



Consumer Protection fact sheet:

TEMPERATURE CONTROLS

The thermometer can be the single most effective tool in the protection of food. The most common type of thermometer is the bi-metallic stemmed thermometer. It is numerically scaled, accurate to within (+) or (-) 2° F and it should have a calibration nut under the dial face head so that the thermometer can be adjusted to maintain accuracy. The common thermometer also shows a temperature range from 0° F - 220°F. These kinds of thermometers should be calibrated on a regular basis, using either the Ice Point Method (ice-bath, calibrated to 32° F, or the Boiling Point Method (boiling water, calibrated to 212° F at sea level).

Take the temperature of cold food in bulk plastic packages by curling a corner of the package around the stem of the thermometer, or place the stem between 2 packages. Both methods can give fairly accurate readings.

Store raw foods below cooked foods or foods that receive no further cooking (such as salads or cold platters and desserts). Use rotation identification (ID) such as writing the receiving date on cans, packages, or labeling the finished products; use the oldest stock items first: First-In-First-Out (FIFO).

The ideal, or suggested, temperature for raw foods put into dry storage is 50° F, with 50 - 60% relative humidity. The ideal, or suggested, floor material for restaurant kitchens and store rooms is quarry tile.

Sous vide (sue veed) means "under vacuum" (vacuum-packaged). The term refers to cooked foods which are put into plastic pouches and then heat-sealed after the air has been removed. Vacuum packaging to remove oxygen will not stop the growth of some very harmful bacteria in the food. Therefore, such products must be properly refrigerated at all times until the time of use. Modified Atmosphere Packaging (MAP) refer to raw or cooked foods which are put into plastic pouches, have the air removed and then replaced with a nitrogen-carbon dioxide mixture (no oxygen) before being heat-sealed. Both sous vide and MAP products should be delivered and received at 0° F unless another refrigeration temperature is specified on the packaging.

An air gap is a reliable backflow prevention strategy. It is the unobstructed, vertical distance through the air that separates an outlet of potable (drinkable) water supply from any potentially contaminated water. However, air gaps can be easily defeated - such as when a garden or janitorial hose is attached to the water faucet outlet.

Pathogenic bacteria can grow rapidly on cooked low-acid foods (PHFs- foods that are capable of supporting the fast growth of disease-causing germs.) in the TDZ (40-140° F is known as the temperature danger zone. Therefore, when PHFs are heated or cooled, the food handler must pass these foods through the TDZ as quickly as possible. The total exposure time adds up every time the food is brought back into the TDZ. Cooked food should not be in the Temperature Danger Zone for more than 4 hours cumulative (total) time.

Foods cooked in advance should be chilled to an internal temperature of below or = 40° F within 4 hours time. The thickness of distance to the center of the food mass has the greatest influence on the cooling rate. Therefore, large roasts should be cut into smaller pieces to reduce the mass for faster cooling and hot products should be quickly separated into serving portions and racked, if possible. Other cooling methods include adding eatable ice, using an ice-water bath while stirring the product frequently, using cooling paddles such as Rapi-kool bottles. Hot liquid-like food masses should be containerized in shallow pans of < or = 4 inches deep with a food depth of < or = 2 inches high. Pans must not be covered and/or stacked during the cooling process!!

4 ACCEPTABLE METHODS FOR THAWING FOOD:

1. in the refrigerator with < or = 40° F
2. under potable (drinkable) running water of < or = 70° F in the food prep sink
3. in the microwave oven, followed immediately by cooking to the proper internal temperature either by conventional cooking processes or in the microwave oven
4. by cooking the frozen food mass as is (cannot be done in microwave oven if food mass is large)

TIME & TEMPERATURE RELATIONSHIPS TO REMEMBER:

Time	Internal Temp	Type of Food
-----	< or = 0° F	Food stored in freezers
-----	< or = 40°F	Food stored in refrigerators
-----	> or =140° F	Food stored in hot-holding equipment such as steam tables and bainmaries
Cooking Temps		
121 minutes	130° F	Rare roast beef (after reaching 130° F internal, must hold to that temp for 121min)
12 minutes	140° F	Rare roast beef (after reaching 140° F internal, must hold to that temp for 12 min)
15 seconds	> or = 145° F	Foods in general: fish, shellfish, other beef, lamb, eggs, vegetables
15 seconds	> or = 155° F	Ground beef & pork products
15 seconds	> or = 165° F	Poultry products & foods stuffed with meat, poultry or fish
-----	> or = 165° F	Any foods cooked in the microwave oven, then let sit for 1-2 minutes to even out the heat
within 2 hours	> or = 165° F	Rapid reheating of leftover foods (cannot be done in steam tables or slow cookers)