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

GB/T 20417.2-2025

Replacing GB/T 20417.2-2006

**Plastics - Acrylonitrile-butadiene-styrene (ABS) moulding and
extrusion materials - Part 2: Preparation of test specimens and
determination of properties**

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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 is Part 2 of GB/T 20417 "Plastics Acrylonitrile-Butadiene-Styrene (ABS) Molding and Extrusion Materials".

GB/T 20417 has published the following parts.

---Part 1: Naming Systems and Classification Basics;

---Part 2: Sample preparation and performance determination.

This document replaces GB/T 20417.2-2006 "Plastics Acrylonitrile-Butadiene-Styrene (ABS) Molding and Extrusion Materials Part 2" the document "Sample Preparation and Performance Determination" differs from GB/T 20417.2-2006 in that, aside from structural adjustments and editorial changes, the main technical changes are as follows.

as follows.

a) The molding conditions for the test piece were changed from "average cooling rate" to "cooling rate"; and from "10°C/min" to "(10±2)°C/min".

(See 4.4, 3.3 in the 2006 edition);

b) The description of specimen conditioning has been revised, with conditioning requirements now described separately for different performance characteristics (see Chapter 5, 2006 edition).

Chapter 4);

c) A "molding shrinkage rate" test has been added (see Table 3);

d) The test conditions for the glass transition temperature were changed (see Table 3, 2006 edition);

e) The sample size for the Vicat softening temperature was changed from "10x10x4" to " $\geq 10 \times \geq 10 \times 4$ " (see Table 3).

Table 3 (2006 edition)

f) A flammability rating "HB@3.0mm" has been added, and a thickness description has been added after the flammability rating (see Table 3);

g) The sample size and sample preparation were changed for relative permittivity and dielectric loss factor. The sample size was changed from "60x60x2" to...

" $\geq 60 \times \geq 60 \times 2$ or $\geq 60 \times \geq 60 \times 1$ "; changed from "M/Q" to "Q" (see Table 3, Table 3 in the 2006 edition);

h) The sample size and preparation methods for volume resistivity and surface resistivity were changed; the sample size was changed from "60x60x2" to...

" $\geq 60 \times \geq 60 \times 2$ or $\geq 60 \times \geq 60 \times 1$ "; changed from "M/Q" to "Q" (see Table 3, Table 3 in the 2006 edition);

i) The sample size relative to the tracking index was changed from " $\geq 15 \times \geq 15 \times 4$ " to " $\geq 20 \times \geq 20 \times 4$ " (see

Table 3 (Table 3 of the 2006 edition);

j) The sample size and preparation for water absorption were changed; the sample size was changed from "60x60x1" to "thickness ≥ 1 "; and the format was changed from "M/Q" to...

For "Q" (see Table 3, 2006 edition);

k) The density test conditions were increased, and the temperature was increased by "27°C" (see Table 3).

This document is modified to adopt ISO 19062-2:2019 "Plastics - Acrylonitrile-butadiene-styrene (ABS) molding and extrusion materials - Part 2" Part. Sample Preparation and Performance Determination.

This document has undergone the following structural adjustments compared to ISO 19062-2:2019.

---The first paragraph of 4.1 corresponds to the last paragraph of Chapter 1 of ISO 19062-2:2019;

---Appendix B corresponds to Appendix A in ISO 19064-2:2020.

This document differs significantly from ISO 19062-2:2019. The relevant clauses are indicated in vertical margins.

Straight lines (|) are marked. A summary of these technical differences and their reasons can be found in Appendix A.

The following editorial changes have been made to this document.

---Added note on pre-molding material treatment (see note 4.2);

---Added instructions for preparing test specimens by punching after compression molding (see note 4.4);

---Added explanation of contact pressure (see the notes in Table 2);

---Added footnotes for sample preparation in Tables 3 and 4 (see Tables 3 and 4);

---Added Appendix A (informative) "Technical differences between this document and ISO 19062-2:2019 and the reasons thereof".

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).

Introduction

GB/T 20417 is the basic standard for acrylonitrile-butadiene-styrene (ABS), and it serves as the standard for acrylonitrile-butadiene-styrene (ABS) products.

This provides support. GB/T 20417 has been revised to adopt ISO 19062. Due to changes in the guidelines of ISO standards, the naming system has also been adjusted accordingly.

Adjustments have been made, as the standard for test methods closely related to sample preparation and performance determination has been revised, and technical differences exist; therefore, adjustments are being made.

Revision of GB/T 20417.

GB/T 20417 "Plastics Acrylonitrile-Butadiene-Styrene (ABS) Molding and Extrusion Materials" is proposed to consist of two parts.

---Part 1: Nomenclature System and Classification Basis. The aim is to establish a standard model applicable to acrylonitrile-butadiene-styrene.

Naming conventions and classification principles for ABS materials.

---Part 2: Sample Preparation and Performance Testing. The aim is to establish a suitable model for acrylonitrile-butadiene-styrene (ABS) materials.

Sample preparation methods and performance testing items, methods and conditions.

This document, based on the characteristics of acrylonitrile-butadiene-styrene (ABS) molding and extrusion materials, specifies unified sample preparation and conditions.

Adjusting the sample size and test conditions to obtain reproducible and comparable test results for acrylonitrile-butadiene-styrene (ABS) products Product standards provide support.

Plastics Acrylonitrile-Butadiene-Styrene (ABS) Molding and Extruded Materials Part 2: Sample Preparation and Performance Testing

1 Scope

This document describes the methods for sample preparation and performance determination of acrylonitrile-butadiene-styrene (ABS) molding and extrusion materials.

The pretreatment of the test materials and the conditioning of the specimens before the test are also described.

This document describes the methods and conditions for preparing ABS molding and extrusion material specimens, as well as the methods for determining the material properties using these specimens.

This document outlines the methods for characterizing the appropriate and necessary properties of ABS molding and extrusion materials.

These properties are selected from the general test methods of GB/T 19467.1. This document also lists a wide range of ABS molding and extrusion materials.

Other test methods that are applicable or of particular significance, as well as the methods for determining the nomenclature performance in Part 1.

This document applies to the preparation and performance determination of acrylonitrile-butadiene-styrene (ABS) molding and extrusion material specimens.

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 1033.1 Determination of density of non-foamed plastics - Part 1: Impregnation method, liquid pycnometer method and titration method (GB/T 1033.1-2008, ISO 1183-1:2004, IDT) GB/T 1033.2 Determination of density of non-foamed plastics - Part 2: Density gradient column method (GB/T 1033.2-2010) ISO 1183-2:2004, MOD) GB/T 1033.3 Determination of density of non-foamed plastics - Part 3: Gas pycnometer method (GB/T 1033.3-2010) ISO 1183-3:1999, IDT GB/T 1034 Determination of water absorption