

ENVIRONMENTAL HEALTH INFORMATIONAL BULLETIN

TO: Orange County Retail Food Facility Owners/Operators

SUBJECT: Requirements for the Cooking of Specific Potentially Hazardous Foods

The California Retail Food Code (CRFC) establishes structural and operational requirements for all food facilities operating in California. Minimum cooking temperature requirements are included in CRFC for the purpose of reducing the number of illness-causing bacteria such as *E. coli 0157:H7* and *Salmonella* to a safe level. Thorough cooking, though not a substitute for proper handling and temperature control, will effectively kill these and other microorganisms that can cause illness and in some cases, death. Although these foods do not always contain harmful bacteria, there is a risk when consuming raw and/or incompletely cooked animal tissues. The purpose of this Bulletin is to inform you of the minimum cooking temperatures required by law.

Ground, Chopped, and Flaked Meats (e.g., Beef, Veal, Lamb, and Pork): CRFC Section 114004(2)

Unless a customer requests a food to be prepared less than thoroughly cooked, all raw ground, chopped, or flaked and formed meats must be heated to an internal temperature of 155° Fahrenheit for 15 seconds, 145°F for 3 minutes, 150°F for 1 minute, or 158°F <1 second (instantaneous). This section does not apply to meat patties, sausages, and chopped and formed meat products that were fully cooked at USDA-inspected food plants.

Ground meat products cooked to the required temperatures will be firm, not mushy, brown in the middle, and the juices will run clear. Temperatures should be taken in the thickest portion of the food. If cooking appears uneven, the temperature of any undercooked area should also be taken.

Eggs and Foods Containing Raw Eggs: CRFC Section 114004(1)(A)

Unless a customer requests a food to be prepared less than thoroughly cooked, all foods made with raw eggs must be cooked to a minimum internal temperature of **at least 145° Fahrenheit for 15 seconds**. Egg whites and yolks cooked to this temperature will be firm and not runny. Temperatures should be taken in the center of the egg-containing food. This requirement does not apply to foods made with pasteurized eggs.

Pooling raw eggs together is risky, as one contaminated egg can contaminate the entire batch. To prevent the growth of illness-causing bacteria, pooled eggs must be kept refrigerated until cooked.

Pork and Pork products: CRFC Section 114004(1)(C)

Unless a customer requests a food to be prepared less than thoroughly cooked, all pork, and foods made with pork, must be cooked to an internal temperature of **at least 145° Fahrenheit for 15 seconds**. This requirement does not apply to fully cured (e.g., bacon, ham, etc.) or to fully cooked USDA inspected products (e.g., lunch meats containing pork, and some sausages). Pork cooked to this temperature will be firm, not mushy, and the juices will run clear. Temperatures should be taken at the thickest portion of the food.

Poultry, Chopped or Ground Poultry, Stuffed Fish, Stuffed Meat, Stuffed Poultry, and Foods Stuffed with Meat or Poultry: CRFC Section 114004(a)(3)

Poultry (e.g., chicken, turkey, duck, goose, etc.) and foods that are stuffed must be heated to an internal temperature of **at least 165° Fahrenheit for 15 seconds**. Poultry cooked to this temperature will pierce easily with a fork, and the juices will run clear. Temperatures should be taken at the thickest portion of the food.

Whole beef roasts, corned beef roasts, pork roasts, and cured pork roasts, such as ham, shall be cooked as specified in both of the following charts:

1) CRFC Section 114004(b)(1) in an oven that is preheated to the temperature specified for the roast's weight in the following chart and that is held at that temperature:

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Oven Type	Oven Temperature Based on Roast Weight			
	Less than 10 lbs.	10 lbs or more		
Still Dry	350°F or more	250°F or more		
Convection	325°F or more	250°F or more		
High	250°F or less	250°F or less		
Humidity*				
*Relative humidity greater than 90% for at least 1 hour measured in the cooking chamber or exit of the oven; or in a				
moisture-impermeable bag that provides 100% humidity.				

2) As specified in the following chart, to heat all parts of the food to a temperature and for the holding time that corresponds to that temperature:

Temperature (°F)	Time* in Minutes	Temperature (°F)	Time* in Seconds	
130	112	147	134	
131	89	149	85	
133	56	151	54	
135	36	153	34	
136	28	155	22	
138	18	157	14	
140	12	158	0	
142	8			
144	5			
145	4			
*Holding time may include postoven heat rise.				

The Department may approve alternative time and temperature minimum heating requirements to thoroughly cook the foods identified in this section when the food facility or person demonstrates to the department that the alternative heating requirements provide an equivalent level of food safety.

Microwaving Raw Meat, Eggs, and Poultry: CRFC Section 114008

When foods containing raw or incompletely cooked ground meat, eggs, pork, or poultry are cooked in a microwave oven, they must be heated to a minimum internal temperature of **at least 165°Fahrenheit** in all parts of the food. These foods must be heated in a covered container, and stirred or rotated frequently to assure even heat distribution. Upon completion of microwaving, the food must be left standing in the covered container for a minimum of two (2) minutes to assure temperature equilibrium.

Reheating Potentially Hazardous Foods: CRFC Section 114016

When potentially hazardous foods, which were previously heated in a food facility, are reheated, special care must be given to assure that they are reheated adequately. Potentially hazardous foods are those which support the rapid growth of illness-causing bacteria. These foods include, but are not limited to soups, sauces, baked potatoes, refried beans, cooked rice, beef, poultry, fish, and eggs. All potentially hazardous foods, which are reheated, must reach a minimum internal temperature of at least 165° Fahrenheit for 15 seconds. Reheating for hot holding shall be done rapidly, and the time the food is between 41°F and 165°F shall not exceed two hours. (Rapid cooling practices are also necessary to prevent the growth of illness-causing bacteria.) This section does not apply to foods that were previously heated, with the intention of being served cold (e.g., yesterday's roast beef sliced for sandwiches). Additionally, this section does not apply to foods that were previously cooked in a USDA plant unless the foods are heated, then cooled, with the intention of being served hot at a later time. These foods must then be reheated to an internal temperature of at least 165° Fahrenheit.

Commercially Processed Potentially Hazardous Food: CRFC Section 114016(c)

Commercially processed potentially hazardous ready-to-eat food which is taken from either a hermetically sealed container or an intact package from a food processing plant, must be heated to a minimum temperature of 135° Fahrenheit for hot holding. If this food is prepared for immediate service, there is no minimum cooking temperature requirement.

If you have any questions regarding the requirements for the cooking of specific potentially hazardous foods, please contact your Environmental Health Specialist at (714) 433-6000.