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NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

GB/T 21496-2025

Replacing GB/T 21496-2008

Animal and vegetable fats and oils - Determination of sediment in crude fats and oils - Centrifuge method

动植物油脂 油脂沉淀物含量的测定 离心法

(English Translation)

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Foreword

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

Drafting.

This document supersedes GB/T 21496-2008 "Determination of Oil and Fat Content in Animal and Vegetable Oils by Centrifugation Method".

Compared with GB/T 21496-2008, apart from structural adjustments and editorial changes, the main technical changes are as follows.

---The determination range for precipitate content has been changed (see Chapter 1, Chapter 1 of the 2008 edition);

---Sample preparation has been modified (see Chapter 7, Chapter 7 of the 2008 edition);

---The requirements for expressing calculation results have been changed (see Chapter 9, Chapter 9 of the 2008 edition).

This document adopts ISO 15301:2001 "Determination of oil and fat content by centrifugation" (Fats and fats of animals and vegetables).

The following minimal editorial changes have been made to this document.

---Incorporates amendments to ISO 15301:2001/Cor.1.2007; the outer margins of the relevant clauses are marked with vertical double lines.

Use lines (||) to indicate;

---Notes have been added to Chapter 6.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

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This document was proposed by the National Food and Strategic Reserves Administration.

This document is under the jurisdiction of the National Technical Committee on Standardization of Grain and Oil (SAC/TC270).

1 Scope

This document describes a method for determining the content of sediment in crude oil by centrifugation.

This document applies to crude oil produced by leaching or pressing methods with a sediment content ranging from 0.1 mL/100g to 15.0 mL/100g.

This document does not apply to lipids that are not liquid at 20°C.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

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Note: GB/T 15687-2008 Preparation of animal and vegetable oil samples (ISO 661:2003, IDT)

3 Terms and Definitions

The following terms and definitions apply to this document.

Sediment

Insoluble substances in oils that can be separated by centrifugation; the opaque layer collected at the bottom of the centrifuge tube after centrifugation.

Note: The precipitate contains phospholipids, impurities, dust, etc., which are dispersed in the aqueous phase and can be quantified using this document. The white layer above and inside the black insoluble layer.

Crystalline components are also part of the precipitate.

4 Principles

The well-mixed sample is centrifuged according to regulations. The separated substance is the precipitate, and its volume is measured using calibrated centrifuge tubes.

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Quantitative.

5 Instruments

Standard laboratory instruments, as well as the following special instruments.

5.1
Centrifuge tubes. 100 mL, pear-shaped or conical, made of fully annealed glass, with stoppers. See Figures 1 and 2.

Note: Compared to the pear-shaped tube, the tapered tube makes it more difficult to read the volume of the opaque layer.

5.2
Centrifuge tube sleeve. Used to hold centrifuge tubes and can resist the corrosion of grease.

5.3
Centrifuge. Compatible with centrifuge tubes (5.1) and centrifuge tube sleeves (5.2), allowing control of centrifugation speed and adjusting the diameter of the narrow section of the centrifuge tube.

The acceleration is 700 to 800 times that of free fall.

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