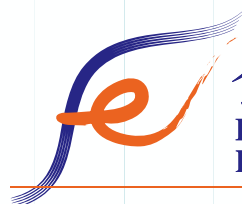


How to Implement a Food Safety Plan



食物環境衛生署
Food and Environmental
Hygiene Department

Chapter 1	Introduction	1
Chapter 2	What is a Food Safety Plan	2
Chapter 3	How to implement a Food Safety Plan	3
	Stage 1: Planning	
	Stage 2: Draw a flow diagram	
	Stage 3: Develop a Food Safety Plan	
	Step 1 List hazards	
	Step 2 Identify preventive measures and their control limits	
	Step 3 Establish monitoring procedures	
	Step 4 Establish corrective actions	
	Step 5 Keep records	
	Step 6 Check and review	
	Examples of application of Food Safety Plan	
Chapter 4	Basic requirements for a Food Safety Plan	16
	A. Cleaning and sanitation	
	B. Personal hygiene	
	C. Pest control	
	D. Waste disposal	
	E. Staff training	
	F. Handling customer complaints	
Chapter 5	Relevant websites	23
	<i>Appendix</i>	24
	1. Main factors contributing to outbreaks of foodborne illnesses	
	1(j). Temperature danger zone	
	2. Examples of hazards	
	3. Food Safety Plan Worksheet — Production Flow Chart	
	4. Food Safety Plan Worksheet	
	5. Approved Suppliers Record Form	
	6. Unqualified Suppliers Record Form	
	7. Purchasing Record Form	
	8. Record Form for Receiving Frozen Products	
	9. Record Form for Receiving Chilled Products	
	10. Record Form for Receiving Dry Products	
	11. Temperature Log	
	12. Corrective Action Record Form	
	13. Cleaning Schedule Record Form	
	14. Pest Control Inspection Record Form	
	15. Pest Control Monitoring Record Form	
	16. Staff Training Record Form	
	17. Customer Complaint Record Form	
	18. Manager Self-inspection Checklist	

Recently, a number of foodborne illnesses occurred worldwide have aroused the concern and anxiety of the public about food safety. Most of these foodborne illnesses are caused by mishandling or improper preparation/storage of food by food handlers (*Appendix 1*). In order to ensure food safety and prevent food poisoning, all food businesses including food service organisations should comply with the existing food regulations as well as prepare their own **Food Safety Plan (FSP)** based on the principles of Hazard Analysis and Critical Control Point (HACCP) system.

HACCP adopts a proactive approach to anticipate the occurrence of potential problems during the food production process and to implement measures designed to prevent the occurrence of these problems.

HACCP system has been adopted worldwide by many food manufacturing companies. However, a “classical” HACCP system is generally not considered feasible in the food service organisations due to the multiplicity of food products, lack of standardised methods, lack of systematic production planning as well as lack of expertise to develop the HACCP system. This document contains an FSP based on the principles of HACCP in order to assist managers of food service organisations to tackle the above problems and ensure food safety, including:

1. an outline of the stages involved in developing an FSP;
2. a list of potential problems that can occur during food production in catering operations; and
3. a list of control measures that can be applied generally to most catering operations and advices on when and how these control measures can be applied.

An FSP is designed to identify and prevent possible food safety problems (hazards) in order to enhance food safety. The problems may relate to the purchase, receiving, storage, preparation, cooking, packaging, transport or display of food.

There are six elements in an FSP:

1. List food safety problems (hazards) at each step of the food processing (e.g. purchase and receiving of food)
2. Identify preventive measures and their control limits
3. Establish monitoring procedures
4. Establish corrective actions
5. Keep records
6. Check and review

Appropriate implementation of the above elements, together with the application of some basic practices (e.g. cleaning and sanitation, personal hygiene, pest control, waste disposal and staff training), will certainly prevent food safety problems during the food production.



Stage 1 Planning

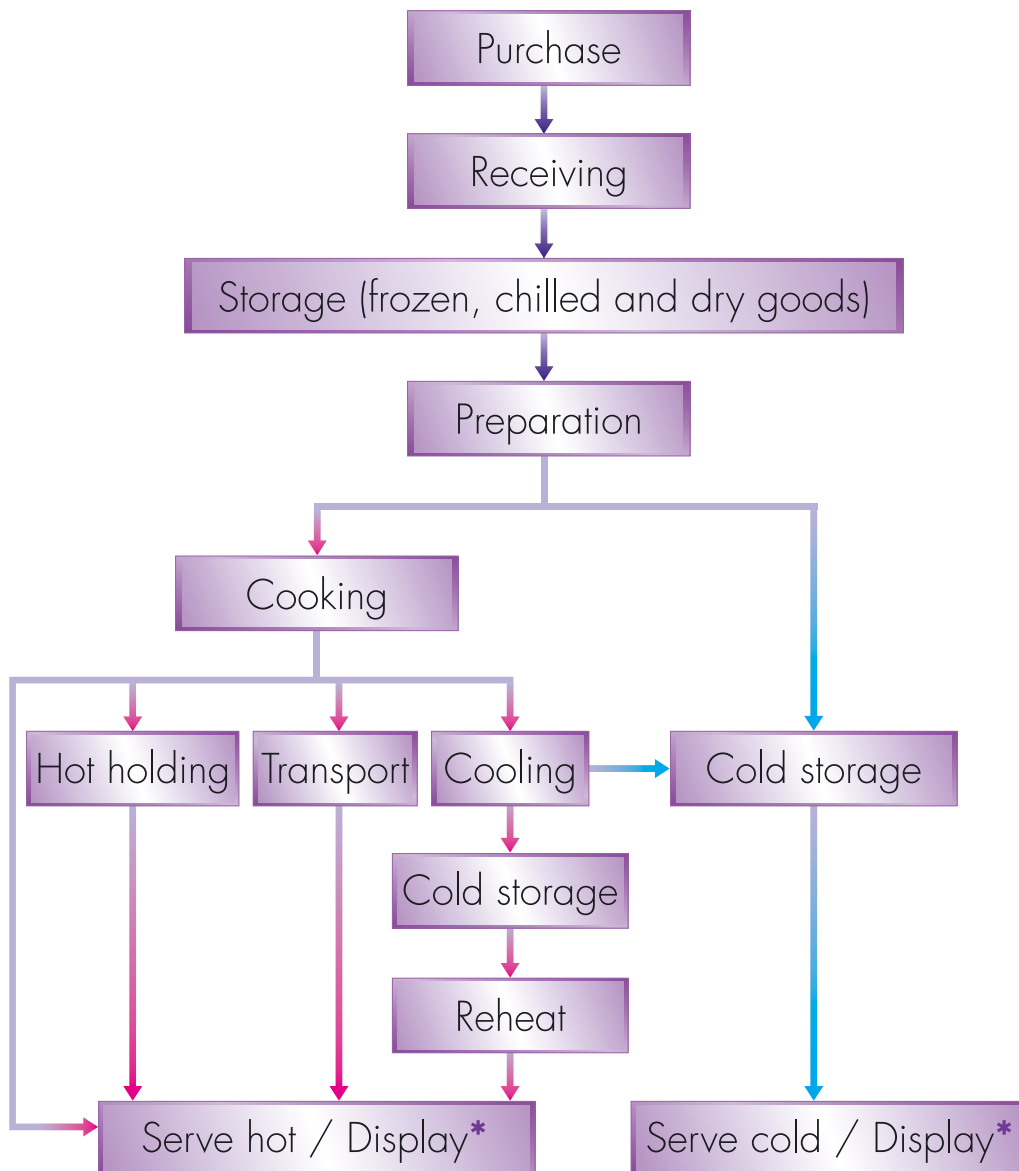
Preliminary planning and preparation will be essential before developing your FSP. A coordinator for developing an FSP should be appointed and adequate authorities and resources should also be provided. The coordinator must have basic knowledge of food safety and must be familiar with the properties of food as well as its processing procedures.

Staff should be made aware of the changes and benefits that will result from the introduction of the FSP. The FSP will only work if each staff member knows their role in the plan, and is committed to making it work. To reduce the anxiety of staff, the FSP should be introduced in phases over a period of time. For example, the FSP could be introduced initially for just the first step of the catering operation (i.e. purchase of raw materials), making sure that the first step is working properly before moving onto the next step.



Stage 2 Draw a flow diagram

A flow diagram should be drawn showing each step in the operation, from purchase of raw materials to serving food to consumers. The flow diagram shown here is a generic example for a catering operation which should be tailored to each individual operation. Each of the steps of the operation can be considered a control point to prevent food safety problems.



* Note: "Display" is applicable to businesses providing buffets.

Stage 3 Develop a Food Safety Plan

Step 1 List hazards

A hazard is anything that may cause a food to be unsafe for human consumption (Appendix 2). Use your flow diagram to identify all the hazards (food safety problems) associated with each step.

Examples of problems:

- I. Raw materials contain harmful micro-organisms (e.g. raw oysters contaminated with Norwalk-like virus and raw eggs contaminated with *Salmonella*)
- II. Harmful micro-organisms grow and produce toxin during processing
- III. Harmful micro-organisms or toxins survive after heating
- IV. Food contains harmful chemicals (e.g. ciguatoxin in coral reef fish)
- V. Food contains extraneous physical objects (e.g. metal, glass fragments)



Of these, harmful micro-organisms as well as toxins produced by them are likely to be the most important problems that cause foodborne illnesses.

Step 2 Identify preventive measures and their control limits

List the measures and control limits that can be used to address the identified problems (i.e. those identified at step 1) at each step of the catering operation. A control limit is a value or measurement (such as temperature or acidity) that must be met to ensure safety of the product.

Examples of preventive measures and their control limits are:

Preventive measures	Control limits
I. Using reputable suppliers	Products bought from approved/licensed and reputable suppliers
II. Adequate freezing or chilling	Frozen/chilled foods should be stored at $-18^{\circ}\text{C}/4^{\circ}\text{C}$ or below
III. Using proper ways to thaw frozen foods	Frozen foods should be thawed under <ul style="list-style-type: none"> ➤ refrigeration at 8°C or below ➤ cool running water in waterproof package
IV. Cooking thoroughly	During cooking the core food temperature should reach 75°C or above
V. Proper cooling	Cooked foods should be cooled from 63°C to 20°C in two hours and then to 4°C or below in the next four hours

Step 3 Establish monitoring procedures

The monitoring of control limits will ensure that any loss of control (i.e. deviation from control limits) can be identified so that corrective actions can be taken before the product becomes unsafe. The methods used should be kept as simple as possible.

Examples of monitoring procedures include:

- I. Cooking temperature and time measurements
- II. Visual observation of "use by" date and stock rotation
- III. Visual observation of cleanliness of equipment and work surface
- IV. Visual inspection of incoming food ingredients

Simple and clear work instructions for the control and monitoring procedures should be developed for staff to refer to:



- I. What is to be checked? (e.g. the cooking temperature)
- II. How is it checked? (e.g. use thermometer to measure temperature)
- III. When is it checked? (e.g. measure once every half hour)
- IV. Who does the check? (e.g. chef assistants)

Step 4 Establish corrective actions

If monitoring procedures reveal loss of control, corrective actions must be taken immediately.

Examples of corrective actions:

- I. Reheat the food until its core temperature reaches the pre-determined temperature (i.e. 75°C or above) if the cooking temperature is inadequate.
- II. Adjust or repair the chiller if its temperature is higher than 4°C.
- III. Clean the equipment again if it is dirty.

Step 5 Keep records

Maintenance of monitoring records (e.g. temperature records of the freezer) helps evaluate whether preventive measures are adequate and efficient. You can make reference to the record sheets shown in *Appendices 3 to 17* and choose the ones that are suitable for you to record the monitoring results.



Step 6 Check and review

In order to ensure that your FSP works properly, you should perform a systematic check periodically (e.g. once a week). An example of an FSP checklist is provided in *Appendix 18* to assist you to develop your own inspection checklist. The checklist may help you determine areas in your operation requiring attention and improvement. In addition, you should also review your FSP at least once a year because your operation or products may change.

Examples of application of Food Safety Plan

Following are examples of possible problems and their controls for each step in the food service operation:

Step: Purchase

Hazards	Control Limits	Monitoring Procedures*				Corrective Actions	Records
		What	How	When	Who		
Raw materials contaminated with ➤ Food poisoning bacteria ➤ Toxins ➤ Chemicals such as pesticides ➤ Glass, metal, etc	Raw materials obtained from approved/licensed and reputable suppliers	Evidence showing that suppliers follow good manufacturing practices	Inspect suppliers' premises and check their monitoring records	Once a year and before renewing contracts with suppliers	Purchasing manager	Avoid unqualified suppliers	Record of approved and unqualified suppliers (<i>Appendices 5 and 6</i>)
		Suppliers' records on customer complaints	Check records	Before renewing contracts with suppliers	Purchasing manager	Avoid unqualified suppliers	
	Establish products' safety and quality specifications with suppliers (including delivery temperature of perishable foods)	Requirements mentioned in product specification	Check product specification	Before purchasing	Purchasing manager	Avoid ordering substandard foods	Purchasing record form (<i>Appendix 7</i>) and product specification

* Monitoring procedures (e.g. frequency of monitoring) should be tailor-made to suit your own operation.

Chapter 3 How to implement a Food Safety Plan?

Step: Receiving

Raw materials or ingredients must be checked against the specifications on deliveries. Depending upon the degree of risk they present, some food or raw ingredients will need to be checked more frequently.

Hazards	Control Limits	Monitoring Procedures				Corrective Actions	Records
		What	How	When	Who		
Damaged packaging and contamination with foreign matter (including food poisoning bacteria)	Packaging is intact and has no visible foreign matter	Integrity of packaging and signs of contamination	Visual checking	Receiving raw materials	Receiver	Reject raw materials and inform suppliers	Records of incoming food and supplies (<i>Appendices 8, 9 and 10</i>)
	Delivery vehicles are clean and hygienic and are not used for the transport of chemicals	Hygienic condition of vehicles and evidence of the vehicle being used to transport chemicals	Visual checking	Receiving raw materials	Receiver	Reject raw materials and inform suppliers	
Presence and growth of food poisoning bacteria during delivery	No sign of deterioration of raw materials (e.g. appearance and odour, etc.)	General conditions of raw materials	Check the appearance of raw materials (ie. colour, smell, texture, etc.)	Receiving raw materials	Receiver	Reject raw materials and inform suppliers	
	Not exceeding the durability of raw materials	Durability of raw materials	Check the labels	Receiving raw materials	Receiver	Reject raw materials and inform suppliers	
	Temperature of raw materials on arrival: 4°C or below (chilled foods) / entirely frozen (frozen foods)	Temperature of raw materials	Use thermometer and check the appearance of food	Receiving raw materials	Receiver	Reject raw materials and inform suppliers	
	Store chilled / frozen foods at 4°C/-18°C or below immediately after receiving (e.g. within ten minutes)	Procedures for receiving and storing food	Visual checking	Receiving raw materials	Store keeper	<ul style="list-style-type: none"> Review the procedures for receiving food to ensure that food should be stored within specified time Discard chilled/frozen foods if placing at ambient temperature for too long (e.g. chilled foods have been placed at ambient temperature for more than four hours) 	

Chapter 3 How to implement a Food Safety Plan?

Step: Dry storage

Dry storage includes the storage of some kinds of fruits and vegetables, dried foods (e.g. cereals and seasonings) and canned or bottled foods.

Hazards	Control Limits	Monitoring Procedures				Corrective Actions	Records
		What	How	When	Who		
Cross-contamination	Group and store food according to their properties and store food in appropriate containers	Storage conditions	Visual checking	Storing / taking food ingredients	Store keeper	<ul style="list-style-type: none"> • Store food in appropriate containers and reorganise layout to separate different food types • Discard contaminated food 	
	Packaging is intact and has no visible foreign matter	General condition of food	Visual checking	Storing / taking food ingredients	Store keeper	<ul style="list-style-type: none"> • Re-wrap the food • Discard contaminated food 	
	Keep storage area dry and clean	Hygienic condition of storage area	Visual checking	Before off-duty	Assistant manager	Clean the storage area immediately	
		Cleaning records	Check records	Before off-duty	Assistant manager	Remind staff to clean storage area according to the schedule	Cleaning records (<i>Appendix 13</i>)
	Storage area is not infested with pests	Signs of pests	Visual checking	Weekly	Assistant manager	Use proper methods (e.g. rodent traps) to capture and kill pests where there are signs of pests or employ a pest control company	Pest control monitoring and inspection records (<i>Appendices 14 and 15</i>)
Growth of food poisoning bacteria	Use first-in-first-out (FIFO) rotation (Use date codes or marks to show the time sequence of food storage)	Date codes / marks (e.g. durability / receiving date)	Check date codes / marks	Daily	Store keeper	Discard food if its durability is passed or it has no date codes / marks	Stock records

Chapter 3 How to implement a Food Safety Plan?

Step: Refrigerated storage

Hazards	Control Limits	Monitoring Procedures				Corrective Actions	Records
		What	How	When	Who		
Cross-contamination (e.g. cooked food contaminated by raw food)	Cover/wrap all food and store cooked and raw foods separately	Storage condition	Visual checking	Storing / taking food ingredients	Store keeper	<ul style="list-style-type: none"> Cover/wrap the food Reorganise layout to separate different food types (e.g. store cooked and raw foods separately) 	
	Keep storage area clean	Hygienic condition of storage area	Visual checking	Storing / taking food ingredients	Store keeper	Clean the storage area immediately	
Growth of food poisoning bacteria and formation of toxins	Storage temperature at 4°C or below	Temperature of the chiller	Use thermometer	Three times a day (in the morning, at noon and before off-duty)	Store keeper	<ul style="list-style-type: none"> Adjust temperature or repair chiller where appropriate Discard affected food 	Temperature record sheet for chiller (<i>Appendix 9</i>)
	Storage area with good air circulation	Storage condition	Visual checking	Storing / taking food ingredients	Chef assistant	Reorganise layout	
	Use first-in-first-out (FIFO) rotation (Use date codes or marks to show the time sequence of food storage)	Date codes / marks (e.g. durability / receiving date)	Check date codes / marks	Daily	Chef assistant	Discard food if its durability is passed or it has no date codes / marks	Stock records

10

Step: Frozen storage

Hazards	Control Limits	Monitoring Procedures				Corrective Actions	Records
		What	How	When	Who		
Growth of food poisoning bacteria	Temperature of freezer at -18°C or below	Temperature of freezer	Use thermometer	Three times a day (in the morning, at noon and before off-duty)	Store keeper	Adjust temperature or repair freezer where appropriate	Temperature record sheet for freezer (<i>Appendix 11</i>)
	Storage area with good air circulation	Storage condition	Visual checking	Storing / taking food ingredients	Store keeper	Reorganise layout	

Chapter 3 How to implement a Food Safety Plan?

Step: Preparation

Hazards	Control Limits	Monitoring Procedures				Corrective Actions	Records
		What	How	When	Who		
Cross-contamination	Use appropriate methods (e.g. colour code) to distinguish the utensils and cutting boards for handling ready-to-eat foods from raw foods	Utensils and cutting boards	Visual checking	During working	Chef assistant	<ul style="list-style-type: none"> • Clean the utensils and put them back to the appropriate location • Retrain the staff 	Corrective action record sheet (if taken) (Appendix 12)
	Ready-to-eat fruits and vegetables are clean and hygienic	Procedures of washing fruits and vegetables	Visual checking	During working	Chef assistant	Discard contaminated ready-to-eat fruits and vegetables	
Growth of food poisoning bacteria and formation of toxin	Frozen foods to be thawed under <ul style="list-style-type: none"> ➤ refrigeration at 8°C or below ➤ cool running water in waterproof package 	Methods of thawing (e.g. thawing temperature, food is packed in waterproof package, water is cool and running while thawing)	Visual checking	During working	Chef	<ul style="list-style-type: none"> • Adjust the thawing temperature to 8°C or below • Discard contaminated food • Retrain the staff 	
	Frozen foods are adequately thawed (no hardening with ice) before cooking	Condition of the thawed foods	Touching and visual checking	Before cooking	Chef assistant	Thaw the food under suitable condition further	
	Maximum time for holding thawed foods and cold perishable foods at above 4°C is four hours	Length of time holding perishable foods at above 4°C in food preparation area	Visual checking	During working	Chef assistant	<ul style="list-style-type: none"> • Control the processing procedures so as to shorten the time in which perishable food is held above 4°C • Discard perishable foods that have been held above 4°C for more than four hours 	

Chapter 3 How to implement a Food Safety Plan?

Step: Cooking

Hazards	Control Limits	Monitoring Procedures				Corrective Actions	Records
		What	How	When	Who		
Survival of food poisoning bacteria and bacteria spores	Core food temperature reaches 75°C or above	Core food temperature	Use thermometer	Each batch	Chef	Continue cooking food to required temperature	Temperature record sheet
	➤ Minced meat is brown inside	Condition of food during and after cooking	Visual checking	Each batch	Chef	Continue cooking food until thoroughly cooked	
	➤ Poultry juices run clear						
➤ Fish flakes with a fork							

Step: Cooling

Hazards	Control Limits	Monitoring Procedures				Corrective Actions	Records
		What	How	When	Who		
Cross-contamination	Food is protected from contamination during cooling	Cooling environment (whether there is any source of contamination)	Visual checking	During working	Chef assistant	<ul style="list-style-type: none"> Eliminate the possible sources of contamination Discard contaminated food 	
	Containers are clean and hygienic	Cleanliness of containers	Visual checking	Before use	Chef assistant	Clean and sanitise the containers	
Growth of food poisoning bacteria and formation of toxin	Containers less than five cm/ two inches high	Height of containers	Visual checking	Before use	Chef assistant	Use shallow containers	
	Cool to 4°C or below in six hours (Cool from 63°C to 20°C in two hours and then to 4°C or below in the next four hours)	Cooling time and temperature of foods	Use timer and thermometer	Every hour	Chef assistant	<ul style="list-style-type: none"> Cool food by – <ul style="list-style-type: none"> ➤ dividing into small portions ➤ placing containers in ice water bath ➤ stirring frequently Discard product if temperature is still above 4°C after six hours of cooling 	Temperature record sheet

Chapter 3 How to implement a Food Safety Plan?

Step: Reheating

Hazards	Control Limits	Monitoring Procedures				Corrective Actions	Records
		What	How	When	Who		
Survival of food poisoning bacteria	Heat food to a core temperature 75°C or above as quickly as possible	Core food temperature	Use thermometer	Each batch	Chef	Continue reheating food to required temperature	Temperature record sheet

Step: Hot holding

Hazards	Control Limits	Monitoring Procedures				Corrective Actions	Records
		What	How	When	Who		
Cross-contamination	Cover / wrap all food	Storage condition	Visual checking	During working	Chef assistant	<ul style="list-style-type: none"> Cover / wrap the food Discard contaminated food 	
Growth of food poisoning bacteria and formation of toxin	Keep food at 63°C or above	Temperature of food in holding containers	Use thermometer	Every two hours	Chef assistant	<ul style="list-style-type: none"> Adjust hot holding apparatus to keep food above 63°C Discard food if it is held below 63°C for more than two hours 	Temperature record sheet (Appendix 11)

Step: Display (applicable to businesses providing buffets)

Hazards	Control Limits	Monitoring Procedures				Corrective Actions	Records
		What	How	When	Who		
Cross-contamination	Display ready-to-eat foods* separately from non ready-to-eat foods (e.g. uncooked meat)	Condition during display	Visual checking	During display	Attendants#	Discard contaminated food and review the display layout	
	Use different sets of utensils to handle ready-to-eat foods* and non ready-to-eat foods	Utensils for handling food	Visual checking	During display	Attendants	Discard contaminated food and clean the contaminated utensils	
	Avoid topping up a displayed batch of foods with a fresh one	Handling of food	Visual checking	During buffet operation hours	Chef	Retrain the staff	
	Displayed leftovers are not kept for further use	Handling of leftovers	Visual checking	During and after display	Chef	Discard all leftovers	
Growth of food poisoning bacteria and formation of toxin	Keep food at 63°C or above	Temperature of food	Use thermometer	Every hour	Attendants	<ul style="list-style-type: none"> Adjust hot holding apparatus to keep food above 63°C Discard food if it is held below 63°C for more than two hours and review display procedures 	Temperature record sheet (Appendix 11)
	Keep cold foods (e.g. raw oysters, sashimi and salad) at 4°C or below	Condition during display	Visual checking	During display	Attendants	Discard food if it is held above 4°C for more than four hours and review display procedures	Temperature record sheet for chiller (Appendix 11)
		Temperature of chillers	Use thermometer	Every two hours	Attendants	Adjust storage temperature or repair the chiller where appropriate	
Keep displaying food in small portions	Condition during display	Visual checking	During display	Manager	Review the quantity of food for display to shorten display time and retrain the relevant staff to explain the procedures of display		

* Sashimi and raw oysters are classified as ready-to-eat foods.

Attendants should be present at buffet tables to monitor the hygienic condition of displayed food.

Step: Transport

Hazards	Control Limits	Monitoring Procedures				Corrective Actions	Records
		What	How	When	Who		
Cross-contamination	Delivery persons have good personal hygiene practices	Personal hygiene practices of staff	Visual checking	During delivery	Supervisor	Retrain delivery persons	
	Delivery vehicles are clean and hygienic and are not used for the transport of chemicals	Hygienic condition of vehicles and evidence of the vehicles being used to transport chemicals	Visual checking	During delivery	Supervisor	<ul style="list-style-type: none"> • Clean the delivery vehicle immediately or use an appropriate vehicle • Discard contaminated food where necessary 	Vehicle inspection sheet
Growth of food poisoning bacteria and formation of toxin	Keep hot foods at 63°C or above and cold foods at 4°C or below	Temperature of foods	Use thermometer	During delivery	Delivery person	<ul style="list-style-type: none"> • Adjust delivery system so that it can achieve acceptable temperatures • Discard food if hot food is kept at a temperature below 63°C for more than two hours • Discard food if cold food is kept at a temperature above 4°C for more than four hours 	Temperature record sheet (Appendix 11)

An FSP should also include some basic activities (e.g. cleaning and sanitation, personal hygiene, pest control, waste disposal and staff training) so that potential problems arising from the food production process will be prevented more effectively. Listed below are the examples of these activities.

A. *Cleaning and sanitation*

Food preparation areas, facilities, equipment and all food contact surfaces should always be kept clean because food residues and dirt may contaminate food resulting in food poisoning. A cleaning programme should therefore be developed to ensure that cleaning and sanitising be carried out in a systematic, regular and effective manner.

The steps for cleaning and sanitising of utensils are as follows:

1. Remove debris by wiping and scraping
2. Rinse with water
3. Clean with detergents
4. Rinse with water
5. Sanitise with hot water or chemical sanitisers (instructions for use and safety precautions on the labels should always be followed when using chemical sanitisers)
6. Air dry

In order to ensure that cleaning and sanitation is carried out effectively in your premises, you should develop a well-planned cleaning and sanitation programme and maintain relevant records for evaluation. A well-planned cleaning and sanitation programme should include the following elements:

- areas, utensils and equipment to be cleaned
- frequency of cleaning required for each item
- cleaning procedure specified for each item
- equipment and methods to be used
- chemicals or systems to be used
- the staff responsible for each task



An example of cleaning programme

Item	Frequency	Equipment and Chemicals	Method	Responsible Person
STRUCTURE				
Floors	End of each day or as required	Broom, damp mop, brush, detergent and sanitiser	<ol style="list-style-type: none"> 1. Sweep the area 2. Apply detergent and mop the area 3. Use scrub for extra soil 4. Rinse thoroughly with water 5. Remove water with mop 	
Walls, window and ceiling	Monthly or as required	Wiping cloths, brush and detergent	<ol style="list-style-type: none"> 1. Remove dry soil 2. Rinse with water 3. Apply detergent and wash 4. Rinse with water 5. Air dry 	
FOOD CONTACT SURFACES				
Work tables and sinks	After use	Wiping cloths, detergent and sanitiser	<ol style="list-style-type: none"> 1. Remove food debris and soil 2. Rinse with water 3. Apply detergent and wash 4. Rinse with water 5. Apply sanitiser 6. Air dry 	
EQUIPMENT				
Utensils, cutting boards, knives, and other cooking equipment	After each use	Wiping cloths, brush, detergent and sanitiser	<ol style="list-style-type: none"> 1. Remove food debris and soil 2. Rinse with water 3. Apply detergent and wash 4. Rinse with water 5. Apply sanitiser 6. Air dry 	
Refrigerators, freezers and storage areas	Weekly or as required	Wiping cloths, brush and detergent	<ol style="list-style-type: none"> 1. Remove food debris and soil 2. Rinse with water 3. Apply detergent and wash 4. Rinse with water 5. Dry with clean cloths / Air dry 	
HAND CONTACT SURFACES				
Door knobs, drawers and switches	Daily	Damp cloths and detergent	<ol style="list-style-type: none"> 1. Remove debris 2. Apply detergent 3. Rinse with damp cloths 4. Dry with paper towel/Air dry 	

B. Personal hygiene

Good personal hygiene is essential to ensure food safety. Food poisoning bacteria may be present on the skin and in the nose of healthy people. All food handlers must therefore maintain a high standard of personal hygiene and cleanliness in order to avoid transferring food poisoning micro-organisms to food. The following points need to be considered by all food handlers:

Handwashing

Hands must be washed:

- Before working
- Before preparing food
- After going to toilets
- After handling raw foods
- After licking fingers, coughing, sneezing, eating, drinking or smoking
- After touching ears, nose, hair, mouth or other bare body parts
- After touching pimples or sores
- After handling waste
- After carrying out cleaning duties
- After changing soiled clothes
- After handling animals
- After any other unhygienic practices



How to wash your hands

1	2	3	4	5	6
					
Wet hands with warm running water	Apply soap	Rub hands for 20 seconds (If necessary, use a nail brush to clean nails. However, the brush must be kept clean and sanitary.)	Rinse hands thoroughly	Dry hands with a paper towel (the paper towel can then be used to turn off the tap)	Turn off the tap with the paper towel

Hand care

- Keep fingernails short and clean
- Cover all wounds or cuts on hands or arms completely with bright-coloured waterproof wound strip
- Wear disposable gloves if there is a wound on hands. Change both gloves and wound strip regularly

Clothing and appearance

- Uniforms and aprons (or clothes) should be clean at the beginning of a work shift
- Wear a hair restraint (hat or hairnet)
- Avoid wearing jewellery while handling and preparing food
- Avoid using strong perfumes/after-shaves
- Do not wear uniforms/aprons outside the food preparation area



Personal hygiene practices while handling food

- Avoid touching nose, mouth, hair and skin during food preparation
- Do not smoke in food premises
- Do not cough or sneeze directly onto food. Wash hands after coughing or sneezing
- Wash hands after blowing nose
- Use disposable tissues to wipe hands

Infection

- Food handlers should be free from any illnesses such as gastroenteritis or flu
- Cease working and report to the manager when feeling ill



C. Pest control

Pests may contaminate food and cause foodborne illness. A pest control programme should be developed to eliminate pests and prevent pests from infesting your food premises. An effective pest control programme should be able to prevent access, deny harbourage and eradicate any pests present.



Design of facilities

- Seal all gaps around fittings or in walls or floors
- Keep doors to the outside closed at all times
- Fit windows open directly into food preparation areas with screens (with apertures of two mm² or less) to keep insects out
- Cover ventilation ducts and floor drains

Preventive measures

- Store food and supplies properly:
 - Cover them properly
 - Store them at least 15cm/six inches off the floor and 15cm/six inches away from walls
 - Store them at low humidity (50 per cent or less)
 - Apply first-in-first-out system
- Remove cartons, newspapers, etc. that may attract and harbour pests
- Store and remove garbage properly and regularly. Keep refuse bins covered
- Keep garbage in sealed plastic bags and inside tightly covered refuse bins
- Clean up spillages of food immediately
- Keep toilets clean and hygienic



Inspection

- Inspect both outside and inside of premises frequently (e.g. weekly) for signs of pests
- Check incoming food and supplies for signs of pests (e.g. any pest is harboured inside the packaging of food and supplies)
- An example of a pest control inspection record sheet is provided in *Appendix 14*

Elimination

- Use chemical, physical or biological means (e.g. rodent traps) where there are signs of pests
- Use a zapper or insecticutor to capture and kill flying insects. Ensure zappers are not above or within three metres of a food preparation or storage area
- Avoid spraying insecticide over food preparation surfaces
- Hire a professional pest control company when necessary
- An example of a pest control monitoring record sheet is provided in *Appendix 15*

D. Waste disposal

Waste can be regarded as any item of foods, ingredients, packaging materials, etc. which is not suitable for further use and intended to be disposed of. Waste should be controlled carefully since it presents a risk of contamination of food.

- Waste disposal bins should be placed near the working area of food preparation rooms and positioned conveniently to operating staff
- Waste disposal bins should be clearly distinguishable from other storage bins
- A defined area should be allocated for the storage of waste pending disposal
- When food waste is removed from food preparation area pending disposal, it must be placed in a tightly covered waste storage bin
- Plastic liners should be used in waste disposal and storage bins
- Waste disposal and storage bins should be emptied when full or on a regular basis
- Waste disposal bins should be cleaned and sanitised daily and placed upside down and off the floor to drain overnight



E. Staff training

Training offers food handlers a better understanding of how food can become contaminated, and how foodborne illnesses can be avoided through proper food handling procedures. Each food business must decide what training their food handlers need by identifying the areas of their work most likely to affect food hygiene and safety.

Examples of basic knowledge of food safety:

- Main factors contributing to outbreaks of foodborne illnesses
- Temperature control of potential hazardous foods
- Proper ways of using equipment (e.g. the skill of using thermometer, knowledge of handling cooking and storage equipment)

Examples of basic knowledge of food hygiene:

- Skills and significance of maintaining good personal hygiene practices
- Knowledge and skills of cleaning and sanitising
- Pest control

- It is a good practice for a business to identify the training needs of each staff member

- It is also a good practice to keep training records of every staff member

- Training needs should be reviewed on a regular basis and should be assessed against the role and responsibilities, existing skills, experience and previous training of the staff

- An example of a staff training record sheet is provided in *Appendix 16*

F. Handling customer complaints

Customer complaints should be handled carefully because they help reflect possible problems that may be overlooked by the management during food production. Depending upon the results of investigation, appropriate amendments to the FSP should be made where necessary.

- Establish complaint handling procedures

- Document all customer complaints

- Record details including the date, customers details, reasons for complaining and action taken

- An example of a customer complaint record sheet is provided in *Appendix 17*

For more information about Food Safety Plan, please browse the following websites:

Regional food safety authorities

Australia New Zealand Food Authority

《www.anzfa.gov.au/foodstandardscodecontents/index.cfm》

Canadian Food Inspection Agency

《www.inspection.gc.ca/english/index/fssae.shtml》

U.S. Food and Drug Administration

《www.cfsan.fda.gov/list.html》

Food Safety and Inspection Service (U.S.)

《www.fsis.usda.gov/index.htm》

International organisations

Codex Alimentarius Commission

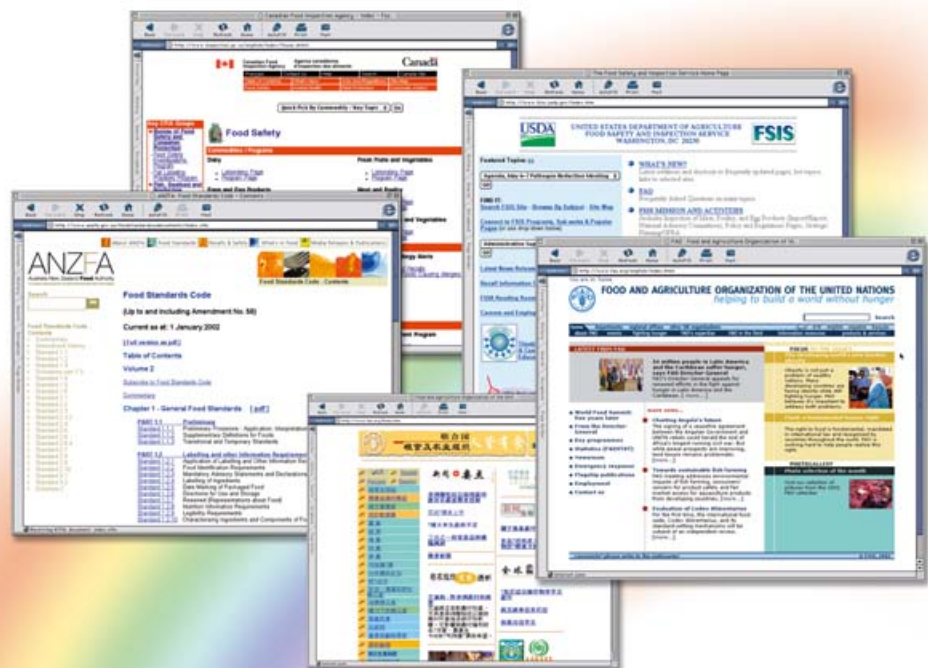
《ftp://ftp.fao.org/codex/standard/volume1b/en/RCP_001e.pdf》

Food and Agriculture Organisation

《www.fao.org/default.htm》

World Health Organisation

《www.who.int/fsf/aboutfos.htm》



Main factors contributing to outbreaks of foodborne illnesses

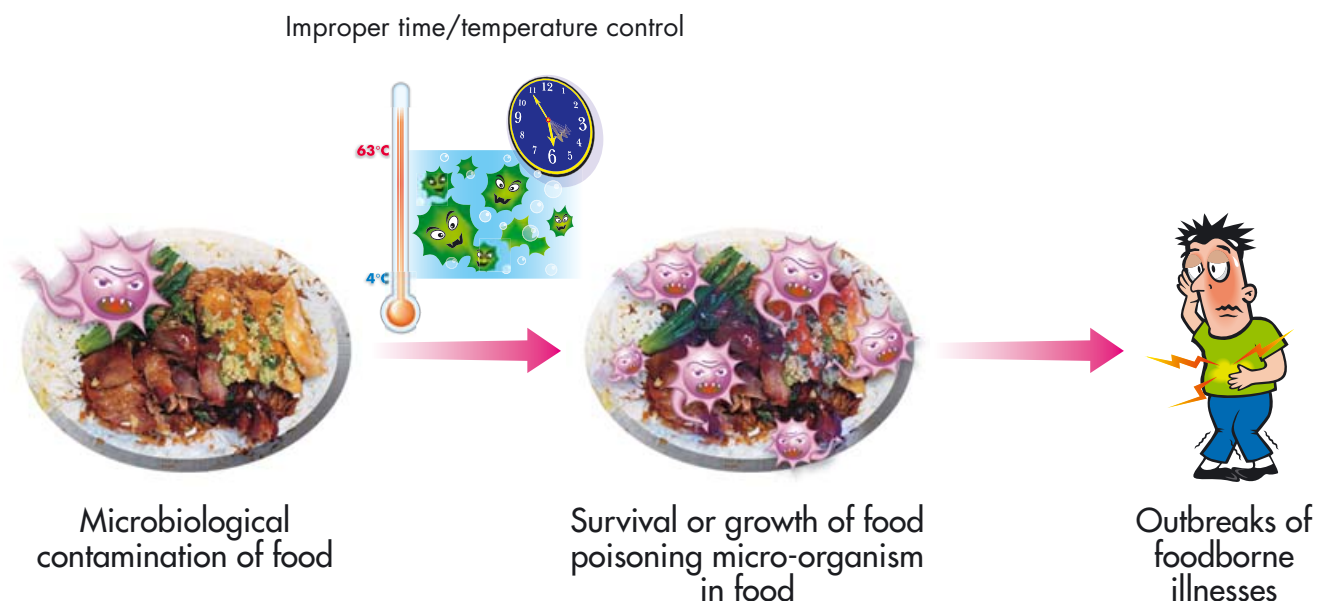
Below is a list of the most common factors contributing to outbreaks of foodborne illnesses. These factors can be categorised into two groups:

1. Microbiological contamination of food

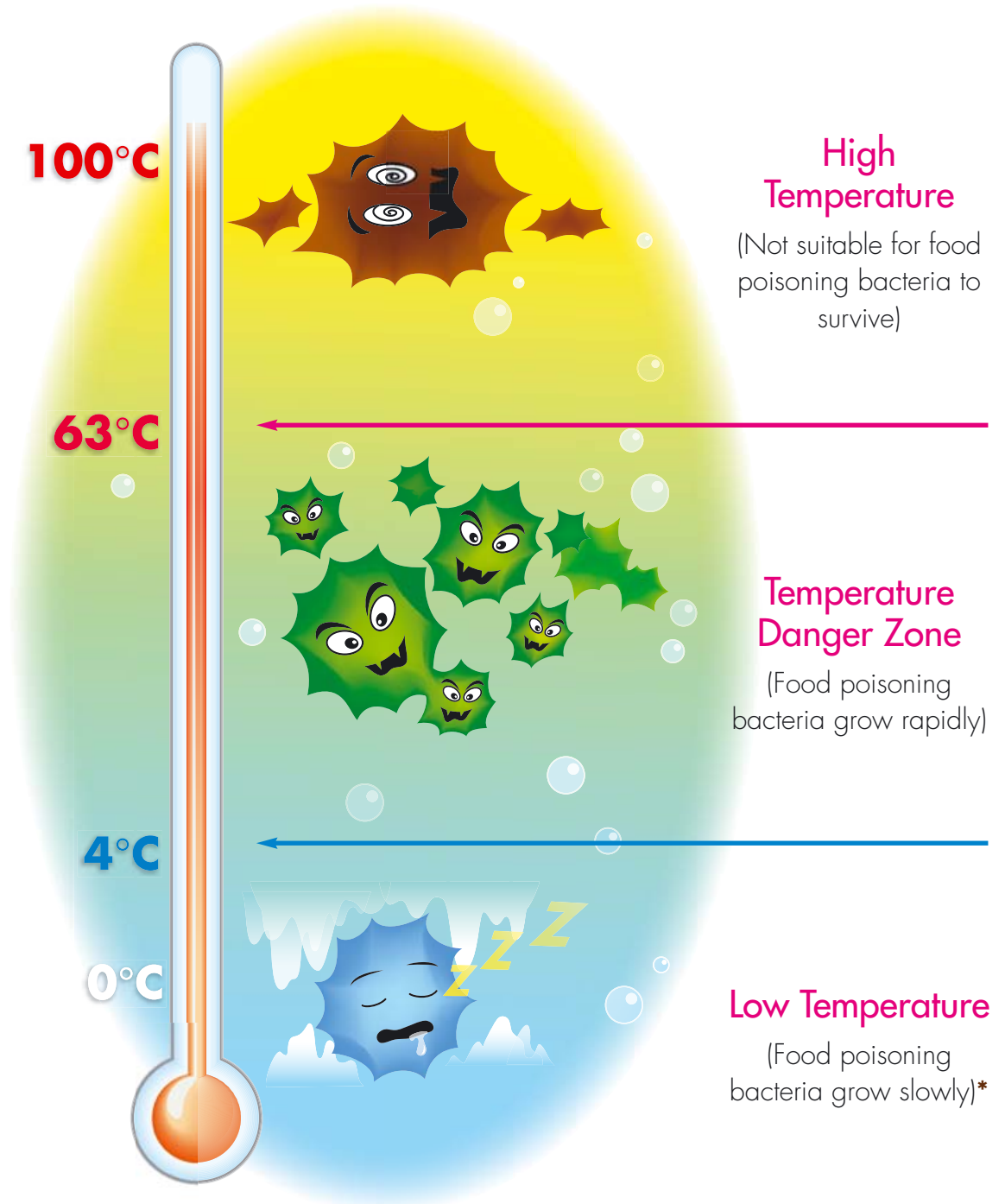
- i. Use of unsafe food source
- ii. Cross-contamination
- iii. Infected food handlers

2. Survival or growth of food poisoning micro-organisms in food (related to improper time / temperature control)

- i. Inadequate cooking
- ii. Prolonged storage of food between 4°C and 63°C (Temperature danger zone at Appendix 1(i))
- iii. Improper cooling
- iv. Inadequate reheating
- v. Inadequate thawing of food before cooking
- vi. Preparation of food too far in advance and storage of food at temperature danger zone
- vii. Improper handling of leftovers



Temperature danger zone

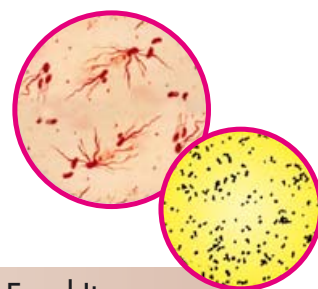


Food should be stored at 4°C or below or 63°C or above to retard the growth of food poisoning bacteria.

* Note: Some of the food poisoning bacteria can still grow at low temperature, e.g. *Listeria monocytogenes*.

Examples of hazards

A hazard is anything in food that may cause harm to consumers. Hazards may be biological, chemical or physical:



Biological

	Sources	Suspected Food Items
<ul style="list-style-type: none"> • <i>Salmonella spp.</i> 	gastro-intestinal tract of humans and animals	Meat and its products, milk and eggs, etc
<ul style="list-style-type: none"> • <i>Staphylococcus aureus</i> 	skin, hair, nose and throat of humans, and animals	Flour confection, milk and its products, egg products, ham and ready-to-eat foods (e.g. cooked food, sandwiches and sushi), etc
<ul style="list-style-type: none"> • <i>Vibrio parahaemolyticus</i> 	marine environment and seafood	Shellfish to be eaten raw and undercooked shellfish, etc
<ul style="list-style-type: none"> • <i>Listeria monocytogenes</i> 	soil, faeces of humans and animals, sewage and grease	Raw milk, soft cheese, poultry, meat and cold dishes (e.g. salad, coleslaw and sandwiches), etc
<ul style="list-style-type: none"> • Norwalk-like virus 	Sewage and shellfish	Salad, raw vegetables and shellfish (e.g. oysters), etc
<ul style="list-style-type: none"> • Hepatitis A virus 	Sewage and shellfish	Shellfish (e.g. clams and oysters), etc

Chemical

	Suspected Food Items
<ul style="list-style-type: none"> • Prohibited pesticides 	Leafy vegetables
<ul style="list-style-type: none"> • Toxins (Fish) 	Coral reef fish
<ul style="list-style-type: none"> • Mycotoxins 	Corns, nuts/peanuts and their products, cereals and figs

Physical

<ul style="list-style-type: none"> • Glass fragments
<ul style="list-style-type: none"> • Metal fragments
<ul style="list-style-type: none"> • Stones

Food Safety Plan Worksheet

Production Flow Chart



Food Safety Plan Worksheet

Stage : _____

Hazards	Control Limits	Monitoring Procedures				Corrective Actions	Records
		What	How	When	Who		

Approved Suppliers Record Form

Product	Details of supplier (e.g. name, address, phone number and food safety management system, etc)	Date approved	Remarks	Signature	Date

Unqualified Suppliers Record Form

Product	Details of supplier (e.g. name, address, phone number and food safety management system, etc)	Causes of failure	Signature	Date

Purchasing Record Form

Ordered date	Name of product	Supplier	Amount of product	Packaging	Specification (with / without)	Arrival date	Signature

Record Form for Receiving Frozen Products

Date	Time	Name of product	Supplier	Amount of product	Packaging	Temp (°C)	Comments	Corrective actions (if any)	Signature

32

Standard Temperature: below -18°C or food is entirely frozen
Absence of large ice crystals
Package: intact

Monitoring Methods Visual inspection and use of suitable food thermometers

Record Form for Receiving Chilled Products

Date	Time	Name of product	Supplier	Amount of product	Packaging	Temp (°C)	Comments	Corrective actions (if any)	Signature

33

Standard Temperature: between 0°C and 4°C
Expiry date: use-by and best-before dates
Package: intact

Monitoring Methods Visual inspection and use of suitable food thermometers

Record Form for Receiving Dry Products

Date	Time	Name of product	Supplier	Amount of product	Packaging	Comments	Corrective actions (if any)	Signature

34

Standard Expiry date: use-by and best-before dates
Package: intact

Monitoring Methods Visual inspection

Temperature Log

Device*: Freezer/Chiller/Hot holding apparatus/Oven/ Location/Code : _____

Standard*: <-18°C/ <4°C / >63°C / Check Frequency : _____

Corrective Action : _____ Remarks : _____

Date	Time	Temperature	Comments	Corrective actions (if any)	Signature

Audited by : _____ Date : _____

* Please delete where inappropriate.

Cleaning Schedule Record Form

Equipment to be cleaned		Location of the equipment	
Cleaning agents to be used		Cleaning frequency	
Cleaning method			

Date	Time	Signature	Remarks

Audited by : _____ Date : _____

Pest Control Inspection Record Form

Date	Location checked	Signs of pests (Yes / No)	Action taken	Signature

Staff Training Record Form

Name			
Position			
Previous training received			
Name of programme / Type of certificate	Contents	Organisation	Date of training

Additional training required:

Customer Complaint Record Form

Date of complaint	
Name of the complainant	
Telephone number of the complainant	
Cause of the complaint	
Ways of sending the complaint	Oral/Written
Staff receiving the complaint	
Staff handling the complaint	
Result of the investigation	
Corrective action taken	
Response of the complainant	Not satisfactory/Satisfactory
Remarks	

Food Safety Plan

Manager Self-inspection Checklist

Part 1

Checked by : _____ Date: _____

I. Personal Hygiene

Standard	Yes	No	N/A	Comments	Date corrected
Employees wear proper clothing					
Food handlers wear hair restraints					
Fingernails are short, unpolished and clean					
Jewellery is limited to watch and plain ring					
Gloves are changed at critical points					
Open sores, cuts or bandages on hands are completely covered while handling food					
Adequate handwashing and drying facilities are available					
Wash hands routinely and thoroughly, follow proper handwashing procedures					
No smoking in preparation, service, storage and warewashing areas					
Eat, drink, or chew gum only in designated areas away from work areas					
Employees take appropriate action when coughing or sneezing					
Disposable tissues are used and disposed of after coughing/blowing nose					
Personnel with infections restricted					
Employee illnesses are documented					

II. Utensils and Equipment

Standard	Yes	No	N/A	Comments	Date corrected
All small equipment and utensils, including cutting boards and can openers, are thoroughly cleaned between uses					
Small equipment and utensils are air dried					
Work surfaces are clean to sight and touch					
Work surfaces are washed and sanitised between uses					
Thermometers are washed and sanitised between each use					
Drawers and racks are clean					
Small equipment is inverted, covered, or otherwise protected from dust or contamination when stored					

III. Cleaning and Sanitising

Standard	Yes	No	N/A	Comments	Date corrected
Three-compartment sink is properly set up for warewashing (wash, rinse and sanitise)					
Cleaning procedures are in place for utensils, equipment and premises					
Chlorine test kit or thermometer is used to check sanitising rinse					
If heat sanitising is used, utensils should be immersed in boiling water					
If using chemical sanitiser, proper dilution should be ensured					
Cleaning chemicals and equipment are stored properly					
The utensils are allowed to air dry					
Adequate clean wiping cloths are provided					
Cleaned tableware and utensils are properly stored					

IV. Waste Disposal

Standard	Yes	No	N/A	Comments	Date corrected
Adequate waste disposal bins are provided					
Waste disposal bins are washed and sanitised					
Waste disposal bins are emptied as necessary					
Cartons and waste are removed from food preparation area					
Waste storage area is insect- or rodent-proofed					
Proper storage is available for brooms, mops and other cleaning utensils outside food preparation area					

V. Pest Control

Standard	Yes	No	N/A	Comments	Date corrected
Screens are put on open windows and doors and properly maintained					
A pest control program is in place					
No evidence of pests is present					

Part 2

Checked by : _____ Date: _____

Food Production

Stage	Control limits	Yes	No	N/A	Comments	Date corrected
Receiving	Inspect incoming food and supplies immediately upon receipt					
	All foods and supplies are promptly moved to proper storage areas					
	Receiving area is clean and free of food debris, boxes or other refuse					
	Chilled and frozen products are arriving at correct temperature					
	Products are supplied by approved suppliers					
Dry Storage	Storage area is dry and well ventilated					
	All foods and paper supplies are stored off the floor					
	All foods are labelled with name and (expiry / delivery) date					
	FIFO (First-in-first-out) is used					
	There are no bulging or leaking canned goods in storage					
	Opened bulk-food supplies are stored in containers with tight-fitting lids					
	Food is protected from contamination					
	All surfaces and floors are clean					
	Chemicals and cleaning supplies are stored away from food and other food-related supplies					

Stage	Control limits	Yes	No	N/A	Comments	Date corrected
Cold Storage	Thermometers are conspicuous and accurate					
	Proper temperatures are maintained: 4°C or below for chillers and -18°C or below for freezers					
	All foods are stored off the floor					
	Units are clean					
	Food is arranged in a way to allow air circulation					
	Cooked foods are stored above or separately from raw foods					
	Proper chilling procedures have been practised					
	All foods are properly wrapped, labelled and dated					
FIFO (First-in-first-out) is used						
Food Handling	Frozen foods are thawed under refrigeration or in cold running water					
	Food is kept under appropriate temperature (i.e. cold foods at 4°C or below and hot foods at 63°C or above)					
	Food is tasted using proper method					
	Food is prevented from cross-contamination					
	Food is handled with clean utensils or clean hands					
	Avoid touching parts of utensils that directly contact food					
	Proper cooling procedures have been practised					

Stage	Control limits	Yes	No	N/A	Comments	Date corrected
Hot Holding	Units are clean					
	Food is heated to 75°C before placing in hot holding					
	Temperature of food being held is 63°C or above					
	Food is protected from contamination					
Display	Display of ready-to-eat and non ready-to-eat foods is separated					
	Different sets of utensils are used to handle ready-to-eat and non ready-to-eat foods					
	Hot foods are kept at 63°C or above					
	Cold foods (e.g. raw oysters, sashimi and salad) are kept at 4°C or below					
Transport	Transport containers and carts are regularly cleaned and sanitised					
	Proper temperatures are maintained during transport: at 4°C or below for cold foods and above 63°C for hot foods					
	Transport carts and containers for food are covered					
	Transport vehicles are clean					



This document can be downloaded from the Food Safety Plan webpage of the Food and Environmental Hygiene Department: www.fehd.gov.hk

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382 Nam Cheong Street, Shek Kip Mei, Kowloon
or
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