

Translated English of Chinese Standard: GB34914-2021

www.ChineseStandard.net → Buy True-PDF → Auto-delivery.

Sales@ChineseStandard.net

GB

NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

ICS 91.140.70

CCS Q 31

GB 34914-2021

Replacing GB 34914-2017

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

净饮水机水效限定值及水效等级

Issued on: December 01, 2021

Implemented on: July 01, 2022

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC.**

Table of Contents

Foreword.....	3
1 Scope.....	4
2 Normative references.....	4
3 Terms and definitions	4
4 Water efficiency grades for water purifier	6
5 Technical requirements	6
6 Test methods.....	7
Appendix A (Normative) Preparation method of test water	10
Appendix B (Normative) Test device for purified water production rate.....	11

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

1 Scope

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.

3.6**Concentrate**

Concentrated water with increased salt content after being treated by a water purifier.

Note: The unit is liter (L).

3.7**Minimum allowable value of water efficiency for water purifier**

Water purifiers used for water sales shall be equipped with concentrate recycling devices.

5.5 Minimum allowable value of water efficiency for water purifier

The minimum water efficiency required by the minimum allowable value of water efficiency for water purifier is grade 3 of the water efficiency grade in Table 1.

6 Test methods

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:

- a) The total hardness shall be controlled at $(250\pm20)\text{mg}/\text{L}$;
- b) The alkalinity shall be controlled at $(140\pm10)\text{mg}/\text{L}$;
- c) The conductivity shall be controlled at $(1000\pm100)\mu\text{S}/\text{cm}$;
- d) The pH value shall be controlled at 7.0~7.5;
- e) The turbidity shall not be greater than 1 NTU.

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:

- a) The ambient temperature shall be controlled at $(25\pm5)^{\circ}\text{C}$;
- b) The relative humidity shall be controlled at 45%~75%;
- c) The power supply voltage is rated voltage; the power supply frequency is $(50\pm1)\text{Hz}$;
- d) The water temperature shall be controlled at $(25\pm1)^{\circ}\text{C}$;
- e) The water inlet pressure shall be controlled at $(0.24\pm0.02)\text{MPa}$.

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:

- a) Installation and debugging shall be carried out according to the requirements of the product manual. The test device shall meet the requirements of Appendix B. Under the condition of keeping the water inlet pressure unchanged, introduce the test water;
- b) If the nominal purified water flow rate of water purifier is <1 L/min, the test shall be carried out in a 24 h uninterrupted manner. If the nominal purified water flow rate of water purifier is ≥ 1 L/min, the test shall be carried out by running continuously for 8 h and then stopping the water outlet for 16 h while maintaining the pressure;
- c) When the purified water volume of water purifier reaches 0%, 25%, 50%, 75%, and 100% of the rated total purified water volume in turn, carry out the tests of purified water flow rate and removal rate. When the nominal rated total purified water volume is reached, record the total water inflow and the total concentrate volume;
- d) If the purified water flow rate and removal rate requirements cannot be met before reaching the nominal rated total purified water volume, it is determined that the total purified water volume of water purifier cannot reach the nominal rated total purified water volume; the test is terminated.

Note 1: For water purifiers with discontinuous water supply, change the manual water supply mode to the automatic water supply mode under no-pressure conditions for testing. For water purifiers with wastewater return mode, when replacing the raw water, the manual mode or tooling mode can be used to run the test.

Note 2: For water purifiers equipped with a pressure tank, the pressure tank is only used for water storage function and does not affect the treatment process. The pressure tank is removed for testing.

6.3.2 Calculation

6.3.2.1 Collect purified water for (300 ± 2) 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.

6.3.2.2 The removal rate is calculated according to formula (1). The specific test

This is an excerpt of the PDF (Some pages are marked off intentionally)

Full-copy PDF can be purchased from 1 of 2 websites:

1. <https://www.ChineseStandard.us>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Select your country (currency), for example: USA (USD); Germany (Euro).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Tax invoice can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with download links).

2. <https://www.ChineseStandard.net>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Add to cart. Only accept USD (other currencies - <https://www.ChineseStandard.us>).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with PDFs attached, invoice and download links).

Translated by: Field Test Asia Pte. Ltd. (Incorporated & taxed in Singapore. Tax ID: 201302277C)

About Us (Goodwill, Policies, Fair Trading...): <https://www.chinesestandard.net/AboutUs.aspx>

Contact: Wayne Zheng, Sales@ChineseStandard.net

Linkin: <https://www.linkedin.com/in/waynezhengwenrui/>

----- The End -----