

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

HJ 851-2017

**Water quality - Determination of methomyl and methomyl-oxime
- High performance liquid chromatography**

水质 灭多威和灭多威肟的测定 液相色谱法

(English Translation)

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Foreword

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 the Prevention and Control of Water Pollution, the protection of human health, regulate the water Dugu Wei and methomyl oxime determination method, the development of this standard.

This standard specifies the determination of methotrexate and methotrexate in water by liquid chromatography.

This standard is the first release.

Appendix A to this standard is an informative appendix.

This standard is organized by the Environmental Monitoring Department of the Ministry of Environmental Protection and the Department of Science and Technology Standards.

The main drafting unit of this standard. Qingdao Environmental Monitoring Center Station and Qingdao University of Technology.

The main verification unit of this standard. Ministry of Agriculture, agricultural quality and safety supervision and inspection test center (Qingdao), Shandong Province Environmental Supervision Measuring center station, Jinan City Environmental Monitoring Center Station, Tai'an City Environmental Protection Monitoring Station, Liaoning North Environmental Testing Technology Co., Ltd.

Division and Qingdao in a monitoring Limited.

The environmental protection department of this standard approved on August 28, 2017.

This standard has been implemented since November 1, 2017.

This standard is explained by the Ministry of Environmental Protection.

Determination of water quality of methomyl and methotrexate by liquid chromatography
Warning. methomyl and methomyloxime has some toxicity, the standard solution should be prepared in the operation of the fume hood, the operation should be in accordance with regulations it is required to wear protective equipment to avoid contact with skin and clothing.

1 Scope of application

This standard specifies the determination of methotrexate and methotrexate in water by liquid chromatography.

This standard applies to the determination of methomyl and methotrexate in surface water, groundwater, domestic sewage and industrial waste water.

When the injection volume was 50 μL , the detection limit of methomyl and methomyxime was 1 $\mu\text{g/L}$, and the lower limit of determination was 4 $\mu\text{g/L}$.

2 Normative reference documents

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

Technical specification for surface water and wastewater monitoring Technical specification for groundwater environmental monitoring

3 Principle of the method

The methotrexate and methotrexate in water were injected directly by liquid chromatography with an ultraviolet detector. According to the reservation Qualitative and external standard method.

4 Interference and elimination

When the organic matter coexisting in the water sample interferes with the determination of the target compound can be determined by changing the chromatographic conditions, so that methomyl and methomyl Separate from the disturbance, or remove the water sample with n-hexane extraction to remove part of the interference, take the water phase for analysis.

5 Reagents and materials

Unless otherwise stated, analytical reagents conforming to national standards are used in the analysis. The test water is pure water containing no organic matter.

5.1

Hydrochloric acid. $\rho(\text{HCl}) = 1.18 \text{ g/ml}$.

5.2

hydrochloric acid solution. $c(\text{HCl}) = 0.1 \text{ mol/L}$.

Accurately remove 3.1 ml of hydrochloric acid (5.1) in a small amount of water and dilute to 1 L.

5.3

sodium hydroxide (NaOH). excellent grade pure.

5.4

Sodium hydroxide solution. $c(\text{NaOH}) = 0.1 \text{ mol/L}$.

Accurately weighed 4.0 g of sodium hydroxide dissolved in a small amount of water, diluted to 1 L.

5.5

Acetonitrile (CH₃CN). Liquid Chromatography Pure.

5.6

methomyl. purity $\geq 98\%$.

5.7

methomyloxime. purity $\geq 98\%$.

5.8

methomyl and methomyloxime mixed standard stock solution. $\rho = 100 \mu\text{g/ml}$.

Were weighed 0.010 g (exact to 0.1 mg) methotrexate (5.6) and methotrexate (5.7), dissolved in acetonitrile (5.5) to 100 ml, frozen at 4 °C, protected from light, can be stored for 12 months, or directly to buy a certified standard solution.

5.9

Methomyl and methomyloxime mixed standard liquid. $\rho = 10.0 \mu\text{g/ml}$.

2 Accurately remove 1.00 ml of methomyl and methotrexate standard stock solution (5.8) and dilute to 10 ml with water.

6 Instruments and equipment

6.1

Sampling vials. 100 ml brown glass jar with a mouth plug.

6.2

Liquid Chromatograph. with UV detector or diode array detector.

6.3

Columns. 5 μm ODS with a column length of 25 cm, an internal diameter of 4.6 mm, or other equivalent columns.

6.4

Micro Samplers. 10 μl , 50 μl and 100 μl .

6.5

Filtration. 0.22 μm Teflon or nylon microporous membrane.