

ICS 83.080.20

CCS G 31



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

GB/T 45475.2-2025

**Plastics - Poly(phenylene ether) (PPE) moulding and extrusion
materials - Part 2: Preparation of test specimen and
determination of properties**

塑料 聚苯醚 (PPE) 模塑和挤出材料 第2部分: 试样制备和性能测定
(English Translation)

Issued on: March 28, 2025

Implemented on: October 1, 2025

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

Table of Contents

Foreword

Introduction

1 Scope

2 Normative references

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 45475 "Plastic Polyphenylene Ether (PPE) Molding and Extrusion Materials". GB/T 45475 has been published the following parts.

--- Part 1: Nomenclature system and basis of classification;

--- Part 2: Sample preparation and property determination.

This document is modified to adopt ISO 20557-2:2018 "Plastic polyphenylene ether (PPE) molding and extrusion materials Part 2: Preparation and testing of test specimens Performance Measurement.

The technical differences between this document and ISO 20557-2:2018 and their reasons are as follows.

--- The normative reference GB/T 1033.1 replaces ISO 1183-1 (see Table 2), and GB/T 1033.2 replaces ISO 1183-2 (See Table 2), GB/T 1033.3 replaced ISO 1183-3 (See Table 2), GB/T 1034 replaced ISO 62 (See Table 2), GB/T 1040.2 replaces ISO 527-2 (see Table 2), GB/T 1043.1 replaces ISO 179-1 (see Table 2), GB/T 1408.1 replaces IEC 60243-1 (see Table 2), GB/T 1409 replaces IEC 60250 (see Table 2), GB/T 31838.2 replaces IEC 60093 (see Table 2), GB/T 1634.2 replaces ISO 75-2 (see Table 2), GB/T 1843 replaces ISO 180 (see Table 3), GB 2536 replaces IEC 60296 (see Table 2), GB/T 3682.1 replaces ISO 1133-1 (see Table 2), GB/T 4207 replaced IEC 60112 (see Table 2), GB/T 5169.16 replaced IEC 60695-11-10 (see Table 3), GB/T 9341 replaced ISO 178 (see Table 2), GB/T 9345.1 replaced ISO 3451-1 (see Table 3), GB/T 12006.2 replaced ISO 15512 (see Table 3), GB/T 17037.1 replaced ISO 294-1 (see Table 2), GB/T 19466.3 replaced ISO 11357-3 (see Table 2), GB/T 19467.1 replaced ISO 10350-1 (see Table 2), GB/T 36800.2 replaced ISO 11359-2 (see Table 2), GB/T 37426 replaced ISO 20753 (see Table 2) and GB/T 45475.1 replaced ISO 20557-1 (see Chapter 1, Table 1).

Introduction

Polyphenylene ether is an indispensable key material in photovoltaic, electric vehicles, water treatment, high-frequency communication and other industries.

It has the advantages of good performance, low water absorption, good high temperature resistance, good electrical insulation and low density, and is widely used in electric vehicle power battery support materials and shells.

Materials, photovoltaic cell backplane materials and water treatment materials.

At present, there is no applicable national standard for polyphenylene ether molding and extrusion materials in my country, which has brought difficulties to the promotion and application of polyphenylene ether and its domestic and foreign trade.

This has brought inconvenience to trade and technical exchanges, affecting the healthy development of the polyphenylene ether industry. Therefore, GB/T 45475 "Plastic Polyphenylene Ether" was formulated.

(PPE) molding and extrusion materials". GB/T 45475 is the classification and naming, sample preparation and performance determination of polyphenylene ether molding and extrusion materials.

The basic standard provides support for polyphenylene ether product standards.

GB/T 45475 "Plastic polyphenylene ether (PPE) molding and extrusion materials" is planned to be divided into two parts.

--- Part 1: Naming system and basis for classification. The purpose is to establish a naming system and basis for polyphenylene ether (PPE) molding and extrusion materials Classification.

--- Part 2: Preparation of test specimens and determination of properties. The purpose is to provide a naming system and classification system for polyphenylene ether (PPE) molding and extrusion materials.

This class establishes rules for specimen preparation, specimen conditioning and test conditions.

Plastic polyphenylene ether (PPE) molding and extrusion materials Part 2: Sample preparation and property determination

1 Scope

This document specifies the specimen preparation and test methods for testing the properties of polyphenylene ether molding and extrusion materials.

Requirements for conditioning of test materials prior to processing and/or molding and of

test specimens prior to testing.

The method and conditions for sample preparation are described, and the method for testing the properties of sample materials is given. Suitable and necessary polyphenylene ethers are listed.

Properties and test methods of molding and extrusion materials.

The performance test methods are selected from the general test methods in GB/T 19467.1. This document also lists a wide range of Other test methods that are applicable or have special significance, and the determination methods of characteristic properties in GB/T 45475.1.

In order to ensure the reproducibility and repeatability of the test results, it is necessary to use the sample preparation and condition adjustment methods specified in this document.

The test data obtained using specimens prepared under different conditions or using specimens of different sizes may can be inconsistent.

2 Normative references

The contents of the following documents constitute 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 1033.2 Plastics - Determination of density of non-cellular plastics - Part 2: Density gradient column method (GB/T 1033.2-2010, ISO 1183-2:2004, MOD) GB/T 1033.3 Plastics - Determination of density of non-cellular plastics - Part 3: Gas pycnometer method (GB/T 1033.3-2010, ISO 1183-3:1999, IDT) GB/T 1034 Determination of water absorption of plastics (GB/T 1034-2008, ISO 62:2008, 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 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 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 1409 Measurement of the permittivity and dielectric loss factor of electrical insulating materials at power frequency, audio frequency, and high frequency (including meter wave wavelength) Recommended method (GB/T 1409-2006, IEC 60250:1969, MOD) GB/T 1634.2 Determination of deflection temperature of plastics under load Part 2: Plastics, hard rubber and long fiber reinforced composite materials (GB/T

1634.2-2019,ISO 75-2:2013,MOD) GB/T 1843 Determination of Izod impact strength of plastics (GB/T 1843-2008, ISO 180:2000, IDT) GB 2536 Unused mineral insulating oil for electrical fluid transformers and switches (GB 2536-2011, IEC 60296.

2003, MOD)