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GB/T 2423.51-2020 / IEC 60068-2-60:2015

Replacing GB/T 2423.51-2012

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

环境试验 第 2 部分：试验方法

试验 Ke: 流动混合气体腐蚀试验

(IEC 60068-2-60:2015, Environmental testing - Part 2-60: Tests - Test Ke: Flowing mixed gas corrosion test, IDT)

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Foreword

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

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

This Part is Part 51 of GB/T 2423.

This Part is 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 methods - Test Ke: Flowing mixed gas corrosion test".

Compared with GB/T 2423.51-2012, the main technical changes of this Part are as follows:

- ADD the requirements for the cross-sectional area of the wet bulb pod placed in the test chamber in the "Test apparatus" (see Clause 3);
- Modify the mass increase of copper coupons [mg/(dm^2 × day)] according to Annex A in the "Test conditions"; in Method 2, change from "0.3~1.0" to "0.3~1.3" (see Table 1; Table 1 of the 2012 edition);
- ADD the provision in "Test conditions" that temperature and relative humidity values different from those given in Table 1 may be used based upon mutual agreement between the interested parties (see Table 1);
- ADD the requirements for the total volume, total surface area of the test specimens and space between specimens in "Test specimens" (see 7.2);
- ADD "measured by a balance with a resolution of 0.01 mg" in "Corrosivity monitoring materials" (see 7.3);
- Modify test procedure 1 and test procedure 2 of "Testing procedure"; CHANGE "During the entire test duration, the copper coupons shall be exposed with the test specimens" TO "The copper coupons shall be exposed with the test specimens for the first 4 days during a test duration. The copper coupons might be exposed another 4 days during a test duration, if necessary. It shall be included in the test report" (See 7.4; 6.3.1 and 6.3.2 of the 2012 edition);
- ADD the requirements for the surface defect and surface roughness of the copper coupons in "Nature and dimension" (see A.2);
- COMBINE Figure B.1, Figure B.2, and Figure B.3 into Figure B.1 (see

Annex B; Annex B of the 2012 edition).

This Part, using translation method, is identical to IEC 60068-2-60:2015 "Environmental testing - Part 2-60: Tests - Test Ke: Flowing mixed gas corrosion test".

This Part has made the following editorial changes:

- CHANGE the standard name to "Environmental testing - Part 2: Test methods - Test Ke: Flowing mixed gas corrosion test";

- ADD informative Annex NA "Components of GB/T 2423".

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

Drafting organizations of this Part: China National Electric Apparatus Research Institute Co., Ltd., Jiangsu Tomilo Environmental Testing Equipment Co., Ltd., Shanghai Zundar Technology Co., Ltd., AVIC Changcheng Metrology & Measurement (Tianjin) Co., Ltd., Guangzhou Power Supply Co., Ltd. Electric Power Test Research Institute, Guangdong Midea Life Electric Manufacturing Co., Ltd., Fujian Xinneng Offshore Wind Power R&D Center Co., Ltd., Wuxi Soyater Test Equipment Co., Ltd., Shanghai Institute of Measurement and Testing Technology, Shenzhen Academy of Metrology & Quality Inspection, Zhejiang Institute of Metrology, Nanjing Wuhe Test Equipment Co., Ltd., Beier Laboratory Equipment Jiangsu Co., Ltd., Shenzhen ORT Testing Technology Co., Ltd., Ningbo Ouzhi Electrical Technology Co., Ltd.

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The previous editions of the standard replaced by this Part were released as follows:

- GB/T 2423.51-2000, GB/T 2423.51-2012.

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

1 Scope

This Part of GB/T 2423 determines the corrosive influence of operating and storage indoor environments on electrotechnical products components, equipment and materials, particularly contacts and connections, considered separately, integrated into a subassembly or assembled as a complete equipment.

It provides test methods giving information, on a comparative basis, to aid the selection of materials, choice of production processes and component design, with regard to corrosion resistance. A guide to the selection of methods and test duration is provided in Annex C.

2 Normative references

The following documents are indispensable for the application of this document. For the dated references, only the editions with the dates indicated are applicable to this document. For the undated references, the latest edition (including all the amendments) are applicable to this document.

ISO 431 Copper refinery shapes

IEC 60512-2-1 Connectors for electronic equipment - Tests and measurements - Part 2-1: Electrical continuity and contact resistance tests - Test 2a: Contact resistance - Millivolt level resistance method

IEC 60512-3-1 Connectors for electronic equipment - Tests and measurements - Part 3-1: Insulation tests - Test 3a: Insulation resistance

3 Test apparatus

The test apparatus consists of a climatic system, test enclosure, gas delivery system and means for measuring gas concentration.

Details of design and construction are optional but shall be such that the conditions specified for each method are fulfilled throughout the working volume and shall comply with the following requirements:

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