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

GB/T 6581-2026

Replacing GB/T 6581-2007

**Glass - Resistance to attack by hydrochloric acid at 100?? -
Flame emission or flame atomic absorption spectrometric
method**

(English Translation)

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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 6581-2007 "Method for Determination of Resistance of Glass to Hydrochloric Acid Etching at 100°C by Flame Emission or Atomic Absorption Spectroscopy".

Compared with GB/T 6581-2007, the main technical changes in the "Law" are as follows, apart from structural adjustments and editorial modifications.

---The scope of application has been changed (see Chapter 1, Chapter 1 of the 2007 edition);

---Oven requirements have been changed (see 6.1, 5.1 and 5.2 in the 2007 edition);

---Changed equipment requirements for atomic absorption spectrometers (atomic absorption spectrophotometers) or flame spectrophotometers (see 6.2, 2007 edition).

---Added requirements for plasma emission spectrometer equipment (see 6.3);

---The caliper requirements have been changed (see 6.4, 5.4 in the 2007 edition);

---The size requirements for PTFE covered dishes have been changed (see 6.5, 5.5 in the 2007 edition);

---Thermometer requirements have been added (see 6.12);

---The sample preparation for glass articles has been modified (see 7.1, 6.2 in the 2007 edition);

---The acid pretreatment for glass acid-resistant specimens has been modified (see 7.2, 6.3 in the 2007 edition);

---The preparation of the sample solution has been modified (see 8.1, 7.1 in the 2007 edition);

---The determination of alkaline oxide content has been changed (see 8.2, 7.2 in the 2007 edition).

This document is modified to adopt ISO 1776:1985, "Resistance of glass to hydrochloric acid immersion at 100°C - Flame emission or atomic absorption spectrometry determination".

"Definition Method".

This document has undergone several structural adjustments compared to ISO 1776:1985. A table comparing the structural numbering of the two documents can be found here.

Appendix A.

This document differs significantly from ISO 1776:1985 in several technical aspects. The relevant clauses are indicated in vertical single-line margins.

The lines (|) are used for marking. A summary of these technical differences and their reasons can be found in Appendix B.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China National Light Industry Council.

This document is under the jurisdiction of the National Technical Committee on Standardization of Glass Instruments (SAC/TC178).

1 Scope

This document describes a method for determining the corrosion resistance of glass in hydrochloric acid solution at 100°C using flame emission or atomic absorption spectroscopy.

Acid resistance is expressed as the mass of basic oxides precipitated per unit surface area.

This document applies to borosilicate glass products with good acid resistance. If the sample is pretreated with acid, the acid resistance of the glass material can also be determined.

For acidic products or other glass products or materials, please refer to this document.

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 620 Chemical Reagents Hydrofluoric Acid GB/T 622 Chemical Reagents - Hydrochloric Acid GB/T 678 Chemical Reagents - Ethanol (Anhydrous Ethanol) GB/T 686 Chemical Reagent Acetone GB/T 6682 Specifications and test methods for water used in analytical laboratories GB/T 12806 Laboratory Glassware - Single-mark volumetric flasks GB/T 12807 Graduated Pipettes for Laboratory Glassware

3 Terms and Definitions

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

4 Principles

Glass samples with a total surface area of approximately 30-40 cm² were etched in a 6 mol/L hydrochloric acid solution at 100°C for 3 hours, and their unit surface area was measured.

The mass of precipitated basic oxides. The sodium oxide content of precipitated borosilicate glass is $\leq 100 \mu\text{g}/\text{dm}^2$.

5.1 Test water

The water used for testing should meet the requirements of Grade III or above as specified in GB/T 6682.

5.2 Hydrochloric acid

It should be no less than the requirements for superior purity in GB/T 622.