

## Standard 3.2.2 Food Safety Practices and General Requirements

*This standard commenced on 24 February 2001*

### Time/Temperature Control

This fact sheet provides advice, based on documented sound scientific evidence, on the use of time as a control for the growth of food-borne pathogens in potentially hazardous food.

### **The use of time as a control for potentially hazardous food during transport, receipt, storage, processing and display (Clauses 5, 6, 7, 8, 10)**

A food business is required to maintain the temperature of potentially hazardous food either at or below 5°C or at or above 60°C during transport, storage and display unless the food business can demonstrate that maintaining food at another temperature, for the period of time for which it will be so maintained, will not adversely affect the microbiological safety of the food.

It is safe for potentially hazardous food to be between 5°C and 60°C provided that the time that the food is within these temperatures is kept to a minimum. This is safe because it takes time for food-borne pathogens to grow to unsafe levels.

The maximum time a potentially hazardous food can be safely at temperatures between 5°C and 60°C will depend on the temperature of the food. Food poisoning bacteria grow at the fastest rate at temperatures around 40°C. Hence, if the food is at 40°C, the time that the food can be safely at this temperature is much less than if it is at 20°C. Advice is provided below on the maximum time that potentially hazardous food can be outside temperature control, based on a worst-case scenario.

### **As a general rule, the total time that a ready-to-eat potentially hazardous food can be at temperatures between 5°C and 60°C is 4 hours**

This is the limit specified within the US Food Code and the UK Food Safety (Temperature Control) Regulations 1995. The 4-hour limit is based on a worst-case scenario. After this time the food must be discarded. The total time is the sum of the time the food is at temperatures between 5°C and 60°C after it has been cooked or otherwise processed to make it safe. For example, if raw meat is cooked, count the time the food is at temperatures between 5°C and 60°C after it is cooked. The cooked food may have been at temperatures between 5°C and 60°C when it was transported, prepared and served.

If the food is to be re-refrigerated, the total time a food can be at room temperature and then be safely put back in the refrigerator to use later is 2 hours. This 2-hour limit is based on advice provided in the UK's guidance notes on its Temperature Control Regulations. This advice states that 'in normal circumstances, a single limited period of up to 2 hours outside temperature control is unlikely to be questioned'.

The '4-hour/2-hour rule' is summarised below:

Any ready-to-eat potentially hazardous food, if it has been at temperatures between 5°C and 60°C

- for a total of less than 2 hours, must be refrigerated, or used immediately;
- for a total of longer than 2 hours but less than 4 hours, must be used immediately; or
- for a total of 4 hours or longer, must be thrown out.

If a food business wishes to maintain potentially hazardous food between the temperatures of 5°C and 60°C for time periods longer than the 2 hours and 4 hours specified above, it will need to be able to demonstrate that the extension in time will not compromise the safety of the food. For example, if the maximum temperature that a potentially hazardous food will be stored at is 15°C, it will be able to be safely kept at this temperature for longer than 4 hours. However, food businesses will need to be able to justify this extension on the basis of sound scientific evidence, as the amount of time that is safe will vary depending on the type of food it is and the pathogens of concern.

Pre-cooked boiled rice is placed cold into a bain-marie. After 6 hours, the temperature of the rice is still only 46°C. This practice is unsafe, as the food-borne pathogen *Bacillus cereus* may have been able to grow to dangerous levels. The food business is advised to heat the rice in an oven or microwave to at least 60°C before placing the rice in the bain-marie unit.

At a takeaway, ham is removed from refrigeration, sliced and re-refrigerated. This takes 30 minutes. Later the sliced ham is again taken out of the refrigerator to be made into sandwiches. This takes 30 minutes. The ham sandwiches are then displayed at room temperature for periods of up to 3 hours over the lunch period. Each sandwich is labelled with the date the sandwich was made and the latest time it can be sold. For example, a time of 2.30 pm indicates that the sandwich must be sold on or before 2.30 pm on the day the sandwich was prepared. Sandwiches that have not been sold by the specified time are discarded.

A bistro has ready-to-eat potentially hazardous food in display units for sale over the luncheon and dinner periods. The refrigerated display units can only maintain the cold food at temperatures around 15°C. The hot display units can keep the food at temperatures above 60°C, but because the food dries out quickly, the business keeps the hot food at approximately 45°C.

When the food business is inspected, the business claims that its practices are safe, because the food is only kept at these temperatures for periods less than 4 hours and then discarded. However, the business cannot provide evidence that these practices are occurring and hence it is not able to demonstrate to the inspector that it has safe alternative systems in place.

The business is required to either keep the food at or below 5°C or at or above 60°C or put in place documented alternative systems.

A food business cooks chickens. The business needs to determine how long the chickens need to cook at a particular temperature to ensure they are thoroughly cooked. A chicken is sufficiently cooked when its internal temperature has reached at least 74°C or when the juices of the chicken run clear.

### Temperature Control (Clause 1)

Temperature control means maintaining food at a temperature of:

- 5°C, or below if this is necessary to minimize the growth of infectious or toxigenic micro-organisms in the food so that the microbiological safety of the food will not be adversely affected for the time the food is at that temperature; or
- 60°C above; or
- 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** means food that has to be kept at certain temperatures to minimise the growth of any pathogenic micro-organisms that may be present in the food or to prevent the formation of toxins in the food.

**Ready to eat food** means food that is ordinarily consumed in the same state as that in which it is sold and does not include nuts in the shell and whole, raw fruits and vegetables that are intended for hulling, peeling or washing by the consumer.

### Temperature Measuring Devices (Clause 22)

A food business must, at food premises where potentially hazardous food is handled, have a temperature measuring device that (a) is readily accessible and (b) can accurately measure the temperature of potentially hazardous food to +/- 1°C.

**Reference:** ANZFA, Safe Food Australia: Guidelines to the Australia New Zealand Food Standards Code.

For further information contact: [www.foodstandards.gov.au](http://www.foodstandards.gov.au)

### Disclaimers

This Fact Sheet was believed to be correct at the date of its approval.

This Fact Sheet is for general information purposes only.