





Meat pasteurization chart

Use this chart to help prepare cooked beef and roast beef, including sectioned and formed roasts, chunked and formed roasts, and cooked corned beef.

Follow the time and temperature combinations to meet either a 6.5- \log_{10} or 7- \log_{10} reduction of *Salmonella*. Heat the meat to your required temperature listed below and hold at that temperature for the minimum specified time.

Minimum internal temperature		Minimum processing time in minutes or seconds after minimum temperature is reached	
 Temperature (°F)	 Temperature (°C)	6.5- \log_{10} Lethality	7- \log_{10} Lethality
130°F	54.4°C	112 min.	121 min.
131°F	55°C	89 min.	97 min.
132°F	55.6°C	71 min.	77 min.
133°F	56.1°C	56 min.	62 min.
134°F	56.7°C	45 min.	47 min.
135°F	57.2°C	36 min.	37 min.
136°F	57.8°C	28 min.	32 min.
137°F	58.4°C	23 min.	24 min.
138°F	58.9°C	18 min.	19 min.
139°F	59.5°C	15 min.	15 min.
140°F	60°C	12 min.	12 min.
141°F	60.6°C	9 min.	10 min.
142°F	61.1°C	8 min.	8 min.
143°F	61.7°C	6 min.	6 min.
144°F	62.2°C	5 min.	5 min.

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 Temperature (°F)	 Temperature (°C)	6.5- \log_{10} Lethality	7- \log_{10} Lethality
145°F	62.8°C	4 min.	4 min.
146°F	63.3°C	169 sec.	182 sec.
147°F	63.9°C	134 sec.	144 sec.
148°F	64.4°C	107 sec.	115 sec.
149°F	65°C	85 sec.	91 sec.
150°F	65.6°C	67 sec.	72 sec.
151°F	66.1°C	54 sec.	58 sec.
152°F	66.7°C	43 sec.	46 sec.
153°F	67.2°C	34 sec.	37 sec.
154°F	67.8°C	27 sec.	29 sec.
155°F	68.3°C	22 sec.	23 sec.
156°F	68.9°C	17 sec.	19 sec.
157°F	69.4°C	14 sec.	15 sec.
158°F	70°C	0 sec *	0 sec.*
159°F	70.6°C	0 sec *	0 sec.*
160°F	71.1°C	0 sec *	0 sec.*

* The required lethality is achieved instantly when the internal temperature of a cooked meat product reaches 158° F or above.