



CD/K/691:2010  
ICS 67.120

## **EAST AFRICAN STANDARD**

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**Canned minced ham — Specification**

**EAST AFRICAN COMMUNITY**

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*Draft for comments only — Not to be cited as East African Standard*

## Foreword

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

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. 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 procedures of the Community.

Article 15(1) of the EAC SQMT Act, 2006 provides that "Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose".

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.

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East African Community

P O Box 1096

**Arusha**

Tanzania

Tel: 255 27 2504253/8

Fax: 255-27-2504481/2504255

E-Mail: [eac@eachq.org](mailto:eac@eachq.org)

Web: [www.each.int](http://www.each.int)

## Introduction

In the preparation of this East African Standard, the following sources were consulted extensively:

IS 12542:1988(R2000), *Meat and Meat Products — Canned Ham, Minced — Specification*

Codex Alimentarius website: [http://www.codexalimentarius.net/mrls/pestdes/jsp/pest\\_q-e.jsp](http://www.codexalimentarius.net/mrls/pestdes/jsp/pest_q-e.jsp)

USDA Foreign Agricultural Service website: <http://www.mrldatabase.com>

USDA Agricultural Marketing Service website: <http://www.ams.usda.gov/AMSV1.0/Standards>

USDA Plant Inspectorate Service website: [http://www.aphis.usda.gov/import\\_export/plants](http://www.aphis.usda.gov/import_export/plants)

European Union: [http://ec.europa.eu/sanco\\_pesticides/public](http://ec.europa.eu/sanco_pesticides/public)

Assistance derived from these sources is hereby acknowledged.

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## Canned minced ham — Specification

### 1 Scope

This East African Standard specifies the requirements and methods of sampling and tests for canned minced ham.

### 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.

AOAC Official Method 931.06:1931, *Phosphorus (Total) ( $P_2O_5$ ) in Eggs*

CAC/RCP 1, *Recommended international code of practice — General principles of food hygiene*

CD-K-670:2010, *Bovine (beef) meat — Carcasses and cuts*

CD-K-671:2010, *Caprine (goat) meat — Carcasses and cuts*

CD-K-672:2010, *Ovine (sheep) meat — Carcasses and cuts*

CD-K-673:2010, *Porcine (pig) meat — Carcasses and cuts*

CD-K-692:2010, *Mutton and goat meat canned in brine — Specification*

CD-K-675:2010, *Edible meat co-products*

CD-K-683:2010, *Smoked bacon — Specification*

CD-K-692:2010, *Mutton and goat meat canned in brine — Specification*

CD-K-693:2010, *Animal casings — Specification*

CD-K-697:2010, *Code of hygienic practice for meat*

CD-K-699:2010, *Veterinary drugs residues in foods — Maximum residue limits*

CD/K/700:2010, *Ante-mortem and post-mortem inspection of meat animals — Code of practice*

EAS 5, *Refined white sugar — Specification*

EAS 12, *Drinking (potable water) — Specification*

EAS 35, *Edible salt — Specification*

EAS 38, *Labelling of prepackaged foods — Specification*

EAS 39, *Hygiene in the food and drink manufacturing industry — Code of practice*

EAS 41, *Fruits, vegetables and derived products — Sampling and methods of test*

EAS 103, *Schedule for permitted food additives*

EAS 123, *Distilled water — Specification*

- ISO 936, *Meat and meat products — Determination of total ash*
- ISO 937, *Meat and meat products — Determination of nitrogen content (Reference method)*
- ISO 1442, *Meat and meat products — Determination of moisture content (Reference method)*
- ISO 1443, *Meat and meat products — Determination of total fat content*
- ISO 1444, *Meat and meat products — Determination of free fat content*
- ISO 1737, *Evaporated milk and sweetened condensed milk — Determination of fat content — Gravimetric method (Reference method)*
- ISO 1841-1, *Meat and meat products — Determination of chloride content — Part 1: Volhard method*
- ISO 1841-2, *Meat and meat products — Determination of chloride content — Part 2: Potentiometric method*
- ISO 2294, *Meat and meat products — Determination of total phosphorus content (Reference method)*
- ISO 2917, *Meat and meat products — Measurement of pH — Reference method*
- ISO 2918, *Meat and meat products — Determination of nitrite content (Reference method)*
- ISO 3091, *Meat and meat products — Determination of nitrate content (Reference method)*
- ISO 3496, *Meat and meat products — Determination of hydroxyproline content*
- ISO 4134, *Meat and meat products — Determination of L-(+)- glutamic acid content — Reference method*
- ISO 4831, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms — Most probable number technique*
- ISO 4832, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coliforms — Colony-count technique*
- ISO 4833, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of microorganisms — Colony-count technique at 30 degrees C*
- ISO 5537, *Dried milk — Determination of moisture content (Reference method)*
- ISO 5553, *Meat and meat products — Detection of polyphosphates*
- ISO 5554, *Meat products — Determination of starch content (Reference method)*
- ISO 5985, *Animal feeding stuffs — Determination of ash insoluble in hydrochloric acid*
- ISO 6491, *Animal feeding stuffs — Determination of phosphorus content — Spectrometric method*
- ISO 6579, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella spp.*
- ISO 7251, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive Escherichia coli — Most probable number technique*
- ISO 8156, *Dried milk and dried milk products — Determination of insolubility index*
- ISO 9390, *Water quality — Determination of borate — Spectrometric method using azomethine-H*

ISO 13493, *Meat and meat products — Determination of chloramphenicol content — Method using liquid chromatography*

ISO 13496, *Meat and meat products — Detection of colouring agents — Method using thin-layer chromatography*

ISO 13730, *Meat and meat products — Determination of total phosphorus content — Spectrometric method*

ISO 13965, *Meat and meat products — Determination of starch and glucose contents — Enzymatic method*

ISO 21527-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds — Part 1: Colony count technique in products with water activity greater than 0.95*

ISO 21527-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds — Part 2: Colony count technique in products with water activity less than or equal to 0.95*

### 3 Definitions and presentation

For the purpose of this standard, the following definitions shall apply.

#### 3.1

##### **canned minced ham**

a cured product of fresh ham and shoulder of pig

#### 3.2

##### **meat**

the uncured, sound and wholesome meat of the pig, namely, pork used as food

### 4 Requirements

#### 4.1 Hygienic requirements

**4.1.1** The material shall be prepared and handled under strict hygienic conditions by persons free from contagious and infectious diseases and only in premises maintained in a thoroughly clean and hygienic condition and having adequate and safe water supply (see EAS 39) and duly approved and licensed by the public health authorities concerned. All workers shall use clean, washed, white clothings. Necessary precautions shall be taken to prevent incidental contamination of the product from soiled equipment or from personnel suffering from injuries.

**4.1.2** All equipment coming in contact with raw materials or products in the course of manufacture shall be kept clean. An ample supply of steam and water, hose, brushes and other equipment necessary for proper cleaning of machinery and equipment shall be available. The equipment may be sterilized by immersion in/or swabbing with hypochlorite or other suitable chlorine solution.

**4.1.3** Quality of water used for processing shall conform to EAS 12.

#### 4.2 Raw material

**4.2.1** Hams for canning shall be derived and cured strictly in conformity with CD-K-677-2010.

**4.2.2** The cured ham shall be in good condition at the time of use. The ham shall not have been frozen after curing.

#### 4.2.3 Salt

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Salt used for curing shall conform to EAS 35.

**4.2.4** Only food grade nitrite of sodium or potassium shall be used.

**4.2.5** Monosodium glutamate, ascorbates and phosphates of food grade may be used.

### **4.3 Preparation**

During preparation of canned minced ham, the precautions given in 4.3.1 to 4.3.5 shall be exercised in the sequence mentioned below.

**4.3.1** Meat obtained from fresh ham and shoulders shall be cured at refrigeration temperature.

**4.3.2** Meat shall be kept for a suitable period at a suitable temperature to develop desirable colour and flavour.

**4.3.3** After proper curing and deboning the meat shall be minced using a plate having a sieve not bigger than 5 mm.

**4.3.4** The minced meat shall be filled in open top sanitary (OTS) cans. The cans shall be cleaned with hot water before filling. The cans shall be either plain or internally lacquered and hermetically sealed. When lacquered, the lacquer shall not be fat soluble and shall be such that it will not be destroyed, altered or its components transferred to the material during processing or subsequent storage and transport. Care shall be taken to avoid formation of large air pockets.

**4.3.5** Gelatin, rendered fat and brine may be added as agreed to between the vendor and the purchaser.

### **4.4 Processing**

The filled cans shall be processed at a suitable temperature and pressure and for adequate time to ensure thorough cooking and sterilization of the product without burning, scorching and over cooking.

### **4.5 Requirements of the finished products**

#### **4.5.1 Appearance**

The product shall be in the form of one solid block and shall be reasonably firm.

#### **4.5.2 Flavour and colour**

The canned minced ham shall have characteristic flavour and taste of pork meat. It shall be neither excessively salty nor sweet and should be free from any foreign odour or flavour such as putrid, stale, fermented, rancid, musty or staggy pork odour. The colour shall be characteristic and uniform. No foreign colour and additive shall be added.

#### **4.5.3 Fill of the container**

The product shall occupy not less than 85 per-cent of total volume of the container when tested according to the method prescribed in the Annex A of CD/K/687:2010.

#### **4.5.4 Freedom from defects**

The product shall be free from foreign matters like dirt, insect parts, wood, glass, metal, bones etc.

#### **4.5.5 Composition**

When tested according to the method prescribed in Annex B of CD/K/687:2010, the finished product shall have good lean meat content which shall be not less than 80 percent by mass of the total content.

#### 4.5.6 Vacuum

The cans shall give a negative pressure of not less than 150 mm of mercury at  $27 \pm 2$  °C under normal atmospheric pressure. Head space shall not be less than 15 mm.

4.5.7 The material shall also conform to the requirements given in Table 1.

### 5 Packing and marking

#### 5.1 Packing

##### 5.1.1 Packing in the cans

The material shall be packed in suitable open top sanitary cans (4.3.4).

##### 5.1.2 Packing in cases

The cans shall be packed in suitable cases. Number of cans in each case shall be subject to agreement between the purchaser and the packer.

#### 5.2 Marking

5.2.1 The labelling of the cans may be done either by printing or stencilling on the cans themselves or by attaching labels printed on paper subject to agreement between the purchaser and the packer, and shall bear the following information:

- a) Name of the material along with the brand name, if any;
- b) Name and address of the manufacturer;
- c) Net mass of the contents of the can;
- d) Ingredients used, by mass, in descending order of composition;
- e) Date of manufacture shall be embossed indelibly on one end of the can only, and the embossing shall be raised;
- f) Batch or code number embossed indelibly on the lid of the cans;
- g) Declaration to the effect that no artificial colouring agent has been used;
- h) MFPO licence number and its category;
- j) Warranty period to be given by the packer; and
- k) Any other requirement as given OIML R87, *Quantity of product in prepackages*.

##### 5.2.2 Standard marking

The product may also be marked with the relevant Standard Mark.

### 6 Sampling

Sampling of the canned minced ham shall be done according to the method prescribed in Annex C of CD/K/687:2010.

### 7 Tests

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7.1 Tests shall be carried out as prescribed in 4.5.1 to 4.5.6 and Table 1.

7.2 **Quality of reagents** — Unless specified otherwise, pure chemicals and distilled water (see EAS 123) shall be used.

NOTE 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the test results.

**Table 1 — Requirements for canned ham, minced**

Type of contaminant		Requirement	Method of test
(i)	Microbiological requirements	Shall be commercially sterile	Annex G of CD-K-692-2010
(ii)	Arsenic, mg/kg, max	1.0	EAS 41
(iii)	Copper, mg/kg, max	20.0	EAS 41
(iv)	Tin, mg/kg, max	250.0	EAS 41
(v)	Mercury, mg/kg, max	0.5	EAS 41
(vi)	Lead, mg/kg, max	2.5	EAS 41
(vii)	Cadmium, mg/kg, max	0.3	EAS 41
(viii)	Zinc, mg/kg, max	50.0	EAS 41
(ix)	Sodium chloride, % by mass	1.5 to 3.5	Annex A
(x)	Nitrite (as NaNO <sub>2</sub> ) in the drained meat, % by mass, Max	0.02	ISO 2918

## Annex A (normative)

### Determination of sodium chloride

#### A.1 Reagents

**A.1.1 Sodium carbonate solution** — 5 percent (w/v).

**A.1.2 Dilute nitric acid** — (1: 4), freed from lower oxides of nitrogen by boiling till it becomes colourless.

**A.1.3 Standard silver nitrate** — 0.1 N.

**A.1.4 Nitrobenzene**

**A.1.5 Ferric alum indicator solution** — A saturated solution of ferric alum  $[\text{FeNH}_4(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}]$ .

**A.1.6 Standard potassium thiocyanate solution** — 0.1 N.

#### A.2 Procedure

**A.2.1 Preparation of sample** — Pass the material through a mincing machine twice to ensure thorough mixing. Transfer the minced sample to a large porcelain mortar and grind with a pestle for 5 minutes to ensure homogeneity.

**A.2.2** Weigh accurately about 5 g of the finely ground and thoroughly mixed sample in a platinum dish and add 20 ml of the sodium carbonate solution. Evaporate to dryness and ignite as thoroughly as possible at a temperature not exceeding dull redness. Extract with hot water, filter and wash. Return the residue to the platinum dish and ignite to ash. Dissolve the ash in the dilute nitric acid. Filter and wash the residue thoroughly. Collect the filtrate and washings and add to the water extract. To this solution, add a known volume of the standard silver nitrate solution in slight excess. Stir well, add 5 ml of nitrobenzene, shake and add 5 ml of the ferric alum indicator solution and a few millilitres of the dilute nitric acid. Titrate the excess silver nitrate with the standard potassium thiocyanate solution until permanent light brown colour appears.

#### A.3 Calculation

**A.3.1** Sodium chloride, percent by weight = 
$$\frac{5.85(V_1N_1 - V_2N_2)}{W} \times 100$$

where

$V_1$  = volume in ml of the standard silver nitrate solution added,

$N_1$  = normality of the standard silver nitrate,

$V_2$  = volume in ml of the standard potassium thiocyanate solution used,

$N_2$  = normality of the standard potassium thiocyanate, and

$W$  = weight in g of the material taken for the test.

**Annex B**  
(normative)

**Recording of vacuum of the cans**

The vacuum in the can may be determined with an electric recording type machine or a vacuum gauge of the piercing type without opening the can.

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