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

GB/T 12416-2025

Replacing GB/T 12416.2-1990

**Glass - Hydrolytic resistance of glass grains at 121°C - Method
of test and classification**

玻璃制品 玻璃颗粒在121°C时的耐水性 试验方法和分级

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document replaces GB/T 12416.2-1990 "Test Method and Classification of Water Resistance of Glass Particles at 121°C", and is consistent with GB/T 12416.2- Compared to.1990, aside from structural adjustments and editorial changes, the main technical changes are as follows:

---The principle has been changed (see Chapter 4, Chapter 3 of the.1990 edition);

---General rules for reagents and requirements for distilled water have been added (see 5.1, 5.2);

---The requirements for test water, the preparation method of methyl red indicator solution, and the requirements for hydrochloric acid solution and acetone have been changed (see 5.3~). 5.6 (4.1, 4.4, 4.2, and

4.5 of the.1990 edition);

---Sodium hydroxide reagent has been removed (see

4.3 in the.1990 edition);

---Changes have been made to the requirements for burettes, narrow-mouth conical flasks, beakers, the O-sieve aperture in standard sieves, ovens, and autoclaves (see 6.2). 6.4, 6.5, 6.11, 6.15, 6.16 (5.3, 5.5, 5.6, 5.12, 5.13,

5.1 of the.1990 edition);

---Requirements and testing environments for ball mills, vibrating screens, ultrasonic cleaners, and electric heating plates have been added (see 6.12~6.14, 6.17, and section 7). chapter);

---The requirements for coarsely crushed samples have been changed (see 8.1,

6.2 of the.1990 edition);

---A method for mechanically preparing particles has been added (see 8.2.2);

1 Scope

GB/T 12416-2025 is the Chinese national standard on glass - hydrolytic resistance of glass grains at 121°C - method of test and classification, in the field of glass and ceramics industries. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 31 October 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 May 2026. Classification: ICS 81.040.01, CCS Y 22. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document describes the test method and classification of the water resistance of glass particles when subjected to water erosion at $(121 \pm 1)^\circ\text{C}$ for (30 ± 1) min. This document applies to glass with high water resistance.

Note. Such as borosilicate glass.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 6005 Basic Dimensions of Mesh Sizes for Test Sieve Wire Braided Mesh, Perforated Plates and Electroformed Sheet Plates

GB/T 6682 Specifications and test methods for water used in analytical laboratories

GB/T 12805-2011 Burettes for Laboratory Glassware

GB/T 12808-2015 Laboratory Glassware - Single-mark Pipettes

GB/T 15723 Laboratory Glassware Desiccators

GB/T 15724 Laboratory Glassware Beakers

GB/T 22362 Laboratory Glassware Flasks

3 Terms and Definitions

This document does not contain any terms or definitions that need to be defined.

4.Principles This method involves testing glass as a glass particle material. 10g of glass particles with a particle size of 300 μ m~425 μ m were added to a certain amount of test water and heated at (121 $\pm$ 1) $^{\circ}$ C for (30 $\pm$) $^{\circ}$ C. 1) min, the water erosion resistance of the particles was determined by analyzing the extraction solution.

Note. The density of glass particles at 20 $^{\circ}$ C is generally (2.4 $\pm$ 0.2) g/cm³.

5 Reagents

5.1 General Rules Unless otherwise specified, reagents of analytical purity or higher should be used.

5.2 Distilled water The following methods can be used to obtain it.