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

GB/T 20417.1-2025

Replacing GB/T 20417.1-2008

**Plastics - Acrylonitrile-butadiene-styrene(ABS) moulding and
extrusion materials - Part 1: Designation system and basis for
specifications**

塑料 丙烯腈-丁二烯-苯乙烯 (ABS) 模塑和挤出材料 第1部分：命名系统和分类
基础

(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 1 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 20417.1-2008 "Plastics Acrylonitrile-Butadiene-Styrene (ABS) Molding and Extrusion Materials Part 1" the main technical changes in "Naming Systems and Classification Basis" compared to GB/T 20417.1-2008, aside from structural adjustments and editorial modifications, are as follows.

as follows.

a) Part of the scope has been changed, modifying the description of additional requirements for special purpose materials in character group 5 to match the character group.

5. See the relevant clauses (see Chapter 1 and 4.6, 1.5 and 3.6 of the 2008 edition);

b) An explanatory group and national standard number section have been added (see 4.1);

c) The order of the character groups in the naming feature items group has been changed (see Chapter 4, Chapter 3 of the 2008 edition);

d) The separator between the symbol ABS and the components and other monomers in character group 1 has been changed (see 4.2, 3.2 of the 2008 edition);

e) Added codes for fillers and reinforcing materials (see Table 3);

f) The codes for fillers or reinforcing materials and their types have been deleted, as specified in GB/T 1844.2-2008, and fillers and/or reinforcing materials have been added.

Numerical designations for materials with a mass fraction of less than 10%, and tables for mixtures of multiple materials and/or multiple forms of materials.

Display method (see 4.3, 3.5 in the 2008 edition);

g) Added content on rounding down the mass fraction of fillers and/or reinforcing materials (see 4.3);

h) Added explanations regarding the optional designations for the base color (N) and/or grain (G) in character group 3 (see 4.4);

i) Letter codes for recommended uses and/or processing methods, as well as important properties, have been added (see Table 4);

j) The instructions regarding sample preservation before the Vicat softening temperature test have been removed (see 3.4.2 in the 2008 version);

k) The range and significant digits of the melt mass flow rate have been changed (see Table 6, Table 5 in the 2008 edition);

l) The range and effective number of notched impact strengths for simply supported beams have been changed (see Table 7, Table 6 in the 2008 edition).

This document is modified to adopt ISO 19062-1:2015 "Plastics - Acrylonitrile-butadiene-styrene (ABS) molding and extrusion materials - Part 1" Part 1: Naming System and Classification Foundations.

This document has undergone the following structural adjustments compared to ISO 19062-1:2015.

---A chapter on "Terms and Definitions" has been added;

---4.5.1 corresponds to the suspended section below 3.5 in ISO 19062-1:2015; 4.5.2, 4.5.3, 4.5.4, and 4.5.5 correspond to ISO 19062-1.

3.5.1, 3.5.2, 3.5.3, and 3.5.4 in 2015.

The technical differences between this document and ISO 19062-1:2015, and the reasons therefor, are as follows.

a) Part of the scope has been changed, modifying the description of additional requirements for special purpose materials in character group 5 to match the character

group.

5.The relevant clauses are included to make the standard content clearer and facilitate the application of this document (see Chapter 1 and 4.6);

b) ISO 1043-1 (see 4.1 and 4.2) has been replaced with the normatively referenced GB/T 1844.1 to adapt to my country's technical conditions, and [further details are needed].

Increase operability;

c) The conditions for pre-test sample storage have been changed (see 4.5.3) to increase operability;

d) Normative references to ISO 1043-2 (see section 4.3 of ISO 19062-1:2015) have been removed to make the standard clearer and easier to understand.

Application of this document;

e) Added content on rounding the mass fraction of fillers and/or reinforcing materials (see 4.3) to facilitate the application of this document;

f) ISO 2580-2 (see 4.5.2~4.5.5) has been replaced with the normatively referenced GB/T 20417.2 to adapt to my country's technical conditions.

Increase operability;

g) The range and significant figures of the melt mass flow rate and the simply supported beam notched impact strength were modified (see 4.5.3 and 4.5.4) to suit...

To enhance operability, we need to consider my country's technological capabilities.

The following editorial changes have been made to this document.

---Added explanation of the optional designations for the base color (N) and/or grain (G) in character group 3 (see 4.4);

---Added one style for naming abbreviations in the naming examples (see Chapter 5).

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 "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 olefin resin materials.

---Part 2: Sample Preparation and Performance Testing. The aim is to establish suitable test methods for acrylonitrile-butadiene-styrene resin materials.

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

Plastics Acrylonitrile-Butadiene-Styrene (ABS) Molding and Extruded Materials Part 1: Nomenclature System and Classification Basis

1 Scope

This document defines a naming system for acrylonitrile-butadiene-styrene (ABS) thermoplastic materials, which serves as the basis for classification.

Different types of ABS plastic materials are specified with the following characteristic property values, composition, recommended uses and/or processing methods, and important information.

This classification system is based on properties, additives, colorants, fillers, and reinforcing materials to distinguish them.

- a) Vicat softening temperature;
- b) Melt mass flow rate;
- c) Notched impact strength of a simply supported beam;
- d) Tensile modulus of elasticity.

This document applies to compounds primarily composed of styrene (and/or substituted styrene) and acrylonitrile copolymers as the continuous phase, and compounds primarily composed of polybutadiene and...

The text specifies that the other components are acrylonitrile-butadiene-styrene materials composed of a dispersed phase.

This document applies to materials that are typically in powder, granule, or broken-grain form, and are either unmodified or modified with colorants, additives, fillers, etc.

This document does not apply to the following materials.

Its simply supported beam impact strength is less than 3 kJ/m²;

---In the dispersed phase of the elastomer, the mass fraction of butadiene is less than 50%;

---In the continuous phase, the mass fraction of acrylonitrile is less than 15%.