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Fluids for electrotechnical application: Specifications for the re-use of mixtures of gases alternative to SF_6

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Fluids for electrotechnical application - Specifications for the re-use of mixtures of gases alternative to SF_6

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IEC 63359 has been prepared by IEC technical committee 10: Fluids for electrotechnical applications. It is an International Standard.

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

Draft	Report on voting
10/1296/FDIS	10/1298/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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

– reconfirmed,
– withdrawn, or
– revised.

1 Scope

This document provides the quality of gases alternative to SF_6 (subsequently referred to as gases) for their re-use in electrical power equipment after recovery and if applicable reclaiming (e.g., during maintenance, repair, overhaul or at the end-of-life). The re-use criteria consider technical and environmental concerns.

This document covers the same gases as listed in IEC 63360. For gases not mentioned in this document, the electrical power equipment manufacturer and/or the gas manufacturer provide the information indicated in this document. It is the intention of this document to include such gases in a next edition or in amendments to this edition.

Procedures for recovering and reclaiming of used gases are described in IEC 62271-4:2022.

NOTE 1 Reclaiming procedures of gases can be done by either reclaiming the complete gas or by separating the most valuable components from the gas.

Gas analysis techniques for checking the quality of the gas are described in this document.

It is the responsibility of the gas manufacturer and/or the electrical power equipment manufacturer to provide sufficient information for safe handling of gases and to provide a risk assessment. It is the responsibility of the user of the electrical power equipment to establish appropriate health and safety practices and to determine the applicability of regulatory limitations prior to use.

NOTE 2 If not otherwise specified in this document, concentration values (e.g. %, ppmv, µl/l) of gas components or contaminants are given in volume fraction at 20 °C and 100 kPa. More information on temperature and pressure dependence of mole fraction and volume fraction is given in IEC 63360:2025, Annex C.

NOTE 3 If gases for electrical power equipment are regulated, their designation and regulation origin can be found in the IEC 62474 database [1][1] (available at https://std.iec.ch/iec62474).

NOTE 4 Information about storage, transportation and disposal of gases, gas properties, safety and first aid, environmental impact, training and certification, handling equipment, by-products, and procedures to evaluate the potential effects on health are covered by IEC 62271-4:2022.

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 60050-212:2010, *International Electrotechnical Vocabulary (IEV) - Part 212: Electrical insulating solids, liquids and gases (available at* http://www.electropedia.org*)*

IEC 60050-426:2020, *International Electrotechnical Vocabulary (IEV) - Part 826: Explosive atmospheres* (available at http://www.electropedia.org)

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

IEC 63360:2025, *Fluids for electrotechnical application - Specification of gases alternative to SF_6 to be used in electrical power equipement*

[1] Numbers in square brackets refer to the Bibliography.

Bibliography

[1] IEC 62474 database, *Material Declaration for Products of and for the Electrotechnical Industry* (*available at* https://std.iec.ch/iec62474) [viewed 2025-10-21]

[2] IEC 60480:2019, *Specifications for the re-use of sulphur hexafluoride (SF_6) and its mixtures in electrical equipment*

[3] IEC 62271-4:2022, *High-voltage switchgear and controlgear - Part 4: Handling procedures for gases for insulation and/or switching*

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