
International Standard



1163/1

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**Plastics — Unplasticized compounds of homopolymers
and copolymers of vinyl chloride** ←
Part 1 : Designation

Plastiques — Compositions non plastifiées d'homopolymères et copolymères de chlorure de vinyle — Partie 1 : Désignation

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 1163/1 was developed by Technical Committee ISO/TC 61, *Plastics*, and was circulated to the member bodies in September 1976.

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The member bodies of the following countries expressed disapproval of the document on technical grounds :

Netherlands
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This International Standard cancels and replaces ISO Recommendation R 1163-1970, of which it constitutes a technical revision.

Plastics — Unplasticized compounds of homopolymers and copolymers of vinyl chloride — Part 1 : Designation

1 Scope and field of application

This part of ISO 1163 specifies a method of designation of unplasticized compounds of homopolymers and copolymers of vinyl chloride, principally as a function of their physical form, their end-use and their Vicat softening temperature. These indications may be supplemented, for the three properties listed in the table, by the figures of the corresponding classes.

ISO 1163/2 will specify the corresponding methods for the determination of these properties.

2 References

ISO 178, *Plastics — Determination of flexural properties of rigid plastics.*

ISO/R 179, *Plastics — Determination of the Charpy impact resistance of rigid plastics (Charpy impact flexural test).*

ISO 306, *Plastics — Determination of the Vicat softening temperature of thermoplastics.*

ISO 1163/2, *Plastics — Unplasticized compounds of homopolymers and copolymers of vinyl chloride — Part 2 : Determination of properties.*

ISO/R 1183, *Plastics — Methods for determining the density and relative density (specific gravity) of plastics excluding cellular plastics.*

3 Definition

For the purposes of this International Standard, the following definition applies :

unplasticized compounds of polymers of vinyl chloride : Compounds based on homopolymers of vinyl chloride or copolymers with at least 50 % of vinyl chloride, or chlorinated poly(vinyl chloride), or mixtures of such polymers with each

other or with other polymers, the principal ingredient being a polymer of vinyl chloride.

These compounds may also contain fillers, colorants, and such small quantities of other ingredients as are necessary to facilitate fabrication, such as stabilizers and lubricants.

4 Designation

Unplasticized compounds of polymers of vinyl chloride are designated by the items listed in 4.1 to 4.4 and, if required, 4.5.

4.1 The symbol PVC.

4.2 One letter for the physical form.

D = dry blend

G = granule

4.3 One letter for the end-use.

B = Blow moulding

C = Coating extrusion

D = Disks

E = General extrusion

F = Film and sheet extrusion

H = Calendering

L = Monofilaments

M = Injection moulding

P = Pipe extrusion

R = Rotational moulding

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4.4 Three figures for the Vicat softening temperature (ISO 306, method B); for example 082 for a value of 82 °C, with a tolerance of ± 2 °C.

4.5 Three other supplementary properties may be included in the designation by adding in parentheses the appropriate class numbers given in the table, namely

- a) impact strength (Charpy notched) (ISO/R 179);
- b) modulus of elasticity in tension (ISO 178);
- c) density (ISO/R 1183).

If only one or two of these supplementary properties are designated, any undesignated property shall be indicated by "X".

5 Example

An unplasticized compound of a polymer of vinyl chloride

- having the physical form of a granule,
- for general extrusion,
- having a Vicat softening temperature of 82 ± 2 °C,
- having a Charpy notched impact strength of 8 kJ/m²,
- having a modulus of elasticity of 3 000 MPa, and
- having a non-designated density,

is designated as follows :

~~UPVC~~ GE 082 or ~~UPVC~~ GE 082 (23X)

~~U~~ ~~PVC~~

Table – Designation of supplementary properties

No.	Property ¹⁾	Unit	Classes										
			X	1	2	3	4	5	6	7	8	9	
I	Impact strength (Charpy notched)	kJ/m ²	Not designated	up to 5	> 5 to 20	> 20							
II	Modulus of elasticity in tension	MPa	Not designated	> 1 500 to 2 000	> 2 000 to 2 500	> 2 500 to 3 000							
III	Density	g/cm ³	Not designated						> 1,30 to 1,35	> 1,35 to 1,40	> 1,40 to 1,50	> 1,50 to 1,60	> 1,60

1) At 23 \pm 2 °C and (50 \pm 5) % relative humidity.