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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 25915.10-2021

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

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Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Rating	2
5 Surface cleanliness inspection/measurement, monitoring and conformity certification of chemical pollution	4
Appendix A (Informative) Conversion of various concentrations of surface chemicals	6
Appendix B (informative) Factors affecting the test and results	12
Appendix C (informative) Basic elements of cleanliness assessment	13
Appendix D (informative) Method of testing surface cleanliness by chemical concentration	14
Appendix E (Informative) Test Report	23
References	24

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

This document is part 10 of GB/T 25915 "Clean Room and Related Controlled Environment". GB/T 25915 has released the following part.

- Part 1. Classify air cleanliness according to particle concentration;
- Part 2. Monitoring of air particle concentration in clean rooms;
- Part 3. Detection method;
- Part 4. Design, construction, start-up;
- Part 5. Operation;
- Part 6. Vocabulary;
- Part 7. Isolation device (clean wind hood, glove box, isolator, microenvironment);
- Part 8. Classification of air cleanliness (ACC) grades according to chemical concentration;

- Part 9. Classification of surface cleanliness grades according to particle concentration;
- Part 10. Classification of surface cleanliness grades according to chemical concentration;
- Part 12. Technical requirements for monitoring the concentration of nanoparticles in the air.

This document is equivalent to ISO 14644-10:2013 "Cleanrooms and related controlled environments Part 10. Division of surfaces by chemical concentration

Cleanliness class".

Introduction

GB/T 25915 adopts the ISO 14644 series of international standards, and the settings of each part are consistent with the international standards. It is planned to consist of 15 parts constitute.

---Part 1. Classify air cleanliness according to particle concentration. The purpose is to distinguish the degree of particle contamination.

---Part 2. Monitoring of air particle concentration in clean room. The purpose is to guide the monitoring of particle pollution to avoid possible pollution risk.

---Part 3. Detection method. The purpose is to guide the detection of various pollution and related environmental elements in the clean room.

---Part 4. Design, construction, and start-up. The purpose is to guide the design, construction and start-up of the clean room.

---Part 5. Run. The purpose is to guide the operation of the clean room.

---Part 6. Vocabulary. The purpose is to unify and standardize technical terminology.

---Part 7. Isolation device (clean wind hood, glove box, isolator, microenvironment). The purpose is to propose the basis of isolation device for clean room

This requirement.

---Part 8. Classify air cleanliness (ACC) according to chemical concentration. The purpose is to distinguish the degree of air chemical pollution.

---Part 9. Classification of surface cleanliness grades according to particle concentration. The purpose is to distinguish the degree of particle contamination on the surface.

---Part 10. Classification of surface cleanliness grades according to chemical concentration. The purpose is to distinguish the degree of chemical contamination on the surface.

---Part 12. Technical requirements for monitoring the concentration of nanoparticles in the air. The purpose is to propose the detection of nano-level particle pollution

Require.

---Part 13. Surface cleaning that meets the requirements of particle and chemical cleanliness. The purpose is to put forward the cleaning requirements for the surface of the clean room to

Avoid the risk of particles and chemical contamination that may be produced.

---Part 14. Evaluate the applicability of the equipment according to the concentration of particle pollution. The purpose is to pass the related equipment that may produce particles in the clean room

Contamination test to determine the suitability of the equipment.

---Part 15. Evaluate the suitability of equipment and materials according to the concentration of chemical pollutants. The purpose is to pass the cleanliness of related equipment

Testing of chemical contamination in the room to determine the suitability of the equipment.

---Part 16. Improving the energy efficiency of clean rooms and air purification devices. The purpose is to save the energy consumption of clean room operation.

This document is based on Part 8 to further determine the classification method of surface molecular pollutants. Since molecular pollutants are usually

Under the circumstances, it exists in many forms (including molecules, ions, atoms, particles, etc.) on the surface of contaminated components, which is difficult to characterize by size and quantity.

This document uses the quality of pollutants per unit area as the basis for dividing surface cleanliness. At the same time, considering that some application

State pollution is very sensitive, and the allowable amount of surface pollutants is very small. Therefore, for extremely low concentrations, molecules, atoms, and atoms per unit area are used.

It is expressed by the number of ions, and the conversion formula of atomic concentration is also given.

Clean room and related controlled environment Part 10.

Classification of surface cleanliness grades according to chemical concentration

1 Scope

This document defines the surface cleanliness of the presence of relevant compounds or chemical substances (including molecules, ions, atoms, and particles) in a clean room.

Clarity grading system.

This document applies to all surfaces in clean rooms and related controlled environments, such as walls, ceilings, floors, working environments, tools, equipment and

Device.

Note 1. This document only considers the chemical properties of microparticles, and does not consider the physical properties of microparticles. This document does not cover the interaction between contaminants and surfaces.

Note 2. This document does not involve the process of pollution generation, and does not involve time-related influencing factors (sedimentation, sedimentation, aging, etc.) and process-related activities

(Such as transfer, processing, etc.), nor does it involve statistical quality control technical guidelines to ensure compliance.

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated quotations

Only the version corresponding to that date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

This document.

GB/T 25915.6 Clean room and related controlled environment Part 6. Vocabulary (GB/T 25915-2010, ISO 14644-6:2007,

IDT)

Note. ISO 14644-6:2007 has been abolished, and my country still retains the corresponding national standard.

3 Terms and definitions

The following terms and definitions defined in GB/T 25915.6 apply to this document.

3.1

Classified by chemical concentration air cleanliness air cleanliness by chemical concentration;
ACC

The maximum allowable concentration of a given chemical substance or group of chemical substances is expressed in ISO -ACCN grade, and the unit is grams per cubic meter (g/m³).

Note. This definition does not include biological macromolecules, biological