Whey Protein Isolate (WPI) Standard

Product Definition

Whey Protein Isolate (WPI) is obtained by the removal of sufficient non-protein constituents from whey so that the finished dry product contains at least 90% protein on a dry matter basis. It is produced by membrane filtration processes and/or ion exchange.

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

Composition

Parameter	Units of Measure	Typical Values	Limits
Protein	%, dry basis	90.0 – 92.0	89.5 minimum
Lactose	%	0.5 – 1.0	-
Fat	%	0.5 – 1.0	1.5 maximum
Total moisture	%	4.0 – 5.0	6.0 maximum
Ash	%	2.0 – 3.0	-

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 & mold	CFU/g	100 maximum
Coliforms[2]	CFU/g	10 maximum
Enterobacteriaceae[2]	CFU/g	10 maximum
Salmonella genus	CFU/sample[3]	not detected
Staphylococcus (coagulase positive)	CFU/g	not detected[4]
Listeria 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.

4 - Where the effective limit of quantitation for the test is 10 CFU/g (such as when a dilution factor of 10 is applied) then the test result must be not detected in order to comply with this Standard. Where the testing method is capable of quantifying microbial counts below 10 CFU/g, then a compliant result must be a value less than 10 CFU/g.

Permissible Additives

Whey Protein Isolate may be pH adjusted with an appropriate mineral or organic acid or base. Any pH adjustment agent used for this purpose shall be food grade and shall be used in accordance with U.S. current Good Manufacturing Practices and in accordance with its GRAS status, where applicable.

Methods of Analysis

Parameter	Reference Method
Protein	AOAC 991.20 (N x 6.38)
Lactose	ISO 22662 / IDF 198
Fat	AOAC 989.05
Moisture	AOAC 925.45
Ash	AOAC 942.05
Microbiological tests	FDA BAM

Product Labeling

Recommended identifications: Whey Protein Isolate (___% protein)

where the % protein is either declared in 2% increments; or declared as the actual percentage, where the supporting analysis for the protein content must also be supplied.

Typical Applications

Whey Protein Isolate is typically used as a general protein supplement, 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

This Standard is a legacy document and has been assigned prior version numbers on an *ex post facto* basis, according to its documented history of modifications, in order to comply with our new document control features and format. Full revision history is on file at ADPI and is available for query via info@adpi.org or by directly contacting the Vice President of Technical Services.

Current version details:

Current Version	Effective Date	Notes
4.0	07/04/2023	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. Authorization to use additives for pH adjustment was migrated out of the Product Definition section and into the Permissible Additives section that is provided in the modernized format, following the verbiage previously reviewed by the ADPI Standards Committee. This revision did require a footnote to clarify the restated units of measure for *Salmonella* and the restatement of the limit for coagulase positive *Staphylococcus*.