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

GB/T 17913-2024

Replacing GB/T 17913-2008

**Grain and oils storage - Phosphine recirculation fumigation
equipment**

粮油储藏 磷化氢环流熏蒸装备

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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. This document replaces GB/T 17913-2008 "Grain and oil storage - Phosphine circulation fumigation equipment" and is consistent with GB/T 17913-2008. In addition to structural adjustments and editorial changes, the main technical changes are as follows: The scope statement has been changed (see Chapter 1, Chapter 1 of the 2008 edition); - The design requirements for phosphine generators have been changed (see 4.2.2, 4.2.2 of the 2008 edition); - Added design requirements for circulation deliquescent application equipment and other phosphine application methods (see 4.2.2.4, 4.2.2.5); - The technical parameters and blade parameters of the circulating fan have been changed (see 4.3.1.2, 4.3.1.4, 4.3.4.2, 2008 edition 4.3.4.4); Added the connection method of fixed pipelines and the requirements for the connection of sub-membrane circulation pipelines (see 4.3.2.8); - The requirements for gas sampling ports, pipeline straightness, plumbness, and leakage in the circulation pipeline have been changed (see 4.3.2.1 1, 4.3.2.12, 4.3.2.13, 4.3.5.8, 4.3.5.9, 4.3.5.10 of the 2008 edition); The requirements for the setting of gas sampling detection points, the configuration and installation of sampling pipes and return pipes in the gas sampling device have been changed (see 4.4.1, 4.4.5, 4.4.6, 4.4.8 of the 2008 edition); Changed the requirements for the inner diameter of the gas sampling tube (see 4.4.1.2, 4.4.2 of the 2008 edition); - Added technical parameters of phosphine detector and phosphine alarm (see 4.4.2 and 4.4.3); - Changed the requirements for phosphine alarm in test instruments (see 5.1.2.1, 5.1.2.1 of the 2008 edition); - Anemometers have been added to the test equipment (see 5.1.2.6); - Changed the requirements for plumbness and straightness of sampling devices

during acceptance inspection (see Table 1, Table 1 of the.2008 edition); - Changed the plumbness requirement in the missing item classification (see Table 2, Table 2 of the.2008 edition); - Deleted marking, packaging, transportation and storage (see Chapter 7 and Chapter 8 of the.2008 edition); - Added instructions for use (see Chapter 6). - 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 was proposed by the State Administration of Grain and Material Reserves. This document is under the jurisdiction of the National Technical Committee on Standardization of Cereals and Oils (SAC/TC 270). This document was drafted by: Henan University of Technology, Henan Future Mechanical and Electrical Engineering Co., Ltd., National Grain and Material Reserves Administration Scientific Research Institute of Food and Material Reserves, Zhengzhou Xinglong National Grain and Material Reserve Co., Ltd., Shanghai Zhengfan Technology Co., Ltd., Guizhou Provincial Grain and Oil Product Quality Supervision and Inspection Station, Nanjing University of Finance and Economics. The main drafters of this document are. Wang Dianxuan, Xu Yongan, Wei Lei, Yu Yingwei, Bai Chunqi, Bai Xuguang, Cao Yang, Zhou Xiaojun, Zhang Lailin, Li Yong, Li Dongsheng, Yao Dongxu, Jiang Yan, Zhu Zibo, and Tang Peian. The previous versions of this document and the documents it replaces are as follows: First published in.1999 as GB/T 17913-1999, first revised in.2008; - This is the second revision. - Phosphine circulation fumigation equipment for grain and oil storage

1 Scope

GB/T 17913-2024 is the Chinese national standard on grain and oils storage - phosphine recirculation fumigation equipment, in the field of agriculture. 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 29 September 2024 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 April 2025. Classification: ICS 65.040.20, CCS B20. 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 defines the terms and definitions of phosphine circulation fumigation equipment, and stipulates its design requirements, installation inspection and operating instructions. This document applies to the design, installation, inspection and delivery of phosphine circulation fumigation equipment used in grain warehouses.

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/T 5099 (all parts) Seamless steel gas cylinders

GB/T 5836.1 Rigid polyvinyl chloride (PVCU) pipes for building drainage

GB/T 5836.2 Rigid polyvinyl chloride (PVCU) pipe fittings for building drainage

GB/T 6052 Industrial liquid carbon dioxide

GB/T 7899 Gas cylinder pressure reducers for welding, cutting and similar processes

GB/T 9969 Instructions for use of industrial products - General principles

GB/T 14525 General technical requirements for corrugated metal hoses

GB/T 15382 General technical requirements for gas cylinder valves

GB/T 36139 Grain and Oil Machinery Product Model Compilation Method

GB 50235 Industrial Metal Pipeline Engineering Construction Specification

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Fumigant application device A device or apparatus used to release phosphine gas into a closed environment or circulating system for fumigation and killing insects.

Note. It includes phosphine cylinder application device, phosphine generator, aluminum phosphide grain surface application equipment, phosphide preparation circulation deliquescence application device, etc.

3.2 cylinderized phosphine application device The phosphine and carbon dioxide mixed gas compressed in a special steel cylinder is converted from a high pressure state to a low pressure state or from the phosphine liquid in the cylinder A device that converts the vaporized gas into low-pressure gas, mixes it directly with the air, and safely applies it to the fumigation system.

Note. The device is generally composed of a cylinder, a cylinder carrier, a pressure reducer, a temperature release device, a mixing control system, a metering device, and soft (hard) connecting pipes.

3.3 on-site phosphine generator A mechanical device capable of controlling the production of phosphine gas from aluminum phosphide.

3.4 Phosphine generating device with recirculation fan and pipes A closed device that can deliquesce aluminum phosphide preparations to produce phosphine gas and is connected to a circulation system and has its own circulation fan to promote gas diffusion

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