CHEMLINKED
by REACH24H Consulting Group

GB 5009.97-2023

National Food Safety Standard

Determination of Cyclohexylaminosulfonate in Food

食品安全国家标准 食品中环己基氨基磺酸盐的测定

National Health Commission of the People's Republic of China
State Administration for Market Regulation

Release Date: Sept. 6, 2023
Implementation Date: Mar. 6, 2024

Translated by ChemLinked

Disclaimer

This is an unofficial document provided by **ChemLinked (**chemlinked.com**)**, a platform of REACH24H Consulting Group, as an informational service to assist non-Chinese companies to better understand the Asia Pacific regulatory environment and importation compliance requirements especially China Chemical, Cosmetic, Food and Agrochemical regulatory issues.

This document should only be used as a reference and in case of any discrepancy between the English and Chinese versions the original Chinese version shall prevail.

Nondisclosure:
You may not disclose this document to anyone else without the written permission of ChemLinked.

For further clarification and questions, you can read our Privacy Polices or contact us at food@chemlinked.com

National Standard of the People's Republic of China

GB 5009.97-2023
In Replacement of GB 5009.97-2016

National Food Safety Standard

Determination of Cyclohexylaminosulfonate in Food

食品安全国家标准

食品中环己基氨基磺酸盐的测定

Date of publication: 2023-09-06 Date of implementation: 2024-03-06

Issued by:
National Health Commission of the People's Republic of China
State Administration for Market Regulation

Foreword

This standard replaces GB 5009.97-2016 “National Food Safety Standard - Determination of Sodium Cyclamate in Foods”.

Compared with GB 5009.97-2016, the main changes of this standard are as follows:

——Change the name of the standard to "National Food Safety Standard - Determination of Cyclohexylaminosulfonate in Food";

——The scope of application has been modified;

——The pre-processing method was modified;

——The instrument conditions and parameters were modified;

——The quantification method of the third method, liquid chromatography-mass spectrometry/mass spectrometry, was modified to the internal standard method.

National Food Safety Standard

Determination of Cyclohexylaminosulfonate in Food

1 Scope

This standard specifies the determination method of Cyclohexylaminosulfonate in food.

The first method, gas chromatography, is applicable to the determination of cyclohexylaminosulfonate in foods (except distilled wine, fermented wine, blended wine, cooking wine and other foods containing ethanol).

The second method, liquid chromatography, is suitable for the determination of cyclohexylaminosulfonate in food.

The third method, liquid chromatography-mass spectrometry/mass spectrometry, is suitable for the determination of cyclohexylaminosulfonate in food.

Method 1 Gas Chromatography

2 Principle

The cyclohexylaminosulfonate in the sample is extracted with water, reacted with sodium nitrite in a sulfuric acid medium to generate cyclohexanol nitrite and cyclohexanol, extracted with n-heptane, and then determined by gas chromatography-hydrogen flame ionization detector and quantified by external standard method.

3 Reagents and materials

Unless otherwise specified, all reagents used in this method were of analytical grade and the water was Grade-1 water as specified in GB/T6682.

3.1 Reagents

3.1.1 n-Heptane [$CH_3(CH_2)_5CH_3$]: chromatographically pure.

3.1.2 Petroleum ether: boiling range is 30℃~60℃.

3.1.3 Sulfuric acid (H_2SO_4), 95.0%~98.0% (mass fraction), density: 1.84g/mL.

3.1.4 Sodium nitrite ($NaNO_2$).

3.1.5 Amylase: enzyme activity ≥1500U/g.

3.1.6 Anhydrous ethanol (CH_3 CH_2 OH).

3.2 Reagent preparation

3.2.1 Sodium nitrite solution (50 g/L): Weigh 50 g of sodium nitrite, dissolve it in water and dilute to 1000 mL, mix well.

3.2.2 Sulfuric acid solution (200g/L): Measure 108mL of sulfuric acid and slowly add it into 800mL of water, stirring constantly to avoid local overheating. After cooling, dilute with water to 1000mL and mix well.

3.3 Standards

Sodium cyclohexylaminosulfonate standard (C_6 H_{12} NSO_3 Na): purity ≥ 99%, or standard products certified by the state and awarded with standard material certificate.

3.4 Preparation of standard solution

3.4.1 Cyclamic Acid Standard Stock Solution (6 mg/mL): Accurately weigh an appropriate amount of sodium cyclamate standard (accurate to 0.1 mg) into a 100 mL volumetric flask, dissolve it in water and dilute to the mark, and mix well (the conversion factor of sodium cyclamate to cyclamic acid is 0.8907). Transfer the solution to a brown glass container and store it at 4°C away from light. The shelf life is 12 months.

3.4.2 Cyclamic acid standard intermediate solution (1200 μg/mL): Accurately pipette 10 mL of cyclamic acid standard stock solution into a 50 mL volumetric flask, dilute to the mark with water, and mix well. Transfer the solution to a brown glass container and store it at 4°C away from light. The shelf life is 6 months.

3.5 Materials

3.5.1 Centrifuge tube: 50 mL graduated centrifuge tube with screw cap.

3.5.2 Organic phase microporous filter membrane: 0.45 μm pore size.

4. Instruments and equipment

4.1 Gas chromatograph: equipped with flame ionization detector (FID).

CHEMLINKED
by REACH24H Consulting Group

SUBSCRIBE TO CHEMLINKED NOW

REMOVE FOOD REGULATORY BARRIERS EXPEDITE GLOBAL MARKET ACCESS

- In-time regulatory information and market access requirements
- Supported by local and experienced technically adept technical team
- Strategic partnerships with competent authorities and industrial associations worldwide
- Customized consulting service for complete compliance solutions.

OUR SERVICES

Information & Knowledge

News, Reports, Expert Analysis
Pedia-articles

Databases

Regulatory Database, English Translations
Inventories/Lists

Solutions

Regulatory Compliance Service, On-demand Translation, Advertisement Service,Tailor-made Service, E-commerce Solution

Training

Webinars, Online Course
Offline Events

CHEMLINKED.COM

Paramount Court, Corrig Road, Sandyford, Dublin 18, Ireland
Tel: +353 1 8899 951 / +86 (0)571 8609 4444 / E-mail: food@chemlinked.com
Visit our website for more information about global food news & regulation updates