
**Plastics — Polyoxymethylene (POM)
moulding and extrusion materials —
Part 1:
Designation system and basis for
specifications**

iTeh STANDARD PREVIEW
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*Plastiques — Matériaux à base de polyoxyméthylène (POM) pour
moulage et extrusion —
Partie 1: Système de désignation et base de spécification*

ISO 29988-1:2018

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html. (standards.iteh.ai)

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This first edition of ISO 29988-1 cancels and replaces ISO 9988-1:2004, which has been technically revised to introduce a new designation system.

A list of all parts in the ISO 29988 series can be found on the ISO website.

Introduction

Polyoxymethylene materials are thermoplastic materials composed principally of long-chain synthetic homopolymers and copolymers of formaldehyde. The repeating unit in the molecular chain is – CH₂O – as an integral part of the main polymer chain resulting from polymerization of formaldehyde.

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Plastics — Polyoxymethylene (POM) moulding and extrusion materials —

Part 1: Designation system and basis for specifications

1 Scope

This document establishes a system of designation for polyoxymethylene (POM) thermoplastic materials, which can be used as the basis for specifications.

The types of polyoxymethylene (POM) materials are differentiated from each other by a classification system based on appropriate levels of the following designatory properties:

- a) melt mass-flow rate or melt volume-flow rate;
- b) tensile modulus,

and on information about basic polymer parameters, intended application, method of processing, important properties, additives, colorants, fillers and reinforcing materials.

This document is applicable to all polyoxymethylene homopolymers and to copolymers of polyoxymethylene and blends of polymers containing polyoxymethylene.

It applies to materials ready for normal use in the form of powder, granules or pellets and to materials unmodified and modified by colorants, additives, fillers, etc.

It is not intended to imply that materials having the same designation necessarily give the same performance. This document does not provide engineering data, performance data or data on processing conditions which can be required to specify materials for particular end-use applications. If such additional properties are required, they are intended to be determined in accordance with the test methods specified in the relevant International Standards.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 1133-1, *Plastics — Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics — Part 1: Standard method*

ISO 29988-2, *Plastics — Polyoxymethylene (POM) moulding and extrusion materials — Part 2: Preparation of test specimens and determination of properties*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

4 Designation and specification system

4.1 General

The designation and specification system for thermoplastics is based on the following standardized pattern:

Designation						
Designation block	Identity block					
	International Standard number block	Individual-item block				
		Data block 1	Data block 2	Data block 3	Data block 4	Data block 5

The designation consists of an optional description block, reading “Thermoplastics”, and an identity block comprising the International Standard number and an individual-item block. For unambiguous designation, the individual-item block is subdivided into five data blocks comprising the following information.

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- Data block 1: Identification of the plastic by its symbol POM in accordance with ISO 1043-1 and information about the polymerization process or composition of the polymer (see 4.2).
- Data block 2: Fillers or reinforcing materials and their nominal content (see 4.3).
- Data block 3: Position 1: Intended application or method of processing (see 4.4).
Positions 2 to 8: Important properties, additives, and supplementary information (see 4.4).
- Data block 4: Designatory properties (see 4.5).
- Data block 5: For the purpose of specifications, a fifth data block can be added containing additional information (see 4.6).

The first character of the individual-item block shall be a hyphen. The data blocks shall be separated from each other by commas.

If a data block is not used, this shall be indicated by doubling the separation sign, i.e. by two commas (,,).

NOTE Data blocks 1 and 2 together form the part marking symbol.

4.2 Data block 1

In this data block, after the hyphen, polyoxymethylene plastics are identified by the symbol “POM”, in accordance with ISO 1043-1, followed by a hyphen and the code-letter H for homopolymers or K for copolymers.

Blends can be made from materials mentioned in ISO 1043-1 and/or other polymers. For polymer blends or alloys, use the abbreviated terms for the basic polymers, with the main component in first place followed by the other components in descending order according to their mass fractions, separated by a plus sign and no space before or after the plus sign.

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

4.3 Data block 2

In this data block, the type of filler and/or reinforcing material is represented by a single code-letter in position 1 and its physical form by a second code-letter in position 2, the code-letters being as specified in Table 1. Subsequently (without a space), the mass content can be given by a 2-figure number in positions 3 and 4.

Table 1 — Code-letters for fillers and reinforcing materials in data block 2

Code-letter	Material ^a	Code-letter	Form
A	Aramid	B	Balls, beads, spheres
B	Boron	D	Powder
C	Carbon	F	Fibre
G	Glass	G	Ground
K	Calcium carbonate	H	Whiskers
L	Cellulose		
M	Mineral		
ME	Metal ^b		
R	Aramid ^c		
S	Synthetic organic ^d	S	Scales, flakes
T	Talc		
W	Wood		
X	Not specified	X	Not specified
Z	Others	Z	Others ^a

^a The materials may be further defined, for example, by their chemical symbols or by additional symbols defined in the relevant International Standard.

^b In the case of metals (ME), the type(s) of metal shall be indicated by means of the relevant chemical symbol(s).

^c Aramid was previously defined by the symbol "R", but "A" is in common use.

^d A specific material may be further defined.

Mixtures of materials or forms may be indicated by combining the relevant codes using the sign "+" and placing the whole between parentheses. For example, a mixture of 25 % glass fibres (GF) and 8 % mineral powder (MD) would be indicated by (GF25+MD08).

4.4 Data block 3

In this data block, information about the intended application and/or method of processing is given in position 1 and information about important properties, additives, and colour in positions 2 to 8. The code-letters used are specified in Table 2.

If information is presented in positions 2 to 8 and no specific information is given in position 1, the letter X shall be inserted in position 1.