



Milk Whey Protein Standard

Product Definition

Milk Whey Protein is obtained from bovine milk or skim milk by the removal of casein and non-protein constituents from milk so that the finished dry product contains not less than 25% protein. It is obtained by microfiltration and/or chromatography of milk or skim milk and may be preceded or followed by ultrafiltration, nanofiltration, evaporation, dialysis, or any other safe and suitable process in which all or part of the lactose, minerals and moisture may be removed.

Milk Whey Protein cannot be produced through any process or combination of processes that include enzymatic coagulation of protein and/or acid precipitation of protein in bovine milk or skim milk.

Milk Whey Protein products with a protein content less than 89.5% are referred to as Milk Whey Protein Concentrates (mWPC).

Milk Whey Protein products with a protein content greater than or equal to 89.5% on a dry matter basis are referred to as Milk Whey Protein Isolates (mWPI).

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

Composition

Parameter	Units of Measure	Limits		
		mWPC 34	mWPC 80	mWPI
Protein ¹	%, as-is basis	33.5 minimum	79.5 minimum ¹	89.5 minimum ¹
Fat	%, as-is basis	2.0 maximum	2.0 maximum	1.5 maximum
Lactose	%, as-is basis	55.0 maximum	13.0 maximum	4.0 maximum
Moisture	%, as-is basis	6.0 maximum	6.0 maximum	6.0 maximum
Ash	%, as-is basis	7.50 maximum	5.0 maximum	4.5 maximum

1 - For mWPC 80 and mWPI the protein content and limit are on the dry basis instead of the as-is basis.

Other Characteristics

Physico-chemical Properties		
Parameter	Units of Measure	Limits
Scorched particles	mg/25g	15.0 maximum
Color	visual	cream
Flavor	sensory	bland, clean

Microbiological Analysis		
Parameter	Units of Measure	Limits
Standard plate count	CFU/g	30,000 maximum
Yeast and mold	CFU/g	10 maximum
Coliforms ²	CFU/g	10 maximum
<i>Enterobacteriaceae</i> ²	CFU/g	10 maximum
<i>Salmonella</i> genus	CFU/sample ³	not detected
<i>Listeria</i> genus	CFU/g	not detected

2 - The food industry is trending toward *Enterobacteriaceae* ("EB") as the most commonly used category of indicator organisms for gauging general process sanitation. For compliance with this Standard, either coliforms and/or EB shall be utilized, at the discretion of the manufacturer.

3 - Typical minimum sample size for *Salmonella* testing is 25 g, but the exact sample size and methodology is left to the discretion of the manufacturer.

Methods of Analysis

Parameter	Reference Method
Protein	SMEDP 15.132
Fat	AOAC 989.05
Lactose	SMEDP 15.092
Moisture	AOAC 927.05
Ash	AOAC 900.02
Scorched particles	ADPI
Standard plate count	AOAC 966.23
Coliforms	AOAC 989.10
All other microbiological tests	FDA BAM

Product Labeling

Recommended identifications: Milk Whey Protein

Milk Whey Protein Concentrate (___% protein)

where the % protein is either declared in 5% increments;
or declared as the actual percentage⁴ (e.g., mWPC 25);
or optionally the % protein may be omitted entirely (only
when the % protein is $\geq 79.5\%$).

Milk Whey Protein Isolate (___% protein)

where the % protein is either declared in 2% increments;
or declared as the actual percentage⁴ (e.g., mWPI 92);
or optionally the % protein may be omitted entirely.

4 - When electing to incorporate the actual percentage protein content into the product identification, the supporting analysis for the protein content must also be supplied.

Alternative identifications: Native Whey Protein

Milk Derived Whey Protein

Milk Soluble Protein

Typical Applications

Milk Whey Protein is typically used as a protein supplement in general sports, adult, or medical nutrition; and for its functionality such as in yogurts and puddings (gelation), toppings and fillings (whipping), meat and sausage (water binding), ice cream, margarine, and mayonnaise (emulsification); and others.

Typical Storage & Shipping

Product should be stored, shipped, and utilized according to the manufacturer's established recommendations. As guidance, product should be stored and shipped in a cool, dry environment with temperature below 80°F and relative humidity below 65%. Stocks should be rotated and utilized in accordance with the manufacturer's established date of expiration or retest.

Typical Packaging

Multiwall kraft bags with polyolefin inner liner, or other suitable closed containers (e.g., totes) are typical.

Revision History

Current Version	Effective Date	Notes
1.0	12/05/2017	First officially approved version of this new ingredient Standard.
1.1	01/18/2018	Only minor cosmetic changes made in order to incorporate the new Standard into the <i>ADPI Dried Dairy Ingredients Handbook</i> .
2.0	07/03/2023	Migrated this Standard to the new modernized format as authorized by the ADPI Standards Committee. No previously established test parameters or limits were materially altered by this update, but this revision did require footnotes to clarify the restated units of measure for <i>Salmonella</i> ; and the streamlined / restated details associated with incorporation of the percent protein into the recommended identifications.