

STN	Čisté priestory a príslušné riadené prostredie Časť 13: Čistenie povrchov na dosiahnutie definovanej úrovne čistoty vzhľadom na klasifikáciu častíc a chemickú klasifikáciu (ISO 14644-13: 2017)	STN EN ISO 14644-13 12 5301
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Cleanrooms and associated controlled environments - Part 13: Cleaning of surfaces to achieve defined levels of cleanliness in terms of particle and chemical classifications (ISO 14644-13:2017)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/18

Obsahuje: EN ISO 14644-13:2017, ISO 14644-13:2017

126077

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2018
Podľa zákona č. 264/1999 Z. z. o technických požiadavkách na výrobky a o posudzovaní zhody a o zmene a doplnení niektorých zákonov v znení neskorších predpisov sa slovenská technická norma a časti slovenskej technickej normy môžu rozmnožovať alebo rozširovať len so súhlasom slovenského národného normalizačného orgánu.

EUROPEAN STANDARD

EN ISO 14644-13

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2017

ICS 13.040.35

English Version

Cleanrooms and associated controlled environments - Part
13: Cleaning of surfaces to achieve defined levels of
cleanliness in terms of particle and chemical classifications
(ISO 14644-13:2017)

Salles propres et environnements maîtrisés apparentés
- Partie 13: Nettoyage des surfaces afin d'obtenir des
niveaux de propreté par rapport aux classifications
particulaire et chimique (ISO 14644-13:2017)

Reinräume und zugehörige Reinraumbereiche - Teil
13: Reinigung von Oberflächen zur Erreichung
definierter Reinheitsgrade hinsichtlich Partikel- und
Chemikalienklassifikationen (ISO 14644-13:2017)

This European Standard was approved by CEN on 26 May 2017.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO 14644-13:2017) 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 February 2018 and conflicting national standards shall be withdrawn at the latest by February 2018.

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Endorsement notice

The text of ISO 14644-13:2017 has been approved by CEN as EN ISO 14644-13:2017 without any modification.

Cleanrooms and associated controlled environments —

Part 13:
Cleaning of surfaces to achieve defined levels of cleanliness in terms of particle and chemical classifications

Salles propres et environnements maîtrisés apparentés —

Partie 13: Nettoyage des surfaces afin d'obtenir des niveaux de propreté par rapport aux classifications particulaire et chimique





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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).

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This document was prepared by Technical Committee ISO/TC 209, *Cleanrooms and associated controlled environments*.

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

Introduction

The term surface refers to the interface between two phases. For the purpose of this document, the surface is a solid. A “clean surface” is where one or more of the contamination categories (particles, chemical) are under control due to cleaning/decontamination. The degree of cleanliness is specified in the corresponding surface cleanliness classifications (see ISO 14644-9 and ISO 14644-10). Different cleaning methods are necessary depending on the degree of cleanliness (cleanliness class) required. This document gives guidance on the selection of cleaning methods to achieve specified cleanliness levels. For the selection procedure, the aspects of surface description, cleanliness specifications, types of contamination, cleaning techniques, material compatibility, and assessment methodology are taken into consideration. Most of the methods are suitable for removal of more than one contamination category at the same time; therefore, a common standard for the selection of a cleaning method for both particles, as well as chemical contamination, is needed.

Cleanrooms and associated controlled environments —

Part 13:

Cleaning of surfaces to achieve defined levels of cleanliness in terms of particle and chemical classifications

1 Scope

This document gives guidelines for cleaning to a specified degree on cleanroom surfaces, surfaces of equipment in a cleanroom and surfaces of materials in a cleanroom. Under consideration are all surfaces (external or internal) that are of interest. It provides guidance on the assessment of cleaning methods for achieving the required surface cleanliness by particle concentration (SCP) and surface cleanliness by chemical concentration (SCC) classes and which techniques should be considered to achieve these specified levels.

The appropriateness of cleaning techniques will make reference to the cleanliness classes and associated test methods found in ISO 14644-9 and ISO 14644-10.

The following matters of general guidance will be provided:

- expected surface cleanliness levels;
- suitability of cleaning methods;
- compatibility of surfaces with the cleaning technique;
- assessment of cleaning appropriateness.

The following will be excluded from this document:

- classification of cleaning methods;
- product produced within a cleanroom;
- specific surface-related cleaning methods;
- detailed description of cleaning mechanisms, methods and procedures of various cleaning methods;
- detailed material characteristics;
- description of damage mechanisms by cleaning processes and time-dependent effects;
- references to interactive bonding forces between contaminants and surfaces or generation processes that are usually time-dependent and process-dependent;
- other characteristics of particles such as electrostatic charge, ionic charges, etc.;
- chemical reactions between molecular contaminants and surfaces;
- microbiological aspects of surface cleanliness;
- radioactive aspects of contamination;
- health and safety considerations;
- environmental aspects such as waste disposal, emissions, etc.;

— selection and use of statistical methods.

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.

ISO 14644-8, *Cleanrooms and associated controlled environments — Part 8: Classification of air cleanliness by chemical concentration (ACC)*

ISO 14644-9, *Cleanrooms and associated controlled environments — Part 9: Classification of surface cleanliness by particle concentration*

ISO 14644-10, *Cleanrooms and associated controlled environments — Part 10: Classification of surface cleanliness by chemical concentration*

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