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

JJG 1077-2012

**Verification Regulation of Ozone Gas Analyzers
(English Translation)**

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5.6 Test cycle (5)

Appendix A calibration certificate/test results in the notice page format (6)

Appendix B test recording format (9)

Introduction

This procedure is based on JJF1002-2010 "national verification procedures write rules", JJF1001 "general purpose Volume terms and definitions "and JJF1059" Evaluation and Expression of Uncertainty in Measurement "provisions enacted.

The procedures include the subject of the instrument are. the use of ozone gas applications

for environmental monitoring, research and analysis, and chemical analyzer Tester ozone gas and ozone alarm chemical industry, disease prevention and control, pollution control and other industries use. Range can be from (10⁻⁹ ~ 10⁻⁴) mol/mol.

The rules of verification of the main metering projects are.

- Indication error in the relative error of the measured value representation;
- Relative standard deviation of repeatability of measurements indicated;
- To measure the response time is the time required to stabilize the value of 90% representation;
- Full scale (FS) relative error represented stability, including stability zero drift and span drift.

The main criteria of the present rules of order are.

- Ozone standard gas generator. Yes (0 ~ 1) $\mu\text{mol/mol}$ range, the maximum permissible absolute error is less More than 2.0%; for (> 1 ~ 400) $\mu\text{mol/mol}$ range, not the absolute value of the maximum permissible error at 5.0%.
- Because ozone is an extremely lively and strong oxidizing gas can not be stored in cylinders or containers, only dynamic it happens now with the current.

This procedure is the first national verification procedures developed.

Ozone gas analyzer test procedures

1 Scope

The order applies to the measurement of air or other gas components in the ozone content of the ozone gas analyzer (hereinafter referred to as "Instrument") of the initial verification, use and subsequent verification check.

2 Overview

Instrument detection principle generally include UV absorption principle, the principle of electrochemical sensors, semiconductor gas sensor original Physical and chemical principles of discoloration. By sampling methods are inhaled and spread two. General Instrument by the sampling device, sensing module Block, electronic circuits, displays and other components. Component being tested by the sensor into electrical signals, and then by electronic circuitry Into a digital signal showing the concentration of ozone.

3 metering performance requirements

3.1 Indication error Indication error should meet the requirements of Table 1.

Table 1 shows the error

Range Range (R^* , $\mu\text{mol/mol}$) indication error 0.10 $\leq R \leq 1.00$ $\pm 6\%FS$ 1.00

$\pm 400 \pm 12\%FS * R$ range for the instrument; FS. full scale instrument.

3.2 Repeatability

Not more than 2% repeatability.

3.3 Response Time

Inhaled Sampling Method instrument response time of less than 60s; diffusion Sampling Method instrument response time not more than 180s.

3.4 zero drift and span drift

3.4.1 Zero Drift

For fixed equipment, continuous operation 4h, zero drift should not exceed $\pm 1\%$ FS. For non-fixed instruments without Claim.

3.4.2 Span drift

For fixed equipment, continuous operation 4h, span drift should not exceed $\pm 2\%$ FS. For non-fixed instruments without Claim.

4 General technical requirements 4.1 appearance and power check