

6.7: Cheese

Cheese is a concentrated dairy product made from fluid milk and is defined as the fresh or matured product obtained by draining the [whey](#) after coagulation of casein.

Cheese making consists of four steps:

1. Curdling of the milk, either by enzyme (rennet) or by lactic curdling (natural process)
2. Draining in which the whey (liquid part) is drained from the curd (firm part)
3. Pressing, which determines the shape
4. Ripening, in which the rind forms and the curd develops flavor

Cheese can be classified, with some exceptions, into five broad categories, as follows. Examples are given of specific cheeses that may be used in baking.

1. Fresh cheese: High moisture content and no ripening characterize these products. Examples: cottage cheese, baker's cheese, cream cheese, quark, and ricotta.
2. Soft cheeses: Usually some rind, but with a soft interior. Example: feta.
3. Semi-soft cheeses: Unripened cheeses of various moisture content. Example: mozzarella.
4. Firm cheeses: Well-ripened cheese with relatively low moisture content and fairly high fat content. Examples: Swiss, cheddar, brick.
5. Hard cheeses: Lengthy aging and very low moisture content. Example: Parmesan.

In baking, cheeses have different functions. Soft cheeses, mixed with other ingredients, are used in fillings for pastries and coffeecakes. They are used for certain European deep-fried goods, such as cannoli. They may also be used, sometimes in combination with a richer cream cheese, for cheesecakes. All the cheeses itemized under fresh cheese (see above) are all more or less interchangeable for these functions. The coarser cheese may be strained first if necessary. The firmer cheeses are used in products like cheese bread, quiches, pizza, and cheese straws.

A brief description of the cheeses most likely to be used by bakers follows.

Dry Curd Cottage Cheese

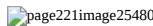
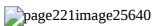
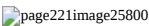
This is a soft, unripened, acid cheese. Pasteurized skim milk is inoculated with lactic-acid-producing bacteria, and a milk-clotting enzyme ([rennet](#)) is added. Following incubation, the milk starts to clot, and it is then cut into cubes. After gentle cooking, the cubes or curds become quite firm. At this point, the whey is drained off, and the curd is washed and cooled with cold water.

Creamed Cottage Cheese

Creamed or dressed cottage cheese consists of dry curd cottage cheese combined with a cream dressing. The milk fat content of the dressing determines whether the final product is "regular" (4% milk fat) or low fat (1% to 2% milk fat).

Baker's Cheese

This is a soft, unripened, uncooked cheese. It is made following exactly the same process as for dry curd cottage cheese, up to and including the point when the milk clot is cut into cubes. This cheese is not cooked to remove the whey from the curd. Rather, the curd is drained through cloth bags or it may be pumped through a curd concentrator. The product is then ready to be packaged. The milk fat content is

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generally about 4%.

Quark

Quark (or quarg) is a fresh unripened cheese prepared in a fashion similar to cottage cheese. The mild flavor and smooth texture of quark make it excellent as a topping or filling for a variety of dishes. Quark is similar to baker's cheese, except acid is added to it (it is inoculated with lactic-acid-producing bacteria), and then it is blended with straight cream to produce a smooth spread

containing approximately 7% milk fat. Today there are low-fat quarks with lower percentage, and high-fat versions with milk fat adjusted to 18%. Quark cheese can often be used in place of sour cream, cottage cheese, or ricotta cheese.

Cream Cheese

Cream cheese is a soft, unripened, acid cheese. A milk-and-cream mixture is homogenized and pasteurized, cooled to about 27°C (80°F), and inoculated with lactic-acid-producing bacteria. The resulting curd is not cut, but it is stirred until it is smooth, and then heated to about 50°C (122°F) for one hour. The curd is drained through cloth bags or run through a curd concentrator. Regular cream cheese is fairly high fat, but much lighter versions exist now.

Ricotta

Ricotta is a fresh cheese prepared from either milk or whey that has been heated with an acidulating agent added. Traditionally lemon juice or vinegar was used for acidulation, but in commercial production, a bacterial culture is used. The curds are then strained and the ricotta is used for both sweet and savory applications.

Mascarpone

Mascarpone is a rich, fresh cheese that is a relative of both cream cheese and ricotta cheese. Mascarpone is prepared in a similar fashion to ricotta, but using cream instead of whole milk. The cream is acidified (often by the direct addition of tartaric acid) and heated to a temperature of 85°C (185°F), which results in precipitation of the curd. The curd is then separated from the whey by filtration or mechanical means. The cheese is lightly salted and usually whipped. Note that starter culture and rennet are not used in the production of this type of cheese. The high-fat content and smooth texture of mascarpone cheese make it suitable as a substitute for cream or butter. Ingredient applications of mascarpone cheese tend to focus on desserts. The most famous application of mascarpone cheese is in the Italian dessert tiramisu.

Table 1 provides the composition of various types of cheeses.

Table 1 Composition of various cheeses (% by weight)

	Moisture %	Milk Fat %	Salt %
Dry curd cottage cheese	80	0.4	n/a
Regular creamed cottage cheese	79	4	1
Low fat (1% and 2%) creamed cottage cheese	79	1-2	1
Baker's cheese	79	4	1
Quark	72	5-7	n/a
Quark (high fat)	59	18	n/a
Cream cheese	54 (varies)	17- 37	1
Ricotta	72-75	8-13	n/a

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Mascarpone	46	60-75	1
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