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

GB/T 28262-2012

Special testing equipment of explosive and medicament

火工品及药剂专用测试仪

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1 Scope

The standard lays down the conditions of use, the requirements, the inspection methods and the inspection rules for the testing instruments used on initiating explosive devices and on pyrotechnic compositions, together with the provisions for marking, packaging, transport and storage.

It applies to the manufacture and the acceptance of the electrostatic sensitivity tester, the explosion point tester, the mechanical impact sensitivity apparatus, the mechanical shock sensitivity apparatus, the pendulum friction sensitivity apparatus and the gas specific volume tester.

2 Normative references

The application of the following documents to this document is indispensable. For a dated reference only the edition bearing that date applies; for an undated reference the latest edition, including all amendments, applies.

GB/T 191, Packaging - Pictorial marking for handling of goods. GB/T 213-2003, Determination of calorific value of coal. GB/T 710, Hot-rolled quality carbon structural steel sheets and strips. GB/T 1298, Carbon tool steels. GB/T 1299, Alloy tool steels.

GB/T 12325, Power quality - Deviation of supply voltage. GB/T 12326, Power quality - Voltage fluctuation and flicker. GB/T 15945, Power quality - Frequency deviation for power

system. GJB 772A-1997, Test methods of explosives. GJB 5891.24-2006, Test methods of initiating and pyrotechnic compositions - Part 24: Friction sensitivity test. GJB 5891.30-2006, Test methods of initiating and pyrotechnic compositions - Part 30: Determination of gas specific volume - Pressure sensor method.

3 Terms and definitions

The following term and definition apply to this document.

3.1 gas special volume: the volume, under standard conditions, of the gas produced by the explosion or the combustion of unit mass of a substance in a vacuum bomb of fixed volume. The English term printed against this Chinese entry is the one used by the issuing body and is reported unchanged.

4 Conditions of use

4.1 Mechanical impact sensitivity apparatus. It is to be used indoors at a temperature of 15 °C to 30 °C and a relative humidity of 50 percent to 70 percent, in a room with good ventilation equipment.

4.2 Mechanical shock sensitivity apparatus. 4.2.1 The temperature and the relative humidity are those of 4.1. 4.2.2 During use the power supply conditions are as follows: voltage 380 V +/- 38 V, the voltage quality meeting GB/T 12325; frequency 50.0 Hz +/- 0.2 Hz, the frequency quality meeting GB/T 15945; voltage fluctuation and flicker meeting GB/T 12326.

4.3 Pendulum friction sensitivity apparatus. 4.3.1 The temperature and the relative humidity are those of 4.1. 4.3.2 The power supply conditions during use are those of 4.2.2. 4.3.3 The maximum permitted load is 150 kilograms per square centimetre measured by the oil cylinder pressure gauge and 1 800 kilograms per square centimetre measured by the sliding column face pressure gauge. 4.3.4 The maximum permitted charge of the test sample is 0.03 g.

4.4 Gas specific volume tester. 4.4.1 The ambient temperature is within the range 15 °C to 30 °C, and during operation the ambient temperature is not to vary by more than +/- 1 °C. 4.4.2 There is to be no direct sunlight and no strong air convection. 4.4.3 There is to be no vibration, no corrosive medium and no strong electromagnetic field interference. 4.4.4 During use the power supply conditions are as follows: voltage 220 V +/- 22 V or 380 V +/- 38 V; frequency 50.0 Hz +/- 0.2 Hz.

5 Requirements

5.1.1.1 Structure. The electrostatic sensitivity tester is made up of the main unit, the step-up column, the copper ball switch box, the electrostatic voltmeter, the pneumatic line solenoid valve, the miniature air compressor and the test chamber for the electrostatic sensitivity of

the composition, as shown in Figure 1.

5.1.1.2 Main unit. 5.1.1.2.1 The main unit is to carry an overload current indicator reading 000 and a voltmeter reading 0 V to 200 V. 5.1.1.2.2 The main unit is to carry a voltage adjustment knob and the reset, prepare and fire buttons, a multi-way socket for connection to the step-up column and terminals supplying the pneumatic line solenoid valve; the knob, the buttons, the sockets and the terminals are to be firmly mounted.

5.1.1.3 Step-up column. 5.1.1.3.1 There are to be two kinds of step-up column, positive polarity and negative polarity. 5.1.1.3.2 The voltage the step-up column can raise is to be not lower than 52 kV.

5.1.1.4 Copper ball switch box. 5.1.1.4.1 The box is to have a lead suitable for connection to the step-up column and a lead suitable for connection to the electrostatic voltmeter, and sockets for connection to the main unit, for connection to the pneumatic line solenoid valve, for the high voltage output and for earthing; every socket is to be firmly mounted. 5.1.1.4.2 Inside the box are to be fitted two removable capacitors and one removable non-inductive resistor; the capacitance values are to be 500 pF and 2 000 pF with a deviation of not more than 5 percent, and the resistance is to be 5 kilohms with a deviation of not more than 5 percent. 5.1.1.4.3 The two copper balls in the box are to be in the separated state and to work pneumatically; when an air pressure of 0.2 MPa to 0.5 MPa is applied and the fire button on the main unit is pressed, the moving copper ball is to strike the stationary copper ball reliably and to return automatically to the separated state after the strike.

5.1.1.5 Electrostatic voltmeter. The voltage range of the electrostatic voltmeter is to suit the requirements of use. 5.1.1.6 Pneumatic line solenoid valve. The working voltage of the valve is to be 24 V and the working pressure 0.2 MPa to 0.8 MPa. 5.1.1.7 Miniature air compressor. The air storage volume is to be not lower than 30 L and the working pressure not lower than 0.7 MPa.

5.1.1.8 Test chamber for the electrostatic sensitivity of the composition. 5.1.1.8.1 Inside the chamber there are to be a movable upper electrode and a fixed lower electrode; the upper electrode is to move freely and the lower electrode is to be firmly fixed, and the chamber is to carry a dial gauge indicating the gap between the upper and lower electrodes. 5.1.1.8.2 The chamber is to carry a release pin able to release the upper electrode reliably and an indicator lamp able to indicate reliably when the upper and lower electrodes touch and short.

5.1.2 Insulation resistance. The insulation resistance between the incoming terminal of the power cable of the electrostatic sensitivity tester and the casing is to be not lower than 2 megohms. 5.1.3 Dielectric strength. A direct voltage of 1 000 V applied between the incoming terminal of the power cable and the casing and held for 1 min is not to break down. 5.1.4 Working stability. 5.1.4.1 At an output voltage of 52 kV the drift of the electrostatic sensitivity tester over 30 min is to be not more than 5 percent. 5.1.4.2 The

deviation of the output energy of the tester is to be not more than 5 percent.

5.2.1.1 Structure. The explosion point tester is made up of three parts, the control instrument, the heating furnace and the lifting mechanism, the furnace and the lifting mechanism being placed in an explosion-proof box. 5.2.1.2 Control instrument. 5.2.1.2.1 The control instrument is to carry a temperature control meter reading 100 °C to 600 °C, the error of its temperature reading being not more than 1 °C. 5.2.1.2.2 The control instrument is to carry a timing meter reading 000.00, the error of its reading being not more than 0.10 s. 5.2.1.2.3 The control instrument is to carry the up, down, rotate, reset and start buttons, each of which is to work reliably and freely and to function normally.

5.2.1.3 Heating furnace. 5.2.1.3.1 The power of the furnace is to be not lower than 2 000 W. 5.2.1.3.2 The maximum heating temperature of the furnace is to be not lower than 600 °C. 5.2.1.4 Lifting mechanism. The lifting movement is to reach its position; once it has travelled down into position, the test tube shell is to be inserted at least 30 mm below the surface of the Wood alloy bath in the furnace; the rotation is to be free and, once in position, the test tube shell is to face the centre of the furnace mouth; lifting and rotation are to be controlled by the control instrument.

5.2.2 Insulation resistance. The insulation resistance between the incoming terminal of the power cable of the explosion point tester and the casing is to be not lower than 2 megohms.

5.2.3 Dielectric strength. An alternating voltage of 1 000 V at a frequency of 50 Hz applied between the incoming terminal of the power cable and the casing and held for 1 min is not to break down. 5.2.4 Working stability. Once switched on, the explosion point tester is to work normally and without interruption for 8 h.

5.3.1.1 Structure. The mechanical impact sensitivity apparatus is made up mainly of the guide rail, the graduated scale, the release tongs, the drop hammer, the impact device and the steel anvil, as shown in Figure 2. The clause is cut by the edge of the last page available.

Note Note on the printed English title

The English title printed on the cover of the document reads Special testing equipment of explosive and medecament. The last word is a typing error for medicament and has been corrected in the title given above; the wording is otherwise reproduced as printed.