

Dry Whole Milk (DWM) Standard

Product Definition

Dry Whole Milk usually is obtained by the removal of water from pasteurized milk, which also may have been homogenized. Alternatively, DWM may be obtained by blending fluid, condensed, or nonfat dry milk with liquid or dry cream or with fluid, condensed, or dry milk, provided the resulting DWM is equivalent in composition. It contains not less than 26% but less than 40% milkfat (by weight) on an “as is” basis and not more than 5% moisture (by weight) on a milk solids-not-fat basis. Optionally, it may be fortified with either Vitamins A or D, or both. The primary DWM products are those having 26.0% and 28.5% milkfat. DWM for human consumption complies with all provisions of the U.S. Federal Food, Drug, and Cosmetic Act.

Specific Grading Requirements for Extra Grade Dry Whole Milk (DWM)

Extra Grade is so designated to indicate the highest quality of dry whole milk. In addition to meeting the foregoing **General Grading Requirements** (see page 30), the product shall meet the following specifications:

Composition/Specifications for Extra Grade DWM

Classifications	Fat	Moisture	Titrateable Acidity	Solubility Index	Scorched Particles
Spray Dried Extra Grade DWM	Min. 26% Max. 40%	Max. 4.5%*	Max. 0.15%	Max. 1.0 ml	Max. 15.0 mg
Atmospheric Roller Dried Extra Grade DWM	Min. 26% Max. 40%	Max. 4.5%*	Max. 0.15%	Max. 15.0 ml	Max. 22.5 mg

*As determined by weight of moisture on a milk solids-not-fat basis.

Microbiological Analysis for Extra Grade DWM

Standard Plate Count	10,000 cfu/g
Coliform	≤ 10 cfu/g

Reconstituted Extra Grade dry whole milk shall be sweet, pleasing and desirable. It may possess a slight feed flavor and a definite cooked flavor. It shall be free from undesirable flavors. The product shall be white or light cream in color, free from lumps that do not break up under slight pressure, and practically free from visible dark particles. The reliquefied product shall be free from graininess.

Specific Grading Requirements for Standard Grade Dry Whole Milk

Standard Grade includes all dry whole milk that fails in one or more particulars to meet the requirements of Extra Grade, but it shall meet the following specifications:

Composition/Specifications for Standard Grade DWM

Classifications	Fat	Moisture	Titrateable Acidity	Solubility Index	Scorched Particles
Spray Dried Standard Grade DWM	Min. 26.0% Max. 40.0%	Max. 5.0%*	Max. 0.17%	Max. 1.5 ml	Max. 22.5 mg
Atmospheric Roller Dried Standard Grade DWM	Min. 26.0% Max. 40.0%	Max. 5.0%*	Max. 0.17%	Max. 15.0 ml	Max. 32.5 mg

*As determined by weight of moisture on a milk solids-not-fat basis.

Microbiological Analysis for Standard Grade DWM

Standard Plate Count 50,000 cfu/g
Coliform ≤ 10 cfu/g

Reconstituted Standard Grade dry whole milk shall be sweet and pleasing. It may possess the following flavors to a slight degree; bitter, oxidized, scorched, stale and storage; and to a definite degree: a feed flavor and cooked. It shall be free from undesirable flavors.

The product shall be white or light cream in color, but may possess a slight unnatural color, shall be free from lumps that do not break up under moderate pressure, and shall be reasonably free from visible dark particles. The reconstituted product shall be reasonably free from graininess.

Oxygen Content

Oxygen content (if gas packed) is not a U.S. grade requirement. When oxygen content is determined for grading purposes, the results will be shown as follows:

Oxygen Content
Not more than 3%
Or,
Oxygen content _____%

Additional ADPI Specifications

Salmonella	negative
Listeria	negative
Coagulase positive Staphylococci	<10 cfu/g
Yeast & Mold	≤ 100 cfu/g

Optional Tests

Copper content**	not more than	1.5 ppm
Iron content**	not more than	1.0 ppm
Vitamin addition (when fortified)	not less than	2,000 I.U. Vitamin A* 400 I.U. Vitamin D*

*Per reconstituted quart

**Copper & Iron test not needed if oxygen content is < 3%

GRADE NOT ASSIGNABLE

Dry whole milk shall not be assigned a grade for one or more of the following reasons:

- α) Fails to meet the requirements for Standard Grade
- β) Has a Direct Microscopic Clump Count exceeding 100 million per gram, or
- γ) Fails to meet requirements for any optional test when such tests have been performed.

Methods of Analysis (see pages 49-79)

Criteria	Reference Method
Fat	AOAC 989.05
Total Moisture	AOAC 925.45

Product Labeling

Product should be labeled as: “Dry Whole Milk (_____ % milkfat)”. If vitamins are added, appropriate declaration shall appear on the package.

Product Applications and Functionality

Confectionery, bakery products, packaged dry mixes, dairy products, soups, sauces, frozen foods, beverage use

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 also be rotated and utilized within 6 - 12 mo.

Packaging

Multiwall kraft bags with polyethylene inner liner or other approved closed container – i.e., “tote bins,” etc. Product packaged in smaller sizes for retail sale.