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

GB/T 24894-2025

**Animal and vegetable fats and oils - Determination of the
composition of fatty acids in the 2-position of the triglyceride
molecules**

(English Translation)

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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 for standardization documents" Drafting is required.

This document replaces GB/T 24894-2010 "Determination of 2-position fatty acid components of triglyceride molecules in animal and vegetable oils and fats" and is compatible with GB/T 24894-Compared with 2010, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- Changed the scope of application of the document (see Chapter 1, Chapter 1 of the 2010 edition);
- Some reagents have been changed (see 5.2, 4.2 of the 2010 edition);
- Some instruments have been changed (see 6.2, 5.2 of the 2010 edition);
- Some operation steps have been changed (see 9.4, 8.4 of the 2010 edition);
- Changed the experimental data processing and added the calculation formula for the 2-position fatty acid composition (see Chapter 10, Chapter 9 of the 2010 edition);
- Changed the test report (see Chapter 12, Chapter 11 of the 2010 edition);
- Deleted the preparation and activity determination of lipase (see Appendix A of the 2010 edition).

This document is modified to adopt ISO 6800:1997 "Determination of the 2-position fatty acid composition of triglyceride molecules in animal and vegetable oils and fats".

Compared with ISO 6800:1997, this document has the following structural adjustments.

- Added a chapter on "Terms and Definitions";

--10.1 in ISO 6800:1997 has been deleted to adapt to my country's technical conditions and increase operability.

The technical differences between this document and ISO 6800:1997 and their reasons are as follows.

--Replaced ISO 5508 and ISO 5509 (see 5.4, 6.4, 9.6) with the normative reference GB 5009.168-2016, and Adapt to the technical conditions of the country;

--ISO 660 (see 9.1) was replaced by the normative reference GB 5009.229-2016 to adapt to my country's technical conditions;

-- Changed the scope (see Chapter 1) to extend the application of the document to all substances with a melting point below 50°C containing four to twenty-two carbon atoms.

Oils and fats containing saturated and unsaturated fatty acids;

--Some reagents have been changed (see 5.2) to apply the alcoholysis of triglycerides to prepare 2-monoglycerides;

--Some instruments have been modified (see 6.2) to apply the alcoholysis of triglycerides to prepare 2-monoglycerides;

--Some operating steps (see 9.4) have been changed to apply the alcoholysis of triglycerides to prepare 2-monoglycerides;

-- Added the calculation formula for the 2-position fatty acid composition in the result presentation (see Chapter 10) to express the calculation method more clearly;

--The test report (see Chapter 12) has been modified to adapt to my country's technical conditions;

-- Deleted Appendix A (normative) Preparation and activity determination of lipase, changed to immobilized lipase and provided enzyme activity parameter.

The following editorial changes were made to this document.

-- Deleted the inter-laboratory test results (see Annex B of ISO 6800:1997).

1 Scope

This document describes a method for the determination of the fatty acid composition of the 2-position (beta or endo) of triglyceride molecules in animal and vegetable fats and oils.

This document applies to fats and oils containing saturated and unsaturated fatty acids with 4 to 22 carbon atoms and a melting point below 50 °C.

This document does not apply to greases containing the following components.

-- fatty acids containing fewer than four carbon atoms;

- fatty acids containing more than 22 carbon atoms;
- Contains hydroxy fatty acids (such as ricinoleic acid).

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

GB 5009.168-2016 National Food Safety Standard Determination of Fatty Acids in Food GB 5009.229-2016 National Food Safety Standard Determination of Acid Value in Food GB/T 5524 Sampling of animal and vegetable fats and oils (GB/T 5524-2008, ISO 5555:2001, IDT) GB/T 6682 Specifications and test methods for water used in analytical laboratories (GB/T 6682-2008, ISO 3696:1987, IDT) GB/T 15687 Preparation of animal and vegetable fat samples (GB/T 15687-2008, ISO 661:2003, IDT)

3 Terms and definitions

There are no terms or definitions that require definition in this document.

4 Principle

After the free fatty acids in the sample were neutralized, they were purified by column chromatography, and the triglycerides were hydrolyzed into 2-monoglycerides by enzymes and separated by thin layer chromatography (TLC).

The fatty acid content was determined by gas chromatography.

5 Reagents

All reagents were of analytical grade. Water was grade II water in accordance with GB/T 6682.

5.1 Reagents for sample cleanup

5.1.1 2-Propanol or ethanol. 95% (volume fraction).

5.1.2

n-Hexane or petroleum ether. boiling range 30 °C ~ 60 °C.

5.1.3 2-Propanol or ethanol. 50% (volume fraction).

5.1.4

Sodium hydroxide solution. 0.5 mol/L.

5.1.5

Phenolphthalein solution. 1 g of phenolphthalein is dissolved in 100 mL of 95% (volume fraction) ethanol.