

International Standard



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Plastics — Polyalkylene terephthalates — Part 1: Designation

Plastiques — Polyalkylène téréphtalates — Partie 1: Désignation

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 7792/1 was prepared by Technical Committee ISO/TC 61, *Plastics*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Plastics — Polyalkylene terephthalates — Part 1: Designation

1 Scope and field of application

1.1 This part of ISO 7792 establishes a system of designation for polyalkylene terephthalate thermoplastic materials which may be used as the basis for specifications.

1.2 The types of polyalkylene terephthalate plastics are differentiated from each other by a classification system based on appropriate levels of the designatory property, namely viscosity number, and information about intended application, method of processing, important properties, additives, colour, fillers and reinforcing materials.

1.3 This designation system is applicable to polyethylene terephthalate (PETP) and polybutylene terephthalate (PBTP). It applies to materials ready for normal use, unmodified by colorants, additives, fillers and reinforcing materials.

1.4 It is not intended to imply that materials having the same designation give necessarily the same performance. This part of ISO 7792 does not provide engineering data, performance data or data on processing conditions which may be required to specify a material for a particular application or method of processing.

If such additional properties are required, they shall be determined in accordance with the test methods specified in ISO 7792/2, if suitable.

1.5 In order to specify a thermoplastic material for a particular application or reproducible processing, additional requirements may be coded in Data Block 5 (see clause 3).

2 References

ISO 1043, *Plastics — Symbols and codes*

— *Part 1: Symbols for basic polymers and their modification, and for plasticizers.*¹⁾

— *Part 2: Codes for designations of polymers by a data-block system.*¹⁾

ISO 1228, *Plastics — Determination of the viscosity number of alkylene terephthalate polymers and copolymers in dilute solution.*²⁾

ISO 7792/2, *Plastics — Polyalkylene terephthalates — Part 2: Preparation of test specimens and determination of properties.*³⁾

1) At present at the stage of draft. (Partial revision of ISO 1043-1978.)

2) At present at the stage of draft. (Revision of ISO 1228-1975.)

3) At present at the stage of draft.

3 Designation system

The designation system of thermoplastics is based on the following standardized pattern¹⁾.

Designation						
Description Block (optional)	Identity Block					
	International Standard Number Block	Individual Item Block				Data Block 5
		Data Block 1	Data Block 2	Data Block 3	Data Block 4	

It consists of an optional Description Block, reading Thermoplastics, and an Identity Block comprising the International Standard number and an Individual Item Block. For unambiguous coding the Individual Item Block is subdivided into 4 data blocks comprising the following information:

- No. 1: Identification of the plastic by its symbol PETP or PBTP, according to ISO 1043/1.
- No. 2: Position 1: Intended application or method of processing (see 3.2).
Positions 2 to 4: Important properties, additives and supplementary information (see 3.2).
- No. 3: Designatory properties (see 3.3).
- No. 4: Fillers or reinforcing materials and their nominal content (see 3.4).

For the purpose of specifications, a fifth data block may be added containing additional information. The kind of information and its codes are not the subject of this part of ISO 7792.

The first character of the Individual Item Block shall be a hyphen. The four data blocks shall be separated from each other by a comma.

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

3.1 Data Block 1

In this data block, after a hyphen, the type of polyalkylene terephthalate is identified by the symbol PETP or PBTP, according to ISO 1043/1.

3.2 Data Block 2

In this data block, information about intended application or method of processing is given in Position 1 and information about important properties, additives and colour in Positions 2 to 4. The codes are specified in table 1.

Table 1 — Codes used in Data Block 2

Code	Position 1	Code	Positions 2 to 4
B	Blow moulding	A	Processing stabilized
C	Calendering	B	Antiblocking
D	Disc manufacture	C	Coloured
E	Extrusion of pipes, profiles and sheet	D	Powder; dry blend
F	Extrusion of film and thin sheeting	E	Expandable
G	General use	F	Special burning characteristics
H	Coating	G	Pellets; granules
K	Cable and wire coating	H	Heat-ageing stabilized
L	Monofilament extrusion	L	Light and/or weather stabilized
M	Injection moulding	N	Natural (not coloured)
R	Rotational moulding	P	Impact modified
S	Powder coating or sintering	R	Moulding release agent
X	No indication	S	Lubricated
		T	Improved transparency
		W	Stabilized against hydrolysis
		Z	Antistatic

1) See ISO 1043/2.

If information is presented in Positions 2 to 4 and no specific information is given in Position 1, the letter X shall be inserted in Position 1.

3.3 Data Block 3

In this data block, the viscosity number is coded by two figures (see 3.3.1). Nucleated material may be coded by the letter N after the two digits.

The designation is based on the average value of the viscosity number of the material. If a value falls on or near a cell limit, the manufacturer shall state which cell will designate the material. If subsequent individual test values lie on, or either side of, the cell limit because of manufacturing tolerances, the designation is not affected.

3.3.1 Viscosity number

The viscosity number shall be determined according to ISO 1228. The cell range of the average viscosity number is coded by two figures, as specified in table 2.

Table 2 — Cell codes and cell ranges for viscosity number in Data Block 3

Plastic	Code	Range of average viscosity number (VN) ml/g
PETP	06	< 60
	07	> 60 to 70
	08	> 70 to 80
	09	> 80 to 90
	10	> 90 to 100
	11	> 100 to 120
	13	> 120 to 140
	15	> 140
PBTP	08	< 90
	10	> 90 to 110
	12	> 110 to 130
	14	> 130 to 150
	16	> 150 to 170
	18	> 170

3.4 Data Block 4

In this data block, the type of filler or reinforcing material is coded by one letter in Position 1 and its physical form by a second letter in Position 2 (see table 3), if requested. Subsequently (without space) the mass content may be given by two figures in Positions 3 and 4, as specified in table 4.

Mixtures of materials or forms may be indicated in parentheses by combining the relevant codes by the sign "+"; for example a mixture of 25 % (m/m) glass fibres (GF) and 10 % (m/m) mineral powder (MD) can be indicated by (G + M) in Position 1, (F + D) in Position 2 and (25 + 10) in Positions 3 and 4.