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INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GA/T 208-2019

Forensic sciences--Examination methods for phosphide in biological samples--HSGC and HSGC-MS

法庭科学 生物检材中磷化氢检验 顶空气相色谱和顶空气相色谱-质谱法

(English Translation)

Issued on: January 1, 1970 **Implemented on: December 1, 2019**

Issued by: Ministry of Public Security

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GA/T 208-1999 "Qualitative and Quantitative Analysis Methods of Phosphide in Samples of Poisoning Cases", and GA/T 208-Compared to 1999, the main technical changes except for editorial changes are as follows.

--- Modified the standard name (see cover, cover of 1999 edition);

--- Modified the relevant content of the scope (see Chapter 1, Chapter 1 of the 1999 edition);

---Revised the relevant content of normative reference documents (see Chapter 2, Chapter 2 of the 1999 edition);

--- Revised the first principle of headspace gas chromatography detection of phosphine and its metabolites (see Chapter 4, 1999 edition of the fourth chapter);

--- Modified the first reagent for detecting phosphine and its metabolites by headspace gas chromatography (see Chapter 5, 1999 edition of No. 5) chapter);

---Modified the first instrument and equipment for detecting phosphine and its metabolites by headspace gas chromatography (see Chapter 6, 1999 edition) Chapter 6);

--- Modified the first qualitative and quantitative analysis of headspace gas chromatography for detection of phosphine and its metabolites (see Chapter 7, 1999) Chapter 7 of the edition);

--- Deleted the second part of the AgDDC method for the determination of phosphine (see Chapter 8 ~ Chapter 11 of the 1999 edition);

--- Deleted the third content of mercury bromide test paper method for measuring

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phosphine (see Chapter 12 ~ Chapter 15 of the 1999 edition);

--- Modify the relevant content of Appendix A (see Appendix A, Appendix A of the 1999 edition);

--- Modify the relevant content of Appendix B (see Appendix B, Appendix B of the 1999 edition).

Please note that some content of this document may involve patents. The issuer of this document does not assume responsibility for identifying these patents.

This standard was proposed by the National Toxic Analysis Subcommittee of Criminal Technical Standardization Technical Committee (SAC/TC179/SC1) and be in charge.

1 Scope

This standard specifies the headspace gas chromatography (HSGC) quantitative detection of phosphine in biological samples (blood, urine, liver, kidney, stomach and stomach contents, etc.) Qualitative and quantitative inspection method of headspace gas chromatography-mass spectrometry (HSGC-MS).

This standard applies to qualitative and quantitative analysis of phosphine in biological samples. Qualitative analysis and determination of phosphine in other suspicious samples Quantitative analysis can refer to use.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this article Pieces. For the cited documents without date, the latest version (including all amendments) applies to this document.

GB/T 6682 Analysis laboratory water specifications and test methods GA/T 122 Nomenclature of poison analysis

3 Terms and definitions

The terms and definitions defined in GA/T 122 apply to this document.

4 Principle

The blank sample and the added sample were used as controls. According to the requirements of parallel operation, headspace gas chromatography-mass spectrometry was used for quantification.

Chromatographic quantification, based on retention time, characteristic ion fragment peak of mass spectrometry and relative abundance ratio as qualitative judgment basis; based on

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peak area, use external Standard method for quantitative analysis.

5.1 Reagent

The water used for the experiment shall conform to the third grade water specified in GB/T 6682.The reagents used in the analysis are of analytical grade, and the reagents include.

a) 20% sulfuric acid solution. take 20mL concentrated sulfuric acid and slowly add it to 80mL water;

b) Zinc powder (no arsenic);

c) Standard solution.

1) Sodium hypophosphite standard solution (equivalent to 1.0 mg/mL containing phosphine). accurately weigh sodium hypophosphite (NaH2PO2 H2O) Standard substance 155.90mg, dissolved in a small amount of water, diluted to 50mL, formulated to contain phosphine equivalent the 1.0 mg/mL sodium hypophosphite standard solution was placed in the refrigerator and stored in a refrigerator. Valid for 1 month.

2) Sodium hypophosphite working solution (equivalent to 0.1mg/mL containing phosphine). Pipette sodium hypophosphite standard solution (equivalent to containing Phosphine 1.0mg/mL), diluted with water to 10mL, sealed, placed in the refrigerator and stored in the refrigerator, valid for 7 days. experiment

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