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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 14634.3-2010

Replacing GB/T 14634.3-2002

Test methods of rare earth three-band phosphors for fluorescent lamps - Part 3: Determination of thermostability

灯用稀土三基色荧光粉试验方法 第3部份：热稳定性的测定

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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 3. This part is GB/T 14634.3-2002 "lamp test method for measuring the thermal stability of rare earth trichromatic phosphor" amendments. This section compared with the GB/T 14634.3-2002, the main changes are as follows:

--- Set temperature of the furnace has been adjusted;

--- Thermal stability relative brightness of the formula has been modified;

--- Increasing the precision of the terms;

--- Standard text made editorial changes. 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. Hangzhou Daming Fluorescent Material Co., Ltd., Shanghai Yuelong New Material Co. Ltd., Xiamen Topstar New Materials Ltd., Institute of Rare Earth New Materials Co., Ltd., Shaanxi Rainbow fluorescent materials company. The main drafters of this section. Hoang Thuy sweet, Chen Rao. The drafters of some of the participants. He Haiyan, Chen Hui new, Daisy Ling, He Tao, Wang Wu Po. This part of the standard replaces the previous editions

are.

--- GB/T 14634.3-2002. Test methods of rare earth trichromatic phosphor lamps Part 3. Determination of thermal stability

1 Scope

GB/T 14634.3-2010 is the Chinese national standard on test methods of rare earth three-band phosphors for fluorescent lamps - part 3: determination of thermostability, 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 determination of the thermal stability of the light rare earth trichromatic phosphor. This section applies to the determination of the thermal stability of the lamp with rare earth trichromatic phosphor.

2 Principle of the method

The empty furnace is heated to a predetermined temperature, and then into the light rare earth trichromatic phosphor sample was heated to a predetermined time at a predetermined temperature, Then removed in the air naturally cooled to room temperature. The treated samples not heat and heat-treated samples relative brightness, chromaticity Coordinate measurement, the absolute value of the difference between the two is denoted by the thermal stability of the test lamp trichromatic phosphor.

3 Instruments and apparatus

Indirectly heated furnace, the maximum operating temperature of 1000 °C. Temperature controller temperature deviation is less than 5 °C. Furnace work area (which is a constant Temperature zone) temperature deviation is less than 10 °C, the minimum size of 200mm x 100mm x 80mm.

4 Measuring step

4.1 pairs of the furnace heating temperature.

4.2 power, its temperature rises to a set temperature uniformity (600 °C), incubated 0.5h.

4.3 Weigh 5g sample was placed in a 30mL alumina crucible.

4.4 the crucible placed into an alumina boat, each no more than four crucibles.

4.5 with the stent placed alumina crucible boat propped up on the furnace temperature zone.

4.6 the heat treatment to a predetermined time (e.g., 0.5H), the alumina boat removed from the sub-heating furnace, natural cooling.

4.7 The relative brightness of the sample to be cooled to room temperature, measured the relative brightness or chromaticity coordinates, and with non-heat-treated samples of the same batch Chromaticity coordinates or contrast.

4.8 Calculation of the sample thermal stability.

5 Test results presentation

5.1 according to equation (1) to calculate the relative brightness of the thermal stability DeltaBh, two parallel determination of the relative brightness of the thermal stability of the difference is not more than 1%, whichever The average value. DeltaBh = | Bh-B0 | B0 x 100 (1) Where. DeltaBh

--- thermal stability relative luminance (%); B0

--- unheated sample treated relative luminance (%); BH

--- the heat-treated samples relative luminance (%). When two parallel determination of the relative brightness of the thermal stability of the difference is not more than 1% of the mean value.

5.2 according to equation (2), (3) calculate the chromaticity coordinates of the thermal stability Deltaxh and Deltayh, parallel determination of the thermal stability of chromaticity coordinates were not Greater than 0.0010 when the mean value. Deltaxh = | xh-x0 | (2)