

ICS 13.060
CCS C 51



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

GB/T 5750.12-2006

**Standard examination methods for drinking water --
Microbiological parameters
(English Translation)**

Issued on: December 29, 2006

Implemented on: July 1, 2007

Issued by: Ministry of Health of the People's Republic of China

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Foreword

GB/T 5750 "Standard Test Method for Drinking Water" is divided into the following parts.

- General principles;
- Collection and preservation of water samples;
- Water analysis quality control;
- Organoleptic and physical parameters;
- Nonmetal parameters;
- Metal parameters;
- Aggregate organic parameters;
- Organic parameters;
- Pesticides parameters;
- Disinfection by-products parameters;
- Disinfectants parameter;
- Microbiological parameters;
- Radiological parameters.

This standard replaces total number of bacteria and total coliforms in the part II of GB/T 5750-1985 "Standard examination methods for drinking water".

As compared with GB/T 5750-1985, the main changes are as follows.

- ADJUST the structure in accordance with GB/T 1.1-2000 "Directives for standardization - Part 1.Rules for the structure and drafting of standards";
 - ADD 7 testing methods for 4 indicators including thermotolerant coliform bacteria, Escherichia coli, Giardia, and Cryptosporidium in drinking water.;
- This standard is proposed by and shall be under the jurisdiction of the Ministry of Health of the People's Republic of China.

The responsible drafting organizations of this standard. China Center for Disease Control and Prevention Safety Institute for Environment and Health-related Product.

Standard examination methods for drinking water -
Microbiological parameters

1.1.1 Scope

This standard specifies the use of plate counting method for the determination of total bacterial counts in drinking water and its source water.

This method applies to the determination of total bacterial counts in drinking water and its source water.

1.1.2 Terms and definitions

The following terms and definitions apply to this standard.

1.1.2.1

Standard plate-count bacteria

The total number of bacteria contained in 1 mL of water sample obtained after 48 h incubation at 37°C under aerobic conditions on nutrient agar.

1.1.3.1.1 Ingredients.

A Peptone 10 g

B Beef paste 3 g

C Sodium chloride 5 g

D Agar 10 g ~ 20 g

E Distilled water 1000 mL

1.1.3.1.2 Preparation method. After mixing above components, HEAT to dissolve it, ADJUST the pH to 7.4 ~ 7.6, CONTAIN it into glass containers (if

1.1.5.2.3 USE the sterile pipette to take undiluted water samples and two ~ three 1 mL of water samples of the appropriate dilution degree, respectively INJECT it into the sterilized plate. The following operation is the same as the drinking water testing procedure.

1.1.6 Colony counting and reporting methods

When doing plate colony counting, it can use naked eye to directly observe it, if necessary, it shall make inspection with a magnifying glass to prevent omission. After recording the number of colonies in each plate, it shall calculate the average count of colonies in the same dilution, which is used for the calculation of next step. When obtaining the average of the dilutions, if one of the plates has more platelet-like colonies, it should not be used, but the plates without platelet colonies shall be used to calculate the average count of colonies of this dilution. If the platelet colonies are less than half of the plate, whilst the distribution of colony count on this other half is very even, the colonies of this half of plate is counted and multiplied by 2 to get the count of colonies of the entire plate. Then the average count of colonies of this dilution is calculated.

1.1.7.1 First SELECT the average count of colonies between 30 ~ 300 to make calculation, if the average count of colonies of only one dilution meet this range, then MULTIPLY the count of colonies by the dilution factor and REPORT it (SEE example 1 in Table 1).

1.1.7.2 If there are two dilutions, the count of colonies grown is between 30 ~ 300, it is determined depending on the ratio of the two, if the ratio is less than 2, it shall report the average of the two (such as example 2 in Table 1). If the ratio is more than 2, it shall report the total count of colonies with a small dilution

(example 3 in Table 1). If it is equal to 2, it shall also report the count of colonies of smaller dilution (SEE example 4 in Table 1).

1.1.7.3 If the average count of colonies of all dilutions is greater than 300, then it shall multiply the average count of colonies of the highest dilution by the dilution factor and report it (see Example 5 in Table 1).

1.1.7.4 If the average count of colonies of all dilutions is smaller than 30, then it shall multiply the average count of colonies of the lowest dilution by the dilution factor and report it (see Example 6 in Table 1).

1.1.7.5 If the average count of colonies of all dilutions is not between 30 ~ 300, then it shall multiply the average count of colonies closest to 30 or 300 by the dilution factor and report it (see Example 7 in Table 1).

1.1.7.6 If the plates of all dilutions are free from colony growth, it shall be reported as "undetected".

2.1.5.1.1 TAKE 10 mL of water sample, INOCULATE it into 10 mL of double lactose peptone culture solution, TAKE 1 mL of water sample, INOCULATE it into 10 mL of single lactose peptone culture solution, TAKE another 1 mL of water sample, INJECT it into 9 mL of sterilized normal saline, MIX it uniformly, PIPETTE 1 mL (that is, 0.1 mL of water sample) into 10 mL single lactose peptone culture solution, INOCULATE 5 tubes for each dilution.

If the tap water that has been processed must be tested regularly or once a day, it can directly inoculate five sets of 10 mL water sample double culture medium, each set is inoculated with 10 mL of water sample.

2.1.5.1.2 When testing the source water, if the pollution is serious, it shall increase the dilution. It can inoculate 1, 0.1, 0.01 mL or even 0.1, 0.01, 0.001 mL. Each dilution is inoculated to 5 tubes, each water sample is totally inoculated to 15 tubes. When inoculating the water sample less than 1 mL, it