

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

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**Ambient air and stationary source emission - Specifications and test
procedures for volatile organic compounds components portable
monitoring instrument based on FTIR method**

环境空气和废气 挥发性有机物组分便携式傅里叶红外监测仪技术要求及检测方法
(English Translation)

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Foreword

To protect the "Environmental Protection Law of the People's Republic of China" and the "Air Pollution Control Law of the People's Republic of China" Environment, protect human health, regulate ambient air and fixed pollution sources, volatile organic compounds, portable Fourier red the performance and quality of the external monitor are formulated in accordance with this standard.

This standard specifies the main technical requirements, test items and test items of the portable organic Fourier infrared monitor for volatile organic compounds.

Detection method.

This standard is the first release.

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. China Environmental Monitoring Station.

This standard is approved by the Ministry of Ecology and Environment on December 29, 2018.

This standard has been implemented since July 1, 2019.

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

1 Ambient air and exhaust gas volatile organic components portable Fourier infrared monitoring Tester technical requirements and test methods

1 Scope of application

This standard specifies the composition, technical requirements and performance of the portable organic Fourier infrared monitor for volatile organic compounds.

Indicators and test methods.

This standard applies to ambient air and fixed pollution source exhaust volatile organic components portable FT-IR monitor (hereinafter referred to as "instrument") design, production and testing.

For the instruments used in different occasions, the detection range of the corresponding instrument is specified. For environmental air pollution accident emergency Instrumentation for monitoring This standard is called Type I instrument and is used to fix the instrument for monitoring the emission of waste gas. This standard is called Type II instrument.

2 Normative references

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

GB/T 4208 enclosure protection grade (IP code) GB/T 16157 Determination of particulate matter in fixed pollution source exhaust gas and sampling method of gaseous pollutants HJ 168 Technical Guidelines for Standardization and Revision of Environmental Monitoring and Analysis Methods

3 Terms and definitions

The following terms and definitions apply to this standard.

Instrument detection limit the instrument can qualitatively detect the minimum concentration of the substance to be tested from the sample within a given confidence level.

Quantitative measurement repeatability Under a set of repetitive measurement conditions, based on the measurement precision of the indication value of the component to be tested, the instrument is continuously measured multiple times.

The same standard substance is expressed based on the relative standard deviation of the indication values of one or more of the components to be tested.

Parallel instrumentation parallelism Under the same environmental conditions, the relative standard deviation of the measurement results of the same test object by two sets of the

same type of system.

23.4

Response time

From the moment the sample probe is introduced to the standard gas, to the time when the analyzer value reaches 90% of the standard gas nominal value.

The middle interval. Includes pipeline transmission time and meter response time.

4.1 Overall structural composition of the instrument

The instrument structure mainly includes sample collection and transmission unit, sample pretreatment unit, analysis unit, data acquisition and processing.

Unit, auxiliary equipment, etc. Depending on the instrument's measurement method, the instrument may have all or part of the above structure.

4.2 Sample Collection and Transfer Unit

It mainly includes sampling probe, sample transmission pipeline, flow control equipment and sampling pump. For the specific technical requirements, see 5.1.4.

And 5.2.4.1.

4.3 Sample Pretreatment Unit

It mainly includes sample filtration equipment, etc.; the material and installation of the pretreatment equipment should not affect the instrument measurement, and its specific technology See 5.2.4.2.

4.4 Analysis unit

It is used to measure and analyze the collected samples. The specific technical requirements are given in 5.2.4.3.

Note: The type of substance that the instrument can analyze depends on the instrument's monitoring substance database.

4.5 Data Acquisition and Processing Unit

Used to collect, process, and store monitoring data, and to transmit monitoring data and device operating status according to central computer commands Information; specific technical requirements for the data acquisition and processing unit are given in 5.2.4.5.

4.6 Auxiliary equipment

The portable instrument adopts the extraction measurement mode, and its auxiliary equipment mainly includes exhaust gas discharge device, purge purification and its control System and condensate discharge device.

5.1.1 General requirements

Same as 5.2.1.

35.1.2 Working conditions

Same as 5.2.2.

5.1.3 Security requirements Same as 5.2.3.

5.1.4 Functional requirements in addition to the sample collection and transmission unit heating, insulation and filtration functions, and the sampling pump to overcome the negative pressure function must not be required in addition, the remaining requirements are the same as 5.2.4. The sample collection and transmission unit has a heating function, and the heating temperature is generally not lower than 120 ° C, and above the sampling pressure of the gas sample water dew point value or hydrocarbon dew point value (whichever is the maximum) 20 ° C or more, the actual temperature value should be displayed in the instrument.

5.2 Type II instrument technical requirements

5.2.1 Appearance requirements

5.2.1.1 The instrument shall have a nameplate, and the nameplate shall be marked with the name, model number, production unit, factory number, date of manufacture, etc. information.

5.2.1.2 The surface of the instrument should be intact, no obvious defects, each zero, the parts are connected reliably, and the operation keys and buttons are used.

Flexible and accurate positioning.

5.2.1.3 The instrument panel is clearly displayed, the color is firm, the characters and logos are easy to identify, and there should be no shortage of readings.

trap.

5.2.1.4 The outer casing or cover of the instrument shall be corrosion-resistant, well sealed, dust-proof and rain-proof. The instrument shall at least reach GB/T 4208.

Medium IP55 protection level requirements.