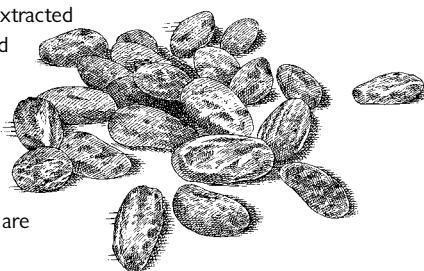


# Chocolate 101

From shopping to chopping, our no-nonsense guide puts an end to chocolate confusion. BY SEAN LAWLER

## Chocolate Basics

*Chocolate liquor*, a dark, pasty liquid made by grinding the nibs extracted from dried, fermented, roasted cacao beans, is pure, unsweetened chocolate, the base ingredient for all other processed chocolates. About 55 percent of chocolate liquor is *cocoa butter*, a natural fat responsible for chocolate's unique texture. Its melting point is close to body temperature, which explains why chocolate melts so smoothly in your mouth but stays solid and shelf-stable at room temperature. Suspended in the cocoa butter are particles of ground *cocoa solids*, which carry the chocolate flavor.



## Chocolate Buyer's Guide

Given the many types of chocolates available in stores today, people often want to know how they differ and whether one can be readily substituted for another. The first question is fairly straightforward (and answered in these pages), the second one is anything but. Different types of chocolate vary tremendously in flavor, and their behavior in recipes can be fussy and unpredictable. For this reason, *Cook's* recipes often employ more than one type of chocolate to achieve complex, multifaceted flavor. That said, we've provided some of the standard substitution formulas below.

## UNSWEETENED CHOCOLATE

**What It Is:** Pure chocolate liquor that has been cooled and formed into bars.

**Cooking Tip:** Because most unsweetened chocolates are starchy and unrefined (see "Conching," below right), unsweetened chocolate is the traditional choice for recipes in which a bold hit of chocolate flavor is more important than a smooth or delicate texture (think brownies).

**Substitution:** Replace 1 ounce unsweetened chocolate with 3 tablespoons cocoa powder + 1 tablespoon butter or oil.

**CAUTION:** This substitution ignores the many important differences between butter, oil, and cocoa butter. A pan of fudgy brownies made with cocoa powder and butter will usually turn out cake-like and dry. (Best for small-quantity substitutions.)

**TEST KITCHEN WINNER:**  
★ SCHARFFEN BERGER Unsweetened Chocolate, \$11.00 for 9.7 ounces



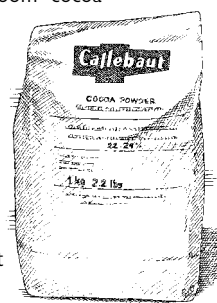
## COCOA POWDER

**What It Is:** Chocolate liquor fed through a press to remove all but 10 to 24 percent of the cocoa butter. To counter the harsh, acidic flavor of natural cocoa, the powder is sometimes treated with an alkaline solution, or "Dutched." Cookbooks often claim that Dutching "mellows" chocolate flavor, but our tasters disagreed. Without the distraction of natural cocoa's harsh acidity, the more subtle, complex chocolate flavors came to the fore. We think Dutched cocoa tastes best, although it is interchangeable with natural cocoa.

**Cooking Tip:** Cocoa powder contributes a lot of chocolate flavor with little additional fat, making it perfect for hot beverages or recipes that already contain plenty of butter, such as cakes and cookies. In the test kitchen, we often "bloom" cocoa powder in a hot liquid such as water or coffee. This dissolves the remaining cocoa butter and disperses water-soluble flavor compounds. The result? A deeper, stronger chocolate flavor.

**Substitution:** None. Chocolates have too much fat to take the place of cocoa.

**TEST KITCHEN WINNER:**  
★ CALLEBAUT, \$20 for 2.2 pounds (mail order)  
**Best Supermarket Brand:** DROSTE Cocoa, \$5.49 for 8.8 ounces



## WHITE CHOCOLATE

**What It Is:** Technically not chocolate because it contains no cocoa solids. To meet government standards for "white chocolate," this product must contain at least 20 percent cocoa butter, which is usually deodorized to remove any naturally occurring flavors that might overwhelm white chocolate's mild flavors of milk, sugar, and vanilla.

**TEST KITCHEN WINNER:**  
★ CALLEBAUT, \$8 for 1 pound



## WHITE CHOCOLATE CHIPS

**What It Is:** Many "white chips" contain palm oil in addition to (or instead of) cocoa butter and do not qualify as "white chocolate." We prefer the brands with the most fat, be it cocoa butter or palm oil, for their softer texture, especially in cookies or brownies eaten straight from the oven.

**TEST KITCHEN WINNER:**  
★ GUITTARD Choc-Au-Lait White Chips, \$2.79 for 12 ounces



## MILK CHOCOLATE

**What It Is:** Candy bar chocolate. Milk chocolate must contain at least 10 percent chocolate liquor and 12 percent milk solids.

**Cooking Tip:** Because of its relatively weak chocolate flavor (milk chocolate is usually more than 50 percent sugar), we don't use it in very many recipes. Good for nibbling.

**TEST KITCHEN WINNER:**  
★ PERUGINA Milk Chocolate, \$2.59 for 4 ounces



## SWEET CHOCOLATE

**What It Is:** Think milk chocolate without the milk. Also called sweet dark chocolate, it is just that—extremely sweet. While it must contain at least 15 percent chocolate liquor, it is often more than 60 percent sugar. Sweet chocolate is sold by the Baker's company as German's Sweet Chocolate Bar.

**Cooking Tip:** We have little use for the stuff, even in our German Chocolate Cake recipe.

**Conching** The transformation of bitter, unsweetened chocolate liquor into the sweetened milk and dark chocolates on store shelves takes place through a refinement process called *conching*. Sugar, vanilla, soy lecithin (an emulsifier), and other ingredients (including a supplement of pure cocoa butter) are added to the chocolate liquor, and the mixture is rubbed and smeared against rollers until homogenous and smooth. The process also aerates and heats the chocolate, driving off some of the volatile compounds responsible for chocolate's natural bitterness. The result is a smooth-melting chocolate with a mellower, more palatable flavor. The U.S. Food and Drug Administration has divided sweetened chocolates into several broadly defined categories: milk chocolate, sweet chocolate, and bittersweet/semisweet chocolate.

## BITTERSWEET/SEMISWEET CHOCOLATE

**What It Is:** A catch-all category. The government makes no distinction between “bittersweet” and “semisweet” chocolates. To be called by either name, the chocolate must contain at least 35 percent chocolate liquor, though most contain closer to 50 percent and many “high-percentage” chocolates have 70 percent chocolate liquor or more. If comparing chocolates made by the same company, it is fairly safe to assume that the bittersweet variety contains more chocolate liquor than the semisweet; otherwise, the terms are of little value.

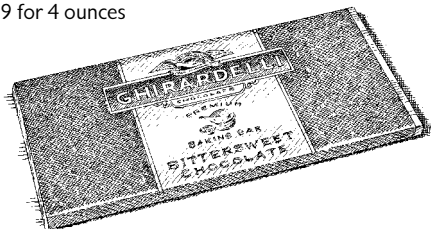
**Cooking Tips:** With relatively strong chocolate flavor and a smooth texture when melted, these are the chocolates to use for sauces, frostings, custards, and icings. While many tasters enjoyed the complex flavors of the expensive, high-percentage chocolates eaten raw, for cooking we preferred the chocolates that were proportionally higher in sugar. Ghirardelli Bittersweet, our test kitchen favorite, is 44 percent sugar, while most of the high-percentage entrants in our tasting were 30 to 35 percent sugar.

**Substitution:** Replace 1 ounce bittersweet or semisweet chocolate with  $\frac{2}{3}$  ounce unsweetened chocolate + 2 teaspoons granulated sugar.

**CAUTION:** Because it has not been conched, unsweetened chocolate will not provide the same smooth, creamy texture as bittersweet or semisweet chocolate.

### TEST KITCHEN WINNER:

★ GHIRARDELLI Bittersweet Chocolate, \$2.29 for 4 ounces



## CHOCOLATE CHIPS

**What It Is:** Real semisweet or bittersweet chocolate, only with a slightly lower fat content (about 27 percent), which improves the chips' stability. Some manufacturers replace a portion of the cocoa butter with palm or other vegetable oils at the expense of texture.

**Cooking Tip:** While we don't recommend using chips in chocolate sauces or puddings, they do produce acceptable results when substituted for bittersweet or semisweet chocolate in a simple brownie recipe.

**Substitution:** Chop up bar chocolate for cookies when chocolate chips are not on hand.

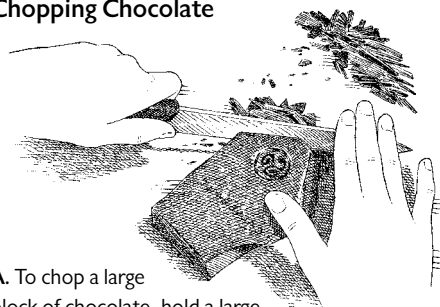
### TEST KITCHEN WINNERS:

★ GUITTARD Semisweet Chocolate Chips, \$2.79 for 12 ounces, and NESTLÉ Semisweet Chocolate Chunks, \$2.50 for 11.5 ounces

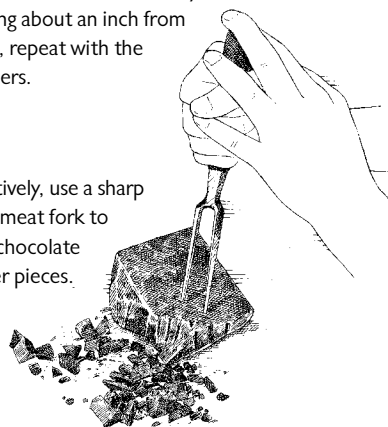


## Working with Chocolate

### Chopping Chocolate



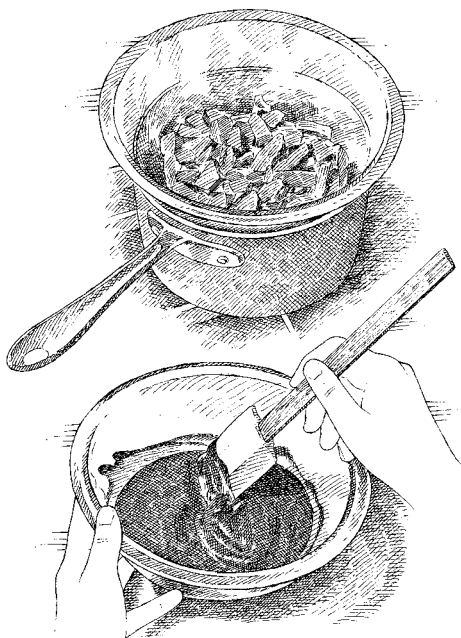
**A.** To chop a large block of chocolate, hold a large knife at a 45-degree angle to one of the corners and bear down evenly. After cutting about an inch from the corner, repeat with the other corners.



**B.** Alternatively, use a sharp two-tined meat fork to break the chocolate into smaller pieces.

### Melting Chocolate

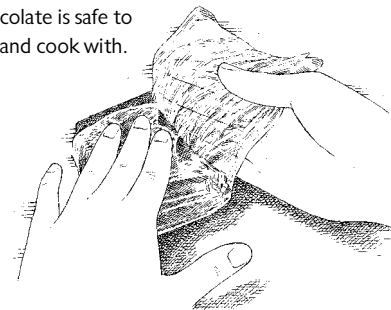
**A. Double Boiler:** The traditional method for melting chocolate is in a heatproof bowl set over a pot of barely simmering water. Stir occasionally.



**B. Microwave:** Microwave chopped chocolate at 50 percent power for 2 minutes. Stir chocolate and continue heating until melted, stirring once every additional minute. If melting butter with chocolate, add the butter at the 2-minute mark when stirring the chocolate.

### Storing Chocolate

Never store chocolate in the refrigerator or freezer, as cocoa butter can easily pick up off flavors from other foods. If chocolate is exposed to rapid changes in humidity or temperature, sugar or fat may dissolve and migrate, discoloring the surface. This cosmetic condition, known as *bloom*, is not harmful—bloomed chocolate is safe to eat and cook with.

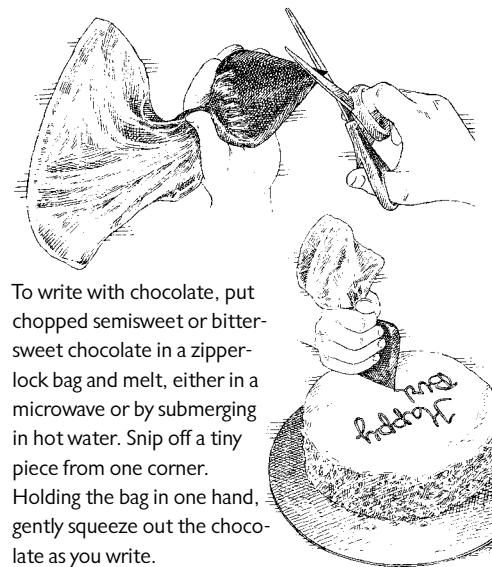


To extend the life of chocolate, wrap it tightly in plastic and store it in a cool, dry place. Milk and white chocolates should last for six months to a year; dark chocolates will last for several years.

### Decorating with Chocolate



To create chocolate curls for cake decorating, scrape a block of chocolate with a sharp paring knife, anchoring the block carefully with your other hand. Pick up the shavings with a toothpick or tweezers.



To write with chocolate, put chopped semisweet or bittersweet chocolate in a zipper-lock bag and melt, either in a microwave or by submerging in hot water. Snip off a tiny piece from one corner. Holding the bag in one hand, gently squeeze out the chocolate as you write.