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

HJ 692-2014

**Stationary source emission. Determination of nitrogen oxides.
Non-dispersive infrared absorption method**

固定污染源废气 氮氧化物的测定 非分散红外吸收法

(English Translation)

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Foreword

To implement the "People's Republic of China Environmental Protection Law" and "People's Republic of China Air Pollution Prevention Law," guard ring Environment, protect people's health, specifications fixed monitoring methods source emission of nitrogen oxides, the development of this standard.

This standard specifies the determination of stationary sources of nitrogen oxides in the exhaust gas Central Africa dispersive infrared absorption method.

This standard is the first release.

This standard is developed by the Ministry of Environmental Protection Science, Technology organization.

This standard drafting units. China National Environmental Monitoring Center, Shanghai Environmental Monitoring Center, Hebei Province Environmental Monitoring Center.

The standard verification unit. Environmental Monitoring Center Station of Hebei Province, Shenyang Environmental Monitoring Central Station, Hubei environmental monitoring Heart

Station, Guiyang Municipal Environmental Monitoring Center, Tianjin Environmental Monitoring Center, Qinhuangdao City environmental protection monitoring station this standard MEP February 7, 2014 for approval.

This standard since April 15, 2014 implementation.

The standard explanation by the Ministry of Environmental Protection.

Determination of Non-Stationary source emission of nitrogen oxides dispersive infrared absorption method

1 Scope

This standard specifies the determination of stationary sources of nitrogen oxides in the exhaust gas Central Africa dispersive infrared absorption method.

This standard applies to the determination of stationary sources of nitrogen oxides in the exhaust gas.

This method of nitric oxide (as NO₂) detection limit of 3mg/m³, measured lower limit of 12mg/m³.

2 Normative references

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

GB/T 16157 Stationary source emission-Determination of particulates and gaseous pollutants sampling methods HJ/T 75 stationary sources Continuous Emission Monitoring Technical Specification (Trial) HJ/T 76 stationary sources Continuous Emission Monitoring system technical requirements and test methods (Trial) HJ/T 373 stationary sources Monitoring Quality Assurance and Quality Control Technical Specifications HJ/T 397 stationary source emission monitoring and technical specifications

3.1 Nitrogen oxides nitrogen oxides

It refers to stationary sources of nitrogen oxides present in exhaust gas to nitric oxide (NO) and nitrogen dioxide (NO₂) forms.

3.2 Calibration span calibration span

The upper limit of the instrument calibration, the calibration standard gas concentration value (if multi-point calibration, compared with the highest standards of calibration gas concentration values). calibration Range (hereinafter referred to by CS) is selected to be appropriate, the average concentration of gaseous pollutants measured should be between 20% ~ 100% CS shall not exceed Over CS. When the determination of low concentrations

of nitrogen oxides (NO_x), in order to achieve the data quality objectives, do not choose too high CS. CS should be small Than or equal to the instrument's full scale.

3.3 Zero drift zero drift

Before and after the determination of the percentage deviation of the calibration range of the instrument measurement results for the same zero gas.

3.4 Span drift span drift

Before and after the determination of the percentage deviation of the calibration range of the instrument measurement results of the same standard gas.

3.5 System deviation system bias

Standard gas directly into the host instrument air intake (direct measurement mode) and the measurement results obtained by the standard gas sampling tube end into instrument the percentage deviation of calibrated span measurement result is (system measurement mode) or obtained absolute error.

4 Principle of the method

The use of NO gas infrared spectral regions, particularly selective 5.3μm wavelength of light absorbed by the Lambert - NO Beer law quantitative exhaust and NO₂ in the exhaust gas through the converter for the reduction of the concentration of NO after.

5 and elimination of interference this method can eliminate the interference of interfering gases by tandem-type pneumatic detectors or gas filter correlation technique. Exhaust gas particulate matter and water vapor Interference, as well as the impact on the measured temperature of the exhaust gas through the filter dust, desiccant cooling means to cool the exhaust gas and the rapid addition of water to reduce or eliminate Interference to an acceptable level.

6 Reagents and materials

6.1

of nitric oxide, nitrogen dioxide standard gas Gas certified environmental standards, uncertainty of not more than 2% of the current uncertainty or attainable. Check the indication error and standard deviation system Quasi-gas concentration is 40% ~ 60% CS or equal to CS.

6.2 Nitrogen

Purity greater than 99.99%.

7.1.1 Composition

Non-dispersive infrared absorption method nitrogen oxides analyzer (hereinafter. the instrument) in the constitution. the host (including flow control devices, air pump, Detectors, etc.), of NO₂ converter, the sampling tube (dust containing means and heating means), windpipe, desiccant cooling device or the like.

7.1.2 Requirements

- (1) has a display sampling flow;
- (2) shows the absolute value of error. $\leq 5\%$ (concentration 8 sampling locations and sampling point Setting the sampling location and sampling point comply with HJ/T 76, HJ/T 373 and GB/T 16157 of. Sampling tube distal end of the instrument as much as possible by Exhaust near the center position.

9.1 Scale calibration

NO standard gas measuring instrument in accordance with this standard 9.2 steps, if the error is shown in line with Article 7.1.2 (2) requirements, the instrument is available.

Otherwise, the need to calibrate.

The calibration method.

- (1) bag method. first with gas flowmeter calibration instrument sample flow. Standard clean gas collection bag after filling emptied repeatedly Three times, and then filled with reserve. Press the instrument calibration procedures specified in the instructions for calibration.
- (2) cylinder method. with a valve, adjustable rotameter and airway standard sampling tube connected to the gas cylinder and open the cylinder Gas valves, regulators rotameter to a predetermined flow rate instrument, the instrument passed into the intake port. Note that each connection can not leak.

Press the instrument calibration procedures specified in the instructions for calibration.

9.2.1 Zero calibration

- (1) according to the instrument manual, the instrument is properly connected host, sampling tube (including dust means and heating means), windpipe, dehumidification Cooling means, and other means.
- (2) the heating device, desiccant cooling devices and other devices powered on, reaching