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**NATIONAL STANDARD OF THE  
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**Space materials science experiments - Management standard  
for samples**

空间材料科学实验 样品管理规范

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## Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard was proposed by the Chinese Academy of Sciences. This standard is under the jurisdiction of the National Space Science and Application Standardization Technical Committee (SAC/TC312). This standard was drafted. Shanghai Institute of Ceramics, Chinese Academy of Sciences, Institute of Physics, Chinese Academy of Sciences, Institute of Metal Research, Chinese Academy of Sciences. The main drafters of this

standard. Wen Haiqin, Ai Fei, Zhang Minghui, Pan Xiuhong, Tang Meibo, Liu Yan, Pan Mingxiang, Luo Xinghong, Wang Binbin, Ding Dawei, Chen Hao, Gai Lijun, Deng Weijie.  
Space Materials Science Experimental Sample Management Specification

## 1 Scope

China's national standard for managing the samples used in space materials science experiments. It specifies the terms and definitions, the determination of technical requirements, and the development of experimental samples covering their design and preparation. Materials experiments are among the main scientific uses of a space station, because weightlessness removes buoyancy convection and sedimentation - the two effects that dominate solidification, crystal growth and fluid mixing on the ground and that mask everything else. Running such an experiment means a sample is prepared on Earth, launched, processed in an orbital furnace, and returned. Each of those steps is a chance to invalidate the result: a sample that changed during storage or launch, or whose exact composition and thermal history were not recorded, produces data that cannot be interpreted. And there is no second attempt at the cost of a launch, which is why sample management is a standard rather than a laboratory practice.

This standard specifies the determination of technical requirements for experimental materials for space materials science, the development of experimental samples, the delivery of experimental samples, and space experiments. Requirements for experimental sample recovery and experimental sample analysis. This standard applies to the management of experimental samples of space materials science conducted by space flight platforms.

## 2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 30114.1-2013 Space science and its application terms - Part 1. General

## 3 Terms and definitions

The following terms and definitions as defined in GB/T 30114.1-2013 apply to this document.

3.1 Material sample materialssample Extracted from material solid matter, or synthesized by a specific method, can represent the material of the material used as a specific experimental object Real.

3.2 Experimental sample experimentsample Sample unit sampleunit Material samples and

their package structures for experimental research.

Note. Rewrite GB/T 30114.1-2013, definition 4.14.

3.3 Sample package sample encapsulation The process of placing, securing, and closing a sample of material into a container.

## 4 Determination of technical requirements

The technical requirements of the experimental sample should be determined for specific experiments, including material sample composition or composition, morphological shape, microstructure, and external Dimensions, weight and requirements for packaging and marking. Determining technical requirements should meet.

- a) project science objectives;
- b) space experimental technical constraints;
- c) Safety and reliability requirements. After the technical state of the preparation of the experimental sample is determined experimentally and experimentally on the ground according to the determined technical requirements, the experimental sample is started. Product management.