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

## Part 1: Designation system and basis for specification

*Plastiques — Élastomères thermoplastiques à base de polyester/ester et polyéther/ester 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 9, *Thermoplastic materials*.

This first edition of ISO 20029-1 cancels and replaces ISO 14910-1:2013, which has been technically revised to introduce a new designation system.

The revised designation system is published under a new ISO number, as many existing documents refer to ISO 14910-1. If the existing ISO 14910-1 would be replaced by the new designation system, these documents would refer to the incorrect designation system.

In order to give users time to switch from ISO 14910-1 to ISO 20029-1, any designation system according to ISO 14910-1 is to be phased out in 5 to 10 years.

A list of all parts in the ISO 20029 series can be found on the ISO website.


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# Introduction

ISO 14910-1:2013 is complex and does not fit with daily practice anymore. In practice, ISO 18064 and ISO 11469 are, in combination, "improperly" being 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 18064 and ISO 11469, where the first two blocks are used for generic identification and marking of products.

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

# Part 1: Designation system and basis for specification

## 1 Scope

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

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, colour, fillers and reinforcing materials.

This document 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.

It is not intended to imply that materials having the same designation give necessarily the same performance. This document does not provide engineering data, performance data or data on processing conditions which may be required to specify a material. If such additional properties are required, they are intended to be determined in accordance with the test methods specified in ISO 20029-2, if suitable.

In order to designate a thermoplastic polyester/ester or polyether/ester elastomer to meet particular specifications, the requirements are 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 1043-4, *Plastics — Symbols and abbreviated terms — Part 4: Flame retardants*

ISO 18064, *Thermoplastic elastomers — Nomenclature and abbreviated terms*

ISO 20029-2, *Plastics — Thermoplastic polyester/ester and polyether/ester elastomers for moulding and extrusion — Part 2: Preparation of test specimens and determination of properties*

## 3 Terms and definitions

No terms and definitions are listed in this document.

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ISO and IEC maintain terminological databases for use in standardization at the following addresses:

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

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

# 4 Designation system

## 4.1 General

The designation system for thermoplastics is based on the following standardized pattern.

| Designation | | | | | | |
|---|---|---|---|---|---|---|
| | Identity block | | | | | |
| Description block (optional) | 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 five data blocks comprising the following information:

— Data block 1: Identification of the plastic by its abbreviated term (TPC), in accordance with ISO 18064, and information about the composition of the polymer (see 4.2).

— Data block 2:
  — fillers or reinforcing materials and their nominal content;
  — flame retardant;
  — optionally recyclate and its content (see 4.3).

— Data block 3: Position 1: Intended application and/or method of processing (see 4.4).
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 specifications, a fifth data block contains appropriate information (see 4.6).

The first character of the individual item block shall be a hyphen. The five data blocks shall be separated from each other by a comma. If a data block is not used, this shall be indicated by doubling the separation sign, i.e. by two commas (,,). Terminal commas may be omitted.

NOTE Data blocks 1 and 2 together form the part marking symbol.

## 4.2 Data block 1

In this data block, after the hyphen, the thermoplastic elastomer is identified by its abbreviated term in accordance with ISO 18064 and, after a space, a symbol indicating the composition as specified in Table 1.


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