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**NATIONAL STANDARD OF THE
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GB/T 16942-2025

Replacing GB/T 16942-2009

Electronic gas - Bulk gas

电子气体 大宗气体

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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.

This document replaces GB/T 16942-2009 "Gas Hydrogen for Electronics Industry", GB/T 14604-2009 "Gas Oxygen for Electronics Industry", GB/T 16945-2009 "Gas Argon for Electronics Industry", GB/T 16944-2009 "Gas Nitrogen for Electronics Industry", GB/T 16943-2009 "Helium Gas for Electronics Industry", GB/T 16942-2009, GB/T 14604-2009, GB/T 16945-2009, Compared with GB/T 16943-2009, GB/T 16944-2009 has the following major technical changes, in addition to structural adjustments and editorial changes.

- Changed the scope (see Chapter 1, Chapter 1 of GB/T 16942-2009, Chapter 1 of GB/T 14604-2009, Chapter 1 of GB/T 16945-2009, Chapter 1 of GB/T 16944-2009, and Chapter 1 of GB/T 16943-2009);
- Added "Terms and Definitions" (see Chapter 3);
- Changed the technical requirements for bulk gases (see Chapter 4, Chapter 3 of GB/T 16942-2009, Chapter 4 of GB/T 14604-2009 Chapter 3, Chapter 3 of GB/T 16945-2009, Chapter 3 of GB/T 16944-2009, Chapter 3 of GB/T 16943-2009 Chapter 3);
- Changed the sampling requirements (see Chapter 5, 4.1.3 of GB/T 16942-2009, 4.1.3 of GB/T 14604-2009, 4.1.3 of GB/T 16945-2009, 4.1.3 of GB/T 16944-2009, 4.1.3 of GB/T 16943-2009);
- Changed the purity calculation method (see 6.1, 4.2 of GB/T 16942-2009, 4.2 of GB/T 14604-2009, GB/T 16945-2009, 4.2, GB/T 16944-2009, 4.2, GB/T 16943-2009);
- Changed the determination method of oxygen, nitrogen, carbon monoxide and carbon dioxide content in hydrogen (see 6.2, 4.3 and 4.4);
- Added the method for determining the argon content in hydrogen (see 6.2);
- Added the method for determining the content of hydrogen sulfide in hydrogen (see 6.3);

- Changed the determination method of hydrogen, argon, nitrogen, carbon monoxide and carbon dioxide content in oxygen (see 6.4, 4.3 of GB/T 14604-2009) and 4.4);
- Changed the method for determining the content of hydrogen, oxygen, nitrogen, carbon monoxide and carbon dioxide in argon (see 6.5, GB/T 16945-2009 4.3);
- Changed the method for the determination of hydrogen, oxygen, carbon monoxide and carbon dioxide in nitrogen (see 6.6, 4.3 of GB/T 16944-2009);
- Added the method for determining the argon content in nitrogen (see 6.6);
- Changed the method for the determination of oxygen, nitrogen, carbon monoxide and carbon dioxide content in helium (see 6.7, 4.3 of GB/T 16943-2009);
- Added the method for determining the content of neon, hydrogen and argon in helium (see 6.7);
- Deleted the requirements for gas standard samples (GB/T 16942-2009 4.6, GB/T 14604-2009 4.7, 4.5 of GB/T 16945-2009, 4.5 of GB/T 16944-2009, 4.5 of GB/T 16943-2009);
- Changed the determination method of moisture content (see 6.9, 4.7 of GB/T 16942-2009, 4.8 of GB/T 14604-2009, 4.6 of GB/T 16945-2009, 4.6 of GB/T 16944-2009, 4.6 of GB/T 16943-2009);
- Deleted the volume calculation method of helium at 20 ° C and 101.3 kPa (see Chapter 6 of GB/T 16943-2009);
- Added requirements for exhaust gas treatment (see 6.10);
- Changed the inspection rules (see Chapter 7, 4.1 of GB/T 16942-2009, 4.1 of GB/T 14604-2009, GB/T 16945-2009, 4.1, GB/T 16944-2009, 4.1, GB/T 16943-2009);
- Changed the requirements for marking, packaging, transportation, storage and safety information (see Chapter 8, Chapter 5, GB/T 16942-2009 Chapter 5 of GB/T 14604-2009, Chapter 5 of GB/T 16945-2009, Chapter 5 of GB/T 16944-2009, Chapter 5 of GB/T 16943-2009).

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 and coordinated by the National Technical Committee for Semiconductor Equipment and Materials Standardization (SAC/TC203).

This document was drafted by: Haohua Gas Co., Ltd. Southwest Branch, Guangdong Huate Gas Co., Ltd., Shanghai Yike Gas Co., Ltd.

Co., Ltd., Henan Institute of Metrology and Testing Science, Zhejiang Institute of Quality Science, Jiangsu Huazhong Gas Co., Ltd., Dalian Huabang Chemical Co., Ltd., Fujian

Jiuce Gas Co., Ltd., Sichuan Air Separation Equipment (Group) Co., Ltd., Guangzhou Guanggang Gas Energy Co., Ltd.

Co., Ltd., Shanghai Hanke Technology Co., Ltd., Shanghai Lizhi Semiconductor Technology Co., Ltd., Beijing Purui Analytical Instruments Co., Ltd., Chongqing Ruixin Gas Co., Ltd., Hongxin Gas (Shanghai) Co., Ltd., Shenzhen Jiegong Technology Co., Ltd., CSIC (Handan) Perri Specialty Gas Co., Ltd.

Co., Ltd., Fujian Hengshen Electronic Materials Technology Co., Ltd., Langxi Instrument (Shanghai) Co., Ltd., Guizhou Product Quality Inspection and Testing Institute, Zhejiang Yivite New Materials Co., Ltd., Zhejiang Hongxin Semiconductor Co., Ltd., Zhonghao Guangming Chemical Research and Design Institute Co., Ltd., Air Liquide (China) Investment Co., Ltd., Dalian Guangming Chemical Industry Gas Quality Monitoring Center Co., Ltd., Shanghai Huaai Chromatography Analysis Technology Co., Ltd.

Company, Dalian Date Gas Co., Ltd., Lianxiong Investment (Shanghai) Co., Ltd., Kunming Guangruida Special Gas Co., Ltd., China Metrology Science and Technology Research Institute, Hangzhou New Century Mixed Gas Co., Ltd., Shenyang Zhongfu Kejin Pressure Vessel Co., Ltd., China Jiliang University, Beijing Ruixinjie Environmental Protection Technology Co., Ltd., China Institute of Measurement and Testing, Ireland AGC Instrument Co., Ltd. Beijing Representative Office, Shanghai Fanwei Instrument Equipment Co., Ltd. Co., Ltd., Southwest Chemical Research and Design Institute Co., Ltd.

The main drafters of this document are: Zhao Shuaide, Ru Gaoyi, Zhu Yan, Li Bo, Wu Yalian, Wang Shuai, Ye Xiangping, Dai Jingping, Guan Zhong, Hou Peng, Qian Ji, Wu Yuqiang, He Jingyu, Zhou Yong, Shan Peng, Deng Tao, Xu Gaopo, Jia Houcheng, Zhang Song, Xu Zhengjun, Shi Lan, Jiang Yuejun, Jin Xingyi, Zhao Yingyi, Liu Junhang, Dong Yunhai, Huang Ying, Xie Shipeng, Yang Zhonglin, Li Jianhao, Sun Funan, Guo Qiong, Cheng Huapeng, Tan Yiqiang, Yin Lele, Wang Feihua, Lan Feng, Gao Jing, Yin Hao, Zhang Weiwei, Chang Xia, Niu Di, Fang Hua, Zhao Yanchao, Yi Juntao, Huang Hui, Yin Dongmei, Wang Man, Zhang Jinbo, Gong Bing, Wang Dawei, Zhang Pengyue, Zhao Jie, Yang Yangzhongfu, Ren Xihui, He Bo, Yang Kang, Zhou Pengyun, Tang Xiamei.

The previous versions of this document and the documents it replaces are as follows.

- First published in 1997 as GB/T 16942-1997 and first revised in 2009 as GB/T 16942-2009;
- First published in 1993 as GB/T 14604-1993 and first revised in 2009 as GB/T 14604-2009;
- First published in 1997 as GB/T 16945-1997 and first revised in 2009 as GB/T 16945-2009;
- First published in 1997 as GB/T 16944-1997 and first revised in 2009 as GB/T

16944-2009;

- First published in 1997 as GB/T 16943-1997 and first revised in 2009 as GB/T 16943-2009;

- This is the second revision, GB/T 16942-2009, GB/T 14604-2009, GB/T 16945-2009, GB/T 16944-2009 and GB/T 16943-2009 were integrated and revised. Electronic Gases Bulk Gases

1 Scope

This document specifies the technical requirements for bulk gases, describes the corresponding test methods, and also specifies sampling, inspection rules, marking, packaging, Transport, storage and safety information requirements.

This document applies to bulk gases packaged in containers that are separated and purified from air, or purified from industrial bulk gases.

2 Normative references

GB 190

GB/T 3634.1

GB/T 3863

GB/T 3864

GB/T 4842

GB/T 5099

GB/T 5832.3

GB/T 6285

GB/T 7144

GB/T 8984

GB/T 11640

GB/T 14194

GB 15258

GB/T 16804

GB/T 28123

GB/T 28124