

10 TYPES OF PROCESSED MILK



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Sterilized Milk

Milk which has been heated to a temperature of 100°C or above for such lengths of time that it remains fit for human consumption for at least 7 days at room temperature is called sterilized milk.

Steps for the Manufacture of Sterilized Milk

1. Receiving Milk & Cooling to 5⁰ C
2. Pre-Heating at 35-40⁰ C
3. Filtration & Clarification
4. Cooling to 5⁰C
5. Standardization & Storage at 5⁰ C
6. Pre-Heating at 60⁰ C
7. Homogenization
8. Clarification, Filling & Capping
9. Sterilization
10. Cooling at Room Temperature
11. Storage at Room Temperature



Homogenized Milk

Homogenization is the process of forcing the milk through a homogenizer with the objective of sub-dividing the fat globules. Homogenized milk ensures breakup of the fat globules to such an extent that no visible fat separation will be seen even after about 48 hours.

Steps for the Manufacture of Homogenized Milk

1. Receiving Milk & Cooling to 5⁰ C
2. Pre-Heating at 35-40⁰ C
3. Filtration & Clarification
4. Cooling to 5⁰ C
5. Standardization & Storage at 5⁰ C
6. Pre-Heating at 60⁰ C
7. Homogenization
8. Pasteurization
9. Cooling to 5⁰ C
10. Bottling & Storage at 5⁰ C



Flavored Milk

Milk to which some flavors have been added to enhance consumer acceptability is called flavored milk.

Steps for the Manufacture of Flavored Milk

1. Receiving Milk & Standardization
2. Pre-Heating at 60⁰ C
3. Homogenization
4. Mixing Sugar & Stabilizer with Milk
5. Adding Flavours and Colours to the Milk
6. Pasteurization at 71⁰ C for 30 minutes
7. Cooling to 5⁰ C
8. Bottling & Storage at 5⁰ C



Vitaminized Milk

The milk may be modified by the partial removal/substitution of different milk solids, carbohydrates, such as sucrose, dextrose, maltose and lactose; salts like phosphates and citrates; vitamins A, D, E, B Group, Vitamin C and other vitamins; and minerals like iron, zinc, copper and iodine. Such method of adding minerals and vitamins in a product from an external source in order to enhance its nutritional value is called “**Fortification**”. Vitaminized milk is milk in which one or more vitamins are added.

Irradiated Milk

Irradiated milk is a type of milk in which vitamin D content has been increased by exposing it to UV (ultra violet) rays through the process of irradiation.

Fermented Milk

Fermented milk is prepared by employing one or more micro-organisms which brings change in the texture and flavor of milk after a well stipulated time. Lactic acid fermentation or souring of milk is the most important type of fermentation being carried out in milk. Popular fermented milks are yoghurt, and buttermilk.

Steps for the Manufacture of Fermented Milk

1. Receiving Milk & Cooling to 5⁰ C
2. Pre-Heating at 35-40⁰ C
3. Filtration & Clarification
4. Cooling to 5⁰ C
5. Standardization & Storage at 5⁰ C
6. Preheating at 60⁰ C
7. Homogenization
8. Pasteurization at 80-90⁰ C for 15-30 minutes
9. Cooling to 25⁰ C
10. Inoculation with Yeast/Bacterial Culture for Fermentation
11. Incubation at 25⁰ C for 16-18 hours
12. Bottling & Storage at 5⁰ C



Standardized Milk

Standardized milk is the milk whose fat content and/or solids-not-fat content have been adjusted to a certain pre-determined level. As per PFA rules, the Standardized milk should contain a minimum of 4.5% fat and 8.5% solids-not-fat.

Steps for the Manufacture of Standardized Milk

1. Receiving Milk & Cooling to 5⁰ C
2. Pre-Heating at 35-40⁰ C
3. Filtration & Clarification
4. Cooling to 5⁰ C
5. Standardization & Storage at a5⁰ C
6. Pasteurization at 63⁰ C for 30 minutes
7. Bottling & Storage at 5⁰ C



Reconstituted/Rehydrated Milk

Milk prepared by dispersing whole milk powder in water approximately in the proportion of 1 part powder to 7-8 parts water. It helps in meeting up the demands while facing shortage of fresh milk supplies in developing countries.

Steps for the Manufacture of Reconstituted/Rehydrated Milk

1. Receiving Water in Pasteurizing Vats
2. Pre-Heating at 38-43⁰ C
3. Adding Whole Milk Powder into the Water & Mixing Well
4. Filtration Process
5. Pasteurization at 63⁰ C for 30 minutes
6. Cooling, Bottling & Storage at 5⁰ C

Recombined Milk

Product obtained when butter oil, skim milk powder and water are combined in the correct proportions to yield fluid milk. This is also used for making up the supplies of milk during shortage in developing countries.

Steps for the Manufacture of Recombined Milk

1. Receiving Water in Pasteurizing Vats
2. Pre-Heating at 38-43⁰ C
3. Adding Skim Milk Powder into the Water & Mixing Well
4. Adding Butter Oil and Mixing Well at 42-49⁰ C
5. Filtration Process
6. Pasteurization at 63⁰ C for 30 minutes
7. Homogenization of Recombined Milk
8. Cooling, Bottling & Storage at 5⁰ C

Toned Milk

The concept of preparing toned milk was developed in India. It is prepared by dispersing whole milk in water and skim milk powder and thus reducing its fat content to 3 percent. It results in depreciation of milk prices by just reducing its fat content and at the same time increasing availability of milk for consumption. Toned milk is not only helping in meeting the ever increasing milk demands of the country but also being widely consumed with the perspective to intake low calorie, low fat but a highly nutritious diet in order to acquire fitness.

Double Toned Milk

Double toned milk is based on the similar concept as that of toned milk. It is a special type of milk prepared by dispersing whole milk to water and skim milk powder. The fat content of double toned milk is adjusted to 1.5 percent and thus the amount of fat and also the prices are lower than that of toned milk.

PFA Standards For Different Classes Of Milk In India (%)

Class Of Milk	Milk Fat	Milk-solids-not-fat (MSNF)
Cow Milk	4.0	8.5
Mixed Milk	4.5	8.5
Standardized Milk	4.5	8.5
Recombined Milk	3.0	8.5
Toned Milk	3.0	8.5
Double Toned Milk	1.5	9.0
Skimmed Milk	Not More Than 0.5	8.7
Full Cream Milk	6.0	9.0

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