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

GB/T 2423.1-2008

**Environmental testing for electric and electronic products - Part
2: Test methods - Tests A: Cold
(English Translation)**

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Foreword

GB/T 2423.1 is part 1 of GB/T 2423; the rest parts of GB/T 2423 are shown in Annex NA.

This Part is identical to IEC 60068-2-1:2007 Environmental Testing - Part 2-1. Tests - Test A. Cold (English version).

Compared with IEC 60068-2-1:2007, main changes of this Part are as follows.

- Change the name of this Part to be Environmental testing for electric and electronic products - Part 2. Test methods - Tests A. Cold;
- Change "this Standard" to be "this Part";
- Delete the foreword of IEC 60068-2-1:2007;
- Delete the introduction of IEC 60068-2-1:2007; transfer the contents into Annex NB;
- Add informative annex "Constituent parts of GB/T 2423" (see Annex NA);
- Add informative annex "Test A. cold and test B. the relations between classification and small letter of high temperature" (see annex NB);
- Delete "for non-heat dissipation test specimen" in section 1 of clause 1;
- Transfer the last 2 paragraphs in clause 1 into 4.1;
- Change the title of 4.3 from "non heat-dissipating specimen" to "test of non heat-dissipating specimen";
- Change the last paragraph in 6.2 to be Note.

For clarity, above revisions have been added with footnotes in relevant positions.

This Part replaces GB/T 2423.1-2001 Environmental testing for electric and electronic and electronic products - Part 2. Test methods - Tests A. Cold. Compared with previous edition, main changes are as follows.

- Delete the test Aa. Cold test of jump in temperature of non heat-dissipating specimen;
- Delete annex A, B, C, D and E;
- Add test Ae. Cold test of temperature jump of heat-dissipating specimen - test specimen should be energized with electricity during testing.

Annex NA and NB of this Part are informative.

This Part was proposed by and shall be under the jurisdiction of National Technical Committee (SAC/TC 8) on Environmental Conditions of Electric and Electronic Products and Environmental Test of Standardization Administration of China.

The responsible drafting organization is Guangzhou Electric Apparatus Research Institute.

The chief drafting staff of this Part. Zhang Zhiyong.

The historical editions replaced by this Part are.

- GB/T 2423.1-1981, GB/T 2423.1-1989, GB/T 2423.1-2001.

1 Scope

This Part of GB/T 2423 deals with cold tests applicable to both non heat-dissipating and heat-dissipating specimens. Test Ab and test Ad have no significant difference with that of previous version1). Test Ae has been added primarily for testing equipment that requires being operational throughout the test, including the conditioning periods. The object of the cold test is limited to the determination of the ability of components, equipment or other articles to be used, transported or stored at low temperature.

2 Normative References

The articles contained in the following documents have become part of this Part of GB/T 2423 when they are quoted herein. For the dated documents so quoted, all the modifications (excluding corrections) or revisions made thereafter shall not be

applicable to this Part. For the undated documents so quoted, the latest editions shall be applicable to this Part.

GB/T 2421 Environmental testing for electric and electronic products - Part 1.

1) There is "For non heat-dissipating specimens" in IEC 60068-2-1.2007.

General and guidance (GB/T 2421-1999, idt IEC 60068-1.1988)

GB/T 2422 GB/T 2422 Environmental testing for electric and electronic products Terms and definitions (GB/T 2422-1995, eqv IEC 60068-5-2.1990)

GB/T 2423.22 Environmental testing for electric and electronic products - Part 2.

Test methods Test N. Change of temperature (GB/T 2423.22-2002, IEC 60068-2-14.1984, IDT)

GB/T 2424.1 Environmental testing for electric and electronic products-Guidance for high temperature and low temperature tests (GB/T 2424.1-2005, IEC 60068-3-1.1974, IDT)

GB/T 2424.5 Environmental tests for electric and electronic products - Confirmation of the performance of temperature chambers (GB/T 2424.5-2006, IEC 60068-3-5.2001, IDT)

GB/T 2424.7 Environmental tests for electric and electronic products - Measurements in temperature chambers for tests A and tests B (with load) (GB/T

3 Terms and definitions

For the purposes of this document, the definitions given in GB/T 2422, as well as the following definitions, apply.

3.1

low air velocity in the working space

velocity of conditioning airflow within a working space which is sufficient to maintain conditions but low enough so that the temperature at any point on the test specimen is not reduced by more than 5 K by the influence of the circulation of the air (if possible, not more than 0.5 m/s)

4 Application of tests for non heat-dissipating specimens versus tests for heat-dissipating

specimens

Temperature chamber(s) are constructed and verified in accordance with specifications GB/T 2424.5 and GB/T 2424.72).

Further guidance for dry heat and cold tests can be found in GB/T 2424.1 and general guidance in GB/T 24213).

5 Test description

Tests Ab, Ad, and Ae are similar. Differences are noted in 5.2.2, 5.3.2 and 5.4.2. All other portions of the test are the same, starting with Clause 6. The rate of change of temperature within the chamber shall not exceed 1 K per minute (not exceed average value of 5 min time). The relevant specification shall define the functioning of the specimen under test.

6 Test procedure

GB/T 2424.5 provides guidance for the confirmation of performance of temperature test chambers. GB/T 2424.1 provides general guidance for the performance of Tests A and B.

7 Information to be given in the relevant specification

When Test A. Cold is included in the relevant specification, the following details shall be given, as far as they are applicable.

8 Information to be given in the test report

As a minimum the test report shall show the following information.

- a) Customer (name and address);
- b) Test laboratory (name and address and details of accreditation - if any);
- c) Test dates.

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