

INTERNATIONAL
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**Plastics — Generic identification and
marking of plastic products**

iTeh STANDARD PREVIEW
Plastiques — Identification générique et marquage des produits plastiques
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ISO 11469:1993

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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 11469 was prepared by Technical Committee ISO/TC 61, *Plastics*, Sub-Committee SC 1, *Terminology*.

Annex A of this International Standard is for information only.

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Plastics — Generic identification and marking of plastic products

1 Scope

1.1 This International Standard specifies a system for the uniform marking of products that have been fabricated from plastic materials. Provision for the process or processes to be used for marking is outside the scope of this International Standard.

NOTE 1 Precise details of the marking, e.g. the minimum size of the item to be marked, the size of the lettering, the appropriate location of the marking, may be subject to agreement between the manufacturer and the user.

1.2 The marking system should help identify plastic products for subsequent decisions relating to handling, waste recovery or disposal.

1.3 The symbols and abbreviated terms used are intended to provide generic identification of the plastics.

1.4 This International Standard is not intended to supplant, replace, or in any way to interfere with requirements for labelling found in legislation.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard 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 472:1988, *Plastics — Vocabulary*.

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 1087:1990, *Terminology — Vocabulary*.

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 472 and the following definitions apply.

3.1 abbreviated term: A term resulting from the omission of any part of a term while designating the same concept.

NOTE 2 Most of the terms in this International Standard are symbols as the term is used in ISO 1043-1 and ISO 1043-2, or acronyms or initialisms as defined in ISO 1087.

3.2 plastic products: Articles or stock shapes of plastic materials intended for useful purposes.

4 Symbols or abbreviated terms

The symbols given in ISO 1043-1 and ISO 1043-2 shall be used for this International Standard. If an appropriate symbol or abbreviated term is not included in ISO 1043-1 or ISO 1043-2, such a symbol or abbreviated term from any available national standard preferably should be used.

NOTE 3 Should any such symbol or abbreviated term be used, it is recommended that this information be provided to the ISO/TC 61/SC 1 Secretariat.¹⁾

1) ISO/TC 61/SC 1 Secretariat, British Standards Institution, 3 York Street, Manchester, M2 2AT, GB.

5 Requirements

5.1 Marking system

5.1.1 Marking of products

If plastic products are marked, they shall be marked at some place on the surface with the appropriate symbol(s) or abbreviated term(s) set between the punctuation marks ">" and "<"

NOTES

4 ">" and "<" are "greater than" and "less than" signs, respectively, often referred to in this context as reversed angled brackets.

5 Details of expanded marking systems are given in annex A.

5.1.2 Products with one component

5.1.2.1 Marking of single-constituent products

Products made from a single polymer or copolymer shall be marked as specified in 5.1.1.

EXAMPLE: For acrylonitrile/butadiene/styrene use:

>ABS<

5.1.2.2 Marking of polymer blends or alloys

Products of polymer blends or alloys shall be marked with the appropriate abbreviated terms for the constituent polymers, separated by one or more plus signs and set off as described in 5.1.1.

EXAMPLE: For a blend of acrylonitrile/butadiene/styrene and polycarbonate use:

>ABS+PC<

5.1.2.3 Marking of filled or reinforced compositions

5.1.2.3.1 Compositions with a single filler or reinforcing material preferably should be marked with the abbreviated term for the polymer, followed by a dash, then the symbol for the additive with its percentage by mass, arranged as shown in the example and set off as described in 5.1.1.

EXAMPLE: For a polypropylene containing 30 % mineral powder use:

>PP-MD30<

5.1.2.3.2 For compositions with a mixture of fillers or reinforcing materials, the marking of these additives preferably should be between parentheses (curved brackets) as shown in the example.

EXAMPLE: For a polyamide 66 containing a mixture of 15 % mineral powder and 25 % glass fibre use:

>PA66-(GF25+MD15)<

or

>PA66-(GF+MD)40<

5.1.3 Products with two or more components difficult to separate

Products that comprise two or more components, some of which are not readily visible, preferably should be marked so that the primary visible material is identified first, by the system specified in 5.1.1, followed by identification of the other material(s), with the individual identifications separated by a comma. The main component by mass shall be identified by underlining.

EXAMPLE: For a product made of three components, where the visible one is a thin coating of poly(vinyl chloride) over a polyurethane containing an insert of acrylonitrile/butadiene/styrene that is the major component by mass, use:

>PVC, PÜR, ABS<

5.2 Method of marking

The marking shall be made either

— during moulding, by having the appropriate symbol included in the mould design;

or

— by embossing;

or

— by melt imprinting;

or

— by other legible and indelible marking of the polymer.

Annex A (informative)

Expanded marking systems

In situations where it is desirable to have a more detailed description of the plastic material that was used to make the product than is possible with the system described in 5.1, the classification and designation systems referred to in the present annex may be used. These designation systems use the same abbreviated terms for the plastic "family name" as described in clause 4 and, in addition, permit a more detailed designation of the polymer. The expanded systems are particularly pertinent for the plastics that have an International Standard developed according to one of these designation systems.

The designation systems are based on standardized patterns that are explained and used in the material standards listed below.

This list includes references to ISO published and draft standards that designate many of the most common plastic materials.

- [1] ISO 800:1992, *Plastics — Phenolic moulding materials — Specification.*
- [2] ISO 1060-1:1982, *Plastics — Homopolymer and copolymer resins of vinyl chloride — Part 1: Designation.*
- [3] ISO 1163-1:1985, *Plastics — Unplasticized compounds of homopolymers and copolymers of vinyl chloride — Part 1: Designation.*
- [4] ISO 1622-1:1985, *Plastics — Polystyrene (PS) moulding and extrusion materials — Part 1: Designation.*
- [5] ISO 1872-1:1986, *Plastics — Polyethylene (PE) and ethylene copolymer thermoplastics — Part 1: Designation.*
- [6] ISO 1873-1:1991, *Plastics — Polypropylene (PP) and propylene-copolymer thermoplastics — Part 1: Designation.*
- [7] ISO 1874-1:1992, *Plastics — Polyamide (PA) moulding and extrusion materials — Part 1: Designation.*
- [8] ISO 2112:1990, *Plastics — Aminoplastic moulding materials — Specification.*
- [9] ISO 2580-1:1990, *Plastics — Acrylonitrile/ butadiene/styrene (ABS) moulding and extrusion materials — Part 1: Designation.*
- [10] ISO 2897-1:1990, *Plastics — Impact-resistant polystyrene (SB) moulding and extrusion materials — Part 1: Designation.*
- [11] ISO 2898-1:1986, *Plastics — Plasticized compounds of homopolymers and copolymers of vinyl chloride (PVC-P) — Part 1: Designation.*
- [12] ISO 3672-1:1979, *Plastics — Unsaturated polyester resins — Part 1: Designation.*
- [13] ISO 3673-1:1980, *Plastics — Epoxide resins — Part 1: Designation.*
- [14] ISO 4597-1:1983, *Plastics — Hardeners and accelerators for epoxide resins — Part 1: Designation.*
- [15] ISO 4613-1:—²⁾, *Plastics — Ethylene/vinyl acetate (E/VAC) copolymer thermoplastics — Part 1: Designation.*

2) To be published. (Revision of ISO 4613-1:1985)

- [16] ISO 4894-1:1990, *Plastics — Styrene/acrylonitrile (SAN) copolymer moulding and extrusion materials — Part 1: Designation.*
- [17] ISO 4896:1990, *Plastics — Melamine/phenolic moulding materials — Specification.*
- [18] ISO 6402-1:1990, *Plastics — Impact-resistant acrylonitrile/styrene moulding and extrusion materials (ASA, AES, ACS), excluding butadiene-modified materials — Part 1: Designation.*
- [19] ISO 7391-1:1987, *Plastics — Polycarbonate moulding and extrusion materials — Part 1: Designation.*
- [20] ISO 7792-1:1985, *Plastics — Polyalkylene terephthalates — Part 1: Designation.*
- [21] ISO 8257-1:1987, *Plastics — Poly(methyl methacrylate) (PMMA) moulding and extrusion materials — Part 1: Designation.*
- [22] ISO 8604:1988, *Plastics — Prepregs — Definitions of terms and symbols for designations.*
- [23] ISO 9988-1:1991, *Plastics — Polyoxymethylene (POM) moulding and extrusion materials — Part 1: Designation.*
- [24] ISO 10366-1:—³⁾, *Plastics — Methyl methacrylate/acrylonitrile/butadiene/styrene (MABS) moulding and extrusion materials — Part 1: Designation and specification.*

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3) To be published.

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