

CCS X04



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

GB/T 23213-2008

**Determination of polycyclic aromatic hydrocarbons in
vegetable oils - GC-MS method**

植物油中多环芳烃的测定 气相色谱-质谱法

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Foreword

The Standard Appendix A, Appendix B is an informative annex. This standard is proposed and managed by the State Administration of Quality Supervision Inspection and Quarantine of People's Republic of China. This standard was drafted. People's Republic of China Qinhuangdao Exit Inspection and Quarantine, People's Republic of China Shandong Entry-Exit Inspection and Quarantine Bureau. The main drafters of this standard. Wang Jianhua, Guo Cui, Zhang Yibing, Wang Yanli, Pang Guofang. Determination of PAHs in vegetable oil Gas chromatography - mass spectrometry

1 Scope

GB/T 23213-2008 is the Chinese national standard on determination of polycyclic aromatic hydrocarbons in vegetable oils - gc-ms method. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 31 December 2008 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 May 2009. Classification: ICS (ICS) , CCS X04. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the vegetable oil 16 polycyclic aromatic hydrocarbons (abbreviated PAH, the specific name of Table 1) gas chromatography - mass spectrometry. This standard applies to the determination of PAHs in vegetable oils. The standard method detection limit. 1µg/kg.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to

the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 6379.1 measurement methods and results of Accuracy (trueness and precision) - Part 1. General principles and definitions (GB/T 6379.1-2004, ISO 5725-1.1994, IDT)

GB/T 6379.2 measurement methods and results of Accuracy (trueness and precision) - Part 2. Determine the standard measurement method to repeat Of the basic methods of reproduction (GB/T 6379.2-2004, ISO 5725-2.1994, IDT)

GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-2008, ISO 3696. 1987, MOD) Principle

3 Polycyclic aromatic hydrocarbons in the sample with acetone - acetonitrile ultrasonic extraction, the extract was concentrated to dryness, ethyl acetate - cyclohexane (1 + 1) dissolved with Gel permeation chromatography purification, gas chromatography - mass spectrometer, internal standard.

4 Reagents and materials

Unless otherwise specified, reagents were of analytical grade water as a water GB/T 6682 regulations.

4.1 acetonitrile.

4.3 ethyl acetate. chromatography.

4.4 Cyclohexane. chromatography.

4.5 acetonitrile + acetone (60 + 40). 60 parts of acetonitrile and 40 parts of acetone mixed, stored at room temperature.

4.6 ethyl acetate + cyclohexane (50 + 50). 50 parts of cyclohexane and 50 parts of ethyl acetate mixed, stored at room temperature.

4.7 Standard substance. mass concentration of PAHs EPA16 mixed standard stock solution are 2g/L, the purity of $\geq 99\%$.

4.8 deuterated internal standard reference material. deuterated - Philippine D10, deuterium - anthracene D10, deuterium - benzo (Rao) pyrene D12, purity $\geq 99\%$.

4.9 PAHs standard solution. Accurately weighed amount of standard (4.7), respectively 50mL volumetric flask, ethyl acetate + cyclohexane (50 + 50) (4.6) to the mark, the concentration of $1\mu\text{g/mL}$, stock solution stored at $-20\text{ }^{\circ}\text{C}$.

4.10 internal standard solution. Weigh accurately 10mg standard (4.7), respectively, in the 100mL flask, ethyl acetate + cyclohexane (50 + 50) (4.6) to the mark, the concentration of $100\mu\text{g/mL}$, stock solution stored at $-20\text{ }^{\circ}\text{C}$. + Cyclohexane and then with ethyl acetate (50 +

50) Diluted to a suitable concentration of the solution and stored at 4 °C refrigerator.

4.11 standard solution. PAHs standard solution (4.9) and internal standard solution (4.10) after mixing spare.

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