

A YtcXUa YfYbUdfcX]fUbUj cX] UHfXc`c UbYbY[cj Y[Uj d]UbU]b`dfYbcgUj
_cj]bU`n`YY_hfc_Ya]g_c`h\ b]_c`fGC`%+\$,%&\$\$(Ł

Method of measurement of hydrogen permeation and determination of hydrogen uptake and transport in metals by an electrochemical technique (ISO 17081:2004)

iTeh STANDARD PREVIEW

Méthode de mesure de la perméation de l'hydrogène et détermination de l'absorption d'hydrogène et de son transport dans les métaux à l'aide d'une technique électrochimique (ISO 17081:2004)

<https://standards.iteh.ai/catalog/standards/sist/47ef8322-41ee-4053-b4e2-83b4cf051e46/sist-en-iso-17081-2008>

Ta slovenski standard je istoveten z: **EN ISO 17081:2008**

ICS:

77.060

Korozija kovin

Corrosion of metals

SIST EN ISO 17081:2008

en

iTeh STANDARD PREVIEW **(standards.iteh.ai)**

SIST EN ISO 17081:2008

<https://standards.iteh.ai/catalog/standards/sist/47ef8322-41ee-4053-b4e2-83b4cf051e46/sist-en-iso-17081-2008>

English Version

Method of measurement of hydrogen permeation and
determination of hydrogen uptake and transport in metals by an
electrochemical technique (ISO 17081:2004)

Méthode de mesure de la perméation de l'hydrogène et
détermination de l'absorption d'hydrogène et de son
transport dans les métaux à l'aide d'une technique
électrochimique (ISO 17081:2004)

Elektrochemisches Verfahren zur Messung der
Wasserstoffpermeation und zur Bestimmung von
Wasserstoffaufnahme und -transport in Metallen (ISO
17081:2004)

This European Standard was approved by CEN on 21 March 2008.

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 CEN Management Centre 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 CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents	Page
Foreword.....	3

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 17081:2008
<https://standards.iteh.ai/catalog/standards/sist/47ef8322-41ee-4053-b4e2-83b4cf051e46/sist-en-iso-17081-2008>

Foreword

The text of ISO 17081:2004 has been prepared by Technical Committee ISO/TC 156 “Corrosion of metals and alloys” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 17081:2008 by Technical Committee CEN/TC 262 “Metallic and other inorganic coatings” the secretariat of which is held by BSI.

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 October 2008, and conflicting national standards shall be withdrawn at the latest by October 2008.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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

iTeh STANDARD PREVIEW
 Endorsement notice
 (standards.iteh.ai)

The text of ISO 17081:2004 has been approved by CEN as a EN ISO 17081:2008 without any modification.

SIST EN ISO 17081:2008
<https://standards.iteh.ai/catalog/standards/sist/47ef8322-41ee-4053-b4e2-83b4cf051e46/sist-en-iso-17081-2008>

iTeh STANDARD PREVIEW **(standards.iteh.ai)**

SIST EN ISO 17081:2008

<https://standards.iteh.ai/catalog/standards/sist/47ef8322-41ee-4053-b4e2-83b4cf051e46/sist-en-iso-17081-2008>

**Method of measurement of hydrogen
permeation and determination of
hydrogen uptake and transport in metals
by an electrochemical technique**

*Méthode de mesure de la perméation de l'hydrogène et détermination
de l'absorption d'hydrogène et de son transport dans les métaux à l'aide
d'une technique électrochimique*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 17081:2008

<https://standards.iteh.ai/catalog/standards/sist/47ef8322-41ee-4053-b4e2-83b4cf051e46/sist-en-iso-17081-2008>



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 17081:2008](https://standards.iteh.ai/catalog/standards/sist/47ef8322-41ee-4053-b4e2-83b4cf051e46/sist-en-iso-17081-2008)

<https://standards.iteh.ai/catalog/standards/sist/47ef8322-41ee-4053-b4e2-83b4cf051e46/sist-en-iso-17081-2008>

© ISO 2004

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

	Page
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Symbols	3
5 Principle	3
6 Samples	4
6.1 Dimensions	4
6.2 Preparation	5
7 Apparatus	5
8 Test environment considerations	7
9 Test procedure	8
10 Control and monitoring of test environment	9
11 Analysis of results	10
11.1 General	10
11.2 Analysis of steady-state current	10
11.3 Analysis of permeation transient	10
12 Test report	13
Annex A (informative) Recommended test environments for specific alloys	14
Bibliography	16

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.

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

The main task of technical committees 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 identifying any or all such patent rights.

ISO 17081 was prepared by Technical Committee ISO/TC 156, *Corrosion of metals and alloys*.

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN ISO 17081:2008
<https://standards.iteh.ai/catalog/standards/sist/47ef8322-41ee-4053-b4e2-83b4cf051e46/sist-en-iso-17081-2008>

Method of measurement of hydrogen permeation and determination of hydrogen uptake and transport in metals by an electrochemical technique

1 Scope

1.1 This International Standard specifies a laboratory method for the measurement of hydrogen permeation and for the determination of hydrogen atom uptake and transport in metals, using an electrochemical technique. The term “metal” as used in this International Standard includes alloys.

1.2 This International Standard describes a method for evaluating hydrogen uptake in metals, based on measurement of steady-state hydrogen flux. It also describes a method for determining effective diffusivity of hydrogen atoms in a metal and for distinguishing reversible and irreversible trapping.

1.3 This International Standard gives requirements for the preparation of specimens, control and monitoring of the environmental variables, test procedures and analysis of results.

1.4 This International Standard may be applied, in principle, to all metals for which hydrogen permeation is measurable and the method can be used to rank the relative aggressivity of different environments in terms of the hydrogen uptake of the exposed metal.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 17475:—¹⁾, *Corrosion of metals and alloys — Electrochemical test methods — Guidelines for conducting potentiostatic and potentiodynamic polarization measurements*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

charging

method of introducing atomic hydrogen into the metal by exposure to an aqueous environment under galvanostatic control (constant charging current), potentiostatic control (constant electrode potential), free corrosion or by gaseous exposure

3.2

charging cell

compartment in which hydrogen atoms are generated on the sample surface, including both aqueous and gaseous charging

1) To be published.