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

JY/T 0433-2011

**Teaching glass dropper
(English Translation)**

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Foreword

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

Please note that some elements of this standard may involve patents. The issuer of this standard should not be held responsible for identifying these patents.

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).

This standard was drafted. Sichuan Longchang Glass Instrument Factory, Zhejiang Educational Technology Center, Sichuan Ziyang Glass Instrument Factory, Sichuan Scientific industry teaching equipment limited liability company.

1 Scope

This standard specifies the classification and naming of droppers, technical requirements, test methods, inspection rules, packaging, transportation, and storage.

This standard applies to droppers.

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.

For undated references, the latest version (including all amendments) applies to this document.

GB 191-2008 packaging storage and transportation pictogram GB/T 2828.1-2003 Counting sampling acceptance procedure Part 1. Sampling plan for batch inspection for retrieval by acceptance quality limit (AQL) JY 0001-2003 General quality requirements for teaching instruments and equipment products JY 0002 Inspection rules for teaching instruments and equipment products JY 0026-1991 teaching instrument and teaching equipment product model naming method JY/T 0423-2011 General quality requirements and test methods of teaching glass instruments

3.1 Product Classification

According to the external dimensions, there are four types. phi 8mm x 90mm, phi 8mm x 100mm, phi 8mm x 150mm, phi 8mm x 200mm.

The structure is divided into straight dropper, curved dropper, straight ball dropper and curved ball dropper.

3.2 Model designation

The model name of the product is in accordance with JY 0026-1991.

The model of the dropper is named.

L - DG - Z/W/ZQ/WQ - 8 x 90 Product specifications (dimensions), unit. mm Product feature code, straight/curved/straight/curved Product name Pinyin prefix, dropper Product model classification code, glass instrument Model example.

L-DG-Z-8 x 100. Straight dropper with dimensions of phi 8mm x 100mm.

4.1 Materials

It should be made of colorless transparent borosilicate glass. The average linear thermal expansion coefficient is not more than $4.0 \times 10^{-6} \text{K}^{-1}$.

4.2 Dimensions

The external dimensions and tolerances of various droppers should conform to Table 1 and Figure 1, Figure 2, Figure 3, and Figure 4.

Table 1 Dimensions and tolerances in millimeters

Serial number part name code Specifications, dimensions and tolerances 8 x 90 8 x 100 8 x 150 8 x 200

1 Full length L 90 ± 10 100 ± 10 150 ± 10 200 ± 10

2 Ball pitch upper tube length l $1 \ 25 \pm 5$ 30 ± 5 30 ± 5 30 ± 5

3 Ball diameter D 18 ± 1 18 ± 1 --

4 Pipe diameter d $10 \sim 11$ $10 \sim 11$ $10 \sim 11$ $10 \sim 11$

5 Tube diameter D $1 \ 7 \sim 8$ $7 \sim 8$ $7 \sim 8$ $7 \sim 8$

6 Tube wall

Upper tube

1 ± 0.2 1 ± 0.2 1 ± 0.2 1 ± 0.2 Tip ≥ 0.5 ≥ 0.5 ≥ 0.4 ≥ 0.4

7 Tube tip diameter d $2 \ 2 \sim 3$ $2 \sim 3$ $2 \sim 3$ $2 \sim 3$

Note: "-" means not required.

Figure 1 Straight dropper Figure 2 Curved dropper

Figure 3 Straight Ball Dropper Figure 4 Curved Ball Dropper

4.3 Appearance

4.3.1 Permitted appearance defects. gas line width is less than 0.5mm, not concentrated, the length should be no more than 1/2 of the total length of the pipe, and no more than 3;

The maximum diameter of nodules should be no more than 1.5mm, no more than five, and they should not be concentrated; the maximum diameter of stones should be no more than 1mm, and no more than four and should not be concentrated; 2 single stripes are allowed; the total number of above defects is allowed. no more than 4 gas lines and single stripes; nodules and stones 6.

4.3.2 The appearance defects that should not exist shall be in accordance with JY/T 0423-2011 Section 5.1.1.

4.3.3 The thickness of the bulb wall of the dropper shall be the same as that of the tube wall.

4.3.4 The tip of the dropper should be dried.

4.4 rubber cap

The dropper should be attached with a natural rubber cap, which should be red, with good suction and release flexibility, and an opening diameter of 6mm, which fits firmly and stably with the dropper mouth.

4.5 Chemical stability should meet water resistance HGB level 1, acid resistance H1 level, alkali resistance A2 level.

4.6 Internal stress

The internal stress should not be greater than 180 nm/cm.

4.7 Environmental test the environmental test shall be in accordance with Chapter 8 of JY/T 0423-2011.

5 Test method

5.1 The average linear thermal expansion coefficient shall be in accordance with JY/T 0423-2011 Section 6.4.2. The test shall meet the requirements of 4.1 of this standard.

5.2 Dimensions are measured with a vernier caliper with a division value of 0.02 mm and a steel ruler with a division value of 0.5 mm, which shall meet the requirements of 4.2 of this standard.

5.3 The length of the appearance defect shall be tested with a reading microscope and shall meet the corresponding requirements of this standard.

5.4 The wall thickness and uniformity shall be tested in accordance with JY/T 0423-2011 Section 4.1.3, and shall meet the requirements of 4.2 and 4.3.3 of this standard.

5.5 Water resistance, acid resistance, and alkali resistance are tested according to JY/T 0423-2011 Section 6.5.5, and they shall meet the requirements of 4.5 of this standard.

5.6 The internal stress shall be in accordance with JY/T 0423-2011 Section 6.1.2 and shall comply with this standard 4.6.

5.7 The material test shall be in accordance with Article 7.2 of JY/T 0423-2011, shall comply with 4.1 of this standard, and shall not be colored.

5.8 The remaining sensory tests shall meet the corresponding requirements of this standard.

5.9 The environmental test shall be in accordance with Chapter 8 of JY/T 0423-2011 and shall comply with 4.7 of this standard.

6 Inspection rules

6.1 Inspection classification the inspection of this product is divided into factory inspection, type test and quality supervision inspection.

6.2 Inspection items and inspection methods the inspection items and inspection methods for factory inspection and type inspection shall comply with Table 2.

Table 2 Inspection items and inspection methods for defect classification, factory inspection and type inspection