

Lesson 13:

Chapter 4 Module 4

Preparing Hot Foods Safely

Chapter 4: The Flow of Food Safely through your Establishment

Module 1: Purchasing and Receiving Foods	59
Module 2: Preparing Foods Safely	69
Module 3: Preparing Cold Foods Safely	75
Module 4: Preparing Hot Foods Safely	82
Module 5: Safely Serving Customers	95

Chapter 4 – Module 4: Preparing Hot Foods Safely

PREPARING HOT FOODS SAFELY

Key Words:

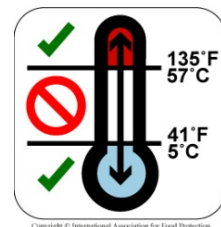
- Hot Holding
- Hot Food Prep Area
- Standardized Recipes
- Temperature Danger Zone (TDZ)
- Internal Temperatures
- HACCP
- Critical Control Points (CCP)
- Critical Limits (CL)
- Corrective Actions

Main Ideas:

- Make sure foods are cooked, held, cooled, and reheated to the proper temperature
- Never thaw high-risk foods at room temperature or in hot water
- Foods must be cooled from 135°F to 70°F or below within 2 hours and then to 41°F or below within an additional 4 hours

HACCP Guidelines

Hazard Analysis Critical Control Points (HACCP) guidelines, including **Critical Control Points**, **Critical Limits**, and **Corrective Actions**, help keep foods safe. As with cold food preparation, the guidelines are designed to keep food out of the **Temperature Danger Zone** (between 41°F and 135°F) where harmful bacteria grow rapidly and may cause foodborne illness.



REMEMBER:

Critical Control Points (CCP) are points within a procedure where action can be taken to eliminate or reduce the risk of a food safety hazard.

Critical Limits (CL) are the boundaries within a CCP.

Corrective Action indicates how to respond when CL are not met.

When hot foods are cooked and served the same day, there are 2 CCPs:

1. Cooking
2. Hot holding

When hot foods are prepared one day, cooled, and reheated another day, there are 4 CCPs:

1. Cooking
2. Hot holding
3. Cooling
4. Reheating



CCP	Critical Limit	Corrective Action
Cooking	Food Specific Internal Temperatures (see table below)	Continue cooking
Hot Holding	135°F	Reheat to 165°F for 15 seconds
Cooling	70°F within 2 hours, 41°F within additional 4 hours	Reheat to 165°F for 15 seconds
Reheating	165°F within 2 hours and held for 15 seconds	Discard food

Table 9: HACCP Critical Control Point examples with Critical Limits and Corrective Actions

Hot Food Preparation Area

All foods must be prepared in a clean and sanitized work area with clean and sanitized equipment and utensils.

- Employees must properly wash hands before entering the preparation area
- Disposable gloves should be worn
- Utensils used to prepare the food should be kept:
 - In the food with the handle remaining above the food, or
 - On a clean portion of the countertop during preparation
- Use a clean spoon for tasting and move away from the food when tasting


Copyright © International Association for Food Protection

Copyright © International Association for Food Protection


Ingredients

Remember to follow basic safe food culture practices:

- ✓ Purchase food from a reliable supplier
- ✓ Inspect deliveries for cleanliness and accuracy
- ✓ Use FIFO storage rotation
- ✓ Quickly store frozen and refrigerated foods

Standardized Recipes

Following standardized recipes protects the quality of the food your restaurant serves. Below is an example of a hot food standardized recipe designed to follow **HACCP** guidelines and warn against **The Big Eight** food allergens. For example, the recipe states the **Critical Control Points** and **Critical Limits** of cooking to an internal temperature of 165°F for at least 15 seconds and hot holding at 135°F or higher.

Oven Fried Chicken (25 servings – Portion: 4 oz)			
Ingredients	Weight	Measure	Instructions
Raw chicken, cut up, thawed	24 lb 8 oz		1. Place chicken pieces in large bowl. Drizzle oil over chicken. Toss to coat thoroughly.
Vegetable oil		1 1/2 cups	
Enriched all-purpose flour	1 lb	3 3/4 cups	2. In a separate bowl, combine flour, dry milk, poultry seasoning, pepper, paprika, and granulated garlic. Mix well.
Instant nonfat dry milk	8 oz	2 Tbsp	
Poultry seasoning		1 Tbsp 1 1/2 tsp	
Ground black or white pepper		1 Tbsp	
Paprika		1 1/2 tsp	
Granulated garlic		1 Tbsp 1 1/2 tsp	3. Coat oiled chicken with seasoned flour.
			4. Bake: Conventional oven: 400°F for 45-55 minutes. Convection oven: 350°F for 30-35 minutes. CCP: Heat to 165°F or higher for at least 15 seconds.
			5. Transfer to 2 steam table pans (12"x20"x2 1/2").
			6. CCP: Hold for hot service at 135°F or higher.
Food Allergy Warning: This recipe contains milk and wheat.			

Recipe 3: Oven Fried Chicken Sample Recipe

Recipe obtained from the National Food Service Management Institute



Preparing Hot Foods



Thawing

While it is safe to cook food directly from the frozen state, some recipes may require thawing ingredients before use. There are three safe ways to thaw food:

1. In a refrigerator;
2. Under cold, running water; and
3. In a microwave oven.

REMEMBER:

Employees should never thaw high risk foods at room temperature or in hot water.

Safe Thawing Methods	
Refrigerator	Place food in a refrigerator at or below 41°F. REMEMBER: Place thawing meats below RTE foods
	Requires planning ahead and is a slower method, but does not require attention once the food is placed in the refrigerator.
Cold Running Water	Submerge under cold water under cold, running water at or below 70°F.
	Quicker method than in the refrigerator. Food must be in a leak-proof plastic bag and the water must be changed every 30 minutes. Foods thawed under cold running water must be cooked immediately and cannot be refrozen until after they are cooked.
Microwave Oven	Follow Microwave Oven instructions.
	Quickest method. Food must be removed from its original package and placed in a container that is designed for microwave oven use. Foods thawed in the microwave oven must be cooked immediately and cannot be refrozen until after they are cooked

Table 10: Thawing frozen food guidelines.

Do Not Wash Meats or Eggs

- Poultry, beef, lamb, and veal, should not be washed before cooking.
- Washing does not remove a significant number of bacteria.
- The bacteria in the meat will be destroyed during cooking, and washing could lead to **Cross-Contamination** by transferring bacteria to the sink area.
- Shelled eggs do not need to be washed because they have already been washed by their commercial supplier.

Marinating and Brining

- Marinating and brining should be done in the refrigerator in order to avoid the **Temperature Danger Zone**.
- Store raw meats below **Ready-to-Eat** foods in the refrigerator.
- Discard the marinade or brine after use.
- Boiling a marinade will destroy the bacteria so that it can be used as a sauce if desired.



Partial Cooking

- Meat should **NOT** be partially cooked and then returned to the refrigerator.
- Partial cooking is safe only if the meat will be immediately transferred to a hot grill or oven to complete cooking.

REMEMBER:

Cross-Contamination occurs when bacteria from a **Time/Temperature Control for Safety (Potentially Hazardous)** food is transferred to another food through either **Direct** or **Indirect** contact. Even a small amount **Cross-Contamination** can cause foodborne illness.

Cross-Contact happens when food allergens are transferred from one food to another food. Just as with Cross-Contamination, **Cross-Contact** can be either **Direct** or **Indirect**. Food allergens can be transferred during preparation, cooking, plating, and serving. Unlike bacteria, food allergens are **NOT** destroyed by cooking.

How can bacteria and viruses be transferred by Cross-Contamination?

- ✗ raw foods drip or splash onto already cooked or Ready-to-Eat food items
- ✗ cutting cooked chicken on the same cutting board or with the same knife used to cut raw chicken

What safe food handling practices will prevent Cross-Contamination?

- ✓ Employees should wash hands, change gloves, and put on a clean apron between handling raw and cooked foods
- ✓ Food contact surfaces should be cleaned and sanitized between working with raw and cooked foods
- ✓ Use different color coded cutting boards for raw meat, poultry, fish, fruits, and vegetables



How can food allergens be transferred by Cross-Contact?

- ✗ Frying shrimp and chicken in the same frying oil. The shrimp allergens will be transferred to the chicken.
- ✗ Cooking fish and steak on the same grill surface. The fish allergens will be transferred to the steak.
- ✗ Toasting wheat bread and potato bread in the same toaster. The wheat allergens (and gluten protein) will be transferred to the wheat-free potato bread.
- ✗ Cutting pecans on the same surface, with the same knife as slicing a sandwich. The pecan allergens (tree nut) have been transferred to the sandwich.

What safe food handling practices will prevent Cross-Contact?

- ✓ Employees should wash hands, change gloves, and put on a clean apron before preparing an allergen-free menu item.
- ✓ Food contact surfaces should be cleaned and sanitized before preparing allergen-free food items.
- ✓ Use a dedicated fryer for shrimp (or other food allergen).
- ✓ Use a dedicated toaster for allergen-free breads.
- ✓ Use a separate pan or sheet of aluminum foil to grill allergen-free menu items.

When dedicated equipment is impractical, consider alternatives:

- Use a single serve fryer on the stove
- Toast allergen-free bread in the oven on a clean baking sheet
- Use aluminum foil to cook a hamburger patty on a griddle
- Let the customer know you cannot prepare the food item safely

Cooking Food to Safe Internal Temperatures

Regardless of the cooking method, the only way to check that foods have reached a safe internal temperature is to use a thermometer. Insert a clean, calibrated probe thermometer into the thickest part of the food to verify the food's internal temperature.



- When measuring the temperature of meat, avoid contact with bone, fat, and gristle.
- When measuring insert the thermometer probe from the side.
- When deep fat frying, remove the food from oil first before checking temperature.

If the food has not reached the Critical Limit, the food must continue cooking until the proper internal temperature is reached.

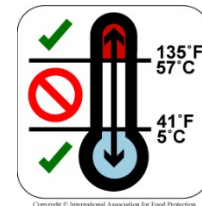
REMEMBER:

Cooking food does not
kill food allergens.

Eggs: Eggs should not be served runny. Eggs should be cooked until the yolks and whites are firm.

Stuffed meats: When cooking stuffed meats, not only does the meat have to reach its proper internal temperature, but the stuffing must also reach an internal temperature of 165°F.

Batch Cooking: When preparing hot food items, working with smaller batches minimizes the time that food spends in the **Temperature Danger Zone**. By working with smaller amounts of food, every aspect of preparation time is decreased including preparation, cooking, and cooling.



Microwaving



Microwave ovens do not always cook food evenly, and employees must take action to avoid undercooked pockets of food where bacteria can survive. This can be accomplished by:

- ✓ Using only microwave-safe materials
- ✓ Arranging the food as evenly as possible
- ✓ Covering and retaining moisture in the food
- ✓ Stirring or rotating the food half way through cooking
- ✓ Allowing standing time after the food is cooked

As with other methods of cooking, employees should use a thermometer to check the internal temperature of the food.







Product		Internal Cooking Temperatures
Poultry (whole or ground - duck, chicken, turkey) Stuffing, stuffed meat and dishes that include previously cooked, potentially hazardous ingredients 	165°	165°F (74°C) for 15 seconds
Microwave cooked Eggs, poultry, fish, meat		165°F (74°C) let food stand for 2 minutes after cooking
Ground meats - beef, pork, or other meat, fish 	155°	155°F (68°C) for 15 seconds
Injected meats - (including brined ham & flavor-injected roasts) 		155°F (68°C) for 15 seconds
Pork, Beef, Veal, Lamb 	145°	Steaks / Chops: cook to an internal temp. of 145°F (63°C) for 15 seconds
Fish 		Roasts: 145°F (63°C) for 4 minutes
Fresh shell eggs for immediate service 		145°F (63°C) for 15 seconds
Commercially processed ready-to-eat foods held for service	135° Temp DANGER Zone 41°	145°F (63°C) for 15 seconds
<div>Minimize "Danger Zone" temperatures during preparation, cooking, & cooling. After 4 hours in the "DZ" food is considered adulterated and must be discarded.</div>		<div>When cooling potentially hazardous food, the temperature must be lowered from 135°F to 70°F in 2 hours and then from 70°F to 41°F or below in the next 4 hours to prevent bacterial growth.</div>
Minimum Internal Cooking Temperatures		

Figure 1: Minimum Internal Cooking Temperatures
Retrieved from: <http://www.cdhd.idaho.gov/eh/food/active.htm>

Hot Holding

Hold hot foods above 135°F. When hot foods will not be served immediately, they must be held at 135°F or higher. This is a **Critical Control Point (CCP)** to be included in standardized recipes. Hot holding must be done in equipment that is designed for this purpose, and temperatures must be monitored and recorded by employees. **A thermometer must be used to check the internal temperature of the food every 2 hours.**



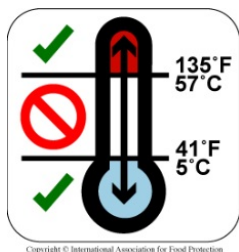
Corrective Action:

If the internal temperature falls below 135°F, and it has been:

- ✓ 2 hours or less since the last correct temperature reading (135°F or higher), **then reheat the food to 165°F for a minimum of 15 seconds.**
- ✓ More than 2 hours since the last correct temperature reading (135°F or higher), **then discard the food.**



Cooling and Storage

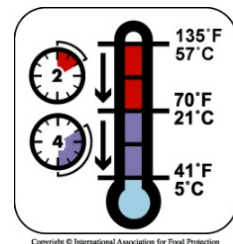


As hot foods cool, there is potential for them to be in the **Temperature Danger Zone** for a long period of time. Food safety guidelines provide specific cooling techniques for leftovers or foods not being served immediately:

- Leftovers
- Foods stored for reheating and service later
- Prep items for use in recipes (such as chicken for chicken salad)

Regardless of the cooling method used, there are 2 time/temperature **Critical Control Points**:

1. Foods must be cooled **from 135°F to 70°F or below** within 2 hours
2. Foods must then be cooled **to 41°F or below** within an additional 4 hours



This can be accomplished by using a combination of any of the cooling methods below based on the type of food product. Cooling is a **CCP** and should be included in standardized recipes using a thermometer to verify internal temperature. If the food is not cooled according to the above guidelines, the food must be reheated to 165°F for a minimum of 15 seconds and cooled again.

Cooling Methods:

- ✓ Add clean, edible ice as an ingredient.
- ✓ Divide food into smaller portions and transfer into shallow, pre-chilled pans.
- ✓ Use containers designed to allow heat transfer.
- ✓ Stir the food while the container sits in an ice bath.
- ✓ Use commercial products such as blast freezers and chillers, ice paddles, and ice wands to facilitate cooling. Follow manufacturer's instructions.

Reheating

As with cooling, reheating has the potential to keep foods in the **Temperature Danger Zone** for extended periods of time. All leftovers must be reheated within 2 hours to an internal temperature of at least 165°F and held at this temperature for at least 15 seconds as part of the **CCP** within the **HACCP** plan. Use a thermometer to verify the internal temperature of the thickest part of the food. Food should be reheated no more than once. If the food does not reach 165°F within 2 hours, the food must be discarded.

REMEMBER:

All leftovers must be reheated within 2 hours to an internal temperature of at least 165°F and held for at least 15 seconds.



STANDARD OPERATING PROCEDURES: PREPARING HOT FOODS SAFELY

- Prepare hot foods in a clean and sanitized work area, using clean and sanitized equipment and utensils, with washed hands and disposable gloves
- Thaw high risk foods in the refrigerator, under cold flowing water, or in a microwave oven
- Avoid Cross-Contamination by using separate preparation areas, equipment, and utensils in addition to proper storage, handwashing, cleaning, and sanitizing
- Avoid Cross-Contact by using separate cooking oils, cooking surfaces, equipment, and utensils in addition to proper handwashing, cleaning, and sanitizing
- Use a thermometer to verify that cooked foods have reached their specific safe internal temperature as set by the restaurant's local laws and regulations
- Use batch cooking to minimize the time that foods spend in the Temperature Danger Zone
- Hot hold cooked foods at 135°F or higher when food will not be served immediately
- Cool foods from 135°F to 70°F or below within 2 hours and then to 41°F within an additional 4 hours
- Reheat foods from 41°F to 165°F or higher within 2 hours

[View Videos linked from Chapter 4 Module 4.](#)

[Part I](#)

[Part II](#)

Quiz...Next Page

Preparing Hot Foods Safely

Module Quiz: Please make sure you have read Chapter 4 – Module 4 and watched the corresponding videos (Parts 1 and 2) before you take the quiz. If you have any questions about the information found in Module 4, please ask your manager before you begin.

1. Which of the following are safe methods of thawing high risk foods?
 - a. In a microwave oven
 - b. In the refrigerator
 - c. Under cold running water
 - d. All of the above
2. Cooking foods to a high temperature kills food allergens.
 - a. True
 - b. False
3. Which of the following is an example of a Critical Limit during the cooking process?
 - a. Proper equipment temperature.
 - b. The food's color.
 - c. The internal temperature held for at least 15 seconds.
 - d. Cooking does not have a CCP.
4. It is okay to use the same utensils, cutting boards, and surface preparation area for raw chicken and the cooked chicken.
 - a. True
 - b. False
5. When hot foods will not be served immediately, they must be...
 - a. held at 165°F or higher.
 - b. held at 135°F or higher.
 - c. held at the foods specific cooking internal temperature.
 - d. Hot foods must be served immediately.
6. Batch cooking can be used to help minimize the time that foods are in the Temperature Danger Zone.
 - a. True
 - b. False
7. The Critical Limit for cooling hot foods is...
 - a. to cool from 135°F to 70°F or below within 2 hours and then to 41°F or below within an additional 4 hours.
 - b. to cool from 135°F to 41°F or below within 4 hours.
 - c. to cool from 135°F to 70°F or below within 4 hours.
 - d. to cool from 165°F to 70°F or below within 2 hours and then to 41°F or below within an additional 4 hours.

8. Which of the following methods are safe for cooling foods?
 - a. Adding clean, edible ice as an ingredient
 - b. Stirring food while the container sits in an ice bath
 - c. Dividing food into smaller portions, transferring into shallow, pre-chilled pans
 - d. All of the above
9. If stuffed meat is cooked to the safe internal temperature of the meat, the stuffing will be safely cooked as well.
 - a. True
 - b. False
10. When reheating, foods must be heated from 41°F or below to 165°F or higher within...
 - a. 4 hours.
 - b. 1 hour.
 - c. 2 hours.
 - d. 6 hours.