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

GB/T 11446.1-2013

Replacing GB/T 11446.1-1997

Electronic grade water

电子级水

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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 1 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 11446.1-1997 "Electronic grade water". Compared with GB/T 11446.1-1997, this part mainly contains the following changes. - In "

3 Terms and definitions", ADD the definitions of "ion exchange resin", "sterile", "pH" (see Chapter 3); - MODIFY the resistivity indexes of "EW-II", "EW-III", "EW-IV" grade water in "

5 Requirements" (see Chapter 5); - MODIFY the particle count indicators of the "EW-I", "EW-II", "EW-III", "EW-IV" grade water in the "

1 Scope

GB/T 11446.1-2013 is the Chinese national standard on electronic grade water, 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 grade, technical index requirements, test methods, inspection rules of electronic grade water. This part applies to high-purity cleaning water, which is used in the electronics and semiconductor industries.

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 11446.3-2013 Generic rules for test methods of electronic grade water

GB/T 11446.4-2013 Test method for resistivity of electronic grade water

GB/T 11446.5-2013 Test method for measuring trace metals in electronic grade water by atomic absorption spectrophotometry

GB/T 11446.6-2013 Test method for SiO₂ in electronic grade water by spectrophotometer

GB/T 11446.7-2013 Test method for trace anion in electronic grade water by ion chromatography

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Electronic grade water High-purity water, which is used in electronic and semiconductor processes.

3.4 Soluble silicon A soluble silicate, which exists in water, as a single molecule.

3.5 Granular matter Except for gas, a substance dispersed in water, in a non-liquid state AND forming a heterogeneous mixture.

3.6 Total organic carbon; TOC The total amount of carbon in the water, in the form of various organic matter. It includes organic matter, which is easily oxidized by general strong

oxidizing agents, AND organic matter, which needs to be oxidized by special methods.

3.7 Absorption The phenomenon, that some porous granular substances absorb certain substances, due to surface activity.

3.8 Coagulation After a certain electrolyte is added to the source water, the charged colloidal particles, in the water, are neutralized by the heterogeneous charges in the electrolyte, so that they aggregate into larger particles and settle.

4 Classification and marking

4.1 Classification Electronic grade moisture is divided into four grades. grade I, grade II, grade III, grade IV.

4.2 Marking The grade I electronic grade water is marked as. EW-I.

5 Requirements

The technical indicators of electronic grade water shall meet the requirements of Table 1.

6 Test method

6.1 Resistivity The electrical resistivity of electronic grade water is measured, according to GB/T 11446.4-2013.

6.2 Total silicon content (calculated as silicon dioxide) The content of total silicon (calculated as silicon dioxide) in electronic grade water is measured, according to GB/T 11446.6-2013.

6.3 Number of particles The number of particles in electronic grade water is measured, according to Item Technical indicators Resistivity (25 °C)/M ·cm ≥ 18 (Not less than 17 for 5% of time)

6.4 Total number of bacteria The total number of bacteria in electronic grade water is measured, according to GB/T 11446.10-2013.

6.5 Trace metal content The content of trace metals in electronic grade water is measured, according to GB/T 11446.5-2013.

6.7 Total organic carbon content The total organic carbon content in electronic grade water is measured, according to GB/T 11446.8-2013.

7 Inspection rules

7.1 Inspection department The inspection of electronic grade water shall be carried out, in a qualified inspection department.

7.2 Inspection classification Electronic grade water's inspection is divided into delivery

inspection and routine inspection.

7.4 Routine inspection (full inspection items)

7.4.1 Inspection items The inspection items are all the items, which are specified in Table

1. The inspection sequence shall be carried out, in the principle that it does not affect the subsequent test results.

7.4.3 Frequency of inspection Routine inspection shall be carried out, at least once a year. Routine inspection shall also be carried out, when water production conditions change.

8 Sampling, storage, transportation, marking

8.1 Sampling, storage, transportation The sampling, storage, transportation of electronic grade water shall comply with the requirements of GB/T 11446.3-2013.