



Infant Formula (IF) Grade Whey Protein Phospholipid Concentrate (WPPC) Standard

Product Definition

Whey Protein Phospholipid Concentrate (WPPC) is a product obtained through the microfiltration of whey, which concentrates whey proteins and whey phospholipids. WPPC for infant consumption complies with all provisions of the U.S. Federal Food, Drug, and Cosmetic Act.

Composition

Parameter	Units of Measure	Limits
Protein	% w/w, dry basis	50.0 minimum
Milkfat	%	12.0 minimum
Total phospholipids	%	4.0 minimum
Total moisture	% w/w	6.0 maximum
Ash (phosphated)	% w/w	8.0 maximum

Other Characteristics

Physico-chemical Properties		
Parameter	Units of Measure	Limits
Scorched particles	mg/25g	15.0 maximum
pH	-	5.70 – 7.50
Tin (Sn)	mg/kg	10.00 maximum
Arsenic (As)	mg/kg	0.10 maximum
Lead (Pb)	mg/kg	0.05 maximum
Mercury (Hg)	mg/kg	0.05 maximum
Cadmium (Cd)	mg/kg	0.05 maximum
Nitrites	mg/kg	2 maximum
Nitrates	mg/kg	100 maximum
Color	visual	white to cream colored
Flavor and odor	sensory	bland, neutral dairy flavor and odor; free from offensive flavors and odors

Physico-chemical Properties		
Parameter	Units of Measure	Limits
Physical appearance	visual	free of lumps that do not break up under slight pressure; free of foreign material

Microbiological Analysis		
Parameter	Units of Measure	Limits
Standard plate count	CFU/g	10,000 maximum
Yeast and mold	CFU/g	50 maximum
Coliforms ¹	CFU/g	10 maximum
<i>Enterobacteriaceae</i> ¹	CFU/g	10 maximum
<i>Salmonella</i>	CFU/25g	not detected
<i>Staphylococcus</i> (coagulase positive)	CFU/g	not detected
<i>Bacillus cereus</i>	CFU/g	100 maximum
<i>Clostridia</i> (sulfite-reducing)	CFU/g	100 maximum

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

Permissible Additives

Whey Protein Phospholipid Concentrate 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)
Milkfat	AOAC 989.05
Total phospholipids	HPLC
Moisture	AOAC 925.45
Ash	AOAC 942.05
Scorched particles	ADPI
pH	USDA
Heavy metals	ICP-AES
Microbiological tests	FDA BAM

Product Labeling

Recommended identification: Whey Protein Phospholipid Concentrate

Alternative identifications: High Fat Whey Protein Concentrate

Typical Applications

Infant Grade WPPC is specifically suited for use as a functional and nutritive ingredient in infant formula manufacture.

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

Version	Effective Date	Notes
1.0	09/08/2023	First officially approved version of this new ingredient standard.