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JJF

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

JJF 1609-2017

**Calibration Specification for Residual Chlorine Meters
(English Translation)**

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Table of Contents

Introduction (II)	
1 Scope (1)	
2 Terms and units of measurement (1)	
2.1 Free residual chlorine (1)	
2.2 Compounds Residual Chlorine (1)	
2.3 Residual chlorine (total residual chlorine) (1)	
3 Overview (1)	
4 Metering characteristics (1)	
5 Calibration conditions (2)	
5.1 Environmental conditions (2)	
5.2 Reference materials and other equipment (2)	
6 Calibration items and calibration methods (2)	
6.1 Indication error (2)	
6.2 Repeatability (2)	
7 Expression of calibration results (3)	
8 Re-school time interval (3)	
Appendix A Examples of Uncertainty Evaluation of Indication Error (4)	
Appendix B Residual Chlorine Detector Recording Format (for reference) (8)	
Appendix C Calibration Certificate (End page) Format (for reference) (9)	

8 Re-school time interval (3)

Appendix A Examples of Uncertainty Evaluation of Indication Error (4)	
Appendix B Residual Chlorine Detector Recording Format (for reference) (8)	
Appendix C Calibration Certificate (End page) Format (for reference) (9)	

Introduction

This specification is based on JJF 1071-2010 "national measurement calibration standard preparation rules", JJF 1059.1-2012 "test Assessment and representation of uncertainty, "JJF 1001-2011" General measurement terms and definitions "provisions of the preparation, reference ASTM D1253-2014 "Standard Test Method for Residual Chlorine in Water" (StandardTestMethodforRe-sidualChlorinein Water), GB/T 14424-2008

"Determination of residual chlorine in industrial circulating cooling water" HJ586-2010

"Determination of free chlorine and total chlorine in water, N, N-diethyl-1,4-phenylenediamine spectrophotometry" Sub-content.

This specification is the first release.

Calibration standard for chlorine analyzer

1 Scope

The calibration standard applies to the colorimetric principle of the residual chlorine analyzer calibration, including the determination of residual chlorine in water or (and) Total residual chlorine analyzer.

2 terms and units of measurement 2.1 free residual chlorine Refers to chlorine present in the form of hypochlorous acid, hypochlorite ion and dissolved monochlorium chloride.

2.2 combined residual chlorine residualresidualchlorine Refers to chlorine in the form of chloramines and organochlorines.

2.3 residual chlorine (total residual chlorine) Refers to chlorine in the form of "free residual chlorine" or "chemical residual chlorine", or both.

Residual chlorine units. mg/L.

3 Overview

Residual chlorine refers to the water after disinfection of residual chlorine in water, is an important indicator of water quality evaluation, it is mainly used for self Water production, medical wastewater treatment and other areas of water quality monitoring. Residual chlorine analyzer is the use of colorimetric method of work, the root Quantitative analysis of the absorbance of the colored material produced at the specific wavelength after the reaction of residual chlorine in the water with the developer is carried out.

The measurement principle is based on the Lambert-Beer light absorption law.

$$A = -\lg$$

$$I_0 = -\lg T = k c L$$

Where.

A --- absorbance;

I_0 --- incident light intensity;

I - transmitted light intensity;

T --- transmittance;

k - absorption coefficient;

c - the amount of residual chlorine in the sample;

L - Light path through the sample.

The instrument is mainly composed of light source, sample room, detector and data processing unit and so on, as shown in Fig.

Light source -> sample chamber -> detector -> data processing unit

Figure 1 Schematic diagram of the structure of the chlorine detector

4 measurement characteristics 4.1 indication error. no more than $\pm 10\%$.