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

GB/T 16428-2026

Replacing GB/T 16428-1996

Determination of the minimum ignition energy of dust clouds

粉尘云最小着火能量测定方法

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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 replaces GB/T 16428-1996 "Method for Determination of Minimum Ignition Energy of Dust Clouds". Compared with GB/T 16428-1996, except for... Aside from structural adjustments and editorial changes, the main technical changes are as follows:

- a) The scope has been changed (see Chapter 1, Chapter 1 of the.1996 edition);
- b) The "Terminology and Definitions" have been changed (see Chapter 3, Chapter 2 of the.1996 edition);
- c) The section on "Sample Selection and Preparation" has been amended (see Chapter 4,

Chapter 3 of the.1996 edition);

d) The experimental setup was modified (see Chapter 5, Chapter 4 of the.1996 edition);

e) The technical requirements for electrode spacing in electric spark generating systems have been changed [see 5.2e,

4.1 of the.1996 edition];

f) The experimental procedures were changed (see Chapter 6, Chapter 5 of the.1996 edition);

g) Additional security measures have been implemented (see Chapter 7);

h) The contents of the test report have been changed (see Chapter 8, Chapter 6 of the.1996 edition);

i) Requirements for a 1.2L Hartmann tube and a 20L spherical explosion test apparatus have been added (see Annex A and Annex B). 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 and is under the jurisdiction of the China National Coal Association. This document was drafted by: China Coal Technology & Engineering Group Chongqing Research Institute Co., Ltd., Dalian University of Technology, Chongqing University, Shandong University of Science and Technology, Xi'an University of Science and Technology, Beijing Institute of Technology, Changzhou University, Qingdao University of Technology, Guizhou University, Lanzhou University of Technology, China Academy of Safety Science and Technology Research Institute. The main drafters of this document are. Long Qingming, Huang Zichao, Jiang Haipeng, Xue Shaoqian, Wang Lei, Zhu Pikai, Deng Bozhi, Zhang Yutao, Yuan Mengqi, and Zheng Kai. Lu Shouqing, Li Runzhi, Li Xiaochuan, Jia Quansheng, Du Yuting, Yan Zheng, Li Zhenbao, Zhao Jingqing, Wang Gang, Si Rongjun. This document was first published in.1996, and this is its first revision. Method for determining the minimum ignition energy of dust clouds

1 Scope

GB/T 16428-2026 is the Chinese national standard covering the smallest spark that will ignite a suspended dust - measured in a tube with a calibrated discharge, and the number that decides whether static electricity from a plastic bag or a person's clothing is enough to destroy a plant. It replaces GB/T 16428-1996, a method thirty years old, under the China National Coal Association. It was issued on 28 January 2026 and has been in force since 1 August 2026, replacing GB/T 16428-1996. The document is under the responsibility of the China National Coal Association. 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 specifies the sample selection and preparation, test apparatus, test procedures, safety measures, and test report for determining the minimum ignition energy of dust clouds. Requirements. This document applies to the determination of the minimum ignition energy of dust clouds that rely on oxygen in the air to sustain their oxidation reactions. This document does not apply to explosives or other dust that can burn and explode without relying on oxidizing gases.

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 150 (All Parts) Pressure Vessels

GB/T 15604 Dust Explosion Prevention Terminology

3 Terms and Definitions

The terms and definitions defined in GB/T 15604 and the following terms and definitions apply to this document.

3.1 dust cloud In an atmospheric environment, a mixture of combustible dust and gaseous oxidant at a certain concentration suspended in the gaseous oxidant. [Source: GB/T 15604-2024, 3.3]

3.2 Emin The minimum spark energy required to ignite a dust cloud and sustain combustion. [Source: GB/T 15604-2024, 4.11, with modifications]

3.3 Spark discharge Instantaneous discharge between two conductors at different potentials.

3.4 Dust cloud ignition Due to the energy transfer, the dust cloud (3.1) in the air undergoes the initial phenomenon of explosion. [Source: GB/T 15604-2024, 3.11]

3.5 ignition delay time The interval between the start of dust spraying and the appearance of spark discharge.