



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

GB 23200.8-2016

Replacing GB/T 19648-2006

**Food safety national standard -- Determination of 500
pesticides and related chemical residues in fruits and
vegetables -- Gas chromatography-mass spectrometry**

水果和蔬菜中500种农药及相关化学品残留量的测定 气相色谱-质谱法

(English Translation)

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Foreword

This standard replaces GB/T 19648-2006 "Determination of 500 pesticides and related chemical residues in fruits and vegetables. Gas Chromatography-Mass Spectrometry law".

This standard compared with GB/T 19648-2006, the main changes are as follows.

- Standard text format is modified to national standard text format for food safety;
- Add the "other vegetables and fruits to the reference" in the standard range.

This standard replaced the previous version of the standard release.

-GB/T 19648-2006.

National standards for food safety Determination of 500 pesticides and related chemical residues in fruits and vegetables Gas chromatography - mass spectrometry

1 Scope

This standard specifies 500 pesticides and related chemicals in apples, citrus, grapes, cabbage, celery and tomatoes (see Appendix A) Determination of Residue by Gas Chromatography - Mass Spectrometry.

This standard applies to the determination of 500 pesticides and related chemicals residues

in apples, citrus, grapes, cabbage, celery and tomatoes, Other vegetables and fruits can refer to the implementation.

2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document.

GB 2763 National Standard for Food Safety - Maximum Residue Limit of Pesticides in Foodstuffs GB/T 6682 Analytical laboratory water specifications and test methods

3 Principle

The samples were extracted with acetonitrile and homogenized. After centrifugation, the supernatant was purified and purified by solid phase extraction column. The samples were washed with acetonitrile-toluene solution (3 1) De-pesticide and related chemicals, solvent exchange and gas chromatography-mass spectrometry.

4.1 Reagents

4.1.1

Acetonitrile (CH₃CN, 75-05-8). Chromatographic Purification.

4.1.2

sodium chloride (NaCl, 7647-14-5). excellent grade pure.

4.1.3

anhydrous sodium sulfate (Na₂SO₄, 7757-82-6). analytical grade. Before burning at 650 °C for 4h, stored in a dryer, cooling and standby.

4.1.4

Toluene (C₇H₈, 108-88-3). excellent grade pure.

4.1.5

Acetone (CH₃COCH₃, 67-64-1). Analytical pure, re-distilled.

4.1.6

dichloromethane (CH₂Cl₂, 75-09-2). chromatographic purity.

4.1.7

n-hexane (C₆H₁₄, 110-54-3). analytical grade, heavy distillation.

4.2 Standards

Pesticide and Related Chemical Reference Material. Purity $\geq 95\%$, see Appendix A.

4.3.1 Standard stock solution

Respectively, to take appropriate (accurate to 0.1mg) a variety of pesticides and related chemical standards were 10mL volumetric flask, according to the standard of the dissolved toluene, acetone mixture, dichloromethane and other solvents dissolved and constant volume to the scale (solvent options see Appendix A), the standard the solution is stored at 4 ° C for 4 years.

4.3.2 Mixing standard solutions (mixed standard solutions A, B, C, D and E)

According to the nature and retention time of pesticides and related chemicals, 500 kinds of pesticides and related chemicals will be divided into A, B, C, D, E five and the concentration of each pesticide and associated chemical in the instrument to determine the concentration in the mixed standard solution. This is the standard the grouping of 500 pesticides and related chemicals and their mixed standard solution concentrations are given in Appendix A.

Depending on the group number of each pesticide and associated chemical, the concentration of the standard solution and the concentration of the standard stock solution, Pesticide and related chemicals standard stock solution in a 100mL volumetric flask, with toluene volume to the scale. Mix the standard solution in the dark at 4 °C Save, save for a month.

4.3.3 Internal standard solution

Accurately weighed 3.5mg epoxy heptachlor in 100mL volumetric flask, with toluene volume to the scale.

4.3.4 Matrix mixed standard working solution

A, B, C, D, E group of pesticide and related chemical matrix mixed standard working solution is 40 μ L standard solution (4.3.3) and 50 ML mixed standard solution (4.3.2) were added to 1.0 mL of the sample blank matrix extract, mixed, dubbed the matrix mixed standard Solution A, B, C, D and E. Matrix mixed standard working solution should be used with the current distribution.

4.4 Materials

4.4.1

Envi-18 column 1). 12 mL, 2.0 g or equivalent.

4.4.2 Envi -Carb1

) Activated carbon column. 6 mL, 0.5 g or equivalent.

4.4.3 Sep-Pak2

NH2 solid phase extraction column. 3 mL, 0.5 g or equivalent.

5 Instruments and equipment

5.1

Gas Chromatography-Mass Spectrometer. Equipped with an electron impact source (EI).

5.2

Analysis of balance. 0.01 g and 0.0001 g.

5.3

Homogenizer. speed not less than 20000 r/min.

5.4

chicken heart bottle. 200 mL.

5.5

Pipettes. 1 mL.

5.6

nitrogen dryers.

6 Sample preparation

Fruit, vegetable sample sampling site according to GB 2763 Appendix A, the sample chopped and homogenized, prepared samples are divided into two, into a clean sample container, sealed and marked. The samples were cryopreserved at -18 ° C.

7.1 Extraction

Weigh 20 g of sample (accurate to 0.01 g) in a 80 mL centrifuge tube, add 40 mL of acetonitrile, homogenize at 15000 r/min homogenate Extract 1min, add 5g sodium chloride, and then homogenate extraction 1min, the centrifuge tube into the centrifuge, centrifugation at 3000 r/min 5min, take Clear liquid 20mL (equivalent to 10g sample volume), to be purified.

7.2 Purification