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

GB/T 32124-2024

Treatment and disposal specification for phosphogypsum

磷石膏的处理处置规范

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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 32124-2015 "Specification for the treatment and disposal of phosphogypsum". Compared with GB/T 32124-2015, In addition to the integration and editorial changes, the main technical changes are as follows:

- a) The scope has been changed (see Chapter 1, Chapter 1 of the 2015 edition);
- b) Added the general requirements section (see Chapter 4);
- c) Added a section on pretreatment of phosphogypsum (see Chapter 5);
- d) The description of the method summary was changed and the chemical reaction formula was deleted (see 6.1.1, Chapter 3 of the 2015 edition);
- e) Added cement retarder made of phosphogypsum, gypsum-based building materials made of phosphogypsum, underground filling materials, open-air filling materials, road construction materials, Phosphogypsum soil conditioner (see 6.2~6.7). 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 China Petroleum and Chemical Industry Federation. This document is under the jurisdiction of the National Technical Committee on Waste Chemical Disposal Standardization (SAC/TC 294). This document was drafted by: Guizhou Phosphate Chemical (Group) Co., Ltd., Shandong Lubei Chemical Co., Ltd., Hubei Yihua Phosphate Gypsum Technology Co., Ltd. Technology Development Co., Ltd., Hubei Xingfa Chemical Group Co., Ltd., Sichuan Lomon New Materials Co., Ltd., New Hope Chemical Investment Co., Ltd. Co., Ltd., Hubei Three Gorges Laboratory, Guizhou Shengwei Kaiyang Chemical Co., Ltd., Wengfu (Group) Co., Ltd., Tianbao Animal Nutrition Technology Co., Ltd. Co., Ltd., Yunnan Yuntianhua Environmental Protection Technology Co., Ltd., Sinochem Chongqing Fuling Chemical Co., Ltd., Jiangsu Jingwei New Materials Co., Ltd., Dixinyue Chemical Group Co., Ltd., Sichuan Ecological and Environmental Protection Industry Group Co., Ltd.,

Hubei Juhai Environmental Technology Co., Ltd., Yunnan Kunju Technology Co., Ltd., Guizhou Chuanheng Chemical Co., Ltd., Yunnan Xinlong Mineral Feed Co., Ltd., Yichang Bangpu Yihua New Materials Co., Ltd., Hubei Yihua Jiangjiadun Mining Co., Ltd., Changzhou Qingliu Environmental Protection Technology Co., Ltd., Anning Phosphogypsum Application Technology Center, CNOOC Tianjin Chemical Research and Design Institute Co., Ltd. The main drafters of this document are. Li Honglin, Lü Tianbao, Zheng Zemin, Zheng Guangming, Zhong Shilin, Lei Ting, Li Zhongjun, Li Haiyan, Qiu Zujun, Su Yu, Zhang Hui, Cao Xin, Zhang Jianyu, Kong Lingquan, Zhang Aimin, Liu Zhihao, Ma Ronghua, Li Jianqiu, Zeng Jian, Wang Hao, Li Milin, Han Xiaogang, Yang Huajin, Wang Ying, Li Zegang, Feng Xiangyi, Liu Gang, Li Fang, Zhong Yifu, Zhang Yumian, Li Shihua, Wei Sha, Du Qi, Wang Jiakai, Tang Shenghe, Liu Zhipeng, Gu Lingling, Zhang Kai, Yan Peng, Zhang Dawei, and Wang Yan. This document was first published in 2015 and this is the first revision. Specification for the treatment and disposal of phosphogypsum

1 Scope

GB/T 32124-2024 is the Chinese specification for treating and disposing of phosphogypsum. It addresses one of the largest solid waste problems in the country: phosphoric acid production leaves about five tonnes of phosphogypsum for every tonne of phosphorus pentoxide, it is stacked in the hundreds of millions of tonnes, and it carries residual acid, fluoride, phosphate and naturally occurring radionuclides that make the stacks a long-term water and land liability. Chinese policy now requires production to be matched by utilisation, which makes treatment a legal condition of operating. The standard sets the requirements for the treatment of the material, the neutralisation, washing and dewatering that make it usable or storable, for its utilisation routes and the quality it must meet for each, and for its disposal, the design, construction, operation, closure and monitoring of the stack, its lining and leachate collection, the water and groundwater monitoring, the dust and radiation control and the restoration of the site. It takes effect on 1 April 2025.

This document specifies the treatment of phosphogypsum with calcium sulfate dihydrate and calcium sulfate hemihydrate as the main components produced by the wet production of phosphoric acid. General requirements for disposal, pretreatment, treatment and disposal methods, and environmental protection. This document applies to the treatment and disposal of phosphogypsum.

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 to This

document.

GB 175 General purpose Portland cement

GB/T 176 Chemical analysis methods for cement

GB/T 212 Industrial analysis methods for coal

GB/T 213 Method for determination of calorific value of coal

GB/T 534 Industrial sulfuric acid

GB/T 2001 Coke industrial analysis and determination methods

GB 4915 Cement Industry Air Pollutant Emission Standard

GB 5086.1-1997 Toxicity of leaching of solid wastes - Leaching method - Inversion method

GB/T 5484 Chemical analysis methods for gypsum

GB 6566 Limits of radionuclides in building materials

GB 8978 Comprehensive sewage discharge standard

GB/T 9776 Building gypsum

GB 16297 Comprehensive Emission Standard of Air Pollutants