



**National Standard on Environmental Protection of the
People's Republic of China**

HJ 536-2009

Replaces GB 7481-87

**Water quality-Determination of ammonia
nitrogen—Salicylic acid spectrophotometry**

水质 氨氮的测定 水杨酸分光光度法

Issued on December 31, 2009

Implemented on April 1, 2010

Issued by Ministry of Environmental Protection

**Notice of Ministry of Environmental Protection of the People's Republic
of China**

2009 No. 77

In order to implement the *Environmental Protection Act of the People's Republic of China*, protect the environment and guarantee human health, hereby we approved and released the *Air and exhaust gas--Determination of ammonia--Nessler's reagent spectrophotometry* and other five standards as national environmental protection standards.

Standard names and standard numbers are as follows:

- I. *Ambient air and exhaust gas—Determination of ammonia—Nessler's reagent spectrophotometry* (HJ 533—2009);
- II. *Ambient air—Determination of ammonia—Sodium hypochlorite—salicylic acid spectrophotometry* (HJ 534—2009);
- III. *Water quality --Determination of ammonia nitrogen -- Nessler's reagent spectrophotometry* (HJ 535—2009);
- IV. *Water quality—Determination of ammonia nitrogen—salicylic acid spectrophotometry* (HJ 536—2009);
- V. *Water quality—Determination of ammonium nitrogen—Distillation-neutralization titration* (HJ 537—2009)

The above criteria have been implemented since April 1, 2010, which is published by China Environmental Science Press, The standards' content can be found at the website of the Ministry of Environmental Protection (bz.mep.gov.cn).

From the date of the implementation of the above criteria, the national environmental standards approved and published by the former State Environmental Protection Administration are abolished. The standard names, numbers are as follows:

- I. *Air quality—Determination of ammonia—Nessler's reagent colorimetric method* (GB/T 14668—93);
- II. *Air quality—Determination of ammonia—Sodium hypochlorite—salicylic acid spectrophotometry* (GB/T 14679—93);
- III. *Water quality—Determination of ammonium—Nessler's reagent colorimetric method*

(GB 7479—87);

IV. *Water quality—Determination of ammonium—salicylic acid spectrophotometry*

(GB 7481—87);

V. *Water quality- Determination of ammonium—Distillation and titration method*

(GB 7478—87)

Notice is hereby.

December 31, 2009

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Foreword

In order to implement the *Environmental Protection Act of the People's Republic of China* and the *Water Pollution Prevention Act of the People's Republic of China*, protect the environment, guarantee human health and standardize the monitoring methods of ammonia nitrogen in water, hereby we formulate this standard.

This standard specifies the determination of ammonia nitrogen in water by salicylic acid spectrophotometry

This standard is an amendment of *Water quality—Determination of ammonium- salicylic acid spectrophotometry* (GB 7481—87).

This standard was initially published in 1987 and the original standards drafting unit was Ganzhou Environmental Monitor Station of Jiangxi. This standard was amended for the first time. The main amendments are as follows:

—The name of the standard is amended from *Water quality—Determination of ammonium—Salicylic acid Spectrophotometry* method with to *Water quality—Determination of ammonium nitrogen—Salicylic acid spectrophotometry*.

—Added the determination method with 30mm cuvette which can reduce the detection limit and broaden the range of application of the method. Specified the lower and upper limits of determination of the method clearly

—Combined the calculation formulas of the results

—Modified the normative appendix

The *Water quality-Determination of ammonium-Salicylic acid Spectrophotometry* (GB 7481—87) approved and released by the original State Environmental Protection Agency on March 14, 1987 is abolished as the date of implementation of this standard.

Annex A of the Standard is normative, while Annex B is informative.

This Standard is organized and formulated by Department of Science, Technology and Standards, Ministry of Environmental Protection of the People's Republic of China.

This Standard is mainly drafted by the following units: Municipal Environmental Monitoring Center Station of Shenyang

The Standard is approved by the Ministry of Environmental Protection on December 31,

2009.

This code is implemented on April 1, 2010.

The Ministry of Environmental Protection is responsible for the interpretation of this Standard.

Water quality-Determination of ammonia nitrogen- Salicylic acid spectrophotometry

1 Scope of application

This standard specifies the determination of ammonia nitrogen in water by salicylic acid spectrophotometry

This standard applies to determination of ammonia nitrogen in groundwater, surface water, domestic sewage and industrial wastewater.

When the sample volume is 8.0 ml and the 10 mm cuvette is used, the detection limit of this method is 0.01 mg/L, and the determination lower limit is 0.04mg/L, and the determination upper limit is 1.0mg/L (expressed in N).

When the sample volume is 8.0 ml and the 30mm cuvette is used, the detection limit of this method is 0.004 mg/L, the determination lower limit is 0.016mg/L, and the determination upper limit is 0.25mg/L (expressed in N).

2 Method principle

Under the condition that the alkaline medium (pH=11.7) and the sodium nitroprusside exist, chemical reactions happen between the ammonia, ammonium ions and the salicylate and hypochlorite ions in water and blue compound is generated; and then measure the absorbancy with a spectrophotometer at 697nm.

3 Interference and elimination

This method applies to the possible interfering substance and quantity limit during water sample analysis, see Annex B for details.

Severe interferences generated by aniline and ethanol amine are rare and most interference is generally generated by primary amine. When it has chloramines and excessively high acidity and alkalinity or when it contains substances making hypochlorite ions reduction, interferences may generate

If the color of the water sample is too dark, or the salt is excessive, or when the masking ability of the potassium tartrate to the metal ions in the water sample is insufficient, or

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