.

5 Test procedure

5.1 Instrument calibration Refer to the instrument manual for instrument calibration.

5.2 Testing

5.2.1 The test sample (4) into the tray (3.3), the sample plane of glass will flatten after that the sample pan and the weight of each phosphor Compaction rate convergence, into the

sample chamber.

5.2.2 Setting the sample chamber temperature $25\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$, in order to coordinate 253.7nm as the excitation wavelength, the relative brightness of the test sample (B_0), chromaticity (X_0, y_0), the test is completed, remove the sample.

5.2.3 Setting the sample chamber temperature of $200\text{ }^{\circ}\text{C}$, until the instrument reach the set temperature and the thermostat 20min after the sample has been taken into until the temperature And again reaches $200\text{ }^{\circ}\text{C}$ after 20min constant to 253.7nm as the excitation wavelength, again test the relative brightness of the sample (B_q), chromaticity sit Standard (x_q, y_q) values, and compared with the value at room temperature ($25\text{ }^{\circ}\text{C}$) under test.

6 Test results are expressed

6.1 according to equation (1) to calculate the relative brightness of thermal quenching of ΔB_q , two parallel determination of the relative brightness of the thermal quenching of the difference is not more than 1%, whichever The average value. $\Delta B_q = B_q - B_0$
 100 (1) Where. ΔB_q

--- thermal quenching of the relative brightness (%);