

ICS 67.200.10
CCS X 14



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

GB/T 5535.2-2008

**Animal and vegetable fats and oils -- Determination of
unsaponifiable matter -- Part 2: Method using hexane extraction
(English Translation)**

Issued on: August 22, 2008

Implemented on: December 1, 2008

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine**

Table of Contents

Foreword...	3
1 Scope...	4
2 Normative References...	4
3 Terms and Definitions...	4
4 Principle...	5
5 Reagents...	5
6 Apparatus...	5
7 Sampling...	5
8 Preparation of Test Sample...	6
9 Procedure...	6
10 Expression of Results...	7
11 Precision...	8
12 Test Report...	8
Annex A (informative) Results of Interlaboratory Tests...	9
Bibliography...	13

Foreword

GB/T 5535 Animal and Vegetable Fats and Oils - Determination of Unsaponifiable

Matter is divided into two parts.

---Part 1.Method Using Diethyl Ether Extraction;

---Part 2.Method Using Hexane Extraction.

This is Part 2 of GB/T 5535.

This Part equivalently adopts ISO 18609.2000 Animal and Vegetable Fats and Oils - Determination of Unsaponifiable Matter - Method Using Hexane Extraction (English version).

For convenience, this Part makes the following editorial modifications to ISO 18609.2000.

---The Foreword of the international standard is deleted;

---"this International Standard" is modified into "this Part";

---Decimal point "." is used to replace ",", which is used as decimal point in the previous text;

---GB/T 15687 is used to replaced ISO 661 in the previous international standard.

Since the date of implementation, this Part shall replace GB/T 5535.2-1998 Animal and Vegetable Fats and Oils - Determination of Unsaponifiable Matter - Part 2.Rapid Method Using Hexane Extraction.

In this Part, Appendix A is informative.

This Part was proposed by State Administration of Grain.

This Part shall be under the jurisdiction of National Technical Committee on Grain and Oil of Standardization Administration of China.

The responsible drafting organization of this Part. Wuhan Polytechnic University.

1 Scope

This Part of GB/T 5535 specifies a method using three hexane extractions for the determination of the unsaponifiable matter content of animal and vegetable fats and oils.

2 Normative References

Through the reference in this Part of GB/T 5535, clauses of the following documents become clauses of this Part. In terms of references with a specific date, all the subsequent modification sheets (excluding the corrected content) or the revised editions are not applicable to this Part.

3 Terms and Definitions

The following term and definition are applicable to this Part of GB/T 5535.

Unsaponifiable matter refers to all the substances present in the product which, after saponification of the latter by potassium hydroxide and extraction by hexane, are not volatile under the specified operating conditions.

4 Principle

The fat or oil is saponified by boiling under reflux with an ethanolic potassium hydroxide solution. The unsaponifiable matter is extracted from the soap solution by hexane or, failing this, light petroleum. The solvent is evaporated, and the residue is weighed after drying.

5 Reagents

Use only reagents of recognized analytical grade and distilled or deionized water or water of equivalent purity.

6 Apparatus

Usual laboratory equipment and, in particular, the following.

7 Sampling

Sampling is not part of the method specified in this Part. A recommended sampling method is given in ISO 5555.

8 Preparation of Test Sample

Prepare the test sample in accordance with GB/T 15687.

9 Procedure

Add 50 mL of the potassium hydroxide solution (5.4) and some anti-bumping granules. Attach the reflux condenser (6.2) to the flask and boil the contents gently for 1 h. Stop heating. Add 50 mL of water through the top of the condenser and swirl.

Carry out a blank test, using the same procedure and the same quantities of all the reagents, but omitting the test portion. If the residue exceeds 1.5 mg, investigate the technique and the reagents.

10 Expression of Results

The unsaponifiable matter content, expressed as a percentage by mass of the sample, is equal to.

11 Precision

Details of interlaboratory tests on the precision of the method are summarized in Annex

A. The values derived from these interlaboratory tests may not be applicable to concentration ranges and matrices other than those given.

12 Test Report

The test report shall specify.

Annex A

(informative)

Results of Interlaboratory Tests

Fourteen laboratories from six different countries (France, Germany, Hungary, Malaysia, Netherlands, United Kingdom) took part in a collaborative study organized by the Institute des corps gras Centre technique industries.

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