# INTERNATIONAL STANDARD

Third edition 2009-02-01

## Plastics — Determination of the viscosity of polymers in dilute solution using capillary viscometers —

Part 1: General principles

*Plastiques — Détermination de la viscosité des polymères en solution diluée à l'aide de viscosimètres à capillaires —* 

Partie 1: Principes généraux



Reference number ISO 1628-1:2009(E)

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## Contents

Page

Forew	ord	iv
1	Scope	
2	Normative references	1
3	Definitions	1
4	Principle	5
5	Apparatus	5
6	Solutions	8
7	Temperature of measurement	9
8	Procedure	9
9	Expression of results	10
10	Test report	11
Annex	A (normative) Cleaning of apparatus	
Annex	B (normative) Notes on sources of error	13
	graphy	

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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 Maison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are orafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical convertues is to prepare International Standards. 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.

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 gentifying any or all such patent rights.

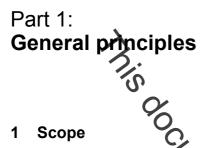
ISO 1628-1 was prepared by Technical Committee ISO/TC 61, Plastics, Subcommittee SC 5, Physicalchemical properties.

This third edition cancels and replaces the second edition (ISO 1628-1:1998), of which it constitutes a minor revision intended primarily to correct an error in Subcause 9.1, paragraph 4 (starting: "The intrinsic viscosity "impsic-viscosity values" has been replaced by shall be calculated from"), where, in line 2, "inherent-viscosity" values.

ISO 1628 consists of the following parts, under the general title Plastics — Determination of the viscosity of polymers in dilute solution using capillary viscometers: renerated by FLS

- Part 1: General principles
- Part 2: Poly(vinyl chloride) resins
- Part 3: Polyethylenes and polypropylenes
- Part 4: Polycarbonate (PC) moulding and extrusion materials
- Part 5: Thermoplastic polyester (TP) homopolymers and copolymers
- Part 6: Methyl methacrylate polymers

## Plastics — Determination of the viscosity of polymers in dilute solution using capillary viscometers –



This part of ISO 1628 defines the general conditions for the determination of the reduced viscosity, intrinsic viscosity and *K*-value of organic polymers in dilute solution. It defines the standard parameters that are applied to viscosity measurement, and can be used to develop standards for measuring the viscosities in solution of individual types of polymer at can also be used to measure and report the viscosities of polymers in dilute to measure and report the viscosities of polymers in solution for which no separate standards exist.

#### 2 Normative references

The following referenced documents are indimensable for the application of this document. For dated indated references, the latest edition of the referenced references, only the edition cited applies. For document (including any amendments) applies.  $\mathbf{n}$ 

ISO 3105:1994, Glass capillary kinematic viscometers **4** Specifications and operating instructions

ISO 3205, Preferred test temperatures

ISO 80000-1, Quantities and units — Part 1: General<sup>1)</sup>

ISO 80000-4, Quantities and units — Part 4: Mechanics

#### 3 Definitions

## 3.1 Dimensions and units

related by th The dimensions of properties defined in this part of ISO 1628 are expressed in derms of L for length, M for mass and T for time in accordance with ISO 80000-1, while the units appropriate to the properties are given in ISO 80000-1 and ISO 80000-4.

## 3.2 Definitions applicable to any liquid

## 3.2.1

## viscosity

viscosity of a fluid sheared between two parallel plates, one of which moves relative to the other in uniform rectilinear motion in its own plane, defined by the Newton equation

<sup>1)</sup> To be published. (Revision of ISO 31-0:1992)