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

GB/T 29479.1-2025

Replacing GB/T 29479-2012

Mobile laboratory - Part 1: General rule

移动实验室 第1部分：通则

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1 Scope

This document specifies the composition and classification and gradation codes, mobile characteristics and requirements, design requirements, technical requirements, manufacturing and acceptance requirements, and management requirements of mobile laboratories.

This document applies to the design, manufacture, acceptance, use and management of mobile laboratories.

2 Normative references

GB/T 27000

GB 27421

GB/T 29472

GB/T 29474

GB/T 29475
GB/T 29476
GB/T 29477
GB/T 29478
GB/T 29479.2
GB/T 29600
GB/T 31017
GB/T 31020
GB/T 33246
GB/T 33247
GB/T 33253
GB/T 33709
GB/T 33710
GB/T 33711
GB/T 38080

3 Terms and definitions

The terms and definitions defined in GB/T 27000, GB/T 31017 and VIM 3rd Edition apply to this document.

4.1 The mobile laboratory mainly consists of three functional units. instruments and

equipment, laboratory shelter (including supply system) and carrier.

NOTE. Generally, instruments and equipment include mobile equipment and facilities for online testing (monitoring).

4.2 The classification and gradation codes for mobile laboratories shall be in accordance

with the provisions of GB/T 33710.

5.1 The mobile characteristics and requirements shall comply with the provisions of

GB/T 31020.

5.2 The mobile characteristics of the mobile laboratory shall be identified. The

identification of mobile characteristics needs to take into account factors such as the mobile laboratory system design, environmental characteristics and requirements, device/equipment performance, safety assurance, and personnel.

5.3 Control measures shall be taken for identified mobile characteristics, and their

effectiveness shall be monitored to ensure that the testing (monitoring), calibration, sampling (sampling, sample-taking), scientific experimental data and results during or after the movement are valid.

5.4 Procedures shall be in place to ensure that mobile laboratories do not pose safety risks due to their mobile characteristics, including personnel safety, equipment and facility safety, and environmental safety. Emergency response capabilities shall be available in the event of a safety incident.

6 Design requirements

6.1 The overall design shall meet the requirements of GB/T 29475.

6.2 Under the premise of meeting technical indicators, priority shall be given to the use of standard parts and modularization design to improve interchangeability and universality. Modularization design should meet the requirements of GB/T 31018.

6.3 The application of new technologies such as system integration, energy

conservation and environmental protection, digitalization, and intelligence should be considered.

6.4 The mobile laboratory structure shall be able to withstand the rated static load, including its service, as well as the rated dynamic load during lifting, long-distance transportation (specified distance), and testing. It shall have high overall strength, high rigidity, and light weight, and be resistant to fatigue, radiation, interference, and vibration. It shall be equipped with an environmental conditioning system as needed, and the work area shall be isolated from the mobile carrier and ancillary equipment.

6.5 Layout design shall fully consider safety passages, ergonomics, specialized

scientific experimental functions, operating space, and instrument and equipment layout based on the experimental workflow and operating procedures. It shall also meet the relevant requirements of the laboratory design's application location and special

environment, ventilation, environmental protection, ergonomics, and safety of use.

Ergonomic design shall comply with the provisions of GB/T 31019.

7.1.1 The mobile laboratory shall be equipped with experimental devices and

instruments that meet the needs of specific purposes and requirements for testing (monitoring), calibration, sampling (sampling, sample-taking). The instruments and equipment for mobile laboratories shall comply with the provisions of GB/T 29476.

7.1.2 The mobile laboratory shelter shall meet the following requirements.

- a) The technical requirements shall comply with the provisions of GB/T 29477;
- b) The layout is reasonable, with functions such as sample processing, testing, and storage. Each functional area is relatively independent and meets the requirements of testing specifications, method procedures, instrument and equipment usage conditions, or sample handling and preparation;
- c) Effective isolation measures shall be in place for equipment, facilities and conditions that may affect testing data and results to prevent contamination, interference or other adverse effects on mobile laboratory activities.

7.1.3 The carrier shall comply with the requirements of GB/T 33253.

7.1.4 The operating platform shall comply with the requirements of GB/T 33246.

7.1.5 The water supply and drainage systems should comply with the requirements of

GB/T 33247.

7.1.6 The temperature and humidity control system shall comply with the provisions of

GB/T 29600.

7.1.7 Interior decoration materials shall comply with the requirements of GB/T 29474.

7.1.8 It is advisable to select standard materials/samples suitable for mobile
experiments, and it is advisable to use electronic standard materials/samples.

7.1.9 Specific-purpose mobile laboratories and their corresponding implementation

standards are shown in Appendix A.