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HJ

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

HJ1018-2019

**Water quality - Determination of sulfonylurea pesticides - High
performance liquid chromatography**

水质 磺酰脲类农药的测定 高效液相色谱法

(English Translation)

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Foreword

Protect the ecology for the implementation of 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 the environment, the protection of human health, the determination of sulfonylurea pesticides in water, the development of this standard.

This standard specifies high performance liquid chromatography for the determination of sulfonylurea pesticides in water.

This standard is the first release.

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

This standard is formulated by the Department of Eco-Environmental Monitoring, the Department of Regulations and Standards of the Ministry of Ecology and Environment.

This standard was drafted. Qingdao Environmental Monitoring Center Station and Qingdao Technological University.

This standard is verified by. Agricultural Products Quality and Safety Supervision, Inspection and Testing Center (Qingdao), Weihai City Environment Protection monitoring station, Tai'an Environmental Protection Monitoring Station, Zibo Environmental Monitoring Station, Qingdao Hua Testing Technology Co., Ltd. and Mountain Dong Hengcheng Testing Technology Co., Ltd.

This standard is approved by the Ministry of Ecology and Environment on April 13, 2019.

This standard has been implemented since September 1, 2019.

This standard is explained by the Ministry of Ecology and Environment.

Water quality - Determination of sulfonylurea pesticides - High performance liquid chromatography Warning. The organic solvents and standard solutions used in the experiments have certain toxicity and volatility, reagent preparation and sample preparation.

Cheng should be carried out in a fume hood, and protective equipment should be worn as required to avoid contact with skin and clothing.

1 Scope of application

This standard specifies high performance liquid chromatography for the determination of sulfonylurea pesticides in water.

This standard applies to surface water, groundwater, domestic sewage and industrial wastewater in nicosulfuron, thifensulfuron, metsulfuron-methyl, sulfometurm Determination of 10 Sulfonylurea Pesticides such as Long, Etherbensulfuron, Chlorosulfuron, Amisulfuron,

Bensulfuron, Pyrazosulfuron and Chlorsulfuron set.

With direct injection, when the injection volume is 50 µl, the detection limit of the method is 0.006 mg/L to 0.009 mg/L, and the lower limit of determination is 0.024 mg/L to 0.036 mg/L; using liquid-liquid extraction or solid phase extraction, sampling 250 ml, the sample has a constant volume of 1.0 ml, and the sample is injected.

When the volume is 20 µl, the detection limit is 0.05 µg/L to 0.09 µg/L, and the lower limit of determination is 0.20 µg/L to 0.36 µg/L. See the appendix for details.

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.

quasi.

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 sample is separated by direct injection, liquid-liquid extraction or solid phase extraction, and separated by high performance liquid chromatography with a UV detector.

According to the retention time qualitative, the external standard method is quantitative.

4 Interference and elimination

4.1

When the water sample contains organic matter that interferes with the determination of the target compound, it can be purified by changing the chromatographic conditions or using a silica gel column.

Except for some interference.

4.2

Under the conditions of this standard, bensulfuron-methyl with bensulfuron-methyl, ethersulfuron and metsulfuron-methyl, ethoxysulfuron and chlorsulfuron, 3,6-dichloro Peak concentration of -2-methoxybenzoic acid (dicamba) with metsulfuron-methyl, 4-(2,4-dichlorophenoxy)-butyric acid (2,4-DB) and chlorsulfuron-methyl Stacking, interference with the measurement.

5 Reagents and materials

Unless otherwise stated, analytically pure reagents that meet national standards were used for the analysis, and the experimental water was pure water containing no target.

5.1

Phosphoric acid. $\rho(\text{H}_3\text{PO}_4) = 1.69 \text{ g/ml}$.

5.2

sodium thiosulfate ($\text{Na}_2\text{S}_2\text{O}_3$).

5.3

Sodium chloride (NaCl).

After burning at 400°C for 2 h, after cooling, it was sealed and stored in a ground glass bottle.

5.4

anhydrous sodium sulfate (Na_2SO_4).

After burning at 400°C for 2 h, after cooling, it was sealed and stored in a ground glass bottle.

5.5

sodium hydroxide (NaOH).

5.6

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

Weigh 0.4 g of sodium hydroxide (5.5) dissolved in water and dilute to 100 ml with water.

5.7

Acetonitrile (CH_3CN). Pure by liquid chromatography.

5.8

Methanol (CH_3OH). pesticide residue grade.

5.9

Dichloromethane (CH_2Cl_2). pesticide residue grade.

5.10

Acetonitrile solution. 20 80.

Mix 20 ml of acetonitrile (5.7) with 80 ml of water.