

INTERNATIONAL STANDARD

**ISO
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Plastics — Polypropylene (PP) moulding and extrusion materials —

Part 1:

Designation system and basis for
specifications

*Plastiques — Polypropylène (PP) pour moulage et extrusion —
Partie 1: Système de désignation et base de spécification*



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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 1873-1 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 9, *Thermoplastic materials*.

This fourth edition cancels and replaces the third edition (ISO 1873-1:1991) and includes the following changes:

The designatory property "isotactic index" has been replaced by the designatory properties "tensile modulus of elasticity" and "impact strength".

ISO 1873 consists of the following parts, under the general title *Plastics — Polypropylene (PP) moulding and extrusion materials*:

- *Part 1: Designation system and basis for specifications*
- *Part 2: Preparation of test specimens and determination of properties*

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Plastics — Polypropylene (PP) moulding and extrusion materials —

Part 1: Designation system and basis for specifications

1 Scope

1.1 This part of ISO 1873 establishes a system of designation for polypropylene (PP) thermoplastic material, which may be used as the basis for specifications.

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

- a) tensile modulus of elasticity
- b) impact strength
- c) melt mass-flow rate (MFR)

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

1.3 This part of ISO 1873 is applicable to all propylene homopolymers and to copolymers of propylene with a content of other 1-olefins of less than 50 % (*m/m*), as well as blends of polymers containing at least 50 % (*m/m*) of aforementioned polymers.

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

This part of ISO 1873 does not apply to propylene-based rubber.

1.4 It is not intended to imply that materials having the same designation give necessarily the same performance. This part of ISO 1873 does not provide engineering data, performance data or data on processing conditions which may be required to specify a material for a particular application and/or method of processing.

If such additional properties are required, they shall be determined in accordance with the test methods specified in part 2 of this International Standard, if suitable.

1.5 In order to specify a thermoplastic material for a particular application or to ensure reproducible processing, additional requirements may be given in data block 5 (see clause 3, introductory paragraph).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 1873. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 1873 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1043-1:1987, *Plastics — Symbols — Part 1: Basic polymers and their special characteristics*.

ISO 1043-2:1988, *Plastics — Symbols — Part 2: Fillers and reinforcing materials*.

ISO 1133:1991, *Plastics — Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics*

ISO 1873-2:—¹⁾, *Plastics — Polypropylene (PP) moulding and extrusion materials — Part 2: Preparation of test specimens and determination of properties*.

3 Designation and specification system

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

Designation						
Description block (optional)	Identity block					
	International Standard Number block	Individual-item block				
		Data block 1	Data block 2	Data block 3	Data block 4	Data block 5

1) To be published (Revision of ISO 1873-2:1989)