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JJG

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

JJG 814-2015

Replacing JJG 814-1993

**Verification Regulation of Automatic Potentiometric Titrators
(English Translation)**

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Introduction

The procedure according to JJF1002-2010 "national verification procedures to write the rules," to write, and JJG 814-1993 compared to, in addition to editorial changes, the major technical changes are as follows.

--- Increased contents Introduction;

--- Original statutes "electricity meter reference repeatability errors, potential electricity meter, Burette capacity Tolerance, titration analysis Repeatability "project name was changed to" electricity meter indication error, electricity meter Repeatability, Buret capacity

error, equipment Repeatability ";

- Modify the calculation method of "electric meter Repeatability" (see 5.2.2.4);
- Modify the content verification of environmental conditions (see 5.1.1);
- Cancel the test standard is the "high impedance DC potentiometer, standard battery and a galvanometer and other components of the standard Verification device "will" or with the same accuracy DC potential Calibrator "was changed to" pH Calibrator. accuracy class 0.0006; "(see 5.1.3);
- Added "certified reference material" requirements (see 5.1.4);
- Increased the list of test items (see Table 3);
- Cancel the original statutes "instrument control titration sensitivity" of technical indicators;
- Modified "Buret capacity error," the test methods (see 5.2.2.7);
- Added "instrument indication error" technical indicators and test methods (see 5.2.2.8);
- Original statutes "potentiometric titration instrument repeatability test" and "instrument and titration repeatability test" Merge, modify the "Instrument Repeatability" and modified its test method (see 5.2.2.8);
- Added "common method to measure Glass Container K (t) value table" (see Appendix B);
- Modify the "verification original record format" appendix (Appendix C);
- Cancel the original statutes "verification certificate" appendix, from "test certificate/test results in the notice page format Shape "Appendix D instead.

The regulations previously issued as follows.

--- JJG 814-1993.

Automatic potentiometric titrator verification procedures

1 Scope

The order applies to automatic potentiometric titrator initial verification, use and subsequent verification check.

2 Overview

Automatic potentiometric titrator (hereinafter referred to as equipment) is based on the principle of potentiometric titration designed for a capacity analysis Kinds of analytical instruments.

Potentiometric titration principle is. the choice of appropriate indicator electrode and a

reference electrode and the measured ratio of the solution to form a working electrode Pool, with the addition of titrant, as a result of a chemical reaction, the concentration of the measured ion is changing, thus indicating the electrode potential changes. Near the end of the titration, ion concentration measured mutation causing sudden electrode potential jump. Thus, according to the projection electrode potential jump can determine the endpoint. It is the potentiometric titration curve, A point shown in Figure 1 the endpoint of the titration.

1 a schematic diagram of potentiometric titration curve Instruments distributor gauge system titration system and electrode system consists of three parts. Electricity meter system consists of potential amplification, control lines Composition, by measuring the indicator electrode and the reference electrode between the ratio of signal processing, the automatic control system of the droplet titration Fluid velocity, is determined after the end of the titration, the instrument automatically stops the titration. Titration system is divided into digital and scale burette two Categories. Electrode system by the indicator electrode and the reference electrode.

3 metering performance requirements Automatic titrator performance measurement requirements in Table 1, Table 2.

Table 1 List of instrument performance measurement

Instrument Level

Measurement of performance Electricity meter shows the maximum value Allowable error
 % FS Electricity meter indication Repeatability Enter the electricity meter Electric current
 Electricity meter input impedance Instrument shows maximum value Allowable error
 Instrument indication Repeatability 0.05 ± 0.05 ≤ 0.025 $\leq 1 \times 10^{-12}$ $\geq 3 \times 10^{12} \pm 1.5$
 ≤ 0.2