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

SN/T 1731.7-2006

**Safety performance test for pyrotechnic composition used for
export fireworks and firecrackers. Part 7: Moisture absorption
capability**

出口烟花爆竹用烟火药剂安全性能检验方法 第7部分：吸湿性测定
(English Translation)

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Foreword

SN/T 1731 "Test method for safety performance of pyrotechnics for export of fireworks and firecrackers" is divided into.

- Part 1. General;
- Part 2. Determination of thermal stability at 75 ° C;
- Part 3. Determination of the explosion point;
- Part 4. Qualitative analysis of banned restricted drugs;
- Part 5. Determination of impact sensitivity;
- Part 6. Determination of friction sensitivity;
- Part 7. Determination of hygroscopicity;
- Part 8. Determination of ignition temperature;
- Part 9. Determination of flame sensitivity;
- Part 10. Determination of static spark sensitivity.

This part is the seventh part of SN/T 1731.

This part is proposed and managed by the National Certification and Accreditation Administration.

This section drafted by. Jiangxi Entry-Exit Inspection and Quarantine Bureau of the People's Republic of China.

1 Scope

This part of SN/T 1731 specifies the test method for the hygroscopicity test of pyrotechnics for exporting fireworks and firecrackers.

This section applies to the inspection of the hygroscopicity of pyrotechnics used in exporting fireworks and firecrackers.

2.1 Basic principles

The dried sample was placed in a humidifier containing a saturated solution of potassium nitrate at the bottom, and after 24 hours, the percentage increase in moisture was measured.

2.2 Instruments and reagents

2.2.1

Thermostat or thermostatic chamber. Temperature control accuracy $\pm 2^{\circ}\text{C}$, control temperature 20°C , continuous operation for 120 h.

2.2.2

Balance. The sensitivity is 0.0001g.

2.2.3

Weighing bottle. bottom diameter $60\text{mm}\pm 1\text{mm}$, height $30\text{mm}\pm 2\text{mm}$.

2.2.4

Drying box. The inner diameter is 240mm~260mm, and silica gel is used as the desiccant.

2.2.5

Potassium nitrate.

2.2.6

Hygrostat. Clean the glass dryer with a diameter of 240mm~260mm, and seal the part with Vaseline. Weigh 650 g of potassium nitrate was added to 500 mL of distilled water exceeding 70°C under stirring, and when the solution was cooled to about 60°C , it was quickly poured into a desiccator.

After cooling, dry the wall of the dryer, place the perforated partition, place a piece of perforated filter paper on the partition, cover it, and place the hygrostat at a temperature of $20^{\circ}\text{C} \pm$ Stand in a 2°C thermostatic chamber or incubator.

2.2.7

Vacuum drying oven or electric constant temperature water oven.

2.3.1 Instrument preparation

2.3.1.1

Control the temperature of the constant temperature chamber or incubator (2.2.1) at 20 °C $\pm$ 2 °C, and stabilize for 4 hours.

2.3.1.2

Wash the weighing bottle (2.2.3), dry it in a desiccator (2.2.4), and place it for 24 hours.

2.3.2 Sample preparation

2.3.2.1

The sample shall all pass through a 400 μ m sieve and the sample shall be divided by a quarter method.

2.3.2.2

Take about 12g sample in the weighing bottle (2.2.3), in the vacuum oven (2.2.7) at 55 °C $\pm$ 2 °C, vacuum pressure 9kPa Dry for 2h under $\sim$ 12kPa condition; or dry at constant temperature for 4h at the same temperature in an electric oven (2.2.7). Placed in a dry box (2.2.4) Inside, cool to room temperature for use.

2.3.2.3

If the incubator is tested, the temperature of the balance chamber shall not be lower than 18 °C. If a constant temperature chamber is used, the balance shall be placed in a constant temperature chamber. Weighing the dryer used should be placed in a constant temperature room or a balance chamber.

2.4 Test procedure

2.4.2

In the constant temperature process, if there is no automatic temperature recorder, record the temperature of the constant temperature chamber or the incubator every 0.5h, automatic recorder or observation point data, any of which should not be lower than 18 °C, higher than 22 °C, otherwise, this experiment is invalid, should be redone (sample can not Reuse).