



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

GB/T 17219-2025

Replacing GB/T 17219-1998

**Hygienic safety evaluation of distribution equipment, protective
materials and treatment materials in drinking water system**

生活饮用水输配水设备、防护材料及水处理材料卫生安全评价

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Foreword

This document was drafted in accordance with the rules given in GB/T 1.1-2020 "Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents".

This document replaces GB/T 17219-1998 "Standard for safety evaluation of equipment and protective materials in drinking water system". Compared with GB/T 17219-1998, apart from structural adjustments and editorial changes, the main technical changes are as follows:

- a) Expanded the scope to include "treatment materials" (see Chapter 1 of this Edition);
 - b) Added terms and definitions (see Chapter 3 of this Edition);
 - c) Added the hygiene requirements for treatment materials (see Chapter 4 of this Edition);
 - d) Deleted the clause "The raw materials used in production and drinking water distribution equipment and protective materials shall be food-grade" (see 3.5 of Edition 1998);
 - e) Adjusted the hygiene requirements indicators to include routine and extended indicators (see Tables 1 and 2 of this Edition; Tables 1 and 2 of Edition 1998);
 - f) Added one new standard indicator: aluminum (see Table 1 of this Edition);
 - g) Added fifteen expansion indicators, including barium, nickel, antimony, tin, di(2-ethylhexyl) phthalate, vinyl chloride, styrene, epichlorohydrin, acrylonitrile, benzene, toluene, xylene (total), bisphenol A, iodide, and total organic carbon (see Table 2 of this Edition);
 - h) Revised the hygiene requirements for 13 indicators, including color, turbidity, pH, permanganate index (as O₂), arsenic, cadmium, lead, mercury, iron, manganese, copper, zinc, and carbon tetrachloride (see Tables 1 and 2 of this Edition; Tables 1 and 2 Edition 1998);
 - i) Revised the names of three indicators, including changing "color" to "chroma", "chloroform" to "trichloromethane", and "potassium permanganate consumption [as oxygen (O₂)]" to "permanganate index (as O₂)" (see Tables 1 and 2 of this Edition; Tables 1 and 2 Edition 1998);
- ≤0.09 mg/L; revised radioactive substances changed to total alpha radioactivity and total beta radioactivity (see Table 2 of this Edition; Table 2 of Edition 1998);
- k) Deleted four indicators, including fluoride, nitrate (as nitrogen), benzo(a)pyrene, and evaporation residue (see Tables 1 and 2 Edition 1998);
 - l) Added inspection indicators and methods (see Chapter 5 of this Edition);
 - m) Modified the immersion method for distribution equipment (see Annex A of this Edition);

Annex A of Edition 1998);

n) Modified the method for immersion of protective materials (see Annex B of this Edition; Annex B of Edition 1998);

o) Added a normative appendix "Immersion methods for treatment materials" (see Annex C of this Edition);

toxicological evaluation of drinking water distribution equipment and protective materials" (see Annex C of Edition 1998).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. The issuing authority shall not be held responsible for identifying any or all such patent rights.

This document was proposed by and shall be under the jurisdiction of National Bureau of Disease Prevention and Control.

The drafting organizations of this document: The National Institute for Environmental and Health Related Product Safety, Chinese Center for Disease Control and Prevention; Jiangsu Provincial Center for Disease Control and Prevention (Jiangsu Academy of Preventive Medicine); Shanghai Municipal Center for Disease Control and Prevention (Shanghai Academy of Preventive Medicine); Hunan Provincial Center for Disease Control and Prevention; and Henan Provincial Center for Disease Control and Prevention.

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Versions of standard substituted by this document are:

- This is the first revision.

1 Scope

This document specifies the requirements and inspection indicators for the sanitary safety evaluation of distribution equipment, protective materials, and treatment materials in drinking water system. It also describes the inspection methods.

This document applies to the sanitary and safety evaluation of drinking water distribution equipment, protective materials, and treatment materials.

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

17218-2025, Hygienic safety evaluation of chemicals used in drinking water treatment GB 31604.31, National food safety standard - Food contact materials and products -- Determination of residual and migration of vinyl chloride, 1,1-dichloroethylene and 1,1-dichloroethane

3 Terms and definitions

3.1 distribution equipment

3.2 protective materials

Materials such as coatings and linings used to protect drinking water pipeline systems or water storage containers that come into contact with drinking water.

3.3 treatment materials

Water-insoluble materials used to purify soluble, suspended, or colloid substances in drinking water through water treatment methods such as adsorption, filtration, ion exchange, aeration, oxidation, and reduction.

4 Hygiene requirements

4.1 Distribution equipment, protective materials, and treatment materials shall not pollute the water quality. The quality of the effluent shall meet the requirements of GB 5749. 4.2 Distribution equipment, protective materials, and treatment materials shall be subjected to immersion tests according to the provisions of Annex A, Annex B, and Annex C, respectively. The immersion test shall simultaneously test both the immersion water and the blank control water. The hygiene requirements for the test indicators shall comply with the provisions of Tables 1 and 2. The evaluation of protective materials shall use the test results of immersion water over 30 d. Two samples of the same product shall be tested simultaneously. The test results of both samples shall meet the corresponding hygiene requirements. a) Acute oral toxicity test: the median lethal dose (LD₅₀) shall not be less than 10 g/kg body weight; chromosome aberration test shall be negative. The immersion water has no unusual odor or smell No visible matter in the immersion water Change b Increase Increase luminum / (mg/L) ead / (mg/L) Mercury / (mg/L) olatile phenols (as phenol) / (mg/L) Increase Increase Increase Increase a Increase refers to the difference between the test results of the immersion water and the blank control water. b Change refers to the absolute value of the difference between the test results of the immersion water and the blank control water. c Total chromium can be measured first. When the increase in total chromium is ≤ 0.005 mg/L, the increase in hexavalent chromium can be considered to meet the requirements. When the increase in total chromium is > 0.005 mg/L, hexavalent chromium shall be measured again and evaluated according to the