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

GB/T 45242-2025

Replacing GB/T 5009.196-2003

Determination of inositol in health foods

保健食品中肌醇的测定

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document specifies the technical requirements related to food quality. For food safety requirements, please refer to relevant laws, regulations, policies and food safety standards. document.

This document replaces GB/T 5009.196-2003 "Determination of inositol in health foods".

In addition to structural adjustments and editorial modifications, the main technical changes are as follows.

- a) The scope of application has been changed (see Chapter 1, Chapter 1 of the 2003 edition);
- b) The principle has been changed (see Chapter 4, Chapter 2 of the 2003 edition);
- c) The reagents have been changed (see 5.1, Chapter 3 of the 2003 edition);
- d) The equipment has been changed (see Chapter 6, Chapter 4 of the 2003 edition);
- e) Added the method of sample preparation (see Chapter 7);
- f) The sample processing conditions and instrument reference conditions have been changed (see 8.1, 8.2, 8.3, 8.5, 5.1 and 5.2 of the 2003 edition);
- g) The calculation formula has been changed (see Chapter 9, Chapter 6 of the 2003 edition);
- h) The detection limit and quantification limit have been changed (see Chapter 11, Chapter

1 of the 2003 edition).

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 is proposed and coordinated by the National Technical Committee for Standardization of Special Foods (SAC/TC466).

This document was drafted by: Hebei Provincial Food Inspection Institute, China Food Fermentation Industry Research Institute Co., Ltd., Zhongyuan Food Laboratory, Light Technology Innovation Center Co., Ltd., Nanjing Food and Drug Administration, Guangdong Academy of Sciences Testing and Analysis Institute (Guangzhou Analysis Testing Center), Dongpeng Beverage (Group) Co., Ltd., Fangyuan Mark Inspection and Testing (Shandong) Co., Ltd., China Light Industry Inspection and Certification Co., Ltd. company.

The main drafters of this document are: Shi Guohua, Zhong Qiding, Shao Bing, Liu Ming, Liu Zhen, Wu Zhuoying, Wang Liping, Zhang Yan, Hu Hai'e, Chen Nannan, Sheng Jianwei, Liu Yang, Wu Yifan, Fan Sufang, Guo Xinguang, Li Hejia, Yang Junli, Li Xueli, Zhou Yibo, Li Qiao, Wu Yixuan, Duan Jiayun.

The previous versions of this document and the documents it replaces are as follows.

- First published in 2003 as GB/T 5009.196-2003;
- This is the first revision.

1 Scope

This document describes a gas chromatographic method for the determination of inositol in health foods.

This document is applicable to the determination of inositol in health foods in dosage forms such as tablets, hard capsules, granules, soft capsules, oral liquids, and beverages.

2 Normative references

GB/T 6682

3 Terms and definitions

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

4 Principle

Inositol in solid samples was extracted with water and precipitated with ethanol. Inositol in semi-solid and liquid samples was extracted with 70% ethanol solution.

The supernatant was centrifuged and dried, then derivatized with a silanization agent, and

the derivative was extracted with n-hexane and analyzed by gas chromatography-hydrogen flame ionization detector.

Detection, qualitative analysis by retention time and quantitative analysis by external standard method.

5 Reagents or materials

Unless otherwise specified, only analytical grade reagents were used.

5.1 Reagents

5.1.1 Water. Grade 1 water as specified in GB/T 6682.

5.1.2 Anhydrous ethanol (C_2H_6O). 5.1.3 95% ethanol (C_2H_6O).

5.1.4 n-Hexane (C_6H_{14}). chromatographically pure.

5.1.5 Trimethylchlorosilane (C_3H_9ClSi).

5.1.6 Hexamethyldisilazane ($C_6H_{19}NSi_2$).

5.1.7 N,N-Dimethylformamide (C_3H_7NO).

5.1.8 Anhydrous sodium sulfate (Na_2SO_4).

5.2 Reagent preparation

5.2.1 70% (volume fraction) ethanol solution. measure 700 mL of anhydrous ethanol (5.1.2), dilute to 1000 mL with water, and mix well.