



CD/K/684:2010
ICS 67.120

EAST AFRICAN STANDARD

Canned pork sausages — Specification

EAST AFRICAN COMMUNITY

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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Introduction

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

IS 3060:1979(2000), *Specification for Pork Sausages, Canned*

KS 59-1:2009, *Sausages — Specification — Part 1: Raw or cooked red meat sausages*

Codex Alimentarius website: http://www.codexalimentarius.net/mrls/pestdes/jsp/pest_q-e.jsp

USDA Foreign Agricultural Service website: <http://www.mrlidatabase.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

European Union: http://ec.europa.eu/sanco_pesticides/public

Assistance derived from these sources is hereby acknowledged.

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Canned pork sausages — Specification

1 Scope

This East African Standard specifies the requirements and the methods of test for canned pork sausages.

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

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/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 1736, *Dried milk and dried milk products — Determination of fat content — Gravimetric method (Reference method)*

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 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

3.1 Definitions

3.1.1

meat

the uncured sound and wholesome flesh of the pig, namely pork, used as food (see CD-K-673:2010).

3.1.2

Offal

This includes brain, fries (liver), gut, paunches, udders, sweetbreads (thymus, pancreas) tripe, spleen, lungs, salivary glands, lymphatic glands, testicles, uterus, ovaries, skin other than pork rind, cartilage and bony tissue.

3.2 Types

Pork sausages, canned, shall be of three types, namely:

- a) Type 1 — Pork sausages (with skin), canned;
- b) Type 2 — Pork sausages (Skinless), canned; and
- c) Type 3 — Cocktail sausages; canned.

4 Requirements

4.1 Hygienic requirements

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 clothings. Necessary precautions shall be taken to prevent incidental contamination of the product from soiled equipment or from personnel suffering from injuries.

4.1.1 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.

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

4.2 Ingredient requirements

4.2.1 Quality of meat

All meat used shall be obtained from healthy animals slaughtered in licensed premises and subjected to ante-mortem and post-mortem inspection as prescribed in CD/K/700:2010. The pork shall be moderately firm (not oily or soft), of bright colour, fine texture (not dark or coarse), and free from foreign odour or flavour, discolouration and deterioration. Frozen pork may also be used provided it is

properly thawed and is sound and fit for human consumption before being used. Trimmings shall be free from gristle, tendon tissues and excessive connective tissues. Trimmings which are bruised or which are from parts of the head other than the masseter muscles or from seedy parts of ballies, shall not be used. Roar meat, feet, and offal shall not be used in the preparation of the product. Processed rinds may be used subject to a maximum of 2 percent by mass of the meat.

4.2.2 Filler

Only cereal rusk, cracker meat (broken biscuits), potato flour or other wholesome edible material of farinaceous origin shall be used as filler.

4.2.3 Animal casings

Hog, sheep or goat casings used shall conform to the quality laid down in CD-K-693:2010.

4.2.4 Salt

Salt used shall conform to EAS 35.

4.2.5 Spices

All spices used shall be clean, sound and strictly wholesome and in every way fit for human consumption.

4.2.6 Phosphates

Phosphatic binders of food grade quality may be used in the preparation of pork sausages.

4.2.7 Fat

Only pure wholesome and edible back or flayer pork fat shall be used.

4.2.8 Sweetening agents

Only refined cane sugar (see EAS 5) or dextrose, shall be used.

4.3 Preparation and processing

The material shall be prepared and filled under strict hygienic conditions into sound and thoroughly clean containers and then sealed hermetically. The sausages may be solid packed or packed in brine. If the cans are lacquered, the lacquer used shall be of such quality that it does not impart any foreign unpleasant taste and smell to the contents of the can; does not peel off during processing and storage of the product. The lacquer shall not be soluble in fat or brine to any extent. The cans shall show no evidence of rusting. The cans shall be thoroughly cleaned before filling. Processing shall be at such temperature and for such length of time as will ensure thorough cooking and adequate sterilization of the finished product without burning, scorching or over-cooking.

4.4 Requirements for the finished product

4.4.1 Flavour and appearance

Pork sausages, canned, shall be palatable, and shall have pleasant flavour and attractive appearance. No scorched, bitter, foreign or any other objectionable odour shall be present.

4.4.2 Fill of container

The product shall not occupy less than 85 percent of the total volume capacity of the container when tested according to the method prescribed in Annex A. If packed in brine, the drained mass shall be not less than 80 percent of the total contents of the container when determined according to the method prescribed in Annex B.

4.4.3 Freedom from defects

Pieces of hair, bristle, skin and particles of bone shall not be present in the product. The product shall be free from dirt, and from insect and rodent contamination. Poisonous or deleterious substances shall not be present. The product shall be free from scorched or burnt patches; and the container shall not show any evidence of internal corrosion.

4.4.4 Uniformity of size and shape

The contents of any one container shall be of reasonably uniform size and shape.

4.4.5 Composition requirements

4.4.5.1 The material shall contain not less than 80 percent of meat including fat provided that the total fat content does not exceed 32 percent of the total meat content when tested according to the method prescribed in Annex C. Not more than 5 percent of hearts may be included in the meat content.

4.4.5.2 Phosphates when used shall not exceed 0.5 percent by mass.

4.4.6 Vacuum requirements

The can shall give a negative pressure of not less than 150 mm of mercury at vacuum at 27 ± 2 °C under normal atmospheric pressure.

4.4.7 The material shall also conform to the limits for metallic impurities and microbiological activity as prescribed in Table 1.

Table 1 — Microbiological and heavy metal limits for canned pork sausages

Type of contaminant		Requirement	Method of test
(i)	Microbiological requirements	Shall be commercially sterile	E.5 of CD/K/520-1:2010
(ii)	Arsenic, mg/kg, max	2.0	EAS 41
(iii)	Copper, mg/kg, max	20	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	0.3	EAS 41
(vii)	Cadmium, mg/kg, max	0.3	EAS 41
(viii)	Zinc, mg/kg, max	50.0	EAS 41

5 Packing and marking**5.1 Packing**

Unless agreed to otherwise between the purchaser and the vendor, the cans shall be packed in cases sufficiently strong to withstand rough handling during transport.

5.2 Marking

5.2.1 The cans may be labelled either by printing or lithographing on the cans themselves or by attaching labels printed on paper as agreed to between the purchaser and the vendor. The label shall give the following information:

- a) Name and type of the material along with brand name, if any;

- b) Name and address of the manufacturer;
- c) Net mass of the contents of the can;
- d) Drained mass of the contents of the can;
- e) Batch number or code number - embossed indelibly on the can;
- f) Names of the ingredients; and
- g) Licence number given by the health authorities.

5.2.2 The product may also be marked with Standard mark.

6 Sampling

Sampling of pork sausages, canned, shall be done according to the method prescribed in Annex A of CD-K-692:2010.

7 Tests

Tests shall be carried out as prescribed in 4.4.2, 4.4.5.1 and relevant annexes of Table 1.

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Annex A
(normative)

Determination of the fill of the container

A.1 Procedure

A.1.1 Cut out the lid of the container without altering the height of the double seam. Measure the vertical distance from the top level of the container to the top level of the contents. Remove the contents, wash, dry and weigh the container. Fill the container with distilled water to within 4.8 mm vertical distance below the top level of the container. Record the temperature of water, weigh the container and determine the mass of the water (W_1) by subtracting the mass of the container. Maintaining the water at the temperature recorded above, draw off water from the filled container to the level of the original contents, and determine the mass of the remaining water (W_2) by subtracting the mass of the container.

A.2 Calculation

A.2.1 Fill of container, percent by mass = $\frac{W_2 \times 100}{W_1}$

NOTE In the case of a container with a lid attached otherwise than by a double seam, remove the lid and proceed as in A.1.1 except that the container shall be filled to the top when determining W_1 .

Annex B
(normative)

Determination of drained mass

B.1 Apparatus

B.1.1 1.70 mm Sieve (Aperture 1.70 mm) — BS Sieve 10, ASTM Sieve 12 or Tyler Sieve 10 have their apertures within the limits specified the above and may, therefore, be used as 1.70 mm sieve.

B.2 Procedure

B.2.1 Carefully weigh the clean and dry sieve and empty the contents of the can into the sieve in such a manner as to distribute the product evenly without disturbing the product. Incline the sieve so as to facilitate drainage. Allow to drain for five minutes, and weigh the sieve again along with the product. The drained mass shall be the mass of the product and sieve less the mass of the sieve.

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Annex C (normative)

Determination of the total meat content

C.1 Apparatus

C.1.1 Kjeldahl flask — 500 ml capacity.

C.1.2 Distillation assembly — The assembly consists of a round-bottomed flask of 1000 ml capacity fitted with a rubber stopper through which passes one end of the connecting bulb tube. The other end of the bulb tube is connected to the condenser which is attached by means of a rubber tube to a dip tube which dips into a known quantity of standard sulfuric acid contained in a beaker of 250 ml capacity.

C.2 Reagents

C.2.1 Potassium sulfate or anhydrous sodium sulfate

C.2.2 Concentrated sulfuric acid — sp gr 1.84.

C.2.3 Yellow mercuric oxide

C.2.4 Potassium hydrogen phthalate

C.2.5 Methyl red-methylene blue indicator solution — prepared by mixing one part of 0.2 percent solution of methyl red in rectified spirit with one part of 0.1 percent solution of methylene blue in rectified spirit.

C.2.6 Phenolphthalein indicator solution — prepared by dissolving 0.1 g of phenolphthalein in 100 ml of rectified spirit.

C.2.7 Standard sodium hydroxide solution — 0.5 N.

C.2.8 Standard sulfuric acid — 0.5 N.

C.2.9 Sodium hydroxide solution — Dissolve approximately 450 g of sodium hydroxide in 550 ml of distilled water. Cool and filter through glass wool if necessary.

C.3 Procedure

C.3.1 Determination of lean meat content

C.3.1.1 Accurately weigh 2 g of the test sample and transfer it to the Kjeldahl digestion flask. Add 10 to 15 g of potassium sulfate (or anhydrous sodium sulfate), 0.1 to 0.3 g of mercuric oxide and 15 to 25 ml of concentrated sulfuric acid. Heat gently until frothing ceases and then heat strongly until the solution becomes clear and continue the digestion for at least 30 minutes longer (about 32 hours are required for complete digestion). Cool and dilute with about 250 ml of distilled water. Cool to room temperature, add a few glass beads and run 50 ml of the sodium hydroxide solution down the side of the flask so that it forms a separate layer and does not mix with the acid solution at once.

Connect to the distillation assembly, mix the contents of the flask by gently swirling, and then distil off the ammonia in about 250 ml of distillate into an Erlenmeyer flask containing a known volume of excess of standard sulfuric acid. Titrate the excess acid in the Erlenmeyer flask with the standard sodium hydroxide solution using three to four drops of the methyl red-methylene blue indicator solution.

C.3.1.2 Carry out a blank determination using all the reagents in the same quantities but without the material to be tested.

C.3.1.3 Calculation

i) Nitrogen, percent by mass = $\frac{(x-y)N \times 1.4}{M}$

where

x = volume, in ml, of sulfuric acid neutralized by the ammonia distilled from the sample;

y = volume, in ml, of sulfuric acid neutralized by the ammonia distilled from the blank;

N = normality of the sulfuric acid; and

M = mass, in g, of sample taken.

ii) Lean meat content percent = nitrogen percent by mass \times 30.

C.3.2 Determination of fat content

C.3.2.1 Accurately weigh 5 g of the sample into a suitable evaporating basin containing a short glass rod with a flattened end. Heat on a water bath until most of the moisture is expelled. Cool the basin and add 25 ml of ether and disintegrate the residue in ether by means of the glass rod. Decant the ether extract through a filter paper. Repeat the maceration and extraction until all the fat has been removed (about five extractions are necessary). Remove the ether from the combined extracts by distillation from a previously weighed 50-ml distillation flask. Dry the flask and contents to constant mass under vacuum in a boiling water-bath.

C.3.2.2 Calculation

Fat, percent by mass = $\frac{\text{Mass of ether extract}}{\text{Mass of sample taken}}$

C.3.3 Calculation of total meat content

Calculate the total meat content as follows:

Total meat content percent by mass = (Lean meat, percent by mass) + (Fat, percent by mass).

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