GB

NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

ICS 11.080

C 50

GB 27948-2020

Replacing GB 27948-2011

General Requirements for Air Disinfectant

空气消毒剂通用要求

Issued on: April 09, 2020 **Implemented on: November 01, 2020**

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

Table of Contents

General Requirements for Air Disinfectant

1 Scope

This Standard specifies the requirements of raw materials, technical requirements, inspection methods, use methods, label instruction manual and precautions for the disinfectants used for indoor air disinfection.

This Standard is applicable to indoor air disinfectants for the major purpose of killing microorganisms in the air, and can meet the requirements of disinfection.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this document.

GB/T 26366 Hygienic Standard for Chlorine Dioxide Disinfectant

GB/T 26371 Hygienic Standard for Peroxide Disinfectants

Technical Standard for Disinfection (2002 Edition) [Ministry of Health (WFJF (2002) No.282)]

3 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

3.1 Air disinfection

Use disinfectant to kill pathogenic microorganisms suspended in the air in the closed room, so as to achieve harmless treatment.

3.2 Air disinfectant

Disinfectant used for air disinfection.

3.3 Aerosol sprayer

The sprayer that may occur the atomized particle diameter range below 50μm, of which

5.3.2 Metal corrosion

The metal corrosion test shall be carried out, and the corrosion level shall be indicated in the instruction manual of the product.

6 Inspection Methods

6.1 Test of physical and chemical indicators

It shall be carried out as per the provisions of relevant standard.

6.2 Evaluation method of disinfection effect

Test according to the relevant provisions of *Technical Standard of Disinfection* (2002 Edition); thereof, the identification test method of air disinfectant neutralizer can refer to Appendix A.

6.3 Safety inspection method

6.3.1 Inspection methods of toxicological indicators

Test according to the relevant provisions of *Technical Standard of Disinfection* (2002 Edition).

6.3.2 Inspection method of metal corrosion

Inspect according to Appendix B.

7 Use Methods

Disinfection may be conducted by aerosol spray, heating vaporization fumigation or gas fumigation.

8 Label, Instruction Manual and Precautions

8.1 The label and instruction manual of the product shall comply with the requirements of the relevant specifications and standards of the disinfectant product label instruction manual, and shall indicate that it can only be used for air disinfection under unmanned conditions.

8.2 When preparing and using the air disinfectant, pay attention to the personal protection; wear the protective mark, protective glasses and protective gloves. If necessary, use the comprehensive respirator. If inadvertently contact, immediately use

Appendix A

(Normative)

Identification Test of the Air Disinfectant Neutralizer

A.1 Neutralizer test for liquid impact sampling method

A.1.1 Scope of application

This method is suitable for evaluation test of 1m^3 aerosol cabinet disinfection effect, the sampler is a liquid impact sampler.

A.1.2 Preparation of bacterial suspension

Take the fresh culture (18h~24h) of the nutrient agar medium slant of Staphylococcus albicans (8032) (3rd generation to 8th generation); use a 5.0mL pipette to take 3.0mL~5.0mL of nutrient broth into the slant test tube; and repeat pressure-vacuum; wash off the bacterial lawn; filter by sterile absorbent cotton; then dilute with nutrient broth to a test bacterial suspension with a concentration of 5×10^3 CFU/mL ~ 3×10^4 CFU/mL.

A.1.3 Neutralizer identification tests are conducted in three groups

A.1.3.1 Group 1: According to the amount of disinfectant required in the instruction manual, spray hard water in a 1m^3 aerosol cabinet; after affecting to the disinfection time, immediately use a liquid impact sampler containing 10mL of neutralizer for sampling (sampling volume is consistent with the sampling volume of the pre-setting disinfection effect identification test); then affect for 10min. Pipette 0.1mL of the test bacterial suspension in the above neutralizer solution for counting the live bacteria culture.

A.1.3.2 Group 2: According to the amount of disinfectant required in the instruction manual, spray the air disinfectant in a 1m^3 aerosol cabinet. After affecting to the disinfection time, immediately use a liquid impact sampler containing 10mL of neutralizer for sampling (sampling volume is consistent with the sampling volume of the pre-setting disinfection effect identification test); then affect for 10min. Pipette 0.1mL of the test bacterial suspension in the above neutralization product solution for counting the live bacteria culture.

A.1.3.3 Group 3: According to the amount of disinfectant required in the instruction manual, spray hard water in a 1m^3 aerosol cabinet. After affecting to the disinfection time, immediately use a liquid impact sampler containing 10mL of sampling liquid for sampling (sampling volume is consistent with the sampling volume of the pre-setting disinfection effect identification test); then affect for 10 minutes. Pipette 0.1mL of the

airtightness and ventilation conditions) of a pair of aerosol cabinets or aerosol chambers shall be consistent. The cabinet (or chamber) should be constructed of stainless steel or aluminum alloy and glass. Temperature and humidity control devices, ventilator devices and corresponding pipes shall be installed.

B.4.2 Sample placement

B.4.2.1 Three pieces of samples are hanged in sequence along the inner, middle and outer equidistant of a diagonal side of the aerosol cabinet or aerosol chamber. The suspension height in the aerosol cabinet shall be the sample is located in the height center of the aerosol cabinet. The suspension height in the aerosol chamber is 0.8m ~ 1.2m above the ground. The placement and position of the test group and the control group shall be the same.

B.4.2.2 When placing the sample, ensure that the test surface of the sample is not to be directly sprayed.

B.4.2.3 The bracket of the sample shall be made of inert non-metallic materials, such as glass, plastic or coated wood products. The material where the sample is hanged shall use man-made fiber, cotton fiber or other inert insulating materials.

B.4.3 Test procedure

B.4.3.1 Simultaneously adjust the temperature and relative humidity of two aerosol cabinets (or chambers) to the temperature (20°C~25°C) and relative humidity (70%~80%) required by the test.

B.4.3.2 Place the samples for test group and control group according to the requirements of B.4.2.

B.4.3.3 The test group prepares the required disinfectant solution according to the volume of the aerosol cabinet (or room) and as per the instruction manual (concentration and used amount) of the disinfectant product, and the number of cycles. Calculate the spray time according to the flow rate of the spray device; the disinfecting machine shall adjust the parameters according to the instruction manual and cycle time; set the start-up time. If using and preparing a disinfectant that is unstable, such as oxidation, etc., it shall be prepared on the day of use.

B.4.3.4 Connect the spray device or disinfection machine and ventilation device to the intelligent timing socket or switch; according to each cycle time (the cycle time is the sum of spraying or starting time, disinfection time and 30min ventilation time after disinfection) and 45 cycles, set intelligent timing socket or switch. Turn on the switch to process the sample cyclically.

B.4.3.5 After the end of the cycle, take out the metal pieces; and respectively clean and weigh the samples according to the requirements of the *Technical Standard for*

This is an excerpt of the PDF (Some pages are marked off intentionally)

------ The End ------