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

GB/T 22089-2021

Replacing GB/T 22089-2008

**Performance requirements and measuring methods for electric
kettles**

电水壶性能要求及试验方法

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Foreword

This document was drafted in accordance with the provisions of GB/T 1.1-2020 Directives for standardization - Part

1. Rules for the structure and drafting of standardizing documents. This document replaces GB/T 22089-2008 Performance requirements and measuring methods for electric kettles. Compared with GB/T 22089-2008, the main technical changes are as follows: -- The scope is modified (see Chapter 1; see Chapter 1 of the 2008 edition); -- The definition of electric kettle is modified (see 3.1; see

3.1 of the 2008 edition); -- The definition of normal operation is modified (see 3.2; see

3.2 of the 2008 edition); -- The definitions of "boil switch off" and "reset time" are deleted (see

3.7 of the 2008 edition); -- The classification of electric kettles is added (see Chapter 4); -- The original Chapter 4 "Test conditions" is moved to 6.1 (see 6.1; see Chapter 4 of the 2008 edition); -- The requirements for normal use environment are added (see 5.1); -- The requirements for boiling water performance are modified (see 5.4; see

5.3 of the 2008 edition); -- The requirements and test methods for the reset time are deleted (see

6.3.3 of the 2008 edition); -- The requirements and test methods for the water out-of-spout performance are modified (see

5.6 and 6.6; see

6.5 of the 2008 edition); -- The classification limits and test methods of thermal efficiency are modified (see

5.8 and 6.8; see

6.7 of the 2008 edition); -- The classification limits and test methods for the whole machine life are modified (see

5.9 and 6.9; see

6.8 of the 2008 edition); -- The requirements and test methods for boil-dry power-off time are added (see

5.10 and 6.10); Performance requirements and measuring methods for electric kettles

1 Scope

GB/T 22089-2021 is the Chinese national standard on performance requirements and measuring methods for electric kettles, in the field of domestic and commercial equipment, entertainment, sport. 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 26 November 2021 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 June 2022. Classification: ICS 97.040.50, CCS Y63. 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 scope, terms and definitions, classification, requirements and test methods of electric kettles for household and similar purposes. This document applies to electric kettles for household and similar purposes with a rated voltage not exceeding AC 250 V. This document does not address safety requirements related to food contact materials.

2 Normative references

The provisions of the following documents constitute the essential clauses of this document through normative references in this text. Among them, for referenced documents with dates, only the versions corresponding to the dates are applicable to this document; for referenced documents without dates, the latest versions (including all amendments) are applicable to this document.

GB/T 2423.17 Environmental testing - Part

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 electric kettle A portable electric heating appliance that is used to heat water to boiling point or to a user-set temperature value and then automatically cuts off the power supply; water can be poured from its spout by holding the handle and tilting the kettle body.

3.2 normal operation The electric kettle works under the rated voltage, with water filled into its container to the nominal maximum water level and the lid closed; the electric kettle can heat the water to the boiling point or the temperature set by the user and then automatically cut off the power. NOTE. If there are accessories such as dust covers and filters, install them according to the instructions.

3.3 rated capacity The maximum volume of the kettle specified by the manufacturer.

3.4 boiling water Water that has been heated to boiling temperature.

3.5 boiling water break time Under specified test conditions, the time required from the time the water reaches boiling temperature to the time the electric kettle automatically cuts off the power.

3.6 thermal efficiency The ratio of the quantity of heat (Q) absorbed by the water when the temperature rises to the electricity consumed in this process (E) measured under specified conditions.

4 Classification

According to the control method. mechanical and electronic.

5 Requirements

5.1 Normal use environment The household and similar electric kettles specified in this document shall be able to operate normally under the following environmental conditions.

- a) Ambient temperature. 5 °C~45 °C;
- b) Relative air humidity. not more than 95%;
- c) Power supply. rated voltage $\pm 10\%$, rated frequency $\pm$
- d) Altitude. not more than 800 m.

5.2 Volume deviation The deviation between the actual volume of the electric kettle and the rated volume shall not exceed $\pm 5\%$ of the rated volume.

5.3 Prompt function The electric kettle shall have a prompt function for different working states, such as heating and keeping warm, to remind the user of sound or light information. DeltaC -- Volume deviation, %; C -- Actual capacity of the electric kettle, in liters (L); CR -- Rated capacity of the electric kettle, in liters (L).

6.3 Prompt function Observe whether it is qualified through visual inspection.

6.4 Boiling water performance

6.4.1 Boiling water cut-off temperature Fix the thermocouple 10 mm above the center of the bottom of the electric kettle. For the electric kettle with the heating element immersed in water, the thermocouple is fixedly placed 10 mm above the highest end of the heating element. Let the electric kettle work under normal working conditions, and measure the corresponding water temperature when the temperature control device acts.

6.4.2 Boiling water break time According to the test method in 6.4.1, measure the time from the water temperature reaching 98 °C to the time when the temperature control device operates.

6.5 Lift-to-off function Check whether it meets the requirements through observation and manual operation.

6.6 Water out-of-spout performance

6.6.1 Normal pouring test The electric kettle is operated under normal working conditions until the temperature control device is activated, and then the electric kettle is immediately lifted vertically so that the spout is (5 ± 1) cm above the upper edge of the water receiving container. The kettle body is tilted and water is poured at the most unfavorable flow rate between the minimum flow rate (water can be poured continuously) and the maximum flow rate (the water level does not exceed the lowest point of the kettle lid) until all the water in the kettle is poured out. Pour half of the rated volume of water into the kettle and repeat the above test. NOTE. When the bottle is nearly empty, some dripping and intermittent water flow are permitted.