



BSI Standards Publication

## Cleanrooms and associated controlled environments

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Part 10: Assessment of surface cleanliness for chemical contamination

This is a preview of "BS EN ISO 14644-10:2...". [Click here to purchase the full version from the ANSI store.](#)

## National foreword

This British Standard is the UK implementation of EN ISO 14644-10:2022. It is identical to ISO 14644-10:2022. It supersedes BS EN ISO 14644-10:2013, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee LBI/30, Cleanroom technology.

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

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May 2022

ICS 13.040.35

Supersedes EN ISO 14644-10:2013

English Version

## Cleanrooms and associated controlled environments - Part 10: Assessment of surface cleanliness for chemical contamination (ISO 14644-10:2022)

Salles propres et environnements maîtrisés apparentés  
- Partie 10: Évaluation de la propreté chimique des  
surfaces (ISO 14644-10:2022)

Reinräume und zugehörige Reinraumbereiche - Teil  
10: Bewertung der chemischen Oberflächenreinheit  
(ISO 14644-10:2022)

This European Standard was approved by CEN on 1 May 2022.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

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## **European foreword**

This document (EN ISO 14644-10:2022) has been prepared by Technical Committee ISO/TC 209 "Cleanrooms and associated controlled environments" in collaboration with Technical Committee CEN/TC 243 "Cleanroom technology" 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 November 2022, and conflicting national standards shall be withdrawn at the latest by November 2022.

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

This document supersedes EN ISO 14644-10:2013.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## **Endorsement notice**

The text of ISO 14644-10:2022 has been approved by CEN as EN ISO 14644-10:2022 without any modification.

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Second edition  
2022-05

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# Cleanrooms and associated controlled environments —

## Part 10: Assessment of surface cleanliness for chemical contamination

*Salles propres et environnements maîtrisés apparentés —  
Partie 10: Évaluation de la propreté chimique des surfaces*



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## 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 209, *Cleanrooms and associated controlled environments*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 243, *Cleanroom technology*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 14644-10:2013), of which it constitutes a minor revision. The changes are as follows:

- the term class (classification, classified) changed to grade or assessment where appropriate;
- ISO 14644-1 moved from [Clause 2](#) to the Bibliography and ISO 14644-6 removed (document withdrawn);
- minor editorial changes.

A list of all parts in the ISO 14644 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

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# Cleanrooms and associated controlled environments —

## Part 10:

# Assessment of surface cleanliness for chemical contamination

## 1 Scope

This document establishes appropriate testing processes to determine the cleanliness of surfaces in cleanrooms with regard to the presence of chemical compounds or elements (including molecules, ions, atoms and particles). This document is applicable to all solid surfaces in cleanrooms and associated controlled environments such as walls, ceilings, floors, worksurfaces, tools, equipment and devices.

NOTE 1 For the purpose of this document, consideration is only given to the chemical characteristics of a particle. The physical properties of the particle are not considered and this document does not cover the interaction between the contamination and the surface.

NOTE 2 This document does not include the contamination generation process or any time-dependent influences (e.g. deposition, sedimentation, ageing) or process-dependent activities such as transportation and handling. Neither does it include guidance on statistical quality-control techniques to ensure compliance.

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

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

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

### 3.1

#### air cleanliness by chemical concentration

##### ACC

level, expressed as an ISO grade level *N*, which represents the maximum allowable concentration of a given chemical species or group of chemical species, expressed in grams per cubic metre ( $\text{g}/\text{m}^3$ )

Note 1 to entry: This definition does not include macromolecules of biological origin, which are judged to be particles.

### 3.2

#### contaminant category

common name for a group of compounds with a specific and similar deleterious effect when deposited on the surface of interest

### 3.3

#### chemical contamination

chemical (non-particulate) substances that can have a deleterious effect on the product, process or equipment