

Consumers should smoke cook foods to internal temperatures as listed by the USDA (USDA-FSIS 1999).

Table 6.1. Internal Temperatures for Smoke Cooking of Foods (USDA-FSIS 1999).

Product	°F
Ground Meat & Meat Mixtures	
Turkey, chicken	165
Veal, beef, lamb, pork	160
Fresh Beef	
Medium Rare	145
Medium	160
Well Done	170
Fresh Veal	
Medium Rare	145
Medium	160
Well Done	170
Fresh Lamb	
Medium Rare	145
Medium	160
Well Done	170
Fresh Pork	
Medium	160
Well Done	170
Poultry	
Chicken, whole	180
Turkey, whole	180
Poultry breasts, roast	170
Poultry thighs, wings	180
Stuffing (cooked alone or in bird)	165
Duck & Goose	180
Ham	
Fresh (raw)	160
Pre-cooked (to reheat)	140

Table 6.1. Internal Temperatures for Smoke Cooking of Foods
(USDA-FSIS 1999).

Product	°F
Seafood	
Fin Fish	Cook until opaque and flakes easily with a fork.
Shrimp, lobster, crab	Should turn red and flesh should become pearly opaque.
Scallops	Should turn milky white or opaque and firm.
Clams, mussels, oysters	Cook until shells open.

Safe Minimum Cooking Temperatures Chart

Food	Type	Internal Temperature (°F)
Ground meat and meat mixtures	Beef, pork, veal, lamb	160
	Turkey, chicken	165
Fresh beef, veal, lamb	Steaks, roasts, chops Rest time: 3 minutes	145
Poultry	All Poultry (breasts, whole bird, legs, thighs, wings, ground poultry, giblets, and stuffing)	165
Pork and ham	Fresh pork, including fresh ham Rest time: 3 minutes	145
	Precooked ham (to reheat) Note: Reheat cooked hams packaged in USDA-inspected plants to 140°F	165
Eggs and egg dishes	Eggs	Cook until yolk and white are firm
	Egg dishes (such as frittata, quiche)	160
Leftovers and casseroles	Leftovers and casseroles	165
Seafood	Fish with fins	145 or cook until flesh is opaque and separates easily with a fork
	Shrimp, lobster, crab, and scallops	Cook until flesh is pearly or white, and opaque
	Clams, oysters, mussels	Cook until shells open during cooking

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Pasteurization Time for Meat (Beef, Pork, and Lamb)

(starting at 41°F / 5°C and put in a 131–151°F / 55–66°C water bath)

Table 5.1: Time required to reduce *Listeria* by at least a million to one, *Salmonella* by at least three million to one, and *E. coli* by at least a hundred thousand to one in thawed meat.

	55°C	56°C	57°C	58°C	59°C	60°C
Thickness	131°F	133°F	134.5°F	136.5°F	138°F	140°F
5 mm	2 hr	1¼ hr	60 min	45 min	40 min	30 min
10 mm	2 hr	1½ hr	1¼ hr	55 min	45 min	40 min
15 mm	2¼ hr	1¾ hr	1½ hr	1¼ hr	60 min	55 min
20 mm	2½ hr	2 hr	1¾ hr	1½ hr	1¼ hr	1¼ hr
25 mm	2¾ hr	2¼ hr	2 hr	1¾ hr	1½ hr	1½ hr
30 mm	3 hr	2½ hr	2 hr	2 hr	1¾ hr	1½ hr
35 mm	3¼ hr	2¾ hr	2¼ hr	2 hr	2 hr	1¾ hr
40 mm	3½ hr	3 hr	2½ hr	2¼ hr	2¼ hr	2 hr
45 mm	4 hr	3¼ hr	3 hr	2¾ hr	2½ hr	2¼ hr
50 mm	4½ hr	3¾ hr	3¼ hr	3 hr	2¾ hr	2½ hr
55 mm	5 hr	4¼ hr	3¾ hr	3½ hr	3 hr	3 hr
60 mm	5¼ hr	4¾ hr	4¼ hr	3¾ hr	3½ hr	3¼ hr
65 mm	6 hr	5¼ hr	4¾ hr	4¼ hr	4 hr	3¾ hr
70 mm	6½ hr	5¾ hr	5¼ hr	4¾ hr	4¼ hr	4 hr

	61°C	62°C	63°C	64°C	65°C	66°C
Thickness	142°F	143.5°F	145.5°F	147°F	149°F	151°F
5 mm	20 min	25 min	18 min	16 min	14 min	13 min
10 mm	35 min	30 min	30 min	25 min	25 min	25 min
15 mm	50 min	45 min	40 min	40 min	35 min	35 min
20 mm	60 min	55 min	55 min	50 min	45 min	45 min
25 mm	1¼ hr	1¼ hr	1¼ hr	60 min	55 min	55 min
30 mm	1½ hr	1½ hr	1¼ hr	1¼ hr	1¼ hr	1¼ hr
35 mm	1¾ hr	1½ hr	1½ hr	1½ hr	1¼ hr	1¼ hr
40 mm	1¾ hr	1¾ hr	1¾ hr	1½ hr	1½ hr	1½ hr
45 mm	2¼ hr	2 hr	2 hr	1¾ hr	1¾ hr	1¾ hr
50 mm	2½ hr	2¼ hr	2¼ hr	2 hr	2 hr	2 hr
55 mm	2¾ hr	2¾ hr	2½ hr	2½ hr	2¼ hr	2¼ hr
60 mm	3 hr	3 hr	2¾ hr	2¾ hr	2½ hr	2½ hr
65 mm	3½ hr	3¼ hr	3¼ hr	3 hr	3 hr	2¾ hr
70 mm	3¾ hr	3¾ hr	3½ hr	3¼ hr	3¼ hr	3¼ hr

Temperature.....

..... Time

°F (°C)..... 12% fat

136 (57.8)..... 81.4 min

137 (58.3)..... 65.5 min

138 (58.9)..... 52.9 min

139 (59.4)..... 43 min

140 (60.0)..... 35 min

141 (60.6)..... 28.7 min

142 (61.1)..... 23.7 min

143 (61.7)..... 19.8 min

144 (62.2)..... 16.6 min

145 (62.8)..... 13.8 min

146 (63.3)..... 11.5 min

148 (64.4)..... 7.7 min

150 (65.6)..... 4.9 min

152 (66.7)..... 2.8 min

154 (67.8)..... 1.6 min

156 (68.9)..... 1 min

158 (70.0)..... 40.9 sec

160 (71.1)..... 26.9 sec

162 (72.2)..... 17.7 sec

164 (73.3)..... 11.7 sec