

JJG

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

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Verification Regulation of Locomotive Pipette (English Translation)

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1 Scope

This Regulation applies to the initial verification, subsequent verification and in-service inspection of locomotive pipette.

2 Cited reference

This Regulation cites the following document.

GB 6682-1992 Water for analytical laboratory use - Specification and test methods

Pay attention to use the current valid version of the above cited reference in using this Regulation.

3.1 Locomotive pipette

Measuring instrument with a certain scale range that can suck the liquid from container and transfer it into another container (Filling injector, sample-filling storage, aspirator etc.

collectively referred to as locomotive pipettes).

3.2 Adjustable locomotive pipette

Locomotive pipette whose volume value can be adjusted.

3.3 Quantitative locomotive pipette

Locomotive pipette with single volume value.

3.4 Aspirating-nozzle

The part installed on the lower end of locomotive pipette and used to suck and discharge liquid.

3.5 Display window

The window on locomotive pipette displaying volume value.

3.6 Suction tube

The connecting member between locomotive pipette and aspirating-nozzle.

4 Overview

Locomotive pipettes are mainly used in environmental protection, medicine, food and health research department, and other departments to sample liquid or add liquid in biochemical analysis and assays. It is a piston pipette working with the principle of air discharge and determining the volume of the locomotive pipette through the moving distance of piston in piston sleeve.

5 Metrological properties requirements

At the standard temperature 20°C, the volume permissible tolerance and measurement repeatability of the locomotive pipette shall meet the requirements in Table 1.

6.2 Piston

The piston of locomotive pipette shall be able to move up and down flexibly with clear sub-block boundaries when being pressed.

6.3 Regulator

The display window of locomotive pipette shall be flexible in rotation with clear and complete indicating numbers in the action of regulating volume.

6.5 Air-tightness

Under 0.04 MPa, the locomotive pipette shall have no air leakage phenomenon in 5 seconds.

6 Metrological measuring tool control

Metrological measuring tool control includes initial verification, subsequent verification and in-service inspection.

7.1.1 Verification environment

The locomotive pipette shall be verified under the condition at $(20\pm 5)^{\circ}\text{C}$ of room temperature, and the change of room temperature is not larger than 1°C/h .

7.3.1 Appearance inspection

Observe the locomotive pipette to verify through eye-inspection, touching or magnifying glass; the appearance shall meet the requirements of 6.1.

7.3.3 Volume verification

Adopt measurement method to verify the locomotive pipette.

7.3.3.1 Preparation before verification

The selected aspirating-nozzle shall match with the aspirating-rod. At the lower end of the aspirating-rod of locomotive pipette, gently turn the aspirating-nozzle to ensue the air-tightness of locomotive pipette; there shall be no hanging-water phenomena after the process of several times of aspirating and discharging.

7.3.4.1 Calculation of the actual volume of locomotive pipette

Substitute the mass value, temperature value, and air density value measured by implementing 7.3.3.2(1) ~ (5) into the following equation; the actual volume of the locomotive pipette at the standard temperature, 20°C , can be obtained.

Where.

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