

HJ

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

HJ 758-2015

**Water quality. Determination of haloacetic acids. Gas
chromatography**

水质 卤代乙酸类化合物的测定 气相色谱法

(English Translation)

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Foreword

To implement the Environmental Protection Law of the People's Republic of China and the Law of the People's Republic of China on Water Pollution Prevention and Control, to protect the environment, this standard is formulated to ensure human health and to regulate the monitoring methods of halogenated acetic acid compounds in water.

This standard specifies the gas phase color of haloacetic acid compounds in surface water, groundwater, domestic sewage and industrial wastewater.

Spectral method.

This standard is the first release.

Appendix A and B of this standard are informative annexes.

This standard was formulated by the Science and Technology Standards Department of the Ministry of Environmental Protection.

This standard is mainly drafted by. Qingdao Environmental Monitoring Center Station, Qingdao Technological University.

This standard is verified by the Agricultural Products Supervision and Inspection Center of the Ministry of Agriculture (Qingdao) and the National Urban Water Supply and Water Quality Monitoring Network.

Station, Zibo Environmental Monitoring Station, Weifang Environmental Monitoring Center Station, Zibo Anrui Water Quality Testing Center, Qingdao Economic Technology Development zone water supply and drainage monitoring station.

This standard was approved by the Ministry of Environmental Protection on October 22, 2015.

This standard has been implemented since December 1, 2015.

This standard is explained by the Ministry of Environmental Protection.

1 Determination of water-halogenated acetic acid compounds - Gas chromatography

Warning. The solvents, internal standards, substitutes and standard samples used in the experiments are all toxic and harmful compounds.

The system shall be carried out in a fume hood, and protective equipment shall be worn as required to avoid contact with skin and clothing.

1 Scope of application this standard specifies gas chromatography for the determination of haloacetic acid compounds in water.

This standard applies to surface water, groundwater, domestic sewage and industrial wastewater, monochloroacetic acid, monobromoacetic acid, dichloroacetic acid, Nine halogenated groups of trichloroacetic acid, monobromo-chloroacetic acid, monobromodichloroacetic acid, dibromoacetic acid, monochlorodibromoacetic acid and tribromoacetic acid Determination of acetic acid compounds.

When the sample volume is 40 ml, the detection limit of this method is 2 µg/L, and the lower limit of determination is 8 µg/L.

2 Normative references

The contents of this standard refer to the following documents or their terms. For undated references, the valid version is appropriate.

Used in this standard.

HJ/T 91 Surface Water and Wastewater Monitoring Technical Specifications HJ/T 164 Technical Specifications for Groundwater Environmental Monitoring

3 Principle of the method

Under acidic conditions (pH 4 interference and elimination when there are interfering substances in the sample, you can adjust the pH of the water sample to >12, extract once with 20 ml of n-hexane, and discard the organic the phase is determined by the preparation and analysis steps of the sample.

5 Reagents and materials

Unless otherwise stated, analytical reagents in accordance with national standards were used for the analysis, and experimental water was used for the fresh preparation.

Sub-water or distilled water.

5.1

ammonium chloride (NH₄Cl).

5.2

Sodium chloride (NaCl). excellent grade pure. Bake in a muffle furnace at 450 °C for 2~3 h before use.

5.3

sodium bicarbonate (NaHCO₃).

5.4

Ammonium chloride solution. ρ(NH₄Cl) = 10 mg/ml.

Weigh 1.0 g of ammonium chloride (5.1) and add to 100 ml of water.

5.5

Sodium chloride solution. $\rho(\text{NaCl}) = 250 \text{ g/L}$.

Weigh 25 g of sodium chloride (5.2) and add to 100 ml of water.

5.6

Saturated sodium bicarbonate (NaHCO_3) solution.

Weigh more than 10 g of sodium bicarbonate (5.3) and dissolve it in a 100 ml reagent bottle with water, keeping the bottom of the bottle with sodium bicarbonate crystals.

25.7 Sulfuric acid. $\rho(\text{H}_2\text{SO}_4) = 1.84 \text{ g/ml}$.

5.8

Methyl tert-butyl ether ($\text{CH}_3\text{OC}(\text{CH}_3)_3$, abbreviated MTBE). pesticide residue grade.

5.9

Methanol (CH_3OH). pesticide residue grade.

5.10

Sulfuric acid-methanol solution. 19.

Pipette 10 ml of sulfuric acid (5.7) and slowly drip into a 150 ml beaker pre-filled with 90 ml of methanol (5.9) until the temperature is cold.

It is used after room temperature. Available now.

5.11

Internal standard solution. 1,2,3-trichloropropane solution, $\rho = 1.0 \text{ mg/ml}$.

Purchase a commercially available certified standard solution.

5.12

Substitute criteria. 2-bromobutyric acid, liquid, purity $>97\%$.

5.13

Alternative stock solution. $\rho = 10.0 \text{ mg/ml}$.

Weigh the substitute standard (5.12) 0.100 g (accurate to 0.1 mg) and add 10 ml containing the appropriate amount of MTBE (5.8) in the volumetric flask, use MTBE (5.8) to bring up to the mark. Store at 4°C in the dark and protected from light.

5.14

Alternative use solution. $\rho = 40.0 \text{ mg/L}$.

Take 200 μl of the alternative stock solution (5.13) and add it to a 50 ml volumetric flask