



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

GB/T 1845.2-2021

**Plastics - Polyethylene (PE) moulding and extrusion materials -
Part 2: Preparation of test specimens and determination of
properties**

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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 of Standardization Documents"

Drafting.

This document is Part 2 of GB/T 1845 "Plastic Polyethylene (PE) Molding and Extrusion Materials". GB/T 1845 has been released

The following parts.

---Part 1. Naming system and classification basis;

---Part 2. Sample preparation and performance measurement.

This document replaces GB/T 1845.2-2006 "Plastic Polyethylene (PE) Molding and Extrusion Materials Part 2. Sample Preparation and Performance

Compared with GB/T 1845.2-2006, except for structural adjustments and editorial changes, the main technical changes are as follows.

a) Add "In Table 3 and Table 4, when the injection molding method is used to prepare the samples separately, the injection molding method is used for all materials in the melt flow rate range.

Requirements for "plastic specimens" (see 4.3, 3.2 of the.2006 edition);

b) Amend "Table 3 and Table 4 separately specify that when the compression molding method is used to prepare samples, the compression molding method is used for all materials in the range of melt flow rate.

Requirements for "plastic specimens" (see 4.4, 3.3 of the.2006 edition);

c) State adjustment time "at least 40h but not more than 96h" is modified to "at least 16h but not more than 96h" (see Chapter 5,

Chapter 4 of the.2006 edition);

- d) The standard environment of the test is specified separately for the filled sample and the unfilled sample (see Chapter 6, Chapter 5 of the.2006 edition);
- e) The standard environmental relative humidity of the test "50%+/-5%" is modified to "50%+/-10%" (see Chapter 6, Chapter 5 of the.2006 edition);
- f) The items of mold shrinkage and glass transition temperature have been added to the general performance (see Table 3, Table 3 of the.2006 edition);
- g) The size of the combustible sample is divided into two types. thickness 1.5mm and thickness greater than 1.5mm (see Table 3,.2006 edition of Table 3);
- h) The size of the electrical strength sample is modified to " $\geq 60 \times \geq 60 \times 1$ " (see Table 3,.2006 edition of Table 3);
- i) The size of the comparative tracking index sample is modified to " $\geq 20 \times \geq 20 \times 4$ " (see Table 3,.2006 edition of Table 3);
- j) The samples for relative permittivity, dielectric loss factor, resistivity and electrical strength are modified to compression molding preparation (see Table 3,.2006 edition of Table 3);
- k) The additional performance adds the use of small tensile specimens for tensile testing (see Table 4);
- l) The item of brittleness temperature is added to the additional performance (see Table 4).

This document uses the redrafting method to modify and adopt ISO 17855-2.2016 Plastic Polyethylene (PE) Molding and Extrusion Materials Part 2

Sub. Sample Preparation and Performance Measurement.

Compared with ISO 17855-2.2016, this document has made the following structural adjustments.

A chapter "Terms and Definitions" has been added to this document.

Compared with ISO 17855-2.2016, this document has technical differences. The main technical differences and their reasons are as follows.

---Regarding the normative reference documents, this document has made adjustments with technical differences to adapt to the technical conditions of our country. Adjustment

The situation is collectively reflected in Chapter 2 "Normative Reference Documents". For specific adjustments, see Appendix A;

---Add "In Table 3 and Table 4, when the injection molding method is used to prepare the sample separately, the injection molding method is used for all materials in the melt flow rate range.

The requirements of "plastic specimen" to make the standard regulations more clear (see 4.3);

--- Amend "Table 3 and Table 4 separately indicate that when preparing samples by compression molding method, all materials in the range of melt flow rate shall be compressed.

"Plastic sample" requirements to make the standard regulations more clear (see 4.4);

---Added the standards that the sample state adjustment and test environment should meet to make the standard provisions more clear (see Chapter 5 and Chapter 6);

---The state adjustment time "at least 16h" is modified to "at least 16h but not more than 96h" to make the standard provisions more reasonable (see Chapter 5);

--- In the general performance, the penetration energy and maximum penetration force sample size increased by dia. 60x2 discs, in line with the requirements of the method standard (see Table 3);

---In the general performance, increase the requirement that the density sample is taken from the middle part of the injection molded or compression molded sample to make the standard provisions more clear (see

table 3);

---The item of brittleness temperature is added to the additional performance, so that the standard requirements can meet the requirements of use (see Table 4);

--- Modify the additional performance density test standards to make the standard provisions more reasonable (see Table 4).

This document has also made the following editorial changes.

---The symbol of nominal strain at tensile fracture is modified to " ϵ_{tb} ", the symbol of tensile fracture stress is modified to " σ_b ", and the symbol of tensile fracture strain is modified to

" ϵ_b ", the penetrating energy symbol is modified to "EP" (see Table 3);

---Delete ISO 17855-2:2016 informative appendix A "Density comparison test carried out in accordance with ISO 1183-1 immersion method".

This document was proposed by the China Petroleum and Chemical Industry Federation.

This document is under the jurisdiction of the National Plastics Standardization Technical Committee (SAC/TC15).

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Introduction

GB/T 1845 is the basic standard for the classification and naming of polyethylene resins, sample preparation and performance determination.

Provided support. The revision of this standard adopts the ISO series of standards. Due to the changes in the guidelines of the ISO standard, the naming system has

The test method standards closely related to equipment and performance measurement have been revised, and there are technical differences, so this series of standards are revised.

GB/T 1845 "Plastic Polyethylene (PE) Molding and Extrusion Materials" consists of two parts.

---Part 1. Naming system and classification basis;

---Part 2. Sample preparation and performance measurement.

This document is Part 2 of GB/T 1845. This document specifies the preparation of compression moulding and injection moulding samples for polyethylene moulding and extrusion materials

Conditions, items, methods, procedures and test conditions for performance measurement, as well as the treatment of test materials and materials before molding and samples before testing

The requirements of state adjustment. All the provisions of sample preparation, condition adjustment, sample size and test conditions are to make the test results have

Reproducibility and comparability, with a platform for data comparison.

Plastic polyethylene (PE) molding and extrusion materials

Part 2. Sample preparation and performance measurement

1 Scope

This document specifies the methods and conditions for the preparation and performance determination of polyethylene (PE) molding and extrusion material samples. This document also provides

Requirements for pretreatment of test materials and state adjustment of samples before