

ICS 49.020

CCS V 04



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

GB/T 37844-2019

**Space materials science experiments - Preparation
specification for solid experimental samples**

空间材料科学实验 固体实验样品制备规范

Issued on: August 30, 2019

Implemented on: December 1, 2019

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and definitions

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 material science experiment Solid experimental sample preparation specification

1 Scope

China's national specification for preparing the solid samples used in space materials science experiments. It specifies the ground preparation process, the checking of preparation status, the material sample preparation and the test samples. It is the companion to the sample management standard and covers the step on which everything downstream depends. A solidification or crystal growth experiment in orbit compares what happens without buoyancy convection against what happens with it, and the comparison is only valid if the starting material is identical and fully characterised. That means the sample's composition, its microstructure, its dimensions and its thermal history must be established on the ground and must not change during the months between preparation and processing. It also means a ground control sample has to be prepared from the same material at the same time. Getting this wrong wastes a launch slot, and there is no second chance at that price.

This standard specifies the ground preparation process, preparation status check, material sample preparation, and solid material test samples for space materials science experiments. Requirements for material sample inspection, material sample packaging, and laboratory sample inspection. This standard is applicable to the ground preparation of solid experimental samples for material science experiments conducted using 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 Space science and its application terms - Part 1. General

GB/T 30114.7 Space science and its application terms - Part 7. Microgravity science

3 Terms and definitions

The following terms and definitions as defined in GB/T 30114.1 and GB/T 30114.7 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. [GB/T 37469-2019, definition 3.1]

3.2 Experimental sample experimentsample Sample unit sampleunit Material samples and their package structures for experimental research. [GB/T 37469-2019, definition 3.2]

3.3 Solid experimental sample solidexperimentsample Experimental study of solid material samples and their package structures.

3.4 Sample package sampleencapsulation The process of placing, securing, and closing a sample of material into a container. [GB/T 37469-2019, definition 3.3]

3.5 Sample box samplecartridgeassembly A closed container for the sample of the packaging material, which is matched with the experimental device. Example. Ampoules are a form of sample box. GB/T 37844-2019 Space materials science experiment - Preparation specification for solid experiment sample ICS

04 National Standards of People's Republic of China Space material science experiment Solid experimental sample preparation specification Spacematerialsscienceexperiment-Preparationspecificationforsolidexperimentsample Published on.2019-08-30 2019-12-01 implementation State market supervision and administration China National Standardization Administration issued