



## EAST AFRICAN STANDARD

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The manufacture, production, processing and treatment of canned meat products

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 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:

SANS 1675:2001, *The manufacture, production, processing and treatment of canned meat products*

CAC/RCP 52:2003(Rev. 4:2008), *Code of practice for fish and fishery products*

IS 4303-1:1975, *Code of hygienic conditions for fish industry — Part 1: Pre-processing stage*

IS 4303-2:1975, *Code of hygienic conditions for fish industry — Part 2: Canning stage*

Codex Alimentarius website: [http://www.codexalimentarius.net/mrls/vetdrugs/jsp/vetd\\_q-e.jsp](http://www.codexalimentarius.net/mrls/vetdrugs/jsp/vetd_q-e.jsp)

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

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

European Union: [http://ec.europa.eu/enterprise/sectors/pharmaceuticals/veterinary-use/maximum-residue-limits/index\\_en.htm](http://ec.europa.eu/enterprise/sectors/pharmaceuticals/veterinary-use/maximum-residue-limits/index_en.htm)

Assistance derived from these sources is hereby acknowledged.

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## Packaged meat products (processed or manufactured)

### 1 Scope

This standard specifies requirements for the manufacture, production, processing and treatment of canned meat products intended for human consumption.

### 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.

CAC/GL 21, *Principles for the establishment and application of microbiological criteria for foods*

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

CAC/GL 30, *Principles and guidelines for the conduct of microbiological risk assessment*

CAC/GL 31, *Guidelines for the sensory evaluation of fish and shellfish in laboratories*

CD/K/572:2010, *Fish and fisheries products — Methods of sampling*

CAC/RCP 52[CD/K/521:2010], *Code of practice for fish and fishery products*

EAS 35, *Edible salt — Specification*

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

EAS 38, *Labelling of prepackaged foods — Specification*

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 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 6579, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella spp.*

ISO 6887-1, *Microbiology of food and animal feeding stuffs — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 1: General rules for the preparation of the initial suspension and decimal dilutions*

ISO 6887-3, *Microbiology of food and animal feeding stuffs — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 3: Specific rules for the preparation of fish and fishery products*

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 6888-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 2: Technique using rabbit plasma fibrinogen agar medium*

ISO 6888-3, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 3: Detection and MPN technique for low numbers*

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 7937, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of Clostridium perfringens — Colony-count technique*

ISO 13720, *Meat and meat products — Enumeration of Pseudomonas spp.*

ISO 17239, *Fruits, vegetables and derived products — Determination of arsenic content — Method using hydride generation atomic absorption spectrometry*

ISO 6634, *Fruits, vegetables and derived products — Determination of arsenic content — Silver diethyldithiocarbamate spectrophotometric method*

ISO 21567, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Shigella spp.*

ISO/TS 21872-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of potentially enteropathogenic Vibrio spp. — Part 1: Detection of Vibrio parahaemolyticus and Vibrio cholerae*

ISO/TS 21872-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of potentially enteropathogenic Vibrio spp. — Part 2: Detection of species other than Vibrio parahaemolyticus and Vibrio cholerae*

ISO 11290-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of Listeria monocytogenes — Part 1: Detection method*

ISO 11290-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of Listeria monocytogenes — Part 2: Enumeration method*

### 3 Definitions

For the purposes of this standard, the following definitions apply (unless the context indicates otherwise):

#### 3.1

##### **acceptable**

acceptable to the authority administering this standard, or to the parties concluding the purchase contract, as relevant

#### 3.2

##### **actual lean meat content, per cent**

The result after the mass percentage of nitrogen, represented by the non-meat proteinaceous material present in the product, multiplied by a factor of 30, has been deducted from the lean meat content, per cent (see 3.21).

**3.3****actual total meat content, per cent**

The result after the mass percentage of nitrogen, represented by the non-meat proteinaceous material present in the product, multiplied by a factor of 30, has been deducted from the total meat content, per cent (see 3.34).

**3.4****address**

An address that includes the street or road number (if a number has been allotted), the name of the street or road and the name of the town, village or suburb, or that, in the case of a farm or a smallholding, includes the name of the farm or smallholding and of the magisterial district in which it is situated. In the case of imported foodstuffs, "address" means the address of the manufacturer or supplier or importer.

**3.5****adequate**

- a) In regard to quality: Of quality such as to ensure performance of the projected activity or function.
- b) In regard to quantity (or size): Of such magnitude as will comfortably accommodate the maximum number of persons or operations (or size of unit) envisaged as being involved.

**3.6****canned meat product**

An article of food that is manufactured from meat or from edible offal or from both, including, when specifically permitted, bone, and with or without vegetables, including mushrooms, fruit or cereal or any combination of the three, or sauces or gravies and other appropriate ingredients, such as vegetable protein, edible fats, seasoning ingredients, spices, thickening agents, sweeteners and caramel, and packed and preserved or semi-preserved in hermetically sealed containers.

NOTE This definition does not include packaged meat products (openpack meat products).

**3.7****cereal**

Wheat, maize, rice or other edible grain, or flour or starch made therefrom.

**3.8****"clean worker"**

A worker who operates in an area that is required to be maintained in an hygienic condition.

**3.9****commercially sterilized product**

A product a) that is processed in such a way as to reduce the number or activity (or both) of viable micro-organisms to such an extent that none are detectable by the methods given in clause 13, and b) in which no spoilage or toxicity of microbial origin is detectable under normal, non-refrigerated conditions of storage, distribution and handling.

**3.10****container; bin**

A container that is made of metal, glass, rigid plastics or semi-rigid plastics (or any combination of these), a plastics retort pouch, a collapsible tube or other acceptable material or combinations of materials, and that is capable of being hermetically sealed.

**3.11****curing salts**

Sodium or potassium nitrates and nitrites that are listed as preservatives under EAS 103, with or without the addition of common salt.

**3.12****"dirty worker"**

A worker who operates in an area that cannot be maintained in a completely hygienic condition.

**3.13**

**declared net mass (d.n.m.)**

The mass of the contents of the container that is declared on the label.

**3.14**

**drained mass**

The mass of the contents of a container, in which equilibrium between the solids and the liquid medium has been reached, that is retained on a wire cloth sieve of nominal aperture size approximately 2 mm, after, if necessary, the contents have been warmed to a temperature not exceeding 30 °C to liquefy the filling medium, or after gentle washing with water, warmed if necessary to a temperature not exceeding 30 °C, to remove adhering gravy, sauce or other packing medium, and finally when equilibrium has been reached after the mass has been drained on the sieve for approximately 2 min.

**3.15**

**edible offal**

- a) In the case of food animals other than poultry: blood, blood plasma, brain, cow-heels, diaphragm, gut (casings), washed head, kidneys, omentum, pancreas, pluck (oesophagus, trachea, lungs, heart, pericardium, associated lymph nodes, pillars of the diaphragm and liver or part thereof (without the gall bladder)), rind and skin, spleen, tail, thymus, tongue, cleaned tripe, trotters and udder (in the case of a heifer).
- b) In the case of poultry: giblets (the heart, the clean and stripped gizzard, and the liver without the gall bladder).

**3.16**

**exhaust**

To remove air from a container and its contents.

**3.17**

**extraneous matter**

Any objectionable matter or any material in the product that has not been derived from meat, edible offal or other ingredients used.

**3.18**

**fat**

Edible vegetable fat or edible animal fat.

**3.19**

**food animal**

Any animal used as food.

**3.20**

**inedible offal:**

- a) In the case of food animals other than poultry: with the exception of bone, all parts of the animal not covered by the definitions of meat (see 3.22) and edible offal (see 3.15).
- b) In the case of poultry: the head, trachea, lungs, crop, intestines, gall bladder, oviducts, oil glands, shanks and feet.

**3.21**

**lean meat content, per cent**

The mass percentage of protein nitrogen, multiplied by a factor of 30.

**3.22**

**meat**

The sound skeletal musculature, excluding the musculature of the lips, snout, scalp and ears, of healthy food animals, with or without connective tissue, blood vessels, lymphatic and nerve tissue,

bone, fat, cartilage, scraped skin (pigs), and defeathered skin (poultry) that are naturally associated with such musculature *in situ* in the dressed carcass and head.

**3.23****mechanically recovered meat**

The pulped material that consists predominantly of musculature tissue, collagen, marrow and fat, and that has been recovered by a process of mechanical separation from bone.

**3.24****name of the product; product name**

The name and true description of the contents that appear on the main panel of the container or label on the container, as required by 14.2.1 (b).

**3.25****packing medium**

Any medium in which solid foods are packed in a can.

**3.26****pasteurized products**

Products heat-treated in the container to a minimum centre temperature of 66 °C for a specified time.

**3.27****per cent; percentage**

Per cent (percentage) by mass, unless otherwise indicated or inconsistent with the text.

**3.28****preserve**

To maintain in sound edible condition by the prevention of deterioration.

**3.29****product**

The particular canned meat product indicated by the context, either prepared or in the course of preparation.

**3.30****semi-preserved products**

Products that, for purposes of continuous preservation during storage, have to be kept under refrigeration.

**3.31****suitable; suitably**

Complying with the requirements of the intended purpose.

**3.32****suitably prepared**

Prepared for the intended purpose.

**3.33****time-temperature process**

The continuous heat treatment, expressed in terms of time and temperature, that is applied in the processing of heat-preserved products after the container has been sealed.

**3.34****total meat content, per cent**

The lean meat content, per cent (determined in accordance with 12.3), plus the fat content, per cent (determined by analysis in accordance with 12.4).

**3.35****tripe**

The scraped and scalded rumen or the scraped and scalded reticulum of ruminant food animals.

## 4 Management system

Producers shall implement and maintain an acceptable quality management system.

## 5 Requirements for the factory and for employees

### 5.1 General

Where a part of the preparation of a product for canning is done at a factory other than the canning factory, the other factory concerned and its employees shall also comply with the requirements of 5.1 to 5.6 inclusive.

The factory, equipment and the water used in the preparation of the product shall comply with the requirements given in 5.2 to 5.5 inclusive.

### 5.2 Factory construction, layout and conditions

#### 5.2.1 Location, size, hygienic design and conditions

The location of the factory shall be such that the buildings can be kept acceptably free from objectionable odours, smoke, dust and other contamination, in order to comply with the relevant requirements for hygiene and sanitation. The factory and equipment shall be so designed and arranged as to permit:

- a) an orderly, uninterrupted flow of production without any cross-flows that could have an adverse effect on the quality of the product;
- b) proper maintenance of hygiene; and
- c) facilities to carry out functions such as quality control and process control.

The factory buildings shall be of sound construction, in good repair and large enough to prevent crowding of equipment and employees and to permit adequate cleaning and the maintenance of product quality and hygiene. Adequate working space shall be provided to facilitate acceptable operations. The factory grounds shall be graded to ensure proper drainage. The factory and grounds shall be maintained in a clean and hygienic state and shall be effectively fenced.

The factory and equipment shall be so designed as to permit the processing of raw materials without undue delay. The buildings shall be so designed and constructed as to prevent the entry and harbouring of insects, birds, rodents and other vermin.

#### 5.2.2 Roofs and ceilings

The roof shall be weatherproof. The roof and ceilings shall be at least 300 mm above any overhead equipment and in no case less than 3 m from the floor. Ceilings, and roofs where no ceilings are fitted, shall be faced with a smooth impervious material that is light in colour and capable of being cleaned without damage, and so constructed and finished as to be dustproof and to minimize condensation, mould development, flaking of paint and the lodgement of dirt. A ceiling shall be provided where the packing media or unprotected cooked product is handled. A ceiling is not required where a canopy covers the entire open product.

#### 5.2.3 Walls and doors

Outer walls shall be weatherproof and impermeable to water. Interior wall surfaces shall be faced with a smooth, hard, impervious, light-coloured material, to a height of at least 2 m from the floor. Where meat might come into contact with the walls above this height, the facing shall be continued to that higher level. Above 2 m, the walls shall have a smooth, impervious, washable, light-coloured surface. All ledges that occur in the wall construction shall be sloped at an angle of not less than 45°. The walls shall be free from unnecessary projections. Windowsills shall be at least 1 m above floor level.

In the production areas and in freezer storage rooms, the wall-to-wall and wall-to-floor junctions shall be coved, the minimum radius of the coving being 25 mm and 40 mm respectively.

Doors, excluding freezer storage room doors, through which meat products are moved between processing areas shall be of adequate width. Doors and door frames shall be sheathed with, or made from, a suitable corrosion-resistant material that has high impact resistance and, unless they are provided with effective air-screens, they shall, as far as is practicable, be of a self-closing type. Doors and door frames shall have a smooth, seamless, impervious, light-coloured, readily cleanable surface. Chill room, freezer and freezer storage room doors shall be tight-fitting.

#### 5.2.4 Floors

Floors shall be constructed of concrete or other material that is suitably impermeable, corrosion resistant and easy to clean, and that has an even surface that is smooth but not slippery, and is free from cracks and open joints. Floors and drainage channels shall be graded to have a fall of at least 1 in 60 and shall be drained to internal drainage channels that are connected to external sewers via a suitable drain trap. Floors and drainage channels shall be in good condition and repair and shall have strainers in place. Internal drainage channels shall be of the open type with, where necessary, removable covers. Where necessary, duckboards of easily cleaned impervious material shall be provided for workers.

Installations that obstruct flow and cleaning shall not be present in drainage channels. The capacity of drainage channels shall be sufficient to cope with peak loads.

#### 5.2.5 Lift cages and staircases

Lift cages shall have a smooth, impervious, corrosion-resistant inside surface and lift shafts shall be properly drained and shall be accessible for cleaning. Staircases in rooms where food is processed or handled shall have solid risers, and shall be provided with solid balustrades of height at least 1 m above the nosing of each step.

#### 5.2.6 Cables and pipes

Cables and pipes shall, where applicable, be

- a) fixed above ceilings, or
- b) chased into walls, or
- c) fixed away from walls and ceilings and above the floor, and spaced in such a manner that the ceilings, walls, floor, cables and pipes can be easily cleaned and maintained in a hygienic condition, or
- d) carried under the floor.

Overhead pipes and cable connections to machines that cannot be fixed above the ceiling shall be carried a minimum of 40 mm apart on tubular brackets suspended at least 40 mm away from the ceiling. Waste pipes and other pipes that cannot be chased into walls, shall be fixed at least 40 mm from the wall surfaces and 150 mm above the floor and spaced at least 40 mm apart. Pipes in which the product is conveyed, shall have no dead ends.

#### 5.2.7 Illumination

General illumination shall be such as to permit efficient operations during the manufacture, production, processing or treatment of the product. Artificial illumination, if used, shall be such that the colours of products are not significantly altered. Luminaires suspended over the work areas where the product is handled at any stage during preparation shall be of the safety type or otherwise be so protected as to prevent contamination of the product in the event of breakage of a luminaire or lamp.

## 5.2.8 Ventilation

The ventilation shall be such that it keeps the air fresh and removes excess water vapour, and that it prevents the build-up of excessive heat, the formation of condensate and the growth of mould on overhead structures. The air shall be free from noxious fumes, vapours, dust and contaminating aerosols. The air flow shall be from the more hygienic to the less hygienic areas. Natural ventilation shall be augmented, where necessary, by mechanical means.

Windows that open for ventilation purposes shall be insect-screened. The screens shall be easily removable for cleaning, and shall be made of suitable corrosion-resistant material.

## 5.2.9 Hand-washing facilities

The following shall be provided at those entrances to the preparation and processing areas of the factory that are used by the employees, and at other conveniently situated places in the preparation and processing areas of the factory, within easy reach of the employees, and at the exits of the toilets:

- a) an acceptable number of wash-hand basins, with an abundant supply of cold and hot or warm running potable water in the temperature range 40 °C to 50 °C, that complies with the requirements of 5.4.1 ;
- b) an ample supply of unscented liquid soap or acceptable detergent in active condition;
- c) disposable paper towels;
- d) receptacles for used towels; and
- e) taps operated by means other than the hands or elbows, for example knee-operated or foot-operated taps, or push-button taps with pre-set volume control.

Disinfectant hand dips, where provided, shall be of such a design that they can be adequately cleaned. Access to hand-washing facilities shall at all times be unobstructed.

## 5.2.10 Footbaths

Unless their absence in particular circumstances is acceptable, or unless alternative acceptable cleaning and disinfecting facilities are provided, footbaths that contain a suitable disinfectant solution shall be provided at each entrance to the preparation, processing and packaging areas that is used by employees, and shall be so located that employees cannot obtain access to those areas without disinfecting their footwear. Footbaths shall be so constructed that they can be adequately drained and cleaned.

## 5.2.11 Notices

Notices shall be strategically displayed in the preparation, processing, packaging and storage areas, in the changerooms and in the toilet facilities. The notices shall require that hands be washed with soap or detergent (see 5.6.3.1) and shall indicate that spitting, the use of chewing gum and the use of tobacco in any form (see 5.6.3.3), and the taking of refreshments or food are prohibited in these areas.

## 5.2.12 Production areas

Production areas shall be so designed, equipped and staffed as to allow free movement of workers and to facilitate the free movement and cleaning of movable equipment. Except where other statutory regulations apply, the deboning of red meat carcasses and the cutting up and preparation of meat for canning shall, except where the nature of the process makes it impossible, be performed in work areas the temperature of which does not exceed 15 °C. The temperature of meat being deboned shall at no time exceed 7 °C except when hot deboning is performed. These areas shall be physically separated from the heat processing areas of the factory. Areas where raw food is being handled shall be separated from areas where cooked food is being handled.

### 5.2.13 Chill, freezer and freezer storage facilities

Chill, freezer and freezer storage facilities shall operate efficiently and shall be hygienically maintained. Freezer storage rooms shall, as far as possible, be equipped with automatic temperature recording systems. Products shall not be stacked direct on the floors, against walls or against wall panels. Walls and floors shall have a smooth finish and shall be impervious to moisture, and measures shall be taken to prevent the flaking off of surface material from ceilings and walls. Brick walls shall be plastered.

### 5.2.14 Storage facilities for meat and red meat offal

Edible red meat offal for human consumption shall be stored only in chill rooms or freezer storage rooms that are used for the storage of carcasses. No uncleaned edible offal shall be stored in any room that contains carcasses or cleaned edible offal. Inedible offal, unless scalded and cleaned, and boxed and frozen, may not be stored in any chill room or freezer storage room that contains meat or edible offal.

In storage, unprotected meat shall be kept separate from boxed or protected meat. Raw materials other than meat and edible offal that require cold storage or freezer storage shall only be stored in the same room as meat and edible offal if in a prepared and neatly packaged form in hygienic containers. No carcass or edible offal, whether wrapped or not, shall rest direct on the floor or against the walls.

### 5.2.15 Storage facilities for edible ingredients

Storage facilities for edible ingredients that are used in the preparation of the frozen product shall be dry, free from dust and any other source of contamination, and verminproof. Edible ingredients shall be stored in closed containers and away from the floor and the walls.

### 5.2.16 Storage facilities for non-edible materials

Non-edible materials shall be stored in a room separate from other storage rooms and from the production area of the factory.

### 5.2.17 Storage facilities for packing and packaging materials

Materials for the packing and packaging of the product shall be stored at a height of at least 250 mm above floor level, in clean, dustproof, verminproof and dry storerooms reserved for the purpose. Packaging materials shall be stored away from the floor and walls.

### 5.2.18 Storage facilities for poisonous and other harmful materials

#### 5.2.18.1 Storage facilities for pesticides or other poisonous and harmful materials

Pesticides or other poisonous and harmful materials and the equipment for their application shall be stored in a well-ventilated room in which no foodstuff, food-handling equipment, packaging material or containers are stored and that is kept locked. All dangerous materials shall be prominently and distinctly labelled and shall at no time come into contact with containers, packaging materials, raw materials or the product or product-contact surfaces.

#### 5.2.18.2 Storage facilities for cleaning and disinfecting materials

Cleaning and disinfecting materials and the equipment for their application shall be stored in a room in which no foodstuff, food-handling equipment, packaging material or containers are stored and shall at no time come into contact with containers, packaging materials, raw materials or the product. All cleaning and disinfecting materials shall be prominently and distinctly labelled.

### 5.2.19 Storage facilities for utensils and spare parts

Utensils and spare parts that, when in use, come into contact with the product shall, when not in use,

be kept in a disinfectant solution or stored in an hygienic way in a dry area that is free from dust and any other source of contamination, and that is verminproof. Spare parts for machinery that are capable of contaminating the product shall be kept in a separate storage area away from the processing areas.

### 5.2.20 Fuel storage area

Any storage area or tanks for the storage of fuels such as coal or hydrocarbons, shall be designed, protected, controlled and maintained in such a way as to prevent the product from being polluted during the storage and manipulation of these fuels.

### 5.2.21 Storage facilities for lubricants

Lubricants shall be stored away from the production area and in such a way that they do not cause contamination of the product

### 5.2.22 Storage facilities for finished products

Finished products awaiting dispatch shall be stacked away from the floors and walls, in well-ventilated, acceptably dust-free, dry and clean rooms. The storage area for finished products shall be physically separated from areas where steam is generated. The finished product shall be protected against elements of the environment or any other condition that could adversely affect the product

Finished products found not to comply with the requirements of this standard shall be stacked apart from finished products that comply with the requirements (see 10.5).

### 5.2.23 Smoke units

Smoke units shall be maintained in an hygienic condition and they shall not be fired from the inside of the processing area of the factory. In the case of prefabricated smoke kilns where the smoke-generating equipment forms part of the kiln, the smoke generator shall not emit any smoke into the processing area, and the area adjacent to such a generator shall be so partitioned off from the processing area as to prevent contamination of the area with sawdust. Sawdust shall be contained in bins with lids on. Doors of smoke rooms and kilns shall be tight-fitting. The inner surfaces of smoke units shall be finished with a smooth lining such as stainless metal, to facilitate the cleaning of the walls with steam and water. Trolleys or trays used in smoke units shall be of hygienic design and shall be regularly cleaned.

### 5.2.24 By-products

Any processing of by-products and non-meat products that are not intended for human consumption shall be conducted in buildings that are physically separated from the factory in such a way that there is no possibility of contamination of the product. Equipment and utensils used in by-product plants shall be identified and shall not be used in areas where food for human consumption is processed.

### 5.2.25 Refuse

A separate, suitable refuse facility shall be provided on the premises and shall be cleaned daily.

### 5.2.26 Comfort facilities

**5.2.26.1** Where the comfort facilities are connected with food handling or storage areas by means of a vestibule only, the fall of the floor surfaces of the comfort facilities shall be such that no water from the floor surfaces can enter the food handling or storage areas. An acceptable number of suitable changerooms, shower baths, wash-hand basins with taps that operate as described in 5.2.9(e), toilets (separate for each sex) and, where appropriate, urinals, shall be provided within practical distance from the factory processing areas. Shower baths shall connect direct to the changerooms. Comfort facilities shall not open direct into a preparation, processing, packaging or storage area unless it is provided with a vestibule. The doors of such a vestibule shall be close-fitting and self-closing. The entry from such a vestibule into the preparation, processing, packing or storage areas shall be

equipped with a footbath.

**5.2.26.2** Toilets shall be completely separate from changerooms, the only permissible access being through a vestibule with close-fitting, self-closing doors. Toilet blocks shall have their own hand-washing facilities, separated from those provided in changerooms. An ample supply of toilet paper, hot and cold running water, nailbrushes, unscented liquid soap or an acceptable detergent solution and disposable paper towels shall be available to employees. Receptacles shall be provided for used towels. Refuse bins of hygienic construction shall be provided.

**5.2.26.3** Notices shall be posted that require employees to wash their hands with soap or detergent after they have used the toilet. Lockers or controlled clothes baskets shall be provided, and the layout and equipment shall be such as to permit proper cleaning and maintenance. The comfort facilities shall be kept clean and tidy. The comfort facilities shall be adequately ventilated. Provision shall be made for proper drainage of the floor surfaces of the comfort facilities. Changerooms and dressing-rooms shall not be used as living quarters or for the preparation of meals. Staff dining-rooms shall be separate from the changerooms or dressing-rooms.

### **5.2.27 Facilities for cleaning and disinfecting portable equipment**

Facilities with proper drainage shall be provided for the cleaning and disinfecting of portable equipment. Such facilities shall be located in a separate room or in a designated area in the preparation, processing and packaging areas where there is an ample supply of cold potable water under adequate pressure that complies with the requirements of 5.4.1, and, where necessary, hot water or saturated steam under adequate pressure. The room or area to be used shall be such that there will be no risk of contamination of the product or product contact surfaces. The floor of the room or area shall be smooth-surfaced and graded to facilitate proper disposal of waste liquids from the cleaning process. The direction of drainage flow shall be away from the handling areas.

## **5.3 Equipment for production**

### **5.3.1 Design and installation**

**5.3.1.1** Processing areas shall be so designed, equipped and staffed as to allow free movement of workers, to facilitate cleaning and the maintenance of both hygiene and product quality.

**5.3.1.2** All plant, equipment and utensils that come into contact with the product shall be smooth-surfaced, light-coloured and of a suitable corrosion-resistant material (other than wood or other absorbent or porous material), which may have an acceptable plastics-coated surface suitable for use with food, but should preferably be stainless steel. They shall be of hygienic design with no open joints or crevices and shall be so constructed as to facilitate their cleaning and disinfecting. Plant and equipment shall be so designed as to facilitate the cleaning and disinfecting of the areas under them. Open ends and curled edges shall be satisfactorily sealed to prevent the accumulation of organic material and dirt. Where necessary, as in the case of equipment that cannot be cleaned *in situ*, it shall be possible to dismantle the equipment for cleaning and disinfecting. Surfaces with which the product comes into contact shall not be painted.

**5.3.1.3** All parts of stationary equipment or of equipment that is not readily movable shall be installed away from the walls and ceilings at distances sufficient to allow access for cleaning and inspection. All permanently mounted equipment shall be either installed high enough above the floor to allow access for cleaning and inspection, or shall be completely sealed to the floor.

**5.3.1.4** Equipment shall preferably not be sunk into the floor but if this is unavoidable, the installation of the equipment shall be such that the equipment is accessible for proper cleaning. Sunken areas shall be well drained.

Copper, lead and their alloys, and other metals or materials detrimental to health, shall not be used in the construction of equipment that comes into contact with the raw materials or with the unprotected product at any stage of its processing. Equipment and utensils used for inedible materials or for waste shall be identified as such and shall not be used for edible products. Equipment used in areas outside the food handling areas, such as in the toilet or ablution facilities, shall not be used in the areas for the

processing of food for human consumption.

### 5.3.2 Equipment for the packing medium

Pipes, valves, joints, pumps or any equipment that comes into contact with the packing medium, shall be of a hygienic design, with no dead ends, sharp bends or uneven joints. Pipelines shall be easily dismantled for cleaning. Mixing equipment, stirrers, mesh screens and storage tanks shall be of stainless steel. Storage tanks shall be provided with suitable covers.

Water used in the mixing tanks shall only be supplied by means of permanently fixed water pipes. Water hoses shall not be used to supply water as an ingredient for the product.

### 5.3.3 Tables

Wooden tables shall not be used in processing areas. Table frames shall be of a design and construction that will not allow the development of unhygienic conditions and bacterial build-up. The frames shall be made of smooth, corrosion-resistant metal or shall have been so coated as to protect them from corrosion. Table tops shall be of seamless stainless metal or other seamless, corrosion-resistant, smooth, impermeable material that possesses similar surface characteristics. They shall be of hygienic construction and shall be either removable for cleaning, or so secured to their frames as to allow cleaning and disinfecting. Where metal tops are folded at the edges, the folds shall be so soldered, welded or sealed with an acceptable mastic sealant as to prevent the accumulation of organic matter and dirt. All table tops shall allow rapid and effective drainage, and shall be free from cracks and crevices. All joints in tables shall have been made watertight.

### 5.3.4 Cutting boards

If cutting boards are used, they shall be of hygienic construction and shall be made of acceptable light-coloured material (other than wood or other absorbent or porous material), suitable for use with food. Cutting boards shall be easily removable.

### 5.3.5 Utensils

Utensils used for the topping-up of cans shall be made of stainless metal or of rigid plastics material and shall be of hygienic design. They shall be provided with acceptable handles. Knives and other utensils shall not have handles of wood or other porous or absorbent material.

### 5.3.6 Heat processing equipment

All heat-processing equipment shall be maintained in good order and shall be fitted with temperature control mechanisms, thermometers and pressure gauges. The temperature control mechanisms, thermometers and pressure gauges of heat-processing equipment shall be calibrated regularly (at least once a year) and the calibration certificates shall be available to the relevant authorities (see 10.2.3). Each steam retort shall be equipped with the following fittings:

- a) a controller, that is either manually or mechanically operated, to maintain the processing temperature accurately;
- b) at least one indicating mercury-in-glass thermometer, easily readable to 0.5 °C;
- c) a recording thermometer and time-temperature charts, that are installed in such a way that their proper operation is not affected by steam or vibration;
- d) a pressure gauge, that is connected to the retort by means of a gauge siphon or gooseneck;
- e) a vent or vents that have a tap or taps in the top of the retort, with unobstructive discharging to the atmosphere;
- f) a bleeder in each thermometer pocket;
- g) at least one bleeder in the top of the retort;

- h) where an automatic controller is used, a steam by-pass around the controller to make a rapid, even rise to the processing temperature; and
- i) an effective safety valve.

The bleeders referred to in (f) and (g) above shall remain open during the heat-processing period. The bleeders and vent(s) referred to in (e), (f) and (g) above shall discharge unobstructively to the atmosphere. The number and size and the position(s) of the vent(s) shall be sufficient to ensure complete removal of air from the retort before the vent(s) is/are closed, and shall also be sufficient to ensure a uniform steam distribution when process temperature has been attained.

The steam supply and steam distribution in the retort shall be such as to ensure adequate heat treatment. The distribution of steam in the retort shall ensure a rapid and even rise of the temperature of the contents to the desired temperature. The steam supply into the retort shall be sufficient to ensure complete removal of air during this venting.

A fixed wall clock for the recording of time in 1 min graduations (a wrist watch shall not be used), and also the thermometers and pressure gauge referred to in (b), (c) and (d) above, shall be so installed that they are readable from one position.

Retort baskets that contain unprocessed products shall be so identified as to obviate confusion between such retort baskets and those containing processed products. The construction of retort baskets or retort trolleys shall be such that the circulation of steam will not be obstructed. Any suppliers of compressed air or water (or both) shall be capable of shutting off adequately to prevent any leakage into the retort, and so to prevent an adverse effect on the process.

### 5.3.7 Containers (bins)

All containers that contain foodstuffs, other than those that contain the finished product and sealed cans in retort baskets, shall at all times be kept on shelves or stands of corrosion-resistant impervious material at a height of at least 250 mm above floor level. Containers that contain food materials shall not be stacked one upon the other in such a way that the contents of one container can be contaminated by the bottom of another container. Containers shall be of hygienic design and light-coloured or shall have a bright metal finish.

### 5.3.8 Disinfecting and cleaning facilities

Disinfecting facilities for gloves and knives shall be available at convenient and acceptable points.

### 5.3.9 Ice-making equipment

All surfaces of ice-making equipment that come into contact with the ice shall be of suitable corrosion-resistant material. The ice-making equipment shall be of hygienic construction throughout. Whenever ice is transferred, stored or transported, it shall be effectively protected from contamination.

### 5.3.10 Compressed air, gases and steam

Compressed air, gases and steam used in direct or indirect contact with food or with food-contact surfaces shall contain no substances that could be hazardous to health or that could contaminate the food.

## 5.4 Water

### 5.4.1 Potable water

Every cannery shall have an adequate supply of clean potable water that is free from suspended matter and from substances that could be deleterious to the product or harmful to health. In addition, the water shall have been so treated, by flocculation, filtration, chlorination or other acceptable process, as to ensure compliance with the following requirements:

- a) total count: When the water is tested in accordance with 13.5, the total count of viable micro-organisms shall not exceed 100 per m;
- b) coliform organisms: The count of coliform organisms shall not exceed five organisms per 1 00 ml of the water (see 13.5); and
- c) faecal coliform bacteria: Faecal coliform bacteria shall not be detectable in 100 ml of the water (see 13.5).

**5.4.1.1** For the purposes of the water examination, the coliform group shall include all Gram-negative, non-spore-forming rods that are capable of fermenting lactose with the production of acid and gas at 37 °C in less than 48 h. Faecal coliform bacteria shall be regarded as Gram-negative, non-spore-forming rods that are capable of fermenting lactose with the production of acid and gas at both 37 °C and 44 °C in less than 48 h, and of producing indole in tryptone water.

5.4.1.2 Chlorinated water that could have any deleterious effect on the product shall be dechlorinated immediately before use. In all cases, the free residual chlorine concentration shall be determined by the N,N-diethyl-1,4-l-phenylenediamine test or other acceptable test that has equivalent sensitivity.

#### 5.4.2 Chlorination of water for container cooling

Water that is used for container cooling but is not recirculated shall be continuously chlorinated to contain a minimum of 2 mg/l of free residual chlorine measured at the retort inlet. Where water for container cooling is recirculated, it shall, before recirculation, be treated to remove solids and then, after cooling, be chlorinated to ensure a minimum free residual chlorine content of 2 mg/l at the retort inlet after a contact period of at least 20 min. In all cases, the free residual chlorine concentration shall be determined by the N,N-diethyl-1,4-l-phenylenediamine test or other acceptable test of equivalent sensitivity.

Recirculated container cooling water shall be protected against contamination.

#### 5.4.3 Steam

Steam used in direct contact with food or with food-contact surfaces shall be made from potable water and shall not contain substances that could be hazardous to health or that could contaminate the food.

#### 5.4.4 Ice

The purity of ice shall be such that the water derived from it (by melting the ice under aseptic conditions at a temperature not higher than 10 °C) immediately after the ice has been manufactured, complies with the requirements of 5.4.1.

#### 5.4.5 Non-potable water

Non-potable water shall be carried in completely separate lines with no cross-connection with, or back-siphonage into, the system that carries potable water. Non-potable water lines shall be identified as such and the water shall be considered unsafe and shall not be used for drinking or for use in food or in food handling areas or allowed to come into contact with food-contact surfaces or for hand washing purposes.

### 5.5 Hygienic operating requirements

#### 5.5.1 General

No operation or condition that could be detrimental to the manufacture, processing, treatment or storage of the product shall be permitted in the factory or in its grounds. The factory and its grounds shall convey an orderly, neat and hygienic image. Uncooked meat or meat products shall, in the course of handling, processing and storage, not be unnecessarily exposed to conditions that affect

them adversely. Care shall be taken to ensure that there is no contact between raw materials and finished products. Uncleaned and unprepared vegetables shall not be prepared or stored in areas where unprotected meat is handled or stored. Raw food shall not be handled or stored in areas where cooked food is handled or stored. Effective measures shall be taken to inhibit mould growth and to prevent dust, dirt, flaking paint, and other loose or extraneous material from being present in the processing areas or in the storage, freezer storage and refrigeration rooms.

Smoke from factory chimneys or from smoke rooms shall not be allowed to enter the factory building in a quantity or way that is offensive, injurious or dangerous to health or that can contaminate the product at any stage during processing. Vehicles that emit exhaust fumes shall not be used in any area where the unprotected product is exposed.

## **5.5.2 Cleaning and disinfecting**

### **5.5.2.1 Cleaning equipment, utensils and materials**

An adequate supply of cleaning and disinfecting materials, saturated steam, hot and cold running water (that complies with the requirements of 5.4.1), hosepipes, spray nozzles, brushes, scrapers and other equipment necessary for the proper cleaning of the plant, equipment and utensils shall be available. Wire, steel wool or metal scouring wool shall not be used for cleaning surfaces that come into contact with the product. Steam used in direct contact with the product and with product-contact surfaces shall not contain any substances that could be hazardous to health or that could contaminate the product (see 5.4.3). Cleaning and disinfecting materials and equipment shall not be stored in a room where food-handling equipment is stored and shall at no time come into contact with raw materials, the products or their containers or packages. Cleaning equipment, utensils and materials used in a particular area shall be identified. Cleaning equipment, utensils and materials used in areas other than areas where food for human consumption is handled, such as toilets and ablution facilities or by-product plants, shall not be used in areas where food for human consumption is processed.

### **5.5.2.2 Physical facilities**

The factory and grounds shall be maintained in a clean and hygienic state.

All plant, equipment and utensils shall be maintained in a state of good repair and shall be kept clean. The entire manufacturing and processing or treatment system, including utensils, shall be cleaned at each change of operations. At the end of operations, the entire system shall be both cleaned and disinfected. Immediately before the start of manufacturing operations, plant and utensils shall be rinsed with potable water that complies with the requirements of 5.4.1 and, if necessary, a detergent or disinfectant shall be used.

Adequate precautions shall be taken to prevent the product from being contaminated during the cleaning or disinfection of the processing areas and equipment. Detergents and disinfectants used shall be suitable for the purposes intended.

### **5.5.2.3 Floors and drainage channels**

During production periods, the floor and the drainage channels shall be kept clean. Thorough cleaning of floors and drainage channels shall take place at the end of each day's operations and as often as is necessary during the working day to maintain hygienic conditions.

The product shall be protected from being splashed with water during the cleaning, rinsing, sweeping and flushing of the floors and equipment.

### **5.5.2.4 Walls**

The inside surfaces of walls shall be thoroughly washed immediately after each day's operations and as often as is necessary during the working day to maintain hygienic conditions.

### **5.5.2.5 Preparation and processing systems**

The product shall be prepared, packaged and processed under strictly hygienic conditions. Equipment used for preparation, filling and closing shall be properly cleaned to prevent soiling and contamination of the product. Saws, deboning knives, steels, and cutting boards shall be of hygienic design, and

shall, after use, be immediately cleaned, disinfected and stored in a hygienic way.

Saws, knives and other utensils kept in disinfectant solution shall be thoroughly rinsed with potable water before being re-used. The hot water disinfectors shall be kept in a clean, hygienic condition.

When the factory is in operation, equipment and utensils shall not be removed from the work area, except for repair, cleaning or replacement.

### **5.5.3 Removal of refuse and disposal of effluent and waste**

Litter, waste and overflow shall not be allowed to accumulate or give rise to unhygienic conditions and shall be removed promptly from the processing area and disposed of in an efficient and sanitary way. Containers of waste that are awaiting removal from the factory premises shall be physically separated from the processing areas. A separate refuse room or other refuse facility shall be provided on the premises and shall be cleaned and disinfected at least once a day. Establishments shall have an efficient effluent and waste disposal system that shall, at all times, be maintained in good order and repair. All effluent lines (including sewer systems) shall be large enough to carry peak loads and shall be so constructed as to avoid contamination of potable water supplies or the environment. Hazardous substances shall be disposed of in an environmentally acceptable way.

### **5.5.4 Vermin control**

All buildings in which raw materials, packaging materials, and ingredients are stored or in which the product is manufactured or stored shall be kept free from rodents and shall be rodentproof. Potential breeding sites for vermin shall be eliminated. All rooms in which ingredients or raw materials are stored shall in addition be rodentproof.

### **5.5.5 The use of pesticides**

Pesticides shall not be used while processing is in operation. Before pesticides are applied, precautionary measures shall be taken to prevent contamination of the product. Work surfaces shall be kept free from pesticide residues. Pesticides shall at no time come into contact with containers, raw materials or the product or with product-contact surfaces.

Pesticides shall only be handled by authorized and properly trained personnel or by persons under strict supervision of trained personnel. Containers with pesticide bait or open bait shall not be present in any area or room where the exposed product or ingredients are present or are handled.

### **5.5.6 Animals**

Animals, including birds, shall not be allowed in any part of the factory.

## **5.6 Requirements for employees engaged in the handling, preparation, processing, packaging and storage of the product**

### **5.6.1 Health**

**5.6.1.1** Before being engaged, employees shall pass an appropriate medical examination to ensure that they are free from communicable diseases, and thereafter they shall pass an annual medical examination. In the case of any absence owing to illness for more than one day, the employee shall, before resuming duty, report the nature of the illness to the factory hygiene officer who shall, should he deem it necessary, take the appropriate steps to obtain a medical opinion on the employee's fitness for work. An appropriate medical record of each employee shall be kept.

**5.6.1.2** Any medical certificate submitted by a factory employee shall be available for inspection by the South African Bureau of Standards.

**5.6.1.3** No employee who is a carrier of, or is suffering from, any communicable disease, especially a carrier of *Salmonella* or *Shigella* organisms, or one who shows symptoms of, or is suffering from, gastro-enteritis or an enterobacterial infection or a disorder or condition that causes discharge of fluid

from any part of the skin or body, shall be allowed to come into contact with the product. Any such employee shall immediately report to the factory management.

**5.6.1.4** No employee who is known to be affected with a disease that is capable of being transmitted through food shall be permitted to work in any part of the factory in a capacity in which there is a likelihood of the employee's contaminating the product with pathogenic organisms.

**5.6.1.5** No employee who is suffering from any cut or injury shall be allowed to come into contact with the product unless the cut or injury has been so treated or dressed that the discharge of body fluid has been prevented, and the wound and its dressing have been so covered as to ensure that infection of the employee and contamination of the product are no longer possible.

## **5.6.2 Protective clothing**

**5.6.2.1** All employees that are engaged in the handling, preparation and processing of the product up to and including the packaging stage (but excluding employees that operate within freezer storage rooms and chill rooms), shall wear clean, light-coloured, protective clothing, waterproof aprons, waterproof slipovers or boots, and clean, washable or disposable headgear that completely covers their hair. Woollen caps and thermal protective clothing (where applicable) may be worn in freezer storage rooms only. Overalls shall completely cover the personal clothing of the employees.

**5.6.2.2** Sleeves shall not extend below the elbows, except when covered by plastics sleevelets or when worn in freezer storage rooms and chill rooms. Waterproof protective clothing shall be of a plastics or rubber material or a similar acceptable material. All protective clothing shall be of hygienic design, shall have no external pockets, shall be in good repair and shall not constitute a source of contamination to the product.

**5.6.2.3** Protective clothing, other than waterproof aprons, sleevelets and gloves, shall not be stored in work areas; when not in use, it shall be kept in changerooms and shall not be removed from the premises except for laundering under hygienic conditions. The homes of employees shall not be regarded as acceptable for this purpose.

**5.6.2.4** Waterproof aprons, sleevelets and gloves shall be cleaned at each time of removal and as frequently as necessary, and shall be hung on hooks or pegs at exits from production areas during intervals between work and during visits to the toilet. Gloves shall be thoroughly cleaned and then disinfected by the use of chlorinated water or other acceptable solution or procedure. Waterproof aprons, sleevelets and gloves, and also all equipment used in the preparation, processing and packaging of the product, shall not be removed from the work areas except for repairs and for cleaning under hygienic conditions.

## **5.6.3 Personal hygiene**

**5.6.3.1** Before starting work, after each absence from the factory production area, at regular intervals during production, and at any time when necessary, employees shall wash their hands with warm water and acceptable unscented liquid soap or detergent and rinse them in clean, running water (see 5.2.9, 5.2.11 and 5.4.1). They may then dip their hands in an acceptable disinfectant solution, after which they shall rinse their hands in clean running water, if so required by the usage directions of the hand dip. Neither varnish nor lacquer shall be used on fingernails, and fingernails shall be kept short and clean. Jewellery shall not be worn by employees who handle raw material and the unprotected product.

**5.6.3.2** Neither employees' personal effects nor their food shall be present in any area where the product and its ingredients and packaging materials are handled and stored (see 5.2.11). Containers used in the preparation, processing or packaging of the product shall not be used for any other purpose.

**5.6.3.3** The use of chewing gum and the use of tobacco in any form shall not be permitted within areas where the product and its ingredients and packaging materials are handled or stored. Spitting shall not be allowed anywhere within the factory premises. Notices to this effect shall be posted strategically (see 5.2.11).

## 5.6.4 Visitors

Any person, including employees, who visit or enter the production areas of the factory during the hours of operation, shall, when in those areas, comply with all hygiene requirements and shall wear clean protective clothing that shall be provided by the factory.

## 6 Ingredient requirements

### 6.1 Condition of ingredients

All ingredients shall fall within the scope of, and shall comply with, EAS 103 and any regulations relevant regulations.

All ingredients shall be clean and sound and in every way fit for human consumption and shall not contain any substances in amounts that could present a hazard to human health. All ingredients shall be stored well protected against vermin such as insects and rodents or other animals and other sources of contamination and shall be free from pesticide residues and any other contaminants and extraneous matter. The temperature of prepared cold meat and cold product emulsions of mixtures that are awaiting processing shall not be more than 7 °C. The transportation of ingredients shall take place under hygienic conditions. The transportation of meat shall be executed in accordance with the requirements of the applicable standards and regulations.

### 6.2 Meat and offal

Meat and edible offal shall have been inspected and passed as fit for human consumption in accordance with the statutory provisions governing animal slaughtering, meat hygiene and meat inspection. The use of frozen meat and frozen edible offal is allowed, provided that they have been frozen and stored under acceptable conditions and show no evidence of rancidity or discoloration and have been defrosted in a way that does not adversely affect quality. Only chilled carcasses in which rigor mortis has occurred fully or carcasses that have been frozen and thawed may be de boned for processing, unless hot deboning is used.

Meat and edible offal shall be free from off-odours, off-flavours and taint. Meat and edible offal that are bruised, meat that is from parts of the head other than the masseter muscles, and, in the case of pork, the teat line, shall not be used. Inedible offal shall not be used. Cartilage, glands, blood clots, major sinews, major tendons and major blood vessels shall be removed, except that sinews and tendons may be used in natural binder.

### 6.3 Fat

Fat shall be pure, edible and free from obvious rancidity. Anti-oxidants may be used in accordance with the requirements EAS 103.

### 6.4 Salt

Salt shall be suitable for human consumption and shall be free from bitterness.

### 6.5 Seasoning ingredients

Seasoning ingredients shall be pure natural spices or herbs or their preparations, essential oils, and essences, and shall be free from foreign matter and of a microbiological quality that complies with the requirements specified in the relevant standards listed in Clause 2.

### 6.6 Tomato puree and tomato paste

Tomato puree and tomato paste shall comply with the requirements for standard grade canned tomato puree and canned tomato paste specified in EAS 66.

## 6.7 Fruit and vegetables

Fruit and vegetables, whether fresh, frozen, canned, dehydrated or dried, shall be suitably prepared from fresh fruit and vegetables that are free from infestation, signs of infestation and contamination by insects or rodents (or both), and that comply with the requirements for pesticidal residues under the Foodstuffs, Cosmetics and Disinfectants Act, 1972. Canned vegetables and canned fruit shall comply with the relevant requirements for standard grade prescribed by the regulations under the Agricultural Product Standards Act, 1990.

## 6.8 Mushrooms

Fresh, frozen, canned or dehydrated mushrooms, free from insect infestation and contamination and that comply with the requirements for pesticidal residues by the relevant East African standards may be used.

## 6.9 Caramel

Caramel used shall be suitably prepared for use in foodstuffs.

## 6.10 Sweetening ingredients

Sucrose, dextrose and liquid glucose shall comply with the requirements relevant East African standards.

## 6.11 Gravy thickeners

Gravy thickeners, if used, shall be specially prepared for use in food and of sound quality. Edible gums, modified starches, and agar-agar shall be in concentrations of not more than 1 % by mass if used as thickeners in the preparation of gravy. (See also 8.1.3 and 8.2.3.)

## 6.12 Curing salts

Curing salts (see 7.7) shall be of a quality intended for use in foods.

## 6.13 Phosphates

Phosphates (see 7.8) shall be suitable for use in meat products.

## 6.14 Citric, lactic and ascorbic acids

Citric, lactic and ascorbic acids shall be of British Pharmacopoeia quality. Sodium ascorbate shall be of a grade intended for use in foods.

## 6.15 Starchy (farinaceous) materials

Fillers used shall be cereal, rusk, biscuit meal, potato flour or other edible starchy (farinaceous) material, including edible gums and modified starches. These materials shall be free from insect and rodent infestation, pesticides or other contaminants.

## 6.16 Soya and other non-meat proteinaceous materials

Soya and other non-meat proteinaceous materials shall not be used to replace the required meat content (see 7.12).

## 6.17 Milk powder

Milk powder shall be pure, fresh and sweet and, when tested in accordance with 13.5, no sample shall have a total bacterial colony count in excess of 50 000 organisms per gram. When tested in accordance with 13.5, no sample shall contain *E. coli* in 1 g.

**6.18 Eggs**

Eggs (fresh, dried or liquid) shall be sound and, when tested in accordance with 13.8, shall not contain *Salmonella* organisms.

**6.19 Colorants**

Any colorant used (see 7.6) shall be one of those permitted by the regulations under the Foodstuffs, Cosmetics and Disinfectants Act, 1972.

**6.20 Garnish**

Garnish, if used, shall consist of pimento, cured olives or other suitably prepared, sound, edible vegetable material.

**6.21 Natural binder**

Natural binder shall be finely comminuted gelatinous material derived from one of the following:

- a) in the case of beef or mutton: gelatinous materials such as sinews, connective tissues and other suitable parts of the carcass, excluding skin, lips and snouts;
- b) in the case of pork: gelatinous materials such as the skin, connective tissues, sinews and face pieces, excluding the ears; or
- c) in the case of poultry: the skin and connective tissues.

The natural binder used shall be derived only from the same type of animal(s) from which the meat used in the product is derived (see 14.2.2.4).

**6.22 Agar-agar**

Agar-agar shall be suitable for use in foods.

**6.23 Gelatine**

Gelatine shall comply with the requirements prescribed by the regulations under the Foodstuffs, Cosmetics and Disinfectants Act, 1972.

**6.24 Lard**

Lard shall comply with the requirements of 8.1 0 for canned edible lard.

**6.25 General**

All ingredients and the quantities used, whether specified or not, shall comply with the relevant requirements of East African standards and any relevant health regulations, and no ingredient not permitted by those regulations shall be used.

**7 Product requirements**

**7.1 General**

In the event of doubt regarding the compliance of the product with any requirement of this standard that relies wholly or partially for its interpretation on the experience or judgement of the person carrying out the assessment, the decision of the East African Standards Committee (EASC) shall be final.

## 7.2 Flavour, odour, colour and appearance

The canned product shall have a flavour, an odour, a colour and an appearance that are characteristic of its type. Foreign flavours and foreign odours, and off-flavours and off-odours shall not be present.

## 7.3 Texture

The product shall have a texture characteristic of its type. Vegetables or fruit, if present as garnish, shall be tender but not mushy, abnormally fibrous or stringy. Cereals, if present, shall not have an abnormally mushy or soggy texture.

## 7.4 Freedom from defects

Bone and skin, except where one or both are specifically permitted, blood clots, and cartilage shall not be present. Permitted bone shall not be dangerously sharp. The proportion of soft connective tissue present in the product shall be the same as that present in the carcass or meat cuts used. The product shall be free from dirt, grit, hair, loose pieces of solder and other extraneous matter.

## 7.5 Fill of container

Except where otherwise specified, the product shall occupy at least 90 % of the total volume capacity of the container (see 11.3).

## 7.6 Colorants

Except where specifically permitted, colorants shall not be present (see 6.19).

## 7.7 Curing salts

Where the presence of curing salts is permitted, the limits specified by EAS 103, shall be complied with. (See also 6.12.)

## 7.8 Phosphates

The presence of phosphates, where permitted, shall be in accordance with the requirements prescribed by the regulations under EAS 103. (See also 6.13 and 12.15.)

## 7.9 Smoke preparations

Smoke preparations suitable for human consumption may be used (see 14.2.2.1.3).

## 7.10 Anti-oxidants

The product shall be free from added anti-oxidants other than citric and ascorbic acids; however, where edible oil is used in the preparation of the product, and subject to the provisions of the relevant East African standards, the oil may contain anti-oxidants.

## 7.11 Preservation

With the exception of products of which the label states that the product is to be kept under refrigeration (see 14.2.1 (e)) and semi-preserved products (see 7.13.2), all canned meat products shall have been commercially sterilized.

Canned meat products covered by this standard and packed as semi-preserved products shall have been preserved by salting, brining, pickling or smoking, or any combination of these, and may in addition have been partially heat processed. The presence of preservatives shall be subject to the requirements under the EAS 103. The products shall not contain inorganic acids.

## **7.12 Soya and other non-meat proteinaceous materials**

The product shall not contain soya and other non-meat proteinaceous materials as a replacement for the prescribed amounts of meat or edible offal or both in the product (see 6.16).

## **7.13 Microbiological requirements**

### **7.13.1 Commercially sterilized products**

#### **7.13.1.1 Microbiological spoilage**

A product in its container, after incubation in accordance with 13.1 and/or 13.2, shall be considered to have undergone microbiological spoilage if the container:

- a) shows a positive pressure;
- b) leaks; or
- c) whether it has a positive pressure or not, shows evidence of bacterial proliferation, indicated, when compared with unincubated sound samples, by a significant change in pH value, or by disintegration or decomposition, or by significant discoloration of the product.

Evidence of bacterial proliferation shall be confirmed by cultural examination (see 13.3).

#### **7.13.1.2 Requirement**

Products in containers examined or tested, or both, in accordance with 13.4 shall show no evidence of microbiological spoilage.

### **7.13.2 Pasteurized, semi-preserved, and salt-preserved products**

#### **7.13.2.1 Microbiological spoilage**

A product in its container shall be considered to have undergone microbiological spoilage if the container:

- a) shows a positive pressure;
- b) leaks; or
- c) whether it has a positive pressure or not, shows evidence of bacterial proliferation, indicated, when compared with sound samples, by a significant change in pH value, or by disintegration or decomposition, or by significant discoloration of the product.

Evidence of bacterial proliferation shall be confirmed by cultural examination (see 13.3).

#### **7.13.2.2 Requirement**

Products in containers examined or tested, or both, in accordance with 13.4 or 13.6 (or both, as applicable), shall show no evidence of microbiological spoilage or of organisms that are liable to cause spoilage of the product during storage at the temperature recommended by the canner, or, in the case of pasteurized products only, of viable non-spore-forming organisms.

## **8 Specific requirements for particular products**

### **8.1 Stewed or braised meat, stewed oxtail, stewed tripe, stewed or braised kidneys, stewed or braised heart, stewed or braised liver, meat balls, stewed meat and kidney pudding, and similar stewed products, with or without gravy, sauces or dressing**

#### **8.1.1 Preparation of meat and edible offal**

Musculature meat for use in stewed or braised meat products shall be trimmed until it is free from perceptible fat, surface-showing connective tissue, sinews and fascia, and, where applicable, it shall be cut into pieces of approximately the same size and shape that are not more than 50 mm long and

not less than 15 mm in diameter.

If the meat is minced and then formed into units, the units shall appear regular in size and shape. Mechanically recovered meat shall not be used. When determined in accordance with 12.3 and 12.4, the actual total meat content (see 3.3) of ingoing units shall be at least 70 %. The ingoing units may contain starchy (farinaceous) material to the extent of not more than 6 %, determined in accordance with 12.5 and calculated as crude starch. The units in the product described as meat balls, shall be formed into a characteristic shape and shall be readily separable. Meat patties formed shall have substantially the same diameter as that of the container.

Kidneys shall be acceptably trimmed and free from adhering fat, connective tissue, renal ducts, urine flavour and black or blue discoloration. Kidneys for use in kidney pudding shall be cut to acceptable size. Kidneys, liver, tongue, heart and tripe for use in stewed or braised products and puddings shall be suitably prepared and cut into pieces that appear regular in size and shape, the smallest dimension of pieces of kidney being at least 10 mm. The product shall be free from any odour or flavour of urine.

Only oxtail, mutton and game meat from the ribs and neck may be packed on the bone. No free bone or sharp bones shall be present.

#### **8.1.2 Texture of meat and edible offal in prepared product**

In the prepared product, meat and edible offal shall be practically free from sinews and connecting tissue and shall not be tough or mushy. Individual pieces of meat in stewed steak shall substantially retain their shape and original muscle structure; pieces of meat shall be easily separable.

#### **8.1.3 Sauce, gravy or broth (see 6.11)**

Although vegetables shall not be present as chunks or as large pieces or whole units, they may be used in the preparation of sauce or gravy. The sauce or gravy may be suitably spiced.

Where the product is claimed in the product name to have been packed in broth, or in thick or rich sauce or gravy, the packing medium shall, after equilibrium has been reached, be in accordance with the claim made. A canned meat product that has been packed in broth shall not be labelled as having been packed in gravy or in sauce.

#### **8.1.4 Curing salts**

The product shall not contain curing salts unless its name indicates the presence of cured meat.

#### **8.1.5 Composition**

The composition of the product shall comply with the relevant requirements given in Table 1, the specified meat content and edible offal content percentages being applicable to the drained mass determined in accordance with clause 11.4. In addition, coagulated exuded fat shall not exceed 10 % of the d.n.m. and shall not be considered part of the drained mass requirement of the product. (See 11.4.1.1.)

### **8.2 Stewed meat products that contain meat or edible offal or both, with vegetables or cereal or both**

#### **8.2.1 Preparation of meat and edible offal, and texture of meat and edible offal in the prepared product**

The requirements of 8.1.1 for the preparation of meat and edible offal for use in stewed or braised meat products and the requirements of 8.1.2 for the texture of meat and edible offal in the prepared product shall apply.

Table 1 — Composition of particular products

1	2
Product category	Requirements
Stewed or braised meat, with or without kidney or other edible offal ingredient in juice or broth	When determined in accordance with 11.4, the drained mass of meat with or without edible offal shall be at least 55 % of the d.n.m. of the container. Where the name of an edible offal ingredient appears in the name of the product, the drained mass of that edible offal ingredient, when determined in accordance with 11.4, shall be at least 12,5 % of the d.n.m. Where the meat is mutton-on-the-bone or game-on-the-bone or a similar pack, the total meat-on-the-bone content, when determined in accordance with 11.4, shall be at least 70 % of the d.n.m. and the bone content shall not exceed 15 % of the d.n.m. (see 11.4.1.3). Free bone, especially chips, splinters or sharp pieces of bone, shall not be present.
Stewed or braised meat of a specific sort, with or without a minor meat ingredient and with or without kidney or other edible offal ingredient, and with gravy, sauce or dressing	When determined in accordance with 11.4, the drained mass of meat with or without edible offal shall be at least 50 % of the d.n.m. Where the name of any minor meat or edible offal ingredient appears in the name of the product, the mass of that ingredient shall be at least 10 % of the d.n.m. Where the meat is mutton-on-the-bone or game-on-the-bone or a similar pack, the meat-on-the-bone content when determined in accordance with 11.4, shall be at least 60 % of the d.n.m. and the bone content shall not exceed 12,5 % of the d.n.m. Free bone, especially chips, splinters or sharp pieces of bone, shall not be present. In a product labelled as goulash and packed in a thick sauce or in a thick rich gravy, at least 50 % of the d.n.m. shall be meat.
Hearts, stewed or braised; kidneys, stewed, braised or in brine; liver, stewed or braised, and similar packs, with or without gravy, sauce or dressing.	When determined in accordance with 11.4, the drained mass of edible offal shall be at least 60 % of the d.n.m., except where the product is packed in thick rich gravy, sauce or other dressing, in which case at least 55 % of the d.n.m. shall be edible offal.
Meat patties, with or without gravy, sauce or dressing	Where the product is packed in gravy, sauce or dressing, at least 55 % of the d.n.m. shall be units of meat, as determined in accordance with 11.4. Where the product is packed dry, at least 70 % of the d.n.m. shall be units of meat.
Meat balls, with or without gravy or sauce; cut sausages in gravy or sauce; and similar packs	Where the product is packed in gravy or sauce, at least 50% of the d.n.m. shall be units of meat, as determined in accordance with 11.4. Where meat balls are packed dry, at least 70 % of the d.n.m. shall be units of meat.
Tripe, stewed with or without sauce or dressing, or in brine.	When determined in accordance with 11.4, the drained mass of tripe in stewed tripe or tripe in brine shall be at least 65 % of the d.n.m. Where the product is packed with sauce or dressing, at least 55 % of the d.n.m. shall be tripe.
Oxtail, with or without gravy, sauce or dressing	In the case of a dry pack, at least 60 % of the d.n.m. shall be oxtail on bone, as determined in accordance with 11.4. Where the product is packed in gravy, sauce or dressing, at least 45 % of the d.n.m. shall be oxtail on bone.
Pork, with or without gravy, sauce or dressing.	In the case of a dry pack, at least 65 % of the d.n.m. shall be pork, as determined in accordance with 11.4. Where the product is packed in gravy, sauce or dressing, at least 50 % of the d.n.m. shall be pork.

### 8.2.2 Vegetables and cereals

Vegetables may be used as such or as preparations. Root vegetables shall be in the form of clean-cut dice, slices or pieces, except that, if of acceptable size, these vegetables may be packed whole. Dice shall be approximate cubes. The thickness of slices shall not exceed 15 mm. Pieces shall appear regular in size and shape and shall be practically free from scrap pieces. The texture shall be soft but not broken up or disintegrated. Onions, fresh or pickled, shall be sliced, diced, shredded or chopped, or, if of acceptable size, they may be used whole. Dehydrated onion may also be used. Grains of rice shall separate easily. Beans and peas shall be mostly intact and not split or broken, and shall be free from loose shells. Cereals such as spaghetti and noodles shall not be disintegrated or abnormally broken up, and the texture shall not be abnormally mushy or soggy. (See also 6.7, 6.8 and 6.15.)

### 8.2.3 Sauce, gravy or broth (see 6.11)

In the final product, the sauce or gravy shall not, after equilibrium has been reached, be thin and watery unless this fact is conspicuously declared in the main panel of the label. Where the product is claimed in the product name to have been packed in broth, or in thick or rich sauce or gravy, the packing medium shall, after equilibrium has been reached, be in accordance with the claim made.

A product that has been packed in broth shall not be labelled as having been packed in gravy or in sauce. A product that claims to have been packed in tomato sauce, shall have a characteristic tomato colour and the sauce shall not be thin and watery.

The ingredients of the sauce, gravy or broth shall not tend to separate from one another when the product is turned out of the container.

#### **8.2.4 Curing salts**

The product shall not contain curing salts unless its product name indicates the presence of cured meat.

#### **8.2.5 Drained mass**

When determined in accordance with 11.4, the drained mass of products other than pudding packs shall be at least 55 % of the d.n.m.

#### **8.2.6 Composition**

The composition of the product shall comply with the relevant requirements given in Table 2, the specified meat content and edible offal content percentages being applicable to the drained mass, determined in accordance with 11.4, except in the case of products where chemical analysis in accordance with 12.3 is specified.

In addition, coagulated exuded fat shall not constitute more than 5 % of the d.n.m. of the contents of the container and shall not be considered part of the drained mass requirements for the product (see 11.4.1.1).

### **8.3 Sliced bacon and sliced cured shoulder of pork**

#### **8.3.1 Preparation**

Sliced bacon shall be cured and prepared from the bacon strip of a pig. Sliced cured shoulder of pork shall be cured and prepared from the shoulder of a pig.

#### **8.3.2 Meat**

Meat used in the preparation of bacon shall be derived from the carcasses of gilts or barrows that are suitable for the manufacture of bacon.

#### **8.3.3 Curing**

The product shall be adequately cured and may be smoked or unsmoked.

#### **8.3.4 Packing**

The product shall be packed in containers and in the form of rashers of uniform size, thickness and shape, that may be interleaved with clean parchment paper, cellulose film or other suitable material. The rashers shall be readily separable one from the other.

#### **8.3.5 Appearance**

The product shall be of attractive appearance and colour, and shall, when determined in accordance with 11.5, have a meat-to-fat ratio of at least 3:1 for bacon and at least 7:1 for shoulder of pork, and shall be free from seed, bruises, rust, discoloration, unsightly pieces of skin and excessive cartilage.

#### **8.3.6 Fill of container**

The container shall be filled as full as is practicable.

Table 2 — Composition of particular products

1	2
Product category	Requirements
Products that contain beef, and vegetables (or fruit) or cereal or both, with or without packing medium	When determined in accordance with 11.4, the drained mass of meat shall be at least 25 % of the d.n.m., except in the case of a product that consists of minced meat and vegetables or cereal such as spaghetti bolognese, where the lean meat content, determined in accordance with 12.3, shall be at least 25 %.
Products that contain mutton, including mutton-on-the-bone, or game-on-the-bone or similar packs, and vegetables (or fruit) or cereal or both, with or without packing medium	In the case of mutton products other than mutton-on-the-bone, at least 25 % of the d.n.m. shall be mutton (without bone), as determined in accordance with 11.4. Where the meat is mutton-on-the-bone or game-on-the-bone, at least 30 % of the d.n.m. shall be meat-on-the-bone. The bone-to-meat ratio, determined by weighing, shall not exceed 1:4. Free bone, especially chips, splinters or sharp pieces of bone, shall not be present.
Products that contain pork and vegetables or cereal or both, with or without packing medium	When the drained mass is determined in accordance with 11.4, at least 25 % of the d.n.m. shall be pork with a meat-to-fat ratio (see 11.5) of at least 3:1.
Products that contain meat balls, and vegetable(s) (or fruit) or cereal or both, sausages and vegetable(s) (or fruit) or cereal or both, and similar packs, with or without packing medium	When determined in accordance with 11.4, the drained mass of the units of meat shall be at least 25 % of the d.n.m.
Products that contain steak or edible offal or both, and onion, with or without packing medium, or formed patties or meat balls and onion, with or without packing medium	When the drained mass of ingredients is determined in accordance with 11.4, at least 50 % of the d.n.m. shall be steak or edible offal or both, as relevant, or patties or meat balls, and at least 10 % of the d.n.m. shall be onion.
Products that contain liver or other edible offal or both, and vegetable(s) or fruit (other than onion alone) or cereal or both, with or without packing medium	When the drained mass of the ingredients is determined in accordance with 11.4, at least 25 % of the d.n.m. shall be liver or other edible offal or both, as relevant.
Products that contain oxtail and vegetable(s) (or fruit) or cereal or both, with or without packing medium	When determined in accordance with 11.4, the drained mass of oxtail with bone shall be at least 25 % of the d.n.m..
Steak and kidney pie, chicken and ham pudding, steak and ham pudding, and similar packs	When the drained mass of ingredients is determined in accordance with 11.4, at least 35 % of the d.n.m. shall be meat or meat plus edible offal. Where the name of an edible offal or minor meat ingredient appears in the name of the product, that edible offal or minor meat ingredient shall be at least 7 % of the d.n.m.
Puddings that contain meat of a specific sort, and vegetable(s) (or fruit) or cereal or both, with or without a minor meat or edible offal ingredient, or puddings that contain edible offal and vegetable(s) (or fruit) or cereal or both, and similar packs	When the drained mass of ingredients is determined in accordance with 11.4, at least 25 % of the d.n.m. shall be meat or edible offal or both, as relevant, and, where the name of a minor edible offal or minor meat ingredient appears in the name of the product, that minor edible offal or minor meat ingredient shall be at least 5 % of the d.n.m. The vegetable (or fruit) content or the cereal content or the vegetable (or fruit) and cereal content, as relevant, of the part of the product within the pie crust shall be at least 15 % of the d.n.m.
Products that contain meat (cured or uncured) and potato or vegetable(s) (or fruit) or cereal or both, as a solid pack	When determined in accordance with 12.3, the actual lean meat content shall be at least 35 %. The appearance of the product shall clearly and prominently reflect the presence of the meat ingredient in accordance with this requirement.

## 8.4 Corned mutton

### 8.4.1 Preparation

Corned mutton shall be adequately cured, and shall be prepared as a solid pack of mutton.

#### 8.4.2 Meat

The meat used shall be obtained only from the skeletal musculature of sheep, and shall not include meat from the head, the masseter muscles excepted, or any offal other than skirt (diaphragm). Mechanically recovered meat shall not be used. The meat shall be well trimmed until free from perceptible sinews, tendons and other tough connective tissue. Thin flank and skirt shall, if used, be well trimmed and such that the connective tissue content of the end product does not detract from its appearance. The actual lean meat content (see 3.2), determined in accordance with 12.3, shall be at least 108 %. (See also 14.2.2.4 and 14.2.2.5.)

#### 8.4.3 Fat origin

The product shall not contain any intestinal or kidney fat, and only fat of ovine origin shall be permitted. (See also 6.3 and 14.2.2.4.)

#### 8.4.4 Fat content

The fat content, determined in accordance with 12.4, shall not exceed 25 % by mass.

#### 8.4.5 Natural binder

If used, not more than 5 % by mass of natural binder shall be added to the product (see 6.21). Only natural binder of ovine origin is permitted. (See also 14.2.2.4.)

#### 8.4.6 Salt

In the preparation of the product, salt may be added to give a concentration of total chlorides, determined in accordance with 12.6 and expressed as sodium chloride, of not more than 3 % by mass.

#### 8.4.7 Gelatine, agar-agar and carboxymethyl cellulose

The product may contain added gelatine, agar-agar or carboxymethyl cellulose and, in the case of the last two, not more than 1.0 % by mass and 0.5 % by mass, respectively, may be added to the product.

#### 8.4.8 Phosphates

No phosphates shall have been added to the product.

#### 8.4.9 Appearance, colour and texture

The product shall be of attractive appearance and shall have an acceptably uniform colour and a uniform firm coarse meat texture, both characteristic of this type of product. The original muscle structure shall be predominantly retained.

There shall be no excessive exudation of gelatinous matter or moisture. When determined in accordance with 11.6, exuded fat, if any, shall not exceed 7 % of the d.n.m. The exuded fat shall be distributed in a reasonably even layer around the entire product surface and it shall not be hard at ambient temperature. Internal fat shall be evenly distributed in the product; no lumps of fat shall be present. The product shall be sliceable at a product temperature of between 10°C and 15 °C. The product shall not stick to the sides of the container and it shall be free from large surface cavities and discoloration.

### 8.5 Corned beef

#### 8.5.1 Preparation

Corned beef shall be adequately cured, and shall be prepared as a solid pack of beef.

**8.5.2 Meat**

The meat used shall be obtained only from the skeletal musculature of bovines, and shall not include meat from the head, the masseter muscles excepted, or any offal other than skirt (diaphragm). Mechanically recovered meat shall not be used. The meat shall be well trimmed until free from perceptible sinews, tendons and other tough connective tissue. Thin flank and skirt shall, if used, be well trimmed and such that the connective tissue content of the end product does not detract from its appearance. The actual lean meat content (see 3.2), determined in accordance with 12.3, shall be at least 108 %. (See also 14.2.2.4 and 14.2.2.5.)

**8.5.3 Fat origin**

The product shall not contain any intestinal or kidney fat, and only fat of bovine origin shall be permitted. (See also 6.3 and 14.2.2.4.)

**8.5.4 Fat content**

Corned beef shall only be labelled as one of the following:

- a) "Corned beef without further qualification, in which case the fat content shall not exceed 20 % on chemical analysis, determined in accordance with 12.4;
- b) "Lean corned beef or "Lean-cut corned beef, in which case the fat content shall not exceed 15 % on chemical analysis, determined in accordance with 12.4; or
- c) "Special lean corned beef, "Special lean-cut corned beef, "Extra lean corned beef, or "Extra lean-cut corned beef, in which case the fat content shall not exceed 10 % on chemical analysis, determined in accordance with 12.4.

Words that qualify the title shall be in accordance with the relevant requirements.

**8.5.5 Natural binder**

If used, not more than 5 % by mass of natural binder shall be added to the product (see 6.21). Only natural binder of bovine origin is permitted. (See 14.2.2.4.)

**8.5.6 Salt**

In the preparation of the product, salt may be added to give a concentration of total chlorides, determined in accordance with 12.6 and expressed as sodium chloride, of not more than 3 % by mass.

**8.5.7 Gelatine, agar-agar and carboxymethyl cellulose**

The product may contain added gelatine, agar-agar or carboxymethyl cellulose and, in the case of the last two, not more than 1.0 % by mass and 0.5 % by mass, respectively, may be added to the product.

**8.5.8 Phosphates**

No phosphates shall have been added to the product.

**8.5.9 Appearance, colour and texture**

The product shall be of attractive appearance and shall have an acceptably uniform colour and a uniform firm texture, both characteristic of this type of product. The original muscle structure shall be retained.

There shall be no excessive exudation of gelatinous matter or moisture. When determined in

accordance with 11.6, exuded fat, if any, shall not exceed 7 % of the d.n.m. The exuded fat shall be distributed in a reasonably even layer around the entire product surface and it shall not be hard at ambient temperature. Internal fat shall be evenly distributed in the product; no lumps of fat shall be present. The product shall be sliceable at a product temperature of between 10 °C and 15 °C. The product shall not stick to the sides of the container and it shall be free from large surface cavities and discoloration.

## **8.6 Corned beef with cereal**

### **8.6.1 Preparation**

Corned beef with cereal shall be adequately cured, and prepared as a solid pack of beef containing starchy (farinaceous) material to the extent of not more than 6 % by mass, determined in accordance with 12.5 and calculated as crude starch.

### **8.6.2 Meat**

The requirements given in 8.5.2 shall apply, but the actual lean meat content (see 3.2), determined in accordance with 12.3, shall be at least 80 % by mass.

### **8.6.3 Natural binder**

The requirements given in 8.5.5 shall apply.

### **8.6.4 Fat origin**

The product shall not contain any intestinal or kidney fat and only fat of bovine origin is permitted. (See also 6.3 and 14.2.2.4.)

### **8.6.5 Fat content**

When determined in accordance with 12.4, the fat content shall not exceed 20 % by mass.

### **8.6.6 Salt**

The requirements given in 8.5.6 shall apply.

### **8.6.7 Agar-agar**

The product shall not contain agar-agar.

### **8.6.8 Gelatine**

Not more than 1 % by mass of gelatine may be added to the product.

### **8.6.9 Phosphates**

No phosphates shall have been added to the product.

### **8.6.10 Appearance, colour and texture**

The product shall be of attractive appearance and shall have an acceptably uniform colour and a coarse texture, both characteristic of this type of product. It shall not have a close, springy texture. There shall be no significant amount of finely chopped and finely minced meat or emulsified material present. The original muscle structure shall still be recognizable. The product shall be readily sliceable at a product temperature of between 10 °C and 15 °C. When determined in accordance with 11.6, exuded fat, if any, shall not exceed 10 % of the d.n.m. The exuded fat shall be distributed in a reasonably even layer around the product surface and it shall not be hard at ambient temperature. In addition, other exuded material, determined in accordance with 11.6, shall not exceed 5 % of the d.n.m. Internal fat shall be evenly distributed in the product. No lumps of fat or lumps of cereal shall

be present. The product shall not stick to the sides of the container and it shall be free from large surface cavities and discoloration.

#### **8.6.11 Labelling**

The product shall be labelled, without further qualification of the title, as one of the following:

- a) "Corned beef with cereal", in which case all the words shall appear in type of the same size and prominence and in a colour that affords a distinct contrast to the background colour of the label; or
- b) "Corned beef containing 6 % cereal" or "Corned beef — contains 6 % cereal", in which case the qualifying words shall appear immediately below "Corned beef", in plain type, of minimum height 2.5 mm, and of at least half the size of that used for "Corned beef", and in a colour that affords a distinct contrast to the background colour of the label.

### **8.7 Corned meat**

#### **8.7.1 Preparation**

Corned meat shall be adequately cured and shall be prepared as a solid pack of meat, with or without permitted edible offal.

#### **8.7.2 Meat**

The meat used shall be obtained from the skeletal musculature of food animals. Mechanically recovered meat shall not be used. No intestinal or kidney fat shall be used. The meat shall be well trimmed until free from perceptible sinews, tendons and other tough connective tissue. The actual lean meat content (see 3.2), determined in accordance with 12.3, shall be at least 60 %. (See 14.2.2.5.)

#### **8.7.3 Permitted edible offal**

Only the following edible offal may be used: hearts, tongues, kidneys and tripe. None of these shall comprise more than 5 % by mass. Where they are used in combination, they shall not exceed 10 % by mass. Their presence shall be declared in the ingredients panel of the label (see 14.2.2.5). (See also 6.2.)

#### **8.7.4 Fat content**

When determined in accordance with 12.4, the fat content shall not exceed 25 % by mass.

#### **8.7.5 Natural binder**

Not more than 10 % by mass or, where edible offal is used, not more than 5 % by mass of natural binder shall be added to the product. (See 6.21 and 14.2.2.5.)

#### **8.7.6 Salt**

In the preparation of the product, salt may be added to give a concentration of total chlorides, determined in accordance with 12.6 and expressed as sodium chloride, of not more than 3 % by mass.

#### **8.7.7 Gelatine or agar-agar**

The product may contain added gelatine or agar-agar and, in the case of the latter, not more than 1 % by mass shall be added to the product.

#### **8.7.8 Phosphates**

The product may contain added phosphates (see 7.8).

### 8.7.9 Appearance, colour and texture

The product shall be of attractive appearance and shall have an acceptably uniform colour and texture, both characteristic of this type of product. It may be fine in texture, but shall not have a close, springy texture and shall not be soggy or doughy when cooled to between 10 °C and 15 °C. Emulsified matter shall not be perceptible. When determined in accordance with 11.6, exuded fat, if any, shall not exceed 12 % of the d.n.m. The exuded fat shall be distributed in a reasonably even layer around the product surface and shall not be hard at ambient temperature. In addition, other exuded material, determined in accordance with 11.6, shall not exceed 5 % of the d.n.m. and shall set at a temperature of between 10 °C and 15 °C. Internal fat shall be evenly distributed in the product. No lumps of fat or lumps of cereal shall be present. The product shall not stick to the sides of the container and it shall be free from large surface cavities and discoloration.

### 8.7.10 Labelling

**8.7.10.1** Where meat other than beef, pork, mutton or goat's meat is used, the kinds of meat present shall be disclosed in the product name, and, in all cases, the kinds of meat used shall be declared in the ingredients panel of the label if they do not appear in the product name. Where fat of other origin than the kind(s) of animal(s) declared on the label is used, the kind(s) of fat origin shall also be declared (see 14.2.2.5).

**8.7.10.2** Subject to 8.7.10.1, corned meat shall be labelled as "Corned meat", without further qualification.

### 8.8 Corned meat with cereal

This product shall comply with the requirements for corned meat (see 8.7), subject to the following exceptions:

- a) it may contain starchy (farinaceous) material of not more than 6 % by mass when determined in accordance with 12.5 and calculated as crude starch;
- b) it may contain added natural binder of not more than 8 % by mass; and
- c) subject to 8.7.10.1, corned meat with cereal shall be labelled without further qualification, as follows:
  - 1) "Corned meat with cereal", in which case all the words shall appear in type of the same size and prominence and in a colour that affords a distinct contrast to the background colour of the label; or
  - 2) "Corned meat containing 6 % cereal" or "Corned meat — contains 6 % cereal", in which case the qualifying words shall appear immediately below "Corned meat", in plain type, of minimum height 2,5 mm and of at least half the size of that used for "Corned meat", and in a colour that affords a distinct contrast to the background colour of the label.

### 8.9 Ham, cured shoulder of pork, and cured solid pressed beef

#### 8.9.1 Ham

Ham shall be prepared from the ham (gammon) of a pig and shall be adequately cured and canned, and either pasteurized or commercially sterilized. This product shall have a meat-to-fat ratio, determined in accordance with 11.5, of at least 9:1. The fat on the outside of the ham shall be fairly evenly distributed. In the case of hams labelled as defatted ham, all surface fat shall, as far as is practicable, be trimmed off.

#### 8.9.2 Cured shoulder of pork

Cured shoulder of pork shall be prepared from the shoulder of a pig and shall be adequately cured and canned, and either pasteurized or commercially sterilized. This product shall have a meat-to-fat ratio, determined in accordance with 11.5, of at least 7: 1. The fat on the outside of the product shall be fairly evenly distributed. The description of this product shall not include the word "Ham", and, in the description, all the words used in the title shall appear in plain type of the same size and

prominence.

**8.9.3 Cured solid pressed beef**

Cured solid pressed beef shall be prepared from skeletal musculature beef and shall be adequately cured and canned, and either pasteurized or commercially sterilized. It shall be free from excessive exuded fat and moisture.

**8.9.4 Meat**

Meat used in the preparation of ham and cured shoulder of pork shall be derived from the carcasses of gilts or barrows up to baconer stage. The carcasses of sows and boars exceeding the age of six months shall not be used. Meat that is bruised, soft or oily shall not be used. Frozen meat shall have been stored at a temperature of -18 °C or lower. Soya and other non-meat proteinaceous materials shall not be used. After all gelatinous material or other jelled materials have been removed from the surface of the contents, the product shall have an actual lean meat content of at least 80 % by mass, determined in accordance with 12.3. (See also 14.2.2.4.)

**8.9.5 Phosphates**

The product may contain added phosphates (see 7.8).

**8.9.6 Curing**

The product shall be adequately cured and, where necessary, shall be adequately cleaned after curing and before packing.

**8.9.7 Smoking**

The product may be either smoked or unsmoked (see 14.2.2.1.3).

**8.9.8 Salt**

In the preparation of the product, salt may be added to give a concentration of total chlorides, determined in accordance with 12.6 and expressed as sodium chloride, of not more than 3 % by mass.

**8.9.9 Trimming and packing**

The product shall be adequately trimmed and shall be free from bone. Whether the product is manufactured from one or more pieces, it shall be compact and shall permit slicing without breaking into pieces.

Gammon may be packed with rind but only if the rind is intact, sliceable and not excessive in quantity. Shoulder may not be packed with rind. Gelatine or agar-agar may be used to solidify the juices, provided that, in the case of agar-agar, the content does not exceed 2 %. The juices in the container shall be a gel at a product temperature of 20 °C or lower.

**8.9.10 Appearance and texture**

Upon removal from the container, the product shall have essentially the same shape as that of the container and shall be as free as is practicable from surface cavities that significantly affect its appearance. The product shall be free from bruises, blood spots, discoloration, surface contamination and other forms of blemish. The original muscular structure shall be retained. Ham and cured shoulder of pork products shall not have a "chopped meat" texture. The texture of the product shall not be emulsified. Fat shall be evenly distributed in the product. The manufacturing process shall be such as to ensure that the product has a cured colour and a texture that are characteristic. The product shall be sliceable at a product temperature of 20 °C or lower.

**8.9.11 Freedom from defects**

The product shall be free from hair follicles, loose fat, loose rind, gristle, cartilage, superficial glands and tough sinews. Poisonous and deleterious substances, including solder and flux, shall not be present. The product shall be free from scorched or burnt portions and the container shall be free from visible internal corrosion that could affect the product adversely.

**8.9.12 Sliceable mass**

The mass of the product, freed from adhering jelled materials and loose fat, and other unattached material from the surface of the contents shall be at least 80 % of the d.n.m.

**8.9.13 Fill of container**

The container shall be filled as full as is practicable.

**8.9.14 Pasteurized products**

Pasteurized products shall be stored under refrigeration at a temperature not exceeding 4 .C or at such lower temperature as might be required (see 14.2.1 (e)).

**8.10 Edible lard****8.10.1 Preparation**

Edible lard shall be prepared by heat-rendering the fresh tissue fat of pigs that are in good health at the time of slaughter. Reprocessed lard or pressings from crackling shall not be included, and the lard shall be free from flesh, fibrous tissue and crackling.

**8.10.2 Rancidity**

Freedom of the product from any odour or taste of rancidity shall be ensured by the method of processing.

**8.10.3 Foreign fat**

The rendered fat of any animal other than pig and any other foreign fat or oil shall not be present in the product.

**8.10.4 Fill of container**

Subject to the requirements of the regulations under the Trade Metrology Act, 1973 (Act 77 of 1973), the container shall be filled as full as is practicable.

**8.10.5 Salt (sodium chloride)**

Sodium chloride shall not be added to the product.

**8.10.6 Physical and chemical requirements of the product****8.10.6.1 Moisture**

The moisture content of the lard, determined in accordance with 12.7, shall not exceed 0,25 % by mass.

**8.10.6.2 Iodine value (according to Wijs)**

The iodine value, determined in accordance with 12.9, shall be within the range 52 to 77.

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### 8.10.6.3 Free fatty acids

The free fatty acid content, determined in accordance with 12.10, and calculated as oleic acid, shall not exceed 0.6 % by mass.

### 8.10.6.4 Saponification value

The saponification value, determined in accordance with 12.11, shall be within the range 192 mg to 202 mg KOH/g.

### 8.10.6.5 Melting point

The melting point, determined in accordance with 12.12, shall be within the range 25 °C to 46 °C.

### 8.10.6.6 Refractive index

The refractive index, determined in accordance with 12.13 at a product temperature of 60 °C, shall be within the range 1.451 0 to 1.4535.

## 8.11 Edible beef dripping

### 8.11.1 Preparation

Edible beef dripping shall be prepared by heat-rendering the fresh fat, exclusive of intestinal fat, of beef from animals in good health at the time of slaughter. Flesh and fibrous tissue shall be removed.

### 8.11.2 Rancidity

Freedom of the product from any odour or taste of rancidity shall be ensured by the method of processing.

### 8.11.3 Foreign fat

The rendered fat of any animal other than the bovine and any other foreign fat or oil shall not be present in the product.

### 8.11.4 Fill of container

Subject to legal metrology requirements, the container shall be filled as full as is practicable.

### 8.11.5 Salt (sodium chloride)

Sodium chloride shall not be added to the product.

### 8.11.6 Physical and chemical requirements of the product

#### 8.11.6.1 Moisture

The moisture content of the dripping, determined in accordance with 12.7, shall not exceed 0.25 % by mass.

#### 8.11.6.2 Iodine value (according to Wijs)

The iodine value, determined in accordance with 12.9, shall be within the range 35 to 48.

#### 8.11.6.3 Free fatty acids

The free fatty acid content, determined in accordance with 12.10 and calculated as oleic acid, shall not exceed 0.75 % by mass.

**8.11.6.4 Saponification value**

The saponification value, determined in accordance with 12.11, shall be within the range 193 mg to 205 mg KOH/g.

**8.11.6.5 Melting point**

The melting point, determined in accordance with 12.12, shall be within the range 40 °C to 46 °C.

**8.11.6.6 Refractive index**

The refractive index, determined in accordance with 12.13 at a product temperature of 40 °C, shall be within the range 1.4566 to 1.4587.

**8.12 Meat rolls (Meat loaves)****8.12.1 Preparation**

Meat rolls (meat loaves) shall be prepared from chopped or comminuted meat of bovines or pork. Any other meat used shall be declared on the main panel of the label. Permitted edible offal, seasoning and flavouring substances, water, fat (see 6.3), starchy (farinaceous) materials (see 6.15), phosphates, milk powder, eggs and other acceptable ingredients may be added. (See also 14.2.2.4 and 14.2.2.5.)

**8.12.2 Natural binder**

Not more than 5 % by mass of natural binder may be added to the product. The nature of the natural binder shall be in accordance with the nature of the product: binder derived from pork shall not be used in a pure beef product nor shall binder derived from beef be used in a pure pork product. (See 6.21 and 14.2.2.4 and 14.2.2.5.)

**8.12.3 Permitted edible offal**

The product may contain the following edible offal: heart, liver, kidney and tongue (see 6.2 and 8.12.4). The use of blood shall be limited to the preparation of blood sausage or blood roll. (See also 14.2.2.4 and 14.2.2.5.)

**8.12.4 Composition requirements****8.12.4.1 Meat rolls (loaves) other than liver rolls**

Meat rolls (loaves) other than liver rolls shall comply with the following requirements:

- a) the actual total meat content (see 3.3) of the product, determined in accordance with 12.3 and 12.4, shall be at least 75 %, except that corned beef roll (loaf) shall have an actual lean meat content (see 3.2) of at least 80 %;
- b) the fat content of the roll (loaf), determined in accordance with 12.4, shall not exceed 35 % of the actual total meat content, except that in corned beef roll (loaf), the fat content of the roll shall not exceed 30 % of the actual total meat content;
- c) the starchy (farinaceous) material, determined in accordance with 12.5 and calculated as crude starch, shall not exceed 6 % by mass;
- d) corned beef roll (loaf) shall not contain heart, liver, kidney or tongue; and
- e) in products other than corned beef roll (loaf), not more than 8 % by mass may consist of heart, liver, kidney or tongue or any mixture of these, provided that the presence of such edible offal is declared in the ingredients panel of the label (see 14.2.2.4 and 14.2.2.5).

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### 8.12.4.2 Liver roll (loaf)

Liver rolls (loaves) shall comply with the following requirements:

- a) the actual total meat content (see 3.3), determined in accordance with 12.3 and 12.4, shall be at least 70 %;
- b) the liver content shall be at least 25 % by mass;
- c) the fat content of the product, determined in accordance with 12.4, shall not exceed 40 % of the actual total meat content;
- d) the starch content, determined in accordance with 12.5 and calculated as crude starch, shall not exceed 6 % by mass; and
- e) not more than 10 % by mass may consist of heart, kidney or tongue or any mixture of these, provided that the presence of such edible offal is declared in the ingredients panel of the label (see 14.2.2.4 and 14.2.2.5).

### 8.12.4.3 Meat rolls (loaves) with garnish

Where a product contains garnish, the specified meat content requirements shall be applicable to the meat constituent.

### 8.12.5 Curing salts

Corned beef roll (loaf) shall be adequately cured. Other products may contain curing salts (see 7.7).

### 8.12.6 Phosphates

The product may contain added phosphates (see 7.8).

### 8.12.7 Agar-agar

The agar-agar content shall not exceed 0.2 % by mass.

### 8.12.8 Appearance and texture

Discoloration that detracts from the appearance of the product shall not be present. The product shall not stick to the inside surfaces of the container. The exterior surface of the product, after the product has been removed from the container, shall be free from unevenness that detracts from its appearance. Exuded material, when determined in accordance with 11.6, shall not exceed 3 % of the d.n.m. The product shall be readily sliceable at a product temperature of 20 °C or lower. Except in the case of liver rolls, the product shall not have a doughy, soggy or pasty texture. The product shall be free from grittiness, cavities, perceptible sinews, tendons or other tough connective tissue.

### 8.12.9 Flavour

The product shall have a characteristic meaty flavour and not a predominantly spicy or non-meaty flavour, and shall not be excessively salty.

## 8.13 Poultry

### 8.13.1 Preparation

Poultry shall be prepared from chicken, duck, goose, turkey or game birds (see 14.2.2.4 and 14.2.2.5) and, subject to 8.13.3, shall be packed as one of the following:

- a) Flesh only;

- b) Pressed meat;
- c) dressed poultry; or
- d) whole poultry

Poultry packed as flesh only, shall be free from bones.

Poultry packed as pressed meat, shall have a flavour characteristic of poultry, shall not have a soggy texture, and shall be sliceable at a product temperature of 20 °C or lower. No surface cavities or discoloration shall be present. After removal from the container, the product shall have essentially the same shape as that of the container. Colour variation shall not be present in the product.

All packs shall be free from arteries and tough tendon tissues, except that, in the case of whole poultry, the two main arteries that lead to the shoulders may be present and also those tendon tissues that, because of the nature of the pack, cannot be removed. Only birds that are free from deformities shall be packed as whole poultry. Edible offal may be included, provided that the product is so labelled as to disclose its true nature.

#### 8.13.2 Trimming

The product shall be cleanly trimmed and shall be free from bruised and discoloured portions of flesh.

#### 8.13.3 Packing

The product shall be packed in one of the following media:

- a) a jellied medium that may, to assist in the formation of a firm jelly, contain gelatine or agar-agar, the latter not exceeding 1 % by mass; the jellied medium shall be a gel at a product temperature of 20 °C or lower;
- b) a suitable sauce or meat juice medium;
- c) poultry fat;
- d) lard, that shall only be used for whole poultry; or
- e) with sauces or dressings, and with or without vegetables (or fruit) or cereal or both.

#### 8.13.4 Drained mass and percentage of flesh

##### 8.13.4.1 Packs without cereal and vegetables (or fruit)

Unless the product is packed in a prepared sauce medium or in chicken broth, the drained mass, determined in accordance with 11.4 and expressed as a percentage of the d.n.m., shall be as follows:

- a) flesh only packs: at least 70 %;
- b) dissected poultry (see 8.13.6): at least 65 %;
- c) whole poultry packs: at least 55 %; and
- d) canned liver and canned heart packs: at least 70 %.

Where the product is packed in a prepared sauce medium or in chicken broth, the drained mass shall be at least 55 % of the d.n.m.

##### 8.13.4.2 Packs with vegetables (or fruit) or cereal or both

The drained mass, determined in accordance with 11.4, shall be at least 55 % of the d.n.m. The mass

of flesh in a pack that is bone-free shall be at least 25 % of the d.n.m. In a pack that contains dissected poultry, the mass of flesh plus bone shall be at least 30 % of the d.n.m. and the ratio of bone to flesh shall not exceed 1 :4. No free bone shall be present.

#### **8.13.5 Pressed meat packs**

In a pressed meat pack, the actual lean meat content (see 3.2), determined in accordance with 12.3, shall be at least 80 %.

#### **8.13.6 Dissected poultry packs**

In a dissected poultry pack, the constituent parts present in the pack shall be in the same proportions as in whole poultry. Constituent parts may be packed separately, provided that the product is so labelled as to disclose its true nature. The ratio of bone to flesh shall not exceed 1:4. No free bone shall be present. The drained mass shall comply with the requirements for a dissected poultry pack given in 8.13.4.1 or 8.13.4.2, as relevant.

#### **8.13.7 Freedom from defects**

Feathers, including pin feathers, shall not be present in the product. In the case of poultry packed on the bone, splinters or grit of bone or sharp bones shall not be present.

#### **8.13.8 Texture**

The meat or edible offal and, where present, the vegetables and fruit, shall have a firm but tender texture. Chicken pie filling shall contain an acceptable proportion of visible muscle meat without bone, and shall have an acceptably viscous consistency.

### **8.14 Sausages**

#### **8.14.1 Preparation**

Sausages shall be prepared from minced meat, with or without permitted edible offal. (See 14.2.2.4 and 14.2.2.5.) Seasoning and flavouring substances, water, fat, starchy (farinaceous) material, phosphates (see 7.8), milk powder (see 6.17), eggs and other acceptable ingredients may be added. Mechanically recovered meat shall not be used. Sausages shall be filled into casings with or without subsequent treatment or shall be otherwise formed into shape.

#### **8.14.2 Natural binder**

Natural binder shall not exceed 8 % by mass of the total sample contents. The nature of the natural binder used shall be in accordance with the nature of the product: binder derived from pork shall not be used in a pure beef product nor shall binder derived from beef be used in a pure pork product. (See 6.21, 14.2.2.4 and 14.2.2.5.)

#### **8.14.3 Permitted edible offal**

The product may contain only the following edible offal: heart, liver, kidney and tongue. Not more than 5 % by mass shall be heart, liver, kidney or tongue, used either singly or in combination, provided that the presence of such permitted edible offal is declared in the ingredients panel on the label (see 6.2, 14.2.2.4 and 14.2.2.5).

#### **8.14.4 Composition requirements**

**8.14.4.1** Sausages in brine, in agar-agar or in other aqueous mediums, whether gelled or not Sausages shall comply with the following requirements:

- a) the composition, determined by chemical analysis, of the canned sausages after they have been drained on a sieve of nominal aperture size 2 mm and after any adhering packing medium has been removed, shall, subject to (b) below, comply with the appropriate of the requirements

given in table 3; and

- b) if the actual total meat content (see 3.3) of the sausage, determined by chemical analysis, is less than the specified minimum of 65 %, but the product of the actual total meat content percentage and the drained mass as a percentage of the d.n.m. (see 8.14.11), divided by 100, gives a value of at least 49, the product shall be regarded as acceptable in relation to actual total meat content. (See also 8.14.11.2.)

**Table 3 — Limits for sausage contents**

1	2	3	4
Type of sausage	Minimum actual total meat content <sup>1)</sup>	Maximum fat content as a percentage of actual total meat content <sup>2)</sup>	Maximum crude starch content <sup>3)</sup>
	%	%	%
Pork sausage	65	38	5
Beef sausage	65	30	5
Mixed meat sausage	65	35	5
Vienna sausage	65	25	5
Frankfurter sausage	65	25	5

<sup>1)</sup> Determined in accordance with 12.3 and 12.4.  
<sup>2)</sup> Determined in accordance with 12.4.  
<sup>3)</sup> Determined in accordance with 12.5.

#### 8.14.4.2 Sausages in fat and sausages without packing medium

The composition of the canned sausages (determined by chemical analysis), after any fat used as packing medium has been removed by gentle scraping, shall comply with the appropriate requirements as given in Table 4.

**Table 4 — Limits for sausage contents**

1	2	3	4
Type of sausage	Minimum actual total meat content <sup>1)</sup>	Maximum fat content as a percentage of actual total meat content <sup>2)</sup>	Maximum crude starch content <sup>3)</sup>
	%	%	%
Pork sausage	75	43	5
Beef sausage	75	36	5
Mixed meat sausage	75	40	5

<sup>1)</sup> Determined in accordance with 12.3 and 12.4.  
<sup>2)</sup> Determined in accordance with 12.4.  
<sup>3)</sup> Determined in accordance with 12.5.

#### 8.14.5 Curing salts

The product may contain curing salts (see 7.7).

#### 8.14.6 Blood plasma

No blood plasma may be added to the product.

#### 8.14.7 Packing medium

Viennas may be packed in brine or in a medium of gelatine content not exceeding 5 % by mass, or of agar-agar content not exceeding 2 % by mass. Frankfurters shall be packed only in brine. In the case of viennas and similar products, the packing medium shall not be uncharacteristically dark. When sausages are packed in a brine or in a clear packing medium, the packing medium shall not be turbid or cloudy, and shall be free of sediment.

**8.14.8 Casings**

Hog, sheep and synthetic casings that are of acceptable quality, sound and in an hygienic condition shall be used. Non-edible casings shall be removed from the sausage, without damaging the sausage, before it is canned.

**8.14.9 Appearance and uniformity of size, shape and colour**

The units in anyone container shall be acceptably uniform in colour, size and shape, and the shape of the units shall not be distorted or twisted. Any splitting and end-bursting shall not be such as to detract from the appearance of the product. Skinless units shall be completely separate from one another. Cross-filling of units shall not be present. Cross-cut units shall be cleanly cut at right angles to the longitudinal axis. The units shall be free from impression marks, for example marks caused by the expansion rings of the side walls of a container.

**8.14.10 Texture**

Frankfurters, viennas and cocktail viennas shall have an evenly fine, smooth and firm filled texture. They shall be free from grittiness, gristle, pieces of natural binder, sinews, cavities or air pockets. The product shall not be soggy.

Beef sausages, pork sausages and mixed meat sausages shall have a firm filled texture. The texture may be coarse, with pieces of meat characteristic of the product. The product shall be free from grittiness and internal and surface cavities. The product shall not be soggy.

**8.14.11 Mass of sausage in pack**

**8.14.11.1** Except as allowed in terms of 8.14.11.2, the drained mass of sausage in a container, when determined in accordance with 11.4, shall be at least 75 % of the d.n.m.; except that, in the case of frankfurters, viennas and cocktail viennas packed in natural casings, and provided that the container was packed to practical capacity with sausages, the drained mass shall be at least 60 % of the d.n.m. In the latter case, where the normal drained mass of 75 % of the d.n.m. cannot be achieved, the actual mass of sausages in the container shall be declared on the label, in addition to the net mass of the contents, in plain type of the same size and prominence as that used for the net mass.

**8.14.11.2** If the drained mass of sausages packed as in 8.14.4.1 is less than the specified minimum of 75 %, but the product of the actual drained mass as a percentage of the d.n.m. and the actual percentage (see 3.3) of total meat content (determined in accordance with 12.3 and 12.4), divided by 100, gives a value of at least 49, the product shall be regarded as acceptable in relation to drained mass.

**8.14.12 Fill of container**

The container shall be filled as full as is practicable.

**8.14.13 Freedom from defects**

Staining, coarse particles of sinew and gristle, discoloration, serious rupturing of casings that detract from the normal appearance of the product, ragged ends, burst, damaged and broken units, and pieces of non-edible casings, shall not be present, and the product shall be free from exuded fat or other material that detracts from its appearance.

It shall be free from sour flavours and off-flavours. The product shall not be excessively salty. The sausages shall not adhere to one another or to the inside surfaces of the container.

**8.15 Tongue**

**8.15.1 Preparation**

**8.15.1.1** Tongue shall be prepared from the adequately cured tongues of food animals and the product shall be so labelled as to indicate the true nature of the tongue. (See 14.2.2.4 and 14.2.2.5.)

**8.15.1.2** Tongue shall be neatly trimmed and shall be free from bone, epiglottis, external fat, glands and, in the case of ox tongue, skin. Ox tongue may be longitudinally cut and may be reduced (by cutting) only at the root end, if necessary for it to fit into the container. Only one small additional loose portion of tongue may be added per container, to make up mass.

#### **8.15.2 Packing medium**

Tongue may be packed in brine or in a medium prepared from bone stock, with or without the addition of gelatine or agar-agar or both, or in a medium prepared from gelatine or agar-agar or both, or in any other acceptable medium. The agar-agar content of the packing medium shall not exceed 2 % by mass. The packing medium shall be characteristic in appearance.

#### **8.15.3 Mass of tongue in pack**

When determined in accordance with 11.4, the drained mass of the tongue in a container shall be at least 80 % of the d.n.m. for ox tongue and at least 75 % of the d.n.m. for sheep tongue.

#### **8.15.4 Appearance and texture**

The product shall be uniformly cured, and discoloration that detracts from the appearance of the product shall not be present. The product shall not be tough, soggy or damaged.

#### **8.15.5 Flavour and odour**

The product shall have a characteristic, pleasant fresh flavour and odour, and shall have no foreign flavours, foreign odours, off-flavours or off-odours.

#### **8.15.6 Salt**

In the preparation of the product, salt may be added to give a concentration of total chlorides, determined in accordance with 12.6, and expressed as sodium chloride, of not more than 3 % by mass.

### **8.16 Tongue slices**

#### **8.16.1 Preparation**

**8.16.1.1** Tongue slices shall consist of slices of the adequately cured tongue of food animals, and the product shall be so labelled as to indicate the true nature of the tongue.

**8.16.1.2** The slices shall be obtained from tongue prepared in accordance with 8.15.1.

The slices in any production lot shall be acceptably uniform in thickness and shall have a maximum thickness of 10 mm. Slices shall not be ragged or damaged.

#### **8.16.2 Packing medium**

The product may be packed in accordance with 8.15.2 or with sauce, gravy or dressing. If the product is packed in brine, slices shall be fairly uniform in size.

#### **8.16.3 Appearance and texture**

The product shall be uniformly cured and discoloration that detracts from the appearance of the product shall not be present. The product shall not be tough or soggy.

#### **8.16.4 Flavour and odour**

The product shall have a characteristic, pleasant fresh flavour and odour and shall have no foreign flavours, foreign odours, off-flavours or off-odours.

### 8.16.5 Mass of tongue in pack

When determined in accordance with 11.4, the drained mass of the tongue in a container shall, in the case of tongue slices packed in accordance with 8.15.2, be at least 70 % of the d.n.m., and in the case of tongue slices packed in sauce, gravy or dressing, at least 50 % of the d.n.m.

### 8.16.6 Salt

In the preparation of the product, salt may be added to give a concentration of total chlorides, determined in accordance with 12.6 and expressed as sodium chloride, of not more than 3 % by mass.

## 8.17 Meat paste, potted meat and chopped meat

### 8.17.1 Preparation

Meat paste and potted meat shall be prepared from meat, with or without edible offal (see 8.17.2), that has been so comminuted as to form a spreadable paste, with or without the addition of tomato, starchy (farinaceous) material, and other acceptable ingredients. Bone shall not be used in any form in the product other than in chicken pastes and similar pastes derived from whole dressed poultry, in which milled bone may be present, provided that it does not detract from the quality of the end product in any way and that bone in excess of that normally present is not used.

Chopped meat shall be adequately cured and shall be prepared as a solid pack of chopped meat without edible offal. Mechanically recovered meat shall not be used. (See 14.2.2.4 and 14.2.2.5.)

### 8.17.2 Edible offal

Where edible offal is used in the manufacture of the product, its nature shall be declared in the title of the product.

### 8.17.3 Natural binder

In potted meat and in pastes other than liver paste, natural binder may constitute not more than 5 % by mass (see 6.21, 14.2.2.4 and 14.2.2.5). It shall not be present in liver paste or in chopped meat.

### 8.17.4 Composition requirements

#### 8.17.4.1 Meat pastes

Where the product is described in the title as containing tomato, the actual total meat content (see 3.3), determined in accordance with 12.3 and 12.4, shall be at least 65 % and the fat content shall not exceed 40 % of the actual total meat content. In other cases, the actual total meat content, determined in accordance with 12.3 and 12.4, shall be at least 70 % and, except in liver paste, not more than 40 % of the actual total meat content shall be fat. Liver paste shall contain at least 25 % of liver, and not more than 45 % of the actual total meat and edible offal content, determined in accordance with 12.4, shall be fat.

Subject to the regulations under the Foodstuffs, Cosmetics and Disinfectants Act, 1972, the product may contain milk powder and eggs. The starchy (farinaceous) material, determined in accordance with 12.5 and calculated as crude starch, shall not exceed 5 % by mass. Approved colorants may be used.

#### 8.17.4.2 Potted meat

When determined in accordance with 12.3 and 12.4, the actual total meat content (see 3.3) of the product shall be at least 90 % and the fat content shall not exceed 37 % of the actual total meat content. The starchy (farinaceous) material, determined in accordance with 12.5 and calculated as crude starch, shall not exceed 5 %.

#### 8.17.4.3 Chopped meat

In the case of chopped ham, the word "chopped" on the label shall be of the same prominence (and printed next to and on the same line) as the word "ham".

When determined in accordance with 12.3 and 12.4, the actual total meat content (see 3.3) of the product shall be at least 90 % and, except in the case of a pork product, fat content shall not exceed 37 % of the actual total meat content (see 3.3). In a pork product, the fat content shall not exceed 42 % of the actual total meat content. The product may contain starchy (farinaceous) material, to the extent of not more than 5 % by mass, determined in accordance with 12.5 and calculated as crude starch. The product shall not contain non-meat proteinaceous materials. Colorants shall not be used.

#### 8.17.5 Curing salts

The product may contain curing salts (see 7.7).

#### 8.17.6 Phosphates

The product may contain added phosphates (see 7.8).

#### 8.17.7 Texture and appearance

##### 8.17.7.1 Pastes and potted meat

The texture of pastes and potted meat shall be such that they can readily be spread, and they shall be practically free from pieces of sinew, gristle, sandiness and grittiness. The contents of anyone container shall be acceptably uniform throughout and acceptably free from internal and surface cavities. The product shall be acceptably free from separated fat, starch or aqueous material. Discoloration, other than light surface discoloration owing to oxidation, shall not be present.

##### 8.17.7.2 Chopped meat

Chopped meat shall have a coarse to medium-coarse, firm, compact and chopped texture. The muscular structure shall be visible in the chopped pieces of meat. The product shall not have a predominantly emulsified texture. Fat present shall be evenly distributed throughout the product. The product shall be free from visible exuded material. Chopped meat shall have a characteristic meaty flavour and shall be free from surface and internal cavities. It shall be free from pieces of cartilage and gristle and shall be free from discoloration. The contents shall not adhere to the insides of the container.

#### 8.17.8 Percentage fill of container

When determined in accordance with 11.3, the total percentage fill of the container with product shall be at least:

- a) 90 % in the case of cans; and
- b) 85 % in the case of glass jars.

#### 8.18 Brawn

##### 8.18.1 Preparation

Brawn shall be prepared from meat that has been cured or cooked or both and shall be suitably dispersed in a gelling medium of gelatinous material derived from bovine, sheep or pig carcasses. It may be spiced. (See also 14.2.2.4 and 14.2.2.5.)

##### 8.18.2 Offal

Edible offal, other than trotters, shall not be used (see 6.2).

**8.18.3 Meat content**

When determined in accordance with 12.3 and 12.4, the actual total lean meat content (see 3.2) shall be at least 65 %.

**8.18.4 Curing salts**

The product may contain curing salts (see 7.7).

**8.18.5 Phosphates**

Phosphates shall not be added to the product.

**8.18.6 Cereal**

The product shall not contain cereal or cereal products.

**8.18.7 Colorants**

The product may contain colorants (see 6.19).

**8.18.8 Agar-agar**

The product shall not contain agar-agar.

**8.18.9 Appearance**

The product shall be attractive in appearance, and the meat particles shall be evenly dispersed throughout the product.

**8.18.10 Set**

The product shall have a firm set at 4 °C, and shall be sliceable.

**8.19 Infant foods prepared with meat**

**8.19.1 Preparation**

Food that is intended for use in the diet of infants and that includes meat shall be prepared from meat, with or without a vegetable or a mixture of vegetables and other acceptable ingredients. Mechanically recovered meat shall not be used.

**8.19.2 Offal**

The product may contain edible offal, provided that the type of edible offal is declared in the title of the product (see 6.2).

**8.19.3 Natural binder**

The product shall not contain natural binder (see 6.21, 14.2.2.4 and 14.2.2.5).

**8.19.4 Nitrite**

Nitrite or nitrate shall not be added to the product other than when bacon or ham is a constituent of the product, in which case, when determined in accordance with 12.14, it may be present to an extent not exceeding 20 mg/kg.

**8.19.5 Freedom from harmful ingredients**

Ingredients of the product shall be known to be non-injurious to infants (see 6.25).

#### 8.19.6 Stabilizers

The product may contain natural edible vegetable gums and agar-agar in a total concentration not exceeding 1 %. Artificial thickeners, phosphatic additives, chemical emulsifiers and thickeners, and anti-oxidants other than ascorbic acid, shall not be used.

#### 8.19.7 Composition

When determined in accordance with 12.3 and 12.4, the total actual meat content (see 3.3) shall be at least 10 % by mass, and the fat content shall not exceed 25 % by mass of the actual total meat content, except that, in the case of products that contain bacon, the fat content shall not exceed 30 % by mass of the actual total meat content.

#### 8.19.8 Salt content

The total chloride content, determined in accordance with 12.6 and expressed as sodium chloride, shall not exceed 1.0 % by mass.

#### 8.19.9 Fibre content

The fibre content, determined in accordance with 12.8, shall not exceed 1.5 % by mass.

### 8.20 Minced meat and minced meat in gravy

#### 8.20.1 Preparation

Minced meat and minced meat in gravy shall be prepared by canning minced meat in its own juice or in a prepared gravy. Spices and other seasoning may be present.

The meat used shall be obtained from the skeletal musculature of food animals. Mechanically recovered meat shall not be used. The product shall not contain edible offal or natural binder. (See 14.2.2.4 and 14.2.2.5.)

#### 8.20.2 Composition

When determined in accordance with 12.3, the actual lean meat content (see 3.2) of minced meat canned in its own juice, shall be at least 70 %. The actual lean meat content of canned minced meat in gravy and canned minced meat in gravy containing invisible onions and peppers shall be at least 60 %. The starchy (farinaceous) material shall not exceed 5 % by mass, determined in accordance with 12.5 and calculated as crude starch.

#### 8.20.3 Appearance

The product shall have a characteristic processed minced meat appearance. The texture shall be uniformly minced without containing excessively large coarse pieces but shall also not be finely ground or be emulsified or be smooth or pasty. The fibre of the meat shall be visible. Coagulated exuded fat shall not be present at ambient temperature. Excessive exuded material shall not be present.

### 8.21 Minced meat with vegetables (or fruit) or cereal or both in gravy

#### 8.21.1 Preparation

Minced meat with vegetables (and/or fruit) or cereal or both in gravy shall be prepared by canning minced meat together with one or more vegetables or fruit or a cereal or both in gravy. The meat used shall be obtained from skeletal musculature of food animals. The product shall not contain edible offal or natural binder.

#### 8.21.2 Composition

In the case of minced meat with onions or peppers, and that contains a visible quantity of onions or peppers, the actual lean meat content, determined in accordance with 12.3, shall be at least 55 %.

In the case of minced meat with vegetables (or fruit) or cereal or both, the actual lean meat content (see 3.2), determined in accordance with 12.3, shall be at least 40 %. The drained mass, determined in accordance with 11.4, of the cereal or the vegetables (or fruit) or both, shall be at least 35 % of the d.n.m.

### 8.21.3 Appearance

The appearance of minced meat shall be as given in 8.20.3. The vegetables (or fruit) or cereals or both shall be as given in 8.2.2.

## 8.22 Snails

### 8.22.1 Packing

The product may be packed in clear brine, water, or sauce. It may be spiced. The product shall be neatly packed. The container shall be filled to practical capacity, over-filling being avoided. The drained mass, determined in accordance with 11.4 and expressed as a percentage of the d.n.m., shall be at least 60 %.

### 8.22.2 Appearance, texture and colour

The product shall be attractive in appearance and characteristic in colour. The units shall not have a greyish or brownish off-colour. The units in any one container shall be reasonably uniform in colour and size. The units shall not have a ragged appearance. The product shall have a characteristic firm but soft texture, and shall not be soggy or mushy or excessively tough or dry.

### 8.22.3 Flavour and odour

The flavour and odour of the product shall be fresh and characteristic. Off-flavours and off-odours shall not be present.

### 8.22.4 Freedom from defects

The product shall be free from sand, grit, pieces of shell, dirt and other extraneous contaminants. Snail eggs shall be absent. When snails are packed in brine or in water, the packing medium shall not be turbid or cloudy and shall be free of sediment.

## 9 Containers

### 9.1 Types of container

The product shall be packed in suitable sound containers.

### 9.2 Condition of containers

The internal and external surfaces of all containers and closures shall be clean and, in the case of cans, free from corrosion, damage, evidence of detinning, delacquering, serious solder splashing or excess application of solder. If lacquered cans and lids are used, the lacquer shall be free from internal scratches or drops or splashes of lacquer, and significant scale or other imperfections, and shall be such that it will not peel off the can or lid surfaces during the processing and normal storage of the product. Can lids and jar caps shall be clean and free from corrosion and damage at the time of seaming or capping. Screw-on lids, if used, shall be tamperproof. A tamper detector shall be provided in cases where lids/caps can be removed by hand, such as with screw-on caps of jars.

All container closures shall be strongly made. Cans of diameter 99 mm or less shall not leak on vacuum leak testing under a maximum negative gauge pressure of 65 kPa, and cans of diameter exceeding 99 mm shall not leak on vacuum leak testing under a maximum negative gauge pressure of 50 kPa. Unused cans shall be immersed for 5 min in boiling water and cooled to 30 °C or lower before being tested. Used cans shall be emptied, immersed in boiling water for 60 min and dried for 6 h at 55 °C before being tested. On internal examination of the seams, cans shall not show any defect

that could result in leakage and subsequent spoilage of the product. Written records of seam examination conducted by the factory shall be kept and shall be available for scrutiny for at least 2 years after the date of production.

Empty containers and closures shall be stored, handled and conveyed in a way that prevents soiling, contamination or damage.

Containers shall be cleaned immediately before use. Containers shall be in an inverted position if the cleaning is by means of blowing out with compressed air. After having been cleaned, the containers shall be protected against risk of contamination. At the end of each production run, runways for empty containers shall be cleared of all containers immediately.

In the final product the container and closures shall be free of integrity defects that could compromise the hermetic condition of the container and closures or affect the product quality and appearance adversely.

### **9.3 Defects in cans: solder splashes**

#### **9.3.1 Major defects**

The following shall be considered as major defects:

- a) plain cans: any tightly bonded internal solder splash of dimension exceeding 4 mm or a series of tightly bonded internal solder splashes of which the combined maximum dimension exceeds 4 mm; and
- b) lacquered cans: any tightly bonded internal solder splash of dimension exceeding 2.5 mm or a series of tightly bonded internal solder splashes of which the combined maximum dimension exceeds 2.5 mm.

#### **9.3.2 Minor defects**

The following shall be considered as minor defects:

- a) plain cans: a single tightly bonded internal solder splash of dimension not exceeding 4 mm, or a series of small tightly bonded internal solder splashes of which the combined maximum dimension does not exceed 4 mm; and
- b) lacquered cans: a single tightly bonded internal solder splash of dimension not exceeding 2.5 mm, or a series of small tightly bonded internal solder splashes of which the combined maximum dimension does not exceed 2.5 mm.

#### **9.3.3 Freedom from solder splashes**

In a representative sample of at least 1 000 open-top cans of the same type and size, drawn from a consignment of these cans delivered to a meat cannery, the percentage of cans that contains minor defects shall not exceed 5.0 and the percentage of cans that contains major defects shall not exceed 0.5.

## **10 Packing and processing requirements**

### **10.1 Filling under hygienic conditions**

The product shall be filled and processed under strictly hygienic conditions, into containers that have been acceptably cleaned.

### **10.2 Processing**

**10.2.1** Filled containers of product other than pasteurized products and semi-preserved products (see 7.11) shall be exhausted, where appropriate, and hermetically sealed or processed in such a

way as to reduce the number or activity or both of viable micro-organisms to such an extent that none are detectable in the treated food by the methods given in clause 13. Containers of pasteurized products shall be exhausted, hermetically sealed, and pasteurized. If thermal processing of the product is required, it shall be carried out immediately after the filling of the containers and the sealing of lids.

**10.2.2** The filling, exhausting, sealing and heat-processing of containers shall be performed in such a way that the ends of the cans or the caps of the jars

- a) are not convex, or
- b) do not become convex under normal transport and storage conditions, and
- c) there shall be no undue delay between filling, sealing of lids and the start of heat-processing that could affect the product adversely.

**10.2.3** Proof shall be available that the time-temperature process (see 3.33) used has been scientifically ascertained to warrant a commercially sterile product. Heat penetration tests such as the "F<sub>0</sub>" value determination for the heat process used for each product and can size in each retort at the factory, shall be carried out by an accredited body. Whenever the product composition is changed or an alteration is made in the retort construction or retort controlling instruments, or type of retort trolley or baskets used or in the steam supply to the retorts, the heat penetration test shall be conducted again and the time-temperature process adjusted accordingly if necessary. Records of the findings shall be available for inspection.

**10.2.4** The time-temperature process in the case of heat-preserved products shall be conducted by adequately trained operators.

**10.2.5** The time-temperature process shall be continuous and shall ensure:

- a) the destruction of pathogenic organisms; and
- b) freedom from microbiological spoilage (see clause 13).

**10.2.6** Immediately after heat-processing, the filled containers shall be cooled as rapidly as possible to a container centre temperature not exceeding 50 °C (see 10.3).

### **10.3 Handling of sealed containers after heat-processing**

Containers, after having been removed from the retort in their baskets or trolleys, shall not be subjected to after-sterilization contamination and before being handled individually, shall be placed in a clean and enclosed area that is separated from the normal factory traffic, until they are cool and dry.

Individual containers, whether hot or cold, shall not be handled manually while wet, and hot containers, even when dry, shall not be touched by hand or handled individually. Containers shall not be handled individually or bulk-stacked before they have been cooled to an internal temperature not exceeding 50 °C (see 10.2. 6).

After the containers have cooled, they may be removed from the baskets or trolleys mechanically, provided that they are removed in such a way that the seams or seals, as relevant, of the containers are not subjected to damage.

In the case of continuous cookers and coolers, the container runways on which the containers are moved from the coolers shall be in a hygienic state and cans shall not roll on their double seams on the container runways.

### **10.4 Exterior of containers**

The containers shall be clean and shall have normal contours and cans shall be free from corrosion and shall not be deformed or have an abnormal appearance or be damaged. Cans shall not have any

visible signs of defective seams or other defects.

## 10.5 Storage

**10.5.1** Products that do not require refrigeration shall be stored, both before and after labelling and packaging, in cool, clean, dry and well-ventilated rooms used for this purpose only (see 5.2.22).

**10.5.2** Where products are required to be stored under refrigeration, the storage temperature shall not exceed 4 °C. Refrigeration rooms shall be clean and shall be hygienically maintained.

## 11 Methods of physical examination

The specific requirements of the particular product to be examined shall be consulted and applied where applicable.

### 11.1 Container

Visually examine the container externally before opening and the internal surfaces and seams after opening, and check for compliance with clauses 9 and 10.

### 11.2 Net mass of contents

**11.2.1** Determine the gross mass of the unopened container.

Then, in the case of

- a) a container that has a lid attached by a double seam, partially cut out the lid without removing the double seam or altering its height, or
- b) a glass jar, remove the lid.

**11.2.2** Determine the average vertical distance, in millimetres, from the lid level of the container to the top level of the contents by taking measurements over the surface of the contents.

**11.2.3** Where the contents are packed in a packing medium, transfer the full contents of the container to a pre-weighed, tared sieve of nominal aperture size approximately 2 mm, inclined at an angle of approximately 17° to 20°, and retain for use in 11.4. Collect the packing medium in an inspection tray for further examination against the specific requirements. Where the product is a solid or a dry pack, remove the contents from the container. Wash, dry and weigh the container, complete with lid. The difference between the gross mass (see 11.2.1) of the unopened container and the mass of the container and the lid, is the net mass of the contents.

### 11.3 Percentage fill of container

**11.3.1** In the case of a container with a lid attached by a double seam, fill the washed, dried and weighed container (see 11.2) with water at ambient temperature to a vertical distance of 5 mm below the lid level of the container.

Weigh the container thus filled and determine the mass of the water by subtracting the mass of the container without the lid.

**11.3.2** Draw off water from the filled container (see 11.3.1) to the level of the contents as determined in 11.2.2, weigh the container and the remaining water and determine the mass of the remaining water by subtracting the mass of the container without the lid.

**11.3.3** Divide the mass of the remaining water as determined in 11.3.2 by the mass of water determined in 11.3.1, and multiply by 100.

**11.3.4** In the case of a glass jar or a container with a lid attached other than by a double seam, remove the lid and proceed in accordance with 11.3.1 to 11.3.3, but fill the container to the lid level

when proceeding in accordance with 11.3.1.

**11.3.5** The result is the percentage of the total volume capacity of the container occupied by the contents.

#### **11.4 Drained mass**

**NOTE** For the purpose of determining the drained mass, maintain the container (before it is opened) for a minimum of 12 h before the test at a room temperature between 20 °C and 30 °C in order to equilibrate the contents.

##### **11.4.1 Packs other than pudding packs**

**11.4.1.1** Allow the product on the sieve (see 11.2.3) to drain for approximately 2 min from the time the contents are poured onto the sieve. If any sauce remains on the product, wash it under a gentle spray of water that has been warmed, if necessary, to a temperature of approximately 40 °C, and remove any adhering gravy or sauce, and exuded fat. Drain for approximately 2 min from the time the washing procedure has been completed. Using a paper towel, remove adhering water from the bottom of the sieve. Weigh the sieve containing the drained product. Subtract the mass of the sieve from the mass of the sieve plus the drained product. The mass of the material remaining on the sieve is the drained mass. Thereafter, separate any visible and optional ingredients such as cereals, vegetables or fruit or any edible offal ingredient that is mentioned in the product name, and proceed in accordance with 11.4.1.2, 11.4.1.3, 11.4.1.4 and 11.4.1.5, as applicable.

**11.4.1.2** In the case of products packed with vegetables, cereal or fruit, remove the vegetables, cereal or fruit from the sieve and re-weigh the sieve containing the remaining product. The mass of the material then remaining on the sieve is the drained mass of meat or edible offal or both, or of meat or edible offal or both and bone, as relevant.

**11.4.1.3** In the case of mutton-on-bone and similar packs, separate the bone present and weigh it.

**11.4.1.4** If any edible offal or minor meat ingredient is mentioned in the name of the pack, separate it and weigh it.

**11.4.1.5** If a minimum content is specified for a vegetable or a cereal, or for a combination of these (see, for example, 8.2.6 and 8.21.2), separate and weigh that ingredient.

**11.4.1.6** In the case of a product packed in a packing medium that is not in a liquid form, separate by hand, at a product temperature between 20 °C and 30 °C, the adhering packing medium and weigh the contents without the packing medium. Record the results as percentages of the d.n.m.

**11.4.1.7** Transfer the contents to an inspection tray for further examination against the specific requirements.

##### **11.4.2 Pudding packs**

**11.4.2.1** Remove the pastry from the product on the sieve (see 11.2.3) and proceed as in 11.4.1.1.

**11.4.2.2** If a minimum content is specified for a vegetable or a cereal, or for a combination of these (see, for example, 8.2.6), separate it and weigh it.

**11.4.2.3** Record the results as percentages of the d.n.m.

**11.4.2.4** Transfer the contents to an inspection tray for further examination against the specific requirements.

#### **11.5 Meat-to-fat ratio**

**11.5.1** Remove the contents from the container.

**11.5.2** Remove any packing medium, fat or exuded material(s).

**11.5.3** At ambient temperature, prise the contents apart and physically separate the visible fat from the meat. Determine the masses of the separated fat and the meat. Calculate the meat-to-fat ratio by dividing the mass of the meat by the mass of the separated fat.

## **11.6 Exuded fats and exuded material**

**11.6.1** Remove the contents from the container.

**11.6.2** At ambient temperature, physically remove the exuded fat from the surface of the contents and determine the mass of the exuded fat. Calculate the percentage of exuded fat by dividing the mass of the exuded fat by the d.n.m. of the product, and multiplying by 100.

**11.6.3** At ambient temperature, physically remove any other exuded material from the surface of the contents and determine the mass of the exuded material. Calculate the percentage of exuded material by dividing the mass of the exuded material by the d.n.m. of the product, and multiplying by 100.

## **12 Methods of chemical analysis**

### **12.1 Specific requirements and reagents**

The specific requirements for the particular product to be analysed must be consulted and applied where applicable. During the analyses, use only reagents of recognized analytical grade and use only distilled water or water of equivalent purity.

### **12.2 Preparation of sample for chemical analysis**

**12.2.1** Corned beef, corned meat, meat rolls, chopped meat, pressed meat packs and similar solid packs, minced meat products, meat pastes and potted meats

**12.2.1.1** Where a product such as ham or cured shoulder of pork is packed in a jelled packing medium, separate and remove the packing medium, scraping it off where it adheres.

**12.2.1.2** Pass the entire remaining contents of the container twice through a meat grinder.

**12.2.1.3** Mix the ground sample thoroughly, using a pestle and mortar. Store the prepared sample in a well-closed container in a refrigerator, until it is required for use.

#### **12.2.2 Sausages, meat balls and similar products**

After draining the product (see 11.4) or, in the case of sausages packed in fat or in agar-agar, after scraping off the adhering packing medium, pass the product twice through a meat grinder and then proceed as in 12.2.1.3.

#### **12.2.3 Packing medium**

Where the packing medium is required for analysis, strain it through a sieve of nominal aperture size 2 mm, mix thoroughly, transfer it to a container and store it as in 12.2.1.3.

#### **12.2.4 Fats for melting point determination**

Melt 10 g to 20 g of the fat in a small beaker and allow it to cool, stirring occasionally, until a faint turbidity appears. Stir the sample until it is homogeneous and set it aside for 24 h at 10 °C before determining the melting point.

### **12.3 Protein nitrogen, protein and lean meat contents**

Use the relevant methods of the AOAC.

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### 12.4 Fat content

Use the relevant method of the AOAC.

### 12.5 Crude starch content

Use the relevant method of the AOAC.

### 12.6 Chloride content (as sodium chloride)

Use the relevant method of the AOAC.

### 12.7 Moisture content

Use the relevant method of the AOAC.

### 12.8 Fibre content

Use the relevant method of the AOAC.

### 12.9 Iodine value (according to Wijs)

Use the relevant method of the AOAC.

### 12.10 Free fatty acids as oleic acid

Use the relevant method of the AOAC.

### 12.11 Saponification value

Use the relevant method of the AOAC.

### 12.12 Melting point

Use the relevant method of the AOAC.

### 12.13 Refractive index

Determine the refractive index at 20 °C in an Abbe type refractometer.

### 12.14 Nitrite and nitrate contents

Use the relevant method of the AOAC.

### 12.15 Phosphorus content

Use the relevant method of the AOAC.

## 13 Incubation and microbiological examination

Sufficient incubation facilities shall be available at the factory. The control over the incubation of the samples shall be under the sole authority of the national standards body or its representative.

### 13.1 Sample for incubation at 37 °C

From the lot, take at random 1 % of the production lot with a maximum of 200 cans and incubate at 37 °C for 14 d.

### 13.2 Sample for incubation at 55 °C

From the lot, take at random 0.5 % of the production lot with a maximum of 100 cans and incubate at 55 °C for 10 d.

### 13.3 Incubation of containers

#### 13.3.1 Commercially sterilized products except rendered fat, pasteurized semi-preserved and salt-preserved products

13.3.1.1 Samples incubated at 37 °C. Examine a representative sample or samples from the cans incubated at 37 °C for 14 d (see 13.1) in accordance with 13.4 for evidence of spoilage.

13.3.1.2 Samples incubated at 55 °C. Examine a representative sample or samples from the cans incubated at 55 °C for 10 d (see 13.2) in accordance with 13.4 for evidence of spoilage.

#### 13.3.2 Rendered fats and pasteurized semi-preserved and salt-preserved products

##### 13.3.2.1 Fats

Incubate the containers at 37 °C for 14 d and then examine a representative sample or samples taken, in accordance with 13.4 for evidence of spoilage.

##### 13.3.2.2 Pasteurized, semi-preserved and salt-preserved products

Examine in accordance with 13.4 for evidence of spoilage.

### 13.4 Examination for general spoilage organisms

13.4.1 Note and record all identification marks that appear on the container or label.

13.4.2 Remove the label, where applicable. Record any obvious physical defects, such as abnormal appearance of the can, rust, pinholing, dents, imperfect closure and defective side seams. Mark any defects found on the can for further physical examination after the container has been opened.

13.4.3 Use SABS SM 1257.

### 13.5 Microbiological examination of water

For the determination of the total count of viable organisms, coliform organisms and faecal coliform organisms, use the relevant method given in EAS 12.

### 13.6 Total count of viable organisms

Use ISO 4833.

### 13.7 Number of *E.coli*

Use ISO 7251.

### 13.8 Presence of viable *Salmonella* organisms

Use the relevant method given in ISO 6579.

## 14 Marking and labelling

### 14.1 Containers

Cans to be labelled shall be in a sound condition complying with 10.4. Only containers of the same size and bearing the same batch identification shall be labelled at the same time. The area and equipment used for labelling shall be kept tidy. Adequate precautions shall be exercised to prevent incorrect labelling. Before the start of any labelling operation, the area shall be cleared of any stray cans or cans that have not been approved for the specific label to be used. The handling of cans during the labelling process shall take place in such a way that the cans are not damaged or the seams subjected to undue stress.

## 14.2 Marking

### 14.2.1 Details required on each container or label

Subject to 14.6 and in addition to the markings required in terms of EAS 38, the following information shall appear in legible and indelible marking on each container or on a label securely attached to each container:

- a) the full name and physical address of the manufacturer, producer, proprietor, or controlling company or, in the case of containers packed for any other person or organization, the full name and physical address of that person or organization;
- b) the name and true description, of the contents (see also 14.2.2), including, where applicable, the nature of the medium in which the product is packed and the presence of bone that is, as such, a constituent of a product. The trade name of the product shall not be misleading to the consumer;
- c) where applicable, a statement of ingredients, including the presence, as relevant, of non-meat proteinaceous material by name, and vegetable fat or oil, in descending order of mass present in the product;
- d) where applicable, the presence of colorants in letters not less than 1.5 mm in height;
- e) where the product is required to be stored under refrigeration, the words "Perishable — keep under refrigeration at a temperature not exceeding 4°C", in a prominent position, in plain letters at least half the size of that used for the name of the product, with a minimum of 3 mm in height, except that the word "Perishable" shall be in bold type of at least 4.0 mm in height;
- f) the declared net mass of the contents;
- g) the product code, the date of canning, the batch number (if used), and the factory identification, embossed or otherwise indelibly marked on the container or, in the case of jars, on the cap or label; any mark or code used for the foregoing shall be disclosed for record purposes to the authority administering this standard;
- h) information required in terms of the relevant subsection(s) dealing with the specific product; and
- i) words indicating the country of origin where the product was produced.

### 14.2.2 True description of contents

#### 14.2.2.1 Designation of product

**14.2.2.1.1** Unless the meat or edible offal or both (as appropriate) of a product that consists of meat or edible offal or both, and of vegetables, cereal or other similar ingredient constitutes the largest single ingredient on the ingoing basis, and in the end product constitutes at least 25 % of the d.n.m., meat or edible offal or both (as appropriate) shall not appear first in the designation of the product.

**14.2.2.1.2** In a product that consists of vegetables (or fruit), cereal and other similar ingredients with meat or edible offal or both (as such or in prepared form) and that falls within the scope of this standard but does not comply with the particular requirements specified for meat or edible offal content, provided that the content of meat or edible offal or both is at least 15 % (10 % in the case of foods for infants), the presence of meat or edible offal shall be declared in the title of the product by means of descriptions such as "Y with X" or "Y containing X", where Y is the basic name of the product (for example, baked beans in tomato sauce) and X is the meat or edible offal ingredient (for example, meat balls, sausage).

**14.2.2.1.3** Products that have undergone a smoking process by exposure to generated smoke, shall be labelled "smoked X" on the main panel of the packaging material. Any addition of a smoke-flavour

that is not obtained by exposure to generated smoke, shall be declared on the main panel of the label. Smoke-flavoured products that have not undergone a process by exposure to generated smoke, shall be labelled as "smoke-flavoured" on the main panel of the packaging material. The qualifying word(s), for example "smoked", shall appear in immediate conjunction with the product name "X", in a letter size of at least half the size in which the name "X" is featured and of equal prominence and boldness.

#### 14.2.2.2 Meat pastes

If reference is made in a product name (other than liver paste, see 8.17.4.1) to one kind of meat only, at least 80 % of the total meat content (see 3.34) shall consist of the named meat.

Where, in the name of the product, two kinds of meat are referred to, the named meats shall constitute at least 80 % of the total meat content. In addition, the kind of meat named first shall constitute at least 50 % of the total meat content, and that named second at least 20 %, except that if kidney or liver is named second, the minimum requirement shall be 10 % of the total meat and edible offal content.

If three kinds of meat appear in the name of the product, the named meats shall constitute at least 80 % of the total meat content. The meat named first shall constitute at least 40 % of the total meat content, and each of the other named meats at least 15 % (except that, if kidney or liver is named second or third, the minimum requirement for each shall be 10 % of the total meat and edible offal content). The kinds of meat shall be named in descending order of contents.

For the purposes of true description of contents, cured pork may be regarded as ham.

#### 14.2.2.3 Potted meat

Where, in a product name, reference is made to one kind of meat only, at least 85 % of the total meat content (see 3.34) shall consist of the named meat.

Where, in a product name, two kinds of meat are referred to, the named meats shall constitute at least 85 % of the total meat content. In addition, the kind of meat named first shall constitute at least 50 % of the total meat content, and that named second at least 25 %.

If three kinds of meat appear in the name of the product, the named meats shall constitute at least 85 % of the total meat content. The meat named first shall constitute at least 40 % of the total meat content, and each of the other named meats at least 15 %. The kinds of meat shall be named in descending order of contents.

#### 14.2.2.4 Use of generic names

When a generic name (or names) of animal meat( s) such as beef or pork appears in the name of the product, that product shall not contain any other meat, edible offal, fat, natural binder, etc., which did not originate from the type of animal meat that appears in the name of the product.

#### 14.2.2.5 Origin of contents

The origin of edible offal or fats from types of animal other than those from which the meat used in the product is derived shall be declared on the label.

### 14.3 Labelling

Labels, lithographed cans, and applied colour lettering statements for jars shall be in accordance with the labelling requirements of this standard.

It is recommended that the authority administering this standard be consulted with regard to newly designed labels, lithographed cans and applied colour lettering statements for jars before they are taken into use.

**14.4 Attachment of labels**

Labels on containers shall be clean, neat, undamaged and securely attached at the time of dispatch from the factory. Misaligned labels, excess glue or lack of glue, or loose or pleated labels shall not be present. They shall not be superimposed on other labels that are attached to, or lithographed on, the containers. They shall not be applied by any person other than the manufacturer or by his authorized agent. Label glue shall not be hygroscopic, or liable to deteriorate during storage of the canned product or cause corrosion of the cans.

**14.5 Packages and their marking**

If the containers are packaged, the packages shall be clean, neat and unbroken, and on every package shall be printed or stencilled the number of containers in the package and their net mass and the information required by 14.2.1 (a), (b), (t), (g) and (i), and, where applicable, (e), except that the address of the manufacturer need not be the full address but shall be sufficient for identification purposes.

**14.6 Containers for export**

Provided that the requirements of the importing country are met and subject to there being no attempt to misrepresent the product, products may be exported either unlabelled, or labelled differently from the requirements of this standard. The requirements of 14.5 shall, however, apply, except that a code mark may be used in lieu of the name of the manufacturer.

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