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

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**Calibration Specification for Silicate Analyzers
(English Translation)**

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Table of Contents

Introduction (II)

1 Scope (1)

2. References (1)

3 Overview (1)

4 Metrological characteristics (2)

4.1 Instrument indication error (2)

4.2 Repeatability measuring instrument (2)

4.3 Instrument stability (2)

4.4 Instrument 24h run stability (2)

4.5 Instrument phosphate anti-interference performance (2)

4.5 Instrument phosphate anti-interference performance (2)

Calibration Condition 5 (2)

8 Recalibration interval (5)

Appendix A calibration reagent and solution preparation method (6)

Appendix B recommended calibration record format (7)

Appendix C Recommended calibration certificate-page format (9)

Appendix D Evaluation of Uncertainty in Measurement Example (10)

Introduction

This specification based JJF 1071-2010 "National Calibration Specifications writing rules", JJF 1001 "universal metering Terms and definitions ", JJF 1059.1-2012" Evaluation and Expression of Uncertainty in Measurement ", and referring to (part) GB/T 12149-2007 "industrial circulating cooling water and boiler water Determination of Silicon", DL/T 677-2009 "hair Power line chemical instrumentation test procedures "requirement developed.

This specification calibrated main items are.

--- Instrument indication error;

--- Instrument measurement repeatability;

- Instrument stability;
- Instrument 24h operational stability;
- Instrument phosphate anti-interference performance.

The specification for the first time to develop.

Silicate analyzer calibration specification

1 Scope

This instruction applies to silicate analyzer calibration.

2. References

This specification references the following documents.

JJF 1094 measuring instrument characteristics evaluation Laboratory use specifications and test methods GB/T 6682 Analysis GB/T 12149 Determination of industrial circulating cooling water and boiler water in silicon DL/T 677 meter inspection of chemical plants online for dated references, only the dated edition applies to this specification; undated reference documents Member, the latest edition (including any amendments) applies to this specification.

3 Overview

Silicate analyzer (hereinafter referred to as the instrument) is used to measure the water content of silicate analysis instrument that measures primary Water soluble silicon processing under certain conditions, the reagent reacts and color, according to Lambert - Beer law, when Bundle of parallel monochromatic light through the light-absorbing substance containing the colored solution, part of the light is absorbed when the absorbing layer thickness is not Varying proportional to the concentration and the absorbance of light-absorbing substance by photoelectric detection device converts the optical signal into an electrical signal by After the microprocessor, the display silicate content. Lambert - Beer law mathematical expression is.

$$A = -\lg$$

$$\lg T = klc$$

Where.

A --- absorbance substances;

I --- transmitted monochromatic light intensity;

Monochromatic light intensity I₀ --- incident;

T --- substance transmittance;

Extinction coefficient k --- substances;

l --- analyte optical path substances;

c --- concentration of the substance.

Instruments mainly by the light source system, the spectrometer, the sample chamber, the detection system, etc., see Schematic figure 1.