



GBZ 2.1-2019

Occupational exposure limits for hazardous agents in the workplace

—Part 1: Chemical hazardous agents

工作场所有害因素职业接触限值

——第1部分：化学有害因素

China Ministry of Health (MOH)

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Preface

The occupational exposure limits listed in Tables 1 to 3 of this standard are mandatory, and the rest are recommended.

This standard is formulated in accordance with the Law of the People's Republic of China on the Prevention and Control of Occupational Diseases.

The Occupational Exposure Limits for Hazardous Agents in the Workplace (GBZ 2) is divided into two parts:

- Part 1: Chemical hazardous agents;
- Part 2: Physical agents.

This is part 1 of GBZ 2.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces Occupational Exposure Limits of Hazardous Agents in the Workplace Part 1: Chemical Hazardous Factors (GBZ 2.1-2007). Compared with GBZ 2.1-2007, the main technical changes (editorial modifications excluded) are as follows:

- Add 6 normative reference documents: GBZ/T 300, GBZ/T 192, GBZ/T 295, GBZ/T 224, GBZ/T 225 and GBZ/T 229.2;
- Add 9 concepts or definitions related to occupational exposure; delete terms in 5 normative references; introduce the concept of peak exposure concentration to replace the excursion limits;
- Summarize and increase the occupational exposure limits of 28 chemical harmful agents developed and revised in recent years.
- Amend the Chinese or English names of 8 chemical substances, and the CAS numbers of 8 substances;
- Add sensitization remarks for 16 substances, skin remarks for 4 substances, carcinogenic remarks for 14 substances, and adjust carcinogenicity remarks for 7 substances;
- Incorporate the exposure limits for nitric oxide into those for nitrogen dioxide;
- Clearly list the adverse health effects on which the exposure limits are based;
- In Chapter 4 "Hygienic Requirements", the occupational exposure biological limits (biological monitoring indicators and exposure limits) have been added, and the published health industry standard for occupational biological exposure limits and standard for detection method have been confirmed, and 28 biological monitoring indicators and exposure limits have been summarized and listed, among which 13 kinds of occupational exposure to biological limits and biological material testing and biological monitoring requirements that have been approved in recent years were added;

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——Further improve the relevant requirements for monitoring and testing methods; for those with PC-TWA results for total dust and respirable dust, clarify the TWA regulations have been clarified to give priority to the determination of respirable dust;

——Added the principles and requirements for occupational exposure control of chemical hazards in the workplace;

—— Add Appendix B, which gives the main drafting unit and main drafter of the new limit value;

—— Further refine and clarify the instructions on how to correctly use Appendix A. Added control principles, key points of exposure to occupational harmful agents, action levels, occupational exposure classification and its control, and management principles of occupational disease hazard operations classification, etc., and revised the Appendix A "Instructions for Correct Use" in the original standard into the main body of the standard;

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The previous version replaced by GBZ 2.1-2019:

- GBZ 2-2002;
- GBZ 2.1-2007.

Occupational Exposure Limits for Hazardous Agents in the WorkplacePart 1: Chemical Hazardous Agents

1. Scope

This standard specifies the hygiene requirements, testing evaluation and control principles of occupational exposure limits for hazardous agents in the workplace.

This standard is applicable to the monitoring, assessment and control of chemical hazardous agents that exist or are generated in industrial hygiene design and various workplaces and the supervision of occupational health.

2. Normative References

The following documents are essential for the application of this standard. For dated references, only the dated edition is applicable to this document. For undated references, the latest edition of the normative document (including all the revisions) is applicable to this standard.

GBZ 1 Hygienic Standards for the Design of Industrial Enterprises

GBZ 159 Specifications of Air Sampling for Hazardous Substances Monitoring in the Workplace
GBZ/T 160 Determinations of Toxic Substances in the Air of Workplace

GBZ/T 192 Determination of Dust in the Air of Workplace

GBZ/T 224 Terms of Occupational Health

GBZ/T 225 Guidelines for Employer of Prevention and Control of Occupational Diseases

GBZ/T 229.2 Classification of Occupational Hazards at Workplaces Part 2: Occupational Exposure to Chemicals

GBZ/T 295 General Principles of Biological Monitoring Method in Occupational Population

GBZ/T 300 Determination of Toxic Substances in Workplace Air

3. Terms and Definitions

The following terms and definitions apply to this standard:

3.1 Chemical hazardous agents

The chemical harmful agents mentioned in this part include the chemical substances, dust and biological agents existing or produced in the workplace.