

Plastics — Determination of the tendency of compounds and products based on vinyl chloride homopolymers and copolymers to evolve hydrogen chloride and any other acidic products at elevated temperatures —

Part 4: Potentiometric method

The European Standard EN ISO 182-4:2000 has the status of a British Standard

ICS 83.080.20

National foreword

This British Standard is the official English language version of EN ISO 182-4:2000. It is identical with ISO 182-4:1993.

The UK participation in its preparation was entrusted to Technical Committee PRI/21, Plastics test methods, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, the EN ISO title page, the EN ISO foreword page, the ISO title page, page ii, pages 1 to 14, the annex ZA page and a back cover.

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English version

Plastics - Determination of the tendency of compounds and products based on vinyl chloride homopolymers and copolymers to evolve hydrogen chloride and any other acidic products at elevated temperatures - Part 4: Potentiometric method (ISO 182-4:1993)

Plastiques - Détermination de la tendance des compositions à base d'homopolymères et copolymères du chlorure de vinyle à dégager du chlorure d'hydrogène et éventuellement d'autres produits acides à températures élevées - Partie 4: Méthode potentiométrique (ISO 182-4:1993)

Kunststoffe - Bestimmung der Neigung von Formmassen und Erzeugnissen auf der Basis von Vinyl-chlorid-Homopolymeren und -Copolymeren, bei erhöhten Temperaturen Chlorwasserstoff und andere saure Produkte abzugeben - Teil 4: Potentiometrisches Verfahren (ISO 182-4:1993)

This European Standard was approved by CEN on 8 September 2000.

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.



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

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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 March 2001, and conflicting national standards shall be withdrawn at the latest by March 2001.

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 182-4:1993 has been approved by CEN as a European Standard without any modification.

NOTE: Normative references to International Standards are listed in annex ZA (normative).

INTERNATIONAL STANDARD

ISO 182-4

First edition
1993-04-01

Plastics — Determination of the tendency of compounds and products based on vinyl chloride homopolymers and copolymers to evolve hydrogen chloride and any other acidic products at elevated temperatures —

Part 4: Potentiometric method

*Plastiques — Détermination de la tendance des compositions à base
d'homopolymères et copolymères du chlorure de vinyle à dégager du
chlorure d'hydrogène et éventuellement d'autres produits acides à
températures élevées —*

Partie 4: Méthode potentiométrique



Reference number
ISO 182-4:1993(E)

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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.

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 182-4 was prepared by Technical Committee ISO/TC 61, *Plastics*, Sub-Committee SC 6, *Ageing, chemical and environmental resistance*.

Together with the three other parts of ISO 182, it cancels and replaces ISO Recommendation R 182:1970, of which the four parts of ISO 182 constitute a technical revision.

ISO 182 consists of the following parts, under the general title *Plastics — Determination of the tendency of compounds and products based on vinyl chloride homopolymers and copolymers to evolve hydrogen chloride and any other acidic products at elevated temperatures*:

- *Part 1: Congo red method*
- *Part 2: pH method*
- *Part 3: Conductometric method*
- *Part 4: Potentiometric method*

Annexes A and B of this part of ISO 182 are for information only.

Plastics — Determination of the tendency of compounds and products based on vinyl chloride homopolymers and copolymers to evolve hydrogen chloride and any other acidic products at elevated temperatures —

Part 4: Potentiometric method

WARNING — The use of this part of ISO 182 may involve hazardous materials, operations and equipment. This part of ISO 182 does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this part of ISO 182 to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1 Scope

1.1 This part of ISO 182 specifies a method for the determination of the thermal stability at elevated temperature of compounds and products based on vinyl chloride homopolymers and copolymers (in the following text abbreviated as PVC) which undergo dehydrochlorination (the evolution of hydrogen chloride).

1.2 The method may be used as a quality control test during manufacture and conversion of PVC compounds. It may also be used for the characterization of PVC compounds and products, especially with regard to the effectiveness of their heat-stabilizing systems.

It is suitable for coloured PVC compounds and products for which a discolouration test under the action of heat may be unsatisfactory.

1.3 The method is recommended for compounded PVC materials and products only, although it can be used for polymers in powder form under appropriate conditions to be agreed upon between the interested

parties. The method is not recommended for PVC compounds in the form of dry blends, since such materials may not be sufficiently homogeneous.

1.4 PVC compounds and products may evolve other decomposition products in addition to hydrogen chloride at elevated temperatures. A limited number of these products, originating from the decomposition of certain comonomers (such as vinyl esters of organic acids) or of plasticizers, stabilizers and other additives, may effect the pH or the conductivity of an aqueous solution when they are absorbed. Consequently, the results obtained for different products by the methods described in Parts 2 and 3 of ISO 182 may not be comparable with those obtained using the method described in the present part of ISO 182.

1.5 This part of ISO 182 specifies a potentiometric method for the determination of chloride ion (Cl^-) concentration (expressed as pCl) in an absorbing solution, independent of the presence of other ions. The value pCl is defined as $-\lg c_{\text{Cl}}$, where c_{Cl} is the molar concentration of chloride ions. This method is, therefore, particularly recommended for plasticized PVC compounds and copolymers.