



# Milk Minerals Standard

## Product Definition

Milk Minerals are fractionated from whey or milk by one of several different isolation techniques, dried, and then ground into fine powders. Milk Minerals are particularly rich in calcium and phosphorus. Milk Minerals comply with all provisions of the U.S. Federal Food, Drug, and Cosmetic Act.

## Composition

Parameter	Units of Measure	Limits
Minerals	%	70.0 minimum
Calcium (Ca)	%	22.0 minimum
Protein	%	7.0 maximum
Fat	%	1.0 maximum
Moisture	%	6.0 maximum
Lactose	%	11.0 maximum

## Other Characteristics

Physico-chemical Properties		
Parameter	Units of Measure	Limits
Scorched particles	mg/25g	15.0 maximum
pH	-	6.4 – 7.5
Color	visual	white to light cream
Flavor	sensory	bland, clean, milky

Microbiological Analysis		
Parameter	Units of Measure	Limits
Standard plate count	CFU/g	10,000 maximum
Yeast and mold	CFU/g	50 maximum
Coliforms <sup>1</sup>	CFU/g	10 maximum
<i>Enterobacteriaceae</i> <sup>1</sup>	CFU/g	10 maximum
<i>Salmonella</i>	CFU/sample <sup>2</sup>	not detected

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.

2 - 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.

Microbiological Analysis		
Parameter	Units of Measure	Limits
<i>Staphylococcus</i> (coagulase positive)	CFU/g	not detected <sup>3</sup>
<i>Listeria</i> genus	CFU/g	not detected

3 - 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

Milk Minerals 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
Minerals	AOAC 930.30
Calcium (Ca)	AOAC 984.27
Protein	AOAC 991.20 (N x 6.38)
Fat	AOAC 932.06
Moisture	AOAC 927.05
Lactose	ISO 22662 / IDF 198
Scorched particles	ADPI
pH	USDA
Microbiological tests	FDA BAM

## Product Labeling

Recommended identification: Milk Minerals

## Typical Applications

Milk Minerals are suitable for nutritional supplements such as tablets, capsules, nutritional bars and chews; calcium-fortified foods such as baked goods, processed meats, dairy and confectionery applications; and calcium-fortified beverages such as juices and dairy drinks; 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 should be 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*	02/01/2018	First officially approved version of this new ingredient standard.
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 limit for coagulase positive <i>Staphylococcus</i> .

\* - Assigned *ex post facto*