

INTERNATIONAL STANDARD

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Plastics — Ultra-high-molecular-weight polyethylene (PE-UHMW) moulding and extrusion materials —

Part 1:

Designation system and basis for
specifications

*Plastiques — Matériaux à base de polyéthylène à très haute masse
moléculaire (PE-UHMW) pour moulage et extrusion —*

Partie 1: Système de désignation et base de spécification



Reference number
ISO 11542-1:1994(E)

Foreword

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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 11542-1 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 9, *Thermoplastic materials*.

ISO 11542 consists of the following parts, under the general title *Plastics — Ultra-high-molecular-weight polyethylene (PE-UHMW) 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 — Ultra-high-molecular-weight polyethylene (PE-UHMW) moulding and extrusion materials —

Part 1:

Designation system and basis for specifications

1 Scope

1.1 This part of ISO 11542 establishes a system of designation for PE-UHMW thermoplastic material which may be used as the basis for specifications.

For the purposes of this part of ISO 11542, PE-UHMW materials are polyethylene materials having a melt mass-flow rate (MFR), measured at 190 °C and 21,6 kg load, of less than 0,1 g/10 min.

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

- a) density
- b) viscosity number
- c) elongational stress

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

1.3 This part of ISO 11542 is applicable to all PE-UHMW homopolymers and to ultra-high-molecular-weight copolymers of ethylene having a content of other 1-olefinic monomers of less than 50 % (*m/m*) and a content of non-olefinic monomers with functional groups up to a maximum of 3 % (*m/m*).

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.

1.4 It is not intended to imply that materials having the same designation give necessarily the same performance. This part of ISO 11542 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.

A part 2 to this International Standard covering the preparation of test specimens and determination of properties is being prepared for use if such data are required.

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).