

# Chapter 15 Meat Processing

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## 15. Introduction

Raw materials accepted for production should be free, as far as possible, from microbiological hazards, such as E. Coli O157 and Salmonella, from chemical hazards such as grease and dirt, and from physical hazards such as metal and other foreign bodies.

Temperature controls are important as bacteria can multiply quickly if meat is kept at a temperature that promotes bacterial growth. Poor hygiene will increase the potential for contamination of food, including transfer from meat to ready-to-eat products, and increase the possibility of food poisoning.

Some further processing techniques will result in a final product that the consumer will not need to cook further, and these products pose a considerably higher risk – see '15.1'. Procedures are needed to minimise the risk of these hazards causing illness in consumers.

Problem	Effect	Possible outcome
Insufficient training of staff responsible for further processing of meat	The risk of contamination of meat due to poor working premises will increase	Increase chance of microbiological cross contamination of food products by food poisoning bacteria (such as Campylobacter and Salmonella)
Inadequately cleaned equipment	Increased risk of cross-contamination between batches of meat-based products	
Failure to maintain the cold chain	Greater risk of bacteria growth on meat	
Food stored or transported under poorly cleaned or inadequate conditions	The risk of contamination of meat from pests or the environment (dust, dirt etc.) will increase	Physical contamination of food
Inadequate screening of incoming products	Failure to spot objects such as needles, metal or glass shards	Unidentified foreign objects can cause harm to food handlers and consumers; small items can be swallowed, larger items can cause physical injury

### **15.1. Ready-to-eat products**

Ready-to-eat products, such as cooked meats, dried or cured sausage, are made to be eaten without the need for further cooking (though they may need to be defrosted), and consumers may choose to cook them for a better taste or appearance.

These products can present a higher risk to consumers if there is no further heat treatment to eliminate or reduce levels of food poisoning bacteria, which can be due to contact with, for example, contaminated equipment, packaging, preparation surfaces, food handlers or other foods.

### **15.2. 'Composite' products**

The production or assembly of food containing both products of plant origin and processed products of animal origin is subject to Regulation 852/2004 but not to the additional requirements of Regulation 853/2004.

This means that the manufacture of products such as, for example, a pizza with ham and cheese, only has to comply with Regulation 852/2004, but the manufacture of ingredients that are of animal origin (the ham and the cheese) must comply with Regulation 853/2004 as well. Thus a pizza manufacturer who cooks meat before making a pizza requires approval under Regulation 853/2004. See chapter 1 'Introduction' and section 1.2 on 'Approvals'.

#### **Specific characteristics**

Ingredients can be added to processed products, for example, garlic added to sausage, peppercorns added to salami, breadcrumbs added to ham, etc. to give specific characteristics without altering the products. Unless the addition of such ingredients, including products of plant origin, substantially alters the initial product, it is not considered to be a 'composite' product.

**Approval of processing establishments** – see chapter 1 'Introduction' and section 1.2 on 'Approvals'

### **15.3. Types of mechanically separated meat (MSM)**

MSM produced using techniques that do not alter the structure of the bones used in the production of MSM should be treated as different from MSM produced using techniques that alter the structure of the bones.

MSM of the former type produced under specified conditions and of a specified composition should be permitted in meat preparations that are clearly not intended to be consumed without first undergoing heat treatment. These conditions are linked in particular to the calcium content of MSM.

## 15.4. Legal requirements for hygienic meat processing

The following sections set out the regulations that apply to the processing of meat into mince, meat preparations, mechanically separated meat and meat products.

### A. Structural and prerequisite hygiene requirements <sup>1</sup>

**L**

#### Legal requirement

#### 853/2004 Annex III Section V Production establishments: Chapter 1 points 1 - 5

Food business operators operating establishments producing minced meat, meat preparations or MSM must ensure that they:

**A1.** are constructed so as to avoid contamination of meat and products, in particular by:

(a) allowing constant progress of the operations; or

(b) ensuring separation between the different production batches.

**A2.** have rooms for the separate storage of packaged and exposed meat and products, unless stored at different times or in such a way that the packaging material and the manner of storage cannot be a source of contamination for the meat or products.

**A3.** have rooms equipped to ensure compliance with the temperature requirements laid down in Chapter III.

**A4.** have equipment for washing hands used by staff handling exposed meat and products with taps designed to prevent the spread of contamination.

**A5.** have facilities for disinfecting tools with hot water supplied at not less than 82 °C, or an alternative system having an equivalent effect.

#### A1. to A5. Compliance regarding design and layout

- Comply with the requirements for production establishments.

#### A1. to A5. Good practice

The requirements for establishments producing minced meat, meat preparations, and MSM are the same as for cutting plants. See chapter 14 on 'Cutting of meat' section A (structural requirements) particularly A2, A3, A6, A9, A10.

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<sup>1</sup> See chapter 2 on 'Design and facilities' structural requirements for all establishments.

**L**

**Legal requirement**

**852/2004 Annex II Food premises: Chapter I point 2(d)**

**A6.** The layout, design, construction, siting and size of food premises: (d) where necessary, provide suitable temperature-controlled handling and storage conditions of sufficient capacity for maintaining foodstuffs at appropriate temperatures and designed to allow those temperatures to be monitored and, where necessary, recorded.

**A6. Compliance regarding temperature control facilities**

- Provide temperature controlled handling and storage conditions of sufficient capacity, and designed to allow temperatures to be monitored and if necessary recorded.

**A6. Good practice**

Take into account the need to comply with the temperature requirements for meat, provide sufficient refrigerated capacity at every stage of production, storage and transport and the means of monitoring temperatures to be sure that chilling is adequate and that the cold chain is being maintained.

See chapter 10 on 'Temperature controls', and chapters 3 on 'Water supply', 4 on 'Maintenance', 5 on 'Cleaning' and 6 on 'Pest control' for the hygiene prerequisites for all establishments.

**L**

**Legal requirement**

**852/2004 Annex II Personal hygiene: Chapter VIII point 1**

**A7.** Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean and, where necessary, protective clothing.

**A7. Compliance regarding personal hygiene**

- Make sure that every person working in a food-handling area maintains a high degree of personal cleanliness.

**A7. Good practice**

All staff, as well as managers, officials and visitors, need to comply with the company's personal hygiene procedures, particularly hand washing and wearing of protective clothing.

See chapter 8 on 'Personal hygiene'.

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**Legal requirement**

**852/2004 Annex II Training: Chapter XII points 1 and 2**

Food business operators are to ensure:

**A8.** That food handlers are supervised and instructed and / or trained in food hygiene matters commensurate with their work activity.

**A9.** That those responsible for the development and maintenance of the required procedures based on HACCP principles, or for the operation of relevant guides, have received adequate training in the application of the HACCP principles.

**A7. to A8. Compliance regarding training, instruction and supervision**

Make sure that:

- food handlers are instructed and / or trained in food hygiene matters commensurate with their work activity
- staff responsible for the development and maintenance of the required procedures based on HACCP principles, or for the operation of relevant guides, have received adequate training in the application of the HACCP principles

**A7. to A8. Good practice**

Instruct all food handlers, including temporary staff and those who inspect raw materials, in hygienic processing skills, about the food safety hazards associated with raw meat, awareness of food safety principles especially the need for temperature controls and personal hygiene, the need to follow instructions and to report failing controls promptly.

Supervise staff as appropriate. Issue reminders if lapses occur. Keep accurate, dated individual training records to show what instruction / training has been given.

**HACCP training** – make sure that at least one person in the business has sufficient training in the application of HACCP principles to develop and maintain HACCP-based procedures or to follow guides to control the food safety hazards in the business. See chapter 9 on ‘HACCP Principles’ section A. and chapter 7 on ‘Training’.

## B. Raw materials and general processing

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### Legal requirement

#### 852/2004 Article 5 point 1

**B1.** Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles.

### B1. Compliance regarding HACCP-based procedures

- Implement and maintain a permanent procedure or procedures based on the HACCP principles.

### B1. Good practice

HACCP - based procedures are necessary to ensure that food safety hazards, including microbiological cross-contamination during processing and growth of bacteria through inadequate temperature control, is minimised. This is done by setting and applying operational limits and procedures for processing and maintenance of the cold chain (for example, during storage and transport) and, where appropriate, freezing, thawing, and thermal processing.

Set out in the HACCP plan, the procedures for controlling hazards, the limits that are to be monitored, the checks to be carried out, the corrective actions to be taken to ensure the safety of the meat and the records to be kept of those checks and actions.

See chapter 9 on 'HACCP Principles'.

**Microbiological testing** – can help validate / verify the effectiveness of HACCP-based procedures. Food safety criteria have also been set for certain products – see chapter 13 on 'Microbiological criteria'.

# L

## Legal requirement

### 852/2004 Annex II Foodstuffs: Chapter IX points 1, 2, 5, 8

**B2.** An FBO is not to accept raw materials or ingredients, other than live animals, or any other material used in processing products, if they are known to be, or might reasonably be expected to be, contaminated with parasites, pathogenic micro-organisms or toxic, decomposed or foreign substances to such an extent that, even after the FBO had hygienically applied normal sorting and / or preparatory or processing procedures, the final product would be unfit for human consumption.

**B3.** Raw materials and all ingredients stored in a food business are to be kept in appropriate conditions designed to prevent harmful deterioration and protect them from contamination.

**B4.** Raw materials, ingredients, intermediate products and finished products likely to support the reproduction of pathogenic micro-organisms or the formation of toxins are not to be kept at temperatures that might result in a risk to health.

Food businesses manufacturing, handling and wrapping processed foodstuffs are to have suitable rooms, large enough for the separate storage of raw materials from processed material and sufficient separate refrigerated storage.

**B5.** Hazardous and / or inedible substances, including animal feed, are to be adequately labelled and stored in separate and secure containers.

## B2. to B5. Compliance regarding receiving raw materials for processing

- Do not accept raw materials if they are known, or reasonably expected, to be contaminated with parasites, pathogenic micro-organisms or toxic, decomposed or foreign substances to such an extent that, even after the hygienic application of normal sorting and / or processing, the final product would be unfit for human consumption.
- Arrange for:
  - the sorting of incoming raw materials including meat
  - suitable rooms, large enough for the separate storage of raw materials from processed material
  - sufficient separate refrigerated storage
  - separate storage of exposed meat from packaged meat and packaging
  - adequate storage for inedible and hazardous materials in labelled, separate and secure containers
- Keep food premises clean and maintained in good condition, in compliance with 852/2004 Annex 1 Chapter I point 1.
- Maintain suitable ventilation as per 852/2004 Annex 1 Chapter I point 5.
- Put adequate procedures in place to control pests, in compliance with 852/2004 Annex II Chapter IX point 4.

## **B2. to B5. Good practice**

**Deliveries** – make adequate arrangements to accept deliveries of meat and other non-meat raw materials. Meat should be kept under temperature control – see ‘Refrigerated storage’ below.

**Sorting** – inspect and sort raw materials on arrival to make sure that:

- meat and other products of animal origin are sourced from approved establishments – see ‘B6. to B9.’
- all products of animal origin are correctly identified, for example, health / id marked meat – see ‘B6. to B9.’
- they meet temperature requirements
- they are not contaminated by, for example, foreign bodies parasites, pests; and
- they meet company quality specifications and have any required documentation

**Action** – take action if your company’s food safety and quality standards are not met. Depending on the problem, action may include:

- holding, for example, to await documentation
- treatment, for example, trimming otherwise fit meat of visible contamination
- divert to production of heat treated product
- disposal
- a return to the originating premises - but note that where the meat received is not fit for human consumption then it must be handled as an animal by-product; it cannot be returned to the supplier unless they are authorised to receive animal by-product

**Sampling** – if incoming raw materials are sampled for laboratory testing, and a positive release system is in place, these raw materials will need to be held until the results become available. In all cases, robust arrangements are needed so that test results can be matched to sampled products.

**Batch identification** – preserve the identity of incoming batches for stock control and traceability purposes.

**Stock rotation** – it is advisable to rotate stock to use the oldest first (FIFO – first in, first out).

**Storage** – areas and containers for storing meat and non-meat food stuffs need to be cleanable and be kept clean, well maintained and adequately ventilated so as to keep the raw materials in good condition and to minimise the risk of contamination, for example from pests. Include storage areas in company maintenance, cleaning and pest control arrangements.

**Refrigerated storage** – the hygiene regulations set maximum temperature requirements for meat – see relevant sections below. Temperature control is important to minimise the growth of microbiological organisms that may spoil food or cause food poisoning – see the ‘Introduction’ chapter.

**Separation** - keep all raw materials separately, in space or time, from processed and or packaged products. This may be done by keeping them in separate stores, or in the same store at a different time or at the same time with either a permanent barrier between them that can be cleaned and disinfected or by using an appropriately placed polythene covering to prevent air-borne cross-contamination – see 'A1. to A5.'.

**Hazardous or inedible materials** – keep meat for human consumption apart from such material. Storage containers need to be clearly labelled and secured in a way that avoids the risk of contaminating foodstuffs.

**L**

#### **Legal requirement**

##### **853/2004 Annex II Section I Identification Mark: point 4**

**B6.** Food business operators must... have in place systems and procedures to identify FBOs from whom they have received... products of animal origin.

##### **853/2004 Article 4 point 1**

**B7.** FBOs shall place products of animal origin manufactured in the Community on the market only if they have been prepared and handled exclusively in establishments:

(a) that meet the relevant requirements of Regulation 852/2004, those of Annexes II and III of this Regulation and other relevant requirements of food law; and

(b) that the competent authority has registered or, where required in accordance with paragraph 2, approved.

##### **853/2004 Article 5 points 1 and 3**

**B8.** FBOs shall not place on the market a product of animal origin handled in an establishment subject to approval... unless it has either a health mark applied in accordance with Regulation 854/2004... or an identification mark ...

**B9.** FBOs may not remove a health mark... from meat unless they cut or process it or work upon it in another manner.

#### **B6. to B9. Compliance regarding traceability**

- Keep adequate supplier records.
- Use food products that come exclusively from registered or, for products of animal origin, come from approved premises with either identification and / or health markings as appropriate.
- Health marks are not removed from meat unless it is cut or processed or worked on in another manner.

#### **B6. to B9. Good practice**

**Supply chain records** – keep details to enable product suppliers to be traced.

**Sourcing of POAO** – make sure all products of animal origin used as raw materials come only from premises with the appropriate approval. When inspecting incoming products of animal origin check that the health mark (for red meat carcasses and wholesale cuts) or identification mark appears genuine and corresponds with the source of the products. Confirm that these marks have not been tampered with or removed, except during the normal processing of meat (for example, cutting) – see chapter 16 on ‘Food traceability’.

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**Legal requirement**

**852/2004 Annex II Foodstuffs: Chapter IX point 5**

**B10.** At all stages of production, processing and distribution, food is to be protected against any contamination likely to render food unfit for human consumption, injurious to health or contaminated in such a way that it would be unreasonable to expect it to be consumed in that state

**B10. Compliance regarding meat processing**

- Make sure that at all stages of production and processing, meat is protected against any contamination likely to make it:
  - unfit for human consumption
  - injurious to health or
  - contaminated in such a way that it would be unreasonable to expect it to be consumed in that state

**B13. Good practice**

**Product flow** – the flow of raw meat awaiting processing and during processing should ensure uniform turnover of accumulated product and avoid possible cross-contamination, for example, between raw materials and ready-to-eat products.

**Non-meat ingredients** – the supply and addition of non-meat ingredients should be controlled to avoid possible microbiological, physical or chemical contamination.

**Dropped meat policy** – procedures depend on the size of the piece of meat and the extent and nature of any possible contamination. Large pieces of red meat or in-skin poultry carcasses should be trimmed immediately of visible contamination before processing is resumed. Pieces that are not suitable for trimming should be disposed of as unfit food.

**Process control** – controls for non-commercially sterile products should prevent pathogen growth and toxin production during all processing activities, for example, during fermentation, partial heat treatment, drying, maturing and curing. Process criteria may include for example:

- correct pH after fermentation
- correct time / temperature schedules during and after heating or smoking
- correct moisture / protein ratio after drying

- correct formulation and application of nitrite as a cure ingredient

If heat and / or other processing treatments are not sufficient to ensure the stability of the product, the product should be cooled to an appropriate storage temperature and in a manner that ensures product safety is not compromised as a result of germination and subsequent growth of pathogenic sporeformers product formulations, for example, distribution of antibacterial ingredients throughout cooked sausage emulsions, addition of cultures, adjustment of pH, should achieve required levels of pathogen control.

**Validated criteria** – cooked products should achieve time / internal temperatures that are validated as achieving appropriate pathogen reduction, including meeting specified performance objectives, performance criteria and microbiological criteria.

Pasteurisation values or other heat processes should be validated for all heat treated chilled products in hermetically sealed containers so as to ensure that product safety is maintained to the end of shelf life, taking into account all preservation factors that may be present.

**Dried products** – protect from environmental contamination and from re-absorption of moisture.

**Metal detection** – processes for products containing minced, comminuted or mechanically separated meat should have in-line magnets or other means of detecting contamination with metal fragments.

**Vacuum and modified atmosphere packed chilled foods** – processes such as heat treatment, pH and salt levels should be used if setting a shelf-life of more than ten days to control C. botulinum – see guidance at: [www.food.gov.uk/business-industry/manufacturers/shelf-life-storage/vacpac](http://www.food.gov.uk/business-industry/manufacturers/shelf-life-storage/vacpac).

**Technical advice** – production of meat products should not be undertaken without expert advice. Guidance is available from many sources, including:

- Campden BRI [www.campdenbri.co.uk](http://www.campdenbri.co.uk)
- Leatherhead Food Research [www.leatherheadfood.com](http://www.leatherheadfood.com)

## C. Minced meat<sup>2</sup>

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### Legal requirement

#### 853/2004 Annex III Section V Hygiene during and after production: Chapter III points 1(a-b), 2(ci-ii)

**C1.** The work on meat must be organised in such a way as to prevent or minimise contamination. To this end, food business operators must ensure in particular that the meat used is:

(a) at a temperature of not more than 4°C for poultry, 3°C for offal and 7°C for other meat; and

(b) brought into the preparation room progressively as needed.

**C2.** (c) Immediately after production, minced meat ... must be wrapped or packaged and be:

(i) chilled to an internal temperature of not more than 2°C... or

(ii) frozen to an internal temperature of not more than -18°C.

These temperature conditions must be maintained during storage and transport.

### C1. and C2. Compliance regarding minced meat operations

- Bring meat progressively into the workroom as needed, keeping it at a temperature of not more than 4°C for poultry, 3°C for offal and 7°C for other meat.
- Immediately after production, wrap or package and chill minced meat to an internal temperature of not more than 2°C, or freeze to an internal temperature of not more than -18°C, and maintain these temperatures during storage and transport.

### C1. and C2. Good practice

Minimise the opportunity for contamination and keep interruptions to the cold chain to a minimum by keeping meat packed and in chilled storage until it is to be worked on in the cutting room.

Where a combination of meat has been used the lowest temperature should be met.

See chapter 14 on 'Cutting of meat' B9 and chapter 10 on 'Temperature controls'.

Chill minced meat to no higher than 2°C and maintain it during subsequent storage and transport, or freeze it to no higher than -18°C.

<sup>2</sup> 'Minced meat' means boned meat that has been minced into fragments and contains less than 1% salt.

# L

## Legal requirement

### 853/2004 Annex III Section V Raw materials: Chapter II point 1

**C3.** The raw material used to prepare minced meat must meet the following requirements.

- (a) It must comply with the requirements for fresh meat.
- (b) It must derive from skeletal muscle, including adherent fatty tissues.
- (c) It must not derive from:
  - (i) scrap cuttings and scrap trimmings (other than whole muscle cuttings);
  - (ii) MSM;
  - (iii) Meat containing bone fragments or skin; or
  - (iv) Meat of the head with the exception of the masseters, the non-muscular part of the linea alba, the region of the carpus and the tarsus, bone scrapings and the muscles of the diaphragm (unless the serosa has been removed).

### 853/2004 Annex III Section V Hygiene during and after production: Chapter III points 2(a) and (b)

- C4.** The following requirements apply to the production of minced meat ...
- (a) Unless the competent authority authorises boning immediately before mincing, frozen or deep-frozen meat used for the preparation of minced meat ... must be boned before freezing. It may be stored only for a limited period.
  - (b) When prepared from chilled meat, minced meat must be prepared:
    - (i) in the case of poultry, within no more than 3 days of their slaughter
    - (ii) in the case of animal other than poultry, within no more than 6 days of their slaughter; or
    - (iii) within no more than 15 days from the slaughter of the animals in the case of boned, vacuum-packed beef and veal.

### C3. and C4. Compliance regarding permitted raw materials for minced meat

- Use only permitted raw materials for the manufacture of minced meat.
- (Unless the Competent Authority authorises boning immediately before mincing) bone frozen or deep-frozen meat used to make minced meat before freezing. Store it only for a limited period.
- When preparing minced meat from chilled meat, make sure that:
  - poultry is within no more than 3 days of slaughter
  - other meat is within no more than 6 days of slaughter or
  - boned, vacuum-packed beef and veal is within no more than 15 days of slaughter

### C3. and C4. Good practice

All meat used in the manufacture of minced meat should be, or come from, fresh meat that meets the legal requirements. This means the meat must have come from approved premises and be either health marked or bear an identification mark – see 'B6. to B9.'.

**Use of scrap trimmings and scrap cuttings** – EC guidance notes that, while use of offcuts (small pieces) from meat that is fit for human consumption is acceptable, scraps (waste) designated 'inedible' or 'unfit for human consumption' or whose use would not allow the microbiological criteria for mince to be achieved are not to be used.

**Other raw materials** – MSM, meat containing bone fragments or skin; meat of the head with the exception of the masseters, the non-muscular part of the linea alba, bone scrapings, the muscles of the diaphragm (unless the serosa has been removed) and meat from the region of the carpus and the tarsus (small scraps derived from the joint region) is unsuitable as a raw material for minced meat production. Shins and shanks can be used.

**Microbiological criteria** – for minced meat see chapter 13 on 'Microbiological criteria'.

**Use of frozen or deep-frozen meat** – boning can be carried out immediately before mincing if carried out hygienically. The process should be included in the HACCP plan as should the determination of the storage period for frozen meat, which is largely a quality issue See chapter 10 on 'Temperature controls' at 'B4.'. Keep appropriate records to demonstrate that those storage periods have not been exceeded and when stored meat was deboned.

**Use of chilled meat** – keep appropriate records to demonstrate compliance. The age of meat for the production of minced meat refers to date of slaughter plus a number of days. It does not apply to meat minced for use in heat treated products.

**Labelling** – see 'F'.

L

#### Legal requirement

853/2004 Annex III Section V Hygiene During & After Production:  
Chapter III point 5

C5. ... minced meat ... must not be re-frozen after thawing.

### C5. Compliance regarding re-freezing of minced meat

- Do not refreeze minced meat after thawing.

### C5. Good practice

Keep records to ensure that minced meat that has been thawed is not re-frozen. See chapter 10 on 'Temperature controls' at 'B5.'.

## D. Meat preparations<sup>3</sup>

L

### Legal requirement

**853/2004 Annex III Section V Hygiene during cutting and after production: Chapter III points 1(a-b) & 2(c i) (c ii)**

**D1.** The work on meat must be organised in such a way as to prevent or minimise contamination. To this end, food business operators must ensure in particular that the meat used is:

(a) at a temperature of not more than 4°C for poultry, 3°C for offal and 7°C for other meat; and

(b) brought into the preparation room progressively as needed.

**D2.** (c) Immediately after production, ... meat preparations must be wrapped or packaged and be:

(i) chilled to an internal temperature of not more than 4°C; or

(ii) frozen to an internal temperature of not more than -18°C.

These temperature conditions must be maintained during storage and transport.

### D1. to D2. Compliance regarding meat preparation operations

- Bring meat progressively into the workroom as needed, keeping it at a temperature of not more than 4°C for poultry, 3°C for offal and 7°C for other meat.
- Immediately after production, wrap or package and chill meat preparations to internal temperatures of no more than 4°C, or freeze to an internal temperature of not more than -18°C, and maintain these temperatures during storage and transport.

### D1. to D2. Good practice

Minimise the opportunity for contamination and keep interruptions to the cold chain to a minimum by keeping meat packed and in chilled storage until it is to be worked on in the cutting room.

Where a combination of meat has been used the lowest temperature should be met.

See chapter 14 on 'Cutting of meat' B9 and chapter 10 on 'Temperature controls'.

Chill meat preparations to no higher than 4°C and maintain it during subsequent storage and transport, or freeze it to no higher than -18°C.

<sup>3</sup> 'Meat preparations' means fresh meat, including meat that has been reduced to fragments, which has had foodstuffs, seasonings or additives added to it or which has undergone processes insufficient to modify the internal muscle fibre structure of the meat and thus to eliminate the characteristics of fresh meat.

# L

## Legal requirement

### 853/2004 Annex III Section V Raw materials: Chapter II points 2

**D3.** The following raw material may be used to prepare meat preparations:

- (a) fresh meat;
- (b) meat meeting the requirements of point 1 (C3); and
- (c) if the meat preparation is clearly not intended to be consumed without first undergoing heat treatment:
  - (i) meat derived from the mincing or fragmentation of meat meeting the requirements of point 1 (C3) other than point 1(c)(i) (C3ci); and
  - (ii) MSM meeting the requirements of Chapter III, point 3(d) (D5)

### 853/2004 Annex III Section V Hygiene during and after production: Chapter III points 2(a) and 3d

The following requirements apply to the ... use of MSM produced using techniques that do not alter the structure of the bones used in the production of MSM and the calcium content of which is not significantly higher than that of minced meat.

**D4.** If the FBO has carried out analyses demonstrating that MSM complies with the microbiological criteria for minced meat ... it may be used in meat preparations that are clearly not intended to be consumed without first undergoing heat treatment and in meat products.

**D5.** The following requirements apply to the production of ... meat preparations.

(a) Unless the competent authority authorises boning immediately before mincing, frozen or deep-frozen meat used for the preparation of ... meat preparations must be boned before freezing. It may be stored only for a limited period.

### D3. to D5. Compliance regarding permitted raw materials for meat preparations

- Use only permitted raw materials for the manufacture of meat preparations.
- If MSM complies with the microbiological criteria for minced meat it may be used in meat preparations that are clearly not intended to be consumed without first undergoing heat treatment.

### D3. to D5. Good practice

All meat used in the manufacture of meat preparations, should be, or come from, fresh meat that meets the legal requirements. This means the meat must come from approved premises and be either health marked or bear an identification mark – see 'B6. to B9.'.

**Use of MSM** – MSM with a low calcium content that complies with microbiological criteria for minced meat may be used in meat preparations that are clearly intended to undergo heat treatment before eating<sup>4</sup> - see 'E6.'

**Microbiological criteria** – see chapter on 'Microbiological criteria'.

**Labelling** – see 'F'.

**L**

**Legal requirement**

**853/2004 Annex III Section V Hygiene During and After Production:  
Chapter III points 2(a) and 3d**

**D5.** The following requirements apply to the production of ... meat preparations.

(a) Unless the competent authority authorises boning immediately before mincing, frozen or deep-frozen meat used for the preparation of ... meat preparations must be boned before freezing. It may be stored only for a limited period.

**D5. Compliance regarding use of frozen meat for meat preparations**

- (Unless the competent authority authorises boning immediately before mincing), bone frozen or deep-frozen meat used to make meat preparations before freezing. Store it only for a limited period.

**D5. Good practice**

**Use of frozen or deep-frozen meat** – boning can be carried out immediately before mincing if carried out hygienically. The process should be included in the HACCP plan, as should the determination of the storage period for frozen meat, which is largely a quality issue. See chapter 10 on 'Temperature controls' at 'B4.'. Keep appropriate records to demonstrate that those storage periods have not been exceeded and when stored meat was deboned.

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<sup>4</sup> This refers to the use of MSM in meat preparations – see 'E' and 'C3. and C4.'.

**L**

**Legal requirement**

**853/2004 Annex III Section V Hygiene during and after production:  
Chapter III point 5**

**D6.** ... meat preparations ... must not be re-frozen after thawing.

**D6. Compliance regarding re-freezing of meat preparations**

- Do not refreeze meat preparations after thawing.

**D6. Good practice**

Keep records to ensure that meat preparations that have been thawed are not re-frozen. See chapter 10 on 'Temperature controls' at 'B5.'

## E. Mechanically separated meat (MSM)<sup>5</sup>

**L**

### Legal requirement

#### 2074/2005 Annex IV Implementing measures

**E1.** The calcium content of MSM as referred to in Regulation 853/2004 shall:

- (a) not exceed 0.1% (= 100 mg/100 g or 1 000 ppm) of fresh product;
- (b) be determined by a standardised international method.

### E1. Compliance regarding calcium content of MSM

- The calcium content of MSM shall not exceed 0.1% of fresh product.

### E1. Good practice

The calcium content of MSM is used as an indicator of whether the structure of the bones has been changed during mechanical separation. A level above 0.1% Ca on a fresh weight basis is also taken as an indication that the level of calcium in the MSM is higher than that of minced meat – see '15.3.'

### E1. Compliance regarding international method

- Use a standardised international method to determine the calcium content of MSM.

### E1. Good practice

The calcium content can be determined by any internationally standardised method. The only method specifically standardised for calcium determination in MSM is Association of American Analytical Chemists (AOAC) method 983.19.

This is a simple titration method of the acid digested MSM with ethylene diamine tetra-acetate (EDTA). It is more usual for calcium to be determined by atomic absorption spectroscopy (AAS), and provided this or any other method gives equivalent results, it can then be used.

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<sup>5</sup> 'Mechanically separated meat' means the product obtained by removing meat from flesh-bearing bones after boning or from poultry carcasses, using mechanical means resulting in the loss or modification of the muscle fibre structure – see 'D'. The use of bones or bone-in cuts of bovine, ovine and caprine animals for the production of mechanically separated meat is prohibited in all Member States – see 'E3. to E5.'

**L**

**Legal requirement**

**853/2004 Annex III Section V Hygiene during and after production:  
Chapter III point 1**

**E2.** The work on meat must be organised in such a way as to prevent or minimise contamination. To this end, food business operators must ensure in particular that the meat used is:

- (a) at a temperature of not more than 4°C for poultry, 3°C for offal and 7°C for other meat; and
- (b) brought into the preparation room progressively as needed.

**E2. Compliance regarding MSM operations**

- Bring meat progressively into the workroom as needed keeping it at a temperature of not more than 4 °C for poultry, 3 °C for offal and 7 °C for other meat.

**E2. Good practice**

Minimise the opportunity for contamination and keep interruptions to the cold chain to a minimum by keeping meat packed and in chilled storage until it is to be worked on in the cutting room.

See chapter 10 on 'Temperature controls' at 'B1. to B3.'

**L**

**Legal requirement**

**853/2004 Annex III Section V Raw material: Chapter II point 3**

**E3.** The raw material used to produce MSM must meet the following requirements:

- (a) it must comply with the requirements for fresh meat;
- (b) the following material must not be used to produce MSM:
  - (i) for poultry, the feet, neckskin and head; and
  - (ii) for other animals, the bones of the head, feet, tails, femur, tibia, fibula, humerus, radius and ulna.

**Regulation EC No. 999/2001 (as amended) Annex V paragraph 5**

**E4.** It is prohibited in all Member States to use bones or bone-in cuts of bovine, ovine or caprine animals for the production of mechanically separated meat.

**853/2004 Annex III Section V Hygiene during and after production: Chapter III points 3(a) and 4(a)**

**E5.** Raw material for deboning from an on-site slaughterhouse must be no more than 7 days old; otherwise, raw material for deboning must be no more than 5 days old. However, poultry carcasses must be no more than 3 days old.

**E3. to E5. Compliance regarding permitted raw materials for MSM**

- Use only permitted raw materials for the manufacture of MSM.
- Make sure that red meat for deboning from an on-site slaughterhouse is no more than 7 days old; otherwise, it is no more than 5 days old, and poultry carcasses are no more than 3 days old from the date of kill.

**E3. to E5. Good practice**

The TSE Regulations limit the raw materials that can be used to produce MSM. All meat used in the manufacture of MSM must come from fresh meat that meets the legal requirements. This means the meat must come from approved premises and be either health marked or bear an identification mark – see 'B6. to B9.'

Have adequate stock control procedures to ensure that raw material requirements are always met and keep adequate records in place to show that is the case.



### Legal requirement

#### 853/2004 Annex III Section V Hygiene during and after production: Chapter III points 3b-3e

**E6.** The following requirements apply to the production and use of MSM produced using techniques that do not alter the structure of the bones used in the production of MSM and the calcium content of which is not significantly higher than that of minced meat.

(b) Mechanical separation must take place immediately after deboning.

(c) If not used immediately after being obtained, MSM must be wrapped or packaged and then chilled to a temperature of not more than 2°C or frozen to an internal temperature of not more than –18°C. These temperature requirements must be maintained during storage and transport.

(d) If the food business operator has carried out analyses demonstrating that MSM complies with the microbiological criteria for minced meat adopted in accordance with Regulation 852/2004 it may be used in meat preparations that are clearly not intended to be consumed without first undergoing heat treatment and in meat products.

(e) MSM not shown to comply with the criteria referred to in (d) may be used only to manufacture heat-treated meat products in establishments approved in accordance with this Regulation.

### E6. Compliance regarding MSM with low calcium content

Make sure that:

- mechanical separation takes place immediately after deboning
- if not used immediately after being obtained, MSM is wrapped or packaged and then chilled to a temperature of not more than 2°C or frozen to an internal temperature of not more than –18°C. These temperatures are maintained during storage and transport.
- if MSM complies with the microbiological criteria for minced meat it may be used in meat preparations that are clearly not intended to be consumed without first undergoing heat treatment and in meat products
- MSM not complying with the criteria is used only to manufacture heat-treated meat products in approved establishments

### E6. Good practice

Debone the meat immediately before MSM is to be produced.

Wrap / package the MSM immediately after it is produced or chill it to no higher than 2°C and maintain it during subsequent storage and transport, or freeze it to no higher than -18°C.

See chapter 10 on 'Temperature controls' at 'B1. to B3.' and see chapter 13 on 'Microbiological criteria'.

MSM that meets the microbiological criteria for minced meat can be used in meat products and in meat preparations that are to be heat treated before being eaten.

If the MSM does not comply with the microbiological criteria use it only to manufacture heat-treated meat products in approved establishments. Label consignments of MSM to say that they need to be heat treated. This information could also be included on the commercial documents.

Keep adequate records in place to show that the requirements are always met.

**L**

#### **Legal requirement**

#### **853/2004 Annex III Section V Hygiene during and after production: Chapter III points 4b, 4d -4g**

**E7.** The following requirements apply to the production and use of MSM produced using techniques other than those mentioned in point 3 (E6):

(b) if mechanical separation does not take place immediately after deboning the flesh-bearing bones must be stored and transported at a temperature of not more than 2°C or, if frozen, at a temperature of not more than -18°C

(d) if not used within one hour of being obtained, MSM must be chilled immediately to a temperature of not more than 2°C

(e) if, after chilling, MSM is not processed within 24 hours, it must be frozen within 12 hours of production and reach an internal temperature of not more than -18°C within six hours

(f) frozen MSM must be wrapped or packaged before storage or transport, must not be stored for more than three months and must be maintained at a temperature of not more than -18°C during storage and transport

(g) MSM may be used only to manufacture heat-treated meat products in establishments approved in accordance with this Regulation

#### **E7. Compliance regarding MSM with high calcium content**

Make sure that:

- if mechanical separation does not take place immediately after deboning, the flesh-bearing bones are stored and transported at a temperature of not more than 2°C or, if frozen, at a temperature of not more than -18°C
- if not used within 1 hour of being obtained, MSM is chilled immediately to a temperature of not more than 2°C
- if, after chilling, MSM is not processed within 24 hours, it is frozen within 12 hours of production so it reaches an internal temperature of not more than -18°C within six hours
- frozen MSM is wrapped or packaged before storage or transport, is not stored for more than 3 months and is maintained at a temperature of not more than -18°C during storage and transport
- MSM is used only to manufacture heat-treated meat products in approved establishments

### **E7. Good practice**

Debone the meat immediately before MSM is to be produced or store and transport the bones at temperatures no higher than 2°C or frozen to no higher than -18°C.

If the MSM is not used within an hour of being produced, chill it to a temperature no higher than 2°C. If the MSM is not used within 24 hours of being chilled, freeze it to a temperature no higher than -18°C within 6 hours.

Wrap / package frozen MSM before storage or transport at temperatures no higher than -18°C. Store it for up to 3 months

See chapter 10 on 'Temperature controls' at 'B1. to B3.'

Use the MSM only to manufacture heat-treated meat products in approved establishments – see chapter on 'Microbiological criteria'.

Keep adequate records in place to show that the requirements are always met.

**L**

#### **Legal requirement**

**853/2004 Annex III Section V Hygiene during and after production:  
Chapter III points 4(c) and 5**

**E8.** The following requirements apply to the production and use of MSM produced using techniques other than those mentioned in point 3 (E6).

(c) Flesh-bearing bones obtained from frozen carcasses must not be refrozen.

**E9.** MSM must not be re-frozen after thawing.

### **E8. and E9. Compliance regarding re-freezing (MSM production)**

- Do not refreeze flesh-bearing bones obtained from frozen carcasses.
- Do not refreeze MSM after thawing.

### **E8. and E9. Good practice**

Keep records to ensure that MSM or flesh-bearing bones that have been thawed are not re-frozen. See chapter 10 on 'Temperature controls' at 'B5.'

## F. Labelling of minced meat, meat preparations and MSM

**L**

### Legal requirement

#### 853/2004 Annex III Section V Labelling: Chapter IV points 1 and 2

F1. In addition to the requirements of Directive 2000/13/EC, food business operators must ensure compliance with the requirement of point 2 if, and to the extent that, national rules in the Member State in the territory of which the product is placed on the market so require.

### F1. Compliance regarding directive 2000/13/EC

- Comply with the requirements of Directive 2000/13/EC.

### F1. Good practice

Directive 2000/13/EC is implemented in the UK by the Food Labelling Regulations 1996 (SI 1499) (as amended) and the Food Labelling Regulations (Northern Ireland) 1996 (SR No. 383).

The Regulations apply only to food ready for delivery to the ultimate consumer or catering establishment. They require that relevant pre-packed foods carry:

- a name
- a list of ingredients
- the amount of certain ingredients used
- a date mark
- any special storage conditions or conditions of use
- the name and address of the manufacturer, packer or EC seller, instructions for use and
- the place of origin of the food, if failure to give it might mislead

See also 'Compositional labelling' below and guidance notes at: [www.food.gov.uk/business-industry/guidancenotes](http://www.food.gov.uk/business-industry/guidancenotes).

# L

## Legal requirement

### 853/2004 Annex III Section V Labelling: Chapter IV points 1 and 2

**F2.** Packages intended for supply to the final consumer containing minced meat from poultry or solipeds or meat preparations containing MSM must bear a notice indicating that such products should be cooked before consumption.

### 2073/2005 Article 6

**F3.** When the requirements for Salmonella in minced meat, meat preparations and meat products intended to be eaten cooked of all species set down in Annex I are fulfilled, the batches of those products placed on the market must be clearly labelled by the manufacturer in order to inform the consumer of the need for thorough cooking prior to consumption.

## F1. to F3. Compliance regarding labelling of minced meat, meat preparations and MSM

- Label, with a notice that such products should be cooked before consumption, packages intended for supply to the final consumer containing:
  - minced meat from poultry or solipeds
  - meat preparations containing MSM
- For minced meat, meat preparations and meat products intended to be eaten cooked for which there is a salmonella criteria, inform the consumer of the need for thorough cooking by labelling.

## F1. to F3. Good practice

Label packages intended for supply to the final consumer with a notice that such products should be cooked before consumption.

In the context of Salmonella , the advice of the Advisory Committee on the microbiological safety of food is that it is sufficient to state clearly that the food requires cooking with cooking times and temperatures where appropriate, for example, for burgers and sausages. The instructions should not include internal temperatures as they are not easily measured by the consumer – see chapter 13 on 'Microbiological criteria' section C.

# L

## Legal requirement

**2076/2005 Transitional arrangements: Article 10 points 1, 2 and 3 as amended by Regulation (EC) No.1162/2009; Article 4, paras 1, 2 and 3**

**F4.** The FBO must check the raw materials entering the establishment to ensure compliance with the name of the product in the table below in respect of the final product.

**F5.** The labelling must also display the following words: ‘percentage of fat under ...’ ‘connective tissue: meat protein ratio under ...’

**F6.** Member States may allow the placing on their national market of minced meat which does not comply with these criteria under a national mark that cannot be confused with the marks provided for in Article 5(1) of 853/2004.

### F4. to F6. Compliance regarding compositional information labelling

- Label with compositional information as set out or mark minced meat packages with a national identification mark.

### F4. to F6. Good practice

Under the conditions laid down in the Food Information to Consumers Regulations 2011/1169 Annex VI Part B, minced meat designations may only be used where the minced meat complies with certain compositional standards, checked on the basis of a daily average, as set out in the following table.

	Fat content	Collagen / meat protein ratio
Lean minced meat	≤7%	≤12%
Minced pure beef	≤20%	≤15%
Minced meat containing pigmeat	≤30%	≤18%
Minced meat of other species	≤25%	≤15%

In addition, the following expression must appear on the labelling of minced meat:

- ‘percentage of fat content under ...’
- ‘collagen / meat protein ratio under ...’

Point 3 of the Food Information to Consumers Regulations 2011/1169 Annex VI Part B, states that ‘The Member States may allow the placing on their market of minced meat which does not comply with the criteria laid down in point 1 of (Part B) under a national mark...’. The UK member nations (England, Scotland, Wales and Northern Ireland) have opted to allow the derogation described in point 3, enabling minced meat to be placed on the UK market under a national mark.

Any minced meat placed on the market that does not meet the criteria laid down in the table above must have displayed the 'national mark' which consists of the following symbol and statement:

- "For UK Market only"

The label STILL then needs to say:

- percentage of fat content under ...
- collagen / meat protein ratio under ...

## G. Meat products<sup>6</sup>

L

### Legal requirement

#### 853/2004 Annex III Section VI Meat products: Section VI points 1 and 2

**G1.** Food business operators must ensure that the following items are not used in the preparation of meat products:

- (a) genital organs of either female or male animals, except testicles
- (b) urinary organs, except the kidneys and the bladder
- (c) the cartilage of the larynx, the trachea and the extra-lobular bronchi
- (d) eyes and eyelids
- (e) the external auditory meatus
- (f) horn tissue; and
- (g) in poultry, the head – except the comb and the ears, the wattles and caruncles – the oesophagus, the crop, the intestines and the genital organs

**G2.** All meat, including minced meat and meat preparations, used to produce meat product must meet the requirements for fresh meat. However, minced meat and meat preparations used to produce meat products need not satisfy other specific requirements of Section V.

### G1. and G2. Compliance regarding meat for producing meat products

- Observe restrictions on parts of animals that may not be used in meat products.
- Produce meat products using only meat (including minced meat and meat preparations) that meets the requirements for fresh meat.
- However, minced meat and meat preparations used to produce meat products need not satisfy other specific requirements of 853/2004 Section V.

### G1. and G2. Good practice

All the meat for meat products must originate from approved slaughterhouses and, if appropriate, approved cutting plants, approved minced meat or approved meat preparation establishments, and bear a health mark (on red meat carcasses and primal cuts) or identification mark – see 'B6. to B9.'

**Minced meat and meat preparations used to produce meat products** – while meeting the above requirements, products do not have to meet the raw material requirements set out in Section V, Chapter II, points 1 and 2; they may derive from raw materials – see 'C1. and C2.' and 'C3. and C4.'

Have adequate stock control procedures to ensure that raw material requirements are always met, and keep adequate records in place to show that is the case.

<sup>6</sup> 'Meat products' means processed products resulting from the processing of meat or from the further processing of such processed products, so that the cut surface shows that the product no longer has the characteristics of fresh meat.

**Labelling of meat products** – see Directive 2000/13 as amended and the Meat Products Regulations 2003 for an EU definition of meat for labelling purposes – see ‘F1.’. These also cover the composition production and inspection records and labelling of meat products for delivery to the ultimate consumer and catering establishments. Guidance notes can be found at: [www.food.gov.uk/business-industry/guidancenotes](http://www.food.gov.uk/business-industry/guidancenotes).

**L**

**Legal requirement**

**853/2004 Annex III Section V Hygiene during and after production:  
Chapter III points 3(d-e), 4(g)**

**G3.** The following requirements apply to the production and use of MSM produced using techniques that do not alter the structure of the bones used in the production of MSM and the calcium content of which is not significantly higher than that of minced meat:

(d) if the food business operator has carried out analyses demonstrating that MSM complies with the microbiological criteria for minced meat adopted in accordance with Regulation 852/2004 it may be used in ... meat products.

(e) MSM not shown to comply with the criteria referred to in (d) may be used only to manufacture heat-treated meat products in establishments approved in accordance with this Regulation.

**G4.** The following requirements apply to the production and use of MSM produced using techniques other than those mentioned in point 3 (E6).

MSM may be used only to manufacture heat-treated meat products in establishments approved in accordance with this Regulation.

**G3. and G4. Compliance regarding MSM in meat products**

- MSM with a low calcium content that complies with the microbiological criteria for minced meat may be used in meat products.
- MSM with a low calcium content not complying with the microbiological criteria or MSM with high calcium content may only be used to manufacture heat-treated meat products in approved establishments.

**G3. and G4. Good practice**

MSM with a high calcium content or with a low calcium content that does not comply with microbiological criteria for minced meat, may only be used in approved establishments to manufacture heat-treated meat products – see ‘E6.’ and ‘E7.’ and chapter on ‘Microbiological criteria’.

Have adequate stock control procedures to ensure that the requirements are always met and keep adequate records in place to show that is the case.

## H. Other edible products

**L**

### Legal requirement

#### 853/2004 Annex III Section XII Chapter II: points 1(a)-(d)

- H1.** Raw materials (for preparing rendered animal fats and greaves) must:
- (a) derive from animals which have been slaughtered in a slaughterhouse, and which have been found fit for human consumption following ante-mortem and post-mortem inspection;
  - (b) consist of adipose tissues or bones, which are reasonably free from blood and impurities
  - (c) come from establishments registered or approved pursuant to Regulation 852/2003 or in accordance with this Regulation; and
  - (d) be transported, and stored until rendering, in hygienic conditions and at an internal temperature of not more than 7°C. However, raw materials may be stored and transported without active refrigeration if rendered within 12 hours after the day on which they were obtained

### H1. Compliance regarding rendering animal fats and greaves

- All animals from which raw materials are derived, must have been slaughtered in a slaughterhouse, and have undergone and passed the relevant inspections.
- Raw materials must be reasonably void of blood and impurities.
- All raw materials must be transported and stored in hygienic conditions and at an internal temperature of 7°C or lower.

### H1. Good practice

See the separate 'Edible co-products industry guide' at: [www.food.gov.uk/business-industry/guidancenotes/meatregsguid/coproductbyproductguide](http://www.food.gov.uk/business-industry/guidancenotes/meatregsguid/coproductbyproductguide).

**L**

### Legal requirement

#### 853/2004 Annex III Section XIII

- H2.** Food business operators treating stomachs, bladders and intestines must ensure compliance with the following requirements. Animal intestines, bladders and stomachs may be placed on the market only if:
- (a) they derive from animals which have been slaughtered in a slaughterhouse, and which have been found fit for human consumption following ante-mortem and post-mortem inspection.

### H2. Compliance regarding treated stomachs, bladders and intestines

- FBOs are required to ensure all animal intestines, bladders and stomachs derive from animals

which have been slaughtered in a slaughterhouse, and have undergone and passed the relevant inspections.

## H2. Good practice

See the separate 'Edible co-products industry guide' at: [www.food.gov.uk/business-industry/guidancenotes/meatregsguid/coproductbyproductguide](http://www.food.gov.uk/business-industry/guidancenotes/meatregsguid/coproductbyproductguide).

**L**

### Legal requirement

#### 853/2004 Annex III Section XIV Chapter I points 1 and 3

#### 853/2004 Annex III Section XV Chapter I: points 1 and 3

**H3.** For the production of gelatine intended for use in food, the following raw materials may be used: (a) bones, other than specified risk materials as defined in Article 3(1)(g) of Regulation (EC) No. 999/2001 of the European Parliament and of the Council; (b) hides and skins of farmed ruminant animals; (c) pig skins; (d) poultry skin; (e) tendons and sinews; (f) wild game hides and skins; and (g) fish skin and bones.

**H4.** For the production of collagen intended for use in food, the following raw materials may be used: (a) bones, other than specified risk materials as defined in Article 3(1)(g) of Regulation (EC) No. 999/2001; (b) hides and skins of farmed ruminant animals; (c) pig skins; (d) poultry skin; (e) tendons and sinews; (f) wild game hides and skins; and (g) fish skin and bones.

**H5.** Raw materials listed in point 1 (a) to (e) (H3. and H4.) must derive from animals which have been slaughtered in a slaughterhouse and whose carcasses have been found fit for human consumption following ante-mortem and post-mortem inspection or, in the case of hides and skins from wild game, found fit for human consumption.

#### 853/2004 Annex III Section XIV Chapter I and Section XV Chapter I: points 2, 4, 5

**H7.** The use of hides and skins is prohibited if they have undergone any tanning process, regardless of whether this process was completed.

**H8.** Raw materials must come from establishments registered or approved pursuant to Regulation 852/2004 or in accordance with this Regulation.

**H9.** Collection centres and tanneries may also supply raw material for the production of gelatine (or collagen) intended for human consumption if the competent authority specifically authorises them for this purpose ...

## H3. to H9. Compliance regarding gelatine and collagen

- Only mandated raw materials may be used for the production of gelatine and collagen intended for use in food.
- Hides and skins which have undergone any tanning process are prohibited for use as raw materials.
- Raw materials must derive from animals which have been slaughtered in a slaughterhouse,

and have undergone and passed the relevant inspections.

- Collection centres and tanneries must seek authorisation from the competent authority before supplying raw materials for use in the production of gelatine or collagen intended for human consumption.

### **H3. to H9. Good practice**

See the separate 'Edible co-products industry guide' at: [www.food.gov.uk/business-industry/guidancenotes/meatregsguid/coproductbyproductguide](http://www.food.gov.uk/business-industry/guidancenotes/meatregsguid/coproductbyproductguide).

## 15.5. Official control requirements

**L**

### Legal requirement

#### 854/2004 Article 4 points 4c, 4h and 4(i)

Audits by officials of good hygiene practices shall verify that meat plant operators apply pre-operational, operational and post-operational hygiene procedures, temperature controls and controls on food entering and leaving the establishment and any accompanying documentation, continuously and properly.

#### 854/2004 Article 4 point 5

Audits by officials of HACCP –based procedures shall verify that meat plant operators apply such procedures continuously and properly.

## 15.6. Applying procedures continuously and properly

**L**

### Legal requirement

#### 852/2004 Article 1 point 1(a)

The operator is responsible for food safety in the food business.

#### 852/2004 Article 5 point 1

Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles.

#### 178/2002 Article 17

Food ... business operators at all stages of production, processing, and distribution within the businesses under their control shall ensure that foods satisfy the requirements of food law which are relevant to their activities and shall verify that such requirements are met.

### 15.6. Compliance regarding operator responsibilities for meat processing

- Operator responsibility includes applying and verifying the company's hygienic meat production procedures and taking corrective action if those procedures fail.
- Implement and maintain a permanent procedure or procedures based on the HACCP principles.

### 15.6. Good practice

Operator responsibility includes maintaining and monitoring the intake of raw materials and hygienic meat processing and taking corrective action if there is a failure. These procedures should be based on HACCP principles – see section 'B1.' and chapter 9 on 'HACCP Principles'.

**Delegation** – responsibility for maintaining and monitoring the company's procedures for the intake of raw materials and processing may be delegated to a nominated person to whom

problems are reported, and who has sufficient authority to ensure that corrective action is taken when necessary.

**Verification** – check periodically if company procedures for accepting, handling and storing raw materials and processing and record keeping are being followed by staff and that problems are being reported.

**Frequency of verification** – this will depend on the likelihood of a problem being found. Once a month may be sufficient in premises where staff are experienced and procedures are unchanged.

**Monitoring** – check on a daily basis that staff are following the company's procedures for processing, for example:

- cleanliness of food handling areas, storage and transport
- meat handling procedures, including adequate tool cleaning and disinfection
- meat temperatures in workrooms, storerooms, vehicles
- effectiveness of heat treatment, if used
- adequacy of personal hygiene practices
- microbiological testing, if carried out

**Records** — keep an accurate, dated account (for example, in a diary/daybook) of observations, of issues requiring special attention, and of any corrective action taken.

**Corrective action** – take action when evidence of failures of procedures are identified. Such action may include:

- change suppliers
- dealing with any incoming raw materials or product that may be contaminated
- establishing the underlying cause and what needs to be done to prevent similar incidents in the future
- informing and, if necessary, changing suppliers; and
- improving staff instructions and training