



Specialty Devices and Safe Food Handling

Several consumer products can be used to thaw food without electricity, cook it with sunlight, determine its doneness, and warm it at a picnic. As with other kitchen devices and cooking equipment, food must be handled safely when using them to avoid foodborne illness. For example, food must not linger in the "Danger Zone" between 40 °F to 140 °F for more than two hours, and food must reach a minimum internal temperature to be

Thawing Tray

The thawing tray is made of superconductive metal alloys that allow frozen food to defrost speedily at room temperature. It uses no energy or chemicals and doesn't warm the food.

Food must be handled properly when defrosting food on this tray. It is important that the surface of the food lays flat against the tray's surface, and to account for the food's size, shape and thickness. To remain safe, raw meats and poultry should be at room temperature no longer than two hours, and if temperature is above 90 °F, only one hour.

The thawed food may be cooked immediately or it may be refrigerated one or two days. After cooking, the food must be refrigerated within 2 hours.

Also very important: after use, the thawing tray must be washed with hot soapy water to prevent cross contamination of bacteria to other foods.

Solar Box Cooking

The Solar Box cooks food using sunlight. The box has a top window which allows the sunlight through. A dark covered pot is placed in the bottom of the box; it absorbs the sunlight which converts to heat.

Solar cooking has been touted as a way to conserve fuel. It is possibly an alternative to conventional methods for cooking meat and poultry.

However, USDA microbiologists question the adequacy of cooking temperatures inside the Solar Cooker. They question how long the food will be in "the Danger Zone" (temperatures between 40 and 140 °F). They are concerned about how long it takes for the food to start

cooking, and how hot the cooking temperature ever becomes.

If the box temperature rises too slowly, there may be temperature abuse before the food starts cooking. The box temperature as well as the food temperature would need to be measured during the cooking process to ensure safety.

Even if solar box cooking proves to be reliable in the summertime in some parts of the U.S., there is still some question about its use in the winter or on cloudy days. Consumers attempting to use the Solar Box should proceed with caution and use a thermometer to ensure safe cooking temperatures are reached.

Disposable Temperature Indicators

The manufacturer recommends that these single-use, cardboard thermometers be used to verify that hamburger patties are cooked to 160 °F, the temperature at which *E. coli* O157:H7 should be destroyed. It can also be used to check eggs and other foods requiring cooking to 160 °F.

The cardboard strip has a white material inside its plastic coated tip. When inserted into food which has reached 160 °F, the white material changes to clear and the tip changes to black. Each strip is intended for one-time use.

This product was originally intended for food service but has begun to be sold in retail packages. It could be useful for the home cook, especially for people "at risk" for foodborne illness; on a picnic; or whenever a regular thermometer is not available.

One of these cardboard thermometers can easily be carried in the pocket or purse for use when ordering

take-out meals or at family gatherings where the food handling practices of other cooks are questionable!

Consumers must use the product properly. If the consumer inserts the indicator and finds the hamburger undercooked another indicator must be used to check the hamburger a second time. It's possible for bacteria from the undercooked patty to cross contaminate the safely done patty if only one were used.

Consumers should insert the cardboard in the thickest part of the food. Hamburgers must reach 160 °F throughout in order to ensure they are safe to eat.

Thermoelectric Cooler/Warmer

These devices that plug into a car's cigarette lighter are meant to replace the ice-filled insulated cooler as well as keep foods warm. Cooler/warmers are advertised to store food 45 degrees below the outside air temperature. Some manufacturers even suggest food can be reheated in it, but the maximum heating temperature advertised for these devices is 125 °F.

There is a question as to whether they keep foods at a safe temperature.

Microbiologists and food science experts at USDA's Food Safety and Inspection Service have voiced great concerns about temperatures at which these cooler/warmers claim to store or heat foods.

This is their concern: pathogens can grow and multiply at temperatures between 40 and 140 °F. Summer temperatures often exceed 90 °F and the interior of a car can reach 160 °F in a matter of minutes in the summertime, even with the windows partially open. The food would then be in the "Danger Zone" at a temperature where foodborne bacteria multiply rapidly.

Likewise, the maximum heating temperature of 125 °F is unsafe. In fact, cooked warm food may become dangerous after two hours at this temperature. It's impossible to reheat cold food to steamy hot in these devices.

As advertised, the thermoelectric cooler/warmer may not keep food safe, either cold or hot. Continue to keep cold food cold in an insulated picnic cooler with plenty of ice or frozen gel packs.

Table Top Ovens

These ovens are small enough to be used on kitchen counters or tables. Several different brands are on the market that can use convection, conduction, or infrared cooking power. Some ovens use all three powers at the same time. Their smaller size uses less energy than larger ovens and cook 50% faster according to manufacturer's claims. For further information, call USDA's Meat and Poultry Hotline, at 1-888-MPHotline (1-888-674-6854).

Deep Fat Turkey Fryers

A whole turkey can be successfully cooked outdoors by the deep fat frying method provided the turkey is not stuffed and has been completely thawed. The turkey should be 12 pounds or less in size.

There are safety concerns when working with such a large amount of oil. Select a cooking vessel large enough to completely submerge the turkey in oil without it spilling over. The oil should cover the turkey by 1 to 2 inches. To determine the amount of oil needed, do a preliminary test using water. Place the turkey in the cooking utensil and add water to cover. Then remove the turkey and measure the amount of water. This is the amount of oil needed.

Select a safe location outdoors for deep fat frying a turkey. Heat the cooking oil to 350 °F. Slowly and carefully lower the turkey into the hot oil. Monitor the temperature of the oil with a thermometer constantly during cooking. Never leave the hot oil unattended. Allow approximately 3 to 5 minutes per pound cooking time. Remove turkey from the oil and drain oil from the cavity. Check the temperature of turkey with a food thermometer. The turkey is safely cooked when the food thermometer reaches a minimum internal temperature of 165 °F in the innermost part of the thigh and wing and the thickest part of the breast.

If the turkey is not done, immediately return the turkey to the hot oil for additional cooking. When the turkey is done, remove it from the oil and place it on a sturdy tray lined with paper towels. The skin can be golden to dark brown to almost black. Let it rest about 20 minutes before carving.

Allow the used oil to cool before pouring it into containers for refrigerator storage. The oil can be reused if it is strained, covered, and used within a month.

The Big Easy Oil-less Turkey Fryer

This outdoor “fryer” uses no oil but requires a 20-pound LP (Liquefied Petroleum Gas) cylinder for fuel. The infrared heating elements circle the stainless-steel cooker so heat penetrates the meat evenly. The result is moist inside and crispy outside. A turkey up to 16 lbs. or a chicken cooks in about 8 to 12 minutes a pound. Besides turkey, this appliance cooks chicken, roasts, ribs and most other large cuts of meat. Always use a food thermometer to verify that the meat or poultry has reached a safe internal temperature. This appliance includes a cooking basket, meat thermometer and grease tray. See the website for recommended cooking times. www.charbroil.com/newproducts/big-easy-fryer.html

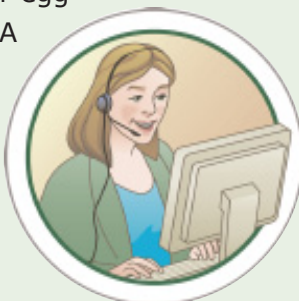
The Big Green Egg

This egg-shaped Japanese outdoor ceramic smoker and grill was derived from an ancient clay cooker called a “kamado.” Cooking times are shorter than metal smokers. There is no drip pan used in this cooker. For long, slow smoking, alternate layers of charcoal with water-soaked wood chips until the firebox is filled to give sufficient smoke flavor throughout the cooking time. Start cooking when the temperature has stabilized at 250 °F. The fuel lights in about 10 minutes with lighter fluid. Food never needs turning except when a charbroiled effect is desired. Use a thermometer inside the smoker to maintain a safe temperature of 200 to 250 °F inside the cooker. www.biggreenegg.com

Food Safety Questions?

Call the USDA Meat & Poultry Hotline

If you have a question about meat, poultry, or egg products, call the USDA Meat and Poultry Hotline toll free at **1-888-MPHotline (1-888-674-6854)**. The hotline is open year-round



Monday through Friday from 10 a.m. to 4 p.m. ET (English or Spanish). Recorded food safety messages are available 24 hours a day. Check out the FSIS Web site at

www.fsis.usda.gov.

Send E-mail questions to MPHotline.fsis@usda.gov.

Ask Karen!

FSIS’ automated response system can provide food safety information 24/7 and a live chat during Hotline hours.



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