

ICS 83.080.20

CCS G 31



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

GB/T 18964.2-2025

**Plastics - Impact-resistant polystyrene (PS-I) moulding and
extrusion materials - Part 2: Preparation of test specimens and
determination of properties**

**塑料 抗冲击聚苯乙烯 (PS-I) 模塑和挤出材料 第2部分：试样制备和性能测定
(English Translation)**

Issued on: January 24, 2025

Implemented on: August 1, 2025

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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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 2 of GB/T 18964 "Plastics - High-impact Polystyrene (PS-I) Moulding and Extrusion Materials".

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 18964.2-2003 "Plastics - High-impact polystyrene (PS-I) moulding and extrusion materials - Part 2: Test Compared with GB/T 18964.2-2003, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

a) Added description on specimen selection for injection molding (see 4.3);

b) The average injection rate in the injection molding conditions table has been changed from "(200±100) mm/s" to "(200±20) mm/s" (see 4.3,

Table 1 of the 2003 edition);

c) The cooling rate in the test piece compression molding conditions table was changed from "average cooling rate 10°C/min" to "cooling rate (10±2)°C/min" (See Table 2, Table 2 of the 2003 edition);

d) Changed the position of "total penetration energy" in the performance table from the general performance table to the additional performance table (see Table 4, 2003

Table 3 of the version);

e) The thickness of the flammability test specimen has been increased (see Table 3);

- f) The test standards for the determination of relative dielectric constant and dielectric loss factor have been changed (see Table 3, Table 3 of the 2003 edition);
- g) The size of the comparative tracking index specimen has been changed from " $\geq 15 \times \geq 15 \times 4$ " to " $\geq 20 \times \geq 20 \times 4$ " (see Table 3, Table 3 of the 2003 edition);
- h) The footnote on the environmental requirements for electrical performance tests has been deleted (see Table 3 of the 2003 edition);
- i) Added the sample preparation method "Q" for water absorption determination (see Table 3);
- j) Added the description of the sample method for density determination, using "Method A. Immersion Method" (see Table 3);
- k) The test method for the determination of residual styrene monomer content has been changed (see Table 4, Table 4 of the 2003 edition).

This document modifies ISO 19063-2:2020 "Plastics - High-impact polystyrene (PS-I) moulding and extrusion materials - Part 2.

Specimen preparation and performance determination.

This document has many technical differences compared to ISO 19063-2:2020.

A list of these technical differences and their reasons is given in Appendix A.

The following editorial changes were made to this document.

- Added instructions for preparing specimens by punching after compression molding (see Note 4.4);
- Changed the symbol of penetration energy from "WP" to "EP" (see Table 4);
- Changed the symbol and unit of residual styrene monomer content from "Wst,r" to "Pa", and the unit from " $\mu\text{g/g}$ " to " mg/kg " (See Table 4).

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 classification basis. 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 specifies uniform specimen preparation, state adjustment, the specimen size and test conditions provide support for the high-impact polystyrene product standard to obtain reproducible and comparable test results.

Plastics High Impact Polystyrene (PS-I) Molding and Extrusion Materials Part 2:
Preparation of test specimens and determination of properties

1 Scope

This document specifies methods for the preparation of test specimens and the determination of properties of high-impact polystyrene (PS-I) molding and extrusion materials. This document also specifies the requirements for the pretreatment of test materials and the condition adjustment of samples before testing are specified.

This document gives methods and conditions for the preparation of test specimens of high-impact polystyrene moulding and extrusion materials, and the use of these test specimens for the this document lists the properties and test methods that are suitable and necessary for characterizing PS-I molding and extrusion materials.

These properties are selected from the general test methods in GB/T 19467.1. This document also lists the widely used Other test methods of special significance or significance, as well as the determination methods of the named properties in GB/T 18964.1.

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 1033.1 Plastics - Determination of density of non-cellular plastics - Part 1: Immersion method, liquid pycnometer method and titration method (GB/T 1033.1-2008,ISO

1183-1:2004,IDT) GB/T 1034 Determination of water absorption of plastics (GB/T 1034-2008, ISO 62:2008, IDT) GB/T 1040.1 Determination of tensile properties of plastics Part 1: General (GB/T 1040.1-2018, ISO 527-1.

2012, IDT)

GB/T 1040.2 Determination of tensile properties of plastics Part 2: Test conditions for moulding and extruded plastics (GB/T 1040.2-2022,ISO 527-2:2012,MOD) GB/T 1040.4 Determination of tensile properties of plastics Part 4: Isotropic and orthotropic fiber reinforced composite materials Test conditions (GB/T 1040.4-2006, ISO 527-4:1997, IDT) GB/T 1043.1 Determination of impact properties of simply supported plastic beams Part 1: Non-instrumented impact test (GB/T 1043.1-2008,ISO 179-1:2000,IDT) GB/T 1043.2 Determination of impact properties of simply supported plastic beams Part 2: Instrumented impact test (GB/T 1043.2-2018,ISO 179-2:1997,IDT) GB/T 1408.1 Test methods for electrical strength of insulating materials Part 1: Tests at power frequency (GB/T 1408.1-2016, IEC 60243-1:2013, IDT) GB/T 1633 Determination of Vicat softening temperature (VST) of thermoplastics (GB/T 1633-2000, ISO 306:1994, IDT) GB/T 1634.1 Determination of deflection temperature of plastics under load Part 1: General test method (GB/T 1634.1-2019, ISO 75-1:2013, MOD) GB/T 1634.2 Determination of deflection temperature of plastics under load Part 2: Plastics and hard rubber (GB/T 1634.2-2019, ISO 75-2:2013, MOD) GB/T 2406.2 Plastics - Determination of combustion behavior by oxygen index method - Part 2: Room temperature test (GB/T 2406.2-2009, ISO 4589-2:1996, IDT) GB/T 2408 Determination of burning properties of plastics - Horizontal and vertical methods (GB/T 2408-2021, IEC 60695-11-10.