

## Doneness Target Temperatures

| FOOD   | DONENESS    | TEMPERATURE  |             |
|--|-------------|--------------|-------------|
|  |             | °F           | °C          |
| <b>BEEF, VEAL, LAMB, GAME</b>  | Rare        | 120          | 49          |
|  | Medium Rare | 134          | 56.5        |
|  | Medium      | 140          | 60          |
|  | Medium Well | 150          | 65.5        |
|  | Well Done   | 160 and over | 71 and over |
| <b>PORK</b>  | Medium Rare | 134          | 56.5        |
|  | Medium      | 140          | 60          |
|  | Well Done   | 160 and over | 71 and over |
| <b>POULTRY, White Meat</b><br><b>DUCK, White Meat</b><br><b>POULTRY, Dark Meat</b> | Medium      | 140-146      | 60-63       |
|  | Medium Rare | 134          | 56.5        |
|  | Well Done   | 176          | 80          |
| <b>FISH, SEAFOOD</b>   | Rare        | 116          | 47          |
|  | Medium Rare | 126          | 52          |
|  | Medium      | 140          | 60          |
| <b>VEGETABLES, FRUITS</b>  | —           | 183-190      | 84-87       |
| <b>EGGS</b>  | soft cooked | 147 or 167   | 64 or 75    |
|  | hard cooked | 160          | 71          |
|  | scrambled   | 167          | 75          |
|  | pasteurized | 135          | 57          |

### ⚠ CAUTION

Raw or unpasteurized food must never be consumed by immune compromised or highly susceptible individuals. The United States Food Code recommends that, for safety, food should not be kept between 41°F (5°C) and 130°F (54.5°C) for longer than four hours.

## Recommended Cooking Temperatures and Times

| FOOD  | THICKNESS <sup>1</sup> |            | TEMPERATURE   |                | TIME     |           |
|---|------------------------|------------|---------------|----------------|----------|-----------|
|   | inch                   | cm         | °F            | °C             | min      | max       |
| <b>BEEF, VEAL, LAMB, GAME</b>   |                        |            |               |                |          |           |
| <b>Tender Cuts</b><br>Tenderloin, Rib-eye, T-bone,<br>Chops, Cutlets  | 1                      | 2.5        | 134 or higher | 56.5 or higher | 1 hr     | 4 hrs     |
|   | 2                      | 5          | 134 or higher | 56.5 or higher | 3 hrs    | 6 hours   |
| <b>Tough Cuts and Grassfed<sup>2</sup></b><br>Bison, Game<br>Lamb Roast or Leg<br>Spare Ribs<br>Flank Steak, Brisket        | 1                      | 2.5        | 134 or higher | 56.5 or higher | 8-10 hrs | 12-24 hrs |
|   | 2.75                   | 7          | 134 or higher | 56.5 or higher | 10 hrs   | 24-48 hrs |
|   | 2                      | 5          | 134 or higher | 56.5 or higher | 24 hrs   | 48-72 hrs |
|   | 1                      | 2.5        | 134 or higher | 56.5 or higher | 8 hrs    | 24 hrs    |
|   | 2                      | 5          | 134 or higher | 56.5 or higher | 12 hrs   | 30 hrs    |
| <b>PORK</b>   |                        |            |               |                |          |           |
| Tenderloin  | 1.5                    | 4          | 134 or higher | 56.5 or higher | 90 min   | 6-8 hrs   |
| Baby Back Ribs  |                        |            | 165           | 74             | 4-8 hrs  | 24 hrs    |
| Chops, Cutlets  | 1                      | 2.5        | 134 or higher | 56.5 or higher | 2-4 hrs  | 6-8 hrs   |
|   | 2                      | 5          | 134 or higher | 56.5 or higher | 4-6 hrs  | 8-10 hrs  |
| Roast   | 2.75                   | 7          | 160-176       | 71-80          | 12 hrs   | 30 hrs    |
| Spare Ribs  | 2.75                   | 7          | 160-176       | 71-80          | 12 hrs   | 30 hrs    |
| Belly (quick)   | 2                      | 5          | 185           | 85             | 5 hrs    | 8 hrs     |
| Belly (slow)  | 2                      | 5          | 167           | 75             | 24 hrs   | 48-72 hrs |
| <b>POULTRY</b>  |                        |            |               |                |          |           |
| <b>White Meat</b>   |                        |            |               |                |          |           |
| Chicken Breast, bone in   | 2                      | 5          | 146 or higher | 63.5 or higher | 2.5 hrs  | 4-6 hrs   |
| Chicken Breast, boneless  | 1                      | 2.5        | 146 or higher | 63.5 or higher | 1 hr     | 2-4 hrs   |
| Turkey Breast, bone in  | 2.75                   | 7          | 146 or higher | 63.5 or higher | 4 hrs    | 6-8 hrs   |
| Turkey Breast, boneless   | 2                      | 5          | 146 or higher | 63.5 or higher | 2.5 hrs  | 4-6 hrs   |
| Duck Breast   | 1                      | 2.5        | 134 or higher | 63.5 or higher | 90 min   | 4-6 hrs   |
| <b>Dark Meat</b>  |                        |            |               |                |          |           |
| Chicken Leg or Thigh, bone in   |                        |            | 165-176       | 74-80          | 4 hrs    | 6-8 hrs   |
| Chicken Thigh, boneless   | 1                      | 2.5        | 165-176       | 74-80          | 2 hrs    | 4-6 hrs   |
| Turkey Leg or Thigh   |                        |            | 165-176       | 74-80          | 8 hrs    | 10 hrs    |
| Duck Leg  |                        |            | 165-176       | 74-80          | 8 hrs    | 18 hrs    |
| Split Game Hen  | 2.75                   | 7          | 150 or higher | 65.5 or higher | 6 hrs    | 8 hrs     |
| <b>SEAFOOD</b>  |                        |            |               |                |          |           |
| <b>Fish</b><br>Tuna, Halibut, Snapper, Sole,<br>Salmon, Trout, Mackerel   | 0.5 - 1                | 1.25 - 2.5 | 126 or higher | 52 or higher   | 20 min   | 30 min    |
|   | 1- 2                   | 2.5 - 5    | 126 or higher | 52 or higher   | 30 min   | 40 min    |
| <b>Crustaceans, Mollusks</b>  |                        |            |               |                |          |           |
| Lobster   | 1                      | 2.5        | 140           | 60             | 45 min   | 60 min    |
| Scallops  | 1                      | 2.5        | 140           | 60             | 40 min   | 60 min    |
| Shrimp  | jumbo                  | jumbo      | 140           | 60             | 30 min   | 40 min    |
| <b>VEGETABLES</b>   |                        |            |               |                |          |           |
| <b>Root</b><br>Carrots, Parsnips, Potato,<br>Turnips, Celery Root, Beets  | up to 1                | up to 2.5  | 183           | 84             | 1-2 hrs  | 4 hrs     |
|   | 1- 2                   | 2.5 - 5    | 183           | 84             | 2.5 hrs  | 4 hrs     |
| <b>Tender</b><br>Asparagus, Broccoli, Corn,<br>Cauliflower, Eggplant, Onions,<br>Green Beans, Fennel, Squash,<br>Fresh Peas | up to 1                | up to 2.5  | 183           | 84             | 30 min   | 1.5 hrs   |
| <b>FRUIT</b>  |                        |            |               |                |          |           |
| <b>Firm</b><br>Apple, Pear  | up to 1                | up to 2.5  | 183           | 84             | 45 min   | 2 hrs     |
| <b>Soft</b><br>Peach, Apricot, Plum, Mango,<br>Papaya, Nectarine, Berries   | up to 1                | up to 2.5  | 183           | 84             | 30 min   | 1 hr      |
| <b>EGGS<sup>3</sup></b>   |                        |            |               |                |          |           |
| Soft-cooked in shell (quick)  | large                  | large      | 167           | 75             | 15 min   | 18 min    |
| Soft-cooked in shell (slow)   | large                  | large      | 146           | 63.5           | 45 min   | 1.5 hrs   |
| Hard-cooked in shell  | large                  | large      | 160           | 71             | 45 min   | 1.5 hrs   |
| Pasteurized in shell  | large                  | large      | 135           | 57             | 1.25 hrs | 2 hrs     |
| Scrambled (5 eggs)  | large                  | large      | 167           | 75             | 20 min   | 20 min    |

<sup>1</sup> Thickness measurements are based on the thickest section of the food and measured through the vacuum-sealed pouch. Cooking times are for foods starting at refrigerator temperature. Add 15 minutes if starting from frozen.

<sup>2</sup> Tough cuts of meat will heat through to serving temperature in the same time as tender cuts. We recommend longer cooking times for lean, tough cuts to tenderize them.

<sup>3</sup> Eggs cooked in the shell should not be sealed in cooking pouches.