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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 13455-2026

Replacing GB/T 13455-1992

Plastics - Aminoplastic moulding materials - Determination of volatile matter

塑料 氨基模塑料 挥发性物质的测定

(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 13455-1992 "Determination of Volatile Matter in Amino Molding Plastics". Compared with GB/T 13455-1992, except for the following.

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

---The principles have been changed (see Chapter 4, Chapter 2 of the 1992 edition);

---Added technical requirements for the specification range of symmetrical volumetric flasks (see 5.1, 3.1 of the 1992 edition);

---The temperature control range and fluctuation requirements for electrically heated forced-air drying ovens have been increased (see 5.2, 3.1 of the 1992 edition);

---The phrase "to avoid loss of moisture or volatiles" has been removed (see Chapter 4 of the 1992 edition);

---Added technical requirements for the packaging of the test samples (see Chapter 6);

---Added "Weigh the dry weighing bottle" (see 7.1);

---Added requirements for the content of test reports (see Chapter 9).

This document is modified to adopt ISO 3671:2023 "Plastics - Determination of volatile substances in amino molding compounds".

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This document has undergone the following structural adjustments compared to ISO 3671:2023.

---Chapter 4 has been added.

The technical differences between this document and ISO 3671:2023, and the reasons therefor, are as follows.

---A "dryer" (see 5.4) has been added to prevent the dried sample from reabsorbing moisture from the air, which could cause result bias;

---The drying conditions "(105±2)°C, 0.5h" (see 7.3) have been added to control the release of volatile substances (mainly water) from raw materials during processing.

Excessive or insufficient content can cause quality problems in the finished product;

---Added the requirement to retain two decimal places for experimental results (see Chapter 8), standardized data rounding rules, and ensured the accuracy of experimental results.

Comparability and reproducibility of results.

The following editorial changes have been made to this document.

---Appendix A (Informative) has been added regarding the precision of volatile substance determination results in amino molding compounds;

---References have been added.

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 Petroleum and Chemical Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Plastics Standardization (SAC/TC15).

1 Scope

This document describes a method for determining the content of volatile substances (mainly water) in amino molding compounds using an oven drying method.

This document applies to urea-formaldehyde (UF) resin, melamine-formaldehyde (MF) resin, aniline-formaldehyde resin, and urea-melamine resin.

Determination of volatile substances in amino molding compounds such as amine-formaldehyde resin and urea-thiourea-formaldehyde resin.

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2 Normative references

This document has no normative references.

3 Terms and Definitions

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

4 Principles

Utilizing the volatility characteristics of volatile substances (including water) in amino molding compounds, ammonia is treated under normal pressure, 55°C and/or 105°C conditions.

The base molding plastic is dried, and the content of volatile substances in the sample is calculated from the weight difference before and after drying, serving as a technical basis.

This is used to ensure the quality of resin storage and processing.

5 Instruments

5.1
Weighing bottle. made of glass or aluminum, with an inner diameter of (50±5) mm and a height of (30±5) mm, and equipped with a cap.

5.3
Balance. Scale division value is 0.001g.

5.4
Desiccant. Contains anhydrous calcium chloride or color-changing silica gel desiccant.

6 Test Samples

Test samples should be white, black, or other colored particles or powders.

Test samples should be sealed when submitted.

Before testing, the sample should be placed in a clean, sealed container to prevent the loss or increase of moisture or other volatile substances.

7 Experimental Procedure

7.1
Weigh the dry weighing bottle m0 (5.1) to an accuracy of 0.001 g and record the mass of the weighing bottle.

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7.2

Take (5.0±0.1)g of sample, place it in weighing bottle (5.1), cover the weighing bottle with the cap, and weigh its mass m1, accurate to 0.001g.

7.3

Place the weighing bottle containing the sample into the electric heating forced-air drying oven (5.2), remove the bottle cap, and select appropriate drying methods based on product storage or subsequent processing.

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