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ICS 13.310
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GA

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GA/T 187-2021

Forensic sciences - Examination methods for dichlorvos and trichlorfon in biological samples - GC-MS and LC-MS

法庭科学 生物检材中敌敌畏和敌百虫检验 气相色谱-质谱和液相色谱-质谱法

(English Translation)

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

Issued by: Ministry of Public Security

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents" drafted.

This document replaces GA/T 187-1998 "Qualitative and Quantitative Analysis Methods of Dichlorvos and Trichlorfon in Poisoning Materials", and Compared with GA/T 187-1998, except for editorial revisions, the main technical changes are as follows.

--- Revised the relevant content of the scope (see Chapter 1, Chapter 1 of the 1998 edition);

--- Added the qualitative and quantitative analysis method of liquid chromatography (see Chapter 1 ~ Chapter 8);

--- Modified the relevant content of normative references (see Chapter 2, Chapter 2 of the 1998 edition);

--- Revised the principle of gas chromatography (see Chapter 4, Chapter 4 of the 1998 edition);

--- Modified the reagents for gas chromatography (see Chapter 5, Chapter 5 of the 1998 edition);

--- Modified the instruments and equipment for gas chromatography (see Chapter 6, Chapter 6 of the 1998 edition);

--- Modified the qualitative and quantitative analysis of gas chromatography (see Chapter 7, Chapter 7 of the 1998 edition);

--- Deleted the relevant content of thin layer chromatography (see Chapter 11 ~ Chapter 16 of the 1998 edition);

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--- Deleted the relevant content of the chemical rapid test method (see Chapter 17 of the 1998 edition);

--- Revised the relevant content of Appendix A (see Appendix A, Appendix A of the 1998 edition);

--- Added the relevant content of Appendix B (see Appendix B).

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

1 Scope

This document specifies the gas chromatography-mass spectrometry of dichlorvos in biological samples (blood, urine, liver, kidney, stomach and stomach contents, etc.) in the field of forensic science (GC-MS) qualitative test method and liquid chromatography-mass spectrometry (LC-MS) qualitative and quantitative test method for dichlorvos and trichlorfon.

This document is applicable to the gas chromatography-mass spectrometry determination of dichlorvos in biological samples (blood, urine, liver, kidney, stomach and stomach contents, etc.) in the field of forensic science Qualitative and quantitative analysis of dichlorvos and trichlorfon by liquid chromatography-mass spectrometry. Other test materials can be used for reference.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 6682 Analysis Laboratory Water Specifications and Test Methods GA/T 122 Toxic Analysis Terminology

3 Terms and Definitions

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

4 Principles

The blank sample and the added sample were used as controls, and the biological samples were extracted, purified and concentrated according to the requirements of parallel operation.

Liquid chromatography-mass spectrometry was used for detection, and retention time,

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mass spectral characteristic ions and ion abundance ratios were used as the basis for qualitative judgment; liquid chromatography-mass spectrometry was used.

The retention time, mass spectral characteristic ion pair and ion pair abundance ratio were used as the basis for qualitative judgment, and the peak area was used as the basis for external standard method.

Perform quantitative analysis.

5.1 Reagents

The experimental water for gas chromatography-mass spectrometry shall meet the tertiary water specified in GB/T 6682, and the experimental water for liquid chromatography-mass spectrometry shall meet the requirements of GB/T 6682.

Grade 1 water specified in GB/T 6682.Unless otherwise stated, the reagents used in the analysis are of analytical grade, including the following reagents.

a) Ethyl acetate.

b) Dichloromethane.

c) Acetonitrile (chromatographically pure).

d) Methanol.

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