
Polimerni materiali i Plastomerni poliester/ester in polieter/ester elastomeri za oblikovanje in ekstrudiranje i 1. del: Sistem označevanja in podlage za specifikacije (ISO 14910-1:1997)

Plastics - Thermoplastic polyester/ester and polyether/ester elastomers for moulding and extrusion - Part 1: Designation system and basis for specifications (ISO 14910-1:1997)

Kunststoffe - Thermoplastische Polyester/Ester- und Polyether/Ester- Elastomer-Formmassen - Teil 1: Bezeichnungssystem und Basis für Spezifikationen (ISO 14910-1:1997)

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Plastiques - Elastomeres thermoplastiques a base de polyester/ester et polyéther/ester, pour moulage et extrusion - Partie 1: Systeme de désignation et base de spécification (ISO 14910-1:1997)

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English Version

Plastics - Thermoplastic polyester/ester and polyether/ester
elastomers for moulding and extrusion - Part 1: Designation
system and basis for specifications (ISO 14910-1:1997)

Plastiques - Elastomères thermoplastiques à base de
polyester/ester et polyéther/ester, pour moulage et
extrusion - Partie 1: Système de désignation et base de
spécification (ISO 14910-1:1997)

Kunststoffe - Thermoplastische Polyester/Ester- und
Polyether/Ester- Elastomer-Formmassen - Teil 1:
Bezeichnungssystem und Basis für Spezifikationen (ISO
14910-1:1997)

This European Standard was approved by CEN on 16 March 2006.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

The text of ISO 14910-1:1997 has been prepared by Technical Committee ISO/TC 61 "Plastics" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 14910-1:2006 by Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by IBN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2006, and conflicting national standards shall be withdrawn at the latest by October 2006.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of ISO 14910-1:1997 has been approved by CEN as EN ISO 14910-1:2006 without any modifications.

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**Plastics — Thermoplastic polyester/ester
and polyether/ester elastomers for
moulding and extrusion —**

Part 1:

Designation system and basis for
specifications

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*Plastiques — Elastomères thermoplastiques à base de polyester/ester et
polyéther/ester, pour moulage et extrusion —*

Partie 1: Système de désignation et base de spécification

<https://standards.iteh.ai/catalog/standards/sist/9c21eac8-91d0-4beb-a23c-291ca009abd4/sist-en-iso-14910-1-2006>



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 14910-1 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 9, *Thermoplastic materials*.

ISO 14910 consists of the following parts, under the general title *Plastic — Thermoplastic polyester/ester and polyether/ester elastomers for moulding and extrusion*:

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

Annex A forms an integral part of this part of ISO 14910.

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Plastics — Thermoplastic polyester/ester and polyether/ester elastomers for moulding and extrusion —

Part 1:

Designation system and basis for specifications

1 Scope

1.1 This part of ISO 14910 establishes a system of designation for thermoplastic polyester/ester and polyether/ester elastomers, which may be used as the basis for specifications.

1.2 The types of thermoplastic polyester/ester and polyether/ester elastomer are differentiated from each other by a classification system based on appropriate levels of the designatory properties

a) hardness;

b) melting temperature;

c) tensile/flexural modulus of elasticity;

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

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1.3 This part of ISO 14910 is applicable to all thermoplastic polyester/ester and polyether/ester elastomers.

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

1.4 It is not intended to imply that materials having the same designation give necessarily the same performance. This part of ISO 14910 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 polyester/ester or polyether/ester 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 14910. 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 14910 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 1043-1:1997, *Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics*.

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

ISO 14910-2:1997, *Plastics — Thermoplastic polyester/ester and polyether/ester elastomers for moulding and extrusion — Part 2: Preparation of test specimens and determination of properties*.

3 Designation system

The designation 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

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 5 data blocks comprising the following information:

- Data block 1: Identification of the plastic by its symbol in accordance with ISO 1043-1 (see 3.1).
- Data block 2: Position 1: Intended application or method of processing (see 3.2).
Positions 2 to 8: Important properties, additives and supplementary information (see 3.2).
- Data block 3: Designatory properties (see 3.3).
- Data block 4: Fillers or reinforcing materials and their nominal content (see 3.4).
- Data block 5: Information required for specification purposes is listed here. The use of data block 5 converts the designation to a specification. Only information listed in data block 5 becomes part of the specification requirements.

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 (,,).

3.1 Data block 1

In this data block, after the hyphen, thermoplastic polyester/ester and polyether/ester elastomers are identified using the symbols and designations given in table 1 or developed from annex A.

Table 1 — Symbols indicating the chemical structure of copolyester/ester and copolyether/ester materials in data block 1 (examples)

Symbol	Chemical identification
TP 4T/PTMEGT	Copolyether/ester based on butanediol, poly(tetramethylene ether) glycol and terephthalic acid.
TP CL/4T	Copolyester/ester based on caprolactone, butanediol and terephthalic acid.
TP 4T/PPEGT	Copolyether/ester based on butanediol, poly(propylene ether) glycol and terephthalic acid.
TP 4T/BDT/PTMEGT	Copolyether/ester based on butanediol, butenediol, poly(tetramethylene ether) glycol and terephthalic acid.

3.2 Data block 2

In this data block, information about 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.

Table 2 — Code-letters used in data block 2

Code-letter	Position 1	Code-letter	Positions 2 to 8
A	Adhesive	A	Processing stabilized
B	Blow moulding	B	Antiblocking
C	Calendering	C	Coloured
D	Disc manufacture	D	Powder
E	Extrusion	E	Expandable
F	Extrusion of films	F	Special burning characteristics
G	General use	G	Granules
H	Coating	H	Heat-ageing stabilized
K	Cable and wire coating	L	Light and weather stabilized
L	Monofilament extrusion	M	Nucleated
M	Moulding	N	Natural (no colour added)
R	Rotational moulding	P	Impact modified
S	Sintering	R	Mould release agent
X	No indication	S	Lubricated
		T	Transparent
		W	Stabilized against hydrolysis
		Z	Antistatic

3.3 Data block 3

In this data block, the hardness is represented by a 2-figure code-number (see 3.3.1), the melting temperature by a 2-figure code-number (see 3.3.2) and the tensile/flexural modulus of elasticity by a 3-figure code-number (see 3.3.3). The code-numbers are separated from each other by hyphens.

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

NOTE — Not all combinations of the values of the designatory properties are provided by currently available polymers.

3.3.1 Hardness

The hardness shall be determined in accordance with ISO 14910-2.

The possible values of the hardness are divided into 11 ranges, each represented by a 2-figure code-number as specified in table 3.