



How to Make Foolproof Caramel

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Whether you've been burned by caramel in the past or have questions to sort out before making your first batch, we're here to help.



By Lan Lam

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The process of caramelizing sugar, the first step in making myriad recipes from caramel sauce to caramel candy to gooey toppings and fillings, can be riddled with pitfalls. The two most common ones: The sugar can melt unevenly and burn, or it can seize up and turn grainy. Many recipes offer tweaks to prevent these mishaps, but there's little agreement on what actually works. We've tested every possible variable to get a firm grip on what makes caramel succeed or fail, and created a technique that even novice cooks will feel confident about.

What is caramel?

Caramel is nothing more than sugar that is heated until it melts, turns clear, and changes color. Granulated sugar is an odorless substance with a relatively straightforward taste, but when heated to the point at which its molecules break down, a cascade of chemical reactions occurs that transforms some of the sucrose into literally hundreds of different compounds. Some of these new compounds give the caramelized sugar rich brown color, while others contribute a slew of new complex flavors and aromas.

To make confections like caramel sauce or caramel candy, you add dairy ingredients like butter or cream to the caramelized sugar, and the complexity of flavors and aromas increases even more. The sugars participate with the proteins and amino acids in the dairy in Maillard browning reactions, which create hundreds of other new compounds.

How do you make caramel?

There are two common approaches to making caramel. With a so-called “dry” caramel, sugar is heated alone. We recommend a “wet” caramel, whereby water is added to the pan with the sugar. With a dry caramel, you run the risk that the sugar will melt unevenly and some will burn. Adding a little water helps the sugar distribute more evenly around the pan, so it will melt and caramelize evenly. We also add corn syrup to help prevent crystallization (more on that below).

WHAT'S THE DIFFERENCE BETWEEN CARAMEL AND DULCE DE LECHE?

Dulce de leche is a type of caramel sauce made by simmering milk and sugar or sweetened condensed milk until it thickens and browns. Though it resembles caramel sauce in appearance, it does not have caramel’s subtly bitter complexity. Its sweetness is mellow and milky.



Transforming sugar into caramel: The sugar is heated until it melts (left), turns clear (middle), and changes color (right). We make a so-called "wet caramel" by adding water to the pot with the sugar, which helps the sugar dissolve more evenly.

What equipment do you need to make caramel?

We've found that for the most foolproof results, an **instant-read thermometer** and a **heavy-bottomed pot** are essential.

Taking the caramel's temperature with an instant-read thermometer, which we prefer to a candy thermometer for its speed and accuracy, is the only way to guarantee you get exactly the results you're looking for. While many recipes recommend gauging the caramel's doneness simply by color, we've found color can be misleading, since factors such as the depth of the pan and its finish can influence how light or dark the caramel looks. (Learn more [here](#).) A heavy-bottomed pot is also critical, as lightweight cookware heats unevenly and creates hot spots where the sugar can burn.



HOW DO YOU CHECK THE CARAMEL'S TEMPERATURE?

1. To ensure an accurate reading, swirl the caramel to even out any hot spots.
2. Tilt the pan so that the caramel pools 1 to 2 inches deep.
3. Move the thermometer back and forth in the caramel for about 5 seconds before taking a reading.

What heat level should you use for cooking caramel?

Cooking caramel over low heat may seem like it's the safest bet, since over high heat, the sugar can go from just right to burnt in a flash. But using low heat makes the process tediously long, which is why we use two heat levels:

- We first melt the sugar over **medium-high heat**.
- We then reduce the heat to **low** when the caramel begins to turn straw-colored, which provides a wider window for nailing the exact temperature.

How do you prevent caramel from turning grainy?

There's nothing more disappointing than having your caramel turn out cloudy and grainy (or crystallized) instead of smooth and glossy. Here's why that can happen: The sucrose molecules in table sugar have a strong tendency to cling together in dense, orderly crystals. When they're dissolved in water, they can't crystallize, but at the edges of the pan and at the surface of the syrup, water evaporates as the syrup cooks. This allows the sucrose to crystallize in those areas. These crystals can trigger further crystallization, for a caramel that's grainy.

You can think of the identical sucrose molecules as bricks that can easily fit together to form a larger structure. The best way to prevent crystallization is to make sure that other shapes of sugar molecules—not only sucrose—are present. The effect is like mixing round rocks into a box full of rectangular bricks: The bricks can no longer fit together neatly.



A properly cooked caramel will look smooth and glossy versus cloudy and grainy.

There are two common approaches to preventing crystallization:

- **Add an acidic ingredient such as lemon juice to the sugar.** This causes some of the sucrose molecules to break down into different sugar molecules (fructose and glucose), which interfere with sucrose crystallization.
- **Our preferred method: Replace some of the sugar with corn syrup.** Corn syrup is made up of water, glucose molecules and chains of glucose molecules, all of which dilute the sucrose molecules and help prevent crystal formation.

SHOULD YOU BRUSH DOWN THE SIDES OF THE PAN OR COVER IT WHEN MAKING CARAMEL?

Brushing the walls of the pot with a wet pastry brush and covering the saucepan to create condensation are both meant to “rinse” away any sugar molecules that might be clinging to the sides and could cause crystallization, but with our updated method, no sugar should attach to the walls in the first place.

Should you stir caramel as it cooks?

Stirring caramel as it cooks isn't necessary—and it can even be detrimental, as it can cause the sugar solution to splash onto the sides of the pan, where the water will evaporate quickly and the sugar can form back into crystals. If even one of those crystals drops into the syrup, it can trigger the formation of new crystals and turn the clear liquid grainy. Even though adding corn syrup (see above) can prevent such crystallization from occurring, it's best not to disturb the melted sugar until it begins to color. At that point, most of the water has cooked out, so we don't have to worry about it evaporating off the sides and forming crystals, and we can swirl the pan occasionally to even out any hot spots.



Candy is likely the first thing that comes to mind when you think of caramel—but there are savory applications as well. We've developed some easy recipes, such as [Spicy Caramel](#)

Popcorn and Caramel-Braised Shallots with Black Pepper, that demonstrate the versatility of our All-Purpose Caramel.

How do you know when caramel is done?

It depends on the type of flavor you want. When sugar first starts to caramelize (at around 340 degrees), it will taste mild and buttery and still very sweet. As the temperature continues to climb with more cooking, even more sugar molecules break down and the caramel will begin to taste markedly more complex and less sweet. Eventually more and more bitter, potent-tasting molecules will form that, if left unchecked, can make the caramel taste acrid and burnt.

- **For most recipes, we cook the sugar to between 360 and 375 degrees**, which allows for plenty of rich complex flavors to be created with minimal bitterness.
- **In certain savory applications, bringing the caramel as high as 390 degrees may be desirable.** For the sauce in our **Vietnamese-Style Caramel Chicken with Broccoli**, we found a higher temperature gave the caramel a bitter edge that was appealing in this dish.

How do you prevent caramel from burning?

Even if you nail the temperature of the caramel and immediately take it off the burner, the caramel will continue to cook—and can still burn. **The key is to quickly stir in the liquid ingredient(s) or butter**, which will rapidly absorb some of the heat and slow the cooking process. But get ready for the mixture to bubble vigorously.



IT WILL BUBBLE, BUT DON'T WORRY!

Prepare yourself for some drama—a puff of steam and some vigorous bubbling—when you add the liquid to the caramelized sugar. It can look impressive, but it's merely a visual cue that the liquid is absorbing a lot of the heat from the caramel and essentially arresting the cooking process, which prevents the caramel from burning. There is nothing to fear: Once you stir the caramel, the theatrics will quickly die down.

Can caramel go bad?

Over time, butter or cream added to a caramel can go rancid and impact its taste. For the best quality, we recommend storing our **All-Purpose Caramel Sauce** in the refrigerator for no more than 2 weeks.

What's the best way to clean the pan after making caramel?

- **The fastest way:** Fill the pan about $\frac{1}{3}$ full of water and bring it to a simmer over medium heat, stirring frequently. Do not use high heat: Caramel at the bottom of the pan will heat quickly, and any water in contact with that bottom layer will turn to steam and splatter as it escapes.
- **The easiest way:** Fill the pan with water and let it soak overnight. Wipe away sticky bits with a soapy sponge.