

Drinking Water Quality Standards

Legislative:

- 1.Nine Articles drafted and promulgated by Environmental Protection Administration Order (87) Huan-Shu-Tu-Tzu No. 004428 on February 4, 1998
- 2.Revisions to Article 3 promulgated by Environmental Protection Administration Order Huan-Shu-Tu-Tzu No. 0920028896 on May 7, 2003
- 3.Revisions to Articles 3, 4, 5 and 6 promulgated by Environmental Protection Administration Order Huan-Shu-Tu-Tzu No. 0940039894 on May 30, 2005
- 4.Revisions to Article 3 promulgated by Environmental Protection Administration Order Huan-Shu-Tu-Tzu No. 0960100652 on January 2, 2008
- 5.Revisions to Article 3 promulgated by Environmental Protection Administration Order Huan-Shu-Tu-Tzu No.0980106331E on November 26, 2009.
- 6.Revisions to Article 3 promulgated by Environmental Protection Administration Order Huan-Shu-Tu-Tzu No.1030001229 on January 9, 2014.
- 7.Revisions to Article 3, 4, 5 promulgated by Environmental Protection Administration Order Huan-Shu-Tu-Tzu No.1060000881 on January 10, 2017.
- 8.Revisions to Article 5 and addition of Articles 5-1 promulgated by Environmental Protection Administration Order Huan-Shu-Shui-Tzu No. 1111059186A on May 23, 2022.

Content:

Article 1 These Standards are determined pursuant to Article 11, Paragraph 2 of the Drinking Water Management Act (herein referred to as "this Act").

Article 2 These standards shall apply to drinking water supplied from drinking water equipment designated in Article 4 of this Act and other drinking water designated by the central competent authority.

Article 3 Regulations of these standards are set forth herein.

I. Bacterial standards: (Samples for total bacterial count must be collected from the finished water distribution networks that receive water from water treatment utilities with disinfection regime)

| Item | Maximum limit | Unit |
|--------------------------|---------------------------------------|--|
| 1. Coliform group | 6 (Multiple-tube fermentation method) | Most probable number (MPN)/100 milliliters |
| | 6 (Membrane filtration method) | Colony-forming unit(CFU)/100 milliliters |
| 2. Total bacterial count | 100 | Colony-forming unit(CFU)/milliliter |

II. Physical standards:

| Item | Maximum limit | Unit |
|--------------|---------------|------------------------------------|
| 1. Odor | 3 | Threshold odor number (TON) |
| 2. Turbidity | 2 | NTU (nephelometric turbidity unit) |
| 3. Color | 5 | Platinum-cobalt unit |

III. Chemical standards:

A. Substances that impact health:

| Item | Maximum limit | Unit |
|-----------------------------------|---|------------------|
| 1. Arsenic | 0.01 | milligrams/liter |
| 2. Lead | 0.01 | milligrams/liter |
| 3. Selenium | 0.01 | milligrams/liter |
| 4. Total chromium | 0.05 | milligrams/liter |
| 5. Cadmium | 0.005 | milligrams/liter |
| 6. Barium | 2.0 | milligrams/liter |
| 7. Antimony | 0.01 | milligrams/liter |
| 8. Nickel | 0.1 0.07 This standard is effective starting on July 1, 2018. 0.02 This standard is effective starting on July 1, 2020. | milligrams/liter |
| 9. Mercury | 0.002 0.001 This standard is effective starting on July 1, 2020. | milligrams/liter |
| 10. Cyanide (as CN ⁻) | 0.05 | milligrams/liter |
| 11. Nitrite-nitrogen | 0.1 | milligrams/liter |

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| Disinfection byproducts | 12. Total Trihalomethanes | 0.08 | milligrams/liter |
| | 13. Haloacetic acids (This concentration is defined as the sum of measured concentrations for five haloacetic acids, including monochloroacetic acid (MCAA), dichloroacetic acid (DCAA), trichloroacetic acid (TCAA), monobromoacetic acid (MBAA), and dibromoacetic acid.) | 0.060 | milligrams/liter |
| | 14. Bromate | 0.01 | milligrams/liter |
| | 15. Chlorite (This regulation only applies to water supply systems that use gaseous chlorine dioxide as disinfectant) | 0.7 | milligrams/liter |
| Volatile organic compounds | 16. Trichloroethene | 0.005 | milligrams/liter |
| | 17. Carbon tetrachloride | 0.005 | milligrams/liter |
| | 18. 1,1,1-Trichloroethane | 0.20 | milligrams/liter |
| | 19. 1,2-Dichloroethane | 0.005 | milligrams/liter |
| | 20. Vinyl chloride | 0.002 0.0003 This standard is effective starting on July 1, 2018. | milligrams/liter |
| | 21. Benzene | 0.005 | milligrams/liter |
| | 22. 1,4-Dichlorobenzene | 0.075 | milligrams/liter |
| | 23. 1,1-Dichloroethylene | 0.007 | milligrams/liter |
| | 24. Dichloromethane | 0.02 | milligrams/liter |
| | 25. 1,2-Dichlorobenzene | 0.6 | milligrams/liter |
| | 26. Toluene | 0.7 | milligrams/liter |
| | 27. Xylenes (This regulated concentration for Xylenes is defined as the sum of the measured concentrations of three xylene isomers, including 1,2- | 0.5 | milligrams/liter |

| | | | |
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| | Xylene, 1,3-Xylene, and 1,4-Xylene.) | | |
| | 28. Cis-1,2-Dichloroethene | 0.07 | milligrams/liter |
| | 29. Trans-1,2-Dichloroethene | 0.1 | milligrams/liter |
| | 30. Tetrachloroethene | 0.005 | milligrams/liter |
| Agricultural chemicals | 31. Endosulfan | 0.003 | milligrams/liter |
| | 32. Lindane | 0.0002 | milligrams/liter |
| | 33. Butachlor | 0.02 | milligrams/liter |
| | 34. Dichlorophenoxyacetic acid | 0.07 | milligrams/liter |
| | 35. Paraquat | 0.01 | milligrams/liter |
| | 36. Methomyl | 0.01 | milligrams/liter |
| | 37. Carbofuran | 0.02 | milligrams/liter |
| | 38. Isoprocarb | 0.02 | milligrams/liter |
| | 39. Methamidophos | 0.02 | milligrams/liter |
| | 40. Diazinon | 0.005 | milligrams/liter |
| | 41. Parathion | 0.02 | milligrams/liter |
| | 42. EPN | 0.005 | milligrams/liter |
| | 43. Monocrotophos | 0.003 | milligrams/liter |
| Persistent organic pollutants | <p>44 Dioxin</p> <p>This regulated concentration for Dioxin is defined as the sum of the measured concentrations of 17 compounds, including 2,3,7,8-Tetrachlorinated dibenzo-p-dioxin-2,3,7,8-TeCDD, 2,3,7,8-Tetra chlorinated dibenzofuran, 2,3,7,8-TeCDF and 2,3,7,8- penta-, hexa-, hepta-, and octa-chlorinated dioxins and furan. This regulated concentration for Dioxin is multiplied by the dioxin toxic equivalency factor</p> | 3 | Petagram – World Health Organization - total toxicity equivalency quantity/liter (pg-WHO-TEQ/L) |

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|--|--|--|--|
| | (WHO-TEFs) provided by World Health Organization, and is expressed as a total toxicity equivalency quantity (TEQ). (If any drinking water treatment facilities locate within a 5-kilometer distance having a large pollution source, it must be monitored once every year. If the measured Dioxin concentrations do not exceed the maximum permitted limit for two consecutive years, the monitoring frequency may be reduced to once every two years starting in the following year.) | | |
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B. Substances with potential health impact:

| Item | Maximum limit | Unit |
|--|---------------|------------------|
| 1. Flouride (as F ⁻) | 0.8 | milligrams/liter |
| 2. Nitrate nitrogen | 10.0 | milligrams/liter |
| 3. Silver | 0.05 | milligrams/liter |
| 4. Molybdenum (This regulation only applies to water supply systems with a potential pollution source, such as those with semiconductor fabrication plants, optoelectronic manufacturing plants, or parts manufacturing plants, located within a 5-kilometer distance upstream from their water intake. The testing frequency is once per quarter. If the test values do not exceed the maximum permissible limits for two consecutive years, the testing frequency could reduce to once per year from the following year.) | 0.07 | milligrams/liter |
| 5. Indium (This regulation only applies to water supply systems with a potential pollution source, such as those with semiconductor fabrication plants, optoelectronic manufacturing plants, or parts manufacturing plants, located within a 5-kilometer distance upstream from their water intake. The testing frequency is once per quarter. If the test values do not exceed the maximum permissible limits for two consecutive years, the testing frequency could reduce to once per year from the following year.) | 0.07 | milligrams/liter |

C. Contaminants that cause aesthetic, cosmetic, and technical effects:

| Item | Maximum limit | Unit |
|--|--|------------------|
| 1. Iron | 0.3 | milligrams/liter |
| 2. Manganese | 0.05 | milligrams/liter |
| 3. Copper | 1.0 | milligrams/liter |
| 4. Zinc | 5.0 | milligrams/liter |
| 5. Sulfate (as SO_4^{2-}) | 250 | milligrams/liter |
| 6. Phenols | 0.001 | milligrams/liter |
| 7. Anionic surface-active agents | 0.5 | milligrams/liter |
| 8. Chloride (as Cl^-) | 250 | milligrams/liter |
| 9. Ammonia nitrogen | 0.1 | milligrams/liter |
| 10. Total hardness (as CaCO_3) | 300 | milligrams/liter |
| 11. Total dissolved solids | 500 | milligrams/liter |
| 12. Aluminum (This regulation concentration is defined as the concentration of total aluminum.) | 0.3 0.2 This standard is effective starting on July 1, 2019. (This regulation is not applicable when the turbidity of the water source is over 500 NTU in the period of typhoon landfall warning, and when the turbidity of water source is over 1000 NTU during the three days after the warning is lifted.) | milligrams/liter |

D. Limit range of residual chlorine (Limited to water supply systems using chlorine as disinfectant):

| Item | Limit range | Unit |
|------|-------------|------|
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| Free available residual chlorine | 0.2-1.0 | milligrams/liter |
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E. Range for pH index (water treated by stationary continuous water supply equipment on public or private premises are not be subjected to this limitation):

| Item | Limit range | Unit |
|---|-------------|---------|
| Hydrogen ion concentration index (pH value) | 6.0-8.5 | No unit |

Article 4 For tap water, simple water supply and treatment facilities, and community-installed public water supply systems, when source water turbidity value exceeds 1,500 NTU caused by torrential rains or other natural disasters, the maximum turbidity limit for drinking water may apply to 4 NTU.

Drinking water source turbidity testing data in the foregoing paragraph shall be provided by tap water enterprises, simple water supply and treatment units or community-installed public water supply units.

Article 5 For tap water, simple water supply and treatment facilities, and community-installed public water supply systems, when source water turbidity value exceeds 1,500 NTU caused by torrential rains or other natural disasters, the limit range of free residual chlorine may apply to the following values (shall apply only to water supply systems that add chlorine disinfectants).

| Item | Maximum limit | Unit |
|------------------------|---------------|------------------|
| Free residual chlorine | 0.2-3.0 | milligrams/liter |

Article 5-1 For tap water that needs to be supplied by zones due to the natural disasters described in the preceding article, during the natural disaster response actions period, the drinking water quality standards in the supply districts are as follows.

I. Limit range of free residual chlorine (shall apply only to water supply systems that add chlorine disinfectants).

| Item | Maximum limit | Unit |
|------------------------|---------------|------------------|
| Free residual chlorine | 0.2-3.0 | milligrams/liter |

II. Physical standards:

| Item | Maximum limit | Unit |
|-----------|---------------|-----------------------------------|
| Turbidity | 4 | NTU(nephelometric turbidity unit) |
| Color | 10 | Platinum-cobalt unit |

III. Contaminants that cause aesthetic, cosmetic, and technical effects:

| Item | Maximum limit | Unit |
|--|---------------|------------------|
| Iron | 0.5 | milligrams/liter |
| Manganese | 0.1 | milligrams/liter |
| Total hardness (as CaCO ₃) | 400 | milligrams/liter |
| Total dissolved solids | 800 | milligrams/liter |

The natural disaster response actions period described in the first paragraph referred to the period which Central Emergency Operation Center is established to deal with natural disasters, in accordance with Article 13, Paragraph 1 of the Disaster Prevention and Protection Act.

Article 6 (Deleted)

Article 7 Testing methods for each water quality item designated in these Standards shall be designated and officially announced by the central competent authority.

Article 8 A competent authority that conducts water quality analysis in accordance with these Standards may commission an approved analysis laboratory to assist with analysis.

Article 9 Unless an implementation date is separately designated, the regulation items in these standards shall take effect on the date of promulgation.