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

GB/T 24150-2026

Replacing GB/T 24150-2009

**Plastics - Flame retardant impact-resistant polystyrene
compound**

塑料 阻燃抗冲击聚苯乙烯专用料

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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 supersedes GB/T 24150-2009 "Flame-retardant and impact-resistant polystyrene materials for plastics" and is consistent with GB/T 24150-2009. Compared to previous versions, aside from structural adjustments and editorial changes, the main technical changes are as follows:

a) The naming pattern has been changed, and the character group order has been adjusted (see 4.1,

3.1 in the 2009 version);

b) The requirements for products using polybrominated diphenyl ether flame retardants containing antimony compounds [code name FR(19)] have been removed (see 2009). (Tables 3, 5, and 6 of the version)

- c) The inspection requirement for "particle appearance (color)" has been removed (see Tables 3-7 in the.2009 edition);
- d) Change the test item "tensile yield stress" to "tensile strength" (see Tables 3-7,.2009 edition);
- e) The tensile yield stress, tensile fracture strain, flexural strength, flexural modulus, and notched impact strength of some product specifications have been modified. Requirements for degree (see Tables 3, 4, 6, and 7; Tables 3, 4, 6, and 7 in the.2009 edition);
- f) The limits and test methods for toxic and hazardous substances have been revised (see 5.3, 6.12; 4.3, 5.12 in the.2009 edition);
- g) The test method for particle appearance has been changed (see 6.4, 5.4 in the.2009 edition);
- h) The specimen size for the flammability test method has been changed (see 6.11, 5.11 in the.2009 edition);

1 Scope

GB/T 24150-2026 is the Chinese national standard covering flame retardant HIPS - the compound moulded into television and appliance housings, where the flame retardance is required by the safety standard and the impact strength by the product surviving being dropped. It replaces GB/T 24150-2009 and takes effect on 1 December 2026. It was issued on 25 May 2026 and takes effect on 1 December 2026, replacing GB/T 24150-2009. The document is under the responsibility of the China Petroleum and Chemical Industry Federation. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

2 Code definition FR(17) Aromatic brominated compounds containing antimony compounds (excluding brominated diphenyl ethers and brominated biphenyls) FR(40) Halogen-free organophosphorus compounds

4.1 Naming Rules

4.1.1 Naming Pattern The classification and naming of flame-retardant and impact-resistant polystyrene special materials are based on the following standard model.

4.1.2 Character Group

1 This character group is the code "PS-I" for impact-resistant polystyrene resin specified in GB/T 1844.1.

4.1.3 Character Group

2 According to GB/T 1844.4, the codes for flame retardant types are shown in Table 1. Table

4.1.4 Character Group

3 This character set is the code for the flammability rating. According to the flammability ratings specified in GB/T 5169.16, the designation for a 50W horizontal flammability rating is HB, and the designation for a 50W vertical flammability rating is... The numbers are V-0, V-1, and V-2, respectively. According to the combustion rating specified in GB/T 5169.17, the designation for the vertical combustion rating of 500W is 5VA or 5VB.

4.1.5 Character Group

4 This character set is the code for melt mass flow rate. Based on the possible values, the melt mass flow rate is divided into three ranges, each represented by a two-digit numerical code. The numerical codes are shown in Table 2.

5.1 Basic Requirements

5.1.1 The product should be uniform in color, size, and free from impurities and oil stains.

5.1.2 The product should contain necessary additives, and the additives should be evenly dispersed.

5.2 Performance Requirements

5.2.1 The performance requirements of HB grade flame-retardant and impact-resistant polystyrene special materials shall comply with the provisions of Table 3.

5.2.2 The V-2 grade flame-retardant and impact-resistant polystyrene special material shall comply with the provisions of Table 4.

6 Test Methods

6.1 Judgment of Test Results The test results were determined using the rounding value method, in accordance with GB/T 8170.

6.2 Sample Preparation Injection molding shall be performed in accordance with the provisions of GB/T 18964.2. Use type A mold from GB/T 17037.1-2019 to prepare type 1A specimens conforming to GB/T 1040.2-2022; use type B molds to prepare... A strip sample measuring 80mm x 10mm x 4mm. The specimens used to determine flammability can be prepared by injection molding using molds that meet the dimensional requirements.

6.3 Conditioning of the specimens and standard testing environment Conditioning of the samples shall be carried out in accordance with GB/T 2918. The conditioning conditions

are. temperature $(23\pm 2)^{\circ}\text{C}$, relative humidity $(50\pm 10)\%$, time at least 16 hours. All tests shall be conducted under the standard test environment specified in GB/T 2918, with a temperature of $(23\pm 2)^{\circ}\text{C}$ and a relative humidity of $(50\pm 10)\%$.

6.4 Particle Appearance Visual inspection under natural light.

6.5 density The sample is the middle part of the 1A type sample prepared according to 6.2. The test was conducted in accordance with Method A of GB/T 1033.1-2008.

6.6 Melt Mass Flow Rate (MFR) The test shall be conducted in accordance with the provisions of GB/T 3682.1-2018, with a test temperature of 200°C and a load of 5kg.

6.7 Tensile properties The sample was a type 1A sample prepared according to 6.2. The test was conducted in accordance with GB/T 1040.2, and the test speed was 50 mm/min.

6.8 Bending performance The sample was a strip sample of $80\text{mm}\times 10\text{mm}\times 4\text{mm}$ prepared according to 6.2. The test was conducted in accordance with GB/T 9341, and the test speed was 2 mm/min.

6.9 Notched Impact Strength of Cantilever Beam The test specimen is an $80\text{mm}\times 10\text{mm}\times 4\text{mm}$ strip prepared according to 6.2. The specimen should ideally have any defects removed within 1 to 4 hours after injection molding. The notch type is Type A in GB/T 1843. The test was conducted in accordance with GB/T 1843.

6.10 Load Deformation Temperature The sample was a strip sample of $80\text{mm}\times 10\text{mm}\times 4\text{mm}$ prepared according to 6.2. The test was conducted according to Method A (bending stress 1.80 MPa) in GB/T 1634.2-2019. During the test, the heating device was activated... The initial temperature should be below 27°C . The heating rate is $(120\pm 10)^{\circ}\text{C/h}$.

6.11 Flammability The specimen was prepared according to 6.2. The specimen size for the 50W flame test should be $(125\pm 5)\text{mm}\times (13.0\pm 0.5)\text{mm}\times 3\text{mm}$. For the 3mm, 500W flame test, the sample size should preferably be $(150\pm 5)\text{mm}\times (150\pm 5)\text{mm}\times 3\text{mm}$. Alternatively, it can be customized according to the buyer's requirements. The test was conducted using a sample of

3.0 mm thickness. The sample thickness used in the arbitration was

3.0 mm. The 50W flame test shall be conducted in accordance with GB/T 5169.16, and the 500W flame test shall be conducted in accordance with GB/T 5169.17.

7 Inspection Rules

7.1 Classification and Items of Inspection Product inspection is divided into two categories. type inspection and factory inspection. All items in Chapter 5 are type testing items. During normal production, type testing shall be conducted at least once a year. When the following conditions apply... Type testing should be performed in certain circumstances.