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Milk fat products — Specification



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Foreword

Uganda National Bureau of Standards (UNBS) is a parastatal under the Ministry of Tourism, Trade and Industry established under Cap 327, of the Laws of Uganda. UNBS is mandated to co-ordinate the elaboration of standards and is

- (a) a member of International Organisation for Standardisation (ISO) and
- (b) a contact point for the WHO/FAO Codex Alimentarius Commission on Food Standards, and
- (c) the National Enquiry Point on TBT/SPS Agreements of the World Trade Organisation (WTO).

The work of preparing Uganda Standards is carried out through Technical Committees. A Technical Committee is established to deliberate on standards in a given field or area and consists of representatives of consumers, traders, academicians, manufacturers, government and other stakeholders.

Draft Uganda Standards adopted by the Technical Committee are widely circulated to stakeholders and the general public for comments. The committee reviews the comments before recommending the draft standards for approval and declaration as Uganda Standards by the National Standards Council.

This Uganda Standard, US 817, *Milk fat products — Specification* is based on the Codex standard for milk fat products (Codex Stan A-2-1973).

Committee membership

The following organizations were represented on the Milk and milk products sub-committee (UNBS/TC 2/SC 1), under the supervision of the Technical Committee on Food and agriculture standards (UNBS/TC 2) during the preparation of this standard:

- Consumer Education Trust (CONSENT)
- Dairy Development Authority (DDA)
- Department of Food Science and Technology, Makerere University
- Department of Veterinary Public Health, Makerere University
- Family Choice Limited
- GBK Dairy Limited
- Independent Dairy Consultant
- Sameer Agriculture and Livestock Limited
- Uganda Dairy Processors Association (UDPA)
- Uganda National Bureau of Standards (UNBS)

Milk fat products — Specification

1 Scope

This Uganda Standard specifies requirements and methods of sampling and test for anhydrous milk fat, anhydrous butteroil, butteroil and ghee, which are intended for further processing or culinary use.

This standard only applies to the ghee obtained from cows' milk and does not apply to ghee obtained from other milk producing animals such as goats and camels (for which a separate standard is yet to be developed).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

US 7, *General standard for the labelling of pre-packaged foods*

US 45, *General standard for food additives*

US 163, *Code of hygienic practice for milk and milk products*

US 500, *Requirements for nutritional labelling of foods*

US 508, *Requirements for nutritional and health claims on foods*

US 566 *Use of nutrition claims — Requirements*

US 738, *General standard for contaminants and toxins in foods*

US EAS 68-1, *Milk and milk products — Methods for microbiological examination – Part 1: Total plate count*

US EAS 68-3, *Milk and milk products — Methods of microbiological examination — Part 3: Enumeration of colony forming units of yeasts and/or moulds - Colony-count technique at 25 °C*

US EAS 80-6, *Butter — Methods of chemical analysis — Part 6: Determination of fat acidity (Reference method)*

US EAS 80- 8, *Butter — Methods of chemical analysis — Part 8: Determination of copper content*

US EAS 80- 9, *Butter — Methods of chemical analysis — Part 9: Determination of iron content*

US ISO 7251, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive Escherichia coli — Most probable number technique*

US ISO 707, *Milk and milk products — Guidance on sampling*

FDUS ISO 3976, *Milk fat — Determination of peroxide value*

FDUS ISO 3595, *Milk fat — Detection of vegetable fat by the phytosteryl acetate test*

FDUS ISO 5536, *Milk fat products — Determination of water content — Karl Fischer method*

FDUS ISO 8262-3, *Milk products and milk-based foods — Determination of fat content by the Weibull-Berntrop gravimetric method (Reference method) — Part 3: Special cases*

3 Terms and definitions

For the purposes of this standard, the following terms and definitions shall apply.

- 3.1 milk fat**
a complex of triglycerides derived exclusively from milk and/or products obtained from milk
- 3.2 anhydrous milk fat
anhydrous butteroil
butteroil**
a fatty product derived exclusively from milk and/or products obtained from milk, by means of processes which result in almost total removal of water and non-fat solids
- 3.3 ghee**
product exclusively obtained from milk, cream or butter, by means of processes which result in almost total removal of water and non-fat solids, with an especially developed flavour and physical structure

4 Essential composition and quality factors

4.1 Raw materials

Anhydrous milk fat, anhydrous butteroil, butteroil and ghee shall be produced from milk and/or products obtained from milk.

Anhydrous milk fat, anhydrous butteroil, butteroil or ghee shall be free from vegetable fat when tested in accordance with FDUS ISO 3595.

Anhydrous milk fat, anhydrous butteroil, butteroil or ghee shall be free from animal fat other than milk fat.

4.2 Permitted ingredients or processing aids

Starter cultures of harmless lactic acid producing bacteria may be used in the production of ghee.

4.3 Composition

Anhydrous milk fat, anhydrous butteroil, butteroil and ghee shall conform to the compositional requirements in Table 1.

5 Food additives

Food additives may be used in anhydrous milk fat, anhydrous butteroil, butteroil and ghee in accordance with US 45.

Inert gas may be used to flush airtight containers before, during and after filling with product.

Table 1 – Compositional requirement for anhydrous milk fat, anhydrous butteroil, butteroil and ghee

Component	Requirement			Method of test
	Anhydrous milk fat/ Anhydrous butteroil	Butteroil	Ghee	
Minimum milk fat, (% m/m)	99.8	99.6	99.6	FDUS ISO 8262-3
Maximum water, (% m/m)	0.1	0.3	0.3	FDUS ISO 5536
Maximum free fatty acids (% m/m as oleic acid)	0.3	0.4	1.5	US EAS 80-6
Maximum peroxide value (milli-equivalents of oxygen/kg fat)	0.3	0.6	1.0	FDUS ISO 3976
Taste and odour	Acceptable for market requirements after heating a sample to 40 °C – 45 °C			-
Texture	Smooth and fine or coarse granules to liquid, depending on temperature			-

6 Contaminants

6.1 Contaminants and toxins

The anhydrous milk fat, anhydrous butteroil, butteroil and ghee shall conform to the maximum limits of contaminants and toxins in US 738.

In addition the products shall conform to the maximum tolerable limits for metal contaminants listed in Table 2.

Table 2– Maximum tolerable limits for metal contaminants in anhydrous milk fat, anhydrous butteroil, butter oil and ghee

Metal contaminant	Maximum limit, mg/kg	Method of test
Copper	0.05	US EAS 80-8
Iron	0.2	US EAS 80-9

6.2 Pesticide and veterinary drug residues

The anhydrous milk fat, anhydrous butteroil, butteroil and ghee shall conform to the maximum residue limits for pesticides and veterinary drugs established by the Codex Alimentarius Commission.

7 Hygiene

Anhydrous milk fat, anhydrous butteroil, butteroil and ghee shall be prepared and handled in accordance with US 163. The products shall conform to the microbiological limits indicated in Table 3.

Table 3 – Microbiological limits in anhydrous milk fat, anhydrous butteroil, butteroil and ghee

Microorganism	Limit	Method of test
Total plate count (cfu/g), maximum	10	US EAS 68-1
<i>Eschericia coli</i> , (per gram), maximum	Not detected	US ISO 7251
Yeasts and moulds (cfu/g), maximum	< 1	US EAS 68-3

8 Packaging

Anhydrous milk fat, anhydrous butteroil, butteroil and ghee shall be packaged in clean food grade packaging material to protect the product from contamination. The packaging materials and process shall not contaminate the product or otherwise affect its technological, nutritional or sensory quality.

9 Labelling

In addition to the provisions of US 7, US 500, US 508 and US 566, anhydrous milk fat, anhydrous butteroil, butteroil and ghee shall conform to the following labeling requirements:

- a) the name of the food shall be one of the following in accordance with Clause 3.
 - i) anhydrous milk fat;
 - ii) anhydrous butteroil;
 - iii) butteroil; and
 - iv) ghee;
- b) for non-retail containers, the information required shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, and the name and address of the manufacturer or packer shall appear on the container.

9 Methods of sampling and test

Sampling of anhydrous milk fat, anhydrous butteroil, butteroil and ghee shall be conducted in accordance with US ISO 707. Tests shall be conducted in accordance with the methods specified in this standard. Where methods have not been indicated, methods specified in the CODEX STAN 234-1999, *Recommended methods of analysis and sampling*, may be used.

Bibliography

- [1] Sserunjogi, M.L., Abraham, R.K and Narvhus, J, 1998. A review paper: *Current knowledge of ghee and related products*. International Dairy Journal, 8: 677-688.
- [2] *Ghee grading and marking rules*, Gazette of India Part II, Section 3, Sub-Section (ii) dated 4-4-1981 at (S.O. 1101) dated 17/3/1981.

Certification marking

Products that conform to Uganda standards may be marked with Uganda National Bureau of Standards (UNBS) Certification Mark shown in the figure below.

The use of the UNBS Certification Mark is governed by the Standards Act, and the Regulations made thereunder. This mark can be used only by those licensed under the certification mark scheme operated by the Uganda National Bureau of Standards and in conjunction with the relevant Uganda Standard. The presence of this mark on a product or in relation to a product is an assurance that the goods comply with the requirements of that standard under a system of supervision, control and testing in accordance with the certification mark scheme of the Uganda National Bureau of Standards. UNBS marked products are continually checked by UNBS for conformity to that standard.

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