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**NATIONAL STANDARD OF THE  
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**GB/T 2424.12-2014**

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**Environmental testing -- Part 2: Test methods -- Guidance to  
test Kd: Hydrogen sulphide test for contacts and connections**

环境试验 第2部分：试验方法 试验Kd：接触点和连接件的硫化氢试验导则  
(English Translation)

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## Foreword

GB/T 2424 contains the following sections.

- GB/T 2424.1 electric and electronic products environmental testing high temperature and low temperature tests
- GB/T 2424.2 electric and electronic products environmental testing for damp heat tests
- GB/T 2424.5 electric and electronic products environmental testing to confirm performance of temperature chambers
- GB/T 2424.6 electric and electronic products environmental testing temperature/humidity chamber performance confirmed
- GB/T 2424.7 electric and electronic products environmental testing test A and B (with load) measure the temperature of the chamber
- GB/T 2424.10 atmospheric corrosion accelerated environmental testing of the general guidelines for test
- GB/T 2424.11 Environmental testing - Part 2. sulfur dioxide test for contacts and connections. Tests - Test Kc Guidelines
- GB/T 2424.12 Environmental testing - Part 2. Test methods - Test Kd. contacts and connections of hydrogen sulfide test Guidelines

--- GB/T 2424.15 electric and electronic products environmental testing temperature/low air pressure tests Guide

--- GB/T 2424.17 Environmental testing for electric and electronic products Part 2. Test methods - Test T. Soldering Test Guidelines

--- Environmental Test Guidelines GB/T 2424.19 electric and electronic products environmental testing simulated the effects of storage

--- GB/T 2424.22 electric and electronic products environmental testing procedures for temperature (cold and heat) and vibration (sinusoidal) tests Guidelines

--- GB/T 2424.25 Environmental testing for electric and electronic products - Part 3. Test methods for seismic test guidelines

--- GB/T 2424.26 Environmental testing for electric and electronic products - Part 3. Supporting documentation and guidance vibration test selection

--- GB/T 2424.27 Environmental testing Supporting documentation and guidance temperature and humidity chamber uncertainty calculation this section GB/T 2424 Part 12.

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

This section uses the translation method identical with IEC 60068-2-46. 1982 (first edition) "Basic environmental testing procedures - Part 2. Test Test Kd. contacts and connections of hydrogen sulfide test guidelines. " this part of IEC 60068-2-46. compared to 1982 (first edition), mainly to do the following editorial changes.

Name --- this section read. "Environmental testing - Part 2. Test methods - Test Kd. contacts and connections of hydrogen sulfide test Test guidelines ";

--- For the/T 2424 standard format is consistent with the new GB , increased Chapter 1, "scope" and Chapter 2, "Normative references" and phase Other clauses should be adjusted number;

--- IEC 60068-2-46. 1982 (First Edition) Chapter 7, referred to IEC 60355. 1971, due to the IEC 60355. 1971 Obsolete in addition, in order to better the standard application, this section refers to GB/T 2424.10-2012;

--- Table 1 and Table 2 as an information appendix "hydrogen sulfide pollution data" (see Appendix A).

This part of the National Electrical and Electronic Products Environmental conditions and environmental tests for Standardization Technical Committee (SAC/TC8) and focal points.

This section drafted by. China Electric Apparatus Research Institute Co., Ltd. Southern Jiangsu Wuxi Test Equipment Co., Ltd., Shenzhen Metrology and Quality Inspection Measure Institute, Ningbo Jiesheng Ocean Development Co., Ltd., Shanghai Institute of Technical Supervision quality inspection.

## 1 Scope

This section GB/T 2424 applies to the design and testing for the relevant personnel to provide guidance in the application of hydrogen sulfide test specification.

## 2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

Hydrogen sulphide test for contacts and connections of. GB/T 2423.20-2014 Environmental testing - Part 2. Test methods Test Kd (IEC 60068-2-43:2003, IDT)

## 3 Overview

Contacts and connections during the life expectancy of good performance depends on many parameters, some parameters of its design decisions (such as type Style, materials, power, etc.); other parameters by decisions that affect them environment. Consider the environmental impact, with particular attention to the atmosphere contained Pollutants (usually very little content).

Some silver and silver alloys due to the presence of trace amounts of hydrogen sulfide are particularly sensitive to many environmental and discoloration, discolored product dimmed mainly by sulfur beta-Silver components.

Use of these metal materials as the separable contacts of an electrical connector, may result in increased contact resistance and contact noise.

## 4 Atmospheric hydrogen sulfide

Bacteria on plants, soil, sewage and animal waste in the sulfate reduction, release of hydrogen sulfide. Hydrogen sulfide is oxidized in the atmosphere easily Into sulfur dioxide, sulfur dioxide rainwater to the ground. Local soil oxygen, some bacteria sulfur dioxide into sulfate. Rot in Rotten organic substances caused by hypoxia or anoxia local produce, sulfate-reducing bacteria to complete the cycle, variable sulfate to hydrogen sulfide, which is big Natural gas is the main source of sulfur. Thus, hydrogen sulphide is a widespread distribution of air pollutants.

When there is no rain washing, sulfur dioxide would accumulate in the atmosphere. Urban areas burning of fossil fuels produces sulfur dioxide into the atmosphere.

The content of sulfur dioxide in the atmosphere may be 10 to 1000 times the hydrogen sulfide content, become the main reason for corrosion. But in the same concentrations Under both more corrosive hydrogen sulfide, especially for silver and copper (see GB/T

2423.19).

Although the natural environment is the main source of sulfur is hydrogen sulfide, but the industrial process can produce hydrogen sulfide. Refineries, chemical plants and Gasworks is the main source. Usually reported atmospheric hydrogen sulfide concentration  $(1 \sim 30) \times 10^{-9}$  (volume fraction). Peak in many places it exceeds this value, especially in the vicinity of the generating source, a higher concentration. Table A.1 is to measure the concentration of hydrogen sulfide statistical distribution of instances. Table A.2 lift A representative of the concentration of hydrogen sulfide series of site measurement. These concentrations sufficient to cause a natural silver color. Other sulfur contaminants Far less important.

The concentration of sulfur dioxide and humidity is not high, little effect on silver, so in fact it is difficult to find discolored product. The two most