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

HJ 872-2017

**Ambient air. Determination of chlorine and other hazardous air
pollutants in emergency monitoring. Electrochemical sensor
method**

环境空气 氯气等有毒有害气体的应急监测 电化学传感器法
(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 Atmospheric Pollution, protect the environment and protect people Physical health, standardize environmental air emergency monitoring work, the development of this

standard.

This standard specifies the determination of ambient air chlorine, hydrogen sulfide, hydrogen chloride, carbon monoxide, hydrogen cyanide, phosgene, hydrogen fluoride, ammonia and Sulfur dioxide and other 9 kinds of harmful gas electrochemical sensor method.

Appendix A of this standard is an informative annex.

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. Shenyang Environmental Monitoring Center Station, Tsinghua University.

This standard was approved by the MEP on November 28, 2017.

This standard since January 1, 2018 come into operation.

This standard is interpreted by the MEP.

1 Ambient air chlorine and other toxic and hazardous gases emergency monitoring electrochemical sensor method Warning. The standard gases used in this method are toxic and should be avoided from direct contact and inhalation. The standard gas used should be properly stored and used Standard gas or on-site emergency monitoring should pay attention to its own protection.

1 Scope of application

This standard specifies the determination of ambient air chlorine, hydrogen sulfide, hydrogen chloride, carbon monoxide, hydrogen cyanide, phosgene, hydrogen fluoride, ammonia and Sulfur dioxide and other 9 kinds of harmful gas electrochemical sensor method.

This standard is qualitative and semi-quantitative method for the ambient air chlorine, hydrogen sulfide, hydrogen chloride, carbon monoxide, hydrogen cyanide, phosgene, Hydrogen fluoride, ammonia and sulfur dioxide and other harmful gases on-site emergency monitoring, as well as screening, census and other preliminary investigations.

The common measurement range of the target is shown in Appendix A.

2 Normative references

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

HJ 589 emergency environmental monitoring technical specifications

3 Method principle

The toxic and harmful gases in the air enter the electrochemical sensor. The electrochemical sensor utilizes the electrochemical activity of the target and oxidizes it or the original, in a certain range, produce an electrical signal proportional to the concentration of the target, so as to obtain the concentration of the target.

The method of measuring the target is shown in Appendix A.

4 Interference and elimination

Dust, moisture, coexistence of the same or similar chemical properties and susceptible to oxidation or reduction of substances may target the determination of dry Disturbance, determination, according to the situation to choose to increase the corresponding pretreatment tube. Refer to Appendix A for the interference and elimination of the target.

5 Reagents and materials

5.1

Standard gas. The use of commercially available standard gas or the use of static volume ratio of mixed or dynamic volume ratio of mixed preparation.

5.2

Zero calibration gas. nitrogen (purity greater than 99.99%) or pure dry air.

6.1 Gas detector

2 gas detector with electrochemical sensor.

6.2 Pretreatment tube

Drying tube, oxidation tube and filter tube.

6.3 Air bag

Volume of not less than 3L, lining material should be used on the measured object of inert material.

6.4 Glass syringe

The volume is 100 ml, which is used when the field is not suitable for direct measurement or needs dilution of the sample.

7.1 Point layout

According to the HJ 589 point layout.

7.2 Sensor check

Check whether the configuration of the sensor can meet the needs of on-site testing, is in use valid period.

7.3 Gas detector inspection

Check gas detector status is normal, the battery is sufficient or if the filter needs to be replaced.

7.4 Air bag inspection

Airtight bag should be checked before use.

8.1 Zero verification

Instrument is turned on stable, access to zero calibration gas or relatively clean ambient air check instrument zero.

8.2 Pretreatment tube connection

Moisture interference target determination of the need to connect the drying tube; dust interference target connected to the filter tube to be measured; other substances interfere with the target Material determination can be selected according to the circumstances to connect the filter tube or oxidation tube.

8.3 Direct measurement

In accordance with the instructions set forth in the operation method of continuous determination of gas to be measured, showing the value of stability, record the measurement results, continuous determination of 2 Times, after the measurement is finished, clean the gas circuit with zero calibration gas or relatively clean ambient air, check the zero point, and then turn off the instrument.

8.4 Indirect determination

3 When the field environment is not suitable for direct measurement, collect it with a glass syringe (6.4) and transfer the sample to an air bag (6.3) Environment determination, of the same manner as 8.3. Air bags used before the first flush with the scene gas 3 to 5 times. When the target concentration is too high, over Instrument range, the glass syringe can be used and the collection bag, with nitrogen or relatively clean ambient air after the sample