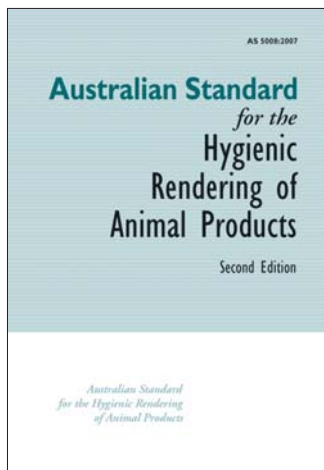


Primary Industries Standing Committee
Australian Standard for the Hygienic
Rendering of Animal Products
Second Edition
AS 5008:2007
PISC Report 87



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PREFACE

The Standard

This Standard has been approved by the Primary Industries Ministerial Council (PIMC) and implementation forms part of a broader national framework for managing risks associated with animal feed controls in Australia. The focus is on the safety of end products of rendering operations and provides for standards that are consistent with the principles and objectives of the world standards contained in *Codex Alimentarius*.

Objective

The prime objective of this Standard is to provide for the production of safe rendered products by ensuring the hygienic rendering of biological material from animals.

Scope

This Standard applies to all rendering premises operating in Australia and to all products of rendering operations including, but not restricted to:

- meat meal;
- meat and bone meal;
- bone meal;
- poultry meal;
- poultry by-product meal;
- feather meal;
- fish meal;
- blood meal;
- tallow;
- poultry oil;
- fish oil.

Minimum requirements for construction and equipment and rendering operations are prescribed in this Standard. Rendered products intended for human consumption must also comply with the *Australia New Zealand Food Standards Code*.

Note For the meaning of *meal* see Section 1 – Definitions.

Guidelines

This Standard should be read in conjunction with guidelines as developed by the Animal Health Committee (AHC) from time to time.

Equivalence

Requirements of this Standard are mandatory unless alternative compliance has been approved by the controlling authority.

Alternative compliance to that mandated in this Standard may be used by operators providing compliance with the overall goal can be independently validated through the use of Hazard Analysis Critical Control Point (HACCP) based programs.

Where the operator of a rendering premises proposes a technique different from that detailed in this Standard the assessment of equivalence is to be determined by AHC. This Committee will establish methodology for determining the equivalence of benchmarks or standards. The proposer of the alternative technique is to supply sufficient supporting information to validate the procedure to the relevant controlling authority, who will advise AHC. The submission must include a HACCP plan that ensures equivalence is maintained. Where AHC cannot reach agreement on the approval of an alternative technique the final decision shall be made by PIMC.

Note For the meaning of *controlling authority* see Section 1 – Definitions.

Primary Industries Ministerial Council

PIMC comprises the Australian Commonwealth, state and territory, and New Zealand ministers responsible for agriculture, soil, water and rural adjustment policy issues. The objective of PIMC is to develop integrated and sustainable agricultural land and water management policies, strategies and practices for the benefit of the community. This Standard falls within the jurisdiction of PIMC.

Under the PIMC arrangement, the Primary Industries Standing Committee (PISC) supports the Council in the achievement of objectives and develops cooperative and coordinated approaches to matters of concern to the Council. PISC is subsequently underpinned by three committees, one of which is the Primary Industries Health Committee (PIHC).

PIHC manages and reports to PISC on national and strategic issues in relation to quarantine policy; animal, fish (aquatic animal), plant and forest health; agricultural and veterinary chemicals; and related matters.

PIHC receives advice on meat issues involving non-food products from AHC, which advises on standards, codes of practice and guidelines covering rendering, pet food and animal feed.

This publication has been approved as an Australian Standard. Other Standards in the series are:

- AS 4467:1997 *Australian Standard for the Hygienic Production of Crocodile Meat for Human Consumption* (SCARM Report No. 67)
- AS 4466:1997 *Australian Standard for the Hygienic Production of Rabbit Meat for Human Consumption* (SCARM Report No. 59)
- AS 5011:2001 *Australian Standard for the Hygienic Production of Natural Casings for Human Consumption* (SCARM Report No. 68)
- AS 5010:2001 *Australian Standard for the Hygienic Production of Ratite (Emu/Ostrich) Meat for Human Consumption* (SCARM Report No. 71)
- AS 4465:2005 *Australian Standard for the Construction of Premises and Hygienic Production of Poultry Meat for Human Consumption* (3rd Edition) (FRSC Technical Report No. 1)
- AS 4841:2006 *Australian Standard for the Hygienic Production of Pet Meat* (PISC Report No. 88)
- AS 4696:2007 *Australian Standard for the Hygienic Production and Transportation of Meat and Meat Products for Human Consumption* (FRSC Technical Report No. 3)
- AS 4464:2007 *Australian Standard for the Hygienic Production of Wild Game Meat for Human Consumption* (FRSC Technical Report No. 2)

1 DEFINITIONS

Approved arrangement	When used in relation to a provision of this Standard applying to a rendering business, means the arrangement for the business that is approved by the controlling authority.
Approved laboratory	Means a laboratory that has been certified by the National Association of Testing Authorities, Australia (NATA) and approved to test product for <i>Salmonella</i> and <i>Clostridium perfringens</i> or a laboratory approved by the controlling authority.
Audit	A systematic and independent examination to determine whether activities and related results comply with planned and documented arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.
Clean	When used in relation to rendering premises, means free of extraneous visible matter.
Contamination	When used in relation to rendered product, means the presence of objectionable matter, including substances or micro-organisms, such as <i>Salmonella</i> , that makes rendered product unsafe.
Controlling authority	Means the Commonwealth, state or territory authority that is responsible for the enforcement of this Standard as it applies to rendered product.
Critical control point (CCP)	Means a point, procedure, operation or stage in the rendering process, including raw materials, at which control can be applied and is essential to prevent or eliminate a hazard or reduce it to an acceptable level.
Hazard analysis critical control point (HACCP)	Means a system that identifies, evaluates and controls hazards that are significant for product safety.
Heat treatment	The process of heating the product during the rendering process at temperatures and for times which, in combination, are sufficient to destroy those target contaminant micro-organisms which represent a hazard and which are normally capable of being destroyed by heat.
Meal	Defatted and dried solid product of rendering after milling.
Operator	The person, owner or manager who at the time is in attendance and responsible for the operation of the registered premises.
Potable	When used in relation to water, means water that is acceptable for human consumption.
Processed animal protein	Meal derived from rendering, defatting and drying animal material.
Processing area	Any area of the plant where a rendering process takes place.
Raw material	Any biological material from animals used for the purpose of processing into fats, oils, processed animal protein or fertiliser.

Raw material area	Any area of the plant designated for the handling of raw material in preparation for the rendering process.
Rendering process	The process of heat treating raw materials to remove moisture and/or liberate fat.
Restricted animal material (RAM)	<p>Any material taken from a vertebrate animal other than gelatin, milk, milk products and tallow.</p> <p><i>Note</i> For the purposes of the ruminant feed ban, tallow is defined as any product (not limited to but including products known as tallow, yellow grease and acid oil) containing rendered fats and oils from any animal and which complies with the specification of 2% maximum M+I (moisture plus insoluble impurities) as measured by American Oil Chemists' Society (AOCS) official methods.</p>
Ruminant feed ban	A ban on feeding restricted animal material to ruminant animals that is enforced through legislation in each state and territory.
Safe	<p>Means:</p> <ul style="list-style-type: none">• will not cause infection or intoxication when properly handled and prepared for its intended use;• does not contain chemical residues in excess of established limits;• free of inappropriate foreign matter;• produced under adequate hygiene control.
Sanitising agent	A chemical or physical agent used to clean surfaces to minimise risk of contamination by micro-organisms.
Scheduled heat treatment	Identification, specification and delivery of the controlled operating conditions required to achieve the thermal destruction of <i>Clostridium perfringens</i> in rendered product.
Validation	The process of demonstrating the effectiveness of a system of controls.
Verify	Apply methods, procedures, tests and other evaluations in addition to monitoring to determine whether a requirement is complied with or a matter is met.

2 MANAGEMENT AND PRODUCTION PRACTICES AT RENDERING PREMISES

OUTCOME

Documented procedures and processes are in place to assure the production of safe rendered product.

- 2.1 The operator of a rendering premises shall have an approved arrangement that:
- (a) includes the policy objectives of the rendering premises for the production of rendered products that are safe and fit for purpose; and
 - (b) contains procedures for each stage of production at the premises; and
 - (c) describes the system of operational hygiene process controls that is effective in ensuring rendered products produced by the business are safe and fit for purpose; and
 - (d) uses records to validate and verify the production of rendered products that are safe and fit for purpose; and
 - (e) provides for internal audits and management reviews to be conducted of the operational activities and policy objectives of the rendering premises. The results of these reviews and the action taken are to be documented; and
 - (f) provides for the implementation of a HACCP plan for each stage of production at the premises; and
 - (g) includes a system for the handling of raw material and other measures, including trace-back.

Note For the meaning of *approved arrangement*, *HACCP*, *raw material*, *operator*, *safe*, *verify* and *audit* see Section 1 – Definitions.

- 2.2 The HACCP plan as required in 2.1 shall conform to the following seven principles as specified in *A Guide to the Implementation and Auditing of HACCP* (SCARM Report No. 60):
1. List all potential hazards associated with each step, conduct a hazard analysis and consider and identify measures to control hazards.
 2. Determine critical control points (CCP).
 3. Establish critical limits for each CCP.
 4. Establish a monitoring system for each CCP.
 5. Establish corrective action plans for CCP deviations that may occur.
 6. Establish verification procedures.
 7. Establish record keeping and documentation.

Note For the meaning of *critical control point* see Section 1 – Definitions.

3 CONSTRUCTION – PREMISES AND EQUIPMENT

OUTCOME

Construction facilitates safe and hygienic processing and prevents contamination of product.

General

- 3.1 The design, working space and layout of the premises and its equipment shall facilitate:
- (a) safe and hygienic production and storage of all materials used in and produced from rendering operations; and
 - (b) any inspection or auditing necessary during or after production.

- 3.2 Premises shall:
- (a) be adequately supplied with continuous hot and cold potable water at a volume and pressure to enable hygienic practice; and
 - (b) be provided with a reliable energy supply that ensures efficient operations; and
 - (c) have waste disposal systems sufficient to handle and, where necessary, treat all liquid and solid waste.

Note For the meaning of *potable* see Section 1 – Definitions.

- 3.3 Where necessary to maintain the production of safe rendered product, premises and equipment within shall be:
- (a) constructed of materials that are:
 - (i) durable;
 - (ii) non-toxic;
 - (iii) smooth surfaced (consistent with safety in the case of floors);
 - (iv) corrosion resistant;
 - (v) impervious;
 - (vi) resistant to, or protected from, impact;
 - (vii) easily cleaned and, where necessary, capable of being dismantled for cleaning;
 - (viii) resistant to chipping or flaking;
 - (ix) of a finish that makes contamination clearly visible;
 - (b) constructed such that joints are effectively sealed; and
 - (c) constructed to minimise accumulation of dust, water, litter or waste materials.

Note For the meaning of *contamination* see Section 1 – Definitions.

- 3.4 Construction shall be designed so that rendered product does not come in contact with raw material processing areas.

Note For the meaning of *processing area* see Section 1 – Definitions.

- 3.5 Ventilation shall facilitate the production of safe rendered product.

- 3.6 The roof shall be waterproof.
- 3.7 Lighting shall be sufficient to enable effective cleaning, hygienic processing and auditing.

Loading areas

- 3.8 Load-out and load-in areas shall be constructed to facilitate the production of safe rendered product.

Cleaning facilities

- 3.9 Facilities shall be provided for the cleaning of equipment.
- 3.10 Cleaning facilities shall be constructed to ensure equipment is effectively cleaned and that the cleaning processes do not jeopardise the safety of rendered products.
- 3.11 Facilities shall be provided for the storage of cleaned equipment.
- 3.12 Hand washing facilities shall be provided that are:
 - (a) supplied with hot and cold water from a central outlet; and
 - (b) supplied with a liquid hand cleaning agent; and
 - (c) located to enable ready access by operators; and
 - (d) connected to a drainage system.

Amenities

- 3.13 Location and construction of amenities shall not jeopardise hygienic processing of rendered product.

Raw material vehicles

- 3.14 Vehicles used for the collection and transport of raw materials shall be leak proof and suitable for the purpose for which they are used.
- 3.15 A suitable designated area shall be provided for the cleaning of vehicles and associated equipment used for the transport of raw materials.

4 PROCESSING REQUIREMENTS

OUTCOME

Process controls effectively manage the risks arising from physical, chemical and microbiological contamination of product.

4.1 General

4.1.1 All processing of rendered product shall be effectively controlled by management through an approved arrangement.

4.1.2 Any material which has not, or may not have, received the scheduled heat treatment shall not be blended with adequately heat treated product.

Note For the meaning of *heat treatment* see Section 1 – Definitions.

4.1.3 A training program to facilitate processing of rendered products that are safe and fit for purpose shall be implemented.

4.1.4 An operator shall at all times:

- (a) maintain a high standard of hygienic processing as outlined in this Standard; and
- (b) correct unsanitary practices, if and when they occur; and
- (c) ensure there are staff readily available for correcting deficiencies; and
- (d) ensure the provisions of this Standard are complied with in all respects.

4.1.5 Personnel from raw material areas shall not be permitted in final product areas unless appropriate hygiene procedures have been taken.

Note For the meaning of *raw material area* see Section 1 – Definitions.

4.1.6 Every person involved in the handling of rendered products shall maintain a high standard of personal cleanliness. They shall wear clean clothing which is suitable for the work in which the person is engaged.

Note For the meaning of *clean* see Section 1 – Definitions.

4.1.7 Domestic animals shall be excluded from areas of premises where rendered product is processed or stored.

4.2 Cleaning

4.2.1 Premises and equipment shall be effectively cleaned and maintained.

4.2.2 An effective cleaning program shall be implemented.

4.2.3 Clean protective clothing (e.g. aprons, protective gloves) and clean implements shall be provided when required.

4.3 Packaging and storage

- 4.3.1 Processed animal proteins shall be packed and stored in a safe and hygienic manner.
- 4.3.2 Containers used for raw material shall be clearly identified. Such containers shall only be used for the designated purpose.
- 4.3.3 Containers returned from outside sources shall be effectively cleaned before re-use and be stored to prevent contamination.

Note For the meaning of *processed animal protein* see Section 1 – Definitions.

4.4 Pest control

- 4.4.1 There shall be an effective and continuous program for the control of insects, birds, rodents and other pests.
- 4.4.2 All reasonable precautions shall be taken to ensure pests and pesticides do not contaminate rendered product.

4.5 Vehicles

- 4.5.1 Vehicles and associated equipment used for transporting raw materials shall not be used to transport finished rendered product unless they have been thoroughly cleaned using a suitable sanitising agent.

Note For the meaning of *sanitising agent* see Section 1 – Definitions.

4.6 Microbiological contamination control

Process validation

- 4.6.1 All rendering heat treatment processes shall be validated annually and, in addition, after a new process is initiated or an existing process modified.
- 4.6.2 Validation of heat treatments must be conducted over 10 consecutive days of operation. The heat treatment process is validated when laboratory results indicate *Clostridium perfringens* is < 10/g on each of the 10 days.
Note For the meaning of *validation* see Section 1 – Definitions.
- 4.6.3 Samples of rendered product, drained as appropriate, shall be taken daily after completion of the heat treatment and tested for *Clostridium perfringens* by an approved laboratory in accordance with AS 5013.16.
Note For the meaning of *approved laboratory* see Section 1 – Definitions.
- 4.6.4 Where *Clostridium perfringens* is detected in any sample the specified heat treatment process must be adjusted and further daily samples tested until the heat treatment is validated in accordance with 4.6.2.

Post-production contamination

- 4.6.5 Management shall effectively manage the risk of *Salmonella* contamination in all processed animal protein.
- 4.6.6 Representative samples of all processed animal protein must be submitted to an approved laboratory for testing for the presence of *Salmonella* in 25 g.
- 4.6.7 At a minimum, one weekly sample shall be taken and tested. A weekly sample shall be a composite of sub-samples of at least 250 g. The sub-samples shall be collected on every production day.
- 4.6.8 Sub-samples shall be collected from load-outs or bagging operations and on days when there is no load-out or bagging, sub-samples shall be collected from bulk storage bins.
- 4.6.9 Where any sample is positive for *Salmonella*, management must:
 - (a) conduct an immediate review of hygiene procedures; and
 - (b) implement and record corrective action taken; and
 - (c) verify the effectiveness of corrective action through testing for *Salmonella*.

5 RUMINANT FEED BAN

OUTCOME

Restricted animal material arising from rendering is not fed to ruminant animals.

- 5.1 As part of Australia's BSE risk reduction measures, all documentation accompanying consignments of bulk rendered product containing restricted animal material and all bagged or packaged rendered product containing restricted animal material must be labelled with the following prescribed warning statement:

**This product contains restricted animal material –
DO NOT FEED TO CATTLE, SHEEP, GOATS, DEER
OR OTHER RUMINANTS.**

Note For the meaning of *ruminant feed ban* and *restricted animal material* see Section 1 – Definitions.

- 5.2 All consignments of rendered animal material intended for use as stock/animal feed that do not contain restricted animal material (i.e. tallow) must be labelled as follows:

This product does not contain restricted animal material.

6 IDENTIFICATION, TRACEABILITY, INTEGRITY AND RECORD KEEPING

OUTCOME

Rendered product is accurately identified. Rendered product that should be recalled can be recalled.

- 6.1 There must be a system of document keeping in place that ensures the identification of the source of all raw materials and the traceability of rendered product.
- 6.2 If any rendered product is required to be recalled, the documents kept by the business shall be comprehensive enough to identify all of the products that should be recalled.
- 6.3 All documentation accompanying consignments of bulk rendered product and all bagged or packaged rendered product must be labelled with the following:
 - (a) the date of production or packaging; and
 - (b) the identity of the rendering business at which it was produced or packed.

7 REFERENCES

Standing Committee on Agriculture and Resource Management (1997). *A Guide to the Implementation and Auditing of HACCP*. SCARM Report No. 60, CSIRO Publishing, Melbourne.

Food Regulation Standing Committee (2007). *Australian Standard for the Hygienic Production and Transportation of Meat and Meat Products for Human Consumption* (3rd Edition). FRSC Technical Report No. 3. AS 4696:2007, CSIRO Publishing, Melbourne.