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

GB/T 46197.2-2025

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

**塑料 聚醚醚酮 (PEEK) 模塑和挤出材料 第2部分：试样制备和性能测定
(English Translation)**

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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 is Part 2 of GB/T 46197 "Plastics - Polyetheretherketone (PEEK) Molding and Extrusion Materials". GB/T 46197 has been...

The following sections were published.

---Part 1: Naming Systems and Classification Basics;

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

This document is modified to adopt ISO 23153-2:2020 "Plastics - Polyetheretherketone (PEEK) molding and extrusion materials - Part 2: Sample preparation".

Preparation and performance testing.

This document differs significantly from ISO 23153-2:2020. The relevant clauses are indicated in the margins using vertical markers.

Straight lines (|) are marked. A summary of these technical differences and their reasons

can be found in Appendix A.

The following editorial changes have been made to this document.

---ISO 10350-1 has been replaced by GB/T 19467.1 (see Chapter 6) as an informative reference;

---Change "B" to "b" in the symbols for nominal tensile fracture strain, tensile fracture stress, and tensile fracture strain (see Table 2);

---Appendix A (informative) has been added. "Technical Differences between this Document and ISO 23153-2:2020 and Their Reasons";

---References have been added.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

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

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

Introduction

Polyetheretherketone (PEEK) is a high-performance engineering plastic with excellent properties, including high heat resistance, radiation resistance, corrosion resistance, and dimensional stability.

It exhibits good stability, excellent electrical properties, and superior processing performance. Polyetheretherketone (PEEK) possesses advantages in relevant applications that other polymers cannot match.

Its superior performance makes it one of the most high-performance specialty engineering plastics. The demand for polyetheretherketone (PEEK) materials has grown rapidly in recent years.

It is widely used in defense, aerospace, electronics and information, petrochemicals, medical and health, home appliances, automobile manufacturing and other fields, and plays a significant role in these fields.

Important role.

Currently, my country has not yet formulated relevant national standards for polyetheretherketone (PEEK) molding and extrusion materials. To promote the application of PEEK products...

To support the application and evaluation of polyetheretherketone (PEEK) plastics, GB/T 46197 "Plastics - Polyetheretherketone (PEEK) Molding and Extrusion" was developed.

Material".

GB/T 46197 "Plastic Polyetheretherketone (PEEK) Molding and Extrusion Materials" is proposed to be divided into two parts.

---Part 1: Nomenclature System and Classification Basis. The aim is to establish a nomenclature system applicable to polyetheretherketone (PEEK) molding and extrusion materials.

Naming conventions and classification principles distinguish different types of polyether ether ketone (PEEK) molding and extrusion materials.

---Part 2: Sample Preparation and Performance Testing. The aim is to establish suitable materials for molding and extrusion of polyetheretherketone (PEEK).

Sample preparation, sample conditioning, and test conditions.

Polyetheretherketone (PEEK) molding and extrusion materials Part 2: Sample Preparation and Performance Determination

1 Scope

This document describes the specimen preparation and testing methods for determining the properties of polyetheretherketone (PEEK) molding and extrusion materials, and specifies the test materials...

Requirements for material handling, test materials before molding, and condition of test specimens before testing.

This document describes the methods and conditions for sample preparation and provides methods for determining the material properties of the samples. Suitable and necessary methods are listed.

Properties and test methods of polyetheretherketone (PEEK) molding and extrusion materials.

To ensure the reproducibility and repeatability of the test results, it is necessary to use the sample preparation and conditioning methods specified in this document.

The specified specimen dimensions and test methods. Test data obtained using specimens prepared by different methods or using specimens of different sizes can be...

They may not be consistent.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 1033.1 Determination of density of non-foamed plastics - Part 1: Impregnation method, liquid pyrometer method and titration method (GB/T 1033.1-2008, ISO 1183-1:2004, IDT) GB/T 1033.3 Determination of density of non-foamed 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 1040.1 Determination of tensile properties of plastics - Part 1: General (GB/T 1040.1-2025, ISO 527-1:2019) MOD) GB/T 1040.2 Determination of tensile properties of plastics - Part 2: Test conditions for molded and extruded plastics (GB/T 1040.2-2022, ISO 527-2:2012, IDT) GB/T 1043.1 Determination of impact properties of simply supported plastic beams - Part 1: Non-instrumental impact testing (GB/T 1043.1-2008, ISO 179-1:2000, IDT) GB/T 1408.1 Electrical strength test methods for insulating materials - Part 1: Power frequency test (GB/T 1408.1-2016) IEC 60243-1:2013, IDT GB/T 1634.1 Determination of temperature of deformation under load in plastics - Part 1: General test methods (GB/T 1634.1-2025) ISO 75-1:2020, MOD) GB/T 1634.2 Determination of temperature of deformation under load for plastics - Part 2: Plastics and hard rubber (GB/T 1634.2-2019) ISO 75-2:2013, MOD) GB/T 1843 Determination of impact strength of plastic cantilever beams (GB/T 1843-2008, ISO 180:2000, IDT) GB/T 2408 Determination of flammability of plastics-Horizontal and vertical methods (GB/T 2408-2021, IEC 60695-11-10) 2013, MOD) GB/T 3682.1 Determination of melt mass flow rate (MFR) and melt volumetric flow rate (MVR) of thermoplastics Part 1: Standard Methods (GB/T 3682.1-2018, ISO 1133-1:2011, MOD)