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**INDUSTRY STANDARD OF THE
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**Water quality. Determination of Atrazine. High performance
liquid chromatography**

水质 阿特拉津的测定 高效液相色谱法

(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 to develop and standardize the monitoring methods for atrazine in water.

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

This standard was first developed.

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. Jiangsu Environmental Monitoring Center, Zhejiang Environmental Monitoring Center, Shanghai Environmental Monitoring Center, Nanjing Environment Monitoring Center Station, Shanghai Municipal Center for Disease Control and Prevention.

This standard was approved by the Ministry of Environmental Protection on September 20, 2010.

This standard has been implemented since December 1, 2010.

This standard is explained by the Ministry of Environmental Protection.

Determination of water quality atrazine by high performance liquid chromatography

1 Scope of application

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

This standard applies to the determination of atrazine in surface water and groundwater.

When the sample volume is 100 ml, the detection limit of this method is 0.08 µg/L, and the lower limit of determination is 0.32 µg/L.

2 Principle of the method

The method extracts atrazine in water with dichloromethane, and the extract is dried over anhydrous sodium sulfate, and concentrated to near dryness with methanol in a concentrator.

The volume was measured by a high performance liquid chromatograph with a UV detector. Characterize by retention time and quantify by external standard method.

3 Interference and elimination

There may be co-existing organic matter interference measurements on the UV detector in the water sample, and the Atrazine and interference can be made by changing the chromatographic conditions.

Separate the object or select a diode array detector for qualitative confirmation.

4 Reagents and materials

Unless otherwise stated, analytically pure reagents and distilled water containing no organic materials were used in the analysis.

4.1

Methanol, HPLC grade.

4.2

Dichloromethane, pesticide residue grade.

4.3

Atrazine standard stock solution, $\rho = 100 \mu\text{g/ml}$.

Accurately weigh 0.010 0 g of atrazine standard sample, dissolve it with a small amount of dichloromethane, and then determine the volume to 100 ml with methanol.

Standard stock solution for Atrazine. Store in a refrigerator at 4 ° C for half a year.

4.4

Atrazine standard use solution, $\rho = 10.0 \mu\text{g/ml}$.

Take Atrazine standard stock solution (4.3) 1.00 ml in a 10.0 ml volumetric flask, make up to volume with methanol, mix well, and prepare for standard use.

Solution. Store in a refrigerator at 4 ° C for half a year.

4.5

Anhydrous sodium sulfate. burned at 400 ° C for 4 h, cooled and sealed in a glass bottle.

4.6

Sodium chloride. ignite at 400 ° C for 4 h, cool and store in a glass bottle.

5 Instruments and equipment

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

5.1

High Performance Liquid Chromatograph. A tunable wavelength UV detector or diode array detector.

5.2

Column. Packing is 5.0 μm ODS, column length is 200 mm, inner diameter is 4.6 mm

reversed phase column or other similar performance column.

5.3

Oscillator. Adjustable speed.

5.4

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

5.5

separatory funnel. 250 ml.

5.6

Common instruments in general laboratories.

6.1 Acquisition and preservation

Samples should be collected in brown glass containers. The water sample should be filled with the sample bottle and sealed, placed in a refrigerator at 4 ° C to protect from light. After sampling the sample should be extracted within 7 days.

6.2 Preparation of samples

A 100 ml sample was weighed into a 250 ml separatory funnel using a graduated cylinder, and shaken by adding 5 g of sodium chloride (4.6). With 20 ml of dichloromethane (4.2) Two extractions, 10 ml each, were shaken well for 5 min on an oscillator (5.3). Note the manual shaking and deflation. After standing and layering, there will be the machine phase was passed through a funnel containing anhydrous sodium sulfate (4.5) to a concentrated bottle, taking care to rinse thoroughly with anhydrous sodium sulfate. Combine two dichlorocarbs Alkane extract. Concentrate to near dryness with a concentrator (5.4) and dilute to 1.00 ml with methanol (4.1) for analysis. The sample is stored in a refrigerator at 4 ° C in the middle, the analysis was completed within 40 days.

Note: When the sample is concentrated during the concentration process, it should be immediately fixed to volume when it is concentrated to near dryness, otherwise Atrazine will have a large loss.

7.2.1 Preparation of the standard series

Take different amounts of Atrazine standard use solution (4.4), dilute with methanol (4.1), and make a concentration of 0.030, 0.050, 0.100, the standard series of 0.500 and 1.00 µg/ml are stored in brown vials and stored in a refrigerator at 4 ° C.