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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 11446.9-2013

Replacing GB/T 11446.9-1997

Test method for particles in electronic grade water by instrument

电子级水中微粒的仪器测试方法

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Foreword

The expected structure of GB/T 11446 is as follows: - GB/T 11446.1 Electronic grade water; - GB/T 11446.2 (To be determined); - GB/T 11446.3 Generic rules for test methods of electronic grade water; - GB/T 11446.4 Test method for resistivity of electronic grade water; - GB/T 11446.5 Test method for measuring trace metals in electronic grade water by atomic absorption spectrophotometry; - GB/T 11446.6 Test method for SiO2 in electronic grade water by spectrophotometer; - GB/T 11446.7 Test method for trace anion in electronic grade water by ion chromatography; - GB/T 11446.8 Test method for total organic carbon in electronic grade water; - GB/T 11446.9 Test method for particles in electronic grade water by instrument; - GB/T 11446.10 Test method for total bacterial count in electronic grade water by membrane filters. This part is Part 9 of GB/T 11446. This part was drafted in accordance with the rules given in GB/T 1.1-2009. This part replaces GB/T 11446.9-1997 "Test method for particles in electronic grade water by instrument". Compared with GB/T 11446.9-1997, this Part mainly has the following changes. - REDEFINE "

1 Scope

GB/T 11446.9-2013 is the Chinese national standard on test method for particles in electronic grade water by instrument, in the field of electronics. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most

foreign buyers meet it. It was issued on 31 December 2013 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 15 August 2014. Classification: ICS 31.030, CCS L90. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This Part of GB/T 11446 specifies the instrumental method for the determination of particles, in electronic grade water. This Part applies to the continuous or single detection and counting of particles, in electronic grade water. The measured particle size is not less than 0.05 μm; the concentration range of the particles is 0 ~ 10000 pcs/mL.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this standard.

GB/T 11446.1-2013 Electronic grade water

3 Terms and definitions

The terms and definitions as defined in GB/T 11446.3-2013, as well as the following terms and definitions, apply to this document.

3.1 Particle Granular, gas removed, non-liquid substance, which is non-uniformly dispersed in water.

4 Principles of the method

A focused laser beam is incident perpendicular to the direction of the water sample flow. The particles in the water will produce a light scattering effect. The intensity of the scattered light has a certain relationship, with the size of the particles. The scattered light focuses on the photomultiplier, through the collecting lens, at which the light signal is converted into electrical pulse.

5 Disturbing factors

5.1 The factors, such as sampling process; pollution of the container, environment and detection chamber; bubbles in the water and vibration of the measurement process; changes in water flow speed, etc.,

5.2 The ambient temperature affects the stability of the analysis results. The temperature of

the laboratory and the environment shall be between 10 °C and 30 °C.

5.3 Whether the instrument is normal or not, directly affects the measurement result. Therefore, it shall be calibrated, in accordance with the calibration cycle, which is specified in China, when it is used.

6 Reagents

6.1 Blank water. EW-I electronic grade water, which is specified in GB/T Microcomputer

7 Measuring instruments

A laser-scattering type submicron liquid particle counting and detecting instrument, which has a microcomputer.

8 Operation procedures

8.1 Preparation before instrument test Turn on the power, according to the instrument's instructions, to make the instrument enter the ready-to-work state.

9 Calculation of measurement results

Calculate the particle number concentration, according to formula (1).

10 Error analysis

The relative deviation of this method is less than 20%.