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EAST AFRICAN STANDARD

Edible casein products — Specification

EAST AFRICAN COMMUNITY

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Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the Principles and procedures for development of East African Standards.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is Technical Committee EASC/TC 17, Milk and milk product.

Attention is drawn to the possibility that some of the elements of this document may be subject of patent rights. EAC shall not be held responsible for identifying any or all such patent rights.

Edible casein products — Specification

1 Scope

This Draft East African Standard specifies requirements, sampling and test methods for edible acid casein, edible rennet casein and edible caseinate intended for direct human consumption or further processing.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

AOAC 926.08, *Rapid Determination of Moisture/Solids and Fat in Dairy Products by Microwave and Nuclear Magnetic Resonance Analysis*

AOAC 999.10, *Determination of Lead, Cadmium, Copper, Iron, and Zinc in foods, Atomic Absorption Spectrophotometry after dry ashing*

CAC/RCP 1, *Code of practice — General Principles for food hygiene*

CXS 192; *General standard for food additives*

CXC 57; C*ode of hygienic practice for milk and milk products*

EAS 38, *Labelling of pre-packaged foods — General requirements*

ISO 1735, *Cheese and processed cheese products — Determination of fat content — Gravimetric method (Reference method)*

ISO 4832, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coliforms — Colony-count technique*

ISO 5538, *Milk and milk products — Sampling inspection by attributes*

ISO 707*, Milk and milk products — Guidance on sampling*ISO 8197, Milk and milk products — Sampling inspection by variables

ISO 11290-2, *Microbiology of the food chain — Horizontal method for the detection and enumeration of Listeria monocytogenes and of Listeria spp. — Part 2: Enumeration method*

ISO 16649-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli — Part 2: Colony-count technique at 44 degrees C using 5-bromo-4-chloro-3-indolyl beta-D-glucuronide*

ISO 11870; *Milk and milk products — Determination of fat content — General guidance on the use of butyrometric methods*

ISO/TS 22113; *Milk and milk products — Determination of the titratable acidity of milk fat*

ISO 14501; *Milk and milk powder — Determination of aflatoxin M1 content — Clean-up by immunoaffinity chromatography and determination by high-performance liquid chromatography*

ISO 6579-1; *Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of Salmonella — Part 1: Detection of Salmonella spp.*

ISO 6888-1; *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 1: Technique using Baird-Parker agar medium*

ISO 11290-2; *Microbiology of the food chain — Horizontal method for the detection and enumeration of Listeria monocytogenes and of Listeria spp. — Part 2: Enumeration method*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.
ISO and IEC maintain terminological databases for use in standardization at the following addresses:
— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
edible acid casein
milk product obtained by separating, washing and drying the acid-precipitated coagulum of skimmed milk and/or of other products obtained from milk.

3.2
edible rennet casein
milk product obtained by separating, washing and drying the coagulum of skimmed milk and/or of other products obtained from milk. The coagulum is obtained through the reaction of rennet or other coagulating enzymes.

3.3
edible caseinate
milk product obtained by action of edible casein or edible casein curd coagulum with neutralizing agents followed by drying

3.4
food grade packaging material
packaging material, made of substances which are safe and suitable for their intended use and which will not impart any toxic substance or undesirable odour or flavour to the product

4 Requirements

4.1 Raw material

Skimmed milk and/or other products obtained from milk complying with relevant standards

4.2 Essential ingredients

a) Starter cultures of lactic acid and or flavor producing bacteria and cultures of other non-pathogenic micro – organisms; and

b) Rennet or other safe and suitable coagulating enzymes

4.3 Optional Ingredients

Optional ingredients shall be food grade and shall comply with relevant standards, and include but are not limited to the following

a) spices;
b) salt complying with EAS 35; and
c) acidulants

4.4. General requirements

Edible casein products shall be:

a) white to pale cream in color;
b) free from lumps which do not break up under slight pressure; and
c) free from foreign flavours and odours.

4.5 Specific requirements

Edible casein products shall comply with specific requirements given in the table 1 when tested in accordance with test methods specified therein.

Table 1 —Specific requirements for Edible casein products

S/N	Characteristic	Requirements			Test method
		Rennet casein	Acid casein	Caseinates	
I.	Moisture, % m/m, max	12.0	12.0	8.0	AOAC 926.08
II.	milk protein[a] in dry matter, % m/m,min	84.0	90.0	88.0	ISO 8968-1
III.	content of casein in milk protein, % m/m, min	95.0	95.0	95.0	ISO 17997-1
IV.	Milkfat, % m/m, max	2.0	2.0	2.0	AOAC 989.05
V.	Ash (phosphated), % m/m	7.5 (min.)	2.5 (max.)	-	AOAC 942.05
VI.	Lactose % m/m, max	1.0	1.0	1.0	AOAC 984.15
VII.	Titratable acidity, max, ml 0.1 N NaOH/g	-	0.27	-	ISO 5547
VIII.	pH	-	-	8.0	ISO 5545
IX.	scorched particles mg/25g	15	22.5	22.5 spray dried) 81.5 mg/25g (roller dried)	ISO 5739

[a] Protein content is 6.38 multiplied by the total Kjeldahl nitrogen determined.

5 Food additives

Only acidity regulators, anticaking agents, bulking agents and emulsifiers may be added in edible casein products in accordance with CXS 192.

6 Contaminants

6.1 Pesticide residues

Edible casein products shall comply with maximum residue limits residues set by Codex Alimentarius Commission.

6.2 Veterinary drugs residues

Edible casein products shall comply with maximum tolerable residue limits for antibiotics and other veterinary drugs set by Codex Alimentarius Commission.

6.3 Aflatoxin

The level of Aflatoxin M1, shall not exceed 0.5 µg/kg, when tested in accordance with ISO 14501

6.4 Heavy metals

Edible casein products shall not exceed limits specified in table 2 when tested in accordance with test methods specified therein

Table 2: Heavy metal limits for Edible casein products

S/N	Heavy metal	Maximum limit	Test method
i.	Copper mg/kg	5	ISO 21424
ii.	Iron mg/kg	20 50 (in roller dried caseinates)	ISO 15151
iii.	Lead (Pb), mg/kg	0.02	AOAC 2015.06

7 Hygiene

7.1 Edible casein products shall be processed, packaged, stored and distributed under hygienic conditions complying with CXC 1 and CXC 57.

7.2 Edible casein products shall not exceed microbiological limits in Table 3 when tested in accordance with test methods specified therein.

Table 3 — Microbiological limits for Edible casein products

S/N	Microorganism	Sampling plan		Limits		Test method
		n*	c*	m*	M*	
i.	*Salmonella spp* per 25g	5	0	0	0	ISO 6579-1
ii.	*E. coli*, cfu/g	5	2	0	0	ISO 16649-2
iii.	*Coagulase-positive staphylococcus aureus cfu/g*	5	2	0	0	ISO 6888-1
iv.	*Yeast and Moulds cfu/g*	*5*	*2*	10^2	10^3	ISO 21527-1
Assessment of the conformity of food to the microbiological requirements shall be based on the following criteria: n; number of units making up the sample (Sampling frequency); m: is the number of micro-organism colonies per gram or millilitre, and food is deemed to conform to the microbiological requirements if the number of colonies in all sample units is equal to or less than m; M: is the maximum value for the number of micro-organism colonies permitted in food per gram or millilitre.						

Food is deemed not to conform to the microbiological requirements and to be unfit for human consumption if the number of micro-organism colonies is equal to or greater than the value of M in more sample units than permitted by c.

c: is the number of units in the sample in which the number of micro-organism colonies per gram or millilitre determined in the course of the study may be between m and M. Food is deemed to conform to the microbiological requirements if the number of microorganism colonies in the remaining samples is equal to or less than the value of m.

8 Packaging

The products shall be packaged in food grade packaging materials made of suitable material and shall be well sealed in order to prevent contamination of the contents during storage and transportation.

9 Labelling

In additional to the requirements of EAS 38, the following specific labelling requirements shall be legibly and indelibly marked:

a) name of product as “edible acid casein”, or “edible rennet casein” or “edible caseinate”;
b) source of milk used
c) name and address of manufacturer;
d) date of manufacture;
e) list of ingredients;
f) coagulating agent used;
g) date of expiry;
h) instruction for use;
i) batch number
j) storage conditions;
k) source of milk used (e.g cow, buffalo, etc); and
l) country of origin.

10 Sampling

The Test samples shall be taken in accordance with ISO 707. In addition to the provision in ISO 707, sampling shall comply with ISO 8197 or ISO 5538 when the sampling is purposely for inspection.

