cdfa
CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

California Milk Pricing Formulas

California's milk marketing program establishes minimum prices that processors must pay for Grade A milk received from dairy farmers. For the purposes of setting prices, there are five classes of milk that are established depending on the type of dairy product. The most significant factors in determining the minimum price that processors must pay for milk are the wholesale commercial market prices for four dairy product commodities:

1. The simple average spot price for Grade AA butter at the Chicago Mercantile Exchange (CME),
2. The California weighted average price (CWAP) for nonfat dry milk (NFDM) as reported by the California Department of Food and Agriculture (Department),
3. The simple average spot price for block Cheddar cheese at the Chicago Mercantile Exchange (CME), and
4. The simple average of the mostly price for Western dry whey (WDW) as reported by Dairy Market News (DMN).

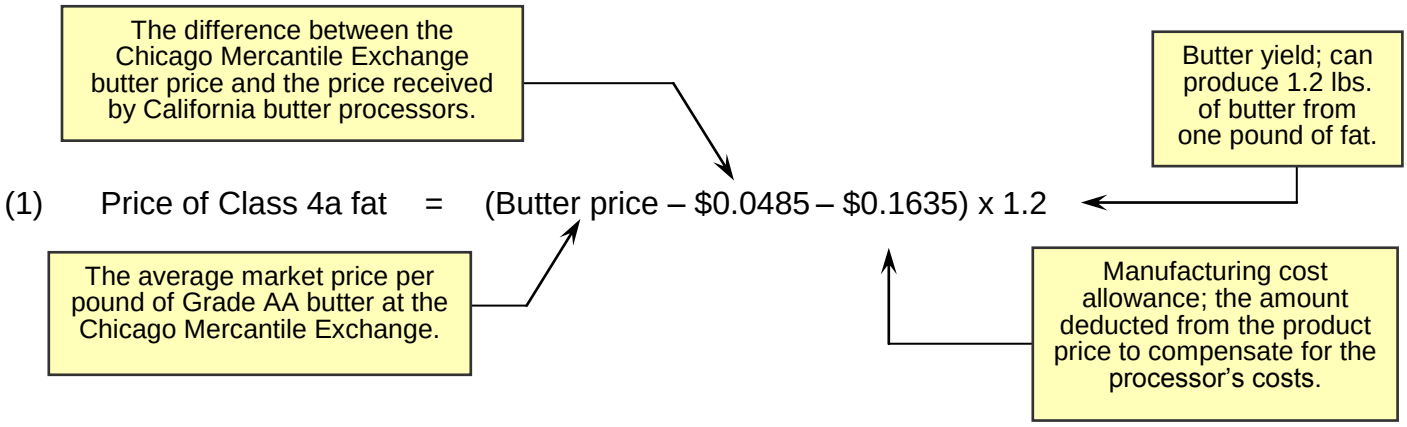
Milk consists of three basic components: butterfat (fat), solids-not-fat (SNF), and fluid carrier (water). Prices are assigned to all three components in the determination of the Class 1 milk price. Only the fat and SNF components are used to set the Class 2, 3, 4a, and 4b milk prices. Because prices are determined for individual milk components, a simple calculation must be performed to obtain the implied hundredweight price for representative milk testing 3.5% fat and 8.7% SNF. Class 1, 4a, and 4b prices are adjusted monthly, and Class 2 and 3 prices are adjusted bi-monthly.

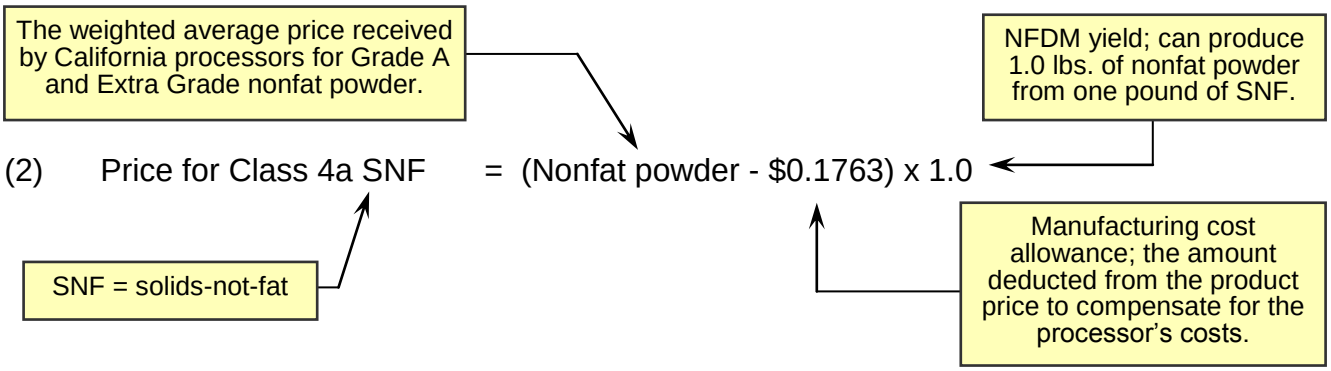
The Five Classes of Milk

- Class 1: Milk used in fluid products, including whole, reduced fat, lowfat, and nonfat milks.
- Class 2: Milk used in heavy cream, cottage cheese, yogurt, and condensed products.
- Class 3: Milk used in ice cream and other frozen products.
- Class 4a: Milk used in butter and dry milk products, such as nonfat dry milk.
- Class 4b: Milk used in cheese, other than cottage cheese, and whey products.

Class 4a Price Formula (butter and dry milk products)

Prices for butter and nonfat powder in the Class 4a formula are calculated using the period of the 26th of the prior month to the 25th of the current month.





(3) Class 4a price per 100 pounds of standardized milk (@3.5% fat and 8.7% SNF)

= (3.5 x price of Class 4a fat) + (8.7 x price of Class 4a SNF)

For any month in which the Secretary implements the collection of charges for the Milk Producers Security Trust Fund, the minimum Class 4a price shall be increased by:

- $0.0032 per pound of fat, and
- $0.0013 per pound of SNF

Class 4b Price Formula (cheese)

The Class 4b price calculation consists of four steps. The first step sets the fat component price in 4b milk to that of 4a milk. The second step determines the product value of cheese, Grade B butter, and dry skim whey per hundred pounds of milk. The third step identifies the 4b SNF price. The fourth step converts the component prices to a standardized milk price. Prices for butter, cheese, and dry whey in the Class 4b formula are calculated using the prices announced during the period of the 26th of the prior month to the 25th of the current month.

Step 1: Price of Class 4a fat = Price of Class 4b fat

The average market price per pound of Cheddar cheese at Chicago Mercantile Exchange.

The difference between the CME block Cheddar cheese price and the price that California processors receive.

Cheese yield; can produce 10.2 lbs. of cheese from 100 pounds of milk.

Step 2: Product value = (Cheddar price – $0.0252 – $0.1988) x 10.2

+ (CME AA butter – $0.10 – $0.1635) x 0.27

+ whey factor

Market price per pound of Grade AA butter at the Chicago Mercantile Exchange.

Whey butter yield; can produce 0.27 lbs of whey butter from 100 pounds of milk.

Manufacturing cost allowances; the amounts deducted from the product price to compensate for the processor's costs.

Adjustment to reflect the value of whey butter relative to CME Grade AA butter price.

Whey Value per cwt. based on the following scale, using the DMN dry whey commodity series:

DMN Monthly Average Dry Whey Price ($/lb)	Whey Factor in 4b Formula ($/cwt.)
< 0.25	0.2500
≥ 0.25 and < 0.30	0.3125
≥ 0.30 and < 0.35	0.3750
≥ 0.35 and < 0.40	0.4375
≥ 0.40 and < 0.45	0.5000
≥ 0.45 and < 0.50	0.5625
≥ 0.50 and < 0.55	0.6250
≥ 0.55 and < 0.60	0.6875
≥ 0.60	0.7500

Step 3: Price of Class 4b SNF =

Average percent of fat in milk used in Cheddar cheese plants.

$$\frac{\text{Product value} - (3.72 \times \text{Price of Class 4b fat})}{8.80}$$

Average percent of solids–not–fat in milk used in Cheddar cheese plants.

Step 4: Class 4b price per 100 pounds of standardized milk (@3.5% fat and 8.7% SNF)

= (3.5 x price of Class 4b fat) + (8.7 x price of Class 4b SNF)

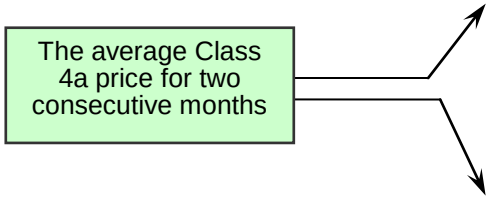
For any month in which the Secretary implements the collection of charges for the Milk Producers Security Trust Fund, the minimum Class 4b price shall be increased by:

- $0.0032 per pound of fat, and
- $0.0013 per pound of SNF

Class 3 Price Formula (frozen dairy products)

Class 3 prices are established on a bi-monthly basis prior to the beginning of each even month. For example, the February–March pricing period for Class 3 milk uses the average Class 4a component prices for December and January.

(1) Class 3 fat price = average Class 4a fat price (throughout California)



(2) Class 3 SNF price = average Class 4a SNF price + ($0.0433 throughout California)

(3) Class 3 price per 100 pounds of standardized milk (@ 3.5% fat and 8.7% SNF)

= (3.5 x price of Class 3 fat) + (8.7 x price of Class 3 SNF)

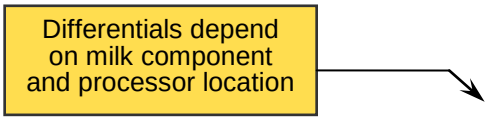
For any month in which the Secretary implements the collection of charges for the Milk Producers Security Trust Fund, the minimum Class 3 price shall be increased by:

- $0.0032 per pound of fat, and
- $0.0013 per pound of SNF

Class 2 Price Formula
(sour cream, heavy cream, cottage cheese, and yogurt)

Like the Class 3 prices, Class 2 prices are established on a bi-monthly basis prior to the beginning of each even month. For example, the February–March pricing period for Class 2 milk uses the average Class 4a component prices for December and January.

(1) Class 2 fat price = average Class 4a fat price (throughout California)



(2) Class 2 SNF price = average Class 4a SNF price +
($0.0490 in Northern California)
($0.0757 in Southern California)

(3) Class 2 price per 100 pounds of standardized milk (@3.5% fat and 8.7% SNF)

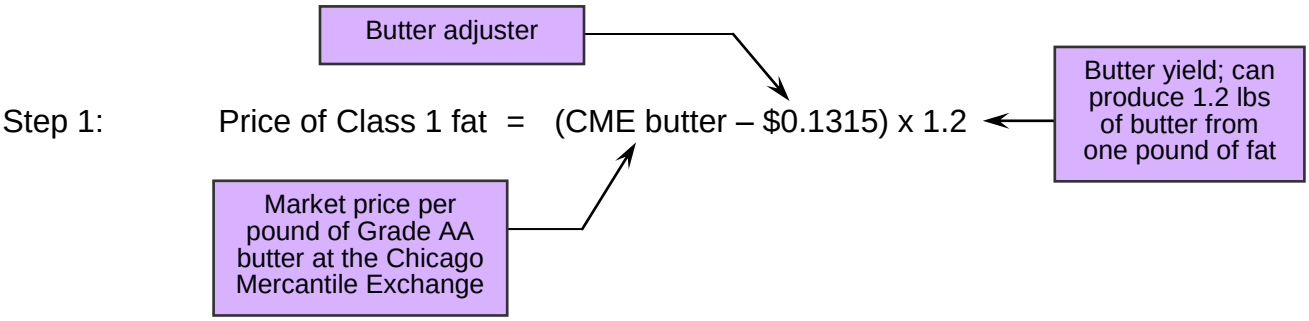
= (3.5 x price of Class 2 fat) + (8.7 x price of Class 2 SNF)

For any month in which the Secretary implements the collection of charges for the Milk Producers Security Trust Fund, the minimum Class 2 price shall be increased by:

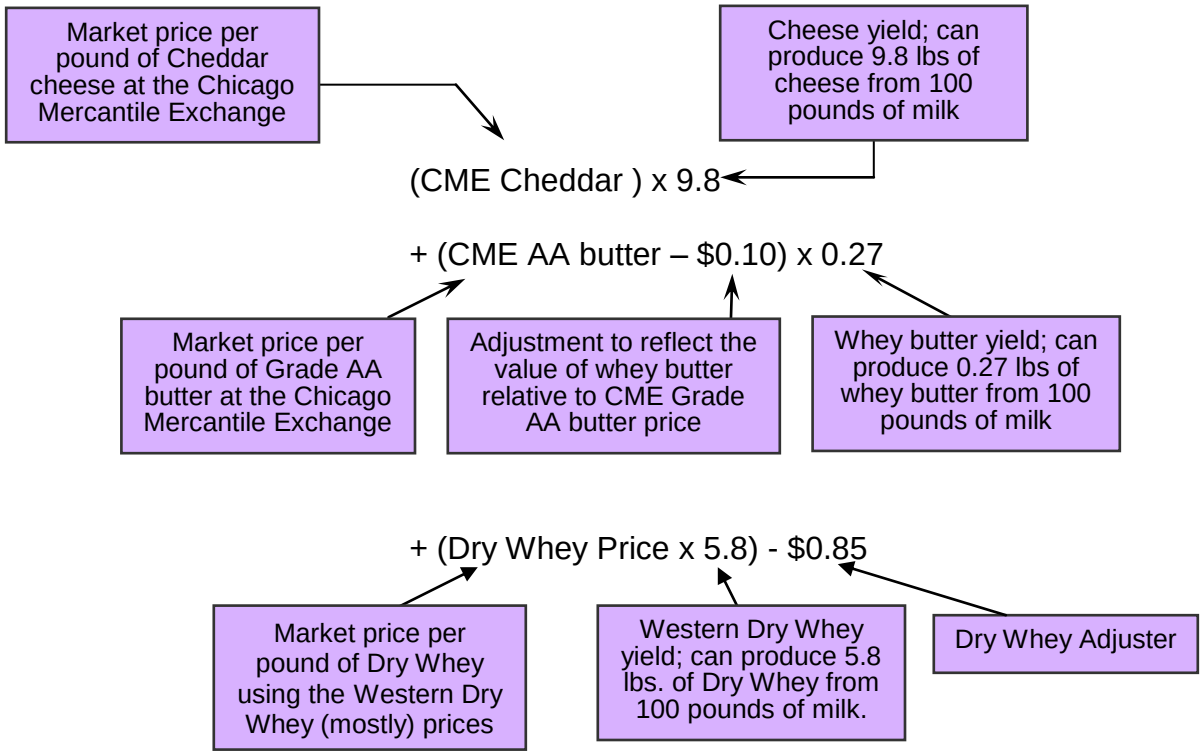
- $0.0032 per pound of fat, and
- $0.0013 per pound of SNF

Class 1 Price Formula for Fluid Milk Products

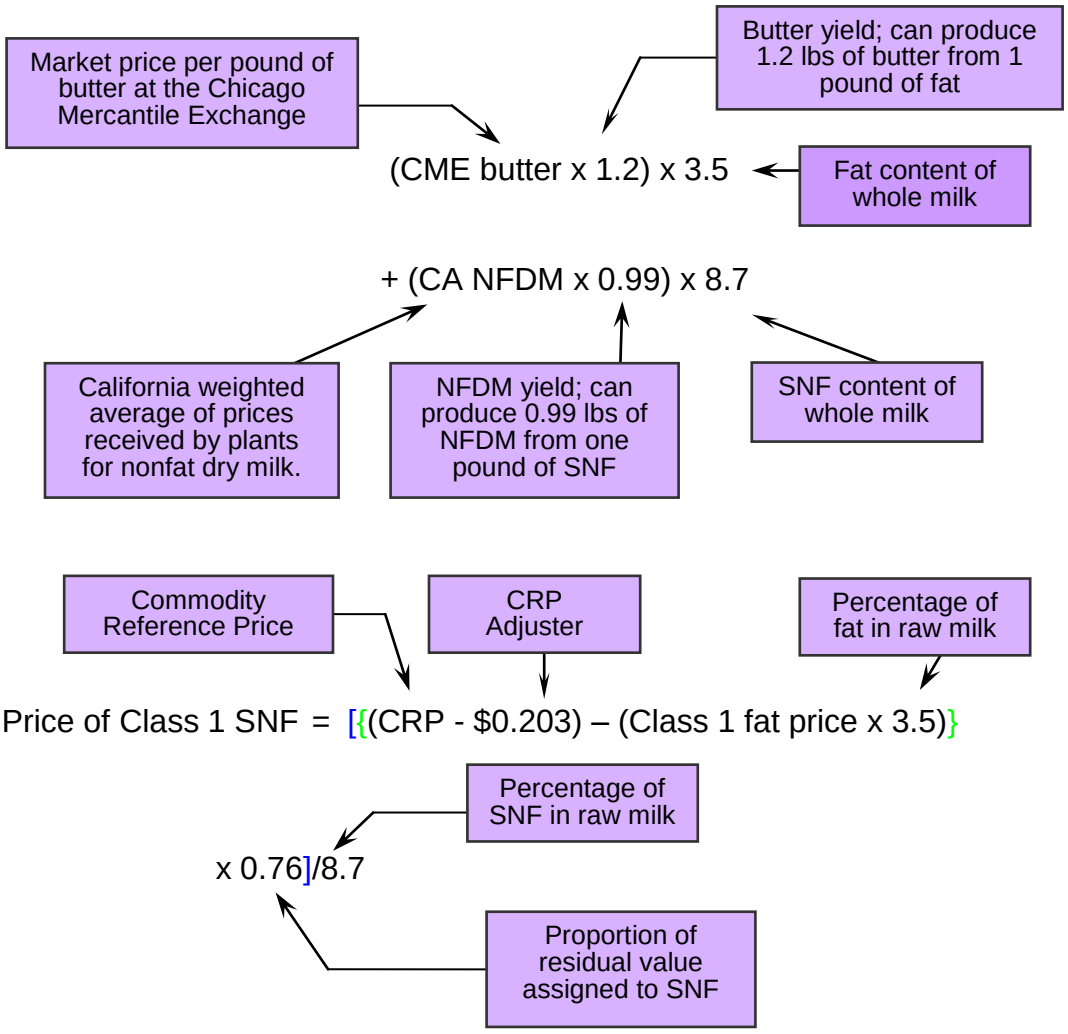
Determining the price for fluid milk products involves several steps. The Class 1 fat price in the fluid milk pricing formula is set directly and uses the Chicago Mercantile Exchange (CME) butter price with an adjuster. The SNF and carrier prices are calculated as residuals. They rely on a basic price mover called the commodity reference price (CRP) which is based off the higher of the price for CME Cheddar cheese and Mostly Western Dry Whey or the CME Grade AA butter and California weighted average price for nonfat dry milk. The value of the Class 1 fat price is subtracted from the CRP and the remaining residual value is allocated to SNF and carrier. Once the component prices have been assigned to fat, SNF, and fluid carrier portions of milk, these component prices are converted to a standardized hundredweight milk price. Commodity prices for butter, cheese, dry whey, and nonfat dry milk in the Class 1 formula are calculated using the prices announced during the period of the 26th of the second prior month to the 10th of the prior month.



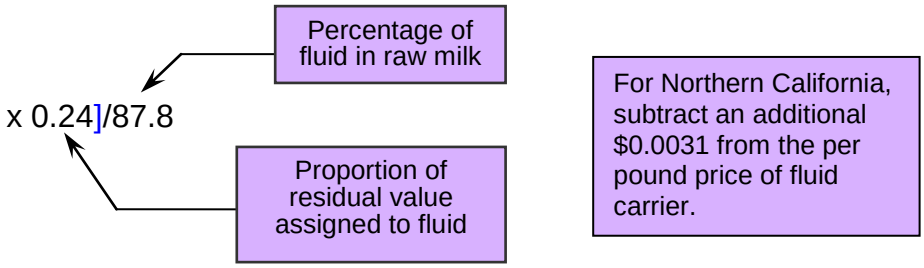
Step 2: Commodity Reference Price = the **higher of** two price calculations:



OR



Step 4: Price of Class 1 fluid = [{(CRP - $0.203) – (Class 1 fat price x 3.5)}



Step 5: Class 1 price per 100 pounds of milk (@3.5% fat and 8.7% SNF)

= (3.5 x Class 1 fat) + (8.7 x Class 1 SNF) + (87.8 x Class 1 carrier)

For any month in which the Secretary implements the collection of charges for the Milk Producers Security Trust Fund, the minimum Class 1 price shall be increased by:

- $0.0017 per pound of fat,
- $0.0009 per pound of SNF, and
- $0.0001 per pound of carrier