

Cheese

Varieties & Definitions

Pasteurized process cheese, cheese food, cheese spread and cold pack are made by blending one or more different kinds of natural cheese into a homogeneous mass. Through the addition of other optional ingredients such as salt and emulsifier, the appearance, texture and flavor of the cheese mass is modified. These cheeses are available in a variety of color intensities and flavors tailored to a variety of food processing applications.

Natural and process cheese may be served alone. It may act as a base for dips or a flavorful complement to bland foods like pasta or potatoes. Cheese can be a piquant seasoning on vegetables and in meats and sauces. It also is filling in desserts and some bakery products.

Cheese Powder

Cheese powder, or dehydrated cheese, is prepared using a single cheese variety or a blend of various cheeses. Products may be all cheese, or a blend of cheese with other dairy ingredients (i.e., whey, nonfat dry milk, etc.), food ingredients and/or color. Some typical applications for cheese powders include prepared dry mixes, sauces and snack foods.

Enzyme-Modified Cheese

Enzyme-modified cheeses are special flavor ingredients that blend lipases (natural food-grade enzymes) together with natural cheese to intensify the effect of cheese flavor development. Available in paste or powder form, applications include flavor enhancement of pasteurized process cheese and cheese sauce, salad dressing and snack foods.

Cheese Analogs

Cheese analogs, or cheese substitutes, are cheeselike products made with nondairy ingredients such as corn oil. These nondairy cheeses are often less expensive than traditional natural cheese, but also have less flavor and poor melting performance.

The following table highlights the name, origin, characteristics and mode of serving of commonly used varieties of cheese.

Name, Origin, Characteristics and Mode of Serving of Commonly Used Varieties of Cheese

Name	Origin	Consistency & Texture	Color & Shape	Flavor	Basic Ingredients	Normal Ripening Period	Mode of Serving
American, Pasteurized Process	United States	Semisoft to soft; smooth, plastic body	Light yellow to orange; square slices	Mild	Cheddar, washed, Colby or granulated (stirred curd) or mixture of two or more cow's milks (whole or lowfat)	Unripened after cheese(s) heated to blend	In sandwiches, on crackers
Asiago, Fresh, Medium, Old	Italy	Semisoft (fresh), medium or hard (old); tiny gas holes or eyes	Light yellow; may be coated with paraffin, clear or colored black or brown; round and flat	Piquant, sharp in aged cheese	Cow's milk (whole or lowfat)	60 days minimum for fresh (semisoft); 6 months minimum for medium; 12 months minimum for old	Table cheese, as seasoning (grated) when aged
Bel paese	Italy	Soft; smooth, waxy body	Slightly gray surface, creamy yellow interior; small wheels	Mild to moderately robust	Cow's milk (whole)	5-8 weeks	Dessert, on crackers, in sandwiches, with fruit
Blue, Bleu	France	Semisoft; visible veins of mold on white cheese; pasty; can be crumbly	Whitemarbled with blue-green mold; cylindrical	Piquant, tangy, spicy, peppery	Cow's milk (whole) or goat's milk	60 days minimum; 3-4 months usually; 9 months for more flavor	Dessert, dips, in cooked foods, salads, dressing
Breakfast, Frühstück	Germany	Soft; smooth, waxy body	Cylindrical (2.5 to 3 inches diameter)	Strong, aromatic	Cow's milk (whole or lowfat)	Little or none (either)	Dessert, on crackers, in sandwiches
Brick	United States	Semisoft; smooth, open texture; numerous round, irregular-shaped eyes	Light yellow to orange; brick-shaped	Mild but pungent and sweet	Cow's milk (whole)	2-3 months	In sandwiches, salads, slices
Brie	France	Soft; thin, edible crust; creamy interior	White crust, creamy yellow interior; large, medium and small wheels	Mild to pungent	Cow's milk (whole, lowfat or skim)	4-8 weeks	Dessert
Caciocavallo	Italy	Hard, firm body; stringy texture	Light tan surface, interior; molded into shapes, typically spindle-shaped or oblong	Sharp, similar to provolone	Sheep's, goat's or cow's milk (whole or lowfat) or mixtures of these	3 months minimum for table use; 12 months or longer for grating	As seasoning, dessert
Camembert	France	Soft, almost fluid in consistency; thin, edible crust; creamy interior	Gray-white crust, creamy yellow interior; small wheels	Mild to pungent	Cow's milk (whole)	4-5 weeks	Dessert
Cheddar	England	Hard; smooth, firm body; can be crumbly	Nearly white to orange; varied shapes and styles	Mild to sharp	Cow's milk (whole)	60 days minimum; 3-6 months usually; 12 months or longer for sharp flavor	In sandwiches, cooked foods
Colby	United States	Hard, but softer and more open in texture than Cheddar	White to light yellow, orange; cylindrical	Mild to mellow	Cow's milk (whole)	1-3 months	In sandwiches, cooked foods
Cottage, Dutch Farmers, Pot	Uncertain	Soft; moist; delicate; large or small curds	White; package in cuplike containers	Mild, slightly acid, flavoring may be added	Cow's milk (skim); cream dressing may be added	Unripened	In salads, dips, on crackers
Cream	United States	Soft; smooth, buttery	White; foil-wrapped in rectangular portions	Mild, slightly acid, flavoring may be added	Cream and cow's milk (whole)	Unripened	Salads, sandwiches, on crackers
Edam	Holland	Semisoft to hard; firm, crumbly body; small eyes	Creamy yellow with natural or red paraffin coat; flattened ball or loaf shape, about 4 lbs.	Mild, sometimes salty	Cow's milk (lowfat)	2 months or longer	On crackers, with fresh fruit
Feta	Greece	Soft, flaky, similar to very dry, high-acid cottage cheese	White	Salty	Cow's, sheep's or goat's milk	4-5 days to 1 month	In cooked foods
Gammelost	Norway	Semisoft	Brownish rind, brown-yellow interior with a blue-green tint; round and flat	Sharp, aromatic	Cow's milk (skim)	4 weeks or longer	As such
Gjetost	Norway	Hard; buttery	Golden brown; cubical and rectangular	Sweet, caramel	Whey from goat's milk	Unripened	On crackers
Gorgonzola	Italy	Semisoft, less moist than blue	Light tan surface, light yellow interior, marbled with blue-green mold; cylindrical and flat loaves	Piquant, spicy, similar to blue	Cow's milk (whole) or goat's milk or a mixture of these	3 months minimum, frequently 6 months to 1 year	Dessert
Gouda	Holland	Hard, but softer than Cheddar; more open mealy body like Edam; small eyes	Creamy yellow with or without red wax coat; oval or flattened sphere of about 10 to 12 lbs.	Mild, nutlike, similar to Edam	Cow's milk (lowfat); but more milkfat than Edam	2-6 months	On crackers, with fruit, cooked dishes
Gruyere	Switzerland	Hard; tiny gas holes or eyes	Light yellow; flat wheels	Mild, sweet	Cow's milk (whole)	3 months minimum	Dessert, fondue
Limburger	Belgium	Semisoft; smooth, waxy body	Creamy white interior, brownish exterior; rectangular	Strong, robust, highly aromatic	Cow's milk (whole or lowfat)	1-2 months	In sandwiches, on crackers
Monterey Jack	United States	Semisoft (whole), hard (lowfat or skim); smooth texture with small openings throughout	Creamy white; rectangular or round	Mild to mellow	Cow's milk (whole, lowfat or skim)	3-6 weeks for table use; 6 months minimum for grating	In sandwiches, grating cheese if made from lowfat or skim milk
Mozzarella	Italy	Semisoft; plastic	Creamy white; rectangular and spherical, may be molded into various shapes	Mild, delicate	Cow's milk (whole or lowfat); may be acidified with vinegar	Unripened to 2 months	In cooking, pizza, as such
Muenster	Germany	Semisoft; smooth, waxy body; numerous small mechanical openings	Yellow, tan or white surface, creamy white interior; cylindrical and flat or loaf-shaped; small wheels and blocks	Mild to mellow; between brick and Limburger	Cow's milk (whole)	2-8 weeks	As such, in sandwiches
Neufchatél	France	Soft; smooth, creamy	White; foil-wrapped in rectangular retail portions	Mild	Cow's milk (whole or skim) or a mixture of milk and cream	3-4 weeks or unripened	In sandwiches, dips, salads
Parmesan, Reggiano	Italy	Very hard (grating); granular; hard, brittle rind	Light yellow with brown or black coating; cylindrical	Sharp, piquant	Cow's milk (lowfat)	10 months minimum	Grated cheese on salads and soups
Port du Salut, Oka	Trappist Monasteries	Semisoft; smooth, buttery	Russet surface, creamy white interior; small wheels, cylindrical and flat	Mellow or mild to robust, similar to gouda	Cow's milk (whole or lowfat)	6-8 weeks	Dessert, with fresh fruit, on crackers
Primost	Norway	Semisoft	Light brown; cubical and cylindrical	Mild, sweet caramel	Whey with buttermilk added, whole milk or cream	Unripened	As such, in cooked foods
Provolone	Italy	Hard, stringy texture; cuts without crumbling; plastic	Light golden yellow to golden brown, shiny surface bound with cord; yellow-white interior; various shapes and sizes (pear, sausage, salami)	Bland acid flavor to sharp and piquant, usually smoked	Cow's milk (whole)	6-14 months	Dessert, grating
Queso Blanco, White	Latin America	Soft, dry and granular if not pressed; hard, open or crumbly if pressed	White; various shapes and sizes	Salty, strong, may be smoked	Cow's milk (whole, lowfat or skim) or whole milk with cream or skim milk	Eaten within 2 days to 2 months or more, generally unripened if pressed	As such or later grated
Ricotta	Italy	Soft, moist and grainy or dry	White; packaged fresh in paper, plastic or metal containers, or dry for grating	Bland, but semisweet	Whey and whole or skim milk or whole and lowfat milk	Unripened	In cooked foods, as seasoning (grated)
Romano	Italy	Very hard; granular interior; hard, brittle rind	Round with flat sides; various sizes	Sharp, piquant if aged	Cow's milk (usually lowfat), goat's milk or mixtures of these	5 months minimum; 5-8 months for table cheese; 12 months minimum for grating cheese	As such, grated and used for seasoning
Roquefort	France	Semisoft, pasty and sometimes crumbly	White, marbled with blue-green mold; cylindrical	Sharp, spicy (peppery),	Sheep's milk piquant	2 months minimum, usually 2-5 months or longer	Dessert, in salads, on crackers
Sap Sago	Switzerland	Very hard (grating); granular; frequently dried	Light green; small, cone-shaped	Sharp, pungent, flavored with leaves, sweet	Cow's milk (skim, slightly soured) with buttermilk and whey	5 months minimum	As such, as seasoning
Schloss, Castle	Germany, Austria	Soft; small; ripened	Molded in small rectangular blocks 1.5 inches square by 4 inches long	Similar to, but milder than, Limburger	Cow's milk (whole or lowfat) and/or casein	Less than 1 month; less intensively than Limburger	In sandwiches, on crackers
Stirred Curd, Granular	United States	Semisoft to hard	Varied shapes and styles	Similar to mild Cheddar	Cow's milk	1-3 months	To make pasteurized process cheese
Stilton	England	Semisoft-hard; open, flaky texture, more crumbly than blue	White, marbled with blue-green mold; cylindrical	Piquant, spicy, but milder than Roquefort	Cow's milk (whole) with added cream	4-6 months or longer	Dessert, in cooked foods
Swiss, Emmentaler	Switzerland	Hard; smooth; large gas holes or eyes with rind	Pale yellow, shiny; rindless rectangular blocks and large wheels	Mild, sweet, nutty	Cow's milk (lowfat)	2 months minimum, 2-9 months usually	In sandwiches, with salads, fondue
Washed Curd	United States	Semisoft to hard	Varied shapes and styles	Similar to mild Cheddar	Cow's milk	1-3 months	To make pasteurized process cheese

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Comparative Nutrient Content Per Serving of Cheese and Cheese Products

Cheese	Serving Size	Water (g)	Food (Kcal)	Energy (kJ)	Protein (g)	Total Lipid (g)	Total Carbohydrate* (g)	Calcium (mg)	Iron (mg)	Magnesium (mg)	Phosphorus (mg)	Potassium (mg)	Sodium (mg)	Zinc (mg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Pantothenic Acid (mg)	Vitamin B ₆ (mg)	Folacin (mg)	Vitamin B ₁₂ (mg)	Vitamin A (RE)	Vitamin A (IU)
American, Pasteurized Process	1 oz (28 g)	11.10	106	445	6.28	8.86	0.45	174	0.11	6	211	46	406	0.85	0.008	0.100	0.020	0.137	0.020	2	0.197	82	343
Blue	1 oz	12.02	100	419	6.07	8.16	0.66	150	0.09	7	110	73	396	0.75	0.008	0.108	0.288	0.490	0.047	10	0.345	65	204
Brick	1 oz	11.66	105	440	6.59	8.41	0.79	191	0.12	7	128	38	159	0.74	0.004	0.100	0.033	0.082	0.018	6	0.356	86	307
Brie	1 oz	13.73	95	396	5.88	7.85	0.13	52	0.14	6	53	43	178	—	0.020	0.147	0.108	0.196	0.067	18	0.468	—	189
Camembert	1 oz	14.68	85	355	5.61	6.88	0.13	110	0.09	6	98	53	239	0.68	0.008	0.138	0.179	0.387	0.064	18	0.367	71	262
Caraway	1 oz	11.14	107	446	7.14	8.28	0.87	191	—	6	139	—	196	—	0.009	0.128	0.051	0.054	—	—	0.077	82	299
Cheddar	1 oz	10.42	114	478	7.06	9.40	0.36	204	0.19	8	145	28	176	0.88	0.008	0.106	0.023	0.117	0.021	5	0.234	86	300
Cheese Food																							
American, Cold-Pack	1 oz	12.22	94	393	5.57	6.93	2.36	141	0.24	8	113	103	274	0.85	0.009	0.126	0.021	0.277	0.040	2	0.363	—	200
American, Pasteurized Process	1 oz	12.23	93	389	5.56	6.97	2.07	163	0.24	9	130	79	337	0.85	0.008	0.125	0.040	0.158	—	—	0.317	—	259
Swiss, Pasteurized Process	1 oz	12.38	92	383	6.21	6.81	1.28	205	0.17	8	149	81	440	1.01	0.004	0.113	0.029	0.142	—	—	0.652	—	243
Cheese Spread																							
American, Pasteurized Process	1 oz	13.51	82	345	4.65	6.02	2.48	159	0.09	8	202	69	381	0.73	0.014	0.122	0.037	0.194	0.033	2	0.113	—	223
Cheshire	1 oz	10.67	110	459	6.62	8.68	1.36	182	0.06	6	131	27	198	—	0.013	0.083	—	—	—	—	—	69	279
Colby	1 oz	10.83	112	467	6.74	9.10	0.73	194	0.22	7	129	36	171	0.87	0.004	0.106	0.026	0.000	0.022	—	0.234	78	293
Cream	1 oz	15.24	99	414	2.14	9.89	0.75	23	0.34	2	30	34	84	0.15	0.005	0.056	0.029	0.077	0.013	4	0.120	124	405
Edam	1 oz	11.78	101	423	7.08	7.88	0.40	207	0.12	8	152	53	274	1.06	0.010	0.110	0.023	0.080	0.022	5	0.435	72	260
Feta	1 oz	15.66	75	313	4.03	6.03	1.16	140	0.18	5	96	18	316	0.82	—	—	—	—	—	—	—	—	—
Fontina	1 oz	10.75	110	462	7.26	8.83	0.44	156	0.06	4	—	—	—	0.99	0.006	0.058	0.043	—	—	—	—	—	333
Gjetost	1 oz	3.81	132	552	2.74	8.37	12.09	113	—	—	126	—	170	—	—	—	0.230	—	—	1	—	—	—
Gouda	1 oz	11.75	101	423	7.07	7.78	0.63	198	0.07	8	155	34	232	1.11	0.009	0.095	0.018	0.096	0.023	6	—	49	183
Gruyere	1 oz	9.41	117	490	8.45	9.17	0.10	287	—	—	172	23	95	—	0.017	0.079	0.030	0.159	0.023	3	0.454	—	346
Limburger	1 oz	13.73	93	388	5.68	7.72	0.14	141	0.04	6	111	36	227	0.60	0.023	0.143	0.045	0.334	0.024	16	0.295	—	383
Monterey Jack	1 oz	11.63	106	443	6.94	8.58	0.19	212	0.20	8	126	23	152	0.85	—	0.111	—	—	—	—	—	—	269
Mozzarella	1 oz	15.35	80	334	5.51	6.12	0.63	147	0.05	6	105	19	105	0.63	0.004	0.069	0.024	0.018	0.016	2	0.185	68	225
Mozzarella (low moisture)	1 oz	13.72	90	378	6.12	6.98	0.70	163	0.06	6	117	21	118	0.70	0.005	0.077	0.027	0.020	0.018	2	0.206	78	256
Mozzarella (low moisture, part skim)	1 oz	13.77	79	332	7.79	4.85	0.89	207	0.07	7	149	27	150	0.89	0.006	0.097	0.034	0.026	0.022	3	0.262	54	178
Mozzarella (part skim)	1 oz	15.25	72	302	6.88	4.51	0.78	183	0.06	7	131	24	132	0.78	0.005	0.086	0.030	0.022	0.020	2	0.232	50	166
Muenster	1 oz	11.84	104	437	6.64	8.52	0.32	203	0.12	8	133	38	178	0.80	0.004	0.091	0.029	0.054	0.018	3	0.418	90	318
Neufchatel	1 oz	17.64	74	308	2.82	6.64	0.83	21	0.08	2	39	32	113	0.15	0.004	0.055	0.036	0.160	0.012	3	0.075	75	321
Parmesan, Hard	1 oz	8.27	111	465	10.14	7.32	0.91	336	0.23	12	197	26	454	0.78	0.011	0.086	0.077	0.128	0.026	2	—	—	171
Pimento, Pasteurized Process	1 oz	11.08	106	445	6.27	8.84	0.49	174	0.12	6	211	46	405	0.84	0.008	0.100	0.022	0.137	0.020	2	0.197	—	358
Port du Salut	1 oz	12.88	100	417	6.74	8.00	0.16	184	—	—	102	—	151	—	—	0.068	0.017	0.060	0.015	5	0.425	—	378
Provolone	1 oz	11.61	100	417	7.25	7.55	0.61	214	0.15	8	141	39	248	0.92	0.0005	0.091	0.044	0.135	0.021	3	0.415	75	231
Romano	1 oz	8.76	110	459	9.02	7.64	1.03	302	—	—	215	—	340	—	—	0.105	0.022	—	—	2	—	—	162
Roquefort	1 oz	11.16	105	438	6.11	8.69	0.57	188	0.16	8	111	26	513	0.59	0.011	0.166	0.208	0.491	0.035	14	0.182	—	297
Swiss (Natural)	1 oz	10.55	107	446	8.06	7.78	0.96	272	0.05	10	171	31	74	1.11	0.006	0.103	0.026	0.122	0.024	2	0.475	72	240
Swiss, Pasteurized Process	1 oz	12.00	95	396	7.01	7.09	0.60	219	0.17	8	216	61	388	1.02	0.004	0.078	0.011	0.074	0.010	—	0.348	65	229
Tilsit	1 oz	12.15	96	403	6.92	7.36	0.53	198	0.06	4	142	18	213	0.99	0.017	0.102	0.058	0.098	—	—	0.595	—	296
Cottage, Creamed	1/2 cup (113g)	89.22	117	409	14.11	5.10	3.03	68	0.16	6	149	95	457	0.42	0.024	0.184	0.142	0.241	0.076	14	0.704	54	184
Cottage, Dry Curd	1/2 cup (113g)	90.14	96	400	19.52	0.48	2.09	36	0.26	4	118	37	14	0.53	0.028	0.160	0.175	0.184	0.093	17	0.932	9	34
Ricotta, Whole Milk	1/2 cup (124g)	88.91	216	903	13.96	16.10	3.77	257	0.47	14	196	130	104	1.44	0.016	0.242	0.129	—	0.053	—	0.419	166	608

* The carbohydrate value is the difference between 100 and the sum of the percentage of water, protein, fat and ash.

Source: Agricultural Research Service, U.S. Department of Agriculture. "Composition of Food, Dairy and Egg Products: Raw, Processed, Prepared." Agricultural Handbook No. 8-1. Washington, DC: U.S. Government Printing Office. 1976.

Cheese

Varieties & Definitions

Definition of Cheese

Cheese, a concentrated dairy food made from milk, is defined as the fresh or mature product obtained by draining the whey (moisture or serum of original milk) after coagulation of casein, the major milk protein. Casein is coagulated by acid, which is produced through the addition of select microorganisms and/or by coagulating enzymes, resulting in curd formation. Milk may also be acidified by adding food-grade acidulants, which is the process often used in the manufacture of fresh cheese.

Rich, creamy and flavorful—cheese is the ingredient of choice for product developers. Available in a wide variety of tastes and textures, cheese ingredients have application in almost all food products.

When formulating prepared foods, the choice of cheese ingredient depends on the needs of the final application. Cheese is primarily used for its organoleptic contributions, but it also contributes functionally and nutritionally to the overall food product. It provides a high level of palatability, flavor and satiety.

Cheesemaking

Almost all cheese in the United States is manufactured from cow's milk (whole, lowfat, nonfat, buttermilk, cream, whey, nonfat dry milk or combination of some or all of these products), although other sources of milk (sheep and goat) are successfully utilized in cheesemaking.

The basic principles of cheesemaking are the same for all natural cheese. The object is to extract the water from milk, leaving the milk solids (fat, protein, vitamins, etc.) behind.

Different ingredients and processes employed during the making and aging of cheese result in a wide variety of available cheese, each with its own distinct texture and flavor profile. There are more than 200 varieties of cheese produced in the United States.

Natural and Pasteurized Process Cheese

Natural cheese is a general classification for cheese that is made directly from milk. In fresh, unripened cheese, the curd, separated from the whey, can be used immediately; whereas in matured or ripened cheese, the curd is further treated by the action of added select strains of bacteria, mold, yeast or a combination of these ripening agents. The bacteria, mold and yeast continue to ripen the cheese over time, changing the cheese's flavor and texture as it ages.

Because natural cheese is a living system, its functional and physical properties change over time. When choosing natural cheese as an ingredient, it's important to understand how a cheese will perform in a finished product based on its age and storage conditions.