



## **COOKING TEMPERATURE CERTIFICATION**

### **Purpose**

This instruction defines policies and procedures associated with product cooked temperature certification.

### **Policy**

When the specification references compliance with 9 CFR 381 or 7 CFR 250, temperature requirements rather than stating actual temperatures, compliance is the responsibility of FSIS. Cook temperatures are stated and monitored through the company's HACCP Plan. When statements such as "product internal temperature shall reach a minimum of 160 °F," or other specific temperature requirements are contained in the specifications, the grader shall make such checks in accordance with prescribed procedures.

Check product cooking temperatures on a sampling period basis or more frequently if conditions warrant. Check product as close as practical to the point where its maximum temperature has been attained. Use point sensitive thermometers for verifying cooking temperatures.

### **Procedures**

Specifications for cooked products such as nuggets, patties, parts, etc., frequently list minimum cooking temperatures as part of the specification requirements. By the nature of these products and the various cooking methods involved, temperatures can vary between different areas of individual cooked items. As heat is transferred from the cooking medium to the product, the surface becomes the hottest. The heat then transfers from the exterior of the product to the interior through conduction. Even after removing from the heat source, the internal temperature may continue to rise above what it was when first removed from the heat source.

Thermocouple type thermometers should be used since they are generally considered more accurate for verifying cooking temperatures than typical dial thermometers. Dial-type thermometers are designed to operate with the entire lower portion of the probe inserted into the product. The 2-inch "sensing" portion of the dial thermometer probe gives an average reading of the temperature along its length. Averaging the temperature gradient may result in a faulty reading for internal temperature and indicate a fully cooked product when, in fact, other areas of the product are less than fully-cooked. The thermocouple thermometers sensitive portion is restricted to the very tip of the probe allowing temperature verification at the center of the product.

Prior to the actual temperature verification, the thermometer should be tempered to neutralize the effect of environmental temperatures. A thermometer at room temperature cannot be inserted directly into a hot product without having some cooling effect on it. Graders shall insert the probe into several individual cooked items successively to warm it up to the desired range before taking a verification temperature. When a product exits from a cooker in multiple rows across a belt or conveyor, graders should take the temperature of product from each row, one at a time. This shall be done daily to determine the existence of "cold spots." In addition, since the product



generally continues to cook after exiting the cooker, it is necessary to determine at what point on the conveyor or belt that the product will reach the highest internal temperature. When taking verification temperatures, select product from the coldest row and at the point of maximum cooking.

For maximum accuracy, graders shall remove the product from the conveyor as quickly as possible and insert the probe. For patties and nuggets, insert the probe from the side of a single unit, putting the sensitive area of the probe as close to the geometric center as possible. For items such as bone-in parts, insert the probe into the thick muscle tissue, putting the probe as close to the middle of the thickest muscle as possible. Keep the probe away from bone, fat, and gristle as they heat at different rates than muscle tissue and can provide inaccurate readings.

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