

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

HJ 926-2017

**Specifications and test procedures for automatic on-line
monitoring of mercury in water**

汞水质自动在线监测仪技术要求及检测方法

(English Translation)

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Foreword

In order to implement the "Law of the People's Republic of China on Environmental Protection" and the "Law of the People's Republic of China on Prevention and Control of Water Pollution", protect the environment, Protection of human health, regulate mercury automatic online monitor technical performance, the development of this standard.

This standard specifies the technical requirements, performance indicators and detection methods of mercury automatic online monitor.

This standard is released for the first time.

This standard by the Environmental Protection Department of Environmental Monitoring Division and Science and Technology Standards Division to develop.

This standard was drafted. China Environmental Monitoring Station.

This standard MEP approved on December 28, this standard since April 1, 2018 come into operation.

This standard is interpreted by the MEP.

Mercury water quality automatic on-line monitor technical requirements and testing methods

1 Scope of application

This standard specifies the technical requirements, performance indicators and detection methods of mercury automatic online monitor.

This standard applies to the production of mercury automatic online monitor design, application selection and performance testing.

For applications in different occasions Mercury automatic online water quality monitor (hereinafter referred to as "instrument"), this standard specifies the two types Instrument range.

The range of type I instruments is 0 ~ 0.002 mg/L, which is mainly used for the monitoring of surface water, groundwater and drinking water.

The measuring range of II type instruments is 0 ~ 0.1 mg/L, which is mainly used for the monitoring of domestic sewage and industrial wastewater.

2 Normative references

This standard references the following documents or the terms. For undated references, the effective version applies to this standard.

GB 4208 enclosure protection (IP code) GB/T 12519 analytical instruments General technical conditions HJ 212 Pollutants Online Monitoring (Monitoring) System Data Transfer Standard HJ 597 Water quality - Determination of total mercury - Cold atomic absorption spectrophotometric method HJ/T 341 Water quality - Determination of mercury - Cold atomic fluorescence method (Trial)

3 Terms and definitions

The following terms and definitions apply to this standard.

Indication error

The relative error between the measured value and the true value of the instrument.

Limit of quantification the instrument can measure the minimum concentration of the substance under the premise of meeting the indication error requirement.

Precision

Under the specified test conditions, the degree of agreement between the test results of multiple instruments.

Zero drift zero drift Under the premise of unplanned manual maintenance and calibration of the instrument, the continuous measurement of the concentration value according to the specified period is the detection Range of the lower limit of the standard solution, the measured value of the instrument and the initial value of the maximum change relative to the upper limit of the detection range of the relative deviation.

Range drift Under the premise of unplanned manual maintenance and calibration of the instrument, the continuous measurement of the concentration value according to the specified period is the detection Range of the upper limit of 80% of the standard solution, the measured value of the instrument and the maximum change between the initial value

relative to the detection range Surrounding the upper limit of the relative deviation.

Environmental temperature stability Instrument in different ambient temperature measurement standard solution, the measured value and the reference value of the indication error.

Ion interference

Instrument to join the interference ion standard solution was measured, the measured value and the true value of the indication error.

Memory effect

Instrument to complete a standard solution or water samples measured after the next measurement results.

Spike recovery Instruments were measured before and after the addition of a certain concentration of the standard solution of the actual water samples, calculated after adding the standard solution measured value the percentage increase relative to the theoretical amount added.

3.10

Data efficient availability of data in the minimum maintenance cycle indication error to meet the requirements of the test data as a percentage of all test data.

3.11

Consistent conformity the degree of parallelism of multiple instruments measured under the same test conditions.

3.12

Minimum maintenance period in the testing process does not carry out any form of manual maintenance of the instrument (including the replacement of reagents, calibration equipment, maintenance equipment Etc.) until the instrument can not maintain the normal measurement state or the total running time (h) when the measurement result does not meet the relevant requirements.

3.13

Check with standard solution Instrument measurement standard solution, to determine the accuracy of measurement results.

3.14

Running log running record During the operation of the instrument automatically records the test conditions, fault, maintenance and other status information and routine calibration, parameter changes and other maintenance records.

4.1 Instrument composition

The basic components of the instrument shown in Figure 1, mainly contains the following units.

Figure 1 The basic components of the instrument

Injecting/measuring unit. Including water sample, standard solution, reagents and other parts of the introduction (aqueous sample channel and standard solution) and measurement section.

Digestion Unit. A unit that converts mercury and its compounds in a water sample to mercury ions.

Analysis unit. the reaction module and the detection module to complete the automatic analysis of the substance to be tested on the part.

Control unit. including system control hardware and software, control equipment sampling, testing and other components of the process of action, the Measured value is converted into electrical signal output, complete data processing, transmission part.

4.2 Basic requirements

4.2.1

The identification of the instrument shall comply with the requirements of GB/T 12519, the nameplate shall be fixed in an appropriate and obvious place, Have the following logo.

- a) manufacturer's name and address;
- b) instrument name, model specifications;
- c) factory number;
- d) date of manufacture;
- e) detection range, lower limit of quantification;
- f) Working conditions.

4.2.2

The monitor should be free from stains and damage. All display interface should be Chinese, and the characters are uniform, clear, no hidden corners of the screen, Dark spots, rainbow, bubbles, flickering and other phenomena, according to the display prompts for full program operation.

4.2.3

chassis shell should be made of corrosion-resistant materials, no cracks on the surface, deformation, pollution, burrs and other phenomena, the surface coating Uniform,