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

GB/T 18300-2025

Replacing GB/T 18300-2011

**Technical specification for automatically controlled sodium ion
exchangers**

自动控制钠离子交换器技术条件

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. This document supersedes GB/T 18300-2011 "Technical Conditions for Automatic Control Sodium Ion Exchangers". Compared with GB/T 18300-2011, Apart from structural adjustments and editorial changes, the main technical changes are as follows:

- a) The wording of "scope" has been changed (see Chapter 1, Chapter 1 of the.2011 edition);
- b) Modified the following settings for "Automatic Control Sodium Ion Exchanger," "Operating Cycle," "Operating Temperature," "Regeneration," "Co-current Regeneration," "Counter-current Regeneration," and "Displacement." Definitions of "forward washing" and "automatic control multi-way valve" (see 3.1, 3.2, 3.4, 3.7, 3.7.1, 3.7.2, 3.8~3.10, and 3.1 in the.2011 edition). 3.2, 3.4, 3.7, 3.7.1, 3.7.2, 3.8~3.10); change the term "flow-initiated regeneration switch" to "flow-based switch". The terms "time-activated regeneration exchanger" and "time-type exchanger" have been changed to "water hardness-activated regeneration exchanger". The terms "online monitoring type exchanger," "primary sodium ion exchange," and "secondary sodium ion exchange" have been changed to "secondary sodium." The relevant definitions were revised (see 3.11-3.15,.2011 edition 3.11-3.15); the term "full room bed" and its definition were added. (See 3.19);
- c) Added "Full Room Bed" (see 4.1.1), and added the code "M" for "Full Room Bed" (see Table 1);
- d) The material codes for the exchange tanks have been changed (see Table 3,.2011 edition);

- e) The model number example has been changed (see 4.2.2,.2011 version 4.2.2);
- f) The requirement for "fixed-bed ion exchange resin layer height" has been changed, and the requirement for "full-chamber ion exchange resin layer resin loading" has been added. See section 5.1.1.3 (2011 version);
- g) The requirement for "time-type exchangers" has been removed, and the requirement for "periodic water production" has been added (see 5.1.1.6,.2011 version 5.1.1.6); The content "If the controller has a hard water bypass, a solenoid valve should be added to automatically shut off the outlet water when regeneration is started" has been deleted (see [link]). Version 5.1.1.7 (2011 version 5.1.1.7) changed the requirements for "water exchangers used for soft water treatment in industrial equipment" and "water exchanger effluent". Hardness requirements (see 5.1.1.8, 5.1.1.9, and 5.1.1.9 in the.2011 edition);
- h) The requirements for the main parameters and performance indicators of the exchanger have been changed, and "Main performance indicator requirements for a full-room bed" have been added (see Table 4). Table 4 (2011 edition)
- i) The requirement for "using controllers with voltages exceeding 36V" has been changed (see 5.1.3.2,.2011 version 5.1.3.2), adding "using..." Requirements for "flow-type controllers", "controllers using online monitoring", and "controllers using chip-controlled operation and regeneration processes". (See 5.1.3.4~5.1.3.6);
- j) The "inlet water temperature" was changed to "operating temperature," and the "requirements for free chlorine in the inlet water quality" were modified (see Table 5, Table 5 in the.2011 edition);

1 Scope

GB/T 18300-2025 is the Chinese national standard covering the automatic sodium ion exchanger - the softener that takes hardness out of boiler feed water and regenerates itself with brine on a schedule or on a meter, without an operator. It fixes the types and parameters, the requirements on the vessel, the resin and the control, the softening capacity and the tests. It replaces GB/T 18300-2011. It was issued on 31 December 2025 and has been in force since 31 December 2025, replacing GB/T 18300-2011. The document is under the responsibility of the Standardization Administration of China. This page is published from the official record of the 2025 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the classification and models, technical requirements, inspection and testing methods, inspection rules, and markings for automatically controlled sodium ion exchangers. Packaging, transportation and storage. This document applies to sodium ion

exchangers with an operating pressure not exceeding

0.6 MPa and automatic control using multi-channel valves. This document does not apply to fluidized bed, moving bed, and non-automatically controlled sodium ion exchangers.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 1576 Industrial Boiler Water Quality

GB/T 3854 Barcol Hardness Test Method for Reinforced Plastics

GB/T 5462 Industrial Salt

GB/T 6909 Analytical Methods for Boiler Water and Cooling Water - Determination of Hardness

GB/T 13384 General Technical Requirements for Packaging of Mechanical and Electrical Products GB/T 13659 001x

3 Terms and Definitions

The terms and definitions defined in GB/T 13922 and the following terms and definitions apply to this document.

3.1 An ion exchanger that can automatically start operation and regeneration under certain set conditions, and uses sodium salt as a regenerator.

Note. Abbreviated as "switch".

3.2 Service cycle Under rated water production conditions, after the exchanger is regenerated, it begins producing softened water until the hardness of the effluent does not meet the requirements. This cycle accumulates... The runtime of the calculation.

3.3 working pressure The gauge pressure of the water entering at the inlet of the heat exchanger.

7 Strong Acid Styrene-Based Cation Exchange Resin

GB/T 13922 Performance Testing of Water Treatment Equipment

GB/T 15453 Determination of chloride ions in industrial circulating cooling water and boiler water

GB/T 17219 Safety Evaluation Standard for Drinking Water Transmission and Distribution Equipment and Protective Materials

GB/T 26747 Composite material tanks for water treatment equipment

GB/T 50109 Design Specification for Industrial Water Softening and Desalination NB/T 10790 Technical Specifications for Water Treatment Equipment

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