REQUIREMENTS FOR EGG PROCESSORS

Egg processors need to meet the requirements of the Food Standards Code and the Food Regulation 2015.

This factsheet is for egg processors who:

- manufacture products with at least 80% egg white or yolk, or both, including:
- fresh liquid whole eggs, egg white, egg yolk (e.g. pulp)
- frozen whole eggs, egg white, egg yolk
- dried whole eggs, egg white (albumen), egg yolk
- salted and sugared yolks
- scrambled egg mix
- hard boiled eggs
- pasteurise products with at least 80% egg white or yolk, or both.

Meet the requirements of the Food Standards Code

Egg processors need to meet the requirements of the Food Standards Code as set out in:

- Standard 1.2.3 Mandatory Warnings and Advisory Statements and Declarations
- Standard 1.6.2 Processing Requirements
- Standard 2.2.2 Egg and Egg Products
- Standard 3.2.1 Food Safety Programs
- Standard 3.2.2 Food Safety Practices and General Requirements
- Standard 3.2.3 Food Premises and Equipment

Egg stamping

All eggs must be uniquely and individually stamped with a unique identifier (usually a number or code) so that they can be traced back to the producer.

The Food Authority can supply a free manual egg stamp and one pack of five ink refills to small producers (those who produce fewer than 1000 eggs per day).

Sampling and analyses

Pasteurised products with at least 80% egg white or yolk, or both, must be sampled and analysed in accordance with the *NSW Food Safety Schemes Manual*. These requirements are outlined in Table 1.

Businesses that produce any of the products listed in Table 1 are required to conduct the corresponding microbiological tests at the prescribed frequency. Testing is to be undertaken per category and not for every product produced by a business.

For example, businesses that pasteurise whole egg pulp, egg white pulp and egg yolk pulp are only required to analyse one of these products for *Salmonella* every ten batches (as they are all in the same category). Businesses that produce more than one product within a particular category must alternate the products sent for analysis. These are the Food Authority's minimum testing requirements needed to verify the effectiveness of a business's food safety program.

Non-reticulated water used in the processing of the above products must also be tested in accordance with Table 1.

Businesses wanting to use recycled water are required to apply in writing to the Food Authority. Applications will be considered on a case-by-case basis.

Businesses that use a non-reticulated water supply and treat the water with chlorine or another suitable method must test this water daily for residual chlorine levels and maintain records of the water treatment. Food Safety Officers will review monitoring records and test results.

For more information on how to treat a non-reticulated water supply refer to the *Guidelines for the use of non-potable water in food businesses* published by the Department of Human Services in Victoria. This document is available at www.health.vic.gov.au

Pathogen testing must be conducted by a NATA accredited laboratory. Laboratories are accredited by the National Association of Testing Authorities (NATA) for specific methods. Businesses can search for a NATA accredited laboratory at www.nata.asn.au

Egg processors must have a documented procedure to ensure that the Food Authority is notified verbally within 24 hours if any sample fails the standards specified in Table 1. This information should be directed to the Food Authority's helpline on 1300 552 406.

Businesses will be referred to a representative of the Compliance, Investigation and Enforcement Unit for advice on the appropriate action that needs to be taken. Notification of any sample failures must also be made in writing to the Food Authority within seven days of businesses being aware of the results.

Table 1: Analyses of egg products, blended egg product mixtures* and water

What to test	Test to be conducted	Limit	Frequency
Pasteurised egg products Examples include fresh liquid or frozen whole eggs, egg white, egg yolk (i.e. pulp)	Salmonella	Not detected in 25g	Every 10 batches
Dried egg products Examples include dried whole eggs, egg white (albumen), egg yolk	Salmonella	Not detected in 25g	Every 20 batches
Pasteurised blended egg product mixtures* Examples include salted and sugared yolks, scrambled egg mix, hard boiled eggs	Salmonella	Not detected in 25g	Every 10 batches
Non-reticulated water used in the processing of egg products or blended egg product mixtures*	E. coli	Not detected in 100mL	Not treated – Every month Treated – Every 6 months

* 'Blended egg product mixture' is the terminology used in the Regulation to define a product consisting of at least 80% (by weight) egg white or yolk, or both, and other ingredients.

Pasteurisation requirements

Egg products with at least 80% egg white or yolk, or both, must be pasteurised in accordance with Standard 1.6.2 *Processing Requirements* of the Code.

An alternative heat treatment process can only be used if the time/temperature combination achieves an equivalent outcome to Standard 1.6.2. If an alternative process is used, businesses must be able to demonstrate this equivalence to the Food Authority.

The equipment used to pasteurise these products must also comply with the requirements specified in the *NSW Food Safety Schemes Manual*.

The processing and equipment requirements for pasteurisation are outlined below in:

- Table 2: Egg processing requirements of Standard 1.6.2 of the Food Standards Code
- Table 3: Pasteurisation equipment requirements – continuous flow pasteurisers
- Table 4: Pasteurisation equipment requirements – batch pasteurisers.

These foods may also be pasteurised using any other process (e.g. high pressure) that achieves an equivalent outcome to Standard 1.6.2 of the Code. Businesses must be able to demonstrate equivalence to the Food Authority for processes other than pasteurisation.

Table 2: Egg processing requirements of Standard 1.6.2 of the Food Standards Code

Egg product	Minimum pasteurisation temperature	Minimum pasteurisation time	Maximum cooling temperature
Liquid whole egg	64°C	2.5 minutes	≤ 7°C
Liquid egg yolk	60°C	3.5 minutes	≤ 7°C
Liquid egg white	55°C	9.5 minutes	≤ 7°C

Standard 1.6.2 requires the cooling of liquid whole egg, egg yolk and egg white, to commence immediately after pasteurisation, and to occur at a rapid rate.

The pasteurisation (or equivalent) process must be documented, and monitoring records must be maintained for each batch to ensure that the appropriate time and temperature combinations are reached.

Table 3: Pasteurisation equipment requirements – continuous flow pasteurisers

Pasteurisation equipment requirements	Verification and validation
The equipment must include an indicating thermometer for product temperature at the end of the holding tube and for the cold product temperature.	Holding tube time must be (externally) validated every 5 years. The indicating thermometer must be compared with the continuous monitoring system each time the pasteuriser is operated (corrective action is required if the difference is more than 0.5°C). The indicating thermometers must be calibrated every 6 months (corrective action is required if the difference is more than 0.5°C).
The equipment must include a continuous recording device for the pasteurisation temperature, sterilisation temperature, cold product temperature, mode of diversion, and cleaning time and temperatures.	The following data must be continuously recorded each time the pasteuriser is operated: pasteurising temperature, sterilising temperature, cold product temperature, mode of diversion device, and cleaning time and temperatures. The recording thermometers must be calibrated every 6 months (corrective action is required if the difference is more than 0.5°C).
Raw, partially treated product and cleaning systems must not contaminate the pasteurised product.	Pasteurisers must be pressure tested annually. The diversion temperature must be challenged during start-up and recorded each time the pasteuriser is operated. The pasteuriser must be sterilised at a minimum of 80°C for 10 minutes during start-up (on the cold side) and recorded each time the pasteuriser is operated. Pressure differentials must be checked and recorded each time the pasteuriser is operated (either by manually recording the psi on the pressure gauges or by the computer system maintaining the pressure differentials).

Table 4: Pasteurisation equipment requirements – batch pasteurisers

Pasteurisation equipment requirements	Verification and validation
The equipment must include a hinged lid or removable cover and an agitator.	Vessel must be enclosed during pasteurisation.
The equipment must include a head space thermometer, an indicating thermometer for product temperature, and a continuous monitoring system for time and temperature (e.g. data logger).	The following data must be recorded each time the pasteuriser is operated: continuous pasteurising temperature, headspace temperature at the beginning and the end of the critical temperature cycle, indicating thermometer compared with the continuous monitoring system (corrective action is required if the difference is more than 0.5°C), and pasteurised product cooling time and temperatures (in accordance with clause 7 of Standard 3.2.2 of the Food Standards Code). The indicating and recording thermometers must be calibrated every 6 months (corrective action is required if the difference is more than 0.5°C).
Raw, partially treated product and cleaning systems must not contaminate the pasteurised product.	Effective seals on valves and outlets.

Implement a Food Safety Program

Egg processors are required to implement a documented food safety management program. A food safety program is a written document that shows a business has examined their food production activities and identified all potential food safety hazards. It outlines how these hazards are controlled, corrective action if they are not controlled, regular review of the program, and appropriate records to be kept.

The Food Authority has developed a template food safety program which can be adapted for your business requirements.

Minimum food safety program requirements

Approved supplier program – receiving of whole shell eggs

Businesses that receive eggs must only accept eggs that have been protected from the likelihood of contamination.

To comply with this requirement egg processors should:

- only purchase whole shell eggs from reputable suppliers
- maintain a contact list (i.e. name and business address) of all their egg suppliers.

Approved supplier program – receiving of cracked eggs or unpasteurised egg products

Businesses that receive cracked eggs or unpasteurised egg products with at least 80% egg white or yolk, or both, must only accept food that has been protected from the likelihood of contamination.

To comply with this requirement egg processors should:

- only purchase cracked eggs or unpasteurised egg products from reputable suppliers
- maintain a contact list (i.e. name and business address) of all their suppliers.

Product and/or air temperature records must be maintained for each delivery of these foods using a thermometer or a continuous data logger. Unpasteurised egg products must be received at ≤ 5ºC, or if frozen, frozen hard solid. Cracked eggs must be received at < 8ºC.

The following records for the purchase of these foods must also be maintained:

- names and addresses of the persons or businesses from whom the foods are purchased
- dates on which the foods are purchased
- lot identification numbers of the foods purchased
- quantity of the foods purchased.

Approved supplier program – other inputs

Other inputs that may potentially contaminate eggs must be suitable for contact with food, such as:

- packaging materials
- salt
- sugar

To comply with this requirement, egg processors should obtain information from their suppliers that demonstrate all inputs are suitable for contact with food.

Sale and use of cracked eggs

Cracked eggs are eggs with a cracked or broken shell (where a crack is visible to the naked eye or by candling) and includes a broken egg.

Cracked eggs must not be made available for retail sale or catering purposes (Standard 2.2.2 of the Code).

Cracked eggs must not be used in the production of egg products with at least 80% egg white or yolk, or both.

Egg processors must have a documented procedure for the handling of cracked eggs on their premises.

This procedure should outline:

- how cracked eggs are identified (e.g. clearly labelled as waste)
- the process used to segregate and dispose of cracked eggs (e.g. hygienically and away from eggs intended for processing).

Sale and processing of dirty eggs

Eggs must be visibly clean (i.e. faeces, soil and other matter removed) before they are used in the production of egg products with at least 80% egg white or yolk, or both (e.g. pulp).

Egg processors must have a documented procedure for the handling of dirty eggs on their premises.

This procedure should outline:

- the process used to deal with dirty eggs, such as:
  - separating the egg contents from the shell using a process that minimises contact between the outside of the shell and the egg product (e.g. automated or manual hand breaking of dry eggs), or
  - discarding dirty eggs.
- how dirty eggs are identified (e.g. clearly labelled as waste), segregated and discarded (e.g. hygienically, and away from eggs intended for processing).

Collection and storage of pulp

Businesses that collect pulp must be licensed with the Food Authority to conduct this activity.

Pulp may be collected using a number of different methods, such as centrifugation (or 'gulping'), mechanical separation or physical separation.

If you centrifuge (or 'gulp') eggs they must be visibly clean (i.e. faeces, soil and other matter removed) prior to the production of pulp.

Eggs must be dry when pulped to prevent contamination of the liquid egg product from water droplets on the shell.

Cracked eggs used for pulp must be stored under hygienic conditions at < 8°C prior to their use in the production of pulp.

Unpasteurised pulp must be stored in a separate area to pasteurised pulp to prevent the risk of cross contamination or misidentification.

Eggs broken in the process of final crack detection may be used for pulp provided the controls above are in place to minimise microbial growth.

Pulp must be stored under hygienic conditions at ≤ 5°C and sent for pasteurisation with minimum delay.

Egg processors must have a documented procedure for the collection and storage of pulp.

This procedure should outline:

- the process used to collect and store pulp
- the process used to dispose of broken eggs, and
- how the pulp is labelled (e.g. date of collection, quantity of pulp, and intended use of the pulp, e.g. 'waste or unpasteurised pulp to be processed').

The following records must be kept for pulp collection and storage:

- purchase details of eggs if applicable (e.g. the farm that supplied the eggs)
- batch details of eggs used (e.g. production date)
- date and quantity of pulp collected
- daily product and/or air temperatures to demonstrate that pulp is stored at ≤ 5°C, and
- calibration of temperature measuring devices (e.g. thermometer, continuous data logger or coolroom gauges) which must be accessible and demonstrate accuracy of ± 1°C.

Use of egg products in food

Egg products with at least 80% egg white or yolk, or both, must not be used in food unless they have been pasteurised.

Businesses that pasteurise these products must be licensed with the Food Authority to conduct this activity.

Businesses that pasteurise these products must comply with Standard 1.6.2 *Processing Requirements* of the Code and the pasteurisation equipment requirements specified in the NSW Food Safety Schemes Manual. Businesses must also maintain a list of all the processed foods they produce that contain these pasteurised products.

Refer to the sheet '*Comply with certain pasteurisation requirements*' for more guidance on these specific requirements.

Sale of egg products

Egg processors that sell unpasteurised egg products with at least 80% egg white or yolk, or both, within NSW must demonstrate that they are only sold to a licensed egg business authorised to pasteurise these products by maintaining a copy of the purchaser's current licence. These products must also be labelled with an advisory statement to the effect that they are unpasteurised, in accordance with the requirements of Standard 1.2.3 *Mandatory Warnings and Advisory Statements and Declarations* of the Code.

The following records must be kept for the sale of these products.

- names and addresses of the person or businesses to whom the foods are sold
- dates on which the foods are sold
- lot identification numbers of the foods sold, and
- quantity of the foods sold.

Dried egg products

The minimum requirement for the heat treatment of dried egg products is the Code (refer to Table 2), or an equivalent demonstrated method.

Dried egg products must be stored in a dry store after processing.

Storage of eggs and egg products

Egg processors must maintain daily product and/or air temperature records (e.g. using a thermometer or a continuous data logger recorder) to demonstrate cracked eggs and egg products with at least 80% egg white or yolk, or both are being stored and maintained in accordance with the requirements outlined in Table 5, or if frozen, frozen solid.

Temperature measuring devices must be easily accessible and demonstrate accuracy of ± 1°C.

Table 5: Storage temperature requirements

Food	Storage temperature	Justification
Cracked eggs	< 8°C	Code of Practice for the Manufacture of Egg Products (AECL, February 2008) Salmonella is unlikely to grow at < 8°C
Egg products with at least 80% egg white or egg yolk, or both. Examples include fresh liquid whole eggs, egg white, egg yolk (i.e. pulp) and scrambled egg mix.	≤ 5°C	Standard 3.2.2 of the Food Standard Code

Labelling of egg products

Egg products with at least 80% egg white or yolk, or both, sold for retail sale must comply with Part 1.2 *Labelling and Other Information Requirements* of the Code.

The following core information must be provided with each delivery of these foods sold for non-retail sale (i.e. Standard 1.2.2 *Food Identification Requirements* of the Code):

- the name of the food
- the egg processors name and address
- lot identification (date marking may be used in lieu of the lot identification).

Additionally, the rest of Part 1.2 *Labelling and Other Information Requirements* of the Code must be available upon request if businesses sell any of these foods for non-retail sale. This non-core information enables the purchaser to comply with the rest of the labelling requirements in the Code.

Cleaning and sanitation procedure

Egg processors must implement a documented cleaning schedule that identifies:

- all fixtures, fittings and equipment used in the processing of egg products with at least 80% egg white or egg yolk, or both (where applicable)
- the frequency of cleaning
- how all fixtures, fittings and equipment are cleaned and sanitised
- how food contact surfaces and utensils are sanitised (where applicable)
- chemical usage (e.g. strength, contact times, temperature).

Daily product and/or air temperature records (e.g. using a thermometer or a continuous data logger record) should be maintained to demonstrate whole eggs are being stored and maintained at < 15°C.

Temperature measuring devices should be easily accessible and demonstrate accuracy of ± 1°C.

More information

- visit the Food Authority's website at www.foodauthority.nsw.gov.au
- phone the helpline on 1300 552 406

For information on the Food Standards Code:

- visit the Food Standards Australia New Zealand's (FSANZ) website at www.foodstandards.gov.au

About the NSW Food Authority: The NSW Food Authority is the government organisation that helps ensure NSW food is safe and correctly labelled. It works with consumers, industry and other government organisations to minimise food poisoning by providing information about and regulating the safe production, storage, transport, promotion and preparation of food.

Note: This information is a general summary and cannot cover all situations. Food businesses are required to comply with all of the provisions of the Food Standards Code and the *Food Act 2003* (NSW).

NSW GOVERNMENT Department of Primary Industries Food Authority

6 Avenue of the Americas, Newington NSW 2127
PO Box 6682, Silverwater NSW 1811
T 1300 552 406
contact@foodauthority.nsw.gov.au
ABN 47 080 404 416

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