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GB 5749-2006

Replacing GB 5749-1985

Standards for Drinking Water Quality

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Foreword

All the technical contents of this standard are compulsive.

This standard replaces GB 5749-1985 Standards for Drinking Water Quality, from the implementation date of this standard.

Compared with previous edition, there have been some significant changes in this standard in the following technical aspects:

- The water-quality indexes are increased to 106 items from 35 items of GB 5749-1985, up 71 items. 8 of the previous items have been revised as follows:
 - a) Microorganism indexes are increased to 6 items from 2 initially; it newly covers escherichia coli, heat-resisting coliform group, giardia and cryptosporidium; total coliform group is revised;
 - b) The drinking water disinfectant are increased to 4 items from 1 item initially; it newly covers monochloroamine, ozone and chlorine dioxide;
 - c) Inorganic compound of toxicological indexes are increased to 21 items from 10 items initially; it newly covers bromate, chlorite, chlorate, stibium, barium, beryllium, boron, molybdenum, nickel, thallium, cyanogen chloride; and arsenium, cadmium, lead and nitrate are revised;
 - d) The organic compound of toxicological indexes are increased to 53 items from 5 items initially; it newly covers formaldehyde, trihalomethane, dichloromethane, 1,2-dichloroethane, 1,1,1-trichloroethane, bromoform, chlorodibromomethane, monobromo-dichloro-methane, epoxy chloropropane, vinyl chloride, 1,1-dichloroethylene, vinylene chloride, trichloroethylene, tetrachloroethylene, hexachlorobutadiene, dichloroacetic acid, trichloroacetic acid, trichloroacetaldehyde, benzene, toluene, xylene, ethylbenzene, styrene, 2,4,6-trichlorophenol, chlorobenzene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, trichlorobenzene, dibutyl phthalate (2-ethylhexyl) ester, acrylamide, microcystin-LR, bentazone, chlorothalonil, deltamethrin, dimethoate, 2,4-dichlorophenoxyacetic acid, heptachlor, hexachlorobenzene, lindane, malathion, parathion, methyl parathion, pentachlorophenol, atrazine, furadan, chlorpyrifos, equigard and glyphosate; carbon tetrachloride is revised;
 - e) Sensitive character and general chemical indexes are increased to 20 items from 15 items initially; it newly covers oxygen consumption, ammonia nitrogen, sulfide, sodium and aluminium; turbidity is revised;
 - f) For radioactive index, total alpha radioactivity is revised.

Standards for Drinking Water Quality

1. Scope

This standard specifies the sanitary requirements for drinking water quality, drinking water source quality, central water supply organization, secondary water supply and health- and safety-related products, together with the water quality monitoring methods and water examination methods.

This standard is applicable to all kinds of central drinking water supply and non-central drinking water supply in both urban and rural regions.

2. Normative references

The following standards contain the provisions which, through reference in this text, constitute the provisions of this standard. For dated documents, the subsequent amendments (excluding corrigendum) or revisions of these publications do not apply. However, the parties who enter into agreement according to these specifications are encouraged to study whether the latest editions of these documents are applicable. For undated references, the latest edition of the normative document is applicable to these specifications.

GB 3838 Environmental Quality Standards for Surface Water

GB/T 5750 (all parts) Standard Inspection Methods for Drinking Waters

GB/T 14848 Standards for Groundwater Quality

GB 17051 Health Specifications for Secondary Water Supply Facilities

GB/T 17218 Assessment of Health Safety for Treatment Chemicals of Drinking Water

GB/T 17219 Safety Evaluation Criteria for Drinking Water Distribution Equipment and Protective Material

CJ/T 206 Standards for Water Quality of Municipal Water Supply

SL 308 Standards for Aptitude of Rural Water Supply Organizations

Health Specifications for Central Drinking Water Supply Organizations (Ministry of Health)

4.1.1 The drinking water shall be free of pathogenic microorganism.

4.1.2 Drinking water shall contain no human health-endangered chemicals.

4.1.3 Drinking water shall contain no human health-endangered radioactive substances.

4.1.4 The sensitive property of drinking water shall be acceptable.

4.1.5 The drinking water shall be sterilized.

4.1.6 The drinking water quality shall conform to the sanitary requirements stated in Table 1 and Table 3. The ex-works in-water disinfectant limit of central water supply and the in-water disinfectant margin of the pipeline terminal shall conform to the requirements of Table 2.

4.1.7 Due to the limit of conditions, the water quality of small central water supply and non-central water supply can be executed according to the requirements of Table 4 and the rest indices can be executed according to the provisions of Table 1, 2 and 3.

4.1.8 When any public accident event affects the water quality, the sensitive property and general chemical index can be loosened upon the approval from the city-above government.

4.1.9 When the drinking water contains the indices listed in Table A1, the assessment can make reference to the limit of this table.

Table 1 Regular indices of water quality and their limits

Index	Limit
1. Microorganism indices ^a	
Total coliform group/ (MPN/100mL or CFU/100mL)	Must not be detected
Heat resisting coliform group/ (MPN/100mL or CFU/100mL)	Must not be detected
Escherichia coli/ (MPN/100mL or CFU/100mL)	Must not be detected
Aerobic bacteria count/ (CFU/mL)	100
2. Toxicological indices	
As/ (mg/L)	0.01
Cd/ (mg/L)	0.005
Cr (Hexavalent)/ (mg/L)	0.05
Pb/ (mg/L)	0.01
Ag/ (mg/L)	0.001
Se/ (mg/L)	0.01
Cyanide/ (mg/L)	0.05
Fluoride/ (mg/L)	1.0
Nitrate (counted in "N")/ (mg/L)	10
	If the groundwater source is confined,

Table 2 Regular indices and requirements on disinfectant of drinking water

Disinfectant	Time exposed to water	Ex-works in-water limit/ (mg/L)	Ex-works in-water margin/ (mg/L)	Pipeline terminal in-water margin/ (mg/L)
Chlorine gas and free chlorine preparation (free chlorine)	≥30min	4	≥0.3	≥0.05
Monochloramine (total chlorine)	≥120min	3	≥0.5	≥0.05
Ozone (O ₃)	≥12min	0.3	--	≥0.02 If adding chlorine, then the total chlorine ≥0.05
Chlorine dioxide (ClO ₂)	≥30min	0.8	≥0.1	≥0.02

Table 3 Non-regular indices and limits of water quality

Index	Limit
1. Microorganism indices	
Giardia/ (pcs/10L)	<1
Cryptosporidium/ (pcs/10L)	<1
2. Toxicological indices	
Sb/ (mg/L)	0.005
Ba/ (mg/L)	0.7
Be/ (mg/L)	0.002
B/ (mg/L)	0.5
Mo/ (mg/L)	0.07
Ni/ (mg/L)	0.02
Ag/ (mg/L)	0.05
Tl/ (mg/L)	0.0001
Cyanogen chloride (counted as CN ⁻)/ (mg/L)	0.07
Chlorodibromomethane/ (mg/L)	0.1
monobromo-dichloro-methane/ (mg/L)	0.06
Dichloroacetic acid/ (mg/L)	0.05
1,2-dichloroethane/ (mg/L)	0.03
Dichloromethane/ (mg/L)	0.02
Trihalomethane (summation of chloroform, chlorodibromomethane, monobromo-dichloro-methane and bromoform)	The ratio of the measured concentration of all kinds of compounds to their limits shall not exceed 1
1,1,1-Trichloroethane/ (mg/L)	2
Trichloroacetic acid/ (mg/L)	0.1
Trichloroacetaldehyde/ (mg/L)	0.01
2,4,6-Trichlorophenol/ (mg/L)	0.2
Bromoform/ (mg/L)	0.1

requirements of GB 17051.

8. Sanitary requirements on health- and safety-related products of drinking water

8.1 Treatment chemicals for flocculation, flocculation acceleration, sterilization, oxygenation, absorption, pH adjustment, antirust and anti-precipitation of drinking water shall not pollute the drinking water and shall conform to the requirements of GB/T 17218.

8.2 The distribution equipment, protective material and water treatment material of drinking water shall not pollute the drinking water and shall conform to the requirements of GB/T 17219.

9. Water quality monitoring

9.1 Water quality detection of water supply organizations

9.1.1 The selection of non-regular indices shall be ascertained by county-above water supply authority and health authority.

9.1.2 The sampling point selection, inspection item/frequency and qualification rate calculation of urban central water supply organizations shall conform to CJ/T 206.

9.1.3 The sampling point selection, inspection item/frequency and qualification rate calculation of rural central water supply organizations shall conform to SL 308.

9.1.4 The water quality detection results of water supply organizations shall regularly submitted to the local health authority; the content and submitting method shall be ascertained by local water supply authority and health authority.

9.1.5 When the water quality of drinking water occur exceptional conditions, such conditions shall be timely reported to the local water supply authority and health authority.

9.2 Water quality monitoring for health supervision

9.2.1 At all levels, the health authority shall carry out health supervision and monitoring for the water quality of the water supplied by all kinds of water supply organizations regularly according to the actual demands.

9.2.2 When any public accident event affects the water quality, the drinking water supervision and monitoring proposals shall be ascertained by county-level-above health authority as required.

Total organic carbon/ (mg/L)	5
β -Naphthol/ (mg/L)	0.4
Butyle xanthogen/ (mg /L)	0.001
Ethyl mercuric chloride/ (mg /L)	0.0001
Nitrobenzene/ (mg/L)	0.017

References

- [1] World Health Organization. Guidelines for Drinking-water Quality, third edition. Vol. 1, 2004, Geneva.
- [2] EU's Drinking Water Standards. Council Directive 98/83/EC on the quality of water intended for human consumption. Adopted by the Council, on 3 November 1998.
- [3] US EPA. Drinking Water Standards and Health Advisories, Winter 2004.
- [4] National Drinking Water Quality Standards, Russia, implemented from January 2002.
- [5] Drinking Water Quality Criteria, Japan, implemented from April 2004.

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