



Storage of Dry Milk

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Types of Nonfat Dry Milk

Regular and instant nonfat dry milk are made from skim milk that has been dried by spraying into hot air. Instant milk is regular milk which has been further processed causing it to clump together which results in a product that is easier to reconstitute with water than is regular nonfat dry milk. They both have the same nutrient composition. Regular nonfat dry milk is more compact and will require less storage space, however, it is harder to reconstitute. The most common type of dried milk to be found in grocery stores is instant nonfat dry milk.

Dried whole milk may also be available, however because of the fat present, it will not store as well as nonfat dry milk.

Dried buttermilk is available to be used in recipes calling for buttermilk. It will not keep quite as long as nonfat dried milk since it has a slightly higher fat level.

Things to consider when buying dried milk:

1. It is best to buy dry milk fortified with vitamins A and D.
2. A claim of "No Preservatives" may be on the label to reassure customers, however, added preservatives are not legal therefore no dried milk processed in the U.S. will contain preservatives.
3. The label may say Grade A to indicate the quality of the milk used in the drying process. Essentially all processing plants producing dried milk use Grade A milk today.
4. "Extra Grade" on the label indicates that the processing plant has met certain criteria and the milk is slightly lower in butterfat and moisture content, more soluble, contains fewer bacteria, and contains fewer scorched particles.
5. The size of the container holding the dried milk should fit storage space considerations and family need. Once a container is opened, the milk will not keep as long, therefore, a very large container is not desirable for a household that consumes a small amount of milk per week.
6. Type of package becomes important if the dried milk is to be stored for long periods of time. The package should be water proof and impermeable to air. Plastic films are good protection against oxygen over short periods of time, but not if the dried milk is to be stored for more than a year.
7. Do not buy more dried milk than you would normally use in a reasonable time period.
8. Date the milk when you buy it.

Storage Conditions

Temperature—The storage temperature is the most important factor in determining the length of time that dried milk can be stored and should be as cool as possible.

Oxygen—Exclude oxygen as much as possible to decrease the speed of undesirable chemical changes. Dried milk canned with nitrogen or carbon dioxide to replace air (which contains oxygen) will keep longer than dried milk that is exposed to air. Vacuum canning also decreases the available oxygen.

Packaging—The packaging for milk which will be held for extended periods of time should not permit air nor water vapor into the package. Cardboard and polyfilm packages do not provide as good of a barrier to air as do metal cans.

Moisture—Moisture will cause caking and accelerate undesirable changes in flavor, therefore, if the milk is not packaged in cans, store it in a dry location.

Light—Most types of packaging will block out light. If dried milk is to be stored in a package type (ex. glass jars, plastic bags) which does not do so, store it in a dark place. Light will accelerate the undesirable chemical changes in flavor and odor.

The following storage times and temperatures are based on nonfat dry milk (instant or regular) stored at different temperatures and in unopened packages with either nitrogen or carbon dioxide to replace the air in the package. Storage times will be shorter for products stored in paper or cardboard packages.

50°F 48 months

70°F 24 months

90°F 3 months

Use of Nonfat Dry Milk

Reconstitute instant nonfat dry milk by mixing or shaking the dried milk with enough water for the desired yield (see below). To disperse regular nonfat dry milk, beat dried milk with about half the water until uniform, then add enough water to reach the desired yield.

Yield	Instant	Regular
For 1 cup	1/3 cup	3–4 tablespoons
For 1 quart	1 1/3 cups or 3 1/2 oz.	3/4 cup or 3 1/2 oz.

After reconstitution, the dry milk should be stored in the refrigerator. Many individuals find it desirable to mix equal amounts of reconstituted dry milk and fresh milk for drinking purposes. The resulting drink is highly acceptable as well as economical.

It is much more desirable to rotate your supply of dried milk by using the oldest first than to have milk with off-flavors. However, if you do have milk which has been stored too long and has developed some off-flavor, it can best be covered up by using in baked products like quick breads or in mashed potatoes. Off-flavors are more obvious in products which use more milk such as yogurt, puddings, and gravy.

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