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

CJ/T 244-2016

**Water quality standards for swimming pool
(English Translation)**

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1 Scope

This Standard specifies water quality standards and test methods for swimming pools.

This Standard is applicable to pool water quality of indoor and outdoor artificial swimming pools. Water quality of theatrical performance pools shall refer to this

Standard for implementation.

This Standard is not applicable to pool water quality of sea water, hot spring water pools, natural water swimming pools and infant swimming pools.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB 5749, Sanitary standard for drinking water

GB/T 5750.4, Standard examination methods for drinking water -

Organoleptic and physical parameters

GB/T 5750.10, Standard examination methods for drinking Water -

Disinfection by-products parameters

GB/T 5750.11, Standard examination methods for drinking water -

Disinfectants parameter

GB/T 5750.12, Standard examination methods for drinking water -

Microbiological parameters

GB/T 18204.1, Examination methods for public places - Part 1: Physical parameters

GB/T 18204.2, Examination methods for public places - Part 2: Chemical pollutants

TY/T 1003, Technical requirements and inspection methods for swimming, diving, water polo and synchronized swimming establishments

Heterotrophic bacteria that can ingest nutrients from inanimate organic matter.

b) parasites

Heterotrophic bacteria that is parasitic in living animals and plants, obtaining nutrition and energy from organic matter in host.

3.8 regular indices

Water quality indicators that can reflect basic situation of water quality of swimming pools.

3.9 non-regular indices

Water quality indicators for swimming pools that need implementing according to region, time or special circumstances.

4.1 Requirements for water quality of original water of swimming pools

4.1.1

When select urban tap water as original water of swimming pools, it shall meet requirements of GB 5749.

4.1.2 When water quality of original water of swimming pools fail to meet

requirements, it shall be processed to meet requirements of GB 5749.

4.2 Water quality standards for swimming pools

4.2.1

Sensory characteristics of pool water of swimming pools shall be good.

4.2.2

Pool water of swimming pools shall not contain pathogenic microorganism.

4.2.3

Chemical substance contained in water of swimming pools shall not harm human health.

4.2.4

See Table 1 for regular inspection items and limits.

Table 1 -- Regular inspection items and limits for water quality of pool water of swimming pools

No. Items Limits

1 Turbidity (scattering turbidimeter unit) / NTU ≤ 0.5

2 pH 7.2~7.8

4 Total number of colonies / (CFU/mL) ≤ 100

5 Total coliforms / (MPN/100mL or CFU/100mL) Shall not be detected

A.3.2 Matching colorimetric tube.

A.4 Reagents

A.4.1 DPD1 reagent tablet of which main component is N, N-diethyl-p- phenylenediamine.

A.4.2 DPD3 reagent tablet of which main component is KI.

A.5 Steps

A.5.1 Use alkaline soap to clean glassware. Then use deionized water to rinse.

Place in 180°C oven to dry.

A.5.2 Respectively add 15mL of pure water to absorber A and absorber B.

Separately put two sets of DPD tablets (each set contains DPD1 and DPD3 tablets) into absorber A and absorber B. Use glass rod to slightly vibrate till tablets are completely dissolved.

A.5.3 Select chlorine-disinfected indoor swimming pool. In the time interval of

maximum daily flow of people of this swimming pool, place air inlet of NCI3 on- site inspection device at pool edge, 30cm above water. If conditions permit, it shall also place air inlet in pool, 30cm above water.

A.5.4 Start vacuum pump. Control pumping flow at 1L/min. Pumping time is

100min. Total pumping capacity is 100L.

A.5.5 Pour absorbent inside absorber A into 25mL volumetric flask. Use a small

amount of pure water to rinse inner wall of live core gas sampler. Pour residual liquid into volumetric flask. Set volume to 25mL. Liquid under test in volumetric flask is called as solution A. Operations of absorbent inside absorber B are same as absorber A. Liquid under test in volumetric flask is called as solution

A.

A.5.6 When pumping capacity is strictly controlled and NCl₃ concentration is below limit, absorbent of absorber B can completely absorb NCl₃, and solution

A is only used for blank reference. Use supporting portable spectrophotometer to respectively measure solution B and solution A. Results are value b and value a, respectively. Combined chlorine value is calculated according to formula (A.1).

Where, c - combine chlorine value, in milligrams per liter (mg/L);

Annex B (Informative)

Plate counting method for heterotrophic bacteria in swimming pool

B.1.1 Instructions on application

Plate counting method for heterotrophic bacteria is a method to measure number of live heterotrophic bacteria in water. This method is used for processing of swimming pool water as well as detection of microbial quantity during supply-distribution process. Paired, chained, clustered, even single cells shall be identified as a colony. They shall be calculated into number of colonies.

The number of colonies is also affected by their growth. In order for data comparison, it shall adopt same cultivation steps and medium.

B.1.2 Screening method

Screening method is described as follows:

a) Dumping plate method. It is for water sample of which volume is

0.1mL~2.0mL or diluted water sample. Colony formed by this method is smaller and firmer. Compared to surface-grown colony, it is less likely to cause interference between them. On the other hand, colony in medium usually grows slowly and is difficult to transfer. Constant-temperature water bath is essential for temperature control of medium.

b) Spread plate method. Spread plate method does not form thermal shock and colony formed is easy to distinguish. Colony formed by this method is convenient to transfer. Colony morphology is clear, easy to distinguish and contrast. This method requires sample under test or diluted water sample has a small volume, only as 0.1mL~0.5mL. Specific volume depends on degree of dryness of plate to be spread. When using this method, it is necessary to maintain proper pre-drying and culture medium that has absorptive capacity.

c) Membrane filtration method. Membrane filtration method is applicable to detection of large sample volume and low turbidity water sample, as well as water sample of which bacterial content is low (< 1CFU/mL~10CFU/mL).

This method does not require heating. But it increases cost of diaphragm.