

ICS 17.020
CCS A 61

JJF

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

JJF 1875-2020

**Calibration Specification for On-line Automatic Monitors of
Permanganate Index
(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)	
4 Calibration conditions (1)	
4.1 Environmental conditions (1)	
4.2 Reference materials and calibration equipment (1)	
5 Calibration items and calibration methods (2)	
5.1 Indication error (2)	
5.2 Relative indication error (2)	
5.3 Stability (2)	
6 Calibration result expression (2)	
7 Re-calibration interval (3)	
Appendix A Reference Format of Calibration Certificate (Inner Page) (4)	
Appendix B Reference format for calibration record of online automatic monitor of permanganate index (5)	
Appendix C Uncertainty Evaluation Example of Indication Error and Relative Indication Error (7)	

4 Calibration conditions (1)

4.1

Environmental conditions (1)

4.2

Reference materials and calibration equipment (1)

5 Calibration items and calibration methods (2)

5.1

Indication error (2)

5.2

Relative indication error (2)

5.3

Stability (2)

7 Re-calibration interval (3)

Appendix A Reference Format of Calibration Certificate (Inner Page) (4)

Appendix B Reference format for calibration record of online automatic monitor of permanganate index (5)

Appendix C Uncertainty Evaluation Example of Indication Error and Relative Indication Error (7)

Introduction

This specification is based on JJF 1071-2010 "Rules for the Compilation of National Metrology and Calibration Specifications", JJF 1001-2011 "General Measurement terms and definitions" and JJF 1059.1-2012 "Measuring Uncertainty Evaluation and Expression" are the basic series of specifications Make it:

The formulation of this specification refers to GB/T 11892-1989 "Determination of Water Quality Permanganate Index" and HJ/T 100-2003 "Technical Requirements for Automatic Water Quality Analyzer for Permanganate Index":

This specification is released for the first time:

Calibration Specification for Online Automatic Monitor of Permanganate Index

1 Scope

This specification applies to the calibration of the online automatic monitor of permanganate index:

2 overview

The permanganate index online automatic monitor (hereinafter referred to as the instrument) can automatically and continuously monitor surface water, groundwater and Permanganate index in drinking water and other water bodies:

The instrument uses the principle of oxidation, adding a known amount of potassium permanganate solution to the water sample, and oxidizing the water under heating the organic matter and reducing inorganic matter in the sample, the oxidized water sample is carried out by redox titration or photoelectric colorimetry After data processing, the permanganate index is directly displayed:

The instrument usually consists of sampling, reaction, detection, data processing and transmission and display units:

3 Metrological characteristics the measurement performance index of the instrument is shown in Table 1:

Table 1 Measurement performance indicators

Calibration item

Technical index

$\leq 5.0 \text{ mg/L}$ $> 5.0 \text{ mg/L}$

1 The maximum allowable error does not exceed $\pm 0.5 \text{ mg/L}$ and does not exceed $\pm 10\%$

2 Stability (12h) $\leq 5\%$ Note:

1 When the permanganate index of the measuring point is not greater than 5 mg/L , the maximum allowable error is expressed by the error of the indication; when the measuring point is high in manganese when the acid salt index is greater than 5 mg/L , the maximum allowable error is expressed by the relative indication error:

2 The above indicators are not used for eligibility judgment and are for reference only:

4 Calibration conditions

4.1 Environmental conditions

4.1.1 Ambient temperature: $(5 \sim 35)^\circ\text{C}$, the temperature fluctuation during calibration should not exceed $\pm 5^\circ\text{C}$:

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

4.1.3 There shall be no mechanical vibration and electromagnetic interference that affect the normal operation of the instrument:

4.1.4 Do not store flammable, explosive and highly corrosive substances that are not related to the experiment:

4.2 Reference materials and calibration equipment

4.2.1 Reference material: National certified permanganate index/chemical oxygen demand (manganese method) reference material is used, and its extension the uncertainty is not more than 3% ($k=2$):

4.2.2 Zero point calibration solution: Add a little potassium permanganate redistilled water to the distilled water (in the