

CCS Y51

JY

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

JY/T 0423-2011

**General quality requirements and test methods for teaching
glass instruments
(English Translation)**

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Foreword

Chapters 4 to 10 of this standard are mandatory and the rest are recommended.

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was proposed by the National Technical Committee for Standardization of

Teaching Instruments (SAC/TC125).

This standard is under the jurisdiction of the National Technical Committee for Standardization of Teaching Instruments (SAC/TC125).

1 Scope

This standard specifies the geometry and coordination, appearance requirements, physical and chemical properties, material requirements and test methods of glass instruments for teaching.

And environmental testing, inspection rules, signs, labels, packaging, instructions, storage and transportation.

This standard applies to teaching laboratory glass instruments.

This standard does not apply to electric vacuum teaching instruments made of glass.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this document.

Nodule knot

Due to uneven mixing of glass batches or incomplete melting, etc., there are transparent nodes or lumps in the glass.

(QB/T 2108-1995, defect term 2.3) 3.7 Stone Opaque solid inclusions in glass; there are batch stones, refractories, and crystalline stones.

(QB/T 2108-1995, defect term 2.4) 3.8 Iron scurf the iron particles adhere to the glass.

(QB/T 2108-1995, defect term 2.5) 3.9 Rust Red or yellow marks on glass surfaces that are rubbed against iron and contaminated.

(QB/T 2108-1995, defect term 2.6) 3.10 Spun glass when the product shakes during the molding operation, the glass tail on the glass wall or bottom surface is left.

(QB/T 2108-1995, defect term 2.7) 3.11 Missing grind the original surface that has not been ground on the matte surface.

(QB/T 2108-1995, defect term 2.30) 3.12 Sand mark the matte surface of the product does not have the coarse sand marks that are present in the fine grinding.

(QB/T 2108-1995, defect term 2.31) 3.13 Blobby line Fingerprints and printed lines are interrupted.

(QB/T 2108-1995, defect term 2.32) 3.14 Etch mark Spots on the glass surface of the pointer product that have been corroded by hydrofluoric acid.

(QB/T 2108-1995, defect term 2.33) 3.15 Smeared print Color smear caused when the product is printed.

(QB/T 2108-1995, defect term 2.34)

4.1.1 Requirements

4.1.1.1

For all glass instruments that have national and industry standards, the minimum wall thickness shall meet the relevant standards. Where there is no national or industry standard Glass instrument, the minimum wall thickness is specified by the product standard.

4.1.1.2

Thickness uniformity of glass instruments under pressure, wall thickness ratio is not greater than 2. 1; other glass instruments are not thick at 5. 2. The minimum wall thickness shall comply with Article 4.2 of GB 21749-2008, and the product standard shall specify the specific wall thickness requirements of glass instruments.

4.1.2 Test method

Test with bottle wall thickness detector of the following specifications.

0mm ~ 2mm error. $\pm 5\mu\text{m}$ (1 + 1%) reading error, 0mm ~ 4mm error. $\pm 10\mu\text{m}$ (1 + 1%) reading error.

4.2.1 Requirements

The frosted surface should cover the frosted part uniformly and regularly, and the area should not be less than 92% of the frosted part.

4.2.2 Surface roughness

The matte surface roughness (Ra) should not exceed 1 μm . The surface roughness of the ground surface of the joint is measured by a surface roughness meter according to GB/T 1031 test.

4.2.3 Light spot

4.2.3.1

The spot should not penetrate vertically.

4.2.3.2

Area inspection of light spot. first measure the total area of frosted area.

SD dl

4.3.1.2 Adhesion shall be graded as follows.

a) Level 1

The running-in surface is required to be fine and free to rotate. It can be used for air pressure test and similar to the air pressure test (such as pistons and other Instruments requiring high tightness);

b) secondary

The running-in surface is required to be fine, which can control the leakage of liquid and can be used for general sealing (such as narrow-mouth bottles, gas generators, dry Dryers, gas wash bottles, drip bottles and similar types of products);

c) Level 3

General running-in surfaces, do not open often, do not require tightness, or cooperate with rubber stoppers (such as jars, weighing bottles, Volumetric flasks, gas cylinders and similar products).

4.3.2 Adhesion requirements and test methods

4.3.2.1

Adhesion requirements and test methods shall comply with Table 1.

Table 1 Adhesion requirements and test methods

4.3.2.2

First-class adhesion test. After the joint is cleaned and dried without grease, its adhesion performance shall meet the following requirements.

a) Use Figure 1 or a similar device for inspection. The total volume of the device should be about 1500mL;

b) the airtightness of the device should be checked before the test;

c) During the test, the connector in the vertical state is fixed on the rubber stopper of the instrument, and the gas is extracted from the device, when the pressure is 50kPa at that time, close the suction piston. After 1 minute, record the pressure gauge reading, and after 5 minutes, record the reading again. Return the device to normal pressure, the joint was removed from the grinding mouth, rotated 90 °, and the above test was repeated. One of the pressure readings taken at 5 min intervals the difference should not exceed 1.3kPa.

Description. 1-rubber stopper; 2-connection to be tested; 3- rubber stopper; 4-connected vacuum system;

Figure 1 Frosted adhesion test device