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Household and similar electrical air cleaning appliances — Method for measuring performance —

Part 2-2: Particular requirements for determination of gas-phase pollutant reduction

Appareils d'épuration d'air électriques domestiques et appareils similaires — Méthodes de mesure de l'aptitude à la fonction —

Partie 2-2: Exigences particulières pour la détermination de la réduction des polluants en phase gazeuse

This draft is submitted to a parallel vote in ISO and in IEC.

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Reference number
IEC/FDIS 63086-2-2:2026(en)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Household and similar electrical air cleaning appliances - Method for measuring the performance - Part 2-2: Particular requirements for determination of gas-phase pollutant reduction

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IEC 63086-2-2 has been prepared by subcommittee 59N: Electrical air cleaners for household and similar purposes, of IEC technical committee 59: Performance of household and similar electrical appliances, in co-operation with ISO technical committee 142: Cleaning equipment for air and other gases and ISO technical committee 146: Air quality. It is an International Standard.

It is published as a double logo International Standard.

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

Draft	Report on voting
59N/XX/FDIS	59N/XX/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.

A list of all parts in the IEC 63086 series, published under the general title *Household and similar electrical air cleaning appliances - Methods for measuring the performance*, can be found on the IEC website.

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 part of IEC 63086 specifies test methods for measuring the performance of electrically powered household and similar air cleaners intended for the reduction of gas-phase pollutants.

This document is intended for measuring the reduction of the concentration of specific gas-phase pollutants. This does not necessarily correlate with the reduction of odour intensity in the case of odorous gas-phase pollutants. Such a reduction can only be tested by olfactory tests, which are not part of this document.

NOTE Test methods for the determination of possible gas-phase by-products are under consideration.

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 63086-1:2020, *Household and similar electrical air cleaning appliances - Methods for measuring the performance - Part 1: General requirements*

IEC 63086-2-1:2024, *Household and similar electrical air cleaning appliances - Methods for measuring the performance - Part 2-1: Particular requirements for determination of reduction of particles*

ISO 16000-3, *Indoor air - Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and test chamber air - Active sampling method*

ISO 16000-3:2022, *Indoor air — Part 3: Determination of formaldehyde and other carbonyl compounds in indoor and test chamber air — Active sampling method*

ISO 16000-6, *Indoor air - Part 6: Determination of organic compounds (VVOC, VOC, SVOC) in indoor and test chamber air by active sampling on sorbent tubes, thermal desorption and gas chromatography using MS or MSFID*

ISO 16000-9, *Indoor air - Part 9: Determination of the emission of volatile organic compounds from building products and furnishing - Emission test chamber method*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 63086-1:2020 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

– IEC Electropedia: available at https://www.electropedia.org/

– ISO Online browsing platform: available at https://www.iso.org/obp

3.1.1
gas-phase pollutant
gaseous compound found in indoor environments as a result of outdoor air infiltration, indoor human activities, or emissions from indoor materials

3.1.2
test gas
gas-phase pollutant (3.1.1) selected for measuring the performance of air cleaners

3.1.3
natural decay rate
reduction rate of the test gas (3.1.2) in the test chamber due to natural factors, such as surface adsorption, chemical reaction, and air exchange

Note 1 to entry: The unit is per hour (h^{-1}).

3.1.4
total decay rate
reduction rate of the test gas (3.1.2) in the test chamber due to the combined effect of the natural decay rate (3.1.3) and the operation decay rate

Note 1 to entry: The unit is per hour (h^{-1}).

3.1.5
background concentration
concentration of test gases (3.1.2) in the test chamber after the test chamber has undergone cleaning and prior to the injection of test gases (3.1.2)

3.1.6
initial concentration
concentration measured inside the test chamber after the injection and mixing of test gases (3.1.2)

3.1.7
TVOC
total volatile organic compounds
sum of the concentrations of identified and unidentified volatile organic compounds eluting between and including n-hexane and *n*-hexadecane (in accordance with ISO 16000-9)

3.1.8
real-time measurement method
method for determining the concentration of the test gas (3.1.2) using a direct reading instrument

Note 1 to entry: A chemiluminescence analyser is an example for an instrument using a real-time measurement method.

3.1.9
integrated sampling method
method for determining the concentration of the test gas (3.1.2) by a periodic process of air capture and subsequent analysis of the sample

Note 1 to entry: High performance liquid chromatography (HPLC) is an example of an instrument using an integrated sampling method (3.1.9).

3.2 Abbreviated terms

CADR	clean air delivery rate
DNPH	2,4- dinitrophenylhydrazine
DUT	device under test
FID	flame ionization detector
GC	gas chromatography
HPLC	high performance liquid chromatography