NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 23200.124-2026

National food safety standard?Determination of three thiadiazole pesticides of thiediazole copper,thiazole zinc,thiosen copper residues in foods of plant origin-Liquid chromatography method

食品安全国家标准 植物源性食品中噻菌铜、噻唑锌、噻森铜等3种农药及其代谢物残留量的测定 液相色谱法

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Foreword

This document was issued on 12 February 2026 by the the National Health Commission of the People's Republic of China, Ministry of Agriculture and Rural Affairs of the People's Republic of China, Standardization Administration of the People's Republic of China and takes effect on 1 March 2026.

It is a GB standard without the /T suffix: compliance is mandatory in China.

The document runs to 15 pages in translation. The identification, the dates, the table of contents and the clauses reproduced on this page are taken from the standard itself.

GB 23200.124-2026 National food safety standard?Determination of three thiadiazole pesticides of thiediazole copper,thiazole zinc,thiosen copper residues in foods of plant origin-Liquid chromatography method English, Anglais, Englisch, Inglés, ???

National food safety standard - Determination of three thiadiazole pesticides of thiediazole copper, thiazole zinc, thiosen copper residues in foods of plant origin-Liquid chromatography method

National Food Safety Standard - Determination of residues of three pesticides (thiediazole copper, zinc thiazole, copper thiazine) and their metabolites in plant-derived foods - Liquid chromatography method

1 Scope

GB 23200.124 is the Chinese national food safety method for three thiadiazole bactericides, thiediazole copper, thiediazole zinc and thiosen copper, together with their metabolites, in plant-derived foods, by liquid chromatography. These are copper and zinc complexes used against bacterial diseases of rice, citrus and vegetables, mainly in China, and they are not

covered by the international multi-residue methods, so a national method is what makes the residue enforceable. The document describes the extraction, the clean-up, the chromatographic determination and the quantification, and carries the reagents, the apparatus, the sample preparation, the analytical procedure, the calculation of results, the precision and the limit of quantification. It is a companion to GB 2763, which sets the limits this method is used to check. For a laboratory testing produce for the Chinese market, this is the prescribed procedure.

This document specifies the liquid chromatography method for the determination of residues of three thiadiazole pesticides - thiediazole copper, zinc thiazole and copper thiazine - in plant-derived foods.

This document applies to the determination of residues of thiediazole copper, zinc thiazole and copper thiazine in plant-derived foods.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative reference. For dated references, only the edition cited applies. For undated references, the latest edition (including all amendments) applies.

GB 2763-2026 National Food Safety Standard - Maximum residue limits for pesticides in food

GB/T 6682 Water for analytical laboratory use - Specification and test methods

3 Principle

The test sample is subjected to constant temperature oscillation in a sodium thiosulfate solution. Thiediazole copper, zinc thiazole and copper thiazine are derivatised to 2-amino-5-mercapto-1,3,4-thiadiazole (AMT). AMT is extracted with an acetonitrile solution under acidic conditions, determined by high-performance liquid chromatography with a UV detector, and quantified by the external standard method.

4 Reagents and materials

Unless otherwise stated, only analytically pure reagents and Grade 1 water complying with GB/T 6682 shall be used in the analysis.

4.1 Reagents

4.1.1 Formic acid (HCOOH, CAS No.: 64-18-6).

4.1.2 Hydrochloric acid (HCl, CAS No.: 7647-01-0, purity 38%).

4.1.3 Sodium thiosulfate (Na2S2O3, CAS No.: 7772-98-7).

4.1.4 N,N-Dimethylformamide (C3H7NO, referred to as DMF, CAS No.: 68-12-2).

4.1.5 Acetonitrile (CH3CN, CAS No.: 75-05-8): chromatographic grade.

4.1.6 Ammonia solution (NH3.H2O, CAS No.: 1336-21-6, purity 25%).

4.1.7 Sodium chloride (NaCl, CAS No.: 7647-14-5).

4.2 Preparation of solutions

4.2.1 Hydrochloric acid solution (1 mol/L): Measure 82 mL of hydrochloric acid (4.1.2) into a 1 L volumetric flask, dilute to the mark with water, and mix well.

4.2.2 Sodium thiosulfate solution (1 mol/L): Weigh 158.09 g of sodium thiosulfate (4.1.3), dissolve in water, transfer to a 1 L volumetric flask, dilute to the mark with water, and mix well.

4.2.3 Ammonia solution (999+1): Pipette 1 mL of ammonia solution (4.1.6) into a 1 L volumetric flask, dilute to the mark with water, and mix well.

4.2.4 Hydrochloric acid solution (0.01 mol/L): Pipette 10 mL of hydrochloric acid solution (4.2.1) into a 1 L volumetric flask, dilute to the mark with water, and mix well.

4.2.5 Sodium chloride solution (999+1): Pipette 1 mL of sodium chloride solution (4.1.6) into a 1 L volumetric flask, dilute to the mark with water, and mix well.

4.2.6 Ammonium acetate solution (0.01 mol/L): Pipette 10 mL of ammonium acetate solution (4.2.1) into a 1 L volumetric flask, dilute to the mark with water, and mix well.

4.2.7 Sodium hydroxide solution (999+1): Pipette 1 mL of sodium hydroxide solution (4.1.6) into a 1 L volumetric flask, dilute to the mark with water, and mix well.

4.3 Standards (national certified pesticide reference materials shall be used preferentially)

4.3.1 Thiediazole copper (C3H5CuN3S2, CAS No.: 3234-61-5), purity >= 95%.

4.3.2 Zinc thiazole (C3H4N3S2.1/2Zn or C3H4N3S2Zn, CAS No.: 3234-62-6), purity >= 95%.

4.3.3 Copper thiazine (C3H4CuN3S2, CAS No.: 95%), purity >= 95%.