

CCS N 64



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

GB/T 6580-2021

**Glass - Resistance to attack by a boiling aqueous solution of
mixed alkali - Method of test and classification**

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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 6580-1997 "Test method and classification of corrosion resistance of glass in boiling mixed alkali aqueous solution", and

Compared with GB/T 6580-1997, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- Modify the standard name "Erosion" to "Erosion" (see cover);
- Added the content of this document applicable to various glass and ceramic alkali resistance tests (see Chapter 1, Chapter 1 of the.1997 edition);
- Added references to missing original documents (see Chapter 2, Chapter 2 of the.1997 edition);
- Added terms and definitions (see Chapter 3);
- Modify pure water to distilled water or deionized water (see 5.1, 4.1 in.1997 edition);
- The style and size of the container have been increased (see 6.1, 5.1 of the.1997 edition);
- Modified the heating device (see 6.12, 5.12 of the.1997 edition);
- The sample basket has been added (see 6.13);
- Modified the sample preparation of glass products (see 7.1, 6.1 of the.1997 edition);
- Modified the glass material sample preparation (see 7.2, 6.2 of the.1997 edition);

---Added the description of alkali resistance of glass material (see 7.2);

---The number of samples has been increased (see 7.3);

--- Increased experimental bias (see Chapter 9).

This document uses the redrafting method to modify and adopt ISO 695.1991 "Test method for resistance to corrosion of glass in boiling mixed alkali aqueous solution and

Classification.

Compared with ISO 695.1991, this document has many adjustments in structure. Appendix A gives the rules and regulations of this document and ISO 695.1991.

List of serial numbers.

Compared with ISO 695.1991, this document has technical differences. Appendix B gives a list of corresponding technical differences and their reasons.

Compared with ISO 695.1991, this document has made the following editorial changes.

---Informative Appendix A and Appendix B have been added.

1 Scope

This document specifies a method for testing the corrosion resistance of glass with a boiling mixture of sodium carbonate and sodium hydroxide aqueous solution. Alkali resistance of glass

It is expressed by the mass loss per unit surface area, and the corrosion resistance of the boiling mixed alkali aqueous solution is classified according to the amount of mass loss.

This document is applicable to all kinds of glass and ceramics.

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

document.

GB/T 620 Chemical reagent hydrofluoric acid

GB/T 622 Chemical reagent hydrochloric acid

GB/T 629 chemical reagent sodium hydroxide

GB/T 639 Chemical reagent anhydrous sodium carbonate

GB/T 678 Chemical reagent ethanol (anhydrous ethanol)

GB/T 686 Chemical reagent acetone

GB/T 6682 Analytical laboratory water specifications and test methods (GB/T 6682-2008, ISO 3696:1987, MOD)

GB/T 15724 Laboratory glass beaker (GB/T 15724-2008, ISO 3819:1985, NEQ)

GB/T 28212 Laboratory glass instrument condenser (GB/T 28212-2011, ISO 4799:1978, NEQ)

ISO 683-13 Heat-treatable steel, alloy steel and chip-free steel Part 13. Refined stainless steel (Heat-treatable

steels, alloy steels and free-cutting steels-Part 13. Wrought stainless steels)

3 Terms and definitions

There are no terms and definitions that need to be defined in this document.

4 Principle

For glass samples with a total surface area of 10 cm²–15 cm², use an equal volume of sodium carbonate with a concentration of 0.5 mol/L and 1 mol/L hydroxide

The boiling mixed solution of sodium sulfide was corroded for 3 h, and the mass loss per unit surface area of the glass sample was measured.

5.1 Distilled or deionized water

It should meet the level 3 or higher experimental water specified in GB/T 6682.