<table>
<thead>
<tr>
<th>TYPE OF MEAT</th>
<th>FINAL COOK TEMPERATURE (HOLD FOR 15 SECONDS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish</td>
<td></td>
</tr>
<tr>
<td>Raw shell eggs for immediate service</td>
<td></td>
</tr>
<tr>
<td>Beef steaks, veal, lamb, commercially raised game animals</td>
<td></td>
</tr>
<tr>
<td>Beef and pork roasts (rare) – hold at 145°F for 3 minutes</td>
<td></td>
</tr>
<tr>
<td>Pork, ham, bacon</td>
<td></td>
</tr>
<tr>
<td>Ground beef, pork, lamb, and flaked fish. Ground commercially raised game animals. Sausage, gyros, and injected meats</td>
<td></td>
</tr>
<tr>
<td>Poultry and wild game animals. Stuffed meats, poultry or fish. Stuffed pasta and casseroles. Stuffing w/ meat</td>
<td></td>
</tr>
<tr>
<td>Any potentially hazardous food cooked in a microwave oven</td>
<td>165°F, let food stand for 2 minutes after cooking</td>
</tr>
</tbody>
</table>

**Reheat all potentially hazardous foods to at least 165°F and hold above 140°F**

### Sanitizer Concentration for Utensils

<table>
<thead>
<tr>
<th>SANITIZER TYPE</th>
<th>CONCENTRATION</th>
<th>CONTACT TIME (Minimum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHLORINE</td>
<td>50 – 100 ppm</td>
<td>7 seconds</td>
</tr>
<tr>
<td>QUATERNARY AMMONIA</td>
<td>200 – 400 ppm</td>
<td>30 seconds</td>
</tr>
<tr>
<td>IODINE</td>
<td>12.5 – 25.0 ppm</td>
<td>30 seconds</td>
</tr>
</tbody>
</table>

Wayne County Health Department  
5454 S. Venoy  
Wayne, MI 48184  
(734) 727-7400  

For more information, check the Michigan Department of Agriculture website: www.michigan.gov/MDA

Information based on the 1999 FDA Food Code  
Compiled by K. McElroy. Edited by A. Guardiola and P. Barry 9/02 W.C.H.D.
**THREE COMPARTMENT SINK:**
1. Clean then sanitize the compartments and the drainboards of the three-compartment sink.
2. Scrape or pre-rinse all utensils and pre-soak silverware.
3. Wash in hot, soapy water.
4. Rinse with clear, warm water.
5. Set in chlorine sanitizer solution for at least 7 seconds, or in iodine or quaternary ammonia for at least 30 seconds.
6. Allow to air dry before using clean utensils.

**Check table on back cover for sanitizer concentrations.**

**WIPING CLOTHS:**
Wiping cloths must be stored in sanitizer solution with 50-100 ppm chlorine solution or equivalent when not in use. Check the concentration with appropriate chemical test strips.

It is also important to keep non-food contact surfaces clean. This includes tables, booths, cooler and microwave gaskets and exteriors, and all parts of kitchen equipment that don’t come into contact with food.

Floors, walls, and ceilings must be kept clean, too. They must be constructed of smooth, non-absorbent, easily cleanable and durable materials.

**SAFE TEMPERATURES FOR STORING POTENTIALLY HAZARDOUS FOODS**

- **Keep hot foods hot** (140°F and above)
- **Keep cold foods cold** (41°F and below)

**DEFINITIONS**

**POTENTIALLY HAZARDOUS FOODS** – Those foods that require temperature control because they can support the rapid growth of dangerous bacteria. Control measures such as refrigeration or hot holding equipment are required to maintain these products at or above 140°F or at or below 41°F. Examples include meat, poultry, seafood, tofu, pasta, dairy products, sprouts, cut melon, soups, stews, and cooked vegetables.

**READY-TO-EAT FOODS** – Those foods that are edible without further preparation such as washing or cooking. Examples include items such as tuna salad, cole slaw, pasta salads, potato salad, breads, pastries, dairy products, sprouts, cut melon, soups, stews, and cooked vegetables.

**FOOD CONTACT ITEMS/SURFACES** – Items and surfaces that will touch food, such as knives, spoons, forks, cutting boards, counter tops, pots, pans, slicers, and mixers.

**NON-FOOD CONTACT ITEMS** – Items that will not normally touch food, but may be splashed during operations, such as cooler/microwave gaskets and exteriors.
PERSON IN CHARGE/HEALTH

PERSON IN CHARGE:
A designated, knowledgeable Person in Charge must be present during all hours of the establishment’s operation, including preparation and cleanup times before or after business hours.

The Person in Charge must be aware of their responsibilities and must be able to demonstrate their knowledge of all food preparation, service, and cleanup procedures applicable to their facility. They can demonstrate this knowledge in one of three ways;
1) Operating the food establishment in compliance with the Michigan Food Law 2000
2) Becoming a Certified Food Manager
3) Responding correctly to an inspector’s questions

EMPLOYEE HEALTH POLICY:
An ill employee can contaminate food and make other people sick. Even mild symptoms can indicate an illness that could be life threatening if passed on to a customer who is elderly or very young, or who possesses a weakened immune system.

Symptoms of foodborne illness include diarrhea, fever, vomiting, jaundice, and sore throat with fever. No one experiencing any of these symptoms can work with food, utensils, or food contact surfaces. Nor may they engage in activities that may contaminate any of the above.

The Big Four- The illnesses associated with Hepatitis A virus, E. coli 0157:H7, Shigella spp., or Salmonella Typhi can be life threatening and can be transmitted by infected food.

Anyone suffering one of these illnesses cannot work within a foodservice establishment until a physician confirms in writing that the affected person no longer poses a risk of infecting the public.

You must report any instance of the Big Four illnesses among employees. Call your local health department as soon as you find out about the illness, then once you have medical documentation of their clearance, call your health department for their approval before allowing the affected person to return to work.

CLEANING AND SANITIZING
No food can be considered safe if it has been prepared on an unsanitary surface, stored in unsanitary containers or touched by contaminated utensils. Always wash, rinse, and sanitize food contact surfaces properly.

WORK SURFACES AND CLEAN-IN-PLACE EQUIPMENT:
Slicers, mixers, and other stationary equipment must be washed, rinsed, and sanitized frequently enough to keep them sanitary.
1. Wash with hot, soapy water.
2. Rinse with clear, warm water.
3. Sanitize with the same concentration solution as you would use in the 3-compartment sink. (50 ppm chlorine, 12.5 ppm iodine, or 200 ppm quaternary ammonia)
4. Allow to air dry before using surface.

AUTOMATIC DISHMACHINES:
1. Machines vary widely, so always follow the manufacturer’s instructions for the operation of your machine.
2. Scrape or pre-rinse all utensils and pre-soak silverware.
3. When using a machine that sanitizes with hot water, make sure the final sanitizing cycle reaches a water temperature of 180°F. Check the temperature dial on the machine.
4. When using a machine that sanitizes with the use of chemicals, make sure the chemical concentration is correct, 50 ppm for chlorine or 12.5 for iodine. Chlorine is generally used for dishmachines while iodine is often used in glass washers.
5. Allow to air dry before using clean utensils.

Note: Make sure to wash hands between handling soiled then clean utensils.

With 3 Compartment sink, Dishmachine, or Glasswasher:
• Check the bottle of sanitizer at the beginning of each shift. If there will not be enough to finish the shift, replace with a fresh bottle of sanitizer.
• Use chemical test strips to check the sanitizer solution concentration at the beginning of each shift. If the concentration isn’t right, correct the problem or call for repair.
**HYGIENE**

Human beings carry all kinds of contaminants around with them, so it's no wonder people are the most common source of food contamination. It's important for all employees to adhere to the basic tenets of good hygiene. That includes:

- Bathing
- Clean, appropriate clothing
- Handwashing

**Handwashing** – Always wash hands at the beginning of the work shift and after...

- touching face, hair, any area of the body
- using the restroom
- coughing, sneezing, using tissue
- using tobacco, eating, or drinking
- handling dirty equipment or utensils
- handling raw meat
- any activity that may contaminate hands

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**Cooling Foods:** Not all bacteria are killed by cooking. In order to prevent rapid bacteria growth during cooling, the process must be accomplished quickly. Cool all potentially hazardous foods from 140°F to 70°F within 2 hours. This can be done best with an ice bath or ice-filled Cold Paddle. Then cool the food from 70°F to 41°F within another 4 hours. This requires the use of refrigeration or other acceptable methods. Please note that stirring greatly speeds the cooling process.

Some acceptable cooling methods are as follows:

- Transfer the hot food into shallow metal trays. If the food is thick (pea soup), fill the pan no more than 2 inches deep. If the food is watery (broth), fill the pan up to 3 inches deep.
  - If air cannot circulate properly around all container surfaces, the food will not cool quickly, so do not stack the trays.
- Use an ice water bath and stir the food to cool it quickly.
- Use an ice filled Cold Paddle to stir the food.

These items can be purchased at kitchen supply stores and are designed to be filled with water then frozen. When hot foods are stirred with the frozen paddle, the ice within quickly cools the food.

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**Proper handsink with:**

- hot and cold running water
- soap
- sanitary toweling
- trash can
- handwash sign

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**Reheating:** To avoid giving bacteria time to grow, reheat all potentially hazardous foods to 165°F within 2 hours. Steam tables/hot holders are not designed for quick heating. Heat foods quickly on a stove, in a conventional oven, or in a microwave oven before setting it into a hot holder.
Proper hand washing takes at least 20 seconds and requires the use of a designated handsink, soap and moderately hot water. Hands should be dried with an air blower, disposable paper toweling, or a clean section of a roller towel.

**NOTE: Chemical hand sanitizers are not a substitute for proper washing and can only be used after proper handwashing**

**BARE HAND CONTACT**

Even after thorough hand washing, employees must not contact exposed, ready-to-eat foods with their bare hands. They must use disposable gloves or suitable utensils such as tongs, deli tissue, spatulas or other dispensing items. Examples of such foods include hot dog and hamburger buns, bread, toast, sandwiches and salad ingredients.

Employees must wash hands thoroughly before putting on gloves and gloves must be changed regularly and whenever they become soiled or damaged.

**CUTS AND ABRASIONS:**

Employees with cuts, abrasions, or infected areas of exposed body parts must cover the area with an impermeable bandage. If the hands are affected, cover the area with a bandage and wear a plastic glove.

**HAIR RESTRAINT:**

Hair is not only highly objectionable to patrons, it can be a cause of contamination. All those who prepare food must wear hair restraint. Hats, hair coverings, or hairnets must be worn to effectively keep hair out of food.

**JEWELRY:**

Not only can rings, earrings, necklaces and other jewelry come into contact with food, they can fall in and become a physical hazard. In addition, these items can collect food debris and employees tend to touch them. To avoid the risk of contamination, food handlers cannot wear jewelry, except for one plain ring such as a wedding band.

**COOKING TEMPERATURES:** All potentially hazardous foods must be cooked to their minimum internal cooking temperature before they are safe to eat. This temperature varies for different foods. See table on the back cover for cooking temperatures. For example, all chicken must be cooked to an internal temperature of at least 165°F while a hamburger (ground beef) must be cooked to 155°F.

**STEM THERMOMETER** – Provide and use a stem thermometer, calibrated to be accurate within ±2°F. Either a digital food thermometer or a dial thermometer with a range of 0 – 220°F with increment marks every 2°F will serve this purpose. Make sure to calibrate to 32°F in an ice water bath before the first use, routinely when in use, and whenever it may be thrown out of calibration, such as when it gets dropped.

*Note: Always check the temperature in the thickest part of the food.*
**Cooking and Cooling**

**Thawing:** If potentially hazardous foods are thawed improperly, they can become a perfect place for dangerous bacteria to multiply. While the interior of the food is still frozen, the surface of the food can remain at room temperature for several hours. To avoid this bacterial growth, always use one of the four safe methods for thawing frozen foods.

- a. Thaw food in the cooler at 41°F (5°C) or lower.
- b. Thaw food under running potable water of 70°F or lower.
- c. If the food will be cooked immediately, it may be thawed in a microwave oven.
- d. Food may be thawed as part of any cooking process. Make sure the product reaches its required minimum internal cooking temperature.

*See table on the back cover for cooking temperatures.*

**Food Storage**

Once the food products are checked and received, all items must be put away and stored correctly.

**Elevation** – In all storage areas, store food and food contact items at least 6 inches off the floor to avoid contamination from dirt, liquid spills, and floor cleaning solutions.

**Dry Storage:**

Store all canned and dry goods such as dry rice, beans, and pasta in a clean, cool, dry area, away from chemicals or personal belongings. Protect these foods by keeping them sealed or covered and do not store them in restrooms or below plumbing lines that carry sewage or water. These could leak and contaminate the food.
REFRIGERATED STORAGE:
**Temperature** - Hold all potentially hazardous foods at or below 41°F. This means that your coolers need to be capable of maintaining an air temperature of 38-39°F.

**Thermometers** – Each refrigeration unit must be supplied with a thermometer that is accurate to within ± 2°F.

**Cross-contamination** – Store raw meats below and away from all other foods, namely cooked and ready-to-eat foods.

**Covers** – except when cooling foods, keep all refrigerated food covered with durable, cleanable lids or with single use foil or plastic wrap.

**Circulation** – do not pack refrigerators too tightly. Air must circulate to keep the food at the proper temperature.

FROZEN STORAGE:
**Temperature** - Hold frozen foods at 0°F or below.

**Covers** – Keep all food covered or sealed with durable, cleanable lids or with single use foil or plastic wrap.

**Circulation** – Do not pack freezers too tightly. Air must circulate to keep the food properly frozen.

CROSS-CONTAMINATION
Cross-contamination occurs when the blood or juice from raw meat comes into contact with a ready-to-eat food or food that will not be cooked to a high enough temperature to kill dangerous bacteria.

**There are several ways to avoid cross-contamination:**
1. Do not allow blood or other juices dripping from raw meat onto other foods in either the cooler or the freezer. Always store raw meats below and away from all other foods.
2. Do not use the same utensil, knife, cutting board, or counter to prepare raw meat then another food. If the same item or area must be used, wash, rinse, and sanitize all affected surfaces before beginning preparation of the cooked or ready-to-eat food.

DATE MARKING
All ready-to-eat, potentially hazardous foods that will be stored for more than 24 hours must be clearly labeled with the **use-by date**. This is referred to as Date Marking and it is required in all food service establishments in Michigan. In addition, these date-marked products must be used up by their use-by date or they must be discarded.

Refrigeration units capable of holding foods at or below 41°F can hold product for longer periods than units capable of holding 45°F. The coolers in most establishments hold food at 41°F or below. The use-by date for these establishments is 7 days after preparation of the food, or 7 days after opening a sealed container.

Those establishments that have received a variance to continue use of 45°F coolers until May 8, 2006 must use no more than 4 days when labeling items with use-by dates.

EXAMPLES OF PROPER LABEL FOR FOOD ITEMS PREPARED ON NOVEMBER 11 AND HELD IN A 41°F COOLER:

- **Use by 11/17**
- **11/17**
- **Made Nov 11 Use by Nov.17**