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

GBZ 125-2009

**Radiological protection requirements for gauges containing
sealed radioactive source
(English Translation)**

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Table of Contents

Foreword...	3
1 Scope...	4
2 Normative References...	4
3 Terms and Definitions...	5
4 Requirements of Radiation Protection for Source Container...	5
5 Radiation Protection and Safety Requirements of Instrument...	7
6 Test and Inspection of Radiation Protection...	10
Appendix A...	14
Appendix B...	18
Appendix C...	19
Translation References and Original Chinese Documents...	20

Foreword

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

Full text of this Standard is compulsory.

This Standard replaces "Radiological Protection Standards for Gauges Containing Sealed Radioactive Source" (GBZ 125-2002) and "Specifications of Radiological Protection Monitoring for Gauges Containing Sealed Radioactive Source" (GBZ 137-2002). From the date

of implementation, GBZ 125-2002 and GBZ 137-2002 shall be abolished simultaneously.

Compared with GBZ 125-2002 and GBZ 137-2002, the main changes in this Standard are as

follows.

- COMBINE GBZ 125-2002 and GBZ 137-2002 into this Standard;
- QUOTE GB 18871 for relevant contents such as "ionizing radiation mark";
- ADD relevant requirements of radioactive source safety and accident emergency requirements.

Appendix A of this Standard is normative; Appendixes B and C are informative.

This Standard was proposed by the Professional Committee for radiological health protection

standard of Ministry of Health.

This Standard was approved by the Ministry of Health of the People's Republic of China.

Chief drafting organizations. Beijing Center for Disease Control and Prevention.

Chief drafting staffs. Li Yachun, Wang Shijin and Kong Yuxia.

The previous standards replaced by this Standard are as follows.

- GB 16368-1996;
- GBZ 125-2002;
- GBZ 137-2002;
- WS/T 185-1999.

Radiological Protection Requirements for Gauges Containing Sealed

Radioactive Source

1 Scope

This Standard specifies the radiological protection requirements and safety requirements of detection instruments of source container and sealed radioactive source (hereinafter referred as

"sealed source"); and requirements of radiological protection testing and inspection.

This Standard is applicable to those detection instruments with sealed source and based on

particle fluence measurement (hereinafter referred as "detection instrument"); such as the level

gage, densimeter, hygrometer and nuclear scale.

2 Normative References

The provisions of following standards, through reference of this Standard, constitute the provisions of this Standard. For dated documents, subsequent amendments (excluding corrigenda) or revisions are not applicable to this Standard. However, all parties who enter into

agreement according to this Standard are encouraged to study if the latest editions of these documents are applicable. For undated documents, the latest editions are applicable to this Standard [Translator. All following documents are undated].

GB 4075 "Sealed Radioactive Source - General Requirements and Classification"

GB 11806 "Regulations for the Safe Transport of Radioactive Material"

GB 14052 "Radionuclide Gauges - Gauges Designed for Permanent Installation"

GB 18871 "Basic Standards for Protection against Ionizing Radiation and for the Safety of Radiation Source"

GBZ 128 "Specifications of Individual Monitoring for Occupational External Exposure"

GBZ/T 208 "Classification of Radioactive Source Based on Dangerous Index"

5.3.2 The radiation protection and safety acceptance test of new-purchased detection

instrument shall be carried out according to this Standard.

5.3.3 At the regular use place of detection instrument, source container shall be fixed firmly

and reliably; it shall adopt security protection measures to avoid the lost of sealed source; PREVENT people entering into the useful beam area between source container and tested substances.

5.3.4 The operation staffs related to the installation, inspection and maintenance of sealed

source must be familiar with the structure of source container; GRASP the skills of radiation protection; OBTAIN the qualification certificate of radiation staff; and ACQUIRE authorization of operation.

5.3.5 According to GBZ 128, radiation operation staffs in supervision area; and radiation

operation staffs during the reloading of radioactive source of various instrument and the maintenance of source related to instrument shall be subject to personal dose monitoring.

5.3.6 Decommissioned sealed source shall be managed strictly as the radioactive dangerous

articles; they shall be sent back to manufacturer or transmitted to the preservation department of

decommissioned source and be provided with permanent records.

5.3.7 "ionizing radiation warning sign" (see GB 18871) shall be set up clearly at striking

position of use-place of detection instrument's source container.

5.4 Transportation requirements

The transportation of sealed source and source container containing sealed source shall comply with the requirements of GB 11806.

5.5.1 For instrument and its used sealed source, the hazard index and corresponding hazard

classification of radioactive source shall be judged according to GBZ/T 208 and according to

the contingent radiation accident risk; so as to provide basis for accident emergency preparation.

The hazard classification of major detection instruments are listed in Appendix C.

5.5.2 According to the situations of production, utilization, storage of sealed source and

instrument, and the contingent radiation accident risk, and according to the classification requirements of radiation accident specified by the nation, corresponding radiation accident emergency plan shall be formulated; and emergency preparation shall be well done.

Appendix B

(Informative)

Catalogue of Radiation Protection and Safety Management System

B.1 The reference catalogue of radiation protection and safety management system for the organizations which manufacture and use the instrument with sealed source is as follows.

1) Radiation protection management organization and the responsibilities;