SLOVENSKI STANDARD
SIST EN ISO 14644-8:2014

01-januar-2014

Nadomešča:
SIST EN ISO 14644-8:2007

Čiste sobe in podobna nadzorovana okolja - 8. del: Klasifikacija čistosti zraka na osnovi koncentracije onesnaževal v zraku (ACC) (ISO 14644-8:2013)

Cleanrooms and associated controlled environments - Part 8: Classification of air cleanliness by chemical concentration (ACC) (ISO 14644-8:2013)

Reinräume und zugehörige Reinraumbereiche - Teil 8: Klassifizierung der Luftreinheit anhand der Chemikalienkonzentration (ACC) (ISO 14644-8:2013)

Salles propres et environnements maîtrisés apparentés - Partie 8: Classification de la propreté chimique de l'air (ISO 14644-8:2013)

Ta slovenski standard je istoveten z: **EN ISO 14644-8:2013**

ICS:

13.040.35	Brezprašni prostori in povezana nadzorovana okolja	Cleanrooms and associated controlled environments

SIST EN ISO 14644-8:2014 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 14644-8

February 2013

ICS 13.040.35

Supersedes EN ISO 14644-8:2006

English Version

Cleanrooms and associated controlled environments - Part 8: Classification of air cleanliness by chemical concentration (ACC) (ISO 14644-8:2013)

Salles propres et environnements maîtrisés apparentés - Partie 8: Classification de la propreté chimique de l'air (ISO 14644-8:2013)

Reinräume und zugehörige Reinraumbereiche - Teil 8: Klassifizierung der Luftreinheit anhand der Chemikalienkonzentration (ACC) (ISO 14644-8:2013)

This European Standard was approved by CEN on 9 February 2013.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN ISO 14644-8:2013) 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of an identical text or by endorsement, at the latest by August 2013, and conflicting national standards shall be withdrawn at the latest by August 2013.

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

This document supersedes EN ISO 14644-8:2006.

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Endorsement notice

The text of ISO 14644-8:2013 has been approved by CEN as EN ISO 14644-8:2013 without any modification.

INTERNATIONAL STANDARD

ISO 14644-8

Second edition
2013-02-15

Cleanrooms and associated controlled environments —

Part 8: Classification of air cleanliness by chemical concentration (ACC)

Salles propres et environnements maîtrisés apparentés —
Partie 8: Classification de la propreté chimique de l'air

Reference number
ISO 14644-8:2013(E)

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Published in Switzerland

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 14644-8 was prepared by Technical Committee ISO/TC 209, *Cleanrooms and associated controlled environments*.

ISO 14644 consists of the following parts, under the general title *Cleanrooms and associated controlled environments*:

— *Part 1: Classification of air cleanliness*

— *Part 2: Specifications for testing and monitoring to prove continued compliance with ISO 14644-1*

— *Part 3: Test methods*

— *Part 4: Design, construction and start-up*

— *Part 5: Operations*

— *Part 6: Vocabulary*

— *Part 7: Separative devices (clean air hoods, gloveboxes, isolators, mini-environments)*

— *Part 8: Classification of air cleanliness by chemical concentration (ACC)*

— *Part 9: Classification of surface cleanliness by particle concentration*

— *Part 10: Classification of surface cleanliness by chemical concentration*

This second edition cancels and replaces the first edition (ISO 14644-8:2006), which has been technically revised.

Introduction

Cleanrooms and associated controlled environments provide for the control of airborne particulate contamination to levels appropriate for accomplishing contamination-sensitive activities. Products and processes that benefit from the control of airborne contamination include those in such industries as aerospace, microelectronics, pharmaceuticals, medical devices, food, healthcare, optics, instrumentation, vacuum technology, coatings, photovoltaics, displays, LEDs, coatings, automotive and surface analysis.

In some of these industries, the product or process can be sensitive to, or can be destroyed by, chemical contamination resulting from chemicals that are present due to external, process, or otherwise generated sources.

Within this part of ISO 14644, the presence of chemicals is expressed as air chemical contamination. Chemical contamination is a three-step event. The first step is *generation* due to external sources such as process leakage or construction material or personnel or material outgassing. The second step is *transport* as airborne chemical contamination. The third step is *sorption* on the sensitive surface, which can be quantified as a surface chemical contamination.

The generating materials and the surfaces where sorption takes place will have a large influence on the steps of generation and sorption in addition to the actual air contamination. Thus, for these two steps, not only the contaminants but also the involved bulk and surfaces need to be defined. In order to make a standard generally applicable to any type of cleanroom or associated controlled environment, air chemical cleanliness (ACC) has been chosen for the classification.

This part of ISO 14644 assigns ISO classification levels to be used to specify the level of ACC within a cleanroom and associated controlled environment, where the product or process is deemed to be at risk from air chemical contamination.

For classification purposes, this part of ISO 14644 is limited to a designated range of ACC and provides standard protocols for specifying such levels with regard to chemical compounds, methods of test and analysis, and time weighted factors.

Informative annexes are contained in this part of ISO 14644 covering:

— parameters for consideration: Annex A;

— typical contaminating chemicals and substances: Annex B;

— typical methods of measurement and analysis: Annex C;

— considerations of specific requirements for separative devices: Annex D.

This part of ISO 14644 is one of a series of standards concerned with cleanrooms and contamination control. Many factors besides ACC need to be considered in the design, specification, operation and control of cleanrooms and other controlled environments. These are covered in some detail in other parts of the International Standards prepared by ISO/TC 209, including ISO 14698 (all parts).[4] In some circumstances, relevant regulatory agencies can impose supplementary policies or restrictions. In such situations, appropriate adaptations of this part of ISO 14644 can be required.