

HJ

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

HJ 756-2015

**Water quality. Determination of butyl xanthate. UV
spectrophotometric method**

水质 丁基黄原酸的测定 紫外分光光度法

(English Translation)

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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 this standard is established for the determination of healthy, standardized butyl xanthogen in water.

This standard specifies the UV spectrophotometric method for the determination of butyl xanthogen in water.

This standard is the first release.

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

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

This standard is verified by. Nanjing Environmental Monitoring Center Station, Suzhou Environmental Monitoring Center Station, Ningbo Environmental Monitoring Station, Shanghai Pudong New Area Environmental Monitoring Station, Shanghai Putuo District Environmental Monitoring Station, Shanghai Textile Energy Conservation and Environmental Protection Center.

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 Water quality butyl xanthic acid determination by ultraviolet spectrophotometry

1 Scope of application this standard specifies the UV spectrophotometric method for the determination of butyl xanthogen in water.

This standard applies to the determination of butyl xanthogen in surface water, groundwater, domestic sewage and industrial wastewater.

The detection limit of this method is 0.004 mg/L, and the lower limit of determination is 0.016 mg/L.

2 Normative references

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

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

3 Terms and definitions

The following terms and definitions apply to this standard.

Butyl xanthate

Refers to the general name of the hydrocarbon-based xanthogenate in the sample measured under the conditions specified in this standard, based on butyl xanthogen.

4 Principle of the method

Butyl xanthogen is a hydrolysis product of xanthogenate. Butyl xanthate has a maximum absorption peak in the ultraviolet wavelength range, at pH5 interference and elimination the suspended insoluble matter in the water sample will cause interference, and the water sample to be tested is filtered through a 0.45 µm filter to remove the interference.

Nitrate has a positive interference at the absorption peak at 301 nm, but it can be offset during the experiment before and after the acid decomposition.

Influence measurement.

When the interference of the chromaticity of the sample cannot be removed, other method standards should be used.

6 Reagents and materials

Analytically pure reagents in accordance with national standards were used for analysis, and the experimental water was newly prepared deionized water or steamed unless otherwise stated.

Distilled water.

6.1

Hydrochloric acid. $\rho(\text{HCl}) = 1.19 \text{ g/ml}$.

6.2

Hydrochloric acid solution. 1 1.

6.3

Hydrochloric acid solution. $c(\text{HCl}) = 0.01 \text{ mol/L}$.

Take 0.4 ml of hydrochloric acid (6.1) and dilute to 500 ml with water.

6.4

Sodium hydroxide solution. $c(\text{NaOH}) = 0.01 \text{ mol/L}$.

Weigh 0.2 g of sodium hydroxide in a small amount of water and dilute to 500 ml.

26.5 Saturated sodium bicarbonate solution.

Weigh more than 9.6 g (at 20 ° C) sodium bicarbonate dissolved in 100 ml of water, should ensure that the bottom of the reagent bottle has sodium bicarbonate crystal precipitation.

6.6

butyl xanthogen standard stock solution. $\rho(\text{C}_4\text{H}_9\text{OCSSH}) = 100 \text{ }\mu\text{g/ml}$.

Accurately weigh 0.0330 g (accurate to 0.1 mg) potassium butyl xanthate ($\text{C}_4\text{H}_9\text{OCSSK}$, content >95%) in a small amount of water, Transfer to a 250 ml brown volumetric flask and bring to volume. It can be stored in a refrigerator at 4 ° C for one week.

Note 1: Butyl xanthate is easily decomposed by moisture, and the standard substance should be placed in a dark place and sealed.

6.7

Standard use solution of butyl xanthic acid. $\rho(\text{C}_4\text{H}_9\text{OCSSH}) = 4.00 \text{ }\mu\text{g/ml}$.

Pipette 10.00 ml of butyl xanthogen standard stock solution (6.6) into a 250 ml brown volumetric flask and dilute to volume with water.

Available at the time of use.

6.8

Wash the solution.

Add 400 ml water, 100 ml 95% ethanol, 50 ml hydrochloric acid (6.1) to a 1000 ml container, mix and store in a reagent bottle.

Save.

Note 2: All glassware used should be cleaned with a cleaning solution and laboratory water.

7 Instruments and equipment

Unless otherwise stated, the analysis used a Class A glass gauge in accordance with national standards.

7.1

UV-Vis spectrophotometer with 30 mm quartz cuvette.

7.2

Filter, 0.45 μm .

7.3

Brown volumetric flask, 250 ml.

7.4

with a colorimetric tube, 25 ml.

7.5

Common instruments in general laboratories.

8.1 Sample collection and preservation

The sample was collected in a brown glass bottle, and the pH of the water sample was adjusted with hydrochloric acid solution (6.3) or sodium hydroxide solution (6.4) immediately after collection.

Neutral, refrigerated at around 4 °C, complete sample analysis within 3 days.

8.2 Preparation of samples

The collected sample to be tested is turbid or contains insoluble substances, and it needs to be filtered with a 0.45 μm filter to remove the interference of insoluble substances.