CCS N 64

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 12810-2021

Laboratory glassware - Capacity methods testing and use of volumetric instruments

Issued on: August 20, 2021 **Implemented on: March 1, 2022**

Issued by: State Administration for Market Regulation, China National Standardization Administration

Table of Contents

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1.Structure and Drafting Rules of Standardization Documents"

Drafting.

This document replaces GB/T 12810-1991 "Laboratory glass instrument glass volume calibration and use method", and

Compared with GB/T 12810-1991, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

--- Changed the scope of application (see Chapter 1, Chapter 1 of the.1991 edition);

--- Change the chapter "Capacity Units, Standard Temperature" to "Terms and Definitions" (see Chapter 3, Chapter 4 of the.1991 Edition);

--- Deleted the definition of the term "capacity unit" (see 4.1 in the.1991 edition);

--- Changed the definition of the term "standard temperature" (see 3.9, 4.2 in the.1991 edition);

---Added the definitions of 8 terms such as measuring-in container and measuring-out measuring device (see 3.1~3.8);

---Change "Method Summary" to "Volume Calibration", and change the expression (see Chapter 3 of 7.1,.1991 Edition);

---Added calibration medium requirements (see Chapter 5);

--- Deleted the barometer (see 5.3 in the.1991 edition);

--- Deleted the chapter "Factors affecting the accuracy of laboratory measuring instruments" (see Chapter 6 of the.1991 edition);

--- Added a chapter "Environmental Requirements for Calibration Laboratories" (see Chapter 6, Table B1 of the.1991 Edition);

---Added the adjustment of the meniscus of the transparent glass containing the transparent liquid (see 7.3.1);

---Added the adjustment of the meniscus of the blue line milky white backing measuring device containing transparent liquid (see 7.3.2);

---Added the adjustment of the meniscus of opaque liquids (see 7.3.3);

---Changed the expression of "glass measure outflow time" (see 7.4, Chapter 8 of the.1991 edition);

---Added the electronic balance weighing method (see 8.3.2.1);

---Changed the volume expansion coefficient of the glass gauge (see 9.1, B1.4 in the.1991 edition);

---Added the calculation method of K(t) value (see 9.3);

---Changed the calculation and presentation of results (see Chapter 9, Appendix B, 9.6, Appendix B of the.1991 edition);

---Added the calibration report (see Chapter 10);

--- Deleted the method of cleaning glass measuring vessels with a mixture of saturated potassium dichromate solution and concentrated sulfuric acid (see.1991 edition A2a.);

--- Deleted the experimental error related to meniscus calibration (see B1.3 in the.1991 edition);

---Change the table in Appendix B (see B.1, B.2, B.3, B.4, B.5, B.6, Table B3, Table B4, Table B6, Table B7 in the.1991 edition,

Table B8, Table B9);

--- The additional correction values for the air temperature and pressure of the 1000mL measuring instrument have been deleted (see Table B10 in the.1991 edition).

This document is drafted with reference to ISO 4787.2010 "Methods for Calibration and Use of Glass Measuring Instruments for Laboratory Glass Instruments".

Degrees are not equivalent.

1 Scope

This document specifies the volume calibration and usage methods of glass measuring devices.

This document is applicable to the calibration and use of glass measuring devices with a capacity range of 0.01mL~5000mL.

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated quotations

Only the version corresponding to that date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

This document.

GB/T 6682 Analytical laboratory water specifications and test methods

JJF1009 Capacity measurement terms and definitions

3 Terms and definitions

The following terms and definitions defined in JJF1009 apply to this document.

3.1

Measuringcontainer(tocontain)

A measuring device used to measure the volume of liquid in the injection measuring device (the inner wall is dry).

[Source. JJF1009-2006, 2.5]

Note. The input symbol is represented by "In".

3.2

Measuringcontainer(todeliver)

A measuring device used to measure the volume of liquid discharged from the inside of the measuring device.

[Source. JJF1009-2006, 2.6]

Note. The symbol of the measure-out formula is represented by "Ex".

3.3

Calibration liquid

The liquid used in the calibration of the gauge.

[Source. JJF1009-2006, 2.5]

3.4

Remaining liquid

The amount of liquid remaining on the surface of the inner wall of the measuring device

after the liquid inside the measuring device is discharged within the specified time.

[Source. JJF1009-2006, 2.11]

3.5

Dischargingtime

In order to ensure the measuring accuracy of the measuring device, the prescribed time for all liquid in the measuring device to flow out.

[Source. JJF1009-2006, 2.12]