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

GB/T 16425-2025

Replacing GB/T 16425-2018

**Risk assessment and characteristic parameter determination
methods of combustible dust explosion**

可燃性粉尘爆炸风险评估及特性参数测定方法

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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 supersedes GB/T 16425-2018 "Determination of Lower Explosive Limit Concentration of Dust Cloud" and GB/T 16427-2018 "Resistivity of Dust Layer". This document integrates GB/T 16425- (The following are references. "Determination of Minimum Ignition Temperature of Dust Layers", GB/T 16430-2018 "Determination of Minimum Ignition Temperature of Dust Layers"). The contents of GB/T 16427-2018 and GB/T 16430-2018,

compared with GB/T 16425-2018, are the same except for structural adjustments and editing. Aside from the sexual alterations, the main technical changes are as follows:

---Added "Enterprises with potential dust explosion hazards", "Number of workers involved in dust-related operations", "Combustible dust", "Explosive dust environment", "Explosion pressure", and "Ignition tools" "Initial pressure", "rate of increase of explosion pressure", "maximum explosion pressure of dust cloud", "maximum explosion pressure of dust cloud", "rate of increase of explosion pressure of dust cloud", "powder" "Dust explosion hazard classification", "lower explosion limit concentration", "resistivity", "minimum ignition temperature of dust layer", "limiting oxygen concentration of dust cloud", "inducible ignition". The document defines 17 terms and definitions related to "guided time" (see sections 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12, and 3.14). 3.15, 3.16, 3.17);

---The terms and definitions of "dust" and "combustible dust" have been deleted (see sections

3.2 of the.2018 edition);

---Added risk assessment for combustible dust explosions (see Chapter 4);

---A method for determining combustible dust has been added (see Chapter 5);

---Added methods for determining the maximum explosion pressure and maximum pressure rise rate of dust clouds (see Chapter 6);

---A method for determining the lower explosive limit concentration of dust clouds has been added (see Chapter 7);

---A method for measuring the resistivity of dust layers has been added (see Chapter 8);

---A method for determining the minimum ignition temperature of dust layers has been added (see Chapter 9);

---A method for determining the limiting oxygen concentration of dust clouds has been added (see Chapter 10);

---A method for determining the spontaneous combustion temperature of accumulated dust has been added (see Chapter 11). 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 Ministry of Emergency Management of the People's Republic of China. This document was drafted by: China Steel Wuhan Safety and Environmental Protection Research Institute Co., Ltd., Northeastern University, and Tianjin Fire Research Institute of the Ministry of Emergency Management. Shanghai Chemical Industry Research Institute Testing Co., Ltd., China Coal Technology & Engineering Group Chongqing Research Institute Co., Ltd., Wuhan University of Technology, Wuhan University of Engineering, Huazhong University of Science and Technology Universities, Applied Safety Science and Technology Research

Institute (Guangzhou) Co., Ltd., Zhejiang Provincial Emergency Management Science Research Institute, Dalian University of Technology, Shandong Xi'an University of Science and Technology, Dalian Duda Safety Technology Co., Ltd., Shimeng (Tianjin) Engineering Technology Co., Ltd., Shenyang Special Equipment Inspection Research Institute of Measurement The main drafters of this document are. Le Youbang, Li Gang, Ren Changxing, Xiao Qiuping, Chen Chen, Wu Xiaoyu, Hu Weixi, Zhou Jian, Zeng Guoliang, and Si Rongjun. Yuan Chunmiao, Zhong Shengjun, Ji Yang, Zhang Xin, Zhang Yan, Chen Xianfeng, Huang Chuyuan, Zhou Dehong, Zhao Jiaquan, Wang Jiye, Mou Jie, Gao Wei, Jiang Haipeng, Li Runzhi Wang QiuHong, Xu Yihao, Yu Wei, Zhang Qianqian, You Yi, Yuan Yuan, Pan Chao. The previous version releases of the document replaced by this document.

---First published in.1996 as GB/T 16425-1996 "Determination of Lower Explosive Limit Concentration of Dust Clouds", and for the first time in.2018. Revision;

1 Scope

GB/T 16425-2025 is the Chinese national standard on risk assessment and characteristic parameter determination methods of combustible dust explosion, 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 2 December 2025 by the State Administration for Market Regulation; Standardization Administration of China, and takes effect on 1 January 2027. Classification: ICS 13.230, CCS C67. 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 describes the risk assessment of combustible dust explosions, methods for identifying combustible dust, the maximum explosion pressure of dust clouds, and the maximum pressure at which they can be released. Methods for determining the rate of ascent, methods for determining the lower explosive limit concentration of dust clouds, methods for determining the resistivity of dust layers, and methods for determining the minimum ignition temperature of dust layers. Methods for determining the limiting oxygen concentration of dust clouds, methods for determining the limiting oxygen concentration of dust clouds, and methods for determining the spontaneous combustion temperature of accumulated dust. This document applies to risk assessment of dust explosion hazard locations in enterprises and the testing and determination of combustible dust characteristic parameters. This document does not apply to risk assessments and related dust characteristics in coal mines, fireworks and firecrackers, explosives, and strong oxidizer environments. Numerical tests were conducted to determine the results.