

**SLOVENSKI STANDARD
SIST EN 61181:2010****01-september-2010****Nadomešča:
SIST EN 61181:1997**

Impregnirani izolacijski materiali - Uporaba analize raztopljenih plinov pri tovarniškem preskušanju električne opreme (IEC 61181:2007)

Mineral oil-filled electrical equipment - Application of dissolved gas analysis (DGA) to factory tests on electrical equipment (IEC 61181:2007)

Getränkte Isolierstoffe - Verwendung der Gasanalyse für gelöste Gase (DGA) als Werksprüfung für elektrische Betriebsmittel (IEC 61181:2007)
(standards.iteh.ai)Matériels électriques imprégnés d'huile minérale - Application de l'analyse des gaz dissous (AGD) lors de essais en usine de matériels électriques (IEC 61181:2007)
01bfc68a4f3e/sist-en-61181-2010**Ta slovenski standard je istoveten z: EN 61181:2007**

ICS:

29.040.01 Izolacijski fluidi na splošno Insulating fluids in general

SIST EN 61181:2010**en**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 61181

April 2007

ICS 29.040.10; 29.180

Supersedes EN 61181:1993

English version

**Mineral oil-filled electrical equipment -
Application of dissolved gas analysis (DGA)
to factory tests on electrical equipment
(IEC 61181:2007)**

Matériels électriques
imprégnés d'huile minérale -
Application de l'analyse des gaz dissous
(AGD) lors d'essais en usine
de matériels électriques
(CEI 61181:2007)

Getränkte Isolierstoffe -
Verwendung der Gasanalyse
für gelöste Gase (DGA)
als Werksprüfung
für elektrische Betriebsmittel
(IEC 61181:2007)

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This European Standard was approved by CENELEC on 2007-03-01. CENELEC 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 CENELEC 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 CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 10/675/FDIS, future edition 2 of IEC 61181, prepared by IEC TC 10, Fluids for electrotechnical applications, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61181 on 2007-03-01.

This European Standard supersedes EN 61181:1993.

EN 61181:2007 includes the following significant technical changes with respect to EN 61181:1993:

- the specific procedures used during factory tests (sampling location, sampling frequency, gas extraction and chromatographic analysis in the laboratory) are described in more detail;
- information is provided in Annex A concerning the residual gas contents recommended before thermal tests on power transformers, typical gas values observed during the tests and cases where gas formation during the tests was followed by problems in the transformers;
- typical values observed during chopped lightning-impulse tests on instrument transformers are indicated in Annex B.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2007-12-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2010-03-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 61181:2007 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60076	NOTE Harmonized in EN 60076 series (partially modified).
IEC 60599	NOTE Harmonized as EN 60599:1999 (not modified).
IEC 60044	NOTE Harmonized in EN 60044 series (partially modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60567	- ¹⁾	Oil-filled electrical equipment - Sampling of gases and of oil for analysis of free and dissolved gases - Guidance	EN 60567	2005 ²⁾

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¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

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NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC

61181

Deuxième édition
Second edition
2007-02

**Matériels électriques imprégnés d'huile minérale –
Application de l'analyse des gaz dissous (AGD)
lors d'essais en usine de matériels électriques**

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Application of dissolved gas analysis (DGA)
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International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MINERAL OIL-FILLED ELECTRICAL EQUIPMENT –
APPLICATION OF DISSOLVED GAS ANALYSIS (DGA)
TO FACTORY TESTS ON ELECTRICAL EQUIPMENT**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61181 has been prepared by IEC technical committee 10: Fluids for electrotechnical applications.

This second edition cancels and replaces the first edition published in 1993 and constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) the specific procedures used during factory tests (sampling location, sampling frequency, gas extraction and chromatographic analysis in the laboratory) are described in more detail;
- b) information is provided in Annex A concerning the residual gas contents recommended before thermal tests on power transformers, typical gas values observed during the tests and cases where gas formation during the tests was followed by problems in the transformers;

- c) typical values observed during chopped lightning-impulse tests on instrument transformers are indicated in Annex B.

The text of this standard is based on the following documents:

FDIS	Report on voting
10/675/FDIS	10/688/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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INTRODUCTION

IEC technical committee 10, responsible for IEC 61181, has prepared guidelines for performing DGA measurements during factory testing on equipment filled with mineral insulating oil in order to ensure consistency in the industry and improve the confidence with which the results will be used.

DGA is used routinely as a standard quality control procedure during and after factory tests on electrical equipment, for example during temperature-rise and chopped lightning-impulse tests, to indicate that a design meets specified requirements. Due to the small quantities of gases generated during factory tests, specific requirements are necessary for the sampling and analysis of oil samples and the interpretation of results.

Acceptance criteria are beyond the scope of TC 10. Attention is drawn, however, to the fact that the guidelines issued by CIGRE in 1993-1995 [1]¹ do not apply any more to transformers manufactured today, the design of which having been improved. Examples of values actually observed today are indicated in Annexes A and B.

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¹ Figures in square brackets refer to the bibliography.