

ICS 11.680.10
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**PHARMACEUTICAL INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

YY/T 0528-2025

Replacing YY/T 0528-2018

Dentistry - Corrosion test methods for metallic materials

牙科学 金属材料腐蚀试验方法

(English Translation)

Issued on: June 18, 2025

Implemented on: July 1, 2026

Issued by: National Medical Products Administration

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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 YY/T 0528-2018 "Test Methods for Corrosion of Metallic Materials in Dentistry". Compared with YY/T 0528-2018, except for...

Aside from structural adjustments and editorial changes, the main technical changes are as follows.

- a) In the "Scope" section, remove the statement that this document does not apply to "orthodontic appliances" and "dental amalgam" (see Chapter 1, Chapter 1 of the 2018 edition);
- b) In 4.1.6.3, a description has been added to the static immersion test method, acknowledging that "the total surface area of orthodontic appliances is difficult to measure." Therefore, if required by the appropriate standards, "for a specified number of orthodontic brackets, report the quantity of each bracket in a set of orthodontic brackets." the 7-day ion release, expressed in μg , is also acceptable. (See 4.1.6.3);
- c) Since not every country offers analytical grades for sodium sulfide (approximately 35% Na₂S), a note has been added to the corresponding test methods.

This indicates that sodium sulfide nonahydrate (Na₂S·9H₂O) with a purity of $\leq 98\%$ can also be used (see 4.3.3.1, 4.4.3.1, 2018 edition).

4.3.3.1, 4.4.3.1);

- d) This document has been modified to conform to ISO 22674:2022 by revising the sample preparation sections for various test methods.

This reflects the changes made in ISO 22674:2022 for the preparation of metal substrates for use in metal-ceramic restorations (see 4.1.6.4).

Versions 4.2.6.4, 4.3.6.4, 4.4.6.4, and 4.5.6.4 (2018 versions. 4.1.6.4, 4.2.6.4, 4.3.6.4, 4.4.6.4, and 4.5.6.4)

- e) Added "Dental amalgam", requiring compliance with ISO/T S17988 (see 4.6) when testing the corrosion behavior of dental amalgam;
- f) Added "crevice corrosion", providing a test method for assessing the susceptibility of dental metal materials to crevice corrosion (see 4.7).

This document adopts ISO 10271:2020 "Dental science - Corrosion test methods for metallic materials".

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 National Medical Products Administration.

This document is under the jurisdiction of the National Technical Committee on Standardization of Dental Materials and Instruments (SAC/TC99).

1 Scope

This document describes test methods for detecting the corrosion behavior of metallic materials used in the oral cavity, so that the test methods in this document can be applied to [the following].

Standard references for metalloid materials.

This document does not apply to medical devices.

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.

Note: GB/T 12806-2011 Laboratory Glassware - Single-mark volumetric flasks (ISO 1042:1998, NEQ) ISO 1942 Dental Vocabulary Note. GB/T 9937-2020 Dental Terminology (ISO 1942:2009, MOD) Note. GB/T 34843-2017 3.3 Properties of borosilicate glass (ISO 3585:1998, MOD) and test methods) Note. GB/T 6682-2008 Specifications and test methods for water used in analytical laboratories (ISO 3696:1987, MOD) ISO 6344-1 Abrasives for Coated Abrasives - Grain Size Analysis - Part 1: Grain Size Composition Note. GB/T 9258.1-2000 Abrasives for coated abrasives - Particle size analysis - Part 1: Particle size distribution (ISO 6344-1:1998, IDT) Note. GB/T 10893.2-2006 Compressed air dryers - Part 2: Performance parameters (ISO 7183.2:1996,

MOD) amalgam)

3 Terms and Definitions

The terms and definitions defined in ISO 1942 and the following terms and definitions apply to this document.

Breakdown potential; E_p the minimum potential that initiates and propagates pitting and/or crevice corrosion.

corrosion

The physicochemical interaction between a metal or alloy and its environment. This interaction can lead to partial or complete damage or performance degradation of the material.

Change.