



Instructions for Reduced Oxygen Packaging HACCP Guidance Templates

The purpose of the Reduced Oxygen Packaging Guidance HACCP Templates for Raw meats and Cook-chill processes is to provide guidance in developing a HACCP plan.

1. There must be a thorough understanding of HACCP principles when developing a HACCP plan.
2. Please refer to the “Reduced Oxygen Packaging Fact Sheet”
3. Please refer to the information sheet “What is needed in a HACCP Plan.”

ROP HACCP Plan must contain the following:

1. A list of products that will be reduced oxygen packaged.
2. Equipment list/equipment spec sheets.
3. Flowcharts for each product must be included with CCPs identified.
4. Hazard Analysis charts must be completed for each product with CCPs identified.
5. HACCP charts must be completed for each product.
6. The HACCP plan must include process descriptions for each product which includes but not limited to:
 - Ingredients
 - Equipment/Materials
 - Preparation steps
 - Monitoring procedures
7. Standard Operating procedures must be included but not limited to:
 - Cooling procedures
 - Training program procedures
 - Cleaning and sanitizing procedures
 - Data logger procedures
 - Reheating procedures
 - Thermometer calibration procedures
 - Designated work area procedures
8. Monitoring Logs must be included such as:
 - Cooking log
 - Reheating log
 - Cooling log
 - Data logger log
9. Make sure your HACCP plan is complete and customized to the processes in **YOUR** establishment or your HACCP plan will not be approved and you will not be able to conduct reduced oxygen packaging.

ABC RESTAURANT

123 Main Street
Oklahoma City, OK 73118

HACCP PLAN For Cook-Chill

General SOPs
Cleaning and Sanitizing
Employee Practices
ROP Procedures
Training Program
HACCP Based SOP's

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COOK-CHILL HACCP PLAN

- Products:** Meat Sauce (ground beef, tomatoes, beans, dried seasonings)
- Ingredients:** Cooked ground beef, canned tomatoes, canned beans, dried seasonings
- Intended Use:** Served in the restaurant to diners
- Time/Shelf-Life:** 7 Days under cold storage ($\leq 41^{\circ}\text{F}$)

PROCESS DESCRIPTION

ABC Restaurant’s cook-chill processes are limited to soups and sauces intended for in-house restaurant use only for the purposes of cooking products to a precise temperature for greater consistency, to enhance food flavors and textures, and to reduce time from order to service. We purchase all of our meats and spices from approved and licensed suppliers and inspect them during receiving for temperature (41°F or below) and quality. The handling, prepping, vacuum packaging, cooking, cooling, storing, and monitoring of cook-chilled products are conducted by employees who have thorough understanding of this HACCP plan and are trained in the reduced oxygen packaging and cook-chill processes. The cook-chill and ROP operations are conducted only in the designated areas of the kitchen.

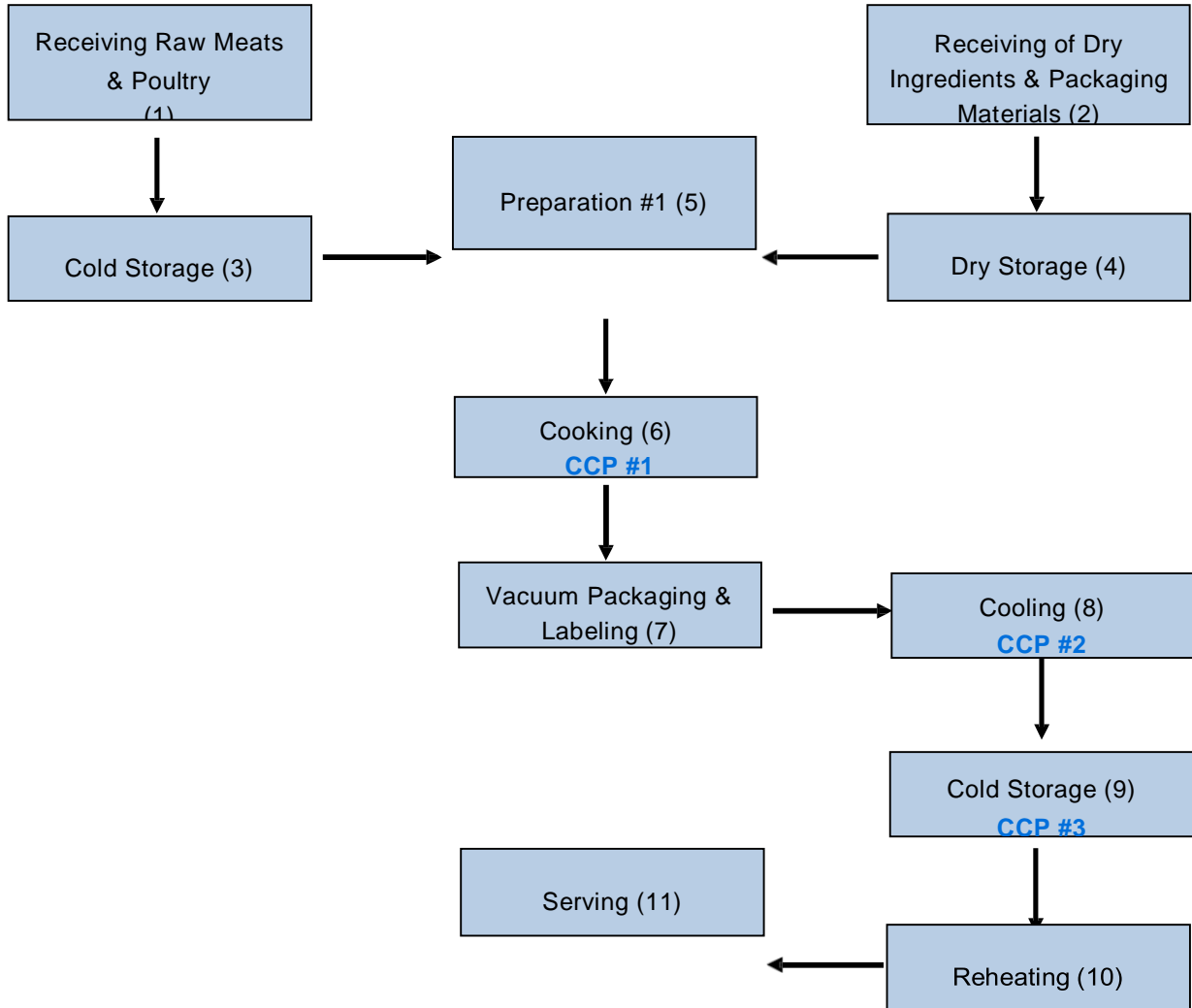
EQUIPMENT LIST (Include make, model and specification sheet)

- Circulator: _____
- Data Logger: _____
- Refrigerators: _____
- Slicer: _____
- Thermometers: _____
- Vacuum Packager: _____

HACCP TEAM MEMBERS

NAME	TITLE/ROLE
_____	_____
_____	_____
_____	_____

FLOW DIAGRAM



Verified by (Name)

Signature

Date

HAZARD ANALYSIS

PROCESS STEP					
Process Step	Potential Hazards (B) Biological, (C) Chemical, (P) Physical	Hazard Significant?	Justification of Decision	Preventative Measures	Is this step a CCP?
Receiving Raw Meats & Poultry (1)	(B) Salmonella, E. coli, Campylobacter jejune, Clostridium Botulinum, etc.	Yes	Fresh meat and poultry are known to contain pathogens	Meat and poultry will be purchased from approved suppliers and received at proper temps.	No
Receiving Dry Ingredients & Bags (2)	(C) Deleterious Chemicals (P) Foreign Material.	No		Letters of guarantee ensuring bags ingredients are from approved sources and appropriate for product use	No
Cold Storage of Raw Meats & Poultry (3)	(B) Salmonella, E. coli, Campylobacter jejune, Clostridium Botulinum, etc.	Yes	Potential growth of pathogens	All meat and poultry will be immediately stored in coolers and freezers.	No
Storage of Dry Goods & Bags (4)	(P) Foreign Material.	No		Visual inspection of packaging materials to ensure no foreign material is present.	No
Preparation (5)	(B) Salmonella, and E. coli, Campylobacter jejune, Clostridium Botulinum, etc.	No	Potential growth of pathogens due to cross-contaminations is likely	Time product will be in the temperature danger zone during preparation will be minimized and monitored.	No
Cooking (6)	B) Salmonella, E. coli, Campylobacter jejune, Clostridium Botulinum, Listeria, etc.	Yes	Survival of bacterial spores if products are not properly cooked to correct internal temperatures.	Products will be cooked to as required in Title 310 Chapter 257.	Yes CCP 1
Vacuum Packing & Labeling (7)	B) Clostridium Perfringes, Clostridium Botulinum and Listeria	Yes	Improperly labeled products will result in outdated or unsafe products	Each bag will be properly labeled with product name, date packaged, and 'Use-By' date	No
Cooling (7)	B) Clostridium Perfringes, Clostridium Botulinum and Listeria	Yes	Improperly cooling can lead to growth of spore-forming pathogens	Products will be cooled to 41°F as described in Title 310 Chapter 257.	Yes CCP 2
Cold Storage (9)	B) Clostridium Perfringes, Clostridium Botulinum and Listeria	Yes	Potential growth of pathogens if proper temperatures and time are not maintained.	ROP packaged and labeled products will be monitored for time and temperature control.	Yes CCP 3
Reheating (10)	B) Clostridium Perfringes, Clostridium Botulinum and Listeria	Yes	Survival of bacterial spores if products are not properly cooked or reheated to correct internal temperature.	ROP packaging will be opened prior to reheating and product properly heated for hot holding or service.	No
Serving (11)	B) Clostridium Perfringes, Clostridium Botulinum and Listeria	Yes	Survival of bacterial spores if products are not properly cooked or reheated to correct internal temperatures.	Products will be served immediately after reheating	No

HACCP FORM

CCP									
(1) Critical Control Point	(2) Hazard Description	(3) Critical Limits	Monitoring				(8) Corrective Action	(9) Verification Activities	(10) Record-keeping Procedures
			(4) What	(5) How	(6) Frequency	(7) Who			
Cooking (CCP 1)	Pathogens	Temperatures: Beef: 155°F for 15 seconds Pork: 145°F for 15 seconds Poultry: 165°F for 15 seconds	Product temperature	Use of thermometer	One food product per batch	Designated food worker	Continue cooking and adjust circulator temps if below designated temp for product	Cooking Log reviewed daily by chef.	Cooking Log Thermometer Validation Log
Cooling (CCP 2)	Pathogens	Temperatures: 140°F to 70°F in 2hrs or less; 70°F to 41°F in additional 4hrs or less.	Product temperature	Use of thermometer	Every hour	Designated food worker	Reheat to cooking temp and restart cooling process if not cooled to 70°F in 1st 2hrs. Discard product if not cooled to 41°F within 4hrs of reaching 70°F.	Cooling Log reviewed daily by chef.	Cooling Log Thermometer Validation Log
Cold Storage (CCP 3)	Pathogens	Temperatures: 41°F or less Time Limit: 7 days or less	Cooler and product temperature Date on ROP bag label	Use of thermometer Data loggers Visual check of the labels	2x Daily plus Continuous Daily	Designated food worker Designated food worker	Immediately discard product if temp exceeds 41°F. Identify and eliminate cause of deviation. Identify out of date products and discard them.	Refrigerator/ Freezer Log reviewed daily by chef. Product Date/ Label Log will be reviewed daily by chef.	Refrigerator/ Freezer Log Thermometer Validation Log Product Date and Label Log

COOK-CHILL PROCEDURES

Only foodservice employees trained in the use of the reduced oxygen packaging equipment and have a thorough understanding of the HACCP plan shall conduct ROP operations.

1. **Receiving Raw Meat/Poultry:** Inspect meat and poultry products upon receiving for temperature and quality and verify product temps are at or below 41°F.
2. **Receiving Packaging Materials:** Inspect the condition of dry goods and packaging materials upon receipt. Verify products are in good condition.
3. **Cold Storage:** Immediately store all perishable products in the designated coolers with temperatures at or below 41°F.
4. **Dry Storage:** Store non-perishable products in clean location that is separated from any potential sources of contamination.
5. **Preparation:** Prepare products, ingredients, and packaging materials necessary to the operation according to recipe/instruction. Prepare products for reduced oxygen packaging and ensure products remain at room temperature no longer than 30 minutes during the preparation and packaging process.

Place product in the packaging materials. Place bags in the vacuum machine ensuring that adequate space is provided around each package. Ensure that machine is working properly and settings are appropriate for the product being packaged. Start the machine and wait for the lid to open indicating that the process is complete. Remove packages from the machine. Visually check the seal to ensure that it is tight and that there are no food materials in the seal. Packages with a faulty seal should be re-packaged. Trim excess packaging as required.

6. **Cooking (CCP#1):** Set the circulator bath water to proper temperatures based on the product being cooked and place the vacuum packaged product in the circulator bath.
 - **Critical Limit:** Follow recipe directions to cook ground beef to 155°F for a minimum of 15 seconds, pork to a minimum of 145°F for 15 seconds, and poultry products to a minimum of 165°F for 15 seconds.
 - **Monitoring:** Check temperature of the product and record the cooking temps for each product on the Cooking Log.
 - **Corrective Action:** If temperature is not at the required temperature, continue cooking. If the temperatures of the circulator bath falls below the appropriate temperatures, adjust circulator temp and continue monitor cooking temperatures.
 - **Verification:** Chef must verify that designated employees are monitoring and checking cooking temperatures daily by visually monitoring employees during their shift and reviewing Cooking Logs on daily basis.

7. **Packaging & Labeling:** Properly label each package with name of product and the date packaged. Have a system to ensure product is used within 7 days of packaging.

8. **Cooling (CCP#2):** Remove the bags from the circulator and place them in an ice bath on the prep table in the ROP station.
 - Critical Limit: Cool the products to 70°F within 2 hours of reaching 135°F and then to 41°F within 4 hours of reaching 70°F.
 - Monitoring: Check temperature of largest of product per batch and frequency to monitor requirements and record the temps on the Cooling Log.
 - Corrective Action: If product is not cooled to 70°F within the first 2 hours, reheat product to required cooking temperature and restart cooling process or discard. If product is not cooled to 41°F within 4 hours of reaching 70°F, discard product.
 - Verification: Chef must verify that designated employees are monitoring and checking cooling temperatures daily by visually monitoring employees during their shift and reviewing Cooling Logs on daily basis.

9. **Cold Storage (CCP#3):** Place ROP packages in coolers immediately after labeling.
 - Critical Limit: Products must be at or below 41°F and held in ROP packages for no more than 7 days.
 - Monitoring: The designated employees must visually check and record temperatures of coolers containing ROP products at least twice a day during business operating times and record temperatures on the Refrigeration/Freezer Log. Datalogger must continuously log temperatures.

The designated employees must also visually check labels of ROP products for use-by dates and record the check and any corrective action on Product Date/Label Log.
 - Corrective Action: If ambient cooler temperatures exceed 41°F, check actual product temperatures and if above 41°F, discard the product and notify the Manager on Duty that the cooler is not properly working. Record corrective actions on the Refrigerator/Freezer Log.

If product is not used within 7 days of the prepared date, discard the product and record corrective actions on the Product Date and Label Log.
 - Verification: Manager on Duty must verify that designated employees are monitoring and checking ROP product temperatures and use-by dates daily by visually monitoring employees during their shift and reviewing Refrigeration/Freezer logs and Product Date/Label Logs on daily basis.

10. **Reheating:** Remove packaged products from coolers and reheat product to proper temperature of 165°F for hot holding.

11. **Serving:** Portion reheated product for meal size and serve as ordered by patrons.

SANITATION STANDARD OPERATING PROCEDURES (SSOPs)

EMPLOYEE HYGIENE AND PRACTICES

1. Hands are to be thoroughly washed in a designated hand sink with soap and water, paying particular attention to the areas underneath the fingernails and between the fingers by scrubbing thoroughly with using a fingernail brush. Dry with single use towels. Handwashing is to be done at the following times:
 - after using the toilet, in the toilet room
 - after coughing, sneezing, using a tissue, using tobacco, eating, or drinking
 - after handling soiled equipment or utensils
 - immediately before engaging in food preparation activities
 - during food preparation as necessary to remove soil and prevent cross contamination
 - when switching between raw and ready-to-eat foods
 - other times as needed to maintain good sanitation
2. Fingernails must be kept trimmed, filed, free of nail polish, and maintained so the edges are cleanable and not rough.
3. Eating and drinking is prohibited in areas where contamination of exposed food, clean equipment, utensils, unwrapped single service and single use articles could occur. A food employee may drink from a closed beverage container in a food prep area as long as it is handled to prevent contamination.
4. Effective hair restraints must be worn in processing areas.
5. Smoking and other uses of tobacco are prohibited.
6. Clean outer clothing must be worn to prevent contamination of food, equipment, utensils, linens, and single-service and single-use articles.
7. Frocks and aprons used by employees are to be hung in a designated area when not in use. They are not to be worn in the toilet area, eating areas and locker rooms.
8. No jewelry (except a wedding band or other plain ring) is allowed during handling of food.
9. Food Employees shall report to the Person in Charge when they have a symptom such as:
 - Diarrhea
 - Vomiting
 - Sore throat with fever
 - Jaundice

- A boil, infected wound or other lesion containing pus that is open or draining unless: if on the hands or wrists, unless a finger cot or other impermeable cover protects the lesion and a single use glove is worn if on exposed portions of the arms, the lesion is protected by an impermeable cover.

10. Food Employees shall report to the Person in Charge when they are diagnosed with the following:

- Hepatitis A
- Norovirus
- Salmonella
- Shiga toxin-producing E. Coli
- Shigella

The Person in Charge shall impose the proper restrictions and exclusions according to law.

CLEANING AND SANITIZING

Equipment Food Contact Surfaces

Properly cleaned and sanitized food contact surfaces are critical to ensuring a safe, sanitary operation. Use of approved cleaners and sanitizers will reduce levels of pathogenic organisms to prevent cross contamination of the product. Detergent cleaners suspend and help remove various food soils. Chemical sanitizers (chlorine, quaternary ammonia, etc.) reduce the numbers of pathogens and other microorganism to insignificant levels.

The cleanup process must be completed in accordance with following procedures:

- **Pre-cleaning:** Equipment and utensils shall be pre-flushed, presoaked, or scraped as necessary to eliminate excessive food debris
- **Washing:** Equipment and utensils shall be effectively washed to remove or completely loosen soils using manual or mechanical means. Only approved chemicals are to be used in this process.
- **Rinsing:** Washed utensils and equipment shall be rinsed to remove abrasives and to remove or dilute cleaning chemicals with water
- **Sanitizing:** After being washed and rinsed, equipment and utensils must be sanitized with an approved chemical by immersion, manual swabbing, brushing, or pressure spraying methods. Exposure time is important to ensure effectiveness of the chemical. *Ensure that an appropriate chemical test kit is available and routinely used to ensure that accurate concentrations of the sanitizing solutions are being used.*

Frequency of Cleaning Equipment, Food Contact Surfaces and Utensils:

1. Before each use with a different type of raw animal food, including beef, fish, lamb, pork, or poultry;
2. Each time there is a change from working with raw foods to working with ready-to-eat foods;

3. Between uses with raw fruits or vegetables and with time/temperature control for safety food;
4. At any time during the operation when contamination may have occurred.
5. If used with time/temperature control for safety food, throughout the day at least once every four hours
6. Utensils and equipment that are used to prepare food in a refrigerated room that maintains the utensils, equipment, and food under preparation at 41 °F or less and are cleaned at least once every 24 hours
7. Before using or storing a food thermometer.
8. For equipment used for storage of packaged or un-packaged food, including coolers, and the equipment is cleaned at a frequency necessary to eliminate soil residue.
9. For ice bins, at a frequency necessary to preclude accumulation of soil or mold.
10. Food contact surfaces of cooking equipment shall be cleaned at least once every 24 hrs.
11. Non-food-contact surfaces of equipment shall be cleaned at a frequency necessary to prevent accumulation of soil residues.

HACCP TRAINING FOR EMPLOYEES

Understanding the potential hazards associated with reduced oxygen packaging.

While the process of packaging foods using a reduced oxygen method extends the shelf life, it also can pose a serious public health threat. Generally, bacteria survive under conditions where there is oxygen present (aerobic conditions) or where oxygen is not present (anaerobic conditions). Some bacteria have the ability to adapt to either condition.

Under traditional packaging conditions (aerobic conditions), spoilage bacteria would normally thrive and the product would spoil before the more hazardous types of bacteria might become a problem. During the process of ‘vacuum packaging’ or ‘reduced oxygen packaging’, the air inside the package (which is approximately 21% oxygen) is eliminated, creating anaerobic conditions and thereby changing the types of bacteria that can survive in the package. Spoilage organisms are eliminated, but several types of pathogenic bacteria survive and actually thrive under these conditions.

The pathogen of greatest concern is **Clostridium botulinum**. While botulism bacteria will normally be killed in a cooking step, spores of the bacteria may survive and could grow and produce toxin if the conditions are right. These conditions are similar to those that occur in a vacuum/reduced oxygen package. Other pathogens of concern may be **Listeria monocytogenes**, *Yersinia enterocolitica*, *Campylobacter jejuni*, and *Clostridium perfringens*.

CONCEPTS REQUIRED FOR A SAFE OPERATION

A thorough understanding of this HACCP plan, the use of the reduced oxygen packaging equipment, and the HACCP based standard operating procedures is necessary for the safe operation of the restaurant’s vacuum packaged products. Areas to focus on include:

products that can be packaged, temperature control, prevention of cross contamination, and health and personal hygiene of food handlers.

Products that can be packaged by ROP

State of Oklahoma regulations limit the types of foods that can be reduced oxygen packaged. ABC's HACCP plan defines the foods that can be packaged using reduced oxygen packaging. **Only the specific products on this list can be reduced oxygen packaged.** Any addition to the above list must first have the approval of the Chef. Changes must be noted in the HACCP PLAN.

Temperature Control

Temperature control is a very important factor in keeping all potentially hazardous foods safe. But the extended shelf life and decreased oxygen concentration allows certain pathogens to multiply in reduced oxygen conditions. To reduce the potential for growth of these pathogens, products (packaged and unpackaged) must be stored at cooler temperatures of 41°F or less. Employees must monitor the cooler temperatures at least every 4 hours to ensure that foods are not allowed to be out of the temperature requirements for extended periods of time.

Preventing Cross Contamination

Raw foods should be handled separately from cooked and ready-to-eat foods to avoid cross-contamination. Utensils, equipment and work surfaces used for raw foods should be thoroughly cleaned and sanitized prior to using for cooked or ready-to-eat foods. In addition, ensure that ready-to-eat foods are stored so that blood or juices from raw products cannot drip or otherwise come into contact with them. Food handlers can also be a source of cross contamination through improper handwashing, or soiled clothing or aprons.

Employee Health and Hygiene

The health and personal hygiene of food handlers can also play a critical role in producing a safe ROP food. It is vital that employees working in this operation follow the Employee Hygiene and Practices guidelines.

Refrigeration/Freezer Log

Instructions: The designated foodservice employee must record the location or description of holding unit, date, time, air temperature, corrective action, and initials on this Log on daily bases. Chef or manager must verify that foodservice workers have taken the required temperatures by visually monitoring food workers during their shift, and must review, initial, and date this log daily. This log should be maintained for a minimum of 6 months.

Product/Refrigerator	Date	Time	Temp	Past Use-by Date	Corrective Action	Initials	Verified By

Thermometer Validation Log

Instructions: The designated foodservice employee(s) must record the validation temperature and corrective action taken each time a thermometer is validated. Accuracy of thermometers will be validated using slurry ice water. The Chef or manager must verify that foodservice employees are using and validating thermometers properly by making visual observations of employee activities during all hours of operation. The supervisor must review and initial the log daily. This log should be maintained for a minimum of 6 months.

Date	Time	Thermometer ID#	Method Used (Ice Slurry)	Thermometer Reading	Accurate (Yes/No)	Corrective Action	Initials	Verified By

Cooking and Reheating Temperature Log

Instructions: Record product name, time, the temperatures/times taken, and any corrective action taken on this form. The supervisor of the food operation will verify that food workers have taken the required cooking temperatures by visually monitoring food workers and preparation procedures during the shift and reviewing, initialing, and dating this log daily. This log should be maintained for a minimum of 6 months.

Date	Time	Food Item	Internal Temp/Time	Internal Temp/Time	Corrective Action Taken	Initials	Verified By

Monitoring Form -- Cooling

Instructions: Record temperatures every hour during the cooling cycle. Record corrective actions, if applicable. The chef or manager will verify that the designated food worker is cooling food properly by visually monitoring the food worker during the shift and reviewing, initialing, and dating the log daily. This log must be maintained for a minimum of 6 months.

Date	Food Item	Time/ Temp	Time/ Temp	Time/ Temp	Time/ Temp	Time/ Temp	Time/ Temp	Corrective Actions Taken	Initials	Verified By/ Date