



**United States
Department of
Agriculture**

**Agricultural
Marketing
Service**

**Dairy
Division**

United States Standards for Grades of Bulk American Cheese

Effective August 2, 1991

United States Standards for Bulk American Cheese¹

Definitions

§ 58.2455 *Bulk American cheese.*

Bulk American cheese is American cheese which is packaged in bulk form. No single piece of cheese, whatever its shape, shall weigh less than 100 pounds.

§ 58.2456 *American cheese.*

American cheese includes the following varieties of cheese:

(a) Cheddar cheese and cheddar cheese for manufacturing shall conform to the provisions of 21 CFR 133.113 and 133.114, respectively, “Cheeses and Related Cheese Products,” as issued by the Food and Drug Administration.

(b) Washed curd cheese (soaked curd cheese) and washed curd cheese for manufacturing shall conform to the provisions of 21 CFR 133.136 and 133.137, respectively, “Cheeses and Related Cheese Products,” as issued by the Food and Drug Administration.

(c) Granular cheese (stirred curd cheese) and granular cheese for manufacturing shall conform to the provisions of 21 CFR 133.144 and 133.145, respectively, “Cheeses and Related Cheese Products,” as issued by the Food and Drug Administration.

(d) Colby cheese and colby cheese for manufacturing shall conform to the provisions of 21 CFR 133.118 and 133.119, respectively, “Cheeses and Related Cheese Products,” as issued by the Food and Drug Administration.

§ 58.2457 *Packaging.*

(a) The primary container (liner) shall be new, in good condition, unbroken, fully protective of all surfaces of the cheese, and properly closed or sealed so as to protect the cheese from damage, contamination or excessive desiccation. If the cheese is handled and stored in only a primary container after cooling, there shall be a satisfactory system for cooling the cheese, retaining the desired shape, and providing reasonable protection of the cheese during transportation, storage, and handling.

¹Compliance with these standards does not excuse failure to comply with the provisions of the Federal Food, Drug and Cosmetic Act.

(b) The secondary container, when used, shall be in good condition and shall satisfactorily protect the cheese. The secondary container shall be of such construction and be filled to a sufficient level so as not to cause handling, stacking, or storage problems.

(c) If antimycotics are used, they shall be used in accordance with the provisions of Food and Drug Administration regulations (21 CFR part 133).

§ 58.2458 *Degree of curing.*

(a) *Fresh (Current)*--Cheese which is the early stages of the curing process, usually 10 to about 90 days old.

(b) *Cured (Aged)*--Cheese which has the more fully developed flavor and body attributes which are characteristic of the curing process, generally over 90 days old.

U.S. Grades

§ 58.2459 *Nomenclature of U.S. grades.*

The nomenclature of U.S. grades is as follows:

(a) U.S. Extra Grade.

(b) U.S. Standard Grade.

(c) U.S. Commercial Grade.

§ 58.2460 *Basis for determination of U.S. grades.*

(a) The determination of U.S. grades of bulk American cheese shall be based on the rating of the following quality factors:

(1) Flavor.

(2) Body and Texture.

(3) Finish and Appearance (as determined by examination of at least the filling end).

(b) The rating of each quality factor shall be established on the basis of characteristics present in a randomly selected sample representing a vat of cheese. If the cheese in a container is derived from more than one vat, the container labeling shall so indicate by showing both vat numbers, and the grade shall be determined on the basis of the lowest grade of either vat. The cheese shall be graded no sooner than 10 days after being placed into the primary container.

(c) The final U.S. grade shall be established on the basis of the lowest rating of any one of the quality factors.

§ 58.2461 *Specifications for U.S. grades.*

(a) *U.S. Extra Grade.* U.S. Extra Grade shall conform to the following requirements (also see Tables I, II, and III of this section):

(1) *Flavor.* Shall be pleasing and characteristic of the variety and type of cheese. For detailed specifications and classification of flavor characteristics, see Table I.

(2) *Body and texture.* A sample drawn from the cheese shall be firm and sufficiently compact to draw a plug for examination. For detailed specifications and classification of body and texture characteristics, see Table II.

(3) *Finish and appearance.* For detailed specifications and classification of finish and appearance characteristics, see Table III

(b) *U.S. Standard Grade.* U.S. Standard grade shall conform to the following requirements (also see Tables I, II, and III of this section):

(1) *Flavor.* Shall be pleasing but may possess certain flavor defects to a limited degree. For detailed specifications and classification of flavor characteristics, see Table I of this section.

(2) *Body and texture.* The cheese shall be sufficiently compact to draw a plug for examination; however, it may have large and connecting mechanical openings. In addition to four sweet holes, the plug sample may have scattered yeast holes and other scattered gas holes. For additional detailed specifications and classification of body and texture characteristics, see Table II of this section.

(3) *Finish and appearance.* For detailed specifications and classification of finish and appearance characteristics, see Table III of this section.

(c) *U.S. Commercial Grade.* U.S. Commercial Grade shall conform to the following requirements (also see Tables I, II, and III of this section):

(1) *Flavor.* May possess certain flavor defects to specified degrees. For detailed specifications and classification of flavor characteristics, see Table I of this section.

(2) *Body and texture.* A plug drawn from the cheese may appear loosely knit with large and connecting mechanical openings. For detailed specifications and classification of body and texture characteristics, see Table II of this section.

(3) *Finish and appearance.* For detailed specifications and classification of finish and appearance characteristics, see Table III of this section.

Table I--Classification of Flavor With Corresponding U.S. Grade

U.S. grade designation

Flavor characteristics	Fresh or current			Cured or aged		
	Extra	Standard	Commercial	Extra	Standard	Commercial
Acid	S	D	P	S	D	P
Barny	-	S	D	-	S	D
Bitter	VS	S	D	VS	S	D
Feed	S	D	P	S	D	P
Flat	-	S	D	-	S	D
Fruity	-	S	D	VS	S	D
Malty	-	S	D	-	S	D
Metallic	-	-	VS	-	-	VS
Old Milk	-	S	D	-	S	D
Onion	-	VS	S	-	VS	S
Rancid	-	S	D	-	S	D
Sour	-	-	VS	-	-	VS
Sulfide	-	S	D	VS	S	D
Utensil	-	S	D	-	S	D
Weedy	-	S	D	-	S	D
Whey Taint (Whey)	-	S	D	VS	S	D
Yeasty	-	S	D	-	S	D

(-)--Not permitted. S--Slight. P--Pronounced. VS--Very Slight. D--Definite.

Table II -- Classification of Body and Texture With Corresponding U.S. Grade

U.S. grade designation

Body and Texture Characteristics	Fresh or current			Cured or aged		
	Extra	Standard	Commercial	Extra	Standard	Commercial
Coarse	S	D	P	S	D	P
Corky	-	S	P	-	S	P
Crumbly	-	D	P	S	D	P
Curdy	D	D	P	S	D	P
Gassy	-	S	D	-	S	D
Mealy	S	D	P	S	D	P
*Open	S	P	P	S	P	P
Pasty	-	D	P	-	D	P
Pinny	-	VS	S	-	VS	S
Short	S	D	P	S	D	P
Slitty	-	S	D	-	S	D
Sweet holes	-	D	P	S	D	P
Weak	S	D	P	S	D	P

(-)--Not permitted. S--Slight. P--Pronounced. VS--Very Slight. D--Definite.

*Not applicable for Colby cheese.

**Table III--Classification of Finish and Appearance
With Corresponding U.S. Grade**
(As determined by examination of at least the filling end)

U.S. grade designation

	Fresh or Current			Cured or Aged		
Finish and appearance characteristics	Extra	Standard	Commercial	Extra	Standard	Commercial
Free Whey	S	D	P	-	S	D
Mold	-	D	D	S	D	D
Rough surface ²	S	D	P	S	D	P
Rough surface ³	D	P	P	D	P	P
Soiled surface	S	D	P	S	D	P

(-)--Not permitted. S--Slight. P--Pronounced. VS--Very Slight. D--Definite.

²Unsealed primary container.

³Sealed primary container or cheese surface treated with antimycotics.

§ 58.2462 *U.S. grade not assignable.*

Bulk American cheese shall not be assigned a U.S. grade for one or more of the following reasons:

- (a) Fails to meet or exceed the requirements for U.S. Commercial grade.
- (b) Produced in a plant which is rated ineligible for USDA grading service.
- (c) Produced in a plant which is not USDA-approved.

Explanation of Terms

§ 58.2463 *Explanation of terms.*

- (a) With respect to flavor:
 - (1) *Very slight*.--Detected only upon very critical examination.
 - (2) *Slight*.--Detected only upon critical examination.
 - (3) *Definite*.--Not intense but detectable.
 - (4) *Pronounced*.--So intense as to be easily identified.
 - (5) *Undesirable*.--Identifiable flavors in excess of the intensity permitted, or those flavors not listed.
 - (6) *Acid*.--Sharp and puckery to the taste, characteristic of lactic acid.
 - (7) *Barny*.--A flavor characteristic of the odor of a cow barn.
 - (8) *Bitter*.--Distasteful, similar to the taste of quinine.
 - (9) *Feed*.--Feed flavors (such as alfalfa, sweet clover, silage, or similar feed) in milk carried through into the cheese.
 - (10) *Flat*.--Inspid, practically devoid of any characteristic cheese flavor.
 - (11) *Fruity*.--A fermented fruit-like flavor resembling apples.
 - (12) *Malty*.--A distinctive, harsh flavor suggestive of malt.
 - (13) *Metallic*.--A flavor having qualities suggestive of metal, imparting a puckery sensation.
 - (14) *Old Milk*.--Lacks freshness.
 - (15) *Onion*.--This flavor is recognized by the peculiar taste and aroma suggestive of its name. Present in milk or cheese when cows have eaten onions, garlic, or leeks.
 - (16) *Rancid*.--A flavor suggestive of rancidity or butyric acid, sometimes associated with bitterness.
 - (17) *Sour*.--An acidly pungent flavor resembling vinegar.
 - (18) *Sulfide*.--A flavor of hydrogen sulfide, similar to the flavor of water with a high sulfur content.
 - (19) *Utensil*.--A flavor that is suggestive of improper or inadequate washing and sterilization of milking machines, utensils, or factory equipment.
 - (20) *Weedy*.--A flavor present in cheese when cows have eaten weedy hay or grazed on weed-infested pasture.

(21) *Whey-Taint (Whey)*.--A slightly acid flavor and odor characteristic of fermented whey caused by too slow expulsion of whey from the curd.

(22) *Yeasty*.--A flavor indicating yeasty fermentation.

(b) With respect to body and texture:

(1) *Very Slight*.--An attribute which is detected only upon very critical examination and present only to a minute degree.

(2) *Slight*.--An attribute which is barely identifiable and present only to a small degree.

(3) *Definite*.--An attribute which is readily identifiable and present to a substantial degree.

(4) *Pronounced*.--An attribute which is markedly identifiable and present to a large degree.

(5) *Curdy*.--Smooth but firm; when worked between the fingers is rubbery and not waxy or broken down.

(6) *Coarse*.--Feels rough, dry, and sandy.

(7) *Corky*.--Hard, tough, over-firm cheese which does not readily break down when rubbed between the thumb and fingers.

(8) *Crumbly*.--Tends to fall apart when rubbed between the thumb and fingers.

(9) *Gassy*.--Gas holes of various sizes, which may be scattered.

(10) *Mealy*.--Short body, does not mold well; looks and feels like corn meal when rubbed between the thumb and fingers.

(11) *Open*.--Mechanical openings that are irregular in shape and are caused by workmanship and not by gas fermentation.

(12) *Pasty*.--Usually weak body; when the cheese is rubbed between the thumb and fingers it becomes sticky and smeary.

(13) *Pinny*.--Numerous very small gas holes.

(14) *Short*.--No elasticity in the cheese plug; when rubbed between the thumb and fingers, it tends toward mealiness.

(15) *Slitty*.--Narrow elongated slits generally associated with a cheese that is gassy or yeasty. Sometimes referred to as "Fish-eyes."

(16) *Sweet holes*.--Spherical gas holes, glossy in appearance; usually about the size of BB shots; also known as shot holes.

(17) *Weak*.--Requires little pressure to crush, is soft but is not necessarily sticky like a pasty cheese.

(c) With respect to finish and appearance:

(1) *Free whey*.--Whey or moisture which comes from the cheese or has not been incorporated into the curd. The free whey determination shall be made on the basis of whey or moisture on the cheese or liner. The intensity is described as slight when droplets are easily detected, definite when the droplets are readily identifiable and run together, and pronounced when the droplets run together and pool.

(2) *Mold*.--Mold spots or areas that have formed on the surface of the cheese. The intensity is described as very slight when the total top surface area covered with mold is not greater than a dime; slight when the area covered is not greater than ten dimes; definite when the area is more than slight, but not greater than one-fourth of the top surface area; and pronounced when greater than one-fourth of the top surface area.

(3) *Rough surface*.--Lacks smoothness. The intensity is described as slight when the defect is easily detected, definite when readily detected; and pronounced when obvious.

(4) *Soiled surface*.--Discoloration on the surface of the cheese due to poor production or handling practices. The intensity is described as slight when the defect is detected upon critical examination; definite when easily detectable; and pronounced when easily identified and covers more than one-half of the surface.