



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

**GB/T 5750.1-2023**

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**Standard examination methods for drinking water - Part 1:  
General principles**

生活饮用水标准检验方法 第1部分：总则

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### Foreword

This document was issued on 17 March 2023 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 October 2023.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

### 1 Scope

GB/T 5750.1-2023 is the general part of the drinking water examination series, and it sets the ground the other parts stand on - how an inspection method is chosen, how results are reported, the reagents and the way concentrations are expressed, the water used in the laboratory, the glassware and its washing, the operation of testing instruments and equipment, and laboratory safety. Where a parameter has two or more methods available, the choice is left to the equipment and technical conditions of the laboratory. A result below the minimum detectable mass concentration of the method is reported as being less than that concentration, not as a number. Reagents are of analytical grade unless a method says otherwise, and the water used is pure water made by distillation, redistillation, sub-boiling distillation, ion exchange or a combined treatment. Volumetric glassware is inspected and calibrated to JJG 196, balances and analytical instruments that produce test data are traced back to measurement standards on a recorded schedule, and dangerous chemicals are stored to GB 15603. Without a common part of this kind, two laboratories can run the

same method on the same water and disagree, because their reagents, their water and their glassware were never the same thing. For water testing laboratories, water utilities, and the authorities who read their reports.

This document stipulates the basic principles and requirements for drinking water quality inspection.

This document applies to drinking water quality inspection, as well as water quality inspection of source water and drinking water that has been treated, stored, and transported.

## 2 Normative references

The following documents contain the provisions which, through normative reference in this document, constitute the essential provisions of this document. For the dated referenced documents, only the versions with the indicated dates are applicable to this document; for the undated referenced documents, only the latest version (including all the amendments) is applicable to this document.

GB 4789.28 National food safety standard - Food microbiology testing - Quality Requirements for Media and Reagents

GB/T 6682 Water for analytical laboratory use - Specification and test methods

GB 15603 General rules for the hazardous chemicals warehouse storage

GB 19489 Laboratories - General requirements for biosafety

JJG 196 Working Glass Container

## 3 Terms and definitions

The following terms and definitions apply to this document.

### 3.1 constant mass

Except for total dissolved solids, the mass difference after two consecutive dryings is less than 0.2 mg.

### 3.2 measure

The operation of using a measuring cylinder to take water samples or test solutions.

### 3.3 pipetting

The operation of taking water samples or testing liquid with plain pipets, graduated pipettes (also called pipets), or pipettes.

#### 3.4 constant volume

The operation of diluting to the mark with pure water or other solvents in a volumetric flask.

### 4 Selection of inspection methods

If there are two or more inspection methods for the same project, the corresponding inspection method can be selected and used according to the equipment and technical conditions.

### 5 Report of test results

5.1 Test results that are lower than the minimum detectable mass concentration of the method shall be reported as "less than the minimum detectable mass concentration".

5.2 When reporting test results involving indicators required for total quantity limit, if the test result of each indicator is less than its minimum detectable mass concentration, report the result as "less than the total minimum detectable mass concentration";

### 6 Reagents and concentration indication

6.1 The reagents used in this document, if the specifications are not specified, are of analytical grade (AR). The specifications of indicators and biological dyes are not specified. If there are special requirements in the inspection method, the provisions in the inspection method shall prevail.

6.4 In each test method in this document, unless otherwise specified, solvent blank (pure water or organic solvent) is used as the reference solution.

6.5 Hydrochloric acid, sulfuric acid, ammonia, etc. expressed by density in the document are concentrated reagents, such as HCl ( $\rho_{20}=1.19$  g/mL), and H<sub>2</sub>SO<sub>4</sub> ( $\rho_{20}=1.84$  g/mL). The concentration of the reagent after preparation is expressed in moles per liter (mol/L) or volume ratio.

6.6 The preparation methods of reagents are stated in each test method. Table 1 provides

the concentrations of several commonly used acids and alkalis and the formulas for preparing dilute solutions.

6.7 Concentration of substance B. Also known as the amount of substance B concentration, it refers to the amount of substance B ( $n_B$ ) divided by the volume ( $V$ ) of the mixture; its common unit is mole per liter (mol/L); it is calculated according to the formula (1).

6.8 The mass concentration of substance B. It refers to the mass ( $m_B$ ) of substance B divided by the volume ( $V$ ) of the mixture. Its commonly used units are gram per liter (g/L), milligram per liter (mg/L), and microgram per milliliter ( $\mu\text{g/mL}$ ); it is calculated according to formula (2).

6.11 Volume by volume concentration. It refers to the mixing of two liquids with volumes  $V_1$  and  $V_2$ , respectively. When the name of the solvent is not indicated, it refers to mixing with pure water; when more than two specific liquids are mixed with water, water shall be indicated.

## 7 Experimental water

7.1 The water used in the inspection is pure water, which can be produced by distillation, redistillation, sub-boiling distillation, ion exchange, etc., or it can be produced by composite treatment technology.

7.2 The first-grade water, second-grade water, and third-grade water used for laboratory testing shall comply with the requirements of GB/T 6682. The water used for microbiological index testing shall comply with the requirements of GB 4789.28.

7.3 The first-grade water is used for ultra-trace analysis or other analyses with strict requirements, the second-grade water is used for high-sensitivity microanalysis, and the third-grade water is used for general chemical analysis.

7.5 Since pure water may be contaminated by  $\text{CO}_2$ ,  $\text{NH}_3$ , microorganisms, and other substances in the laboratory air as well as pollutants from the container wall during storage, the first-grade water cannot be stored and shall be prepared before use; the second-grade water and third-grade water can be prepared in appropriate amounts and