



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

**GB 23200.40-2016**

Replacing SN/T 1984-2007

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**Food safety national standard -- Determination of  
organophosphorus and organochlorine pesticide residues in  
cola drinks -- Gas chromatographic method**

可乐饮料中有机磷、有机氯农药残留量的测定 气相色谱法

**(English Translation)**

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### Foreword

This standard replaces SN/T 1984-2007 "Method for the determination of organophosphorus and organochlorine pesticide residues in import and export cola beverages Gas chromatography law".

Compared with SN/T 1984-2007, the main changes are as follows.

- Standard text format is modified to national standard text format for food safety;
- Standard name "import and export cola drinks" to "cola drinks".

- increase the "other food reference implementation" in the standard range.

This standard replaced the previous version of the standard release.

-SN/T 1984-2007.

National standards for food safety Determination of organophosphorus and organochlorine pesticide residues in cola drinks - Gas chromatographic method

## 1 Scope

This standard specifies the determination of 11 organophosphorus and organochlorine pesticide residues in cola beverages by gas chromatography.

This standard applies to cola drinks in dichlorvos, chlorpyrifos, malathion, parathion, heptachlor, hexachlorobenzene, hexachloride and its isomeric (11.66, beta-six six six, gamma-six six six, delta-six six six), pentachloronitrobenzene and other 11 kinds of organic phosphorus, organochlorine pesticide residues of the detection, other food 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 organic phosphorus residue in the sample was extracted with ethyl acetate, concentrated by rotary evaporation, purified by solid phase extraction column, and analyzed by gas chromatography flame photometric Determination of the external standard method.

The organochlorine residue in the sample was extracted with ethyl acetate, concentrated by rotary evaporation, sulfonated and purified by gas chromatography electron capture detector, External standard method.

## 4 Reagents and materials

Unless otherwise specified, all reagents are of analytical grade and water is in accordance with the primary water specified in GB/T 6682.

## **4.1 Reagents**

### **4.1.1**

n-hexane (C<sub>6</sub>H<sub>14</sub>). chromatographic purity.

### **4.1.2**

Methanol (CH<sub>3</sub>OH). Chromatographic Purification.

### **4.1.3**

ethyl acetate (C<sub>4</sub>H<sub>8</sub>O<sub>2</sub>). excellent grade pure.

### **4.1.4**

anhydrous sodium sulfate (Na<sub>2</sub>SO<sub>4</sub>). 650 °C burning 4 h, placed in the dryer in reserve.

### **4.1.5**

Sodium chloride (NaCl).

### **4.1.6**

Sodium hydroxide (NaOH).

### **4.1.7**

concentrated sulfuric acid (H<sub>2</sub>SO<sub>4</sub>). excellent grade pure.

## **4.2 Solution preparation**

### **4.2.1**

Methanol - Aqueous solution (5 95, V/V). Take 5 mL of methanol and mix with 95 mL of water.

### **4.2.2**

Methanol - Aqueous solution (10 90, V/V). Take 10 mL of methanol and mix with 90 mL of water.

### **4.2.3**

Sodium hydroxide solution (1 mol/L). 20 g of sodium hydroxide, dissolved in water and set to 500 mL.

## **4.3 Standards**

### **4.3.1**

Pesticide Reference Material. See Appendix A.

#### **4.4.1 Organophosphorus pesticide standard solution**

##### **4.4.1.1**

Organophosphorus pesticide standard stock solution. accurately weighed the amount of dichlorvos, chlorpyrifos, malathion, parathion, respectively with C the ketone is dissolved and fixed in a brown volumetric flask at a concentration of 1 000 mg/L and the stock is stored below -18 ° C.

##### **4.4.1.2**

organic phosphorus mixed standard intermediate solution. accurate absorption of appropriate dichlorvos, chlorpyrifos, malathion, parathion standard stock solution in a brown volumetric flask, the concentration of various organophosphorus pesticide standard solutions is 10 mg/L, and the intermediate solution is at -18 ° C Save the following.

##### **4.4.1.3**

organic phosphorus mixed standard working solution. with ethyl acetate mixed standard intermediate solution as needed dilution, prepared for the four kinds of Machine phosphorus pesticide mixed standard working solution, mixed standard working solution in 0 °C ~ 4 °C preservation.

#### **4.4.2 Organochlorine pesticide standard solution**

##### **4.4.2.1**

mixed solution of organochlorine pesticide standard solution. remove the appropriate volume of heptachlor, hexachlorobenzene, 666 mixed standard solution, pentachlor Nitrobenzene standard solution in a brown volumetric flask, with n-hexane volume to the scale, a variety of organochlorine pesticide standard solution concentration of 10 mg/L, the intermediate solution is stored below -18 ° C.

##### **4.4.2.2**

organic chlorine mixed standard working solution. with n-hexane mixed standard intermediate solution as needed dilution, formulated as organic chlorine farmers Drug mixed standard working solution, mixed standard working solution stored at 0 °C ~ 4 °C.

#### **4.5 Materials**

##### **4.5.1**

HLB solid phase extraction cartridge. 60 mg, 3 mL, or equivalent.

### **5 Instruments and equipment**