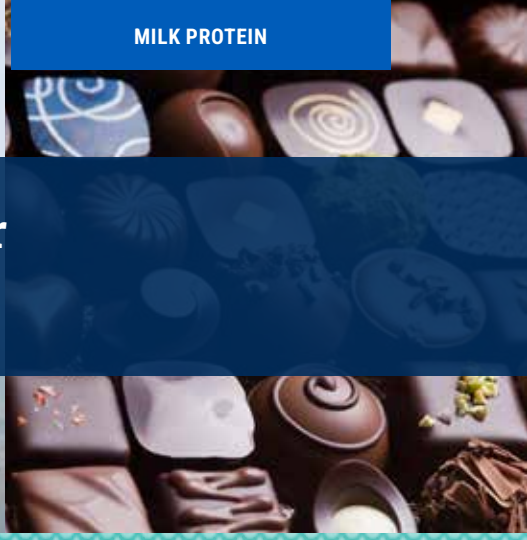
MILK PROTEIN

AMERICAN Dairy Products INSTITUTE™

Whole Milk Powder (WMP)



Product Definition

Whole Milk Powder (WMP) is the product resulting from the partial removal of 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.

Whole 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 minimum
FAT	%	26.0 - 42.0
MOISTURE[2]	%	4.5 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
SCORED 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

Permissable Additives

The protein content of milk used to manufacture WMP may be adjusted ("standardized") by the addition of the following milk products only:

- Milk retentate: 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.

Product Labeling

Recommended identifications: Whole Milk Powder

Nutrition Facts

servings per container

Serving size (100g)

Amount per serving

Calories **500**

	% Daily Value*
Total Fat 27g	35%
Saturated Fat 17g	85%
Trans Fat --g	
Cholesterol 95mg	32%
Sodium 370mg	16%
Total Carbohydrate 38g	14%
Dietary Fiber 0g	0%
Total Sugars 38g	
Includes 0g Added Sugars	0%
Protein 26g	
Vitamin D 1mcg	6%
Calcium 912mg	70%
Iron 0mg	0%
Potassium 1330mg	30%

*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

Ingredient Note:
Dry Whole Milk may comply with all Dry Whole Milk may comply with all aspects of the definition for Whole Milk Powder, but WMP (which is permitted to be standardized) does not comply with DWM requirements by definition. This 'one-way' equivalence has implications for product formulation and labeled ingredient declarations.

MAKE IT WITH DAIRY

WHOLE MILK POWDER

MILK PROTEIN

Protein Quality

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

Digestible Indispensable Amino Acid Score (DIAAS).....1.16

Functionality and Applications

HIGH PERFORMANCE:

Hydration Rate
Heat Stability

MEDIUM PERFORMANCE:

Emulsification
Water Binding
Browning

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

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

Ingredient Note: Dry Whole Milk (DWM) and WMP are analogous ingredients, with the former representing the U.S. definition and the latter representing the international (Codex Alimentarius) definition, respectively. The U.S. definition permits the blending of specific milk processing streams in order to achieve a final product which is equivalent to that obtained solely by drying whole milk; while the Codex standard allows for changing the fat and/or protein content of the product by adding specific permissible additives, ensuring that the casein-to-whey proteins ratio is not altered.

Product Examples

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

Just the Fun Part Waffle Cones: Whole milk powder provides a rich dairy flavor to this bite-size, Belgian milk chocolate filled cone. The addition of milk powder is also required to meet the standard of identity for milk chocolate in the U.S.

TruHeigh Toddler Complete Nutrition Formular: It is recommended that children from the age of one consume whole milk to support normal growth and development. The whole milk powder in this toddler formula provides a convenient way to provide important nutrition for this age group.

Kirin Caramel Tea Latte: Whole milk powder provides a rich, creamy mouthfeel to this ready to drink tea latte. Though it is combined with skim milk powder, the higher fat content of the whole milk powder gives this product a more premium appeal.

Ghiradelli Minis: This milk chocolate caramel gets its characteristic flavor from the addition of whole milk powder. The addition of whole milk powder meets the standard of identity for milk chocolate in the U.S.

Orgain Kids Protein Shake Mix: Whole milk powder is combined with whey protein concentrate and milk protein concentrate to give this nutrition shake 8 grams of protein and 4 g of fat per serving. All three dairy protein powders provide high quality protein for growing kids.

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