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

GB/T 16265-2025

Replacing GB/T 16265-2008

Test method of packaging materials - Compatibility

包装材料试验方法 相容性

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1 Scope

GB/T 16265-2025 is the Chinese national standard on test method of packaging materials - compatibility, in the field of packaging and distribution of goods. 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 30 June 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 January 2026. Classification: ICS 55.020, CCS A83. 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 test methods for the compatibility of packaging materials with filling materials and between packaging materials. This document applies to compatibility tests between the following materials.

- a) neutral packaging materials with solid materials;
- b) peelable plastics or coatings with solid materials;

- c) volatile rust preventive packaging materials with metallic materials;
- d) volatile rust preventive packaging materials with heat-sealable packaging materials.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 678 Chemical reagent - Ethanol

GB/T 687 Chemical reagent - Glycerol

GB/T 3880.1-2023 Wrought aluminium and aluminium alloy plates, sheets and strips for general engineering - Part

3 Terms and definitions

For the purpose of this document, the terms and definitions defined in GB/T 10123 and GB/T 11372, as well as the following apply.

3.1 disease Corrosion or reduced performance of the material.

3.2 neutral packaging material Packaging material with a near-neutral pH (6.5 ~ 8.0) and no corrosive properties.

3.3 volatile rust preventive inhibitor A volatile rust preventive material of which the main component is a volatile corrosion inhibitor. NOTE. Primarily available in powder, granular, flake, or liquid forms.

4 Laboratory environmental conditions

The test shall be conducted in an environment with a temperature of 20 °C ~ 30 °C and a relative humidity not exceeding 80 %.

5 Compatibility of neutral packaging materials with solid

5.1 Principle Test pieces are packaged in neutral packaging material and placed in a test chamber with specific temperature and relative humidity for a period of time. By comparing the changes in the test pieces with those in a blank test, the compatibility of the neutral packaging materials with the solid materials is evaluated.

5.2 Reagents and materials

5.2.1 Anhydrous ethanol. GB/T 678, analytical grade.

5.2.2 Water. GB/T 6682, grade 3.

5.2.3 Solid material test piece (hereinafter referred to as test piece). Selected according to the actual contents of the package, with dimensions of 100 mm x 50 mm and a thickness not exceeding 5 mm. If the solid material is metallic, unless otherwise specified, the following materials may be used. - T3 pure copper plate meeting the requirements of GB/T 5231-2022; - 2A12 aluminum alloy plate meeting the requirements of GB/T 3880.1-2023; - zinc-plated passivated steel plate; - cadmium-plated passivated steel plate.

5.2.4 Hook. S-type, made of stainless steel or glass.

5.2.5 Sandpaper. 240 grit, alumina sandpaper.

5.2.6 Silica gel desiccant. Meets the requirements of

5.1.5.1 in BB/T 0049-2021.

5.3 Instruments and equipment Damp heat test chamber. Meets the requirements of GB/T 10586.

5.4 Specimens

5.4.1 The specimens of neutral packaging materials shall be representative. The specimens shall be sealed and stored before the test. The specimens shall be protected from contamination before and during the test.

5.4.2 The specimen dimensions are 150 mm x 150 mm.

5.5.1 Preparation of test pieces

5.5.1.1 Before the test, sand the copper and aluminum alloy test pieces alternately in a perpendicular direction with sandpaper. After sanding, the sanding marks on the test pieces shall be parallel and consistent, with no pits, scratches, or rust on the surface, and no burrs on the test pieces and the edges of the holes.

5.5.1.2 Materials with plating, coatings, or other non-metallic materials do not require processing or polishing; simulants or 100 mm x 50 mm test pieces can be used directly.

5.5.1.3 For prepared test pieces, except for materials that cannot come into contact with ethanol, hold the test piece and degreased cotton (gauze) with tweezers, wash them sequentially three times in three containers containing anhydrous ethanol, then dry them with hot air using a hair dryer, and cool them to room temperature before the test. When it is not possible to test the test pieces continuously, place them in a desiccator containing silica gel desiccant, use them within 8 h, or re-sand and clean them after 8 h.

5.5.2 Tests

5.5.2.1 Four sets of parallel tests, one of which is a blank test. The blank test does not require neutral packaging materials to package the test piece.

5.5.2.2 Package the test pieces with the specimens, ensuring a double layer near the longitudinal centerline and a single layer on both sides of the test pieces, then fold both ends of the test pieces along their length to the double-layered side, and secure the folded layers tightly with string (e.g., nylon rope) along the longitudinal direction of the test pieces.

5.5.2.3 The packaged test pieces shall be vertically suspended in a damp heat test chamber at $39\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ and a relative humidity of not less than 95 % for 72 h.

5.5.2.4 After the test, unpack the package and inspect the test pieces for signs of corrosion, softening, cracking, blistering, deformation, delamination, or other disease.

5.5.3 Result evaluation Compare the three sets of test pieces from the parallel tests with the blank test piece. If none of the test pieces show disease, or their disease is not more severe than the blank, they are considered compatible. If any set is more severe than the blank, the test must be repeated according to

5.5.1 and 5.5.2. If two or more sets are more severe than the blank, or if a retest still results in one set being more severe than the blank, they are considered incompatible. NOTE. In this document, the appearance of rust spots, pits, or the formation of loose or granular products on the metal surface is considered corrosion; color changes on the metal surface without other corrosion characteristics are not considered corrosion.