



# Safe Preparation and Display of Sushi



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## INTRODUCTION

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The aim of this document is to provide retail food businesses with information on the safe preparation and display of sushi.

The key food safety aspects affecting the safe the safe preparation of sushi are discussed. These include:

- Receipt of raw materials/sushi;
- Preparation of sushi;
- Temperature control;
- Display of sushi.

All food businesses are required to comply with the requirements of Food Standards Code 3.2.2 and 3.2.3. It is encouraged that the Code be read in conjunction with this resource.



## FOOD LEGISLATION

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The food laws in NSW are the *Food Act 2003*, Food Regulation 2015 and Food Standards Code.

To protect consumers from the risk of foodborne illness, businesses need to comply with Standards 3.2.2 and 3.2.3.

Authorised officers assess safe food handling practices of a business against these standards by using the Food Premises Assessment Report.

## FOOD STANDARDS CODE

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All food businesses need to meet the requirements of the Australia New Zealand Food Standards Code (Food Standards Code) to ensure they follow safe handling practices.

To protect consumers from the risk of foodborne illness, businesses need to comply with **Standard 3.2.2, Division 3, Clause 7 – Food Processing:**

1. A food business must

- a) Take all practicable measures to process only safe and suitable food; and
- b) When processing food
  - Take all necessary steps to prevent the likelihood of food being contaminated; and
  - Where a process step is needed to reduce to safe levels any pathogens that may be present in the food – use a process step that is reasonably known to achieve the microbiological safety of the food.

2. A food business must, when processing potentially hazardous food that is not undergoing a pathogen control step, ensure that the time the food remains at temperatures that permit the growth of infectious or toxigenic microorganisms in the food is minimised.

## SUSHI IS READY TO EAT

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Ready-to-eat sushi is regarded as a potentially hazardous food.

It is a requirement for food businesses to maintain the temperature of sushi either at or below 5°C during transport, storage and display. This is a requirement of the Australia New Zealand Food Standards Code (Food Standards Code) Division 3, Standard 3.2.2.

The Food Standards Code allows for alternative compliance to the temperature control requirement, provided the businesses can demonstrate the product's safety.



## POTENTIALLY HAZARDOUS FOOD

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Food Standard 3.2.2 defines potentially hazardous food as:

*“Food that has to be kept at certain temperatures to minimise the growth of any pathogenic microorganism that might be present in the food or to prevent the formation of toxins in the food”.*

Potentially hazardous foods are foods that meet both of the criteria below:

- They might contain the types of food-poisoning bacteria that need to multiply to large numbers to cause food poisoning; and
- The food will allow the food-poisoning bacteria to multiply.



## TEMPERATURE CONTROL

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The associated definition of temperature control is important. It means “maintaining food at a temperature of”:

1. 5°C, or below if this is necessary to minimise the growth of infectious or toxic microorganisms in the food so that the microbial safety of the food will not be adversely affected for the time that the food is at that temperature; or
2. 60°C or above; or
3. Another temperature — “if the food business demonstrates that maintenance of the food at this temperature for the period of time for which it will be so maintained, will not adversely affect the microbiological safety of the food”.

Potentially hazardous food must be held under temperature control during transportation, storage and display.

## ALTERNATIVE COMPLIANCE – TIME

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Clause 8 of Standard 3.2.2 requires that a food business, when displaying potentially hazardous food, display it under temperature control.

Food businesses can use time as an alternative control measure. This is known as the “4-hour / 2-hour rule”.

The “4-hour / 2-hour rule” is summarised as follows:

Any ready-to-eat potentially hazardous food, if it has been at temperatures between 5°C and 60°C during any stage (including transportation, storage, processing and display):

- For a total less than two hours, must be refrigerated or used immediately;
- For a total of longer than two hours but less than four hours, must be used immediately; or
- For a total of four hours or longer, must be thrown out.



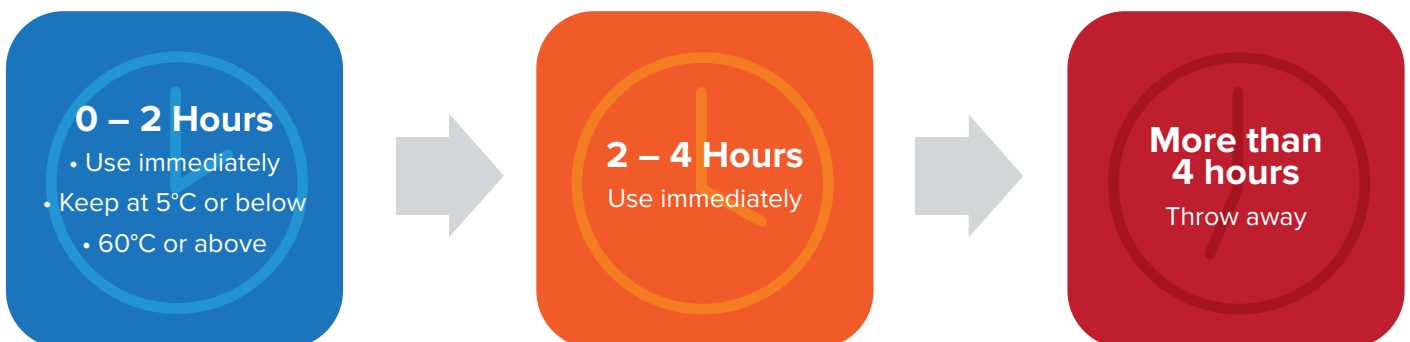
## 4-HOUR / 2-HOUR RULE

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### What is the 4-hour / 2-hour rule?

Studies show that food can be safely held out of temperature control for short periods of time without significantly increasing the risk of food poisoning.

The time that food can be safely held in the **temperature danger zone**, which is between 5°C to 60°C is referred to as the 4-hour / 2-hour rule.



## RECEIVING AND STORING FOOD

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### Supplier and food information

- Recalls frequently occur, so keep a record of all food suppliers
- All food should be provided contact details and an address for the supplier. This can be on the package or on a receipt
- Always check the food has a date marking. This can be in the form of “use by” or “best before” date
- Return food to suppliers that does not meet the requirements when received.



### Ready made sushi

- Only receive ready made sushi that has been transported in refrigerated vehicles
- Always check the temperature of sushi for each batch when received. The temperature must be 5°C or less
- Once received, sushi must be:
  - Kept refrigerated at 5°C or less; or
  - Placed on retail display immediately.
- Sushi must be covered during receipt and storage to protect against contamination.

### Potentially hazardous raw ingredients

- Only receive Potentially Hazardous Foods (PHF) that have been transported under temperature control
- After receiving PHF, it must be placed into refrigerated storage and kept under 5°C immediately
- Only sashimi-grade fish or tuna should be used in raw fish sushi
- Raw ingredients must be stored separately from finished sushi; and ready-to-eat foods and ingredients such as salmon or tuna
- Raw meat must not be placed above ready-to-eat foods, to prevent the raw juices from dripping onto them
- Refrigerated ingredients must be covered to protect from becoming contaminated.



## RECEIVING AND STORING FOOD

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### Shelf stable foods

- Shelf-stable foods include uncooked rice, seaweed (nori) sheets, wasabi powder and pickles
- When receiving shelf stable foods make sure that the packaging is intact
- Shelf-stable foods must be covered during storage to protect against contamination.



### Frozen foods

- All frozen foods must be received in a frozen state
- If foods are to be kept frozen, they must be placed in a freezer immediately
- When receiving and storing frozen foods, ensure they are adequately covered and the package is intact.

### Acidified rice

- Only receive acidified rice that is labelled with the date and time it was made
- Check the pH of the rice to ensure it has been properly acidified. It must be less than 4.6
- If the pH is higher than 4.6 or it was made greater than 8 hours ago, reject the rice
- Record the pH result, the date and time the rice was made, and the pH on a worksheet
- Only acidified rice can be stored at room temperature; however it must be used on the day it was made – after this it must be discarded
- All acidified rice must be kept covered when not in use to protect against contamination.



## PREPARING SUSHI

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Preparing sushi is a high-risk activity because it involves handling both raw and cooked foods. Because sushi is eaten without any further cooking it is important that it is prepared correctly and safely.

Raw foods can contain bacteria and, if not handled correctly, the numbers of bacteria can grow.

Poor handling of cooked foods can result in them becoming cross-contaminated from raw foods, and if not stored correctly, the number of bacteria can also grow.



### Using correct equipment and utensil

- Wooden utensils, except for bamboo mats, must not be used by a food business. Only equipment that can be effectively clean and sanitised must be used when preparing sushi
- Sanitise all benches and utensils before commencing preparation
- Sushi rolling machines must be cleaned and sanitised throughout the day to remove the build-up of rice and destroy harmful bacteria
- Boards and utensils must be cleaned and sanitised in between preparing different foods, especially when preparing foods that will not be further cooked (e.g. raw fish and cooked teriyaki chicken)
- Bamboo and plastic mats must be cleaned and sanitised daily. If bamboo mats are used, they are to be covered with clean cling wrap and the cling wrap changed regularly.

### Personal hygiene

All persons preparing and handling sushi must ensure they follow good personal hygiene practices:

- People who are sick with vomiting, diarrhoea or fever must not be preparing food
- Take all practicable measures to prevent unnecessary contact with ready-to-eat food
- Wash hands prior to preparing sushi and after handling non-food articles, using the toilet, smoking, drinking, eating and touching hair, scalp or body
- Wash hands between handling of raw ingredients and ready-to-eat foods.



## PREPARING SUSHI

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### Use of disposable gloves

It is not mandatory for food handlers to use disposable gloves, although if used correctly they can assist with minimising contamination.

When using disposable gloves they must be:

- Only used for one continuous task and then discarded;
- Regularly changed to avoid cross-contamination – this is especially the case when changing from preparing raw ingredients to handling ready-to-eat foods;
- When taken off they must always be discarded and not kept for use later; and
- Removed and discarded before using the toilet, smoking, eating, drinking or touching the hair, scalp or body.



### Acidified rice

Correctly preparing acidified rice is very important to ensure the rice is safe to use.

- Acidification of rice should occur as soon as possible after cooking is finished
- Rice acidified to a pH of less than 4.6 will inhibit the growth of pathogenic bacteria
- The pH must be tested on every batch of rice to ensure proper acidification has occurred. It is recommended to use a calibrated pH meter for testing
- The results of testing the pH must also be recorded
- Once acidified, the rice must be stored covered when not being used
- Acidified rice can be stored for up to 8 hours and the remaining rice must be discarded each day.

**Note:** If cooked rice is not acidified, it must be stored under refrigeration at or below 5°C at all times.

# PREPARING SUSHI

## Example of Rice Acidification Record

DATE ACIDIFIED	TIME ACIDIFIED	SUPPLIER (IF APPLICABLE)	AMOUNT OF RICE	PH	COMMENTS
5/8/2020	9:30am	N/A	1kg	4.4	

### Preparation of fillings and sushi

- All potentially hazardous raw materials should be kept under refrigeration until used – this is especially the case for raw fish
- Acidified rice should be at room temperature prior to making the sushi products
- Frozen foods are to be thawed under refrigeration or using a microwave oven
- Vegetables must be washed before use
- Meat and chicken must be thoroughly cooked
- Prepared potentially hazardous ingredients (e.g. cooked chicken, tamago) must be placed under refrigeration after cooked and when not being used
- Once prepared, sushi should be placed under refrigeration (at 5°C or less) unless it is being displayed for sale immediately
- If cooked ingredients are not tempered (e.g. cooked meat and tamago at 5°C or less and acidified rice at room temperature) prior to making sushi, the sushi must be placed under refrigeration prior to display to effectively decrease temperature to 25°C or less



**Note:** Display cabinets will not effectively reduce the temperature of prepared sushi.

- Businesses with limited storage and display space should only make an amount of sushi that can be properly placed within the storage or display section. Sushi must not be left unrefrigerated unless on display.

## DISPLAYING SUSHI

Scientific studies have shown that sushi displayed for longer than 4 hours at 25°C can cause harmful bacteria to grow in number and reach dangerous levels.

Based on the scientific studies, retail sushi businesses can display sushi at temperatures greater than 5°C provided:

- The food standards code requirements are followed during receipt, preparation and storage of sushi and raw materials;
- The rice is acidified to a pH less or equal to 4.6 and pH is recorded for each batch prepared;
- A monitoring system is used when sushi is on display at a temperature greater than 5°C;
- Sushi is displayed above 5°C for no longer than 4 hours;
- Sushi is never displayed above 25°C.



### Record system

Records must be kept when displaying sushi when not held under temperature control that indicate:

- The time when the sushi was placed on display;
- If sushi is made and displayed immediately (e.g. conveyor system), the time it was made must be recorded;
- Corresponding colour, patterns; etc.

### Example of Sushi Display Records for colour code

DATE	COLOUR	DISPLAY TIME	TIME DISPOSED (4+ HOURS)
4/7/2020	Red	10:00am	2:00pm

In this example a red sticker or plate may be used on a sushi roll or plate to show that it was placed on display at 10:00am and must be disposed at 2:00pm.

## SUSHI BARS

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Display cabinets must include doors to protect food from the likelihood of contamination and maintain the temperature control inside the cabinet.

When not in use, doors on the display cabinet must be closed.

Either each roll or batch must be able to be identified.

This could include:

- Colour-coded stickers on roll packaging;
- Colour-coded containers;
- Time stamp of each roll / container – this is only applicable to sushi bars preparing their own sushi.

Display cabinets must be cleaned and sanitised at the end of the day.



## SUSHI CONVEYOR (TRAINS)

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- All plates on conveyor must be covered to protect from contamination
- All plates must be able to be traced to a batch and time of display.  
Suggested systems include:
  - Colour coded plates
  - Patterns on plates
  - Colour-coded stickers.
- Garnishes cannot be used as time of display indicator
- Individually packaged wasabi and pickled ginger should be provided to prevent cross contamination.

## FURTHER RESOURCES

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- **Food safety guidelines for the safe preparation and display of sushi**  
[www.foodauthority.nsw.gov.au/sites/default/files/\\_Documents/retail/sushi\\_preparation\\_display\\_guidelines.pdf](http://www.foodauthority.nsw.gov.au/sites/default/files/_Documents/retail/sushi_preparation_display_guidelines.pdf)
- **4-hour / 2-hour rule**  
[www.foodauthority.nsw.gov.au/sites/default/files/2020-07/4\\_hour\\_2\\_hour\\_rule.pdf](http://www.foodauthority.nsw.gov.au/sites/default/files/2020-07/4_hour_2_hour_rule.pdf)
- **Potentially hazardous foods**  
[www.foodauthority.nsw.gov.au/sites/default/files/\\_Documents/scienceandtechnical/potentially-hazardous-foods.pdf](http://www.foodauthority.nsw.gov.au/sites/default/files/_Documents/scienceandtechnical/potentially-hazardous-foods.pdf)
- **Temperature control of potentially hazardous foods**  
[www.foodstandards.gov.au/publications/documents/FS\\_Temp\\_Control\\_GuideApr02.pdf](http://www.foodstandards.gov.au/publications/documents/FS_Temp_Control_GuideApr02.pdf)
- **Safe Food Australia – A guide to the Food Safety Standards**  
[www.foodstandards.gov.au/publications/Pages/safefoodaustralia3rd16.aspx](http://www.foodstandards.gov.au/publications/Pages/safefoodaustralia3rd16.aspx)



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