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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 19469-2026

Replacing GB/T 19469-2004

Determination of the ignition temperature of pyrotechnic composition - DTA-TG analysis

烟火药着火温度的测定 差热-热重分析法

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. This document supersedes GB/T 19469-2004 "Determination of Ignition Temperature of Pyrotechnic Agents - Differential Thermal-Thermogravimetric Analysis", and is consistent with GB/T 19469- Compared to.2004, aside from structural adjustments and editorial changes, the main technical changes are as follows:

---Added content on "Copper Test Sieves" (see 6.1);

---The parameters for the "Temperature Controlled Oven" have been changed (see 6.2, Chapter 6 of the.2004 edition);

---The "Safety Notice" content has been changed (see 7.1, "Warnings" from the.2004 version);

---The method for preparing pyrotechnic sample has been changed (see 7.2, 7.3, and

7.2 in the.2004 edition). Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China National Light Industry Council. This document is under the jurisdiction of the National Technical Committee on Standardization of Fireworks and Firecrackers. This document was drafted by: Nanning Customs Technology Center and Ningbo Customs Technology Center. The main drafters of this document are. You Lanhua, Guo Wei, Chen Youwei, Chen Xiaomeng, He Jinlin, and Chen

Xian. The release history of this document and the document it replaces is as follows:

---First published in.2004 as GB/T 19469-2004;

---This is the first revision. Determination of the ignition temperature of pyrotechnic powder Differential thermal-thermogravimetric analysis Warning. Personnel using this document should have practical experience in relevant testing or inspection work. This document does not specify all possible safety risks. Regarding all issues, users are responsible for taking appropriate safety and health measures and ensuring compliance with relevant national laws and regulations.

1 Scope

GB/T 19469-2026 is the Chinese national standard covering the temperature at which a pyrotechnic mixture ignites, measured by differential thermal analysis and thermogravimetry - the number that governs how the composition may be dried, stored and transported. It replaces GB/T 19469-2004 and has been in force since 1 June 2026, with the pyrotechnic assay methods revised alongside it. It was issued on 27 February 2026 and has been in force since 1 June 2026, replacing GB/T 19469-2004. The document is under the responsibility of the China National Light Industry Council. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document describes a method for determining the ignition temperature of pyrotechnic propellants using differential thermal-thermogravimetric analysis. This document applies to the determination of the ignition temperature of pyrotechnic powder.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 8170 Rules for rounding off numerical values and the representation and determination of limiting values AQ4115 Technical Specification for Preventing Static Electricity Hazards in Fireworks and Firecrackers

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 A mixture of oxidizer and combustible agent that produces a pyrotechnic effect when

burned or exploded.

Note. "Fireworks effect" refers to the phenomenon that occurs when fireworks burn or explode, producing light, sound, color, gas, smoke, and other effects, as well as forming various patterns.

3.2 ignition temperature The minimum temperature at which pyrotechnic powder is ignited and continues to burn automatically.

3.3 A technique for measuring the temperature difference between a sample and a reference material under programmed temperature control.

3.4 A technique for measuring the relationship between the mass of a sample and temperature under programmed temperature control.

4.Method Principles Under programmed temperature control, changes in temperature and/or mass of pyrotechnic sample due to physical and/or chemical changes are measured using... The thermal analyzer records the relationship between sample mass and temperature difference versus temperature, i.e., the thermogravimetric curve and the differential thermal analysis curve. The first DTA curve of the sample... The extrapolated onset temperature of a strong exothermic peak (the corresponding TG curve usually shows obvious weight loss) is the ignition temperature of the tested sample.