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

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Mobile laboratories - General requirements for biosafety

移动式实验室 生物安全要求

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1 Scope

China's national standard for the biosafety of mobile laboratories - the containment laboratories built into vehicles, trailers, containers or shelters and driven to an outbreak, a border crossing or a disaster site, where the protection has to work without the fixed building services a permanent laboratory relies on. It sets the basic requirements for the facilities, the equipment and the safety management of mobile laboratories of biosafety levels 1, 2 and 3, and it applies to mobile laboratories in which biological agents are handled. It does not cover mobile biosafety level 4 laboratories, nor level 3 laboratories with open or semi-open animal housing. Clause 4 sets out the risk assessment and risk control that everything else follows from; clause 5 gives the basic technical forms of mobile laboratory and the classification by protection level; clause 6 the design principles and basic requirements; and clause 7, the longest, the requirements for the facilities and equipment of each level in turn - BSL-1, BSL-2 and BSL-3, then ABSL-1, ABSL-2 and ABSL-3 for the

animal laboratories, and finally the laboratories used for work on invertebrates. Clause 8 sets the management requirements. Five informative appendices follow: the comparison of the terms used here with those of GB 19489-2008, the action plan and on-site work plan for a mobile BSL-3 laboratory, the guidelines for on-site testing of its safety performance, the guidance on spare parts, and the outline of its on-site emergency response plan. The animal housing requirements follow GB 14925-2010 and the general biosafety framework GB 19489-2008. Issued on 11 September 2015 and in force since 15 December 2015.

This Standard specifies the basic requirements for the facilities, equipment and safety management of the level 1, level 2 and level 3 biosafety protection level mobile laboratories, excluding the requirements for mobile biosafety level 4 laboratories and biosafety level 3 laboratories with open or semi-open animal rearing. Chapter 6,

7.2 are the basic requirements for mobile laboratory biosafety protection facilities and equipment. When necessary, they are applicable to mobile laboratories with higher protection levels. For laboratory activities related to the breeding of infected animals, this Standard specifies the basic requirements for animal breeding facilities and environments in mobile laboratories. When necessary,

7.3 is applicable to the animal biosafety mobile laboratory of the corresponding protection level. This Standard applies to mobile laboratories involved in the operation of biological factors.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB 14925-2010, Laboratory animal - Requirements of environment and housing facilities

GB 19489-2008, Laboratories - General Requirements for Biosafety

3 Terms and definitions

The following terms and definitions are applicable to this document.

3.1 mobile laboratory Laboratory that can be used in different locations.

3.2 directional airflow Airflow that is directionally controlled.

3.3 primary barrier A physical barrier or isolation between the operator and the action object.

Note: Personal protective equipment is also considered a primary barrier. When it is not specified in this Standard, the primary barrier refers to protective equipment such as biological safety cabinet or isolator.

3.4 secondary barrier A physical barrier or isolation between the public environment and the action object.

Note: The enclosure structure of the laboratory is a secondary barrier.

4 Risk assessment and risk control of mobile laboratories

4.1 It shall meet the applicable requirements in Chapter 3 of GB 19489-2008.

4.2 The method of laboratory movement and the risks during the movement shall be assessed, and appropriate control measures shall be taken.

4.3 The risks of the environment to the mobile laboratory (not limited to biological risks) shall be assessed, and appropriate control measures shall be taken.

4.4 The environmental risks of mobile laboratories and experimental activities (not limited to biological risks) shall be assessed, and appropriate control measures shall be taken.

4.5 Before and after the maintenance, repair, modification or decommissioning of the laboratory, a risk assessment shall be carried out and appropriate control measures shall be taken.

4.6 The activities undertaken by the laboratory shall be determined, on the basis of risk assessment, in accordance with the classification list of pathogenic microorganisms issued by the relevant national competent authorities.

6.1.3 It shall be safe, reliable, durable, easy to use, meet the requirements of biosafety protection, and meet the requirements of occupational hygiene, environmental protection and energy saving.

6.1.4 If applicable, it shall meet the corresponding requirements of GB 19489-2008.

6.1.5 When test animals are involved, if applicable, the corresponding requirements of GB 14925-2010 shall be met.

6.1.6 If there are no special requirements, it shall meet the design requirements and manufacturing requirements for motorized running devices or transported devices in relevant national regulations or standards.

6.1.7 For a mobile laboratory that is designed and manufactured according to the specific requirements of the customer, if the technical indicators conflict with the requirements of the relevant national regulations or standards, the relevant competent authorities shall be consulted for advice in advance.

6.1.8 Driving positioning system and driving recording system shall be installed.

6.2 Basic requirements

6.2.1 It shall be easy to reach or to be transported to the designated place.

6.2.2 The parts to be transported shall have suitable loading and unloading, handling and fixing devices to meet the requirements of handling and transportation tools. Lifting devices and supporting wheels should be provided to achieve short-distance movement.

6.2.3 The maximum overall dimensions of the laboratory and removable parts should be designed and manufactured with reference to the relevant national standards for removable facilities.

6.2.4 Design and model selection shall be carried out according to the principles and requirements of modularization, integration and standardization, so as to ensure universality and ease of maintenance.

6.2.5 If applicable, maintenance-free equipment shall be selected.

6.2.6 The layout of facilities and equipment, the working space, and the equipment operating mode shall be reasonable, so as to ensure smooth work flow and comply with the principles and requirements of ergonomics.

6.2.7 The implementability of all maintenance works shall be ensured, and the work station space shall be suitable for the needs of human body measurement, posture and use of tools. Mechanical and electrical equipment, if installed, shall not affect the maintenance work.

j) sand and dust;

k) smog (including salt fog);

l) pests (such as fungi, arthropods, rodents).

6.2.16 Documents such as schematic diagrams, operation instructions, maintenance manuals and safety manuals that meet the needs of on-site use, maintenance and repair shall be provided.

6.2.17 The self-propelled laboratory shall be provided with relevant documents of the motorized driving part, which shall meet the requirements of 6.2.16.

6.2.18 When applicable, documents such as good manufacturing practices for mobile laboratories and on-site emergency response plans shall be provided.

7.1 BSL-1 laboratory

7.1.1 The laboratory may consist of a single laboratory room. The primary barrier mode can be open, but it shall be based on risk assessment, including the content of experimental quality control requirements.

7.1.2 The fixed equipment, table cabinets and wall cabinets of the laboratory shall be firm and connected with the cabin reliably, and the connection shall be smooth and easy to clean.