

ICS 83.080.20

CCS G 31



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

GB/T 15597.2-2024

Replacing GB/T 15597.2-2010

**Plastics - Poly(methyl methacrylate)(PMMA)moulding and
extrusion materials - Part 2: Preparation of test specimens and
determination of properties**

塑料 聚甲基丙烯酸甲酯 (PMMA) 模塑和挤出材料 第2部分: 试样制备和性能测定

(English Translation)

Issued on: June 29, 2024

Implemented on: January 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 15597 "Plastics Polymethyl Methacrylate (PMMA) Moulding and Extrusion Materials".

GB/T 15597 has published the following parts.

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

This document replaces GB/T 15597.2-2010 "Plastics Polymethyl Methacrylate (PMMA) Molding and Extrusion Materials Part 2 Part 1: Sample preparation and performance determination.

Compared with GB/T 15597.2-2010, in addition to structural adjustments and editorial changes, the main technical changes of this document are as follows.

- a) The pre-drying conditions of the molding compound have been changed from "pre-drying in an oven at 80°C for 24 hours before processing" to "the moisture content should not exceed 0.05% (mass fraction)" (see Chapter 4, Chapter 3 of the 2010 edition);
- b) The melt temperature of MFR code 240 has been changed from "220°C" to "210°C" (see Table 1, Table 1 of the 2010 edition);
- c) Changed the standard relative humidity of the test environment from "(50±5)%" to "(50±10)%" (see Chapter 6, 2010 Edition) Chapter 5 of);
- d) The pre-drying time of the molding compound in the oven was changed from "at least 24 hours" to "at least 4 hours" (see Table 3, 2010 edition).
table 3);
- e) Added the test conditions for tensile strain at break and supplemented the explanation that "When using the test condition of 50 mm/min, the elongation at break is the test result

should be Introduction GB/T 15597 is the basic standard for the classification and naming, sample preparation and performance determination of polymethyl methacrylate resin.

It provides support for the evaluation and application of methyl acrylate products and the formulation of product standards.

GB/T 15597 "Plastics Polymethyl Methacrylate (PMMA) Molding and Extrusion Materials" is intended to consist of two parts.

--- Part 1: Nomenclature system and basis of classification. The purpose is to introduce a complete nomenclature system for polymethyl methacrylate.

--- Part 2: Sample preparation and performance determination. The purpose is to establish a set of standard methods for sample preparation and performance determination.

The two parts complement each other and constitute a complete standard system for polymethyl methacrylate.

The release and implementation of this document can standardize the sample preparation and performance determination of polymethyl methacrylate molding and extrusion materials to meet the needs of customers.

Requirements to better promote trade, exchanges and technological cooperation.

Plastic polymethyl methacrylate (PMMA) Molding and extrusion materials Part 2:
Preparation of test specimens and determination of properties

1 Scope

This document specifies the test specimen preparation and test methods for polymethyl methacrylate (PMMA) molding and extrusion materials, and specifies the test materials Requirements for conditioning of test materials before processing and/or molding and of test specimens before testing.

The performance test methods are selected from the general test methods in GB/T 19467.1. This document also lists a wide range of test methods for molding and extrusion materials.

Other test methods that are applicable or have special significance, and the determination methods of characteristic properties in GB/T 15597.1.

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 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 1040.2 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 1041 Determination of compression properties of plastics (GB/T 1041-2008, ISO 604:2002, 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 1633 Determination of Vicat softening temperature (VST) of thermoplastics (GB/T 1633-2000, ISO 306:1994, IDT) 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 1843 Determination of Izod impact strength of plastics (GB/T 1843-2008, ISO 180:2000, IDT) GB/T 3398.1 Determination of hardness of plastics Part 1: Ball indentation method (GB/T 3398.1-2008, ISO 2039-1:2001, IDT) GB/T 3398.2 Determination of hardness of plastics Part 2: Rockwell hardness (GB/T 3398.2-2008, ISO 2039-2:1987, IDT) GB/T 3682.1 Plastics Thermoplastics - Determination of melt mass flow rate (MFR) and melt volume flow rate (MVR) Part 1: Standard method (GB/T 3682.1-2018, ISO 1133-1:2011, MOD)