



Safe cooking of pork and beef

– Fresh, minced and brine injected meat



Do you want juicy meat with a red centre, but are you worried about bacteria? Read here how to cook meat safely every time – even when the meat is not cooked through.

WHAT IS FOOD SAFETY?

While most bacteria are harmless, some can cause food-borne illness. In whole cuts of fresh meat, these bacteria are present on the surface, whereas in minced and brine injected meat they are present both on the surface and in the centre of the meat.

Heat treatment is a reliable way of rendering the bacteria harmless. The bacteria die when exposed to sufficiently

high temperatures. However, the sensitivity of the bacteria to heat differs, and some must be exposed to higher temperatures than others. Furthermore, the elimination of bacteria is not only determined by the specific temperature but also by the heat treatment time.

To achieve a safe product, the heat treatment must ensure a reduction of the number of bacteria by at least 10,000 times.

ABOUT DMRI

DMRI are focusing our attention on methods and technologies for efficient production of safe meat products of a high quality at competitive prices. At the same time, DMRI are committed to enhancing the working environment and animal welfare as well as demonstrating due care to the external environment.

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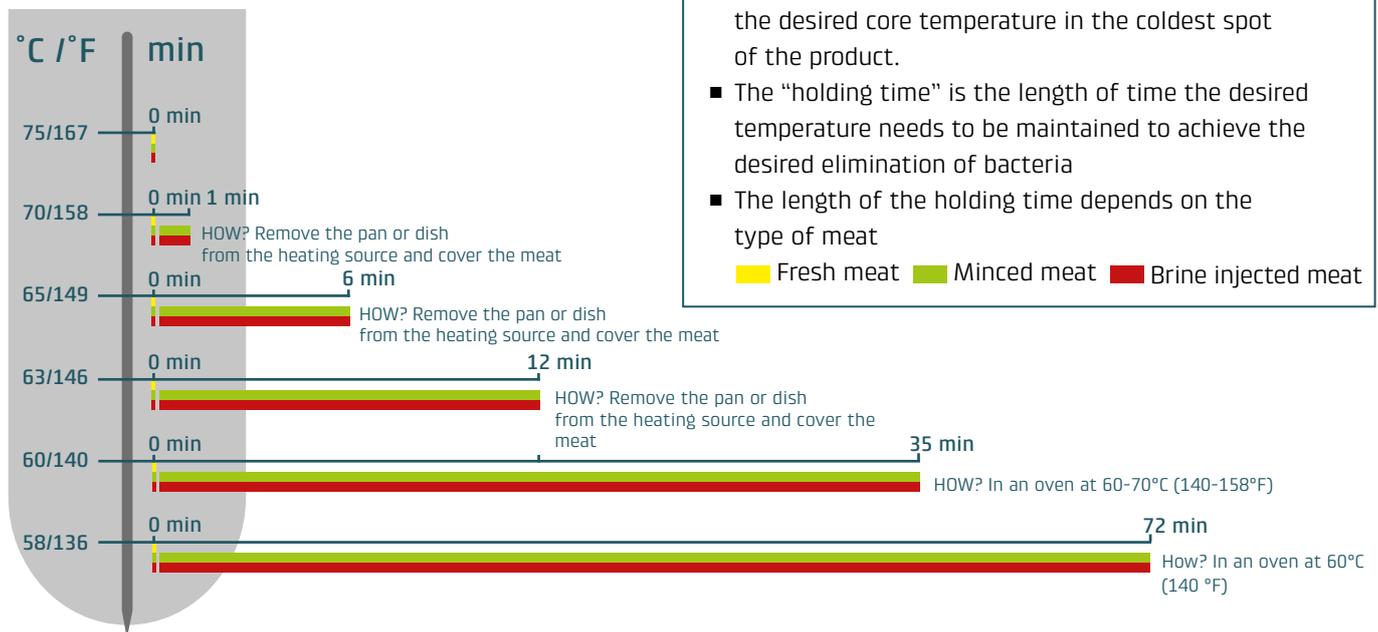


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For minced and brine injected meat, in which bacteria can be present in the centre, it is necessary to add a holding time when heating to core temperatures below 75°C (167°F). Therefore, the 'cooking time' is composed of the time it takes to heat the meat to the desired core temperature plus the time the temperature must be maintained.

These guidelines for the safe cooking of meat have been drawn up on the basis of scientific studies of meat demonstrating that the desired elimination of bacteria in the product can be achieved through heat treatment. If these recommendations are followed, cooking of minced and brine injected meat to core temperatures below 75°C (167°F) is just as safe as cooking to 75°C (167°F).

CORE TEMPERATURE HOLDING TIME



COOKING TIME = HEATING TIME + HOLDING TIME

- The "heating time" is the time it takes to reach the desired core temperature in the coldest spot of the product.
 - The "holding time" is the length of time the desired temperature needs to be maintained to achieve the desired elimination of bacteria
 - The length of the holding time depends on the type of meat
- Fresh meat
 ■ Minced meat
 ■ Brine injected meat

These guidelines are applicable for cooking in pan, in oven, on grill and sous vide, but not for microwave cooking. The guidelines are based on experiments with pork and beef at DMRI, Danish Technological Institute, and on theoretical calculations of elimination of *L. monocytogenes* by heat.

STEP BY STEP COOKING INSTRUCTIONS

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1 Heat the meat until the desired core temperature is reached, e.g. 63°C (146°F). Use a meat thermometer.
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2 Remove the frying pan or dish from the heat source and cover the meat while holding. Maintain the core temperature for the specified holding time in the warm frying pan or in a dish, e.g. for 12 minutes for minced meat.
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3 Eat the meat immediately after cooking or keep it at max. 5°C (41°F) for up to 5 days.