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

GB/T 5169.18-2013

Replacing GB/T 5169.18-2005

**Fire hazard testing for electric and electronic products -- Part
18: Toxicity of fire effluent -- General guidance**

电工电子产品着火危险试验 第18部分：燃烧流的毒性 总则

(English Translation)

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Table F-1 stimulus value (derived from ISO 13571:2007)

Foreword

GB/T 5169 "Fire hazard testing for electric and electronic products" have or plan to release the following sections.

--- Part 1. Terminology concerning fire tests

--- Part 2. Guidance for assessing the fire hazard - General

--- Part 3. Electronic Components assessing fire hazard requirements and test specifications for the development of guidelines

--- Part 5. Test flames - Needle-flame test methods for confirming test methods and guidelines

--- Part 9. Guidance for assessing the fire hazard preselection test procedures - General

--- Part 10. Glowing/hot wire based test methods - Glow - wire apparatus and common test procedure

--- Part 11. Glow-wire flammability test method for Glowing/hot wire based test methods for the finished product

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- Part 13. Glowing/hot wire based test methods - Glow - wire ignitability test method for materials from
- Part 14. Test flames - 1kW nominal pre-mixed flame - Apparatus, confirmatory test arrangement and guidance
- Part 15. Test flames - 500W flames - Apparatus and method for confirmatory test
- Part 16. Test flames - 50W horizontal and vertical flame test methods
- Part 17. Test flames - 500W flame test methods
- Part 18. General toxicity of combustion flow
- Part 19. Abnormal heat - Mould stress relief distortion test
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- Part 21. Abnormal heat - Ball pressure test
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- Part 23. Test flames tubular polymeric material 500W vertical flame test methods
- Part 24. Guidance for assessing the fire hazard of the insulating liquid
- Part 25. Smoke obscuration - General
- Part 26. Smoke obscuration - Summary and relevance of test methods
- Part 27. Smoke obscuration - Small-scale static test instrument Description
- Part 28. Smoke obscuration - Small-scale static test - Materials
- Part 29. Heat release - General
- Part 30. Heat release - Summary and relevance of test methods
- Part 31. Surface spread of flame - General
- Part 44. Guidance for assessing the fire hazard of fire risk assessment 1)

1) This section is still in the development plan.

This section GB/T 5169 Part 18.

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

This Part replaces GB/T 5169.18-2005 "Fire hazard testing for electric and electronic products - Part 18. The electric and electronic products, fire Disaster to minimize risk of poisoning General Guidelines ", compared with the GB/T 5169.18-2005 main technical changes are as follows.

- Remove the evaluation of fire risk of poisoning principle "Overview" (2005 version 4.1);

- Increased choker carbon monoxide and hydrogen cyanide caused the failure of the body is calculated dose (see 4.3.2);
- An increase of some important stimuli can cause the body to lose body integral value (F value) (see Table 1 4.3.4);
- Consider increasing the diffusion combustion flow volume terms (see 4.4);
- Increases escape time assessment provisions (see 4.5);
- Increased use of small-scale test methods to assess the risk of poisoning combustion stream General (see Chapter 5);
- Increasing the suitability assessment requirements test methods (see Chapter 6).

This section uses the translation method identical with IEC 60695-7-1:2010 "Fire hazard testing - Part 7-1. Toxicity of the total flow of combustion Then ", but according to the provisions of GB/T 20000.2-2009 made a small editorial changes, and deletes the last two paragraphs of Chapter 1 of informative content.

This section is consistent with the existing standard series, the standard name will be changed to "Fire hazard testing for electric and electronic products - Part 18. combustion flow General toxicity. " this part is proposed by the China Electrical Equipment Industrial Association.

This section hazard testing Standardization Technical Committee (SAC/TC300) is administered by the National Electrical and Electronic Products fire.

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Participated in the drafting of this section. Guangzhou Weikai Detection Technology Co., Ltd., Sichuan Fire Research Institute of Ministry of Public Security, the Guangdong Entry-Exit Inspection and Quarantine Inspection and Quarantine Bureau Technology Center, Shenzhen Academy of Metrology and Quality Inspection, Shenzhen CIQ, China Saibao Laboratory, Wuhan computing Machine External Equipment Institute, China Electronics Standardization Institute.

Introduction

Electric and electronic products are often involved in the fire. However, except for some specific places (such as power plants, transportation tunnels and heavy traffic computer Room), the electrical and electronic products in quantity is not usually constitute a major source of risk of poisoning. For example, in the family home and public places, electrician Electronic products, compared with other items (such as furniture) is a very small flow of combustion sources.

GB/T 5169 and IEC 60695-7 series of standards publications involved in the toxicity of combustion flow is based on ISO/TC92 in fire safety Studies constantly evolved.

This part of ISO/TC92 (SC3) in ISO 19706. Fire risk of poisoning in 2007 described the development of fire safety rules Consistent. Assessing the fire hazard of electric and electronic products in the General IEC 60695-1-10 and IEC 60695-1-11 has provided. Fire escape Estimated time tutor in the ISO 13571:2007 provides. Fatal Toxicity determination of combustion flow in the ISO 13344:2004 have Statements.

1989, ISO/T R9122-1 expressed the following views.

"As we currently know, small-scale tests are not suitable for toxic effects of regulatory measures. They can not produce toxic gases as materials in the fire Tendency to provide hierarchical order. All the existing tests have limitations, because it can not reproduce the dynamics of the development of the fire, the process determines Time full-sized fire burning stream - the concentration curve reflects the response of electrical and electronic products, rather than material fire. This limitation is Crucial, because, according to current understanding of the combustion stream toxic effects in addition to the size and chemical composition of the burning material, but also by major it depends on the rate of combustion and combustion state. " Because of these limitations, IEC/TC89 has developed IEC 60695-7-50, and have also developed a ISO ISO/T S19700.

2007 [1]. Two criteria using the same instrument. This is a practical small-scale test equipment, can be used to determine the toxic effects, its the advantage is you can simulate the fire to determine the stage of drug efficacy data obtained can be applied to assess the risk of a full-size case. Both test Test methods give different physical fire models with air circulation and temperature changes, but the ISO test method was also used as the equivalent ratio as a key parameter.

The signs of fire and casualties binding test ignition and combustion toxicity study data indicate that there is a rare highly toxic chemicals not important (see 4.3.5). So far, the danger of carbon monoxide poisoning is the most important component. Other major components of cyanide Hydrogen, carbon dioxide and irritating gases. At the same time, there are some important threat to the life, non-toxic factors such as heat, radiation, hypoxia Fuzzy and smoke effects, which can be found in ISO 13571. Smoke obscuration can always see GB/T 5169.25-2008 [2].

IEC/TC89 believe, electrical and electronic products to effectively alleviate the risk of poisoning the best by improving the resistance to fire from combustible and reducing the rate of development Tests and specifications to achieve, which is to restrict the flow of combustion exposure levels.

Fire hazard testing for electric and electronic products Part 18. General toxicity of combustion flow