Nonfat Dry Milk (NDM)

Production Definition

Nonfat Dry Milk is obtained by the removal of water from pasteurized skim milk. It contains not more than 5% moisture (by weight) and not more than 1.5% milkfat (by weight) unless otherwise indicated. NDM for human consumption complies with all provisions of the U.S. Federal Food, Drug, and Cosmetic Act.

Typical Compositional Range[1]

	Percentage
Protein	34.0 – 37.0
Lactose	49.5 – 52.0
Fat[2]	0.6 – 1.25
Ash	8.2 – 8.6
Moisture[2]	3.0 – 4.0

Microbiological Analysis

Standard Plate Count[2]	≤ 10,000/g
Coliform[2]	≤ 10/g
Salmonella	negative
Listeria	negative
Coagulase-positive Staphylococci	negative

Other Characteristics

Scorched Particle Content[2]	7.5 – 15.0 mg
Solubility Index[2]	≤1.2 ml ≤ 2.0 ml – high-heat
Titratable Acidity[2]	≤0.15%
Color[2]	white to light cream/natural color
Flavor[2]	clean and pleasing

Ingredient Statement

"Nonfat Dry Milk" (_____ % milkfat) if the fat content is over 1.5%

Production Applications and Functionality

Fluid milk fortification, frozen desserts, cheese, yogurt, dairy beverages, bakery products, custards, gravies, sauces, frozen foods, packaged dry mixes, processed meats, soups, infant formulas, snack foods, cosmetics

Nonfat dry milk is classified for end-product use according to the heat-treatment used in its manufacture.

The classifications are: high-heat, medium-heat and low-heat. *(see page 2)*

Storage & Shipping

Product should be stored and shipped in a cool, dry environment with temperatures below 80° F and relative humidities below 65%. Stocks should be rotated and utilized within 1 to 1 ½ years.

Packaging

Multiwall kraft bags with polyethylene inner liner or other approved closed container. *(i.e. "tote bins," etc)*

[1] On an "as is" basis
[2] USDA Grade parameters (7 CFR §58.2528)

Heat-Treatment Classification of Nonfat Dry Milk

(General Applications for Use Based on Processing Parameters)

Classification	Undenatured Whey Protein Nitrogen* *mgs./gm*	A Few Recommended Uses
Low Heat	Over 6.0	Fluid milk fortification, cottage cheese, cultured skim milk, starter culture, chocolate dairy drinks, ice cream
Medium Heat	1.51 – 5.99	Prepared mixes, ice cream, confectionery, meat products
High Heat	Under 1.5	Bakery, meat products, ice cream, prepared mixes

** Higher temperatures and/or extended holding times contribute directly to whey protein denaturation. This index is used as a measure of the cumulative heat effects during processing of nonfat dry milk.*