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

GB/T 46197.1-2025

**Plastics - Polyetheretherketone (PEEK) moulding and extrusion
materials - Part 1: Designation system and basis for
specifications**

塑料 聚醚醚酮 (PEEK) 模塑和挤出材料 第1部分：命名系统和分类基础
(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 1 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 23153-1:2020 "Plastics - Polyetheretherketone (PEEK) molding and extrusion materials - Part 1: Nomenclature system".

"Unified Classification Basis".

The technical differences between this document and ISO 23153-1:2020, and the reasons therefor, are as follows.

---ISO 527-1 has been replaced by the normatively referenced GB/T 1040.1, and ISO 527-2 has been replaced by GB/T 1040.2 (see 4.5.3).

4.5.4), to adapt to my country's technological conditions and increase operability;

---ISO 1043-1 (see 4.1, 4.2) has been replaced with the normatively referenced GB/T 1844.1 to adapt to my country's technical conditions, and has been added.

Operability;

---ISO 1043-2 (see 4.3) has been replaced with the normatively referenced GB/T 1844.2 to adapt to my country's technical conditions and increase operability.

Actual nature;

---ISO 1133-1 has been replaced by the normatively referenced GB/T 3682.1, and ISO 11443 has been replaced by GB/T 25278 (see 4.5.2).

To adapt to my country's technological conditions and increase operability.

The following editorial changes have been made to this document.

---ISO 23153-2 has been replaced by GB/T 46197.2 (see Chapter 1) for informational purposes;

---Change position 2 of character group 3 in Example 1 to "granular" (see 5.1).

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 1: Naming Systems and Classification Basics

1 Scope

This document establishes the nomenclature system and classification basis for polyetheretherketone (PEEK) molding and extrusion materials. The PEEK polymer chain consists of ethers...

Polyaryletherketone polymers are formed by linking the carbonyl group to the phenylene ring in the order of ether, ether, ketone.

Different types of polyetheretherketone (PEEK) plastics are classified according to the following specified characteristic performance values, specific applications and/or processing methods, important properties, and additives.

The classification system is based on agents, colorants, fillers, and reinforcing materials to distinguish them.

- a) Melt viscosity or melt volumetric flow rate;
- b) Tensile modulus;
- c) Tensile strength.

This document applies to all polyetheretherketones (PEEKs).

This document applies to unmodified or unmodified powders, granules, or broken particles containing colorants, fillers, reinforcing agents, or other additives.

Material.

This document does not imply that materials with the same name necessarily have the same properties. This document does not provide information for describing the special uses of materials and/or related matters.

Or the engineering data, performance data, or processing condition data required for the processing method.

If necessary, these additional properties shall be determined in accordance with the test methods specified in GB/T 46197.2.

To illustrate the specific use of a particular thermoplastic material or to ensure the repeatability of the processing, character group 5 provides additional requirements (see 4.1).

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 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, MOD) GB/T 1844.1 Plastic symbols and abbreviations - Part 1: Basic polymers and their characteristic properties (GB/T 1844.1-2022) ISO 1043-1:2011, MOD) GB/T 1844.2 Plastic symbols and abbreviations - Part 2: Fillers and reinforcements (GB/T 1844.2-2022) ISO 1043-2:2011, IDT 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) GB/T 25278 Determination of flowability of plastics using capillary and slit-die rheometers (GB/T 25278-2010) ISO 11443:2005, MOD)

3 Terms and Definitions

This document does not contain any terms or definitions that need to be defined.