



# GUIDE

FOR FOOD HANDLERS





# TABLE OF CONTENTS

## FOOD HANDLING: AN IMPORTANT RESPONSIBILITY

Training: An Investment	2
Food Poisoning	2

## FOOD INSPECTION IN QUÉBEC

Food Safety First!	3
--------------------	---

### MATERIAL

Temperature	4
Safety	5
Origin	5
Labelling	5
Allergies	5

### METHOD

Preventing Contamination	6
Thawing	6
Cooking	6
Cooking chart	7
Cooling	8
Reheating	8
Cleaning and Sanitizing	8
Process-Specific Risks	9
Record Keeping	10

### STAFF

Hand Washing and Staff Behavior	11
Work Clothes	11
Health Conditions and Injuries	12

### EQUIPMENT

Requirements and Maintenance	13
------------------------------	----

### ENVIRONMENT

Vermin	14
Building Interior	14
Building Exterior	15
Hot and Cold Potable Water Supply	15



## FOOD HANDLING: AN IMPORTANT RESPONSIBILITY

In Québec, any person who produces, processes, or handles food is responsible for ensuring that the products offered are of quality and do not present a risk to consumers. This is what food safety is all about.

To promote food safety, **the regulation making food health and safety training mandatory** went into effect November 21, 2008. This regulation applies to all establishments where food is prepared for sale or service (food processing establishments, retail outlets, restaurants, and food-related services), regardless of whether the establishment is required to possess a licence from Ministère de l'Agriculture, des Pêcheries et de l'Alimentation (MAPAQ).

The regulation concerns those who are responsible for ensuring hygiene and food safety at the place of business, namely food establishment managers and certain staff members who handle food.

This guide contains recommendations for all food handlers who strive to carry out their work in a way that ensures the food they prepare is safe, regardless of the type or quantity.

### **Training: An Investment**

Training is designed to prevent food contamination and food poisoning. All trained personnel must comply with best food handling practices from reception to service, including all stages of preparation (thawing, cooking, cooling, etc.).

This is why it is crucial for food handlers to adopt rigorous work methods in accordance with food health and safety standards.

It is important to improve knowledge of the risks associated with food handling, since food safety depends on controlling these risks.

### **Food Poisoning**

When a person becomes ill after consuming food or water contaminated by bacteria, viruses, parasites, or chemical substances, it is a sign of possible food poisoning.

Studies show that food poisoning is almost always the result of improper methods of food preparation and preservation.

Most cases of food poisoning are harmless and last only a few days. However, the consequences can be more serious for children, pregnant women, the elderly, and those with a weakened immune system.



## FOOD INSPECTION IN QUÉBEC

In order to ensure the safety of the food offered to Quebecers, MAPAQ's Centre québécois d'inspection des aliments et de santé animale (CQIASA) conducts regular inspections of food establishments.

CQIASA inspectors inform business operators about the risks involved in food handling and encourage them to meet their safety responsibilities, for example, by implementing corrective measures when necessary.

The method used is known as risk-based inspection (RBI), which consists of evaluating a set of critical points as they apply to **material, method, staff, equipment** and **environment**. RBI makes it possible to evaluate establishments in terms of the risk they pose to public health.

### Food Safety First!

It is important to remember that the responsibility for quality control in food establishments lies with the operators.

They must constantly monitor the cleanliness of the premises and the hygiene of their staff, as well as the quality and safety of the food provided to consumers.

Observance of the rules of hygiene and cleanliness promotes food quality and safety, saves money, and protects the reputation of food establishments.

The recommendations contained in this document are based on Québec legislation or on good manufacturing practices (GMPs) recognized internationally for food safety.

MAPAQ is entrusted with enforcing a number of statutes and regulations, including the Food Products Act (R.S.Q., c. P-29) and the attendant regulations, which, for legal interpretation purposes, take precedence over any information presented in this guide.



## MATERIAL

In terms of material, product origin, safety, labelling, and temperature are verified. These critical points concern the food directly.

Food is considered either potentially hazardous food (PHF) or not potentially hazardous food (NPHF). PHF requires temperature control at all times to ensure safety. These foods are usually high in protein and have little or no acidity.

PHF examples	NPHF examples
Meat, fish	Bread
Dairy products	Dry foods
Prepared meals	Vegetable oil

## Temperature

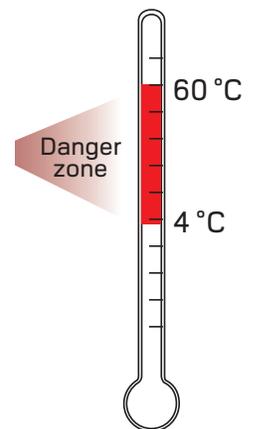
The internal temperature of food is a key factor in preventing the growth of microorganisms.

**Frozen food: maximum of -18 °C**

**Refrigerated food: maximum of 4 °C**

**Food served hot: minimum of 60 °C**

- Check the ambient temperature of food-storage equipment with a reliable thermometer calibrated by a specialized company.
- Keep a daily temperature record and plan measures for dealing with non-conformity.
- Avoid the danger zone between 4 °C and 60 °C. Within this range, the growth of bacteria in potentially hazardous food rises. Preparing these foods at temperatures above 4 °C must take as little time as possible: take out only the amounts required for the preparation or service time.





## Safety

- Discard all altered food (odor, color, texture) that has become unfit for human consumption.
- Discard any food you suspect of being physically contaminated (e.g., glass splinters), chemically (e.g., cleaning products), microbiologically (e.g., raw meat juices), or by harmful organisms (e.g., insects).

## Origin

Food must come exclusively from well known sources (licensed establishments), supplier records and corresponding invoices must be properly kept.

## Labelling

Food labelling must indicate the following information: product name, list of ingredients in decreasing order, net quantity, and the name and address of the manufacturer responsible for the product offered.

Labelling may also include other information:

- Expiration date
- Storage method
- Product state (cooked, frozen)
- Origin
- Nutritional value
- Lot number

## Allergies

In order to protect people with allergies from unknowingly consuming food containing allergens, they must be indicated on the label. Food allergy reactions can be serious or even fatal.

**An allergy is an immediate or delayed hypersensitive reaction, either localized or generalized, that can occur after ingesting or, in some cases, after inhaling of or skin contact with a food or food additive (an allergen).**

All high-protein foods can cause potentially dangerous allergic reactions to those who are sensitive to them. Health Canada has published a list of foods considered to be the cause of most adverse reactions (90%). Pay special attention to the following allergens:

- Peanuts
- Wheat
- Sesame seeds
- Milk
- Nuts (almonds, Brazil nuts, cashews, hazelnuts, macadamian nuts, pecans, pine nuts, pistachio nuts and walnuts)
- Tree nuts
- Eggs
- Seafood (fish, crustaceans and shellfish)
- Soy
- Sulfites



## METHOD

**Work methods are observed during inspection. Processes, cooking temperature, thawing, cooling, reheating, the risk of cross-contamination, cleaning and sanitizing procedures are monitored.**

To prevent food from being altered, it is crucial that sources of contamination be kept to a minimum by making sure that anything in contact with the products is safe. The following recommendations safeguard against the reproduction or introduction of microorganisms and help destroy them or limit their number.

- Rotate food stock properly.
- Make sure that the shelf life indicated on products is adequate.

### Preventing Contamination

- Keep food in tightly closed containers.
- Always store raw meat below ready-to-eat food.
- Use protective shields (sneeze guards) around buffet tables, salad bars, fish counters, etc.
- Avoid putting containers on work surfaces if they have been in contact with the floor.
- Prevent cross-contamination by thoroughly washing and sanitizing equipment, utensils, work counters and tabletops after having handled raw food such as meat or poultry and before handling cooked food or ready-to-eat food.
- Store food packaging away from any source of contamination.

### Thawing

Thaw potentially hazardous food using one of the following methods:

- In the refrigerator
- In the microwave oven, immediately followed by cooking
- In a conventional oven, by combining thawing and cooking
- In a container completely submerged under cold running water

Never thaw food at room temperature because the outer surfaces of the food, which defrosts the quickest, are then exposed too long at temperatures that spur the growth of bacteria.

### Cooking

Cook food according to the times and temperatures recommended in the cooking chart that follows. Precooking of meat is prohibited. In addition, the food must reach a safe internal temperature during cooking. Use of a reliable thermometer is necessary.



## Cooking Chart

The indicated temperatures are the minimum internal cooking temperatures. In the “Time” column, the duration given refers to the length of time the thermometer must indicate the corresponding temperature.

	Temperature	Time	Characteristics
<b>Beef, veal, lamb</b>			
Steak (tenderized or not)	63 °C using a validated method or a thermometer	None	
Roasts (tenderized or not)	With a temperature check: 60 °C	None	Well done, medium Juices run clear and meat can be pink.
	Visual check only <sup>1</sup> : 70 °C or equivalent	None	
<b>Pork</b>			
Roasts, chops	68 °C	15 seconds	
Cooking ham	68 °C	15 seconds	
Fresh sausage	68 °C	15 seconds	
<b>Game</b>			
<b>Raised:</b> deer, boar, rabbit, etc.	68 °C	15 seconds	
<b>Wild:</b> hare, caribou, etc.	74 °C	15 seconds	
<b>Poultry</b>			
<b>Whole:</b> chicken, turkey, pheasant, guinea fowl, quail, goose, duck, etc.	74 °C	15 seconds	Juices run clear, the meat is tender, and the thighs pull away easily.
<b>Parts:</b> breasts, thighs, wings	74 °C	15 seconds	
<b>Ground</b>	74 °C	15 seconds	
<b>Running birds</b>			
Ostrich, emu, rhea	68 °C 63 °C	15 seconds 3 minutes	
<b>Ground meat</b>			
All ground meat (except poultry)	68 °C	15 seconds	The center and juices must not be pink.
<b>Fish</b>			
Whole, filleted	63 °C	15 seconds	The color is even and opaque. The flesh flakes away easily.
Sliced	68 °C	15 seconds	
<b>Eggs</b>			
Whole			The white and the yolk must be firm.
Egg-based food	68 °C	15 seconds	
<b>Stuffing</b>			
Stuffing mix, stuffed meat and pasta	74 °C	15 seconds	
<b>Raw food of plant origin cooked to be kept hot</b>			
	60 °C		

1. If no thermometer is used, minimal cooking must be at least rare. The internal temperature normally reaches 70 °C or the equivalents as defined in the following table.



## 70 °C internal cooking temperature equivalents for roasts

### Temperature/time equivalents

Temperature	68 °C	66 °C	65 °C	63 °C	62 °C	61 °C	60 °C	59 °C	58 °C	57 °C	56 °C	55 °C	54 °C
Time	15 s	60 s	85 s	140 s	3 min	5 min	8 min	12 min	19 min	32 min	47 min	77 min	121 min

### Cooling

Cool potentially hazardous food as quickly as possible, at temperatures in the 0 °C to 4 °C range. The internal temperature of the food must be reduced from 60 °C to 4 °C in less than six hours. However, within this timeframe, the internal temperature must drop from 60 °C to 21 °C in less than two hours. Do the following to ensure proper cooling:

- Divide food in smaller portions and refrigerate
- Divide up big cuts of meat
- Use shallow, wide containers made of materials that facilitate heat transfer
- Place food containers in an ice-water bath and stir periodically
- Use a blast chiller
- Use a clean and sanitized ice paddle

These methods can be combined in order to cool food properly.

Food in refrigeration units should be placed so that air circulates freely around them.

### Reheating

To reheat potentially hazardous food that has been cooked and then cooled—and that must now be kept hot—maintain a temperature of 74 °C for 15 seconds or 63 °C for 3 minutes. This must be done within two hours of cooling.

Turn potentially hazardous food frequently when reheating it in the microwave oven so that heat is distributed evenly. Safe reheating requires an overall temperature of 74 °C.

### Cleaning and Sanitizing

Cleaning and sanitizing are two distinct and inseparable steps in the same process. The **purpose of cleaning** is to remove all traces of food and dirt on work surfaces that come in contact with food. Cleaning consists of:

- 1) Disassembly, as needed
- 2) Prewashing
- 3) Washing with the right detergent for the residue
- 4) Rinsing

A visual check of surface conditions after these steps may reveal inadequate cleaning, in which case cleaning must be repeated.



**Sanitizing** is the process by which the number of microorganisms on surfaces is reduced until their level does not compromise food safety. There are two methods for sanitizing:

- 1) Thermal. The following must be monitored when this method is used:
  - Water temperature: 77 °C for manual sanitizing and 82 °C for the dishwasher
  - Amount of time the object is in contact with hot water: 30 seconds
- 2) Chemical. The following must be monitored when this method is used:
  - Manufacturer's instructions regarding product concentration
  - Instructions for use
  - Water temperature
  - Amount of time the object is in contact with the chemical product
  - Rinsing

Sanitizing consists of:

- 5) Thermal or chemical sanitizing
- 6) Rinsing, as needed
- 7) Air drying

### Facts to know

- Cleaning and sanitizing products must be approved for use with food and be used according to the manufacturer's instructions.
- The use of a triple sink helps facilitate operations.
- The use of nylon scrub pads is recommended. Food is more likely to be contaminated when metal pads or brushes are used.
- Waterless cleaning (e.g., brushing, vacuuming, or stripping) can be used to remove dried food residues only.

### Process-Specific Risks

Certain processes involve more risks than others and must be rigorously controlled and monitored. This is the case for food processing that uses heat treatment or that modifies the physicochemical properties of food or the food environment, such as packaging.

The following treatments are associated with these processes:

- Acidification
- Vacuum or modified atmospheric packaging
- Hot or cold smoking
- Pasteurization
- Preparation of canned foods
- Preparation of semipreserved foods
- Salting
- Drying, dehydrating, evaporating



Food products are processed in many different ways, from the simplest methods such as trimming to the most complex such as commercial canned food preparation.

Commercial food processing procedures adapted from small-scale practices require specific control measures. For example, the Bernardin method is acceptable for household production, but additional requirements must be met for commercial production, in particular recipe standardization, validation and the keeping of control records.

**To master and control food processing methods that involve specific risks, it is important to establish clear and accurate steps and basic safe food handling practices and ensure that food handlers apply them.**

## Record Keeping

Records on food storage, preparation, cleaning and sanitizing activities must be kept on site and must be duly completed and available to establishment and inspection personnel. Here are a few examples of records that make food industry quality control possible:

- Records of purchases and suppliers (packing slips)
- Records of cooking of products
- Records of cleaning and sanitizing
- Records of pasteurization (mandatory, where applicable)
- Records of cooling of products
- Records of live bivalve shellfish (mandatory, where applicable)
- Records of preservation temperatures
- Records of meats used in preparing ground meat
- Records listing staff members trained in food hygiene and safety



## STAFF

Frequently, food preparation staff members are sources of contamination. Anyone can be a carrier of pathogenic microorganisms transmitted through food. The following precautions must be taken in order to prevent food poisoning.

### Hand Washing and Staff Behavior



- Wash your hands and forearms with hot water and soap before beginning work and after smoking, using the washroom, or handling raw food, as well as every time there is a risk of food contamination.
- For hand washing to be effective, a sink and soap and paper towel dispensers must be accessible at all times and in good working condition. In addition, you must follow proper hand washing steps: wet, soap, scrub, clean the nails, rinse, dry, and turn off the faucet using a piece of paper towel.
- The use of hand sanitizer is not a substitute for hand washing, which must be done prior to applying any sanitizer.
- The use of gloves is not a substitute for hand washing. The wearing of latex or latex-coated gloves is prohibited for anyone in contact with food or with equipment making contact with food. Hands must be washed thoroughly before the gloves are put on and every time a fresh pair is worn. Gloves used to handle food must be used once only. They must never be washed and reused and must be changed:
  - As soon as they are soiled or torn
  - When a new task is started or a different type of food is handled
  - After handling raw food or before handling cooked or ready-to-eat food
  - After touching a contaminated surface
- Do not dry your hands on your work clothing, since doing so can introduce a new source of contamination to hands, surfaces, and the foods that are handled.

### Work Clothes

- Wear clean clothes that are used only in the workplace, as well as a bonnet or hairnet that covers the hair entirely. Wear a beard cover if necessary. For example, a mustache extending beyond the upper lip area must be covered by a beard cover.
- Remove watches, rings, earrings, pins, and any other pieces of jewelry, including body piercing jewelry, before starting work. Do not wear nail polish, and keep nails short and clean.



## Health Conditions and Injuries

The state of health of food establishment staff is a risk factor that must be controlled.

If you have a disease that might contaminate food or if you have symptoms such as diarrhea, nausea, vomiting, or fever, you must immediately notify your employer. Consult a doctor if necessary, and clearly describe your symptoms and work responsibilities. Make sure you fully understand the doctor's recommendations regarding temporary work leave. Notify or speak with your employer about the possibility of reassignment to other tasks in order to avoid contact with food during this period.

### **Cutaneous syndromes:**

Cover any noninfected hand, wrist, or forearm injury with a clean bandage and wear a waterproof glove (non latex or latex covered) that is long enough to cover the entire bandage. In the case of an infected wound, the employee must be reassigned to other tasks or duties.

### **Enteric syndromes:**

Any person with symptoms of gastroenteritis must either wait 48 hours after full recovery before returning to work or, if applicable, follow the doctor's recommendations. Food handlers carrying an infectious agent who no longer have symptoms can plan to return to work provided they follow basic hygiene and safety rules.



## EQUIPMENT

Equipment includes utensils, and packaging products. Their nature, state of repair, and level of cleanliness may be a source of food contamination.

### Requirements and Maintenance

- The equipment, utensils, and packaging used in food preparation must:
  - Be clean
  - Be accessible for cleaning, sanitizing, maintenance, and inspection activities
  - Have smooth, nonabsorbent surfaces that will not corrode and are free of holes, cracks, and crevices
- All chemical products used for equipment cleaning and maintenance (lubricants, coatings, paint, etc.) that could come into contact with food products must be appropriate for use with food.
- Any equipment or appliance used for refrigeration, freezing, or heating must be equipped with a thermometer. It is recommended to keep a temperature record for each appliance or piece of equipment. In addition, refrigerators and freezers should be defrosted and cleaned regularly in order to prevent unpleasant odors and other problems that could eventually lead to equipment failure.
- In the case of power or equipment failure, the staff must notify the person at the establishment responsible for hygiene as quickly as possible in order to ensure that the food stored in the affected refrigerators and freezers is safely managed.



## ENVIRONMENT

The environment includes the premises where food is prepared and stored. Inspection of the environment is aimed at detecting any source of physical, chemical, or environmental contamination.

### Vermin

Insects and rodents must be prevented from entering the premises. A vermin control and extermination program is of primary importance.

### Building Interior

- There must be an adequate number of **hand washing stations** located in the appropriate areas. They must be equipped with running potable water, both hot and cold, and equipped with a sink, a combination faucet, a soap dispenser, a paper towel dispenser, and a trash can.
- **Staff facilities** must be separated from areas where food is handled, processed, or packaged, and there must be no direct access to these areas. Lockers must be available to the staff.
- **Floors, walls, and ceilings** must be made of noncorrosive materials and withstand washing, cleaning, and sanitizing activities.
- Windows, doors, and their frames must be sealed or outfitted with properly adjusted screens.
- Activities must be planned appropriately. Physically or systematically separating tasks can prevent food contamination caused by staff movement.
- Waste pipes must be outfitted with protective screens and a sanitary trap.
- Cleaning products, disinfectants, and all other toxic products must be kept separate from where food is prepared or stored.
- Food storage and preparation rooms must be clean and must not present any risk of physical, chemical, or microbiological contamination. In addition, they must be used only for food preparation and storage.
- Rooms must have proper ventilation and airflow. Ventilation equipment must be installed in a way that prevents food from becoming contaminated.
- Lighting fixtures in preparation and storage areas must be protected from breakage.
- Appropriate sanitary equipment (trash cans) must be set up for the temporary storage of waste and non-food grade material and designed to prevent any contamination.



## **Building Exterior**

Waste must be put in an area reserved for refuse and placed in clean, sealed, watertight containers that are inaccessible to insects and other animals. Waste must be collected regularly to avoid any overflow.

## **Hot and Cold Potable Water Supply**

Water for human consumption, food preparation, equipment cleaning, and ice making must be of potable quality. If the water is not supplied from the municipal water system, as is the case with wells, it must be analyzed several times a year and be treated as the need arises. Hot water must be at least 60 °C.

When the water supplier issues a boil advisory, the food establishment operator is responsible for using and supplying potable water in the establishment in accordance with Food Products Act requirements and regulations. To do this, the operator must plan to supply enough potable water to meet all the needs of the food establishment.

The use or consumption of water subject to a boil advisory (if it is contaminated by pathogenic microorganisms) could cause problems, notably food poisoning.

## FOR FURTHER INFORMATION

If you have any questions about food safety, inspection requirements, to file a complaint, or report a case of food poisoning, contact MAPAQ's Centre québécois d'inspection des aliments et de santé animale:

- Phone: **1 800 463-5023**
- Email: **DGA@mapaq.gouv.qc.ca**

Website: **[www.mapaq.gouv.qc.ca](http://www.mapaq.gouv.qc.ca)**

© Gouvernement du Québec

Legal deposit: 2010

ISBN 978-2-550-58271-7 (print version)

ISBN 978-2-550-58272-4 (on-line version)

