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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 42387-2023

Volumetric glass - Technical requirements for quality classification

玻璃量器 质量分级技术要求

Issued on: March 17, 2023 **Implemented on: October 1, 2023**

Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC

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Foreword

This document was issued on 17 March 2023 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 October 2023.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

1 Scope

GB/T 42387-2023 covers quality grading for volumetric glassware - burettes and the other graduated vessels a laboratory measures with. Clause 4 carries the technical requirements, set out grade by grade in tables that run for most of the document and take each type of vessel in turn, starting with burettes. Clause 5 describes the test methods used to check a vessel against those tables, and Clause 3 settles what a quality classification is: sorting by the quality and technical characteristics laid down here, rather than by price or by a maker's own description. Every quantitative result in a wet laboratory rests on the volume delivered by a piece of glass. A burette whose bore is not uniform, whose graduations were laid down off the true position, or whose tip drains at the wrong rate, gives a titration that is repeatable and wrong, and the same error runs through every result until someone recalibrates - by which time batches have been released on it. Grading gives a purchaser a way to ask for accuracy that matches the work in hand, instead of buying the cheapest vessel of the right nominal capacity and hoping. For glassware makers, laboratory buyers, and the metrology and accreditation bodies that verify volumetric equipment.

This document specifies the technical requirements for quality classification of volumetric glass

and describes the test methods.

This document is applicable to the quality classification and test of volumetric glass

(burettes,

graduated pipettes, one-mark pipettes, one-mark volumetric flasks, measuring cylinders and

measuring cups).

2 Normative References

The contents of the following documents constitute indispensable clauses of this document

through the normative references in this text. In terms of references with a specified date, only

versions with a specified date are applicable to this document. In terms of references without a

specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 6580 Glass - Resistance to Attack by a Boiling Aqueous Solution of Mixed Alkali -

Method of Test and Classification

GB/T 6581 Glass - Resistance to Attack by Hydrochloric Acid at 100 ?C - Flame Emission or

Flame Atomic Absorption Spectrometric Method

GB/T 6582 Glass - Hydrolytic Resistance of Glass Grains at 98 ?C - Method of Test and

Classification

GB/T 12803 Laboratory Glassware - Conical Graduated

GB/T 12804 Laboratory Glassware - Graduated Measuring Cylinders

GB/T 12805 Laboratory Glassware - Burettes

GB/T 12806 Laboratory Glassware - One-mark Volumetric Flasks

GB/T 12807 Laboratory Glassware - Graduated Pipettes

GB/T 12808 Laboratory Glassware - One-mark Pipettes

GB/T 15726 Glassware - Stress Examination Methods

GB/T 15728 Glass Resistance to Attack by a Boiling Hydrochloric Acid Gravimetric Method

of Test and Classification

GB/T 28209 Methods for Chemical Analysis of Borosilicate Glasses

JJG 196 Verification Regulation of Working Glass Container

3 Terms and Definitions

The following terms and definitions are applicable to this document.

3.1 quality classification

Quality classification refers to classification in accordance with the quality and technical requirements of volumetric glass under test.

NOTE 1: volumetric glass includes burettes, graduated pipettes, one-mark pipettes, one-mark

volumetric flasks, measuring cylinders and measuring cups.

NOTE 2: the quality and technical requirements include structure type, specifications and dimensions, capacity and accuracy, appearance requirements, physical and chemical properties, etc.

3.2 marking numbers

Marking numbers are marked on the outer surface of the volumetric glass to indicate the metrological figure of the volumetric glass.

4 Technical Requirements

4.1 Burettes

The quality classification requirements for burettes shall comply with the stipulations of Table

1.

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