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(JACA/JSA)

**Cleanrooms and associated
controlled environments—Part 1:
Classification of air cleanliness by
particle concentration**

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In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

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Foreword

This Japanese Industrial Standard has been established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal for establishment of Japanese Industrial Standard submitted by Japan Air Cleaning Association (JACA)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

Consequently **JIS B 9920:2002** has been withdrawn and partially replaced with this Standard.

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Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, applications for a patent after opening to the public or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, applications for a patent after opening to the public or utility model rights.

JIS B 9920 series consists of the following 2 parts under the general title *Cleanrooms and associated controlled environments*:

Part 1: Classification of air cleanliness by particle concentration

Part 2: Monitoring to provide evidence of cleanroom performance related to air cleanliness by particle concentration

Cleanrooms and associated controlled environments—Part 1: Classification of air cleanliness by particle concentration

Introduction

This Japanese Industrial Standard has been prepared based on **ISO 14644-1:2015**, Edition 2, with some modifications of the technical contents.

The dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JD.

1 Scope

This Standard specifies the classification of air cleanliness in terms of concentration of airborne particles in cleanrooms and clean zones, and separative devices as defined in **JIS B 9917-7**.

Only particle populations having cumulative distributions based on threshold (lower limit) particle sizes ranging from 0.1 μm to 5 μm are considered for classification purposes.

The use of light scattering airborne particle counters (LSAPCs) is the basis for determination of the concentration of airborne particles at designated sampling locations. Concentrations of ultrafine particles (particles smaller than 0.1 μm) will be addressed in a separate standard. An M descriptor (see Annex C) may be used to quantify populations of macroparticles (particles larger than 5 μm).

This Standard cannot be used to characterize the physical, chemical, radiological, viable or other nature of airborne particles.

NOTE The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 14644-1:2015 *Cleanrooms and associated controlled environments—Part 1: Classification of air cleanliness by particle concentration* (MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS B 9917-3 *Cleanrooms and associated controlled environments—Part 3: Test methods*

JIS B 9917-7 *Cleanrooms and associated controlled environments—Part 7: Separative devices (clean air hoods, gloveboxes, isolators and mini-environments)*

NOTE Corresponding International Standard: ISO 14644-7 *Cleanrooms and associated controlled environments—Part 7: Separative devices (clean air hoods, gloveboxes, isolators and mini-environments)* (MOD)

JIS B 9920-2 *Cleanrooms and associated controlled environments—Part 2: Monitoring to provide evidence of cleanroom performance related to air cleanliness by particle concentration*

NOTE Corresponding International Standard: ISO 14644-2:2015 *Cleanrooms and associated controlled environments—Part 2: Monitoring to provide evidence of cleanroom performance related to air cleanliness by particle concentration*

JIS B 9921 *Light scattering airborne particle counter for clean spaces*

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions apply.

3.1 General

3.1.1

cleanroom

room within which the concentration of airborne particles is controlled and classified, and which is designed, constructed and operated in a manner to control the introduction, generation and retention of particles inside the room

NOTE 1 The class of concentration of airborne particles is specified.

NOTE 2 Levels of other cleanliness attributes such as chemical, viable or nanoscale concentrations in the air, and also surface cleanliness in terms of particle, chemical, viable or nanoscale concentrations might also be specified and controlled.

NOTE 3 Other relevant physical parameters might also be controlled as required, e.g. temperature, humidity, pressure, vibration and electrostatic.

3.1.2

clean zone

defined space within which the concentration of airborne particles is controlled and classified, and which is designed, constructed and operated in a manner to control the introduction, generation and retention of particles inside the space

NOTE 1 The class of concentration of airborne particles is specified.

NOTE 2 Levels of other cleanliness attributes such as chemical, viable or nanoscale concentrations in the air, and also surface cleanliness in terms of particle, chemical, viable or nanoscale concentrations might also be specified and controlled.

NOTE 3 A clean zone(s) can be a defined space within a cleanroom or might be achieved by a separative device. Such a device can be located inside or outside a cleanroom.