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

GB 34914-2021

Replacing GB 34914-2017

**Minimum allowable value of water efficiency and water
efficiency grades for water purifier**

净水机水效限定值及水效等级

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Foreword

This document is drafted in accordance with GB/T 1.1-2020 "Directives for standardization - Part

1. Rules for the structure and drafting of standardizing documents". This document replaces GB 34914-2017 "Minimum allowable value of water efficiency and water efficiency grades for reverse osmosis drinking water treatment purifiers". Compared with GB 34914-2017, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) Change the reverse osmosis water purifier in the scope of application to reverse osmosis water purifier and nanofiltration water purifier (see Clause 1; Clause 1 of the 2017 edition);
- b) Add the terms and definitions of water purifier, reverse osmosis water purifier, and nanofiltration water purifier (see 3.1, 3.2, 3.3);
- c) Change the index of water efficiency grades (see Clause 4; 4.4 of the 2017 edition);
- d) Add the requirements for the removal rate index of nanofiltration water purifier (see 5.3);
- e) Change the water quality index of test water (see 6.1; 5.1 of the 2017 edition);
- f) Change the test process and calculation method (see 6.3;

5.3 of the 2017 edition);

g) Change the preparation method of test water (see Appendix A; Appendix A of the 2017 edition);

h) Add the test device for purified water production rate (see Appendix B). Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. The issuing authority of this document shall not be held responsible for identifying any or all such patent rights. This document was proposed by and shall be under the jurisdiction of Standardization Administration of the PRC. This document was first issued in 2017. This is the first revision. Minimum allowable value of water efficiency and water efficiency grades for water purifier

1 Scope

GB 34914-2021 is the Chinese national standard on minimum allowable value of water efficiency and water efficiency grades for water purifier, in the field of construction materials and building. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 1 December 2021 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 July 2022. Classification: ICS 91.140.70, CCS Q31. 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 document specifies the minimum allowable value of water efficiency and water efficiency grades, technical requirements, and test methods for water purifier. This document applies to small water purifiers which use municipal tap water or other centralized water supply as raw water, and use reverse osmosis membrane or nanofiltration membrane as the main purification element for use in households or similar places. This document does not apply to large water purifiers with a length or width or height ≥ 2000 mm, mass ≥ 100 kg, and purified water flow rate ≥ 3 L/min.

2 Normative references

The contents of the following documents, through normative references in this text, constitute indispensable provisions of this document. Among them, for dated references, only the edition corresponding to that date applies to this document. For undated references, the latest edition (including all amendments) applies to this document.

GB 5749 Standards for drinking water quality

GB/T 5750 (all parts) Standard examination methods for drinking water

GB 8538 Methods for examination of drinking natural mineral water

GB/T 19249 Reverse osmosis water treatment equipment

GB/T 30307 Household and similar drinking water treatment equipment

3 Terms and definitions

The terms and definitions defined in GB 5749, GB/T 19249 and GB/T 30307 and the following ones apply to this document.

3.1 Water purifier A system which consists of one or several drinking water treatment filter elements to improve water quality.

3.2 Reverse osmosis water purifier The water purifier used in households or similar places, which uses municipal tap water or other centralized water supply as raw water and uses reverse osmosis membrane filter element as the core treatment element to improve water quality.

3.3 Nanofiltration water purifier The water purifier used in households or similar places, which uses municipal tap water or other centralized water supply as raw water and uses nanofiltration membrane filter element as the core treatment element to improve water quality.

3.4 Purified water flow rate The water production per unit time under specified test conditions.

Note. The unit is liters per minute (L/min).

3.5 Purified water production rate The ratio OF the total purified water volume of water purifier TO the total water inflow after the raw water has been purified under the specified test conditions.

4 Water efficiency grades for water purifier

The water efficiency grades for water purifier are divided into 3 grades; of which grade 1 has the highest water efficiency. The purified water production rate and nominal rated total purified water volume of each grade of water purifier shall comply with the provisions of Table 1.

5 Technical requirements

5.1 Total purified water volume The total purified water volume of water purifier shall not be less than the nominal rated total purified water volume.

5.2 Purified water flow rate The purified water flow rate of water purifier shall not be less than the nominal value.

5.3 Removal rate

5.3.1 The reverse osmosis water purifier uses the following control indexes to test the removal rate.

5.3.2 The nanofiltration water purifier uses the following control indexes to test the removal rate.

6.1 Test water

6.1.1 When measuring the total purified water volume, purified water flow rate, removal rate, and purified water production rate of water purifier, the test water shall be prepared with pure water (conductivity < 10 $\mu\text{S}/\text{cm}$). The requirements for the water quality indexes are as follows:

6.1.2 The test water is prepared according to the method in Appendix A. The specific test method is carried out according to GB/T 5750 (all parts) and GB 8538.

6.2 Test conditions When measuring the total purified water volume, purified water flow rate, removal rate, and purified water production rate of water purifier, the test conditions shall meet the following requirements.

6.3 Test and calculation

6.3.1 Test When measuring the total purified water volume, purified water flow rate, removal rate, and purified water production rate of water purifier, the following steps shall be followed.

6.3.2 Calculation

6.3.2.1 Collect purified water for $(300 \pm 2)\text{s}$ at the sampling point of the outflow sample; measure its water volume; collect it every 5 min and collect 3 times in total. Take the arithmetic mean of the 3 test values as the test result of purified water flow rate.

Appendix A

(Normative) Preparation method of test water A.1 All chemical reagents used are of analytical grade or equivalent purity. A.2 According to the following steps, use pure water (conductivity < 10 $\mu\text{S}/\text{cm}$) for standard-addition preparation (take the preparation of 100 L of test water as an example).