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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 44187-2024

Dangerous goods - Test method of slow cook-off test for extremely insensitive articles without a mass explosion hazard (1.6 article)

危险货物 无整体爆炸危险的极端不敏感物品（1.6项物品）缓慢升温试验方法

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Standardization Administration of the PRC

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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 for standardization documents" Drafting is required. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document is proposed and coordinated by the National Technical Committee on Hazardous Chemicals Management Standardization (SAC/TC 251). The drafting organizations of this document include. Nanjing University of Science and Technology, Shanghai Institute of Chemical Technology Testing Co., Ltd., China Inspection and Quarantine Jiangsu Technical Service Co., Ltd. Shanghai Customs Industrial Products and Raw Materials Testing Technology Center, Harbin Institute of Technology, China Petroleum and Chemical Industry Federation, Guangdong Hongda CIVIL EXPLOSIVE GROUP LIMITED. The main drafters of this document are. Xu Sen, Luo Yimin, Ma Zhiyong, Xia Yu, Liu Jingping, Shang Zhaocong, Ge Mingmei, Chen Xiang, Yu Teng, Jiang Zaixing, Cao Mengran, Chen Yiwen, Hao Yuan, and Cai Jiayuan.

This document is used to simulate the situation when dangerous goods are facing fire danger. Although they are not directly covered by flames, they are still exposed to the fire environment. Slow heating under high thermal radiation field and high thermal air flow conditions. The test products involved in this document usually have fixed packaging or are complete sets of standardized products. The reaction level after the test is related to its packaging or The structure of the standard (such as shell thickness, constraint method, etc.) is closely related. Dangerous goods without mass explosion hazard Extremely insensitive items (

1.6 items) Slowly warm up Test methods Warning - Personnel using this document should have practical experience in formal laboratory work. Special attention should be paid to the test process involving explosives. The use of the heating device during the test should have independent This document does not address all possible safety issues. The user is responsible for taking appropriate safety and health measures and ensuring that the

conditions stipulated by relevant national laws and regulations are met.

1 Scope

GB/T 44187-2024 gives the slow cook-off test used in qualifying an article for Division 1.6, the transport class of extremely insensitive detonating articles. The test represents the fire that develops slowly around a stored or transported item, and it is the case that most sharply separates an insensitive munition from a conventional one: heated gradually, a conventional article eventually reacts violently, while a genuinely insensitive one is required to react no more severely than a burn. The standard sets the principle, the test article and its configuration, the heating chamber and the prescribed slow heating rate, the instrumentation and the recording of the temperatures and of the time to reaction, the confinement and the witness arrangements, the number of trials, the classification of the reaction observed, burning, deflagration, explosion or detonation, against the criteria, and the report. It takes effect on 1 November 2024.

This document specifies the test principle, instruments and equipment, test and outcome assessment. This document is suitable for evaluating the reaction characteristics of samples under slowly increasing temperature conditions and can be used to measure whether they can be classified as having no mass explosion hazard. Extremely insensitive items.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies. in this document.

GB 6944 Classification and Product Name Numbers of Dangerous Goods

GB 19455 Safety specification for inspection of hazardous properties of dangerous goods for civil explosives

GB 19458 Safety specification for inspection of hazardous properties of dangerous goods - General rules

GB/T 30429 Industrial Thermocouple United Nations Recommendations on the Transport of Dangerous Goods Model Regulations

3 Terms and definitions

GB 19455, GB 19458, GB 6944 and the United Nations "Recommendations on the Transport of Dangerous Goods Model Regulations" and the following The terms and

definitions apply to this document.

3.1 Extremely insensitive articles Articles which do not present a mass explosion hazard and for which the probability of ignition or of transition from combustion to explosion (under normal conditions of transport) is negligible.

4 Test Principle

The sample is slowly heated in a dedicated slow oven for testing. The slow oven is heated from room temperature at a rate of 3.3 °C/h according to a pre-set temperature program. The temperature of the sample and the slow oven is gradually increased to 365 °C. Thermocouples are installed at specific locations of the sample and the slow oven to monitor the sample temperature and the ambient temperature. The inside of the box is gradually heated, and decomposition or even ignition, combustion or explosion may occur. The sample temperature change curve is used to comprehensively judge the response type, grade and degree of the sample under the action of slow heating.