

ICS 13.040.35

CCS C 70



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

GB/T 36306-2024

**Cleanrooms and associated controlled environments -
Technical requirements for air chemical contamination control**

洁净室及相关受控环境 空气化学污染控制技术要求

Issued on: March 15, 2024

Implemented on: October 1, 2024

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

1	Scope
2	Normative references
3	Terms and definitions
4	Pollution sources
5	Air Chemical Pollution Control
8	Air cleanliness by chemical concentration (ACC) grade
11	Reference

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 for standardization documents" Drafting is required. This document replaces GB/T 36306-2018 "Guidelines for Control of Air Chemical Contamination in Clean Rooms and Related Controlled Environments" and Compared with GB/T 36306-2018, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) The scope of application of the standard has been changed (see Chapter 1, Chapter 1 of the.2018 edition);
- b) Deleted the terms such as air molecular pollution, environmental response monitoring method, pollutants, and gas phase air purification device (see the.2018 edition of 3.1, 3.2, 3.3, 3.4);
- c) Added terms such as air cleanliness and released gas classified by chemical concentration (see
- d) The definition of air chemical pollutants has been changed (see 3.2, 3.5 of the.2018 edition);
- e) The pollution sources were changed and added (see 4.1, 4.2, 4.1 of the.2018 edition), and the classification and categorization were deleted (see 4.2);
- f) Added general requirements, design, construction, operation and maintenance and other air chemical pollution control content (see 5.1, 5.2, 5.3, 5.4), deleted Determine whether there is pollution and the situation, and the content of control measures (see

6.2 of the.2018 edition);

g) Changed the title "Detection" to "Detection and Monitoring" (see Chapter 6, Chapter 5 of the.2018 edition), and changed the content of the detection (see 6.1,

5.2 of the.2018 edition), added monitoring content (see 6.2). Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was proposed and coordinated by the National Technical Committee for Cleanrooms and Related Controlled Environments (SAC/TC319). This document was drafted by: China Electronics Engineering Design Institute Co., Ltd., China Electronics System Engineering Third Construction Co., Ltd., China Electronic System Engineering Second Construction Co., Ltd., Institute of Atmospheric Physics, Chinese Academy of Sciences, Suzhou Antai Air Technology Co., Ltd., Shenzhen Yi Tianjin Purification Technology Co., Ltd., Tianjin University, Suzhou Huatai Air Filter Co., Ltd., China Association for Standardization, Binzhou Yuneng Electronic Materials Co., Ltd. Co., Ltd., Beijing Dyna Experimental Technology Co., Ltd., Yantai Baoyuan Purification Co., Ltd., Jiangnan University, Shanghai Indoor Environment Purification Industry Association, China Electronics Jingtai Electronic Engineering Co., Ltd., Liz Holdings Co., Ltd., Wuxi Lambton Technology Co., Ltd., Zhongkai University of Agriculture and Engineering, Huanggang Luban Pharmaceutical Co., Ltd., Shanghai Heyi Purification Equipment Manufacturing Co., Ltd., Foshan Nanhai Dongfang Aolong Pharmaceutical Co., Ltd., Shenzhen Shenzhen China Construction Southern Environment Co., Ltd. The main drafters of this document are. Yan Dong, Liu Junjie, Wang Qixun, Sun Yang, Li Wei, Xia Qunyan, Chen Siyuan, Huo Jinpeng, Hao Yinbo, Hu Maocong, Wu Zhijian, Geng Wentao, Wang Fang, Xi Xiaopeng, Ding Lixing, Yang Yuntao, Yang Ziqiang, Chen Xifu, Wang Yan, Yan Bin, Pei Jingjing, Zhou Shuzhen, Xu Baoping, Xu Yibin, Zhang Changan, Yang Li, Yang Xiaolong, Bai Bing. The previous versions of this document and the documents it replaces are as follows:

---First published in.2018 as GB/T 36306-2018;

1 Scope

China's national standard for controlling airborne chemical contamination in cleanrooms. It specifies the terms and definitions, the pollution sources, the air chemical pollution control and the detection and monitoring, with an informative annex on selecting cleaning measures. Particle counts are what a cleanroom is classified on, and for a great deal of work they are not the binding constraint. Semiconductor lithography is ruined by airborne molecular contamination at concentrations of parts per billion: amines and ammonia poison the chemically amplified photoresists, acids corrode exposed metal, organics condense on optics and wafers, and refractory dopants change the device. None of that shows in a particle count. The sources are ordinary - outdoor air, the building materials, the process chemistry, the people - and the controls are chemical filtration, material selection and

pressurisation. As chip geometries shrank this became the harder half of cleanroom design, which is why it now has a standard of its own.

This document specifies the technical requirements for the control of air chemical pollutants in clean rooms and related controlled environments, including pollution sources, air chemical pollution control Control, testing and monitoring etc. This document applies to the control of airborne chemical contamination in cleanrooms and related controlled environments.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 25915.8-2021 Cleanrooms and related controlled environments Part

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 The ISO -ACC represents the maximum permissible concentration of a given chemical type or group of chemicals in grams per cubic meter.

Note. Biomacromolecules are classified as particles and are not included in this definition. [Source: GB/T 25915.8-2021, 3.1.2]

3.2 Existing in gaseous or vapor form, its chemical properties may have adverse effects on the products, processes, and equipment in the clean room and related controlled environments substance.

3.3 outgassing Chemical substances released from equipment and materials in gaseous or vaporous form. [Source: GB/T 25915.8-2021, 3.1.7, modified]

4 Pollution sources

4.1 Outdoor pollution sources Chemical substances present in the outdoor atmosphere that may harm products, processes, and equipment in clean rooms mainly include sulfur oxides, nitrogen oxides, substances, ozone, ammonia, volatile organic compounds, etc.