BS EN IEC 60376:2018

BSI Standards Publication

Specification of technical grade sulphur hexafluoride (SF6) and complementary gases to be used in its mixtures for use in electrical equipment

bsi.

National foreword

This British Standard is the UK implementation of EN IEC 60376:2018. It is identical to IEC 60376:2018. It supersedes BS EN 60376:2005, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/10, Fluids for electrotechnical applications.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Published by BSI Standards Limited 2018

ISBN 978 0 580 85305 0

ICS 29.130.01; 29.040.20

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 August 2018.

Amendments/corrigenda issued since publication

Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 60376

August 2018

ICS 29.040.20

Supersedes EN 60376:2005

English Version

Specification of technical grade sulphur hexafluoride (SF_6) and complementary gases to be used in its mixtures for use in electrical equipment (IEC 60376:2018)

Spécification de la qualité technique de l'hexafluorure de soufre (SF6) et des gaz complémentaires à employer dans les mélanges de SF_6 pour utilisation dans les appareils électriques
(IEC 60376:2018)

Bestimmung der Reinheit der technisch einsetzbaren Qualität von Schwefelhexafluorid (SF6) sowie Gasen für den Gebrauch in SF_6-Mischungen zur Verwendung in elektrischen Betriebsmitteln
(IEC 60376:2018)

This European Standard was approved by CENELEC on 2018-06-28. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 10/1056/FDIS, future edition 3 of IEC 60376, prepared by IEC/TC 10 "Fluids for electrotechnical applications" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60376:2018.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2019-03-28
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2021-06-28

This document supersedes EN 60376:2005.

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

Endorsement notice

The text of the International Standard IEC 60376:2018 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60068-2-17	NOTE	Harmonized as EN 60068-2-17.
ISO 14040:2006	NOTE	Harmonized as EN ISO 14040:2006 (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60050-212	-	International Electrotechnical Vocabulary - Part 212: Electrical insulating solids, liquids and gases	-	-
IEC 60050-441	-	International Electrotechnical Vocabulary (IEV) - Chapter 441: Switchgear, controlgear and fuses	-	-
IEC 60050-826	-	International Electrotechnical Vocabulary - Part 826: Electrical installations	-	-
IEC 60480	-	Guidelines for the checking and treatment of sulphur hexafluoride (SF_6) taken from electrical equipment and specification for its re-use	EN 60480	-
IEC 62271-4	-	High-voltage switchgear and controlgear - Part 4: Handling procedures for sulphur hexafluoride (SF_6) and its mixtures	EN 62271-4	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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SPECIFICATION OF TECHNICAL GRADE SULPHUR HEXAFLUORIDE (SF_6) AND COMPLEMENTARY GASES TO BE USED IN ITS MIXTURES FOR USE IN ELECTRICAL EQUIPMENT

FOREWORD

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International Standard IEC 60376 has been prepared by IEC technical committee 10: Fluids for electrotechnical applications.

This third edition cancels and replaces the second edition published in 2005. This edition constitutes a technical revision.

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

a) the requirements for the use of SF_6 in electrical equipment have been confirmed;
b) a specification for complementary gases to be used in SF_6 mixtures with N_2 and CF_4 has been included;
c) the introduction and scope have been merged;
d) a new repartition of the annexes of IEC 60376, IEC 60480 and IEC 62271-4 has been included.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
10/1056/FDIS	10/1060/RVD

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

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

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

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

A bilingual version of this publication may be issued at a later date.

SPECIFICATION OF TECHNICAL GRADE SULPHUR HEXAFLUORIDE (SF_6) AND COMPLEMENTARY GASES TO BE USED IN ITS MIXTURES FOR USE IN ELECTRICAL EQUIPMENT

1 Scope

This document defines the quality for technical grade sulphur hexafluoride (SF_6) and complementary gases such as nitrogen (N_2) and carbon tetra-fluoride (CF_4), for use in electrical equipment. Detection techniques, covering both laboratory and in-situ portable instrumentation, applicable to the analysis of SF_6, N_2 and CF_4 gases prior to the introduction of these gases into the electrical equipment are also described in this document.

This document provides some information on sulphur hexafluoride in Annex A and on the environmental effects of SF_6 in Annex B.

Information about SF_6 by-products and the procedure for evaluating the potential effects of SF_6 by-products on human health are covered by IEC 60480, their handling and disposal being carried out according to international and local regulations with regard to the impact on the environment. Handling of SF_6 and its mixtures is covered by IEC 62271-4.

Procedures to determine SF_6 leakages are described in IEC 60068-2-17.

For the purposes of this document, the complementary gases used in SF_6 mixtures will be limited to N_2 or CF_4.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

IEC 60050-212, *International Electrotechnical Vocabulary – Part 212: Electrical insulating solids, liquids and gases* (available at http://www.electropedia.org)

IEC 60050-441, *International Electrotechnical Vocabulary – Part 441: Switchgear, controlgear and fuses* (available at http://www.electropedia.org)

IEC 60050-826, *International Electrotechnical Vocabulary – Part 826: Electrical installations* (available at http://www.electropedia.org)

IEC 60480, *Guidelines for the checking and treatment of sulphur hexafluoride (SF_6) taken from electrical equipment and specification for its re-use*

IEC 62271-4, *High-voltage switchgear and controlgear – Part 4: Handling procedures for sulphur hexafluoride (SF_6) and its mixtures*