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

GB/T 16838-2021

Replacing GB/T 16838-2005

Environmental test and severities for fire electronic products

消防电子产品环境试验方法及严酷等级

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part

1. Structure and Drafting Rules of Standardization Documents" Drafting. This document replaces GB/T 16838-2005 "Environmental Test Methods and Severity Levels of Fire Electronic Products", and is compatible with GB/T 16838-2005. In comparison, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

--- Change the classification of severity levels from the original 4 levels to 5 levels (see 4.3.1,

3.3 in the 2005 edition);

--- Modified high temperature (operation) test, high temperature (endurance) test, low temperature (operation) test, low temperature (endurance) test, constant damp heat (operation) Test, constant damp heat (endurance) test, alternating damp heat (operation) test, alternating damp heat (endurance) test, water test, voltage fluctuation resistance Disturbance test, voltage sag, short-term interruption and voltage change immunity test, electrostatic discharge immunity test, radio frequency electromagnetic field radiation Radio immunity test, electrical fast transient pulse group immunity test, surge (impact) immunity test and radio frequency field induced conducted disturbance Interference immunity test (see 5.1~5.8, 5.18~5.25, 4.1~4.8, 4.14~

4.21 of the 2005 edition);

--- Added new requirements for the safety integrity level of fire-fighting electronic products (see 4.2);

--- Added free drop test, mildew test, salt spray test, sand dust test, power frequency magnetic field immunity test, AC power port harmonic Low-frequency immunity test items of wave, interharmonic wave and power grid signal (see 5.14, 5.15, 5.16, 5.17, 5.26, 5.27).

This document was proposed by the Ministry of Emergency Management of the People's Republic of China. This document is under the jurisdiction of the National Fire Standardization Technical Committee (SAC/TC113). This document was drafted by: Shenyang Fire Research Institute, Ministry of Emergency Management, Jilin Province Fire

and Rescue Corps, Beijing Lida Huaxin Electronics Co., Ltd., Shou'an Industrial Fire Fighting Co., Ltd., Yinghong Fire Fighting Technology (Fujian) Co., Ltd. The main drafters of this document. Tong Ruitao, Guo Rui, Li Haitao, Wang Yuxing, Guo Jinlong, Zhao Yu, Wang Yane, Liu Meihua, Zhu Feng, Chen Hongying, Li Weigang, Li Xin. The previous versions of this document and the documents replaced are as follows:

---First published in.1997 as GB 16838-1997; first revised in.2005;

---This is the second revision. Environmental test methods and severity levels of fire-fighting electronic products

1 Scope

GB/T 16838-2021 is the Chinese national standard on environmental test and severities for fire electronic products, in the field of environment and health protection, safety. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 20 August 2021 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 March 2022. Classification: ICS 13.220.01, CCS C81. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the environmental test methods, severity levels and functional safety requirements for fire-fighting electronic products. This document applies to all types of fire-fighting electronic products. For fire-fighting electronic products used in special places, if the use is more stringent than this document For the environmental test conditions, in addition to the test parameters specified separately, the test method can also refer to this document.

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated quotations Only the version corresponding to that date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to This document.

GB/T 2423.1-2008 Environmental testing of electric and electronic products Part