



**SLOVENSKI STANDARD**  
**SIST EN ISO 1060-1:2000**

01-maj-2000

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Plastics - Homopolymer and copolymer resins of vinyl chloride - Part 1: Designation system and basis for specifications (ISO 1060-1:1998)

Kunststoffe - Homo- und Copolymere des Vinylchlorids - Teil 1: Bezeichnungssystem und Basis für Spezifikationen (ISO 1060-1:1998)

Plastiques - Résines d'homopolymères et de copolymères de chlorure de vinyle - Partie 1: Systeme de désignation et base de spécification (ISO 1060-1:1998)

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**Ta slovenski standard je istoveten z: EN ISO 1060-1:1999**

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**ICS:**

83.080.20      Plastomeri      Thermoplastic materials

**SIST EN ISO 1060-1:2000**      en

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN ISO 1060-1**

May 1999

ICS 83.080.20

English version

**Plastics - Homopolymer and copolymer resins of vinyl chloride -  
Part 1: Designation system and basis for specifications (ISO  
1060-1:1998)**

Plastiques - Résines d'homopolymères et de copolymères  
de chlorure de vinyle - Partie 1: Système de désignation et  
base de spécification (ISO 1060-1:1998)

Kunststoffe - Homo-und Copolymere des Vinylchlorids -  
Teil 1: Bezeichnungssystem und Basis für Spezifikationen  
(ISO 1060-1:1998)

This European Standard was approved by CEN on 18 April 1999.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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## Foreword

The text of the International Standard from Technical Committee ISO/TC 61 "Plastics" of the International Organization for Standardization (ISO) has been taken over as an European Standard by Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by IBN.

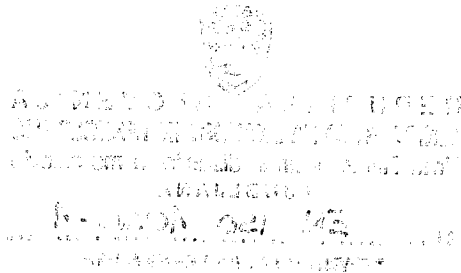
This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 1999, and conflicting national standards shall be withdrawn at the latest by November 1999.

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

## Endorsement notice

The text of the International Standard ISO 1060-1:1998 has been approved by CEN as a European Standard without any modification.

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# INTERNATIONAL STANDARD

**ISO**  
**1060-1**

Second edition  
1998-03-15

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## Plastics — Homopolymer and copolymer resins of vinyl chloride —

### Part 1: Designation system and basis for specifications

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*Plastiques — Résines d'homopolymères et de copolymères de chlorure de  
vinyle*

*Partie 1: Système de désignation et base de spécification*

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Reference number  
ISO 1060-1:1998(E)

## ISO 1060-1:1998(E)

## 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.

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International Standard ISO 1060-1 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 9, *Thermoplastic materials*.

This second edition cancels and replaces the first edition (ISO 1060-1:1982) and includes the following main changes:

- a) the viscosity and the type of rheological behaviour of standard pastes have been introduced as designatory properties for paste resins;
- b) retention on a 63 µm sieve has been introduced as a designatory property;
- c) plasticizer absorption has been introduced as a designatory property.

ISO 1060 consists of the following parts, under the general title *Plastics — Homopolymer and copolymer resins of vinyl chloride*:

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

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# Plastics — Homopolymer and copolymer resins of vinyl chloride —

## Part 1:

### Designation system and basis for specifications

#### 1 Scope

**1.1** This part of ISO 1060 establishes a system of designation for vinyl chloride thermoplastic resins, which may be used as the basis for specifications.

**1.2** The types of vinyl chloride plastics are differentiated from each other by a classification system based on appropriate levels of the designatory properties:

- a) reduced viscosity
- b) apparent density
- c) retention on a 63  $\mu\text{m}$  mesh sieve
- d) plasticizer absorption at room temperature (for general-purpose resins and filler resins only)
- e) the viscosity and the type of rheological behaviour of a standard paste (for paste resins only)

and on information about basic polymer parameters, polymerization processes and intended applications.

**1.3** This part of ISO 1060 is applicable to resins in powder form which consist of homopolymers of the monomer vinyl chloride and copolymers, terpolymers, etc., of vinyl chloride with one or more other monomers, but where vinyl chloride is the main constituent. The resins may contain small amounts of non-polymerized substances (e.g. emulsifying or suspending agents, catalyst residues, etc.) and other substances added during the course of polymerization.

**1.4** It is not intended to imply that materials having the same designation give necessarily the same performance. This part of ISO 1060 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 resin 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 1060. 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 1060 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 1060-2:1998, *Plastics — Homopolymer and copolymer resins of vinyl chloride — Preparation of test samples and determination of properties*.

### 3 Designation and specification system

The designation and specification 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 five data blocks providing the following information:

- Data block 1: Identification of the plastic by its symbol (PVC, etc.) in accordance with ISO 1043-1 and information about the polymerization process and the composition of the polymer (see 3.1).
- Data block 2: Intended application (see 3.2).
- Data block 3: Designatory properties (see 3.3).
- Data block 4: Fillers or reinforcing materials and their nominal content (not included in this standard).
- Data block 5: For the purpose of specifications, a fifth data block may be added containing additional information (see 3.4).

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, vinyl chloride polymer resins are identified by the symbol PVC or VC/.../... for homopolymers or copolymers/terpolymers respectively, in accordance with ISO 1043-1, followed, for copolymers/terpolymers, by a space and by a two-figure number indicating the percentage content of combined vinyl chloride. This is calculated from the chlorine content determined in accordance with ISO 1060-2, using the equation

$$[VC] = 1,762\ 9 \times [C]$$

After a hyphen, the polymerization process is indicated by a single code-letter as specified in table 1.



**Table 1 — Code-letters used for additional information in data block 1**

Code-letter	Definition
<b>S</b>	Suspension polymerization
<b>E</b>	Emulsion polymerization
<b>M</b>	Bulk polymerization
<b>X</b>	Process other than the above, or an intermediate process, including microsuspension

### 3.2 Data block 2

In this data block, information about intended application is given. The code-letters used are specified in table 2.

**Table 2 — Code-letters used in data block 2**

Code-letter	Intended application
<b>P</b>	Paste resins
<b>F</b>	Filler resins
<b>G</b>	General-purpose resins (excluding categories P and F)

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### 3.3 Data block 3

In this data block, the reduced viscosity is represented by a three-figure code-number (see 3.3.1), the apparent bulk density by a two-figure code-number (see 3.3.2) and retention on a 63  $\mu\text{m}$  mesh sieve by a two-figure code-number (see 3.3.3). For general-purpose resins and filler resins, the plasticizer absorption at room temperature is represented by a two-figure code-number (see 3.3.4). For paste resins, the viscosity of a standard paste is represented by a letter indicating the paste formulation used, two two-figure code-numbers for the viscosity at  $16 \text{ s}^{-1}$  and  $100 \text{ s}^{-1}$  and a code-letter indicating the type of rheological behaviour of the paste (see 3.3.5). The codes representing the four designatory properties 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 range limit because of manufacturing tolerances, the designation is not affected.

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

#### 3.3.1 Reduced viscosity

The reduced viscosity shall be determined in accordance with ISO 1060-2.

The possible values of the reduced viscosity are divided into 26 ranges, each represented by a three-figure code-number as specified in table 3.