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QB

**LIGHT INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

QB/T 2738-2023

**Evaluating methods for antibacterial and bacteriostatic efficacy
of daily chemical products**

日化产品抗菌抑菌效果的评价方法

(English Translation)

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1 Scope

This document describes the detection method of the antibacterial and bacteriostatic efficacy of daily chemical products with special hygiene functions; stipulates the evaluation criteria.

This document is applicable to the testing and evaluation of the antibacterial and bacteriostatic properties of common detergents. The testing and evaluation of the antibacterial and bacteriostatic properties of other daily chemical products are selected according to the purpose.

2 Normative references

The contents of the following documents constitute the essential terms of this document through normative references in the text. Among them, for dated references, only the version corresponding to that date is applicable to this document; for undated references, the latest version (including all amendments) is applicable to this document.

GB 4789.2 National food safety standard - Microbiological examination of food.

Aerobic plate count

QB/T 2153 Industrial oleic acid

QB/T 2850 General technical requirements for antibacterial and bacteriostatic detergents

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Antibacterial

The process of killing bacteria or hindering bacterial growth and activity by chemical or physical methods.

3.2

Bacteriostasis

The process of inhibiting or hindering bacterial growth and activity by chemical or physical methods.

3.3

Carrier

The support for test microorganisms.

3.4

Colony forming unit (CFU)

In the counting of live bacteria, the colony expressing the number of live bacteria formed by the growth and reproduction of a single bacterium or multiple bacteria in a cluster on a solid culture medium.

3.5

Neutralizer

In the microbial killing test, it is a reagent used to neutralize the suspension of the test microorganism and the bactericide and the residual bactericide on the surface of the microorganism, so that it loses its inhibitory and killing effects on the microorganism.

3.6

Product of neutralization

The product after the neutralizer (3.5) reacts with the bactericide.

4 Basic requirements for laboratories and aseptic operations for testing the effects of antibacterial and bacteriostatic daily chemical products

4.1 Microbiological laboratories shall adopt a closed layout; the building shall be easy to clean and disinfect.

4.2 Before the start of the test, the table and the indoor floor shall be cleaned by wet methods; then the air in the laboratory shall be disinfected by ultraviolet rays or other methods.

4.3 Experimenters shall wear work clothes, masks, hats; when conducting sterility tests, they shall enter the laboratory after air showering. Then, wear sterile isolation clothes, hats, masks correctly.

4.4 The sterile pipette shall be replaced every time a different sample is drawn; the inoculation loop (needle) shall be burned and sterilized on the flame before it can be used

again.

4.6 Reagents that require sterility, such as distilled water, phosphate buffer, culture

medium, bovine serum albumin, standard hard water, neutralizer, etc., shall be sterilized or filtered.

4.7 Before using sterile equipment and reagents, check whether the container or packaging is intact. If damaged, it shall not be used.

4.8 Sterile equipment and reagents in use shall not be exposed to the air for a long time.

4.9 When pipetting or inoculating, the mouth of the test tube and the agar plate shall be close to the flame to prevent contamination.

4.10 All used contaminated equipment shall be immediately placed in a container containing disinfectant, to prevent contamination of the surrounding environment and clean items.

5 Sample collection

In order to make the samples representative, at least 12 minimum sales packaging samples shall be randomly selected from the three transport packages of the same batch number, of which 4 samples shall be retained, 4 samples shall be tested for antibacterial or bactericidal performance, 4 samples shall be tested for stability.

6 Principles for evaluating the antibacterial and bacteriostatic efficacy of daily chemical products

6.1 Bactericidal test determination method

The bactericidal test determination method in the document is used to evaluate the antibacterial effect of the product.

6.2 Bacteriostatic test determination method

The bacteriostatic test determination method in the document is used to evaluate the bacteriostatic effect of the product.

6.3 Indicator microorganisms for inspection

The test bacteria in Table 1 shall be selected and tested according to the product implementation standard or the scope of application of the instructions. Other strains can also be added as test strains according to the product usage requirements.

6.4 Action concentration

It is carried out according to the standard requirements clearly stated on the product. If it is not clearly stated, QB/T 2850 shall be implemented.

6.5 Action time

It is carried out according to the standard requirements clearly stated on the product. If it is not clearly stated, QB/T 2850 shall be implemented.

6.6 Colony count

Count according to the provisions of GB 4789.2.

6.7 Result report

The test result report is a written expression of the test conditions and results. The result report shall at least include.

7 Test methods for antibacterial and bacteriostatic efficacy

of daily chemical products

7.1 Classification of test methods for antibacterial and bacteriostatic efficacy of

daily chemical products

See Table 2 for the classification of test methods for antibacterial and bacteriostatic efficacy of daily chemical products.

7.2 Bactericidal effect test method for daily chemical products (suspension

quantitative method)

7.2.1 Equipment

The main equipment is.

7.2.3.1 General

In order to accurately evaluate the killing effect of the sample on microorganisms, it is required to select an appropriate neutralizer in the sterilization test. The selected neutralizer can not only stop the inhibitory and killing effect of the antibacterial wash on microorganisms in time, but also the reaction product of the neutralizer itself and the sample (i.e., the neutralization product) has no inhibitory or killing effect on microorganisms, has no adverse effect on the culture medium.