

**Fresh coarsely ground meat products —
Specification**

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Ministry of Health – Food safety unit
Kenya Industrial Research and Development Institute
National Public Health Laboratories Services
Government Chemist's Department
Food Science and Technology Platform Kenya
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University of Nairobi — Department of Food Science and Technology
South Eastern Kenya University
Meru University
Egerton University
Consumer Information Network
Kenchic (K) Ltd.
Alpha Fine Foods Ltd.
Kenya Meat Commission
Directorate of Livestock Production
Directorate of Veterinary Services
Quality Meat packers
Choice Meats Ltd.
Kenya Bureau of Standards — Secretariat

REVISION OF KENYA STANDARDS

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Fresh coarsely ground meat products — Specification

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Foreword

This Kenya Standard was prepared by the Meat and Poultry Products Technical Committee under the guidance of the Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

The demand for minimally processed and processed meat products such as minced meat, meat balls, meat burgers, meat rolls and ground kebabs that are intended for further cooking before consumption has increased tremendously over the years.

In order to assure the general public of the safety and quality of these categories of products, it has been found necessary to develop this standard. It is envisioned that this first edition of the standard will go a long way in safeguarding public health and enhance food safety.

During the preparation of this standard, reference was made to the following documents:

The Food, Drugs and Chemical Substances Act, Cap 254 of the Laws of Kenya.

International Commission on Microbiological Specifications for Foods - Micro-organisms in Foods, Book 8.

Acknowledgement is hereby made for the assistance derived from these sources.

Fresh coarsely ground meat products — Specification

1 Scope

This Kenya Standard specifies the quality and safety requirements, sampling and test methods for fresh coarsely ground/minced meat products. These include, but not limited to, meat balls, patties such as meat burgers meat rolls, meat pies and ground kebabs that are intended for further processing before consumption.

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 971.21, *Mercury in food by flame atomic absorption spectroscopy (FAAS)*

AOAC 986.15, *Arsenic, cadmium, lead, selenium, and zinc in human and pet foods by atomic absorption spectrometry (AAS) and anodic stripping voltammetry (ASV)*

AOAC 999.10, *Lead, cadmium, zinc, copper, and iron in foods by glass furnace atomic absorption spectroscopy (GFAAS) and by flame atomic absorption spectroscopy (FAAS)*

CAC/MRL 2, *Maximum residue limits for veterinary drugs in food*

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

KS 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*

KS ISO 10272-2, *Microbiology of the food chain — Horizontal method for detection and enumeration of Campylobacter spp. — Part 2: Colony-count technique*

KS ISO 11290-1, *Microbiology of the food chain — Horizontal method for the detection and enumeration of Listeria monocytogenes and of Listeria spp. — Part 1: Detection method*

KS ISO/TS 13136:2012 *Microbiology of food and animal feed — Real-time polymerase chain reaction (PCR)-based method for the detection of food-borne pathogens — Horizontal method for the detection of Shiga toxin-producing Escherichia coli (STEC) and the determination of O157, O111, O26, O103 and O145 serogroups*

KS CODEX STAN 192, *General standard for food additives*

KS EAS 12, *Potable water — Specification*

KS EAS 35, *Edible salt — Specification*

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

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

KS 166, *Methods for the chemical analysis of meat and meat products*

KS 2761, *Meat hygiene — Code of practice*

KS 2763, *Meat speciation — Test method*

3 Terms and definitions

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

3.1

meat

all parts of an animal that are intended for and have been judged as safe and suitable for human consumption

3.2

Ground/minced meat

boneless meat finely or coarsely chopped by a meat grinder or chopping knife leading to its reduction into fragments

3.3

minimum meat content

the minimum permissible amount of meat together with fats and connective tissue for a particular species

3.4

maximum fat content

the amount of fat permissible in a meat mixture for a particular species

3.5

patties

disc-like meat products formed from ground meat

3.6

fillers

these are mostly plant substances, low in protein and high in carbohydrates that are used in increasing the product volume

3.7

binders

agents that are mixed homogeneously in the processing to help in the structural consistency of the meat product

3.8

meat burgers- a flat round mass of minced or ground meat. Common types include beef burgers, chicken burgers, hamburgers, bacon burgers or fish burgers.

3.9

meat pie- ground or minced meat mixed with a dark gravy, all covered in pie pastry

3.10

meatballs- minced or ground meat rolled into a small ball that is commonly mixed with binders.

3.11

ground kebabs- Kebabs consist of cut up or ground/minced meat, sometimes with vegetables, and various other accompaniments according to the specific recipe

3.12

meat roll- consist of ground meat rolled into cylindrical shape made from a mixture of different meats and spices

4 Requirements

4.1 General requirements

4.1.1 The meat from which the product is prepared shall be of a quality suitable for human consumption and free from objectionable odours.

4.1.2 The product shall be prepared, handled and delivered under hygienic conditions.

4.1.3 The product shall be prepared in a facility which is complying with KS EAS 39.

4.2 Raw material requirements

4.2.1 Meat

Meat shall be derived from animals slaughtered in a hygienically managed slaughter house complying with KS 2761.

4.2.2 Optional Ingredients

All optional ingredients used shall be of food grade quality and comply with applicable Kenya Standards.

4.2.2.1 Fillers and binders

These include:

- a) Carbohydrates such as but not limited to meal, flour or starch prepared from grain, potato or sweet potato; bread, biscuit rusk or bakery products.
- b) Proteins such as milk powder, skim milk powder, butter milk powder, caseinate, whey powder, egg protein, dried blood products, vegetable protein products.
- c) Sucrose, invert sugar, dextrose (glucose), lactose, maltose, glucose syrup (including corn syrup).
- d) Spices, seasonings and condiments complying with respective Kenya Standards.
- e) Salt complying with KS EAS 35.
- f) Water complying with KS EAS 12
- g) Food additives used in the fresh coarsely ground meat products shall be in accordance with the Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya and KS CODEX STAN 192.

5 Essential composition and quality requirements

Fresh coarsely ground meat products shall comply with the requirements given in Table 1 when tested in accordance with the methods given therein.

Table 1 — Compositional requirements for fresh coarsely ground meat products.

S/N	Characteristic	Limit for final product (raw), %	Test method
i.	Total meat content, min.	50	KS 166
ii.	Fat content, max.	30	
iii.	Total ash, max.	3.0	

6 Hygiene requirements

6.1 Fresh coarsely ground meat shall be prepared, handled and stored in accordance with the appropriate sections of KS EAS 39 and KS 2761.

6.2 All workers shall use appropriate personal protective equipment that does not contaminate the product.

6.3 All workers shall undergo a food handlers test before their deployment and every so often as per the Public Health Act, Cap. 242 of the Laws of Kenya and Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya.

6.4 Necessary precautions shall be taken to prevent incidental contamination of the product from soiled and/or dirty equipment or from persons suffering from injuries.

6.5 All equipment coming into contact with raw material or product in the course of manufacture shall be kept clean.

6.6 Adequate supply of running potable water that complies with EAS 12 and/or steam/boiling water, brushes, and other equipment necessary for proper cleaning of machinery/equipment shall be available.

6.7 The equipment shall be cleaned, sanitised and/or disinfected using an appropriate food grade agent or with hot water at a temperature above 82 °C.

7 Safety requirements

7.1 Sampling

The sampling of the fresh coarsely ground meat products shall be in accordance to CAC/GL 50 General guidelines on sampling

7.2 Microbiological limits

Fresh coarsely ground meat shall comply with the microbiological requirements given in Table 2 when tested in accordance with the methods given therein.

Table 2 — Microbiological limits for fresh coarsely ground meat products

S/N	Micro-organism	Max. limit	Test method
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Hygiene parameters			
I.	<i>Escherichia coli</i> , cfu/g	10 ²	KS ISO 4833
II.	Coagulase positive <i>Staphylococcus aureus</i> , cfu/ g	10 ³	KS ISO 6888-1
Food safety parameters			
III.	<i>Escherichia coli</i> O157:H7	Absent in 25 g	ISO/TS 13136
IV.	<i>Salmonella ssp</i>	Absent in 25 g	KS ISO 6579-1
V.	<i>Listeria monocytogenes</i>	Absent in 25 g	KS ISO 11290-1
VI.	<i>Campylobacter</i> ^a	Absent in 25 g	KS ISO 10272-2
^a For poultry products.			

8 Pesticides and veterinary drug residues

8.1 Veterinary drug residues

The products covered by this standard shall comply with the maximum residue limits specified in CAC/MRL 2.

8.2 Pesticide residues

Fresh coarsely ground meat products shall comply with the maximum residue limits set by Codex Alimentarius Commission.

9 Limits for heavy metal contaminants

Fresh coarsely ground meat products shall not contain heavy metal contaminants in excess of the limits given in Table 3 when tested in accordance with the methods mentioned therein.

Table 3 — Limits for heavy metal contaminants for fresh coarsely ground meat products

S/N	Contaminant	Maximum limit, ppm	Test method
i.	Arsenic (As)	0.1	AOAC 986.15
ii.	Lead (Pb)	0.1	AOAC 999.10
iii.	Cadmium (Cd)	0.05	AOAC 986.15
iv.	Mercury (Hg)	0.03	AOAC 971.21
NOTE Where a risk assessment indicates the possibility of occurrence of other heavy metal contaminants not listed, then the product shall be tested.			

10 Meat identification

The identification/isolation of meat species shall be done according to KS 2763 or any other validated test method.

11 Packaging

11.1 Packaging shall be done in food grade packaging materials that protect the product from any physical, microbiological, chemical or any other type of contamination during handling, storage and distribution.

11.2 The packages shall be able to withstand the rigors of handling and transportation and shall not be exposed to direct sun or rain.

11.3 For the burgers, food grade separators shall be used in layer packing of patties.

12 Labelling

Labelling of packages shall be done in accordance with the requirements stipulated in KS EAS 38, and shall include the following:

- a) description /name of the product as appropriate;
- b) list of ingredients in descending order;
- c) allergens declaration;
- d) name, location and address of manufacturer;
- e) net weight, in metric units;
- f) declaration as “raw” product;
- g) declaration of minimum meat content by %;
- h) date of production/manufacture;
- i) expiry date;
- j) batch number;
- k) instructions for use (shall inform the end-user to cook the product for recommended period of time before consumption);
- l) storage conditions and temperature of storage; and
- m) country of origin or “Made in Kenya” for locally manufactured products.