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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 2793-2026

Replacing GB/T 2793-1995

Test method for the non-volatile content of adhesives

胶粘剂不挥发物含量的测定

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1 Scope

GB/T 2793-2026 is the Chinese national standard covering the solids content of an adhesive - what is left after the solvent or water has gone, which is what actually forms the bond and what the buyer is paying for. It replaces GB/T 2793-1995, a method thirty-one years old. It was issued on 27 February 2026 and has been in force since 1 September 2026, replacing GB/T 2793-1995. The document is under the responsibility of the China Petroleum and Chemical Industry Federation. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This Document describes a method for determining the non-volatile content of adhesives.

This Document applies to the determination of the non-volatile content of liquid adhesives that experience mass loss under heating conditions; solid adhesives shall be used with reference to this method. This Document does not apply to the determination of the non-volatile content of radiation- cured adhesives and alpha-cyanoacrylate instant adhesives.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document.

GB/T 2943 Terms of adhesives

GB/T 8170 Rules of rounding off for numerical values & expression and judgement of limiting values

3 Terms and Definitions

For the purposes of this Document, the terms and definitions given in GB/T 2943 apply.

4 Instrument and Equipment

4.1 Oven For samples that may release flammable volatiles, explosion-proof equipment shall be used and operated under effective ventilation. For test temperatures not exceeding 150°C, the oven shall be maintained within ±2°C of the specified or agreed temperature. For test temperatures exceeding 150°C, the oven shall be

5.1 Pretreatment of test apparatus

5.1.1 After cleaning the flat-bottomed dish, dry it in an oven at 120 °C for 30 min to 60 min. Remove it and place it in a desiccator to cool to room temperature before weighing. If a lid and/or leveling tool are used, treat them together with the flat-bottomed dish throughout the pretreating, weighing, and heating processes; and include them in the mass.

5.1.2 Record the sum of the mass of the flat-bottomed dish (including the lid if used) and the leveling tool (if applicable) as m0, accurate to

0.1 mg.

5.2 Specimen weighing

5.2.1 The sample shall be placed under standard test conditions, i.e., temperature (23±2) °C and relative humidity (50±5) %, for at least 24 h before sampling.

5.2.2 The standard specimen quantity shall be weighed according to the provisions of Table A.1. Non-standard specimen quantities may also be used, such as use the agreed specimen quantity or specimen quantity after calculation using a flat-bottomed dish with a non-standard inner diameter.

5.2.3 When sampling single-component samples, ensure that the sample is homogeneous.

5.2.4 For multi-component (including two-component) samples, mix each component sample thoroughly according to the manufacturer's specified ratio before weighing. To ensure more accurate mixing of the components, it should mix them according to the mass ratio. If it is required to determine the non-volatile content of each component separately, samples shall be taken separately and noted in the report.

5.2.5 For rapidly reacting samples, each component can be accurately weighed separately into the same flat-bottomed dish according to the proportions, and then mixed thoroughly.

5.2.6 If the manufacturer specifies a range of proportions, follow these principles.

a) For reactive components (such as curing agents), use the midpoint of the range;

b) For non-reactive components (such as diluents), use the upper limit of the range.

5.2.7 For volatile samples, the weighing by difference should be adopted. NOTE. The weighing by difference refers to determining the mass of the sample transferred to the flat-bottomed dish by weighing the difference in mass of the sealable container before and after sampling, thus reducing evaporation losses during the weighing process.

5.2.8 The time from sampling to completion of weighing shall not exceed 5 min. Record the total mass m1 after adding the sample to the flat-bottomed dish, accurate to

0.1 mg.

5.2.9 Spread the sample evenly and thoroughly over the bottom of the flat-bottomed dish.

5.3 Pretreatment before heating

5.3.1 Non-reactive samples do not require pretreatment.

5.3.2 Reactive specimens (such as multi-component, moisture-curing adhesives) require pretreatment. Pretreatment should involve weighing the sample and placing it in the flat-bottomed dish under standard test conditions (see 5.2.1) for 24 h; the time can be shortened if the pretreatment purpose is met. If the manufacturer specifies otherwise, adjustments can be made accordingly; however, the placement temperature shall not exceed (50±2) °C; and the cumulative pretreatment time shall not exceed 3 d. NOTE. The purpose of pretreatment is not to remove volatile substances, but to improve the stability of the sample in subsequent processes by allowing partial reaction to occur beforehand. Proper pretreatment can reduce the formation of crusts and boiling over in samples, as well as reduce the evaporation loss of active monomers, which is beneficial for obtaining more

realistic test results.

5.4 Heating

5.4.1 Set the oven temperature according to the provisions of Table A.1 or the conditions agreed upon by the relevant parties. Place the weighed sample, along with the flat-bottomed dish, into the preheated oven at the set temperature; and maintain the temperature for the specified or agreed time.

5.4.2 Observe the changes in the appearance of the specimen during heating. For specimens with surface crusting that may affect the results, gently puncture the surface film using a leveling tool. Avoid specimen loss during operation and minimize the time the oven door is opened to reduce temperature fluctuations; and prevent specimen splashing that could cause danger.

5.4.3 If the specimen undergoes violent boiling and results in specimen loss, the test shall be terminated; and the test conditions adjusted before retesting.

5.5 Weighing after heating After the specified or agreed heating time has been reached, immediately remove the flat- bottomed dish containing the specimen; transfer it to a desiccator to cool to room temperature, and weigh it. Record its mass as m2, accurate to 0.1 mg.