

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

HJ 698-2014

**Water quality. Determination of chlorothalonil and deltamethrin.
Gas chromatography method**

水质 百菌清和溴氰菊酯的测定 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 determination method of chlorothalonil and deltamethrin in water.

This standard specifies gas chromatography for the determination of chlorothalonil and deltamethrin 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. Taizhou Environmental Monitoring Center Station.

This standard method verification unit. Jiangsu Environmental Monitoring Center, Nanjing Environmental Monitoring Center Station, Suzhou Environmental Monitoring Central Station, Wuxi Environmental Monitoring Center Station, Changzhou Environmental Monitoring Center and Taizhou Environmental Monitoring Center Station.

This standard was approved by the Ministry of Environmental Protection on March 31, 2014.

This standard has been implemented since July 1, 2014.

This standard is explained by the Ministry of Environmental Protection.

Water quality - Determination of chlorothalonil and deltamethrin - Gas chromatography
Warning. The reagents and standard solutions used in this method are volatile toxic compounds. The preparation process should be in the fume hood.

Carry out; protective equipment should be worn as required to avoid contact with skin and clothing.

1 Scope of application

This standard specifies the gas chromatographic method for the determination of chlorothalonil and deltamethrin in water.

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

When the sample amount is 100ml, the detection limit of this standard method is. chlorothalonil is 0.07µg/L, and deltamethrin is 0.40µg/L;

Lower limit of determination. chlorothalonil was 0.28 µg/L, and deltamethrin was 1.60 µg/L.

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.

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

3 Principle of the method

The chlorothalonil and deltamethrin in the sample were extracted with n-hexane, and the extract was dehydrated, concentrated, and made up to volume with anhydrous sodium sulfate.

Phase Chromatograph - Electron Capture Detector (ECD) separation, detection, qualitative according to retention time, external standard method for quantification.

4 Interference and elimination

Due to its high sensitivity, the electron capture detector is prone to interference due to a large number of impurity peaks. When the target compound is detected, Apply column 2 to aid in qualitative confirmation to eliminate interference.

5 Reagents and materials

Unless otherwise stated, analytically pure reagents and distilled water in accordance with national standards were used for the analysis.

5.1

n-hexane. pesticide residue level.

5.2

chlorothalonil standard solution. rho = 100mg/L, the solvent is petroleum ether.

5.3

Deltamethrin standard solution. rho = 100mg/L, the solvent is petroleum ether.

5.5 Anhydrous sodium sulfate (Na₂SO₄)

After burning at 400 ° C for 4 h, it was cooled and placed in a ground glass bottle and stored in a desiccator.

5.6 Sodium chloride (NaCl)

After burning at 400 ° C for 4 h, it was cooled and placed in a ground glass bottle and stored in a desiccator.

5.7 Sodium sulfate solution. $c(\text{Na}_2\text{SO}_4) = 1.0 \text{ mol/L}$.

Weigh 142 g of sodium sulfate (5.5) in a small amount of water and dilute to 1000 ml.

5.8 Nitrogen. purity $\geq 99.999\%$.

6 Instruments and equipment

6.1

Gas Chromatograph. With an electron capture detector.

6.2

Column 1. Quartz capillary column, 30m x 0.25mm, coated with 5% phenylmethylpolysiloxane, film thickness 0.25 μm .

Or other equivalent capillary column.

6.3

Column 2. Quartz capillary column, 30m x 0.25mm, coated with 35% phenylmethylpolysiloxane, film thickness 0.25 μm .

Or other equivalent capillary column.

6.4

Concentration device. Rotary evaporation device or equivalent equipment such as KD concentrator and concentrator.

6.5

Oscillator.

6.6

Separating funnel. 100 ml, 250 ml.

6.7

Microinjector. 10 μl , 50 μl , 100 μl .

6.8

Drying column. glass column with a length of 250mm and an inner diameter of 20mm, and the glass piston is not coated with lubricating oil. At the lower end of the column, put A small amount of glass wool or glass fiber filter paper was added to 10 g of anhydrous sodium sulfate (5.5). Or use other types of drying equipment.