NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

GB/T 22271.1-2021

Plastics - Polyoxymethylene(POM) moulding and extrusion materials - Part 1: Designation system and basis for specification

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Foreword

This document was drafted in accordance with the provisions of GB/T 1.1-2020 "Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents".

This document is part 1 of GB/T 22271 "Plastics - Polyoxymethylene (POM) moulding and extrusion materials". GB/T 22271 has released the following parts:

- Part 1: Designation system and basis for specification;
- Part 2: Preparation of test specimens and determination of properties;
- Part 3: Requirements for general materials.

This document replaces GB/T 22271.1-2008 "Plastics - Polyoxymethylene (POM) moulding and extrusion materials - Part 1: Designation system and basis for specifications". As compared with GB/T 22271.2-2008, except for structural adjustment and editorial changes, the main technical changes are as follows:

a) MODIFY the normative references (see Chapter 2; Chapter 2 of the 2008 edition);

b) ADD the chapter "Terms and definitions" (see Chapter 3);

c) MODIFY the representation of naming system (see 5.1, 5.2, 5.3; 4.1, 4.2 of the

2008 edition).

This document uses the translation method, to identically adopt the ISO 29988-1:2019

"Plastics - Polyoxymethylene (POM) moulding and extrusion materials - Part 1: Designation system and basis for specification".

The Chinese documents, that have a consistent correspondence with the international documents, which are normatively cited in this document, are as follows:

- GB/T 1844.1-2008 Plastics - Symbols and abbreviated terms - Part 1: Basic polymers and their special characteristics (ISO 1043-1:2001, IDT);
- GB/T 3682.1-2018 Plastics - Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics - Part 1: Standard method (ISO 1133-1:2011, MOD);
- GB/T 22271.2-2021 Plastics - Polyoxymethylene (POM) moulding and extrusion materials - Part 2: Preparation of test specimens and determination of properties (ISO 29988-2:2018, IDT).

For ease of use, the following editorial changes have been made to this document:

- ADJUST the inappropriate numerical code, which is used for melt flow rate

Plastics - Polyoxymethylene (POM) moulding and extrusion materials - Part 1: Designation system and basis for specification

1 Scope

This document specifies a designation system for thermoplastic polyoxymethylene (POM) molding and extrusion materials. This designation system can serve as a basis for classification.

Note: The polyoxymethylene material is a thermoplastic material, which is mainly composed of long chains of homopolymers and copolymers, as synthesized from formaldehyde. The repeating unit in the molecular chain is -CH2O-, which is an integral part of the main polymer chain as produced by the polymerization of formaldehyde.

Different types of polyoxymethylene materials are distinguished, based on a classification system, by specified characteristic property values (melt mass flow rate

or melt volume flow rate, tensile modulus of elasticity), as well as basic polymer parameters, recommended uses, processing methods, important properties, additives, colorants, fillers, reinforcements, etc.

This document applies to all materials, which contain polyoxymethylene homopolymers, copolymers, polyoxymethylene blends. It is suitable for general powder, granular or flake materials, as well as unmodified and modified materials with colorants, additives, fillers, etc. This document does not imply that, identically named materials necessarily have identical properties.

This document does not provide engineering data, performance data, processing condition data, of the end-application specific material. When necessary, these additional properties can be determined, according to the test methods specified in the relevant international standards.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, for dated references, only the version corresponding to the date applies to this document; for undated references, the latest version (including all amendments) is applicable to this document.

ISO 1043-1 Plastics - Symbols and abbreviated terms - Part 1: Basic polymers and their special characteristics

Character group 5: For classification purposes, additional information can be added to the 5th character group (see 4.6).

The first character of the characteristic item group shall be a hyphen. Groups of characters shall be separated from each other, by commas ",".

If character groups are not used, they shall be separated by double commas (,,).

Note: Character group 1 and character group 2 together constitute partial marking symbols.

4.2 Character group 1

In this character group, after the hyphen, the symbol "POM" is used to represent the polyoxymethylene plastic, according to ISO 1043-1, followed by a hyphen and the letter

code H, to identify the homopolymer, OR the letter code K, to identify the copolymer. The blends can be made from the materials mentioned in ISO 1043-1 and/or other polymers. For polymer blends or alloys, the abbreviation for the base polymer is used: the main component is listed first: the other components are listed in descending order, according to their mass fractions, separated by a "+" sign; before or after the "+" sign, there are no spaces.

Example: A blend of polyoxymethylene homopolymer and polyethylene is designated as: POM-H+PE.

4.3 Character group 2

In this character group, the filler and/or reinforcement material is represented by a letter code, in position 1; the physical form is represented by a second letter code, in position 2; the letter code used is specified in Table 1. Immediately after (without spaces) the positions 3 and 4, use two numbers as a code, to indicate its mass content.

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