



AMERICAN
Dairy Products
INSTITUTE™

Skim Milk Powder (SMP)



Product Definition

Skim Milk Powder (SMP) is the product resulting from the partial removal of fat and water from pasteurized milk. The fat and/or protein content of the milk 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 casein-to-whey protein ratio of the milk being adjusted. Milk products permitted for such adjustment purposes are defined in the Permissible Additives section of this Standard.

Skim Milk Powder complies with all provisions of the U.S. Federal Food, Drug, and Cosmetic Act.

Composition

PARAMETER	UNITS OF MEASURE	LIMITS
PROTEIN	%, solids non-fat basis ¹	34.0 maximum
FAT	%	1.50 maximum
MOISTURE ²	%	5.0 maximum

¹ Solids non-fat includes lactose water of crystallization.

² Moisture content does not include lactose water of crystallization.

Other Characteristics

PHYSICO-CHEMICAL PROPERTIES		
PARAMETER	UNITS OF MEASURE	LIMITS
SCORCHED PARTICLES	mg/25g	15.0 maximum
TITRATABLE ACIDITY	%	0.18 maximum
SOLUBILITY INDEX	mL	1.0 maximum
COLOR	visual	white to cream
FLAVOR	sensory	bland, clean

Product Labeling

Recommended identifications: Skim Milk Powder
Skimmed Milk Powder

Nutrition Facts	
servings per container	
Serving size	(100g)
Amount per serving	
Calories	360
	% Daily Value*
Total Fat 1g	1%
Saturated Fat 0.5g	3%
Trans Fat 0g	
Cholesterol 25mg	8%
Sodium 490mg	21%
Total Carbohydrate 51g	19%
Dietary Fiber 0g	0%
Total Sugars 51g	
Includes 0g Added Sugars	0%
Protein 34g	
Vitamin D --mcg	--%
Calcium 1248mg	100%
Iron 0mg	0%
Potassium 1674mg	35%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Protein Quality

Protein Digestibility Corrected Amino Acid Score (PDCAAS).....**1.00**

Digestible Indispensable Amino Acid Score (DIAAS).....**1.23**

Permissible Additives

The protein content of milk used to manufacture Skim Milk Powder may be adjusted (“standardized”) by the addition of the following milk products only:

- Milk rententate: the product obtained by concentrating milk protein by ultrafiltration of milk, reduced fat milk, or skim milk;
- Milk permeate: the product obtained by removing milk proteins and milkfat from milk, reduced fat milk, or skim milk by ultrafiltration; and
- Lactose.

Functionality and Applications



HIGH PERFORMANCE:

Hydration Rate
Heat Stability

Skim Milk Powder is typically used in confectionery, bakery products, packaged dry mixes, dairy products, soups, sauces, frozen foods, beverages, and others.



MEDIUM PERFORMANCE:

Water Binding
Emulsification
Browning

The protein adjustment which is permitted for Skim Milk Powder is optional. Product manufactured without this adjustment, and in compliance with all other U.S. requirements, is equivalent in composition to Standard Grade Nonfat Dry Milk, and it may be utilized in U.S. standardized foods where Nonfat Dry Milk is specified by the corresponding Standard of Identity (SOI).

Nonfat Dry Milk and Skim Milk Powder are analogous ingredients, with the former representing the U.S. definition and the latter representing the international (Codex Alimentarius) definition, respectively. Note that the U.S. definition permits the fortification of Nonfat Dry Milk with either vitamin A and/or vitamin D, but does not allow for raising or lowering the protein content (“standardization”) by adding specific permissible additives as is permitted for Skim Milk Powder.

Product Examples

(launched in the last year) *Credit: Innova Market Insights*



Kendamil Milk Base Formula Powder for Toddlers: Toddler formulas use skim milk powder in formulations made in Europe and other countries outside the U.S.. Skim milk powder provides important nutrients, such as high quality protein and vitamins and minerals for growth and development.



HEB Hazelnut Spread: Chocolate bread spreads made with skim milk powder have a better flavor and mouthfeel. The milk chocolate flavor combined with hazelnuts gives this spread a premium quality and feel.



Chupa Chups Cream Carbonated Drink: Cream sodas are opaque and tend to have a smooth, creamy mouthfeel. This cream soda gets some of its creaminess from skim milk powder.



Maple Leaf Sausage Pork Patties Sausage patty formulations benefit from the water binding ability of skim milk powder. During the cooking process, the skim milk powder will help retain moisture and keep the sausage tender and moist after it is fully cooked.

Ingredient Labeling Note:

Nonfat Dry Milk may comply with all aspects of the definition for Skim Milk Powder, but Skim Milk Powder (which is permitted to be standardized) does not comply with Nonfat Dry Milk requirements by definition. This “one-way” equivalence has implications for product formulation and labeled ingredient declarations.