

ICS 21.140

CCS J 22



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

GB/T 33920-2025

Replacing GB/T 33920-2017

Test method for flexible graphite sheets

柔性石墨板 试验方法

Issued on: March 28, 2025

Implemented on: October 1, 2025

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

Table of Contents

Preface

1 Scope

2 Normative references

3 Terms and Definitions

4 Samples and their preparation

5 Test method for ash content

6 Test method for fixed carbon content

7 Test method for thermal weight loss

8 Test method for sulfur content

9 Determination of chlorine content

10 Test method for fluorine content

11 Radiation resistance test method

12 Carbon and sulfur element test method---combustion infrared method

13 Test Report18

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Documents Part 1: Structure and Drafting Rules for Standardization Documents" Drafting.

This document replaces GB/T 33920-2017. Compared with GB/T 33920-2017, in addition to structural adjustments and editorial changes, the main technical The technical changes are as follows.

- Added the test method for thermal weight loss at 670°C (see 7.3.3);
- Added chloride ion test method B (see 9.2);
- Added the radiation resistance test method for flexible graphite sheets (see Chapter 11);
- Added the test method for carbon and sulfur elements---combustion infrared method (see Chapter 12).

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee for Standardization of Packing and Static Seals (SAC/TC350).

This document was drafted by: Ningbo Xinyuan Carbon Materials Co., Ltd., Binzhou Shuangfeng Graphite Sealing Materials Co., Ltd., Hefei General Machinery Research Institute Co., Ltd., Zhejiang Guotai Xiaoxing Sealing Materials Co., Ltd., Ningbo Tiansheng Sealing Co., Ltd., Cixi Hengli Sealing Materials Co., Ltd.

Ltd., Cixi High-tech Sealing Materials Co., Ltd., Ningbo Xinyi Sealing Co., Ltd., Guangzhou Dongshan Nanfang Sealing Co., Ltd., Ningbo Aituo Sealing Technology Co., Ltd., Wuxi Xixi Chemical Machinery Parts Co., Ltd., Shanghai Xinlian Special Seals Co., Ltd., Yueyang Dong Ting Sealing Materials Co., Ltd., Luoyang Energy Seals Co., Ltd., Guangxi Xincheng Special Equipment Testing Co., Ltd., Hefei General Electromechanical Products TESTING INSTITUTE LIMITED.

The main drafters of this document are: Yuan Yilin, Li Shouhai, Lu Kewei, Wu Yimin, Li Xinggen, Xu Shaohuan, Gong Xuyuan, Song Guozhou, Wu Kaijun, Ye Jianping, Hui Fuming, Chen Jizhong, Xia Yuyou, Hao Xiaoling, Xiong Yunhua, He Song.

This document was first published in 2017 and this is the first revision.

Test methods for flexible graphite sheets Warning---People who use this document should have practical experience in formal laboratory work. This document does not address all possible safety issues.

The user is responsible for taking appropriate safety and health measures and ensuring that the conditions stipulated by relevant national laws and regulations are met.

1 Scope

This document specifies the tests for ash content, fixed carbon content, thermal weight loss, sulfur content, chlorine content, fluorine content and radiation resistance test of flexible graphite sheets Equipment, specimen requirements, test procedures and calculation of test results.

This document applies to the determination of ash content, fixed carbon content, thermal weight loss, sulfur content, chlorine content and fluorine content of flexible graphite sheets, as well as radiation resistance.

The performance test, the sulfur content is measured in the range of 50 μ g/g~10000 μ g/g, the chlorine content is measured in the range of 1 μ g/g~500 μ g/g, and the fluorine content is measured in the range of The content determination range is 1 μ g/g~1000 μ g/g.

2 Normative references

GB/T 26168.2

3 Terms and definitions

There are no terms or definitions that require definition in this document.

4 Samples and their preparation

4.1 The surface of the sample to be tested should be clean and free of dust and oil.

4.2 Take enough samples for the test items, take three square samples of the same size at equal distances along the diagonal direction of the sample, and use the quartering method to Divide into two parts, one as the test sample and the other as the reserved sample. For samples at 670°C, the sample must be no less than 50mmx 150mmx0.5mm.

4.3 Use stainless steel scissors to cut the samples except those used for the 670°C thermal weight loss test into pieces (length and width are not more than 3mm).

The samples for thermal gravimetric determination at 600°C were cut into pieces and passed through a sieve with a pore size of 0.56mm, and the undersize was removed.

The samples were cut into strips of 50 mm x 150 mm x 0.5 mm using stainless steel scissors.

4.4 Dry the prepared sample in an electric constant temperature drying oven at $(100\pm 2)^{\circ}\text{C}$ for 1h, place it in a desiccator and cool it to room temperature for later use.

4.5 The samples used for the radiation resistance test (Chapter 11) should be cut into square samples of 50 mm x 50 mm under the premise of ensuring safety.

Each group of samples should not be less than 5, and the sample thickness should not be less than 1.6mm; if the single layer thickness does not meet the requirements, multiple layers can be stacked until the thickness does not exceed 1.6mm. Less than 1.6mm.