



FOOD SAFETY MANAGER'S CERTIFICATION STUDY GUIDE

(Servsafe, CPFM & Beyond)

& FOOD SAFETY MANAGEMENT GUIDE

Based on the current 2017 FDA Model Food Code

2022

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Disclaimer: This book is a study guide and not intended to replace or discredit any other publication. This book is a mere guide to help promote a better understanding of the General Food Managers Safety topics set out by ANSI (American Nation Standards Institute). This book is designed specifically for those with many years in the industry and/or in need of recertifying their Food Manager's Safety Certification. We do not guarantee any passing score but have hopes that this book will help those professionals achieve success. We cannot guarantee 100% accuracy, and depending on your jurisdiction, some items may differ from the food safety code. Always call your local jurisdiction for clarity on your certification requirements.

What Is So Important about Food Safety?

Each year in the United States 48 million people get sick from a foodborne illness, 128,000 are hospitalized, and close to 3,000 die. Food safety refers to the conditions and practices that preserve the quality of foods and prevent contamination and foodborne illnesses. Food safety is vital as it helps to protect consumers from the risk of foodborne illnesses. It also helps to protect consumers from the risks of health-related conditions such as allergies.

Food safety starts with each of us. If you are providing foods to consumers, it is imperative that you follow food safety guidelines. **Food safety is everyone's business. Make it yours.**

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Intro to Food Safety

Government Agencies and Their Involvement in Food Safety



The FDA (Food and Drug Administration) is a federal agency of the Department of Health and Human Services. It issues the model food code for all governing bodies, although it is considered a suggested guide, as local health departments are not required to follow it.

The USDA (U.S. Department of Agriculture) oversees the American farming industry. The USDA is responsible for the safety of meat, poultry and egg products, while the FDA regulates all other foods.

The CDC (Centers for Disease Control and Prevention) conducts and supports health promotion, prevention and preparedness activities, with the goal of improving overall public health.

The CDC is the agency that analyzes potential foodborne illness outbreaks. An outbreak is when two or more people get sick eating the same food.

The top five risk factors that most often are responsible for foodborne illness outbreaks are:

- Improper hot/cold holding temperatures of potentially hazardous food.
- Improper cooking temperatures of food
- Dirty and/or contaminated utensils and equipment.
- Hygiene issues
- Food from unsafe supplier

The PHS (Public Health Service) administers a number of critically important health agencies, including the FDA and the CDC.

These two agencies assist local health departments if they suspect a foodborne illness outbreak.

Health departments regulate food establishments on a local level. They are responsible for inspecting restaurants and food service providers that serve food to the public within cities and counties. Every health department is different, and local requirements differ.

Your local health department may regulate a variety of retail food establishments, including restaurants, arenas, delis, catering companies, clubs, bakeries, nursing homes and hospitals, schools, day care centers, mobile vehicles, theaters and parks.

What Is the Food Manager's Safety Certification?

Throughout the 50 states, various regulatory agencies (health department groups) require that one food service manager/operator per shift be certified with an accredited Food Manager's Safety Certificate. The Food Safety Manager Certification Examination (FSMCE) is accredited under exam standards.

Each jurisdiction will differ. It is key that you speak with your regulatory agency to find out what the requirements are in your area in regards to the Food Manager's Safety Certification.



This study guide is a great resource for those wishing to take their Food Manager's Safety Examination and a useful guide for those who need to gain the knowledge and skills to keep their food establishment in compliance with local regulations and ultimately obtain the know-how on how to make their food establishments thrive.

Remember, food safety starts upon purchasing the foods. That is why it is key when we purchase our foods we make sure our suppliers meet all state, federal and local regulations.

Food Safety is everyone's business, so make it yours.

Some Challenges That We Face:

- Language/cultural differences
- Education
- Pathogens (foods we once thought were safe—think again)
- Unapproved suppliers
- Staff turnover
- Poor personal hygiene
- High-risk customers

Cross-Contamination

Is when we transfer a pathogen from one place to another.



How Can We Prevent Cross-Contamination?

- Use separate cutting boards.
- Wash, rinse and sanitize between uses or at least every four hours.
- Prepare foods at different times.
- **Always wash hands in between any food process.**

TCS Foods (Temperature Control for Safety)

Foods that need time and temperature control for safety, known as TCS foods, which include milk and dairy products, eggs, meat, poultry, fish, shellfish and crustaceans, baked potatoes, soy (tofu), sprouts, sliced melons, cut tomatoes, cut leafy greens, untreated garlic (but not canned goods).



Ready-to-Eat Foods

Food that can be eaten without additional preparation. Ready-to-eat foods must always be handled using gloves or another protective hand barrier.

It is suggested that you buy ready-to-eat foods over foods that you need to prepare. *For example: A bag of chopped lettuce can help reduce the risk of contamination during preparation.*

Training

As food safety managers, we need to set the example by our behaviour and actions.

Training is based on training needs, and training aids are a helpful way to ensure staff is being trained properly. Staff members need to demonstrate their newly learned knowledge by practicing, and training supervision is a must. Often when staff members are not performing at their best, a reevaluation of the system must occur.



Poor Cleaning & Sanitizing

- Surfaces, equipment and utensils are not properly washed, rinsed and sanitized during service.
- Wiping cloths are not stored in the sanitizing solution.
- Unapproved cleaning agents are used.

Food Contamination (three types)

Three Kinds of Contamination

There are three kinds of contaminants that we need to be aware of: biological, chemical and physical.

How does contamination happen?

Contamination comes from various places. Many come from the animals we use for food. A majority of contamination comes from the way the food handler managed the food. And a great number of viruses get transferred to food by food handlers who have traces of feces on their fingers and then contaminate the food. Handwashing is a major issue and something that must be practiced well throughout the whole flow of food.

Food handlers can also get sick when they are in contact with a person who is sick and the person who is sick may not know he or she is even infected. **The person who shows no symptoms is called a carrier.**

Biological hazards (bacteria, viruses, parasites, fungi and toxins) are known as pathogenic microorganisms.

- **Bacteria** are members of a large group of unicellular microorganisms that have cell walls but lack organelles and an organized nucleus, including some that can cause disease. Bacteria are always present; in fact, we have them all over our bodies, and a large number of them keep us healthy.

Bacteria are always going to be present in regards to food, but we need to prevent them from growing to harmful levels. The key is cooking foods to the proper internal temperature and controlling the amount of time the food spends in the temperature danger zone of 41 to 135 degrees.

- **Viruses** are transferred by people or animals into food and are never destroyed by normal cooking methods. Generally, viruses come from the food handler. Washing hands is the best prevention.
- **Parasites** are organism that lives in or on fish. Cooking and freezing, kills parasites. Buy seafood from the approved source.

- **Fungi** include yeasts, molds and mushrooms. Molds and mushrooms may produce toxins that cause foodborne illnesses. That is why it is key to buy mushrooms and fish from an approved, reputable supplier. All moldy food—unless it is a part of the ingredients—must be discarded.

Chemical hazards include soaps, sanitizers and degreasers, as well as metals such as zinc, copper and lead found in cooking utensils. It is key that we use chemicals for their intended purpose.

Physical hazards are any foreign object that not is intended to be in food. They include objects like dirt, glass, nails, nail polish and staples and natural objects such as bone, cartilage, fruit pits or olive pits.

Sometimes these objects can come from our suppliers, so proper inspection of our product is always a necessity.

What are biological toxins?

Another type of contamination comes from things that naturally occur in the environment. Two types that are commonly associated with fish are scombroid toxin and ciguatera toxin. It is key that you buy your food from an approved, reputable supplier.



The “Big Six” Pathogens

According to the FDA, there are over 40 types of bacteria, viruses, parasites and fungi. Of these, the agency has created a list called the “**Big Six.**” They are highly contagious and cause severe illnesses that can be life threatening.

- Shigella spp.
- Salmonella Typhi
- Nontyphoidal Salmonella
- Hepatitis A
- Norovirus
- Shiga toxin-producing Escherichia coli (STEC), commonly known as E. coli



The “Big Six” Pathogens

BACTERIA	SOURCE	FOODS LINKED WITH THE BACTERIA	PREVENTION MEASURE
Shigella spp.	People	<p>Foods that are contaminated by the hands; TCS foods (potatoes, tuna, shrimp, pasta and chicken)</p> <p>Foods that made contact with contaminated water, like produce</p>	Exclusion; washing hands; controlling flies inside and outside the food establishment
Salmonella Typhi	People	<p>Ready-to-eat foods</p> <p>Beverages</p>	Washing hands; cooking foods to minimum internal temperatures
Nontyphoidal Salmonella	Farm animals and people	Poultry and eggs; meat; milk and dairy; produce like tomatoes and peppers	<p>Cook poultry and eggs to the minimum internal temperatures</p> <p>Avoid bare-hand contact with ready-to-eat foods and poultry</p> <p>Keep anyone who is vomiting or has diarrhea away from foods</p>
Shiga toxin-producing Escherichia coli (STEC), commonly known as E. coli	Farm animals and people	Intestines of cattle, people	<p>Exclude food handlers who have diarrhea and have been diagnosed with a disease from the bacteria</p> <p>Cook food, beef to the minimum internal temperatures</p> <p>Purchase product from an approved reputable supplier</p> <p>Avoid cross-contamination between raw meats and ready-to-eat food</p>

The “Big Six” Pathogens (Continued)

BACTERIA	SOURCE	FOODS LINKED WITH THE BACTERIA	PREVENTION MEASURE
Hepatitis A	Feces	Ready-to-eat foods Shellfish from contaminated water	Exclude staff who have jaundice for seven days or less Wash hands Avoid bare-hand contact with ready-to-eat foods Purchase your shellfish from an approved, reputable supplier
Norovirus	Farm animals and people	Ready-to-eat foods Shellfish from contaminated water	Exclude staff who have jaundice for seven days or less Wash hands Avoid bare-hand contact with ready-to-eat foods Purchase your shellfish from an approved, reputable supplier

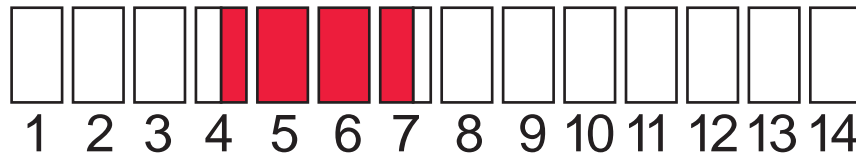


Be aware that anyone who is diagnosed with or suspected to have any of these “Big Six” pathogens must be excluded from the operation immediately. The local regulatory authority (the health department) must be notified. The individual will require a doctor’s note in order to come back to work. If an employee states someone the person lives with is infected with any of these six pathogens, contact the health department for clarity.

Six favorable conditions are required for the growth of foodborne pathogens. **FATTOM** is an acronym designed to help you remember these conditions.

Food: Bacteria need food to grow and reproduce.

Acidity: The level of acid in a food based on a pH scale of 0 to 14.0. A pH between 7.1 and 14 is alkaline, while a pH between 0.0 and 6.9 is acidic. A pH of 7.0 is neutral. Foodborne microorganisms grow well in food that has a neutral to slightly acidic pH (7.5 to 4.6). **It is ideal to keep your acidity at 4.6.**



Temperature: We need to keep our foods out of the temperature danger zone, keeping hot food at 135 degrees F or higher and our cold foods at 41 degrees F or below.

Time: Food that is held in the temperature danger zone for a period of time may experience pathogenic growth. When food passes through 70 degrees F to 125 degrees F, bacteria grow even faster. Some refer to this as the extreme danger zone.

Oxygen: Many pathogens need oxygen to grow while others do not.

Moisture: The more moisture the food has, the greater the risk of bacterial growth.

Other concerns

Listeria Bacteria

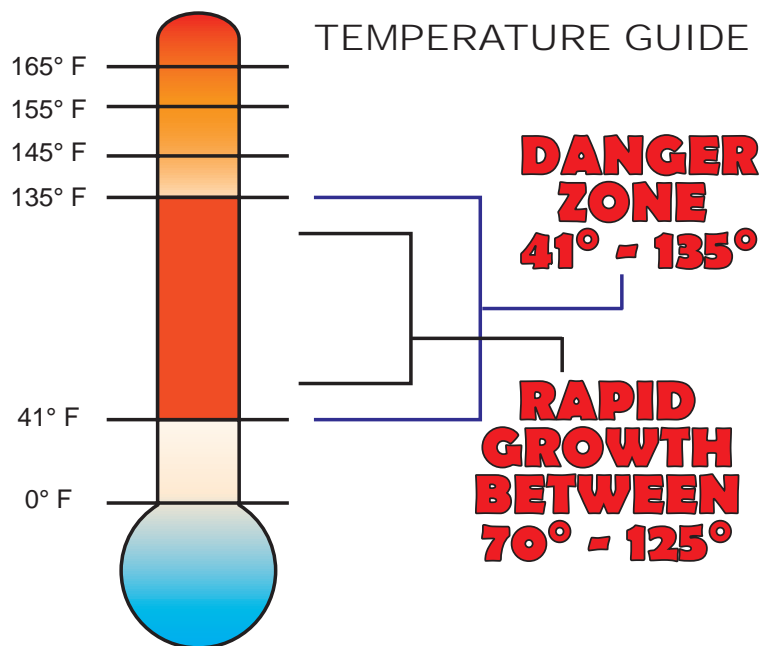
Found everywhere, especially in deli meats. They are found in soil, water, animal feed and in the intestines of people and animals.

Staphylococcus Aureus Bacteria

These are one of the most common causes of foodborne illnesses. They are found in the skin, nose and mouth of 50-70 percent of all people.

Bacillus Cereus Bacteria

Found in soil where vegetables and grains are grown and form spores that can be found in cooked rice dishes.



Clostridium Botulinum Bacteria

Microorganisms responsible for causing botulism. They form spores and grow only where there is no air. They are commonly found in vacuum-packed and home-canned foods.

What do you do if you suspect foodborne illness?

Responding to an Outbreak

1. Collect information.
2. Notify the authorities (the health department).
3. Segregate the product in question.
4. Document the information.
5. Identify the staff who was involved.
6. Cooperate with the authorities (the health department and possibly the CDC).
7. Review food procedures and protocol.

Hopefully you will never have to experience a situation like this. However, if you do, take the claim seriously. Contact your local regulatory authority immediately.

Allergies (Very Important)

An allergy is a protein or ingredient that some people are sensitive to. A severe reaction called anaphylaxis can lead to death. Here are some typical symptoms:

- Nausea
- Wheezing
- Hives/itchy rashe
- Swelling in various parts of the body
- Vomiting and diarrhea
- Adnominal pains
- Itchy throat

There are over 160 different food items that can lead to an allergic reaction. Of these 160, just eight are responsible for 90 percent of all the food allergies in the U.S.

Hence, the “**Big Eight Allergies**”:

- Milk
- Eggs
- Wheat
- Fish
- Crustacean shellfish
- Peanuts
- Tree nuts, like walnuts and pecans



Cross-Contact

Cross-contact is the transfer of allergens from one surface to another. This includes food, equipment and food-contact surfaces.

Examples: Using one set of parchment paper for baking chocolate chip cookies and peanut butter cookies, or frying shellfish in the same oil as French fries.

We must avoid **cross-contact** (do not confuse it with cross-contamination) by making allergy special orders when customers identify they are allergic to a particular food item. The staff responsible for taking the order must speak with the cook/food handler about creating an **allergen special order**. The food contact surface and utensils must be cleaned, washed, rinsed and sanitized and the food must be prepared to rule out a possible cross-contact situation.

Allergen special orders must always be delivered separately from other food.



There must always be a manager on-site who can explain to any customer how foods are prepared and the ingredients they contain. There is no such thing as a secret recipe.

Deliberate Contamination of Food

The FDA has created a tool— commonly known as **food defense**—in regards to the deliberate contamination of foods. It created an acronym that will help any food establishment remain safe from suspicious or terrorist actions that could intentionally contaminate food:

A.L.E.R.T.

Assure: make sure your food being received is from a reliable safe source.

Look: monitor the security of your facility and food.

Employee: know who is working in your facility.

Reports: keep your food defense plan accessible.

Threat: identify who will notify the authorities if a risk arises.

Remember to never allow individuals who do not work in the operation or those who are not serving your operation access to food-preparation areas. This includes ex-employees, children of staff members and customers.

The Food Handler

When can food handlers contaminate food?

- When they have a foodborne illness.
- When they have a wound, cut or boil that may contain a pathogen.
- When they sneeze, cough, spit or even use a tissue.
- When they do not properly wash their hands or do not wash their hands at all after using the restroom. The food handler might now contaminate foods with traces of feces on their fingers. This is called the fecal-oral route.
- When they have or had recently experienced diarrhea, vomiting or jaundice, which is a condition that makes the infected person have yellow skin and/or eyes.
- When not practicing food safety while infected with a dangerous pathogen, even while showing no symptoms. They are known as carriers. They may not show any symptoms for several weeks.



What are some actions that food handlers can make that can contaminate foods?

Scratching their bodies, touching an infected part of their body, wearing a dirty uniform, coughing, spitting, using a tissue and not washing their hands.

Who is responsible for implementing a personal hygiene program?

The food safety service manager must create a program that ensures that anyone handling food must be trained on handwashing and general hygiene-related issues.

It is key that any manager at any given time MODELS CORRECT BEHAVIOR IN REGARDS TO FOOD SAFETY AND ESPECIALLY HANDWASHING. Food managers must be the example.

Handwashing and Hand Care

Handwashing is the most critical piece in personal hygiene. Many people do not know or understand the proper method of handwashing, which is why it is key that all food handlers are retrained and reminded on a regular basis on using their hands as a vehicle to prevent contamination.

How do you wash your hands?

1. Wet hands and arms using running water as hot as you can comfortably stand.
2. Apply a generous amount of soap, and build a good lather.
3. Scrub your hands and arms vigorously for 10 to 15 seconds. Clean your fingers and fingernails really well.
4. Rinse hands and arms thoroughly with warm water.
5. Dry your hands and arms. Use a single-use paper towel or a hand dryer. Use a paper towel to turn off the faucet as the hands may become contaminated immediately.

HAND WASHING STEPS - 20 SECONDS



1. Wet hands (up to exposed forearms) Using running water as hot as you can comfortably stand.



2. Apply soap. Apply a generous amount, build a good lather.



3. Scrub your hands and arms vigorously for 10 to 15 seconds. Clean your fingers and fingernails really well.



4. Rinse hand and arms thoroughly. Use warm water to rinse.



5. Dry your hands and arms. Use a single-use paper towel or a hand dryer.

Remember to clean in between your fingers and fingernails very well.
Hidden pathogens may be lurking.

How long does proper handwashing take?

Minimum of 20 seconds.

When should hands be washed?

- Any time you begin a new action that is related to food or a food-contact surface
- After handling money
- After using any electronic devices
- After handling any animals
- After handling ready-to-eat foods
- After handling chemicals
- When in doubt, wash your hands.

Corrective Action

If your food handlers are not following proper handwashing techniques, as a manager you must correct the problem immediately. If they have improperly washed their hands and touched food or a food-contact surface, the following is required:

1. Throw away the contaminated foods.
2. Clean the dirty equipment and/or utensils as soon as possible, stop the food handlers and retrain them.



Hand Antiseptics

If you wish to, use hand antiseptics, hand sanitizers or hand gels. Hand antiseptics may be used after food handlers wash and dry their hands.



Hand Care Guidelines:

Long Fingernails and False Nails. Keep your fingernails short. False nails, for example, can become a physical contaminant. Long fingernails can be hard to clean, and they will tear any gloves that you need to use while preparing foods.

Nail Polish. Do not wear nail polish. It can hide dirt under your fingernails. It can chip and contaminate food. Some jurisdictions may permit food handlers with nail polish to handle food. They will, however, be required to wear gloves. To be certain, check with your local regulatory authority (the health department).

Infected Wounds

Make sure any hand cut or boil is covered with an impermeable cover (bandage) and gloves are worn over the wound.

Single-Use Gloves

Disposable gloves must be used while handling ready-to-eat food. We always need to create a barrier between our hands and food and food-contact surfaces.

Do gloves always need to be worn while handling food?

We always need to wear gloves while working with ready-to eat foods. The exception is washing fruits or produce and when handling ingredients that will be cooked to the correct internal food temperature.

What kind of gloves should be purchased?

- Gloves approved for food service
- The correct size
- Nonreusable
- Latex alternatives. Many gloves are made from safe material for those with latex allergies

What not to do to your gloves

- Use them as an alternative to washing hands
- Reuse them
- Wash them
- Blow into them
- Roll them so they fit easier
- Use the wrong size

When should gloves be changed?

- When they are dirty or ripped
- Before beginning a new food task
- After any interruption
- After handling raw meat, seafood or poultry, and before working with ready-to eat food



Eating, Drinking, Smoking or Using Other Tobacco Products

Staff must never eat, drink, smoke or use other tobacco related products in the kitchen area, only in a designated area far away from food.

Work Attire Guidelines

Hair Restraints. Wear a clean hat or hair restraint while working with food. Food handlers with beards should also wear a beard restraint. Check with your local jurisdiction on beard cover requirements.



Clean Clothing. Wear clean clothing daily; consider changing at work.

Aprons. Wear clean aprons. Make sure they are removed when leaving the prep area. Store dirty aprons in an isolated laundry bag or basket.

Jewelry. Wear only a plain band ring on arms or hands. Remove any bracelets or watches. No exceptions.

Reporting Health Issues

It is mandatory that every manager let all staff members know when they need to be restricted or excluded from the workforce.

Restrictions

Any staff member with a sore throat or fever must be restricted from working around food. Food that was prepared by anyone with these two conditions must be discarded.

Exclusions

Anyone working in the operation with vomit or diarrhea must be sent home immediately. Any food that was prepared by someone suffering from these symptoms must be discarded. Staff members must be sent home for a minimum of 24 hours.



High-Risk Population

Staff members who work in a susceptible population must be sent home if they have a sore throat or fever and will be required to present a doctor's note upon returning to work. These employees will be required to stay away from work for a minimum of 48 hours.



YOUNG
CHILDREN



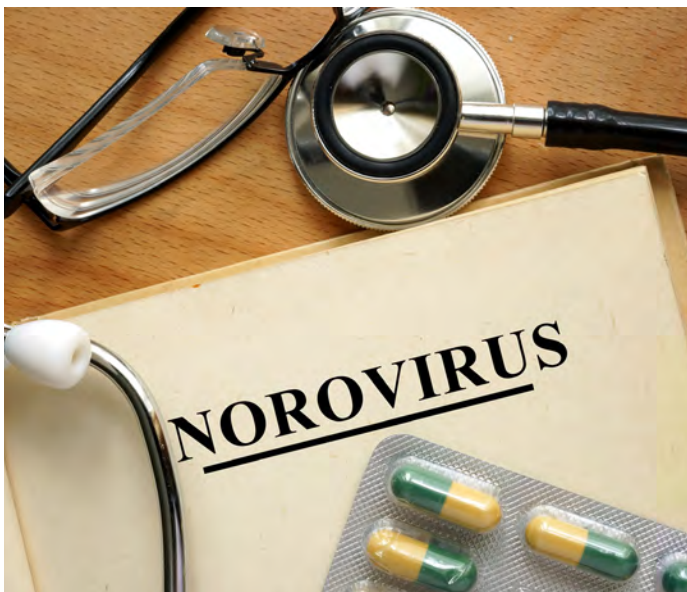
ELDERLY



COMPROMISED
IMMUNE SYSTEM

Immediate Exclusion

- Shigella spp.
- Salmonella typhi
- Nontyphoidal salmonella
- Shiga toxin-producing Escherichia coli (STEC), commonly known as E. coli
- Hepatitis A
- Norovirus



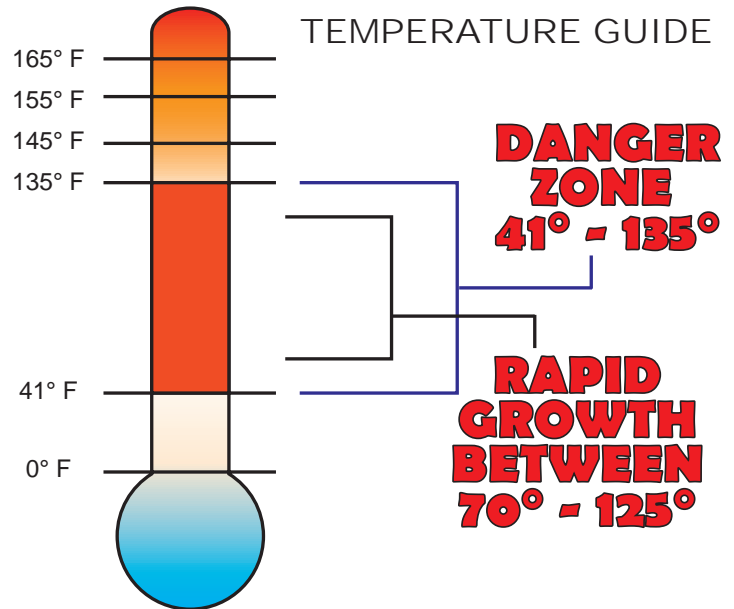
Be aware that anyone who is diagnosed with or suspected to have any of these “Big Six” pathogens must be excluded from the operation immediacy. The local regulatory authority (the health department) must be notified. They will be required to have a doctor's note in order to return back to work.

Taking Temperatures

Very often, foodborne illnesses happen as a result of foods not held at the right temperatures. Time-temperature abuse in regards to TCS foods is when these foods remain in the temperature danger zone, 41 to 135 degrees F, for an extended period. Be aware that pathogens grow rapidly between 70 and 125 degrees F.

Guidelines for Preventing Cross-Contamination

- Use separate cutting boards for each type of food. Consider using a yellow cutting board for chicken, red for meats and green for your veggies.
- Prepare your raw meats, poultry and ready-to eat food at separate times.
- Buy prepared food. If you have the possibility to buy food that needs little or no preparation, this will limit possible risks.



How can time-temperature abuse be controlled?

- Monitor temperatures. Check the temperatures of specific foods. Decide who should check it and how often.
- Tools. Make sure food handlers use the correct thermometers. Train staff on the importance of keeping food out of the temperature danger zone.
- Recording. Make sure food temperatures are recorded, especially your walk-in coolers/freezers. Temperature readings of all refrigerated units should be monitored daily, often twice a day.
- Time and Temperature Control. As food service managers, it is our responsibility to train our food handlers to prevent time-temperature abuse. Time and temperature control is something we can and must control throughout the entire process of food.
- Corrective Actions. A plan must be in place if foods are either at risk of cross-contamination or they are at risk of time-temperature abuse.



About Thermometers

Follow the food thermometer manufacturer's instructions for use. Use a food thermometer that measures temperatures from 0 to 220 degrees F and is appropriate for the temperature being taken.

Types of Thermometers

Thermocouples: Thermocouples measure temperature with the press of a button. The thermocouple gives a readout of the temperature. This type of thermometer measures temperatures quickly.



Bimetallic stemmed thermometers: The bimetallic stemmed thermometer is the most common type of foodservice thermometer. It measures temperature through a metal stem with a sensor at the end. The sensing area is from the tip to a half inch past the dimple. Make sure it has an adjustable calibration nut, easy-to-read temperature markings and a dimple marking the end of the sensing area.



Digital thermometers: Digital thermometers measure temperatures through a metal tip or sensing area. They are especially easy to read.



Laser thermometers: Laser thermometers are used for thin food and equipment surfaces. They reduce the risk of cross-contamination because they do not touch food. However, they only check the surface temperature of foods, not the internal temperatures. They may be used for a slice of turkey, for example.



Other Types of Thermometers

A time temperature indicator (TTI) is a kind of thermometer strip that is usually found on packages and looks like a label.

Maximum registering tape is a special tape placed on items going through a hot water dishwasher. You can determine if your dishwasher is working properly if temperatures reach 180 degrees F.

Penetration probes are thermometers that check generally the temperatures of thin foods.

Surface probes are thermometers used to check the temperatures of flat cooking equipment.

Immersion probes are thermometers used to check the temperatures of liquids, such as soups.

Air probes are thermometers used to check the temperature inside refrigerators and freezers.

Calibrating Your Thermometers



All thermometers should be calibrated or adjusted so that they measure temperatures accurately.

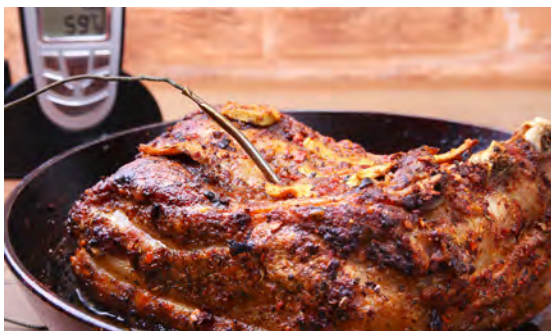
Make sure all thermometers used for checking food are accurate to within **+/- 2 degrees F or +/- 1 degree C**.

Thermometers used to check the temperatures of food-storage units must read accurate to within **+/- 3 degrees F or +/- 1.5 degrees C**.

If you have a glass thermometer, make sure it is enclosed in a shatter-resistant covering.

Here's how:

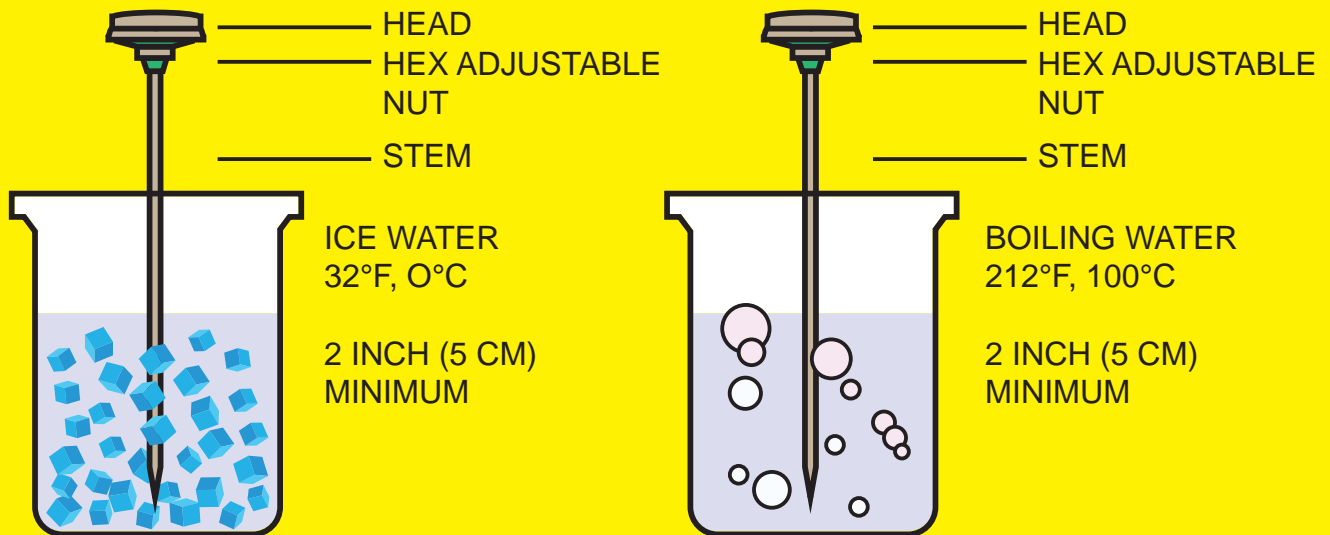
Bimetallic stemmed thermometers:



Bimetallic stemmed thermometers are calibrated using the ice-point method. Calibrate on a regular basis and after using the thermometer with very hot or very cold foods or after dropping or jarring it. In a clean glass cup, make an ice water slush by filling the cup halfway with ice cubes and the rest with water. Stick the sensing tip of the thermometer into the cup, being sure not to touch the sides or bottom of the cup. Wait four or five minutes or until the needle is steady. If the needle does

not read 32 degrees F, then turn the nut under the dial until it does. Clean and sanitize the thermometer and its case before next use.

How to Calibrate Your Food Service Thermometer



Before and after each use, wash, rinse, sanitize and air-dry thermometer stems. Use a sanitizing solution that is safe for food-contact items.

Purchasing, Receiving & Storage

Purchase foods from approved, reputable suppliers. This means they meet all applicable local, state and federal laws.

Try to avoid receiving food deliveries during busy operating hours if possible. And make specific staff responsible for receiving and train them to follow food safety guidelines. It is key all food and non-food items are stored immediately after receiving.

Key drop deliveries are when the food supplier is given after-hour access to the operation. Managers must do inspections upon arrival at the operation. They must ensure the orders have been placed in the correct storage location to maintain the required temperature.



Temperatures of Foods Being Received

Cold TCS food must be received at 41 degrees F or below.

Live shellfish, including oysters, mussels, clams and scallops, must be received at 45 degrees F. Shellfish must be stored to 41 degrees F or below within four hours.

Shucked shellfish must be received at 45 degrees F and must be stored to 41 degrees F or below within four hours.

Shell eggs must be received at 45 degrees F and must be stored to 41 degrees F or below within four hours.

Milk must be received at 45 degrees F and must be stored to 41 degrees F or below within four hours.



If you see **ice crystals** on the frozen food, this is a sign the item was thawed and then frozen again, and the food has been time-temperature abused.

When Food Needs To Be Rejected upon Delivery

- Severe and deep dents in seams or body of the can
- Swollen or bulging ends
- Missing complete labels
- Holes, leaking or dampness
- Signs of pests or pest damage. Pests very often enter delivery facilities.
- Expired expiration date
- Rust



Some Other Factors

- **Color.** Refuse food that is moldy or has an abnormal color.
- **Texture.** If the meat, fish or poultry is slimy, sticky or dry and leaves an imprint when pressed on, reject it.
- **Smell.** If you smell a foul odor, the item must be rejected.

Required Documentation

Shellfish and fish that will be eaten raw or undercooked must be received with the **shellstock identification tags**, which state where and when the shellfish was harvested and that it was purchased from an approved source. Do not remove the shellfish tag from the container until the last shellfish is used, and keep it from 90 days when the container is empty.

Super Fishy Fish Company	
PERISHABLE KEEP REFRIGERATED	777 Fish Ave. Fish Plans, NY 10777 (777) 555-5673
Cert. # NY ####-SS, SP, OR PHP*	Wholesale # WD NY 34 SP
ORIGINALS SHIPPERS CERT. NO. IF OTHER THAN ABOVE: _____	
○ DATE OF HARVEST: 07/24/2019	_____
HARVEST AREA, NAME, OR #: Montauk Harbor Atlantic	
TYPE OF SHELLFISH: Oysters	
QUANTITY OF SHELLFISH: 30 per box	
SELL BY: 08/10/2019	
THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY AND THEREAFTER KEPT ON FILE, IN CHRONOLOGICAL ORDER, FOR 90 DAYS.	
RETAILERS: DATE WHEN THE LAST SHELLFISH FROM THIS CONTAINER SOLD OR SERVED _____	

All fish that has been farm raised must have documentation stating it was raised to FDA standards.

Storage

All food that will not be consumed within 24 hours must be date marked.

TCS food that will be stored for longer than 24 hours must have a label that indicates when the food must be sold, eaten or thrown out. Ready-to-eat TCS food can be stored for only seven days if it is held at 41 degrees F or lower. The count begins on the day the food was prepared or the container has been opened.

Some labels indicate the date the food was prepared. It is important that the seven-day expiration date was labeled on the food.

Item	Teriyaki Chicken
Prepared Date	8/03/21
Use By	8/09/21
Emp	LM
Cambro	

When combining foods with different use-by dates, base the discard date on the earliest prepared food.

Temperatures

- TCS food must be stored with an internal temperature of 41 degrees F or below or 135 degrees F or higher.
- Frozen food must be stored at a temperature that will keep it frozen.
- Storage units need to have at least one air-temperature measuring device and must be accurate to +/- 3 degrees. This device needs to be placed in the warmest part of the refrigeration unit and the coldest part of the hot holding unit.
- Do not overload cooler or freezers, as this will affect the temperature.
- Use open shelving in your coolers and freezers. This will help ensure better airflow.
- Monitor temperatures regularly by taking random samples.

Follow the FIFO (First In, First Out) Process

When storing your food, place previously prepared food in front or on top of the newly prepared food. This will help ensure your foods are consumed in an adequate amount of time. When receiving deliveries, make sure you do the same.

Storage Order

Food that is placed in the cooler needs to have a bottom-to-top shelving order to limit cross-contamination. You can see that the storage level is based on the cooking temperatures of the food, with the highest cooking temperature stored at the bottom. This order is based on the science of the food.



Food Preparation

During any food preparation, one must be always aware of the following:

- **Equipment.** Ensure that all workstations, work surfaces and utensils are cleaned and sanitized after use or every four hours.
- **Quantity.** Make sure that the food handler is not overpreparing and is taking steps to limit time-temperature abuse.
- **Storage.** Make sure all food is put in the appropriate location.
- **Additives.** Never use additives to alter the appearance of food.
- **Presentation.** Food must not be misrepresented, and customers must judge for themselves the appearance. Food must be presented honestly.
These items are not permitted: colored wraps, additives used to change the appearance of the food, lighting or even the lack of lighting.



Food that is dishonest or adulterated must be discarded upon discovery.

Thawing Food

In order to prevent or reduce food from being exposed to the **temperature danger zone**, never thaw food at room temperature. There are four ways to thaw food.

1. **Refrigeration.** Thawing food in a cooler is the best and most convenient way to defrost food. Food must be kept at 41 degrees F or below.
2. **Running Water.** Submerge food under running, clean water at 70 degrees F or below. The flow of water will push possible food bits down the drain. Never let food go above 41 degrees F for longer than four hours.
3. **Microwave.** This method is acceptable as long as the food will be served or hot-held for service immediately.
4. **Cooking** as part of the cooking process.
Example: Frozen hamburger patty placed on a grill.

Produce

- **Cross-Contamination.** Make sure when preparing produce that it does not touch surfaces that have been used to prepare raw meat, seafood, etc.
- **Washing.** All produce must be washed under running water that is slightly warm. Pay special attention to leafy greens like spinach and lettuce. Remove all dirt particles.

- **Soaking.** If your produce will be soaked or stored, never mix other items or multiple batches of the same item.
- **Freshly Cut Produce.** TCS produce items like cut tomatoes, chopped leafy greens and cut cantaloupe must be held at 41 degrees F or below.
- **Raw Seed Sprouts.** Do not serve raw seed sprouts to the high-risk population.

Eggs

- **Pooled Eggs** are eggs that have been cracked open and separated from the shell in a container. These need to be cooked promptly after mixing or stored at 41 degrees F or below.
- **Pasteurized Eggs.** Use these types of eggs if you are making a dish that needs little or no cooking time for the high-risk populations.

Ice

- Make ice with water that is safe to drink (potable) and hasn't been used to keep other food cold.
- Containers and scoops must be clean and sanitized. Containers and scoops must never have held raw meat, seafood or chemicals. They must be stored outside the ice machine.
- Never scoop ice with hands or with glass.

Variances/HACCP

Certain ways of preparing food require special permission. This is called a **variance**. When food establishments are applying for a variance, some agencies will require them to submit an **HACCP** plan. The plan shows how you are preventing the food from **biological, chemical and physical contamination**.

- Packaging fresh juice for sale at a later time (retail)
- Smoking food as a way to preserve it but not to change its flavor
- Using food additives, vinegar or acidifying food to preserve food so it doesn't need temperature control
- Curing food
- Killing animals for consumption



- Packing foods using the ROP method, also known as MAP, sous vide or vacuum packaging
- Growing seeds or beans
- Selling live shellfish from a display tank (lobster, crab)

If you are packaging fish using ROP method, the fish must be frozen before, during, or after packaging and there must be a label that states the fish must be frozen until used.

If you are retailing food, you must use the following criteria:

List the ingredients and subingredients by descending order by weight.

FOODS	MINIMUM INTERNAL TEMPS & HOLDING TIME
Poultry (including whole or ground chicken, turkey and duck)	165°F (74°C) for 1 second (Instantaneous)
TCS food in a microwave Meat, seafood, poultry and eggs.	165°F (74°C) for 1 second (Instantaneous)
Stuffed meat and stuffing (when stuffed with meat, seafood, poultry or pasta)	165°F (74°C) for 1 second (Instantaneous)
Dishes that include previously cooked TCS ingredients	165°F (74°C) for 1 second (Instantaneous)
Ground or mechanically tenderized meat and fish	155°F (68°C) for 17 seconds
Injected meat	155°F (68°C) for 17 seconds
Shell eggs that will be hot-held	155°F (68°C) for 17 seconds
Pork, beef, veal, lamb Roasts	145°F (63°C) for 15 seconds 145°F (63°C) for 4 minutes
Eggs for immediate service	145°F (63°C) for 15 seconds
Fish	145°F (63°C) for 15 seconds
Commercially processed, ready-to-eat food that will be hot-held for service (beans, pasta, rice, fruits, veggies)	135°F (57°C) (no minimum time)

Microwave Cooking and TCS Food

Any meat, seafood, poultry and egg products must be cooked at 165 degrees F.

Partially Cooking Food

Some food establishments will precook food and finish cooking at a later time. This process must be handled carefully. The initial precooking process cannot exceed 60 minutes.

Consumer Advisory Warnings

If you are selling raw or undercooked animal products, it is required that a consumer advisory is in place warning customers of the risk of foodborne illness. The warning must be placed in the menu or on a table tent—for example, at a buffet. There must be an asterisk next to the item.

It is key that when customers order, they are warned of the risks related to food of this manner.

FRANK'S CHICKEN SANDWICH

Grilled Chicken Breast with Frank's BBQ
sauce served with provolone cheese,
pickles, onion and our special
pretzel roll..... \$10.99

WILD BURGER*

Half pin coby beef cooked to order,
served with monterey jack, hot peppers,
chili on a kaiser bun.....\$10.99

*This item is served raw or undercooked, or contains
(or may contain) raw or under-cooked ingredients.

Consuming raw or under-cooked meat, poultry,
seafood, shellfish, or eggs may increase the risk of a
foodborne illness.

The FDA advises that we do not serve raw or undercooked meat, poultry, seafood or eggs to children.

Operations whose majority of clientele are **high-risk customers** cannot serve:

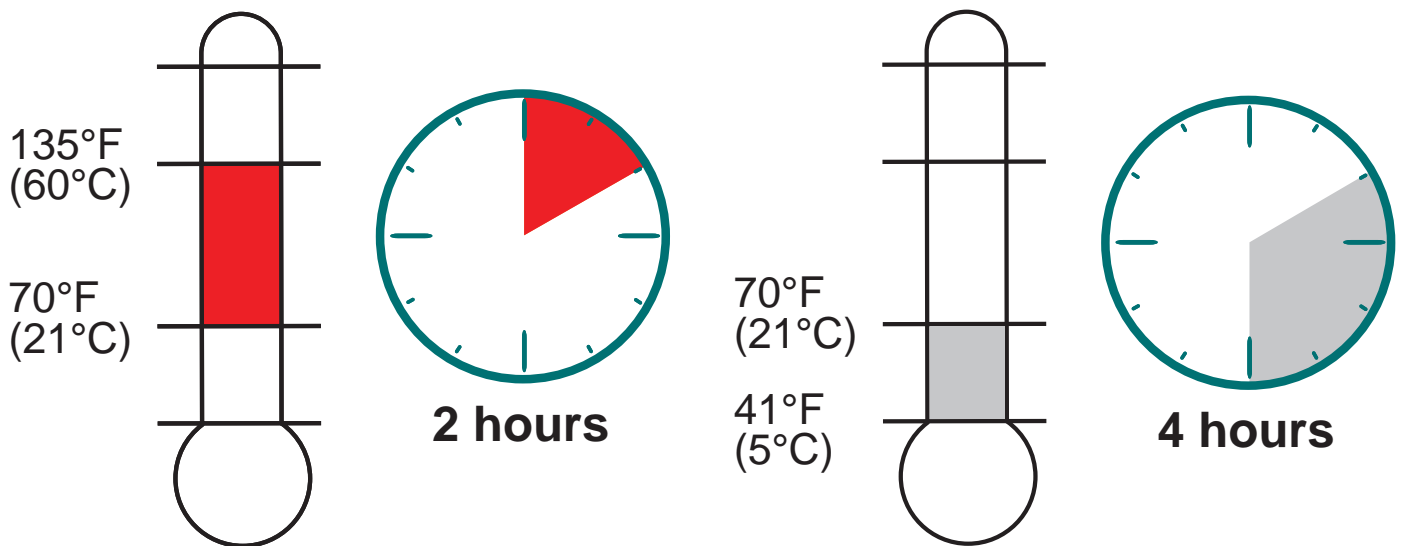
- Raw seed sprouts (alpha sprouts)
- Raw or undercooked eggs, meat, seafood (raw oysters), poultry and eggs
- Unpasteurized milk and juice

Cooling Food

Cooling food requires special attention. TC food, for example, may be cooled from 135 degrees F to 41 degrees F or below. The process must occur within six hours to prevent time-temperature abuse.

First step, cool the food from 135 degrees F to 70 degrees F within two hours. Reheat the food immediately if it is not chilled from 135 degrees F to 70 degrees F within two hours. If the food is cooled in one hour, then you can use the remaining five hours.

Second step, cool the food from 70 degrees F to 41 degrees F or below within four hours. The total cooling process from 135 degrees F to 41 degrees F may not exceed six hours. Take corrective action immediately if the food is not chilled from 135 degrees F to 41 degrees F within the six-hour cooling process.



Use the following methods to cool your foods:

- Ice Paddles
- Ice Baths
- Blast or Tumble Chillers

You may use ice or water to cool the food down. It is important that while cooling food down, we break the food down into smaller containers or shallow pans. This will help reduce cooling times.

SERVICE OF FOOD

Holding Food

Food that is being hot-held for service is always at risk of time-temperature abuse. Time and temperature control must be monitored on a regular basis.

Guidelines for Holding Food

Protect Food. Cover food and use sneeze guards. This will protect the food from contamination and help maintain required food temperatures.



Taking Temperatures

Use an actual thermometer to take the food temperature. The gauge on the unit will not record the actual internal temperature of the food.

Time. Check temperatures every two hours. This will allow food handlers to correct any temperature issues they may find.

Reheating Hot-Holding. Remember, any food that has gone below 135 degrees F within the two-hour period must be reheated to 165 degrees F. Most hot-holding devices are not designed to heat food up; the majority is designed only to hold the food.

Cold food can be held without temperature control for six hours, as long as the food has a label specifying when it was removed from refrigeration that kept it cold at 41 degrees F or below, the food doesn't exceed 70 degrees F and there is a time listed on the label when the item needs to be discarded. After six hours, the food must be thrown away.

Hot food can be held without temperature control for four hours, as long as the food has a label specifying when it was removed from being heated to its required temperature and the time it must be discarded. After four hours, the food must be thrown away.



Kitchen Staff Requirements

Bare-Hand Contact. Whenever ready-to-eat food is being handled, the person handling the food must either wear single-use gloves or use some other type of hand barrier, such as a spatula, tongs, deli paper or another utensil for serving.

Utensils must be clean and sanitized at minimum every four hours if in continuous use.



Refilling Take-Home Containers. Some food establishments provide refillable take-home containers. The containers must be provided by the operation clean and sanitized, and they must be able to be cleaned at home as well.

Presetting Tableware

If one is using preset tableware, table settings do not need to be wrapped and covered when they are placed when the guests have been seated but must be cleaned and sanitized when they have left.

What can we reserve to the customer?

The only things that can be reserved to customers are unopened condiment packets, wrapped crackers, wrapped bread sticks, etc. Any plate garnishes or bread must be discarded. Used linens for the bread basket must be changed and washed in between use.



OK TO RESERVE



DO NOT RESERVE

Food Safety Management (Haccp)

As food safety managers, we must focus on controlling risks and hazards. **We must focus on the following:**

- Hygiene policies
- Supplier specification
- Food safety training (always assessing the training needs)
- Proper cleaning and sanitizing programs
- Quality controls
- Standard operating procedures (SOPs) — taking a food manager's course, for example
- Pest control
- Equipment maintenance



HACCP

Hazard analysis and critical control points (HACCP) is a systematic approach to hazard identification. It assesses risk and control over the potential hazard. **HACCP** originated in the 1960s, when the National Aeronautics and Space Administration (NASA), the Pillsbury Company and the U.S. Army combined to develop it.

HACCP has been so successful that many food safety programs internationally follow the principles.

HACCP is a written seven-step process that will help prevent and eliminate biological, chemical and physical contamination.

Although there are standards, a plan that works for you may not work for another. These documents must be provided to the regulatory authority if requested.

The seven-step process is as follows:

1. Conduct a hazard analysis.
2. Determine critical control points (CCPs).
3. Establish critical limits.
4. Establish monitoring procedures.
5. Identify corrective actions.
6. Verify that the system works.
7. Establish procedures for record keeping and documentation.



To break it down in a simple way, principles one, two and three help you analyze your hazards. Principles four and five help you find ways to control the hazards, and principles six and seven help you maintain your plan by ensuring that it is effective.

Any deviation in any step will make the plan ineffective.

1. **Conduct a hazard analysis.** The food and its process must be analyzed. One must look for risks related to biological, chemical or physical contamination. There may be more than one. *Example: bacteria.*
2. **Determine critical control points (CCPs).** Look for points in the process that can prevent, eliminate or reduce risks. There may be more than one CCP. *Example: cooking (cooking to order).*
3. **Establish critical limits.** Set limits on the food and/or process. *Example: 10-oz. chicken breast 19 minutes 165°F.*
4. **Establish monitoring procedures.** Find out who will be checking that the critical limit is being met and when, where and how often. These CCPs must be recorded by these individuals. *Example: the cook.*
5. **Identify corrective actions.** What happens if the CCP has not been met? How will the person monitoring ensure the food or process is safe? *Example: The 10-oz. chicken breast does not reach its limit in 19 minutes, so the chicken breast needs to be cooked for additional time until it reaches the maximum limit. This will be recorded as a corrective action in the corrective action log.*
6. **Verify that the system works.** It is important that management is checking all documentation related to this plan, including shipment orders, monitoring charts and corrective action logs. The HACCP plan must be observed on a regular basis in order to ensure it is working. Adjust the plan as needed.
7. **Establish procedures for record keeping and documentation.** Decide where and how the documentation for this plan is being stored. As this plan may be required by the health department, it may wish to observe it. *Example: Documents are kept for two years in an accordion folder, labeled for easy control.*

If the local health department needs to issue a food establishment a **variance**, it will require the food establishment to submit an **HACCP** plan for the following items:

- Curing food
- Packaging fresh juice for sale at a later time (retail)
- Smoking food as a way to preserve it but not to change its flavor
- Using food additives, vinegar or acidifying food so it doesn't need temperature control
- Killing animals for consumption
- Packing foods using the ROP method, also known as MAP, sous vide or vacuum packaging
- Growing seeds or beans
- Selling live shellfish from a display tank (lobster, crab)

Safe Facility & Pest Control

It is key that all utilities, materials, equipment and food surfaces are maintained in an operation to ensure food safety.

The entire operation must be cleaned on a regular basis, including floors, walls and ceilings.

All floors must have cove tiling. Cove tiling involves the space between the floor and the wall, where the curvature of the tile prevents sharp corners against the wall. Coving prevents the buildup of dirt, dust and food particles that attract unwanted pests.



Equipment Requirements

Food safety equipment must be smooth, strong, nonabsorbent and resistant to damage. Food service equipment should have an NSF label posted on it. This label proves the equipment is supported by the American National Standards Institute (ANSI).

Floor-mounted equipment must be at least six inches (15 centimeters) high.

Tabletop equipment must be mounted four inches (10 centimeters) high.



Handwashing Sinks

Handwashing stations are a key in ensuring hands are properly cleaned, and they are required in restrooms or directly next to them and in any area used to prepare food, provide service and wash dishes.

Handwashing stations must not be used for drinking or preparing food; however, the water must be drinkable, or potable.

Handwashing stations require the following:

- Hot and cold running clean water
- Soap
- A way to dry your hands—paper towels or hand dryer
- A garbage container
- Signage stating all employees must wash hands before returning to work



Water and Plumbing Systems

Only drinkable water is accepted in any food establishment. The water is called **potable water**, which can have many sources. Here are acceptable sources of **potable water**:

- Approved public water
- Private sources that meet all legal requirements
- Portable water
- Water transporters

We must be aware of several things in regards to plumbing:

Cross-connection is the physical link between good and dirty water.

Backflow is the reverse flow through a cross-connection. This could result from pressure pushing contaminants back into the clean water.

Backsiphonage is when high water in one area creates a vacuum effect in the plumbing that sucks contaminants back into the water.



A **vacuum breaker** is a device used to close a check valve and seal the water supply shut when the water flow is stopped.

The only way to be certain there is no **backsiphonage** is an **air gap**. This is the airspace you see below that separates a water supply from a prospective contaminated source.

Lighting

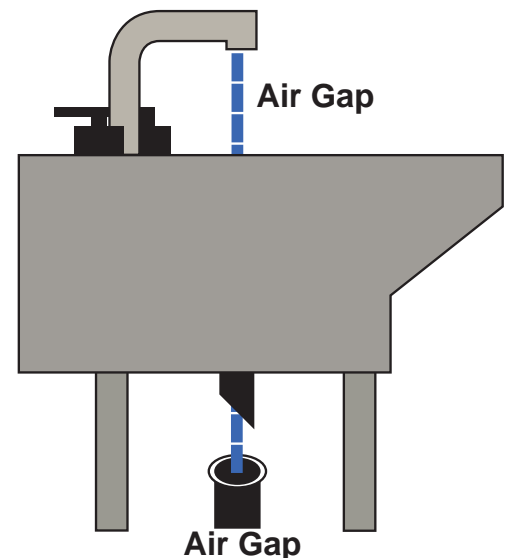
Local health departments require that the kitchen or food preparation areas have a higher lighting intensity than other areas. Adequate lighting will help prevent cross-contamination. It is extremely important that all lights in the kitchen unit have protective covering to prevent physical contamination.

Ventilation

Ventilation is important in the kitchen unit as it will prevent moisture and grease from building up on the walls and ceiling.

Garbage

It is key that all trash be removed from the prep area as quickly as possible. Garbage and waste can become a hazard and attract pests.



Indoor garbage containers must be leak-proof, waterproof and easy to clean. Frequent cleaning of trash cans will help eliminate the possibility of pests.

Outdoor garbage containers must have tight-fitting lids. They must be smooth, strong and nonabsorbent and placed on concrete or asphalt.

Facility Maintenance

Unsanitary conditions can cause food safety issues, especially in regards to pests. The best way to prevent pests from entering is by keeping a clean facility.

Check the infrastructure of your facility by ensuring all cracks and holes are sealed. Concrete must be used to fill any spot that may allow unwelcomed guests—that is, pests—from entering.



Accessing Emergency Conditions

There may be situations that will force a food establishment to temporarily close. These issues are known as **imminent health hazards**. Some issues that could affect the facility, customers and employees are as follows:

- Fire
- Flooding
- Earthquakes
- Lack of water
- Sewage backups
- Lack of refrigeration

When a food establishment needs to close, the local health department must be notified. When there have been unsanitary water conditions, management must call the local water municipality to verify the water is safe to use.

The regulatory authority may allow an operation to operate in the event of a water or electrical failure under the following conditions:

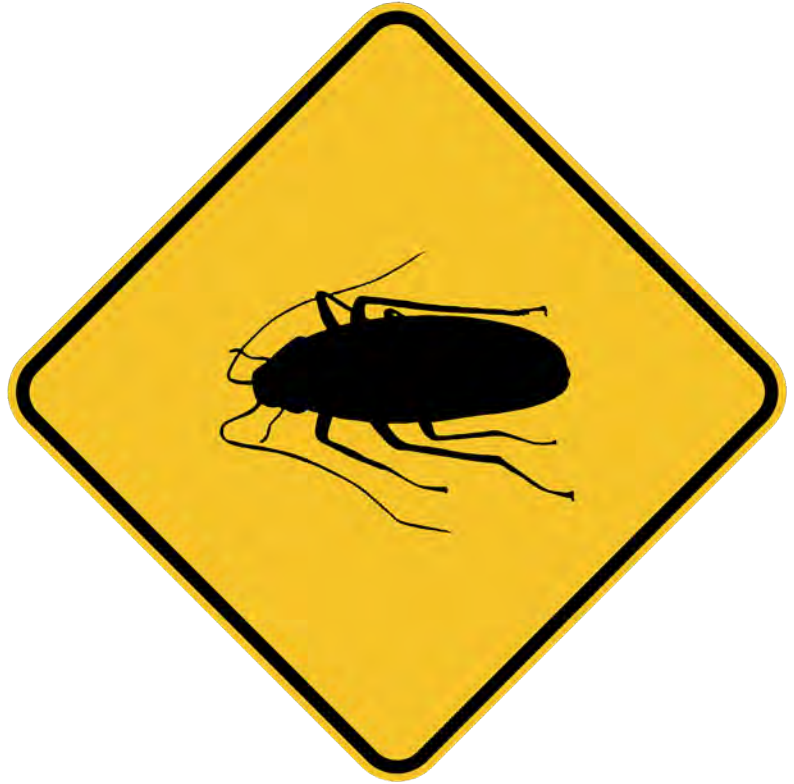
- There is a written emergency operating plan
- Immediate corrective action must be taken
- The regulatory authority must be notified

Pest Control

Controlling pests is extremely important. Denying pests access to the facility must be a priority. Only qualified people should administer food-safe and food-grade pest chemicals. Only licensed pest control operators (PCO) are allowed to apply these chemicals. However, these chemicals may be allowed in the facility as long as they are put in an isolated container far away from food or food-related products.

Remember to check deliveries for signs of pests and take steps to prevent pests from entering the facility.

Keep all objects six inches off the floor and contact a licensed PCO if you see any signs of pests.



Cleaning & Sanitation Programs

Cleaning and sanitizing utensils, food equipment and food-contact surfaces is a viable action that must commence throughout the entire food safety practice.

We have three kinds of sinks that we must be aware of:

- Three-compartment sink
- Handwashing station
- Prep sink
- Utility/service sink (mop sink); some refer to it as a slop sink

Sanitizing is a key process, and there are two types:

Heat. Very often food establishments are equipped with dishwashers. Dishwashers use either heat as a source of sanitizing or a heat and sanitizer blend. Regardless, the temperature of the final rinse must be at least 180 degrees F. It is important that the water pressure and water temperature be posted on the machine.

Three-compartment sinks are required in all food places where food is being prepared. The final-rinse sanitizing temperature must reach 171 degrees F. This sanitizer, however, is less effective when the temperature goes below 120 degrees F.

We are allowed to use three kinds of chemicals for sanitizing:

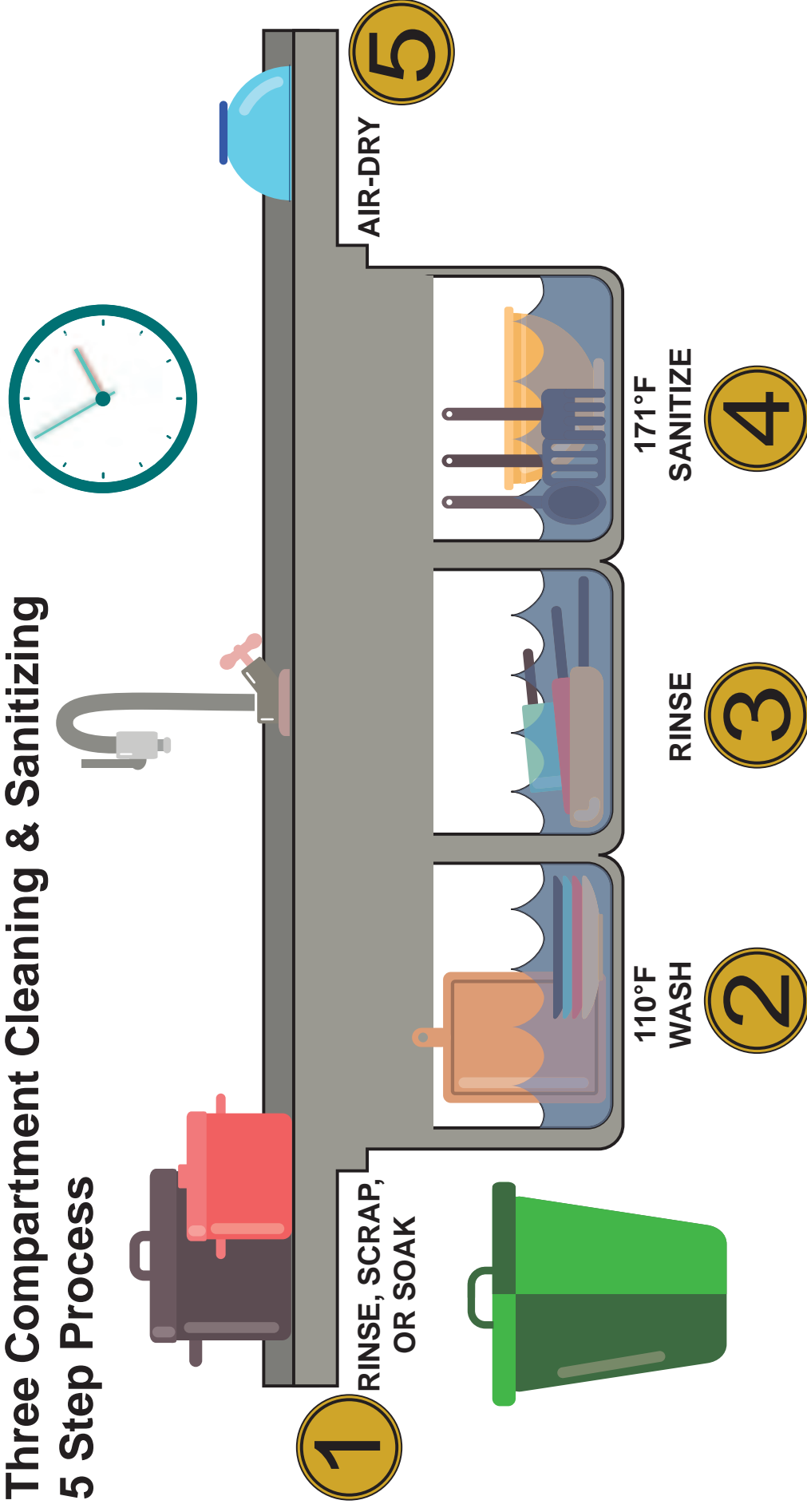
- Chlorine
- Iodine
- Quats (quaternary ammonium)

PRODUCT	WATER TEMP	CONCENTRATION	CONTACT TIME
Chlorine	100°F	50-120 PPM	7 seconds
Iodine	68°F	12.5-25 PPM	30 seconds
Quats	75°F		

Concentration is measured in parts per million (PPM). The only real way to check the concentration of a sanitizer is by using a test kit.



Three Compartment Cleaning & Sanitizing 5 Step Process



Cleaning and Sanitizing Food-Contact Surfaces or Equipment

All food-contact surfaces and/or equipment that is used in the operation must be cleaned every four hours if in continual use or before beginning a new task that requires a clean surface. The process steps are similar to dishwashing.

1. Scrape, remove food pieces or particles from the table. Nylon brushes, scrubbing pads or cleaning cloths are acceptable materials.
2. Wash the affected area with the appropriate cleaning agent.
3. Rinse the surface with water.
4. Sanitize the surface.
5. Allow the surface to air-dry.



Cleaners must be stable, noncorrosive, and safe to use. They must always also be available to employees. Three cleaners that should be available are:

- Detergents
- Degreasers
- Delimers
- Abrasive cleaners

Dishwashing Machines

All dishwashers must be maintained and the manufacturer's instructions must be followed. Use the required and approved detergent and sanitizer. All dishwashing machines must be able to measure water temperature, water pressure and sanitizing concentration. Dishwashers must be located to prevent washed items from being recontaminated.

Cleaning Tools

All cleaning tools must be stored on hooks located near or around the service sink.

Mops must never be stored in mop buckets. Mop water must never be poured down a toilet.

Sanitizing clothes must always be stored inside sanitizing solutions in between cleanings.



Testing Tips

Test taking can be a grueling and nerve-racking task. There are all kinds of learners. Some are visual, some are great at memorizing and some just have a knack for test taking and know exactly how to look at the questions and score high.

Various food manager's exams have been described as challenging, difficult, easy or impossible and straight-up unfair. The responses vary from person to person.

Being prepared no matter what kind of learner you are is key here. One can never study too much, but for sure it is possible to study too little. So prepare yourself well. This study guide is a great reference, but don't pass up the opportunity for live instruction or even taking an online course if time is an issue. Read as much as you can. Study, study, study.

At the end of the day, what we learn in these courses and programs will ultimately make us more knowledgeable and will help us be the best food safety managers possible.

Here are some helpful test-taking tips:

- It is helpful for some to relax and try to free their mind prior to taking an exam. Stress, although it seems negative, can also be a positive thing. However, do not panic, as this can alter your testing mind-set.
- Concentrate. Do your best to free yourself of worries and fears.
- Read each question a couple of times prior to answering. Rushing through question may lower your chance for a passing score. Take your time.
- Ask yourself as you are reading the question—especially if it's long—what are they really asking me? Sometimes extra information in the question may not be relevant or carries no clue to the answer.

Look for key terms. For example:

Who of the following is least likely to contract a foodborne illness?

- a. An overweight 25-year-old
- b. A healthy female with HIV
- c. A healthy 3-year-old
- d. A senior citizen

The answer is an overweight 25-year-old. The key term here is least likely. We understand that B, C and D are all part of the high-risk population, and an overweight 25-year-old is less likely to get a foodborne illness compared with the others.

- Using the process of elimination is a great idea, especially with questions that one might be unsure of. Go through the possible answers that are not probable and eliminate them from your choices. This action may potentially leave you with two possibilities, which will give you a 50 percent chance of getting the question right.
- Make an educated guess. If you are completely confused, pick the answer that you feel is more pertinent to the question.
- Pay particularly close attention to the words not, sometimes, always and never. Also pay special attention to words such as excluding and restricting and storing and receiving. Very often, test takers confuse one word for another meaning, and this will change the choices. Again, read each question at least two times.
- Never, ever leave an answer blank. However, depending on the exam, there may be an option to mark it for review and return to it later.
- Sometimes you may find a question that repeats itself in a similar form. This may be a good indication you are on the right track, or maybe you need to return to that question and revise your choice.

Glossary (This is a basic beginner's list; not all terms are here.)

A

Acidity

The level of acid in food. An acidic food has a pH below 7.0. Microorganisms present in food do not grow well in high acidity, while they grow best in foods with a neutral to slightly acidic pH. Keeping our acids at 4.6.

Active Managerial Control

A comprehensive food safety system. It includes operators and staff who are knowledgeable about food safety issues and are responsible for controlling practices and procedures that contribute to foodborne illness.

Air Curtains

Devices used to prevent air or contaminants from moving from one open space to another. They typically run alongside doors and blow a steady air current. This aids pest or insect prevention.

B

Bacteria

The FDA lists over 40 types of bacteria, viruses, parasites and fungi that contaminate foods and cause illness. Bacteria are always present. Our goal in food safety management is to prevent their growing to harmful levels.

Bimetallic Stemmed Thermometer

A thermometer that can check temperatures from 0 to 220 degrees Fahrenheit.

Biological Contamination

A general definition of a hazard as related to food safety is conditions or contaminants that can cause illnesses. Biological hazards include microorganisms such as bacteria, viruses, yeasts, molds and parasites. Some of these are pathogens or may produce toxins.

C

Calibration

Adjusting a thermometer to ensure accuracy. Recalibrate or adjust the accuracy of your thermometer regularly.

Carrier

A person who is infected with an illness and doesn't show symptoms for a period of time.

Centers for Disease Control and Prevention (CDC)

The Centers for Disease Control and Prevention (CDC) is a federal agency that conducts and supports health promotion, prevention and preparedness activities in the U.S.

Chemical Contamination

Chemical substances, such as cleaning agents, sanitizers, polishes, lubricants and toxic metals, like copper that leaches from cookware and equipment, that have contaminated food.

Concentration

The amount of sanitizer to water; measured in parts per million (ppm). The concentration of the sanitizer affects the effectiveness.

Critical Control Point

Is defined as an HACCP step to which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level.

Cross-Connection

Air space used to separate a water-supply outlet from any potentially contaminated source. Prevents reverse flow of contaminants through a cross-connection into a water system.

Cross-Contact

Occurs when an allergen is transferred from a food containing an allergen to a food that does not contain the allergen.

Cross-Contamination

Pathogens can be transferred from one surface or food to another.

D

Date Marking

Must indicate when the food was prepared and, most important, thrown out.

Demonstration

Allowing someone who has learned a skill to practice to see its effectiveness.

E

Exclusion

To prevent a food handler from working with or around food due to an illness.

F

First In, First Out (FIFO)

Method of rotating stored food according to its use-by or expiration dates so that oldest products are used first.

Food Additives

Substances added to foods to extend their shelf life.

Food and Drug Administration (FDA)

FDA inspects all food except meat, poultry and eggs. FDA issues a model Food Code, science-based recommendations for food safety regulations.

Food Defense

Food defense is the protection of food products from intentional contamination or adulteration—biological, chemical or physical.

Foodborne Illness Outbreak

Is when two or more people experience an illness after eating the same food.

Fungi

Ranging in size from microscopic, single-celled organisms to very large, multicellular organisms that cause food to spoil. Molds, yeasts and mushrooms are good examples.

H

HACCP

Hazard analysis and critical control points, or HACCP, is a systematic preventive approach to food safety from biological, chemical and physical hazards, a seven-step principal plan.

Hair Restraint

A hair cover used while preparing food in the kitchen or food prep area.

Hard Water

Water containing minerals such as calcium and iron in concentrations higher than 120 parts per million.

Health Inspector

City, county or state staff member who conducts food service inspections. Health inspectors are also known as a health specialists. They are trained in food safety.

Heat Sanitizing

Using heat to reduce the number of microorganisms on a clean surface to safe levels.

Hepatitis A

Disease-causing inflammation of the liver. It is transmitted to food by poor personal hygiene or contact with contaminated water. The source is feces.

High-Risk Population

Young children and elderly people with weakened immune systems are part of the high-risk population as they are susceptible to foodborne illness.

I

Ice Paddle

Plastic paddle filled with ice or water then frozen. Used to stir hot food to cool it quickly.

Imminent Health Hazard

A significant danger to health that requires immediate correction or closure to prevent injury.

Infestation

Situation that exists when pests overrun an operation in large numbers.

J

Jaundice

A condition where a person is infected with the yellowing of the skin and eyes. Jaundice is a symptom of hepatitis A.

K

Key Drop Deliveries

Deliveries given after working hours.

M

Material Safety Datasheet

Sheet supplied by the chemical manufacturer listing the chemical and its common name, its potential physical and health hazards and information about using and handling it safely. Must be accessible to staff. This document was created by OSHA (Occupational Safety and Health Administration).

Microorganisms

Small, living organisms that can be seen only with a microscope. There are four types of microorganisms (pathogens) that can contaminate food and cause foodborne illness: bacteria, viruses, parasites and fungi.

Modified Atmosphere Packaging (MAP)

Packaging method by which the air inside a package is altered using gases.

N

NSF

Organization that develops and publishes standards for sanitary equipment design for commercial food service equipment.

O

Occupational Safety and Health Administration (OSHA)

Federal agency that regulates workplace safety.

P

Parasites

Organisms that need to live in a host to survive. Parasites can be found in water and inside many animals, such as cows, chickens, pigs and fish. Correct cooking and freezing will kill parasites.

Pathogens

Illness-causing microorganisms.

Personal Hygiene

Habits that include keeping the hands, hair and body clean and wearing clean and appropriate uniforms.

Pest Control Operator (PCO)

Licensed operator who uses safe methods to prevent and control pests.

Pesticides

Chemicals used to control pests, usually insects.

pH

Measure of a food's acidity or alkalinity. The pH scale ranges from 0 to 14.0. A pH between 7.1 and 14 is alkaline, while a pH between 0.0 and 6.9 is acidic. A pH of 7.0 is neutral. Foodborne microorganisms grow well in food that has a neutral to slightly acidic pH (7.5 to 4.6).

Physical Hazards

Foreign objects that can accidentally get into food and contaminate it, such as hair, staples and broken glass. Can also be natural objects, like bones in chicken.

R

Ready-to-Eat Foods

Any food that is edible without further preparation, washing or cooking. It includes washed fruit and vegetables and deli meats. Once food is cooked, it is considered ready to eat.

Reduced Oxygen Packaging (ROP)

Packaging method that reduces the amount of oxygen, in order to slow microbial growth. ROP methods include sous vide, MAP and vacuum packaging.

S

Sanitizer

Chemical used to sanitize. Three of the approved are chlorine, iodine and quaternary ammonium.

Sanitizing

Process of reducing the number of microorganisms on a clean surface to safe levels.

Single-Use Gloves

Disposable gloves designed for one-time use. They provide a barrier between hands and the food they touch.

Single-Use Paper Towels

Paper towels designed to be used once.

Sneeze Guards

Food shields placed over self-service food containers or food service food containers used to protect food and customers from contamination, while aiding in maintaining proper food temperatures.

Sous Vide

A method of treating food by cooking followed by vacuum-sealing and chilling.

T

TCS Foods

Foods that contain moisture and protein and have a neutral or slightly acidic pH.

Temperature Danger Zone

The temperature range between 41 and 135 degrees F, within which most foodborne microorganisms rapidly grow.

Thermistors/Thermocouples

Thermometers that check food temperature through a sensor on the tip of a metal probe.

Time-Temperature Abuse

Food has been time-temperature abused any time it has been allowed to remain too long at a temperature favorable to the growth of foodborne microorganisms.

Toxins

Poisons produced by pathogens, plants or animals.

U

U.S. Department of Agriculture (USDA)

Federal agency responsible for the inspection and grading of meat, poultry, dairy products, eggs and fruit and vegetables shipped across state lines.

V

Vacuum Breaker

Device preventing the backflow of contaminants into a drinkable water system.

Variance

Document issued by a regulatory agency that allows a requirement to be waived or modified.

W

Water Activity (WA)

Amount of moisture available in food for microorganisms to grow.

