

Cream

Dry cream products have fat contents greater than whole milk powders. Drying high fat products can be difficult and may require the addition of other ingredients to keep the fat globules in a stable emulsion. The fat typically must be emulsified or encapsulated, often with milk proteins, before cream can be dried successfully. If the fat is not encapsulated properly the resulting powder will stick to dryer surfaces and powder handling equipment.

The information provided here is a general outline given the process for drying cream can vary significantly depending on the end use of the powder.

Cream powder results from the removal of water from pasteurized cream. The fat and/or protein content of the cream may be adjusted but only if needed to comply with the compositional requirements of the CFR. Milk constituents may be added or removed as long as the whey protein to casein ratio of the cream is not altered.

Dry Cream Definition

(summarized from Code of Federal Regulations)

Dry cream is the product obtained by removal of water only from pasteurized milk or cream or a mixture thereof, which may have been homogenized. Alternatively, dry cream may be made by blending dry milk with dry cream provided that the resulting product is equivalent in composition to dry cream made by the water removal method. Dry cream contains not less than 40% but less than 75% by weight milkfat on an as is basis and not more than 5% by weight moisture on a milk solids not fat basis.

Optional ingredients include emulsifiers, stabilizers, anticaking agents, antioxidants, nutritive carbohydrate sweeteners and flavoring agents (with and without coloring)

Dry Cream Definition

(summarized from Codex)

Cream powder can be obtained by the partial removal of water from cream. The fat and/or protein content of the cream may have been adjusted, only to comply with the compositional requirements. Addition and/or withdrawal of milk constituents must be done in such a way as not to alter the whey protein casein ratio of the milk

Codex permits the use of the following products for standardization of dry cream:

- Milk retentate
- Milk permeate
- Lactose

ADPI Dry Cream Definition

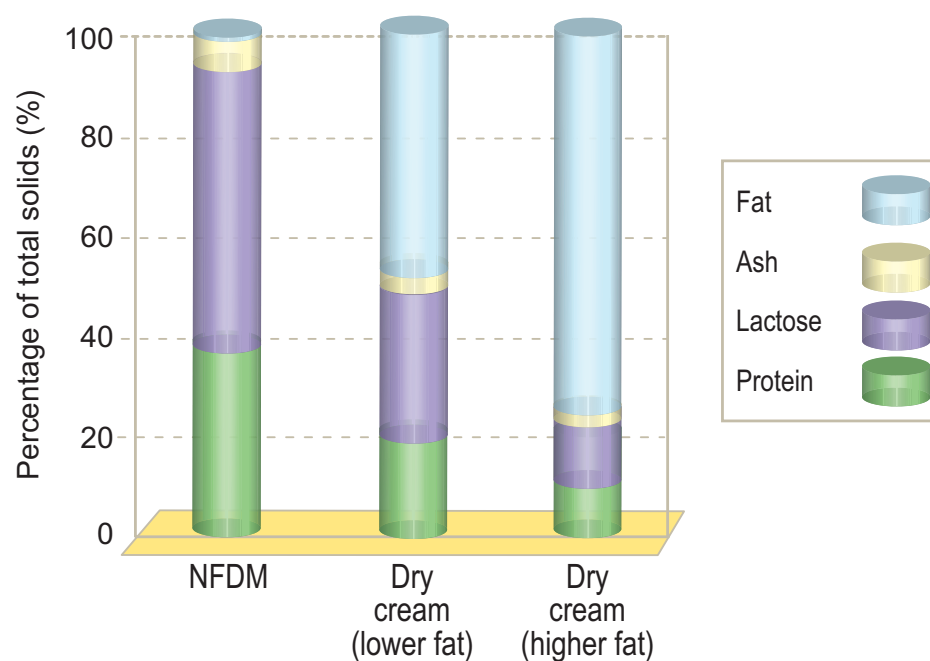
Cream powder is the product resulting from the partial removal of water from pasteurized cream. The fat and/or protein content of the cream may have been adjusted, only to comply with the compositional requirements below, by the addition and/or withdrawal of milk constituents in such a way as not to alter the whey protein to casein ratio of the cream being adjusted.

Regulations

- ♦ 21 CFR 131.149
- ♦ Codex Stan 207-1999

ADPI Industry Standard

General composition of dry cream



CFR specifications for dry cream*

Component	Dry cream	
	not less than	not greater than
Milkfat	40%	75%
Moisture	-	5.0%

* 21 CFR 131.149

Codex specifications for dry cream*

Component	Dry cream	
	not less than	not greater than
Milkfat	42%	-
Protein**	34%	-
Moisture	-	5.0%

* Codex Stan 207-1999

** Protein in milk-solids-not-fat basis

General composition of dry cream

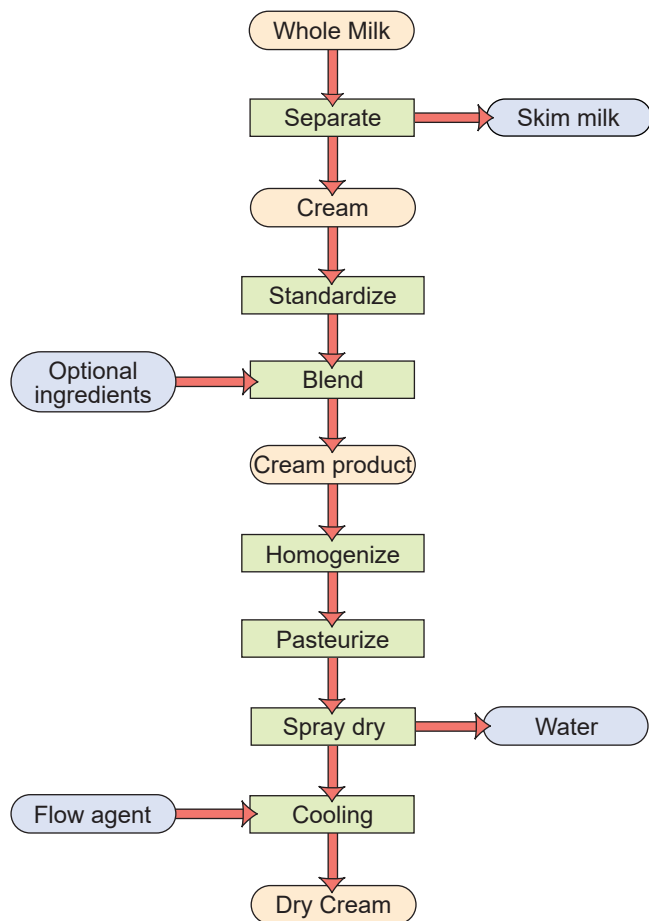
Component	Dry cream
	----- % -----
Protein	na
Lactose	40 - 75
Ash	na
Fat	na
Moisture	5

ADPI industry standard for dry cream

Component	Dry cream	
	not less than	not greater than
Milkfat	42%	-
Protein*	34%	-
Moisture	-	5.0%

* Protein on milk-solids-not-fat basis

Manufacture of Dry Cream



Typical composition and characteristics

Dry cream*

- ♦ Typical composition

Protein (db)	na%
Moisture	3%
Lactose	na%
Fat	72%
Ash	na%
- ♦ Characteristics
 - Color: light cream
 - Flavor: sweet cream
 - TA <0.18%
- ♦ Storage
 - <27 C, <70% rh
 - 12 months

*Exact composition depends on manufacturer

CFR Product Labeling

Dry cream (Contains ____% milkfat)

The percent fat is given as the whole number closest to the actual fat content of the product.

Codex Product Labeling

Cream powder