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

GB/T 18964.1-2025

**Plastics - Impact-resistant polystyrene(PS-I) moulding and
extrusion materials - Part 1: Designation system and basis for
specifications**

塑料 抗冲击聚苯乙烯 (PS-I) 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 is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 1 of GB/T 18964 "Plastics - High-impact Polystyrene (PS-I) Moulding and Extrusion Materials". GB/T 18964 the following parts have been published.

- Part 1: Nomenclature system and basis of classification;
- Part 2: Sample preparation and property determination.

This document replaces GB/T 18964.1-2008 "Plastics - High-impact polystyrene (PS-I) molding and extrusion materials - Part 1.

Compared with GB/T 18964.1-2008, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

a) Changed some of the scope, added descriptions of applicable material shapes, and specified additional information for special-purpose materials in character group 5.

The required description is changed to the clauses related to character group 5 (see Chapter 1 and 4.6, 1.5 and 3.5 of the 2008 edition);

b) Added description group and standard number section (see 4.1);

c) Changed the order of the character groups in the named feature item group (see Chapter 4, Chapter 3 of the 2008 edition);

d) Added letter codes for fillers and/or reinforcing materials (see Table 1);

e) The codes of fillers or reinforcing materials and types have been deleted. According to GB/T 1844.2, the quality of fillers and (or) reinforcing materials has been added.

Numerical codes for expressing the amount fraction less than 10% and mixtures of multiple materials and/or multiple forms of materials (See 3.4 of the 2008 edition);

f) Added the explanation that the codes of character group 3 can omit the natural color (N) and (or) particles (G) (see 4.4);

g) Added letter codes for recommended uses and/or processing methods and important properties (see Table 2);

h) The number of significant digits of melt mass flow rate has been changed (see Table 4, Table 3 of the 2008 edition);

i) The effective number of digits for simply supported beam notched impact strength was changed, and the classification range was increased (see Table 5, Table 4 of the 2008 edition).

This document is modified to adopt ISO 19063-1:2015 "Plastics - High-impact polystyrene (PS-I) moulding and extrusion materials - Part 1.

Naming system and classification basis the technical differences between this document and ISO 19063-1:2015 and their reasons are as follows.

a) Changed some of the contents of the scope, added the description of the applicable material shape, and added the additional information of the special purpose materials in character group 5.

The description of the requirements is changed to the clauses related to character group 5 (see Chapter 1 and 4.6) to make the standard content clearer and easier to understand.

Application of this document;

b) The normative reference GB/T 1844.1 replaces ISO 1043-1 (see 4.1) to adapt to my country's technical conditions and increase operability.

Sex;

c) ISO 1043-2 (see 4.3) has been deleted to make the standard content clearer and facilitate the application of this document;

d) Added the explanation that the codes of character group 3 can be omitted for natural color (N) and/or granular (G) (see 4.4) to make the standard more clear;

e) The normative reference GB/T 18964.2 replaces ISO 2897-2 (see 4.5.2~4.5.5) to adapt to my country's technical requirements.

parts, increasing operability;

f) The effective digits of melt mass flow rate and simply supported beam notched impact strength (see 4.5.3 and 4.5.4) have been changed to suit the requirements of my country technical conditions and increase operability.

Introduction

GB/T 18964 is the basic standard for high-impact polystyrene resin and provides support for high-impact polystyrene product standards.

GB/T 18964 was modified to adopt ISO 19063. Due to the change in the ISO standard guidelines, the naming system was adjusted accordingly.

The test method standards that are closely related to equipment and performance determination have been revised and there are technical differences. Therefore, the GB/T 18964 Revised.

GB/T 18964 "Plastics - High-impact polystyrene (PS-I) molding and extrusion materials" consists of two parts.

--- Part 1: Nomenclature system and basis for classification. The purpose is to establish a standard model for high-impact polystyrene materials Naming method and classification principles.

--- Part 2: Sample preparation and performance determination. The purpose is to establish a sample preparation method suitable for high-impact polystyrene materials and performance measurement items, methods and conditions.

This document describes the characteristics of high-impact polystyrene (PS-I) molding and extrusion materials with specified characteristic property values and recommended uses and (or) processing methods, important properties, additives, colorants, fillers and reinforcements, etc., for different types of impact polystyrene molding and extrusion the output materials were differentiated.

Plastics High Impact Polystyrene (PS-I) Molding and Extrusion Materials Part 1:
Nomenclature system and basis of classification

1 Scope

This document specifies a naming system for high-impact polystyrene (PS-I) thermoplastic materials as a basis for classification.

Different types of high-impact polystyrene plastic materials are specified with the following characteristic property values and recommended uses and/or processing methods.

A classification system based on important properties, additives, colorants, fillers and reinforcements distinguishes.

- a) Vicat softening temperature;
- b) melt mass flow rate;
- c) simply supported beam notched impact strength;

d) Flexural modulus.

This document applies to all rubber products with polystyrene and (or) alkyl-substituted styrene and styrene copolymers as the continuous phase and butadiene as the Impact polystyrene plastic with a two-phase polymer system in which the gel phase is the dispersed phase.

This document applies to materials in conventional forms such as powder, granules or crushed particles, unmodified or modified by colorants, additives, fillers, etc.

This document does not apply to distributable materials.

This document does not imply that materials with the same name necessarily have the same properties. This document does not provide information on the specific use and (or) engineering data, performance data or processing condition data required for the processing method. If necessary, use the test method specified in GB/T 18964.2 these additional properties cannot be determined.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

GB/T 1844.1 Plastics symbols and abbreviations Part 1: Basic polymers and their characteristic properties (GB/T 1844.1-2022,ISO 1043-1:2011,MOD) GB/T 18964.2 Plastics - High-impact polystyrene (PS-I) - Moulding and extrusion materials - Part 2: Preparation of test specimens and determination of properties (GB/T 18964.2-2025,ISO 19063-2:2020, MOD)

3 Terms and definitions

There are no terms or definitions that require definition in this document.

4.1 General

The naming and classification system for high-impact polystyrene is based on the following standard model.