

ICS 17.020
CCS A 61

JJF

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

JJF 1888-2020

**Calibration Specification for Hydrogen Chloride Gas Detectors
and Alarms**
(English Translation)

Issued on: November 26, 2020

Implemented on: May 26, 2021

Issued by: State Administration for Market Regulation

Table of Contents

Introduction (II)	
1 Scope (1)	
2 Overview (1)	
3 Measurement characteristics (1)	
3.1 Indication error (1)	
3.2 Repeatability (1)	
3.3 Response time (1)	
3.4 Alarm function and alarm action value (1)	
3.5 Drift (1)	
4 Calibration conditions (1)	
4.1 Environmental conditions (1)	
4.2 Measuring instruments and ancillary equipment for calibration (1)	
5 Calibration items and calibration methods (2)	
5.1 Instrument adjustment (2)	
5.2 Indication error (2)	
5.3 Repeatability (3)	
5.4 Response time (3)	
5.5 Alarm function and alarm action value (3)	
5.6 Drift (3)	
6 Calibration result expression (3)	
7 Re-calibration interval (4)	
Appendix A Calibration record of hydrogen chloride gas detection alarm (5)	
Appendix B Internal page format of calibration certificate (7)	
Appendix C Example of measurement uncertainty evaluation of indication error of hydrogen chloride gas detection alarm (8)	

3 Measurement characteristics (1)

3.1

Indication error (1)

3.2

Repeatability (1)

3.3

Response time (1)

3.4

Alarm function and alarm action value (1)

3.5

Drift (1)

4 Calibration conditions (1)

4.1

Environmental conditions (1)

4.2

Measuring instruments and ancillary equipment for calibration (1)

5 Calibration items and calibration methods (2)

5.1

Instrument adjustment (2)

5.2

Indication error (2)

5.3

Repeatability (3)

5.4

Response time (3)

5.5

Alarm function and alarm action value (3)

5.6

Drift (3)

7 Re-calibration interval (4)

Appendix A Calibration record of hydrogen chloride gas detection alarm (5)

Appendix B Internal page format of calibration certificate (7)

Appendix C Example of measurement uncertainty evaluation of indication error of hydrogen chloride gas detection alarm (8)

Introduction

JJF 1071 "Rules for the Compilation of National Metrology and Calibration Specifications", JJF 1059.1 "Evaluation and Expression of Measurement Uncertainty" Together they constitute the basic series of specifications that support the formulation of this specification: The formulation of this specification refers to GB 12358-2006 "General Technical Requirements for Ambient Gas Detection and Alarm in Workplaces" and GB/T 50493-2019 "Petrochemical Design Standard for Detection and Alarm of Industrial Combustible Gas and Toxic Gas" etc:

This specification is released for the first time:

Calibration specification for hydrogen chloride gas detection alarm

1 Scope

This specification applies to the calibration of hydrogen chloride gas detection alarms with a range not greater than 100 μ mol/mol:

2 overview

The hydrogen chloride gas detection alarm (hereinafter referred to as the instrument) is mainly used to detect hydrogen chloride gas in the workplace environment concentration: The detection principles of the instrument mainly include electrochemical principles and semiconductor principles: The instrument is mainly composed of detection unit, signal it is composed of signal processing unit, alarm unit and display unit: When the instrument display value is greater than the alarm setting value, it has Sound, light or vibration alarm: According to the sampling method, it can be divided into suction type and diffusion type, and according to the use method can be divided into fixed type and portable:

3 Metrological characteristics

3.1 Indication error Absolute error: $\pm 2\mu$ mol/mol or relative error: $\pm 20\%$:

The above can satisfy one of them:

3.2 Repeatability

Repeatability is not more than 5%:

3.3 Response time

The response time is not more than 120s:

3.4 Alarm function and alarm action value an instrument with an alarm function should have an alarm setting value within its measurement range: When the instrument display value

reaches the alarm setting when setting the value, there should be sound, light or vibration alarm:

3.5 Drift

3.5.1 Zero drift: $\pm 2\%FS$:

3.5.2 Range drift: $\pm 5\%FS$:

Note: The above indicators are not applicable to eligibility determination and are for reference only:

4 Calibration conditions

4.1 Environmental conditions

4.1.1 Ambient temperature: $(0\sim 40)^{\circ}C$:

4.1.2 Relative humidity: $\leq 85\%$:

4.1.3 The working environment should be free of electromagnetic fields and interference gases that affect the normal operation of the instrument: The calibration site should be ventilated and Take safety measures:

4.2 Measuring instruments and ancillary equipment for calibration