



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

GB/T 2423.51-2020

**Environmental testing - Part 2: Test methods - Test Ke: Flowing
mixed gas corrosion test**

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Preface

GB/T 2423 "Environmental Testing Part 2. Test Methods" is divided into several parts according to the test methods.

Refer to Appendix NA for the components of GB/T 2423.

This part is part 51 of GB/T 2423.

This section was drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces GB/T 2423.51-2012 "Environmental Testing Part 2. Test Method Test Ke. Flowing Mixed Gas Corrosion

test".

Compared with GB/T 2423.51-2012, the main technical changes in this part are as follows.

---Added the requirements for the cross-sectional area of the wet bulb tank placed in the test chamber in the "test equipment" (see Chapter 3);

---Modified the weight gain of the copper sheet sample obtained according to Appendix A in the "test conditions" [mg/(dm²·d)], in the method 2 from "0.3

~1.0" is changed to "0.3~1.3" (see Table 1, Table 1 of the 2012 edition);

---Added the "test conditions" related parties can negotiate and agree to use temperature and relative humidity values different from those given in Table 1 (see Table

1);

---Added the requirements for the total volume, total surface area and interval between test samples in "test samples" (see 7.2);

--- Added "Weighing with a 0.01mg resolution balance" in "Corrosion Monitoring Materials" (see 7.3);

---Modified the "test procedure" test procedure 1, test procedure 2, will "in the entire test period, the copper sample and the test sample should be together

"Conduct exposure test" is changed to "The copper sample shall be exposed together with the test sample 4 days before the test period. If necessary, copper strip test

The sample can be exposed for another 4 days during the test, and this will be written into the test report" (see 7.4,.2012 edition of 6.3.1 and 6.3.2);

---Added the requirements for no defects and surface roughness on the surface of the copper sample in the "material and size" (see A.2);

---Merge Figure B.1, Figure B.2, and Figure B.3 into Figure B.1 (see Appendix B, Appendix B of the.2012 edition).

The translation method used in this section is equivalent to the use of IEC 60068-2-60.2015 Environmental Testing Part 2-60.Test Test Ke. Flow

Mixed gas corrosion test."

This section has made the following editorial changes.

---Change the standard name to "Environmental Test Part 2.Test Method Test Ke. Flowing Mixed Gas Corrosion Test";

---Informative appendix NA "Components of GB/T 2423" has been added.

This part is proposed and managed by the National Standardization Technical Committee on Environmental Conditions and Environmental Tests for Electrical and Electronic Products (SAC/TC8).

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the company.

1 Scope

This part of GB/T 2423 is used to determine the impact of the indoor environment of work and storage on electrical and electronic product components, equipment and materials, especially

Corrosion effects of contact points and connectors, contact points and connectors can be individual components, assembled into a component or assembled into a complete device

Come for assessment.

The test methods provided in this section help to compare and select materials, manufacturing processes and component designs in terms of corrosion resistance. Test party

Refer to Appendix C for the selection guide of method and test time.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article

Pieces. For undated references, the latest version (including all amendments) applies to this document.

ISO 431 refined copper profiles (Copperrefinery shapes)

IEC 60512-2-1 Electronic equipment connector test and measurement Part 2-1.Electrical continuity and contact resistance test

2a. Contact resistance millivolt method

(Connectorsforelectronicequipment-Testsandmeasurements-Part 2-1.Elec-

tricalcontinuityandcontactresistancetests-Test2a.Contactresistance-Milivoltlevelresistance method)

IEC 60512-3-1 Electronic Equipment Connector Test and Measurement Part 3-1.Insulation Test Test 3a. Insulation Resistance (Connectors

forelectronicequipment-Testsandmeasurements-Part 3-1.Insulationtests-Test3a.Insulation resistance)

3 Test equipment

The test equipment includes climate system, studio, gas delivery system and gas concentration detection device.

The design and structure of the test equipment are optional, but each test method should meet its specified conditions in the entire working space and comply with

Meet the following requirements.

- Water droplets or suspended objects should not enter the studio;
- The air and water used for the test should be clean enough so as not to affect the test effect;
- Ensure that the test conditions in the working space are consistent when the test gas passes through the studio;
- The gas analysis sampling point should be in the working space of the test box;
- Exhaust should be implemented in accordance with relevant legal provisions;
- The area of the wet ball tank placed in the working room should not exceed 0.1% of the cross-sectional area of the working room.

Due to the strong synergistic effect and the so-called "memory effect" (that is, the chloride is difficult to completely remove from the test chamber and pipeline), it is used as a chlorine-containing

The testing studio and piping system should be limited to chlorine testing.

The working space stipulates that the corrosion weight of the copper specimens at each position in the space shall not exceed 15% of the average corrosion weight of all copper specimens

[Refer to Appendix A, the corrosion weight of copper specimens is expressed in $\text{mg}/(\text{dm}^2 \cdot \text{d})$].

4 severity level

The test severity level is specified by the relevant regulations and depends on the following factors.

- Test method (selected from Table 1);
- Test time.

The test time is preferably 4d, 7d, 10d, 14d and 21d.

There are 4 test methods, the test parameters are shown in Table 1, and the application