

**ASSOCIATION OF
FOOD AND DRUG
OFFICIALS**



FOOD CODE

**A POCKET GUIDE
FOR REGULATORS**

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AFDO FOOD CODE

A pocket guide for regulators
(based on the 2005 FDA Food Code)

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FOOD CODE

A POCKET GUIDE FOR REGULATORS

A "FOOD ESTABLISHMENT" IS:

- an operation that stores, prepares, packages, serves, vends or otherwise provides food for human consumption.

A "FOOD ESTABLISHMENT" DOES NOT INCLUDE:

- an establishment that offers only prepackaged foods that are not potentially hazardous (time/temperature control for safety);
- a produce stand offering whole uncut fresh fruits and vegetables;
- a food processing plant;
- a kitchen in a private home which prepares non-potentially hazardous (time/temperature control for safety) foods for a religious or charitable organization's bake sale;
- a kitchen in a private home that prepares and offers food to guests if the home is owner occupied, the number of available guest bedrooms does not exceed six, breakfast is the only meal offered, the number of guests served does not exceed eighteen, and the consumer is advised by placard or brochure that food is prepared in a kitchen

- that is not inspected by a regulatory authority;
- a private home that receives catered or home-delivered food.

A “POTENTIALLY HAZARDOUS FOOD/TIME-TEMPERATURE CONTROL FOR SAFETY FOOD (TCS food)” IS:

- one that requires time/temperature control for safety (TCS) to limit pathogenic microorganism growth or toxin formation, such as:
 1. an animal food that is raw or heat treated;
 2. a plant food that is heat treated or consists of raw seed sprouts, cut melons, or garlic-in-oil mixtures that are not modified in a way to that results in mixtures which do not support pathogenic microorganism growth or toxin formation;
 3. has a combination of water activity and pH values as shown in Tables A and B, which do not support growth or pathogenic microorganism or toxin formation

Table A. Interaction of pH and a_w for control of spores in food heat-treated to destroy vegetative cells and subsequently packaged.

a_w Values	pH Values		
	4.6 or less	> 4.6 – 5.6	> 5.6
≤ 0.92	non-PHF*/non-TCS food**	non-PHF/non-TCS food	non-PHF/non-TCS food

> 0.92 – 0.95	non-PHF/non-TCS food	non-PHF/non-TCS food	PA***
> 0.95	non-PHF/non-TCS food	PA	PA
* PHF means “Potentially hazardous food (TCS food)” ** TCS food means “Time/temperature control for safety food” *** PA means “Product assessment required”			

Table B. Interaction of pH and a_w for control of vegetative cells and spores in food not heat-treated or heat-treated but not packaged.

A_w values	pH values			
	< 4.2	4.2 – 4.6	> 4.6 – 5.0	> 5.0
< 0.88	non-PHF*/non-TCS food**	non-PHF*/non-TCS food	non-PHF*/non-TCS food	non-PHF*/non-TCS food
0.88 – 0.90	non-PHF*/non-TCS food	non-PHF*/non-TCS food	non-PHF*/non-TCS food	PA***
> 0.90 – 0.92	non-PHF*/non-TCS food	non-PHF*/non-TCS food	PA	PA

> 0.92	non-PHF*/ non-TCS food	PA	PA	PA
* PHF means "Potentially hazardous food (TCS food)" ** TCS food means "Time/temperature control for safety food" *** PA means "Product Assessment" required				

A "POTENTIALLY HAZARDOUS FOOD (TCS food)" DOES NOT INCLUDE:

- an air cooled hard boiled egg with shell intact; or a shell egg that is not hard-boiled, but has been treated to destroy all viable salmonellae;
- a food that because of its water activity or pH ;
- a food in an unopened hermetically sealed container commercially processed to achieve and maintain commercial sterility;
- a food that because of its pH or water activity value, or interaction of water activity and pH values is designated as a non potentially hazardous food (TCS food);
- A food that has undergone a Product Assessment showing that the growth or toxin formation of pathogenic microorganisms reasonably likely to occur in that food is precluded due to intrinsic, extrinsic, or a combination of intrinsic and extrinsic factors.
- A food that does not support the growth or toxin formation of pathogenic microorganisms due to pH, water activity

value, intrinsic, or extrinsic factors or a combination of factors even though it may contain a pathogenic microorganism or chemical or physical contaminant at a level sufficient to cause illness or injury.

A “MAJOR FOOD ALLERGEN” MEANS:

- Milk, egg, fish (such as bass, flounder, cod, and including crustacean shellfish such as crab, lobster, or shrimp), tree nuts (such as almonds, pecans, or walnuts), wheat, peanuts, and soybeans; or
- A food ingredient that contains protein derived from a food, as specified in the above paragraph.
- Food allergen guidance may be found at: <http://www.cfsan.fda.gov/~dms/alrguid4.html>

A “MAJOR FOOD ALLERGEN” DOES NOT INCLUDE:

- Any highly refined oil derived from a food allergen and any ingredient derived from such highly refined oil; or
- Any ingredient that is exempt under the petition or notification process specified in the Food Allergen Labeling and Consumer Protection Act of 2004 (Public Law 108-282).

A “READY-TO-EAT” FOOD INCLUDES:

- raw animal food that is cooked or frozen according to specifications;
- raw fruits and vegetables washed according to specifications;

- fruits and vegetables cooked for hot holding;
- all potentially hazardous food (TCS food) cooked to the time and temperature required for the food;
- plant food for which further washing, ~~or~~ cooking, or other processing is not required for food safety, and from which rinds, peels, husks or shells are removed.
- substances derived from plants such as spices, seasonings, and sugar;
- a bakery item for which further cooking is not required;
- dry, fermented sausages, salt-cured meat and poultry products, and dried meat and poultry products, which have all received lethality treatment for pathogens; and
- thermally processed low-acid foods packed in hermetically sealed containers.

EMPLOYEE HEALTH:

- The permit holder shall require food employees and conditional employees to report to the person in charge information about their health and activities as they relate to diseases that are transmissible through food. A food employee or conditional employee shall report the information in a manner that allows the person in charge to reduce the risk of foodborne disease transmission, including providing necessary additional information, such as the date of onset of symptoms and an illness, or of a diagnosis without symptoms if the food employee or conditional employee has:

1. reportable symptoms (vomiting, diarrhea, jaundice, sore throat with fever, and exposed, infected lesions);
 2. reportable diagnosis (Norovirus, Hepatitis A, *Shigella* spp., EHEC or STEC, or *Salmonella* spp.);
 3. reportable past illness (*Sal. typhi* in last 3 mo. without antibiotics);
 4. reportable history of exposure;
- The person in charge has the responsibility to:
 1. notify regulatory authorities when required;
 2. prohibit a conditional employee from becoming a food employee when required;
 3. Exclude or restrict employees from duties which could spread foodborne illness
 - Food employees are responsible for informing the person in charge of reportable symptoms, diagnosis, past illnesses and history of exposure.

DEMONSTRATION OF KNOWLEDGE:

- The person in charge must demonstrate his/her knowledge of foodborne illness prevention, HACCP, and the requirements of the Food Code by:
 1. describing the relationship between the prevention of foodborne disease and the personal hygiene of a food employee;
 2. explaining the responsibility of the person in charge for preventing the transmission of foodborne disease by a food employee who has a disease or medical condition that may cause foodborne disease;

3. describing the symptoms associated with the diseases that are transmissible through food;
4. explaining the significance of the relationship between maintaining the time and temperature of potentially hazardous food (TCS food) and the prevention of foodborne illness;
5. explaining the hazards involved in the consumption of raw or undercooked meat, poultry, eggs, and fish;
6. stating the required food temperatures and times for safety cooking of potentially hazardous food (TCS food), including meat, poultry, eggs, and fish;
7. stating the required temperatures and times for the safe refrigerated storage, hot holding, cooling, and reheating of potentially hazardous food (TCS food);
8. describing the relationship between the prevention of foodborne illness and the management and control of the following:
 - a. cross contamination,
 - b. bare hand contact with ready-to-eat foods,
 - c. handwashing, and
 - d. maintaining the food establishment in a clean condition and in good repair.
9. Describing foods identified as major food allergens and the symptoms that a major food allergen could cause in a sensitive individual who has an allergic reaction.
10. Explaining the relationship between food safety and providing equipment that is:

- a. sufficient in number and capacity, and
 - b. properly designed, constructed, located, installed, operated, maintained, and cleaned.
11. Explaining correct procedures for cleaning and sanitizing utensils and food-contact surfaces of equipment;
 12. Identifying the source of water used and measures taken to assure that it remains protected from contamination such as providing protection from backflow and precluding the creation of cross connections;
 13. Identifying poisonous and toxic materials in the food establishment and the procedures necessary to assure that they are safely stored, dispensed, used, and disposed of according to law;
 14. Identifying critical control points in the operation from purchasing through sale or service that may contribute to foodborne illness and explaining steps taken to ensure that the points are controlled in accordance with the requirements of this Code;
 15. Explaining the details of how the person in charge and food employees comply with the HACCP plan if a plan is required by the law, this Code, or an agreement between the regulatory authority and the establishment; and
 16. Explaining the responsibilities, rights, and authorities assigned by this Code to the
 - a. food employee or potential employees with

- conditional job offers (conditional employee),
 - b. person in charge, and
 - c. regulatory authority.
17. Explaining how the person in charge, food employees, and conditional employees comply with reporting responsibilities and exclusion and restriction of food employees.
- The person in charge shall demonstrate this knowledge by complying with this Code by having no critical violations during the current inspection, by being a certified food protection manager through testing as part of an accredited program or by responding correctly to the inspector's questions relating to the food operation.

HANDWASHING:

- Food employees shall clean their hands and exposed portions of their arms by vigorous lathering for 20 seconds at the following times:
 1. after touching bare human body parts other than clean hands and clean, exposed portions of arms;
 2. after using the toilet room;
 3. after caring for or handling service animals;
 4. after coughing, sneezing, using a handkerchief or disposable tissue, using tobacco, eating or drinking;
 5. after handling soiled equipment or utensils;
 6. immediately before engaging in food preparation, including working with exposed food, clean equipment and utensils, and unwrapped single-service and

- single-use articles;
7. during food preparation, as often as necessary to remove soil and contamination and to prevent cross-contamination when changing tasks;
 8. when switching between working with raw foods and working with ready-to-eat foods; or
 9. before donning gloves for working with food; and
 10. after engaging in other activities that contaminate the hands.
- Approved hand antiseptics (previously hand sanitizers), if used, shall be applied only to hands that have been washed. If the components are not approved, the hand sanitizer must be rinsed off, used with gloves or not come in direct contact with food.
 - Except when washing fruits and vegetables or when otherwise approved, food employees may not contact exposed, ready-to-eat foods with their bare hands. Suitable utensils shall be used such as deli tissue, spatulas, tongs, single-use gloves, or dispensing equipment.
 - Always wash hands properly before putting on a new pair of gloves. When using single-use, disposable gloves, ensure they are changed when required such as when contaminated, torn, or between changing tasks. These gloves should not be worn for longer than 2 hours.
 - Review the Gloves Usage Guide at the end of this book.

**STORAGE TEMPERATURE REQUIREMENTS FOR
POTENTIALLY HAZARDOUS FOODS (TCS food):**

- Refrigerated 5°C (41°F)
- Cooked and received hot 57°C (135°F)
- Raw shell eggs 7°C (45°F)

COOKING:

- Shell eggs (individual, immediate order), fish, meats and commercially raised game:
63°C (145°F) for 15 seconds
- ratites, game animals, comminuted fish and meats, injected meats and eggs held hot:
68°C (155°F) for 15 seconds,
66°C (150°F) for 1 minute,
63°C (145°F) for 3 minutes.
- Poultry, baluts, field dressed wild game animals, stuffed fish, stuffed meat, stuffed pasta, stuffed poultry, stuffed ratites and stuffing containing fish, meat, poultry or ratites:
74°C (165°F) for 15 seconds
- Whole Meat Roasts (beef, corned beef, lamb, pork and cured pork roasts such as ham) (holding time may include post-oven heat rise):
54.4°C (130°F) for 112 minutes
55.0°C (131°F) for 89 minutes
56.1°C (133°F) for 56 minutes
57.2°C (135°F) for 36 minutes

57.8°C (136°F) for 28 minutes
58.9°C (138°F) for 18 minutes
60.0°C (140°F) for 12 minutes
61.1°C (142°F) for 8 minutes
62.2°C (144°F) for 5 minutes
62.8°C (145°F) for 4 minutes
63.9°C (147°F) for 134 seconds
65.0°C (149°F) for 85 seconds
66.1°C (151°F) for 54 seconds
67.2°C (153°F) for 34 seconds
68.3°C (155°F) for 22 seconds
69.4°C (157°F) for 14 seconds
70.0°C (158°F) for 0 seconds

OVEN PARAMETERS FOR WHOLE MEAT ROASTS:

Oven Temperature		
Oven Type	Roast Weight	
	< to 4.5 kg (10 lbs.)	= > 4.5 kg (10 lbs)
Still Dry	177°C (350°F)	121°C (250°F)
Convection	163°C (325°F)	121°C (250°F)
High Humidity*	< 121°C (250°F)	< 121°C (250°F)

***Relative humidity greater than 90% for at least 1 hour as measured in the cooking chamber or exit of the oven; or in a moisture-impermeable bag that provides 100% humidity.**

MICROWAVE COOKING:

- Heated to at least 74°C (165°F) throughout, rotated or stirred and allowed to stand covered for 2 minutes after cooking.

REHEATING POTENTIALLY HAZARDOUS FOOD (TCS food):

- 74°C (165°F) for 15 seconds within 2 hours

Note: 74°C (165°F) and allowed to stand covered 2 minutes after reheating in a microwave oven.

Note: 57°C (135°F) heating for hot holding of ready-to-eat food from a commercially processed, hermetically sealed container.

Note: Cooked, refrigerated food reheated for an individual consumer order may be served at any temperature.

FREEZING FOR PARASITE DESTRUCTION:

- Ready-to-eat, raw, marinated or partially cooked fish (these requirements do not apply to molluscan shellfish) shall be:
 1. frozen and stored at -20°C (-4°F) or below for 168 hours (7 days) in a freezer; or
 2. frozen at -35°C (-31°F) or below until solid and stored at -35°C (-31°F) for 15 hours.
 3. frozen at -35°C (-31°F) or below until solid and stored at -20°C (-4°F) or below for a minimum of 24 hours

Note: if the fish is an exempted tuna species or aquacultured fish (such as salmon raised in open water in net pens or land based operations and fed formulated feed that contains no live parasites), it may be sold raw, raw-marinated or partially cooked without freezing.

THAWING POTENTIALLY HAZARDOUS FOOD (TCS food):

- Under refrigeration to maintain the food at 5°C (41°F) or below or at 7°C (45°F) or below in equipment that will be upgraded or replaced within 5 years to hold 5°C (41°F).
- Under 21°C (70°F) or below running water with sufficient water velocity and agitation and for a period of time that

does not allow thawed portions of ready-to-eat foods to rise above 5°C (41°F).

- As part of a cooking process if the frozen food is thawed in a microwave oven and transferred immediately to conventional cooking equipment.

COOLING COOKED POTENTIALLY HAZARDOUS FOOD (TCS food):

1. Cool from 57°C (135°F) to 21°C (70°F) within 2 hours, and
2. Within 6 hours from 57°C (135°F) to 5°C (41°F) or below.

READY-TO-EAT POTENTIALLY HAZARDOUS FOOD (TCS food) – DATE MARKING AND DISPOSITION:

- On-Premises Preparation – Refrigerated, ready-to-eat, potentially hazardous food (TCS food) prepared and held in a food establishment for more than 24 hours shall be marked to indicate the date that the food shall be consumed, sold or discarded.
 1. The day of preparation shall be counted as Day 1.
 2. The consumption date shall be based upon the following time and temperature combinations:
 - a. at 5°C (41°F) or less for a maximum of 7 days; or
 - b. at 7°C (45°F) or between 5°C (41°F) and 7°C (45°F) for a maximum of 4 days.
 3. A refrigerated, ready-to-eat, potentially hazardous food (TCS food) that is subsequently combined with additional ingredients or food shall retain the date

marking of the earliest prepared ingredient.

- Commercially Processed Food - Refrigerated, ready-to-eat, potentially hazardous food (TCS food) prepared and packaged in a food processing plant shall be marked at the time the original container is opened in a food establishment if the food is held more than 24 hours. The date by which the food shall be consumed, sold or discarded must be marked.
 1. The date that the original container is opened shall be counted as Day 1.
 2. The consumption date shall be based upon the following time and temperature combinations:
 - a. at 5°C (41°F) or less for a maximum of 7 days; or
 - b. at 7°C (45°F) or between 5°C (41°F) and 7°C (45°F) for a maximum of 4 days.
 3. The date marked by the food establishment may not exceed a manufacturer's use-by date, if the manufacturer's date is based on food safety.
 4. These requirements do not apply to the following foods prepared and packaged by a food processing plant inspected by a regulatory authority:
 - a. Deli salads, such as ham, seafood, chicken, egg, pasta, potato and macaroni salads
 - b. Hard cheeses (<39% moisture) such as cheddar, gruyere, parmesan and reggiano, and romano
 - c. Semi-soft cheeses (>39% but ≤50% moisture) such as blue, edam, gorgonzola, gouda, and

- monterey jack
 - d. Cultured dairy products such as yogurt, sour cream, and buttermilk
 - e. Preserved fish products such as pickled herring and dried or salted cod, and other acidified fish products
 - f. Shelf stable, dry fermented sausages, such as pepperoni and Genoa salami that are not labeled "Keep Refrigerated" and which retain the original casing on the product
 - g. Shelf stable salt-cured products such as prociutto and Parma (ham) that are not labeled "Keep Refrigerated"
- A refrigerated, ready-to-eat, potentially hazardous food (TCS food) that is frequently rewrapped, or for which date marking is impractical may be marked by either date marking method or by an approved alternative method.
 - The date marking requirements do not apply to individual portions served or repackaged from a bulk container upon a customer request.
 - Food requiring date marking shall be discarded if it:
 1. exceeds the temperature and time combinations, except time that the product is frozen;
 2. is in a container that does not bear a date or day; or
 3. is appropriately marked with a date that exceeds a temperature and time combination.
 - Refrigerated, ready-to-eat, potentially hazardous food (TCS

food) prepared in a food establishment and dispensed through a vending machine with a automatic cutoff control shall be discarded if it exceeds the temperature and time combinations.

TIME AS A PUBLIC HEALTH CONTROL:

- Four hours is allowed from the point in time when food is removed from temperature control or 6 hours if the food was initially $\leq 5^{\circ}\text{C}$ (41°F) and does not rise above 21°C (70°F), provided a written procedure is available describing how the food is marked and that the food is discarded after 4 hours. Time may not be used as a public health control for raw eggs for a highly susceptible population.

SPECIAL REQUIREMENTS FOR HIGHLY SUSCEPTIBLE POPULATIONS:

- Food establishments that serve highly susceptible populations shall not serve:
 1. any prepackaged fruit or vegetable juice that is not pasteurized (this also applies to children 9 or less in a school or daycare setting);
 2. raw shell eggs; or
 3. raw animal food including soft cooked eggs or raw seed sprouts
- Any food served to individuals in medical isolation or in a protective environment may not be re-served to others nor should persons in protective isolation be served packages of food that has been served to any other

consumer.

Note: food employees may not use bare hand contact with ready-to-eat foods in facilities that serve highly susceptible populations.

REDUCED OXYGEN PACKAGING:

- Food may be packaged using reduced oxygen packaging methods under a HACCP plan provided it is maintained at 41°F or less and does not support the growth of *C. botulinum* and *Listeria monocytogenes* because it is a:
 1. food with a water activity of .91 or less;
 2. food with a pH of 4.6 or less;
 3. meat products from a USDA regulated facility which contain a combination of nitrites and salt that at the time of processing consists of 120 mg/L or higher concentration of sodium nitrite and a brine concentration of at least 3.50%; or
 4. food containing a high level of competing non-pathogenic organisms.
 5. fish that has been frozen before, during, and after packaging.
 6. a food item with a limited refrigerated shelf life of no more than 14 calendar days.
- Food may be packaged using cook chill or sous vide processing without a variance, provided
 1. Food is refrigerated at 1°C (34°F) and consumed or discarded within 30 days after preparation;

2. food is cooked and cooled according to code requirements;
 3. food is held in a refrigeration unit that is continuously electronically monitored and cooling/refrigeration records are kept for 6 months; and
 4. ROP bagged food is prepared and consumed within the same business entity (on-site or in a satellite location) and not sold to another business or the consumer.
- Hard, semi-soft or pasteurized process cheese may be packaged using ROP without a variance, provided
 1. a "use by" date is placed on the label that does not exceed 30 days after packaging or the original manufacturer's "sell by" or "use by" date;
 2. it meets the Standard of Identity for those cheeses (21 CFR 133.150, 21 CFR 133.187 and 21 CFR 133.169, respectively); and
 3. ROP cheese is consumed or discarded if not sold or consumed within 30 days of packaging.

MOLLUSCAN SHELLSTOCK IDENTIFICATION:

- Molluscan shellfish identification tags must include:
 1. harvester ID or and dealers name, address, and certification number;
 2. original shippers ID where applicable;
 3. date of harvest, harvest location ;
 4. type of shellfish ;
 5. quantity of shellfish ;
 6. 90-day statement.

FOOD LABELS:

- Food packaged in a food establishment shall bear labeling information that includes:
 1. the common name of the food;
 2. if made from 2 or more ingredients, a list of ingredients in descending order by weight, including artificial color, flavor or preservatives;
 3. quantity of contents;
 4. the name and place of business of the manufacturer, packer or distributor; and
 5. The name of the food source for each major food allergen contained in the food unless it is already part of the common or usual name.
 6. nutrition labeling unless exempted.
 7. for any salmonid FISH containing canthaxanthin as a COLOR ADDITIVE, the labeling of the bulk fish container, including a list of ingredients, displayed

on the retail container or by other written means, such as a counter card, that discloses the use of canthaxanthin.

PROHIBITED FOOD STORAGE AREAS:

1. locker rooms
2. toilet rooms
3. dressing rooms
4. garbage rooms
5. mechanical rooms
6. under unshielded sewer lines
7. under leaking water lines
8. under open stairwells
9. under other sources of contamination

MATERIAL USE LIMITATION / CAST IRON:

- Cast iron may not be used for utensils or food-contact surfaces of equipment.
- Cast iron may be used as a surface for cooking.
- Cast iron may be used in utensils for serving food if the utensils are used only as part of an uninterrupted process from cooking through service.

COPPER:

- Copper and copper alloys such as brass may not be used in contact with a food that has a pH below 6 such as vinegar, fruit juice or wine, or for a fitting or tubing installed between a backflow prevention device and a carbonator.

This does not include beer brewing in the prefermentation and fermentation steps of a beer brewing operation, such as a brewpub or microbrewery.

LEAD IN CERAMIC, CHINA AND CRYSTAL:

<u>Utensil Category</u>	<u>Description</u>	<u>Maximum Lead (mg/L)</u>
Hot Beverage Mugs	Coffee Mugs	0.5
Large Hollowware	Bowls ≥1.1 L (1.16 Qt.)	1.0
Small Hollowware	Bowls < 1.1 L (1.16 Qt.)	2.0
Flat Utensils	Plates, Saucers	3.0

GALVANIZED METAL:

- Galvanized metal may not be used for utensils or food-contact surfaces of equipment that are used in contact with acidic foods.

LINENS, NAPKINS, AND SPONGES:

- Linens, napkins, and sponges may not be used in contact with food.
- Linens and napkins may be used to line containers used for the service of foods if the linens and napkins are replaced each time the container is refilled for a new consumer.
- Cloth gloves may be used in direct contact with food that is subsequently cooked, such as frozen food or a primal cut of meat.

- Sponges may not be used in contact with cleaned and sanitized or in-use food-contact surfaces.

PEWTER:

- Pewter alloys containing lead in excess of 0.05% may not be used as a food contact surface.

SOLDER AND FLUX:

- Solder and flux containing lead in excess of 0.2% may not be used on surfaces that contact food.

WOOD:

- Wood and wood wicker may not be used as a food-contact surface.
- Hard maple or an equivalently hard, close-grained, nonabsorbent wood may be used for:
 1. cutting boards, cutting blocks, bakers' tables, and utensils such as rolling pins, doughnut dowels, salad bowls, and chopsticks; and
 2. wooden paddles used in confectionery operations for pressure scraping kettles when manually preparing confections at a temperature of 110°C (230°F) or above.
- Whole, uncut raw fruits and vegetables, and nuts in the shell may be kept in the wood shipping containers in which they were received until the fruits, vegetables, or nuts are used.

- If the nature of the food requires removal of rinds, peels, husks or shells before consumption, the whole, uncut, raw food may be kept in:
 1. untreated wood containers; or
 2. treated wood containers if the containers are treated with a preservative that meets the requirements specified in 21 CFR 178.3800, Preservatives for Wood.

MANUAL WAREWASHING:

1. A sink with at least three (3) compartments shall be provided for manually washing, rinsing, and sanitizing equipment and utensils.
2. Sink compartments shall be large enough to accommodate immersion of the largest equipment and utensils.
3. If equipment or utensils are too large for the warewashing sink, a warewashing machine or alternative equipment may be used such as:
 - a. high-pressure detergent sprayers;
 - b. low- or line-pressure spray detergent foamers;
 - c. other task-specific cleaning equipment;
 - d. brushes or other implements;
 - e. two-compartment sinks;
 - f. receptacles that substitute for the compartments of a multi-compartment sink.
4. A two-compartment sink may be used only if:
 - a. its use is approved by the regulatory authority; and

- b. the number of kitchenware items cleaned and sanitized in the 2-compartment sink are limited and the warewashing is limited to batch operations for cleaning kitchenware, such as between cutting one type of raw meat and another or cleanup at the end of a shift.
 - c. the following requirements shall be followed:
 - 1. the cleaning and sanitizing solutions must be made up immediately before use and drained immediately after use, and
 - 2. a detergent-sanitizer must be used to sanitize and must be applied in accordance to the manufacturer's label instructions and, where there is no distinct water rinse between washing and sanitizing, the agent applied in the sanitizing step must be the same detergent-sanitizer that is used in the washing step, or
 - 3. use a hot water sanitization immersion step.
 - d. A 2-compartment sink may not be used for warewashing operations such as where cleaning and sanitizing solutions are used for a continuous or intermittent flow of kitchenware or tableware in an ongoing warewashing process.
- 5. The temperature of the wash solution shall be maintained at not less than 43°C (110°F) unless a different temperature is specified on the cleaning agent manufacturer's label instructions.
 - 6. If immersion in hot water is used for sanitizing in a manual

operation, the temperature of the water shall be maintained at 77°C (171°F) or above.

MECHANICAL WAREWASHING:

- The temperature of the wash solution in spray type warewashers that use hot water to sanitize may not be less than:
 1. 74°C (165°F) for a stationary rack, single temperature machine;
 2. 71°C (160°F) for a single tank, conveyor, dual temperature machine;
 3. 66°C (150°F) for a stationary rack, dual temperature machine; or
 4. for a multi-tank, conveyor, multi-temperature machine, 66°C (150°F).
- The temperature of the wash solution in spray-type warewashers that use chemicals to sanitize may not be less than 49°C (120°F).
- In a mechanical operation, the temperature of the fresh hot water sanitizing rinse as it enters the manifold may not be more than 90°C (194°F) or less than:
 1. 74°C (165°F) for a stationary rack, single temperature machine, or
 2. 82°C (180°F) for all other machines.
 3. The flow pressure of the fresh hot water sanitizing rinse in a warewashing machine may not be less than 100 kilopascals (15 pounds per square inch) or more

than 170 kilopascals (25 pounds per square inch) as measured in the water line immediately downstream or upstream from the fresh hot water sanitizing rinse control valve.

- Mechanical warewashing machines shall automatically dispense detergents and sanitizers; and
- incorporate a visual means to verify that detergents and sanitizers are delivered; or a visual or audible alarm to signal if they were not delivered to the respective machine cycle.

MANUAL AND MECHANICAL WAREWASHING - CHEMICAL SANITIZATION:

- A chemical sanitizer used in a sanitizing solution for a manual or mechanical operation shall meet the requirements specified in 40 CFR 180.940, Sanitizing Solutions, and shall be used in accordance with the EPA-approved manufacturer's label use instructions, and shall be used as follows:
- A chlorine solution shall have a minimum temperature based on the concentration and pH of the solution as listed in the following chart:

<u>Minimum Concentration</u> mg/L	<u>Minimum Temperature</u>	
	pH 10 or less °C (°F)	pH 8 or less °C (°F)
25	49 (120)	49 (120)
50	38 (100)	24 (75)

- An iodine solution shall have a:
 1. minimum temperature of 24°C (75°F);
 2. pH of 5.0 or less, or a pH no higher than the level for which the manufacturer specifies the solution is effective; and
 3. concentration between 12.5 mg/L and 25 mg/L;
- A quaternary ammonium compound solution shall have:
 1. a minimum temperature of 24°C (75 F);
 2. a concentration as in 40 CFR 180.940 and as indicated by the manufacturer's use directions included in the labeling; and
 3. Be used only in water with 500 mg/L hardness or less or not greater than specified by manufacturer's label.

FREQUENCY OF CLEANING FOOD CONTACT SURFACES AND UTENSILS:

- Equipment food-contact surfaces and utensils shall be cleaned:
 - before each use with a different type of raw animal food such as beef, fish, lamb, pork or poultry;
 - each time there is a change from working with raw foods to working with ready-to-eat foods;
 - between uses with raw fruits or vegetables and with potentially hazardous food (TCS food);
 - before using or storing a food temperature measuring

device; and
at any time during the operation when contamination may
have occurred.

- If used with potentially hazardous food (TCS food), equipment food-contact surfaces and utensils shall be cleaned throughout the day at least every 4 hours.
- Equipment food-contact surfaces and utensils may be cleaned less frequently than every 4 hours if:
 1. in storage, containers of potentially hazardous food (TCS food) and their contents are maintained at required temperatures and the containers are cleaned when they are empty;
 2. utensils and equipment are used to prepare food in a refrigerated room that maintains the utensils, equipment, and food under preparation at required temperatures and the utensils and equipment are cleaned at least every 24 hours or less based on room temperature;
 3. containers in serving situations such as salad bars, delis, and cafeteria lines hold ready-to-eat potentially hazardous food (TCS food) that is maintained at the required temperatures are intermittently combined with additional supplies of the same food that is at the required temperature, and the containers are cleaned at least every 24 hours;
 4. temperature measuring devices are maintained in contact with foods held at proper temperatures;

5. equipment is used for the storage of packaged or unpackaged food such as a reach-in refrigerator and the cleaning frequency precludes accumulation of soil residues.
6. The regulatory authority approves the cleaning schedule based on consideration of:
 - a. characteristics of the equipment and its use;
 - b. the type of food involved;
 - c. the amount of food residue accumulation; and
 - d. the temperature at which the food is maintained during the operation and the potential for rapid and progressive multiplication of pathogenic or toxigenic microorganisms that are capable of causing foodborne disease; or
 - e. in-use utensils are intermittently stored in a container of water in which the water is maintained at 57°C (135°F) or more and the utensils and containers are cleaned at least every 24 hours or sooner if necessary.

HANDWASHING LAVATORY:

- A handwashing sink shall be equipped to provide water at a temperature of at least 38°C (100°F) through a mixing valve or combination faucet.
- A steam mixing valve may not be used at a handwashing sink.
- A self-closing, slow-closing or metering faucet shall provide a flow of water for at least 15 seconds without the need to reactivate the faucet.
- A handwashing sign shall be posted at all handwashing sinks used by employees.

LIGHTING INTENSITY/PROTECTIVE SHIELDING:

- The light intensity shall be:
 1. at least 108 lux (10 foot candles) at a distance of 75 cm (30 inches) above the floor in walk-in refrigeration units, dry food storage areas and in all areas and rooms during periods of cleaning;
 2. at least 215 lux (20 foot candles) at a surface where food is provided for consumer self service such as buffets and salad bars or where fresh produce or packaged foods are offered, inside coolers and at a distance of 75 cm (30 inches) above the floor in areas used for handwashing, warewashing, equipment and utensil storage and toilet rooms, and
 3. at least 540 lux (50 foot candles) at a surface where a food employee is working with food or utensils and

equipment such as knives, slicers, grinders or saws where employee safety is a factor.

- Light bulbs shall be shielded, coated, or otherwise shatter-resistant in areas where there is exposed food; clean equipment, utensils, and linens; or unwrapped single-service and single-use articles.

POISONOUS OR TOXIC MATERIALS:

- Containers of poisonous or toxic materials and personal care items shall bear a legible manufacturers label;
- Working containers used for storing poisonous or hazardous materials such as cleaners and sanitizers taken from bulk supplies shall be clearly and individually identified with the common name of the material;
- Poisonous or toxic materials shall be stored so they can not contaminate food, equipment, utensils, linens, and single use articles by separation through spacing or portioning or by locating them in an area which is not above the articles;
- Except for items packaged for sale, only those poisonous or toxic materials that are required for the operation and maintenance of a food establishment shall be allowed in a food establishment;
- Poisonous or toxic materials shall be used according to law and code, in accordance with manufacturers directions, and for a pesticide, manufacturers label instructions that state that use is allowed in a food

establishment. Any conditions of certification if required must be met;

- Poisonous or toxic materials shall be applied in a manner so that they do not pose a hazard to employees or other persons and contamination including toxic residues due to drip, drain, fog, splash or spray on food, equipment, utensils, linens, and single-service and single use articles is prevented. For a restricted use pesticide this is achieved by:
 1. removing the items;
 2. covering the items with impermeable covers;
 3. taking other appropriate preventive actions; and
 4. cleaning and sanitizing equipment and utensils after the application.
- A container previously used to store poisonous and toxic materials may not be used to store, transport, or dispense food.

DISPOSABLE GLOVE USE WITH READY-TO-EAT FOODS:

- Fecal-oral route pathogens like bacteria and viruses are most often spread from feces-to-hand-to-mouth. Studies have shown that a three-step barrier approach to preventing FDI via the fecal-oral route is most effective. This three-step barrier approach includes:
 1. preventing ill employees from handling food;
 2. frequent and proper hand washing;
 3. and preventing the bare hand contact of ready-to-eat foods.

- The use of disposable gloves is only one method of preventing bare hand contact with ready-to-eat foods. Other effective methods include:
 1. the use of tongs, spatulas;
 2. deli tissue paper;
 3. and other dispensing utensils.
- The use of gloves is never a substitute for frequent and proper hand washing.
- When disposable gloves are used, they need to be utilized following the Food Code requirements for food-contact utensils and changed when contaminated, torn, or if there is a task interruption. For example:
 1. change gloves after touching raw animal products;
 2. and before touching ready-to-eat products;
 3. after touching soiled utensils and equipment;
 4. or after coughing or sneezing.
- Disposable gloves should never be worn for longer than one to two hours at a time. Always wash hands before putting on a new pair of gloves.

About AFDO Publications

The Association of Food and Drug Officials (AFDO), established in 1896, successfully fosters uniformity in the adoption, implementation and enforcement of science-based food, drug, medical device, cosmetics and product safety laws, rules, and regulations.

AFDO and its six regional affiliates provide the mechanism and the forum where regional, national and international issues are deliberated and resolved to uniformly provide the best public health and consumer protection in the most expeditious and cost effective manner.

This handbook is one of several publications available through AFDO, many of which are model codes and guidelines AFDO has developed specifically for the food industry and regulators. For a complete listing and order form contact the AFDO office at (717) 757-2888, or download from the AFDO web site at www.afdo.org.

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