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Plastics — Polyamide (PA) moulding and extrusion materials —

Part 1: Designation system and basis for specifications

Plastiques — Matériaux à base de polyamide (PA) pour moulage et extrusion —

Partie 1: Système de désignation et base de spécifications

Reference number
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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).

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For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 9, *Thermoplastic materials,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 249, *Plastics,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 16396-1:2015), which has been technically revised.

The main changes compared to the previous edition are as follows:

— “marking of products” has been deleted in the subtitle; the subtitle has been replaced by “Part 1: Designation system and basis for specifications”;

— the abbreviation for “Injection moulding” has been changed back to “M” in Table 4;

— “Multiple processing modes” has been added in Table 4

— the reference to ISO 1874-2 has been changed to ISO 16396-2.

A list of all parts in the ISO 16396 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

In practice, ISO 1043 and ISO 11469 are, in combination, being "improperly" used as a designation system for, e.g. marking. The aim of this document is to simplify the data block system and to connect more to ISO 1043 and ISO 11469, where the first two blocks are used for generic identification and marking of products.

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Plastics — Polyamide (PA) moulding and extrusion materials —

Part 1: Designation system and basis for specifications

1 Scope

This document establishes a system of designation for polyamide (PA) moulding and extrusion materials, which can be used as the basis for specifications.

The types of polyamide plastics are differentiated from each other by a classification system based on appropriate levels of the designatory properties

a) viscosity number,

b) tensile modulus, and

c) nucleating additive,

and on information about composition, intended application and/or method of processing, important properties, additives, colorants, fillers, and reinforcing materials.

The designation system is applicable to all polyamide homopolymers, copolymers, and blends.

It is applicable to unmodified materials ready for normal use and materials modified, for example, by colorants, additives, fillers, reinforcing materials, and polymer modifiers.

This document does not apply to the following materials:

— monomer casting-type polyamides of PA 6;

— monomer casting-type polyamides of PA 12.

It is not intended to imply that materials having the same designation give the same performance. This document does not provide engineering data, performance data, or data on processing conditions which can be required to specify a material. If such additional properties are required, they can be determined according to the test methods specified in ISO 16396-2, if suitable.

In order to specify a thermoplastic material for a particular application, additional requirements can be given in data block 5 (see 4.1).

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 307, *Plastics — Polyamides — Determination of viscosity number*

ISO 527 (all parts), *Plastics — Determination of tensile properties*

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

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ISO 16396-2, *Plastics — Polyamide (PA) 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:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Designation system

4.1 General

The symbol "%" used in this document means mass fraction.

The designation system for thermoplastics is based on the following standard pattern:

Designation						
Description block	Identity block					
Thermoplastics (optional)	International Standard 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.

Data block 1: Position 1: Identification of the plastic by its abbreviated term (PA), in accordance with ISO 1043-1 and information about the composition of the polymer.

Position 2: Information on the use of plasticizer (P) or impact modifier (I) (see 4.2).

Data block 2: Position 1: Fillers or reinforcements and their nominal content.

Position 2: Flame retardant information.

Position 3: Declaration of recyclate (R) (see 4.3).

Data block 3: Position 1: Intended application and/or method of processing. 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 specification, the fifth data block contains appropriate 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 („). Terminal commas can be omitted.

NOTE Data blocks 1 and 2 together form the part marking symbol, connected with a hyphen, and placed between the punctuation marks ">" and "<", where no spaces are used between the codes.

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