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

HJ 503-2009

Replacing GB/T 7490-1987

**Water quality. Determination of volatile phenolic compounds.
4-AAP spectrophotometric method**

水质 挥发酚的测定 4-氨基安替比林分光光度法

(English Translation)

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Table of Contents

Foreword
1 Scope of application
2 Normative references
3 Terms and definitions
4 Principle of the method
5 Interference and elimination
5.1 Elimination of oxidants (such as free chlorine)
5.2 Elimination of sulfides
5.3 Elimination of organic or inorganic reducing substances such as formaldehyde and sulfite
5.4 Elimination of oils
5.5 Elimination of anilines
7 Instruments and equipment
8 Samples
8.1 Sample Collection
8.2 Sample storage
9 Analysis steps
9.1 Pre-distillation
9.2 Color rendering
9.3 Extraction
9.4 Absorbance measurement
9.5 Blank test
9.6 Calibration
10 Result calculation
11 Precision and accuracy
11.1 Precision
11.2 Accuracy
12 Quality Assurance and Quality Control
13 Principle of the method
14 Interference and elimination
15 Reagents and materials
16 Instruments and equipment

17	Samples
18	Analysis steps
18.1	Pre-distillation
18.2	Color development
18.3	Absorbance measurement
18.4	Blank test
18.5	Calibration
19	Calculation of results
20	Precision and accuracy
20.1	Precision
20.2	Accuracy
21	Quality Assurance and Quality Control

Foreword

To protect the environment and protect the human body in order 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 Health, standardize national environmental pollutant monitoring methods, and develop this standard.

This standard specifies the spectrophotometric method for the determination of volatile phenols in surface water, groundwater, drinking water, industrial wastewater and domestic sewage.

This standard is a revision of the "4-aminoantipyrine spectrophotometric method for the determination of volatile phenols in water" (GB 7490-87).

This standard was first published in 1987. The original standard drafting unit was Hangzhou Environmental Protection Monitoring Station. This is the first revision.

The main contents of this revision are as follows.

- Expanded the scope of application of the standard and clarified the applicable objects of the standard;
- Increased the optical path of the extraction spectrophotometric cuvette, reducing the detection limit;
- Improved the purification method of 4-aminoantipyrine and increased the purification method of phenol;
- Added quality assurance and quality control provisions.

The national environmental protection standard "Water quality approved and issued by the former National Environmental Protection Agency on March 14, 1987 since the implementation of this standard.

Determination of volatile phenols 4-Aminoantipyrine spectrophotometric method after distillation (GB 7490-87) was abolished.

Appendix A of this standard is a normative appendix, and Appendix B is an informative appendix.

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

This standard is mainly drafted by. Dalian Environmental Monitoring Center.

This standard was approved by the Ministry of Environmental Protection on October 20, 2009.

This standard has been implemented since December 1, 2009.

This standard is explained by the Ministry of Environmental Protection.

Determination of volatile phenols in water 4-aminoantipyrine spectrophotometry Warning. Ether is a low boiling, flammable and anesthetic organic solvent. There should be no open flame around and be ventilated.

In the cabinet operation, when the room temperature is high, the sample and ether should be cooled in the ice bath first, then the extraction operation should be carried out as soon as possible;

Alkanes are anesthetic and irritating organic solvents that are harmful to inhalation of vapors. Wear a gas mask and keep them in a ventilated place.

use.

1 Scope of application

This standard specifies 4-aminoantipyrine fractions for the determination of volatile phenols in surface water, groundwater, drinking water, industrial wastewater and domestic sewage.

Photometric method.

Surface water, groundwater and drinking water should be determined by extraction spectrophotometry. The detection limit is 0.000 3 mg/L, and the lower limit of determination is 0.001 mg/L.

The upper limit of determination is 0.04 mg/L.

Industrial wastewater and domestic sewage should be determined by direct spectrophotometry. The detection limit is 0.01 mg/L, and the lower limit of determination is

0.04 mg/L.

The upper limit is 2.50 mg/L.

For samples with a mass concentration higher than the upper limit of the standard measurement, the sample may be appropriately diluted.

2 Normative references

The contents of this standard refer to the terms in the following documents. For undated references, the valid version applies to this standard.

GB 7489-87 Determination of dissolved oxygen in water - Iodometric method HJ/T 91 Surface Water and Wastewater Monitoring Technical Specifications

3 Terms and definitions

The following terms and definitions apply to this standard.

Volatile phenolic compounds it is distilled with water vapor and can react with 4-aminoantipyrine to form a volatile phenolic compound of a colored compound, and the result is based on phenol.

Method 1 Extraction Spectrophotometry

4 Principle of the method

The volatile phenolic compound is distilled off by distillation and separated from the interfering substance and the fixing agent. Since the volatilization rate of phenolic compounds is it varies with the volume of the distillate, so the distillate volume must be equal to the sample volume.

The distilled phenolic compound reacts with 4-aminoantipyrine in the presence of potassium ferricyanide in a pH (10.0 ± 0.2) medium.

The orange-red antipyrine dye was produced and extracted with chloroform and the absorbance was measured at 460 nm.

5 Interference and elimination

Determination of oxidizing agents, oils, sulfides, organic or inorganic reducing substances and aniline interfering phenols.

5.1 Elimination of oxidants (such as free chlorine)

The sample appeared blue on the starch-potassium iodide test paper (6.23), indicating the presence of oxidant, and an excess of ferrous sulfate (6.2) could be added.