SS Engineers & Consultants

EQUIPMENTS FOR MINI & LARGE FOOD FACTORIES

SS Engineers & Consultants as Turn-key Project executors

SS Engineers & Consultants was established between the end of 1999 by its parent company SRI PUMPS & FITTINGS INDL. CORP.

From the beginning the family-run company specialized in the construction of equipment for the dairy industry and developed later into the field of soft drinks, juices and beverages in general.

Today the SS Engineers name is among the more well-known in the dairy and beverages sector and the company is internationally acclaimed & acknowledged, particularly in the realization of "turn-key" projects, and in the specific processing sectors, such as production of cheese, pasteurization and packaging ones.

Looking more closely at the company's product ranges, the SS Engineers division covers research, project design along supply of complete systems for the milk, cream – fermented food products, fresh soft cheeses, and other liquid foods.

In this field the company has a wide experience and can cover all equipment needs suitable for small or big production house of pasteurized drinking milk, yoghurt, different kinds of cheese, butter, etc.

In the beverage field, the range includes pre-mix units, sugar dissolving systems, filters, mixing and storage tanks as well as the complete thermal treatment up to the filling. These kinds of plants are "tailor-made" designed according to customer's specific demands. The company is also renowned and appreciated for following products: Batch pasteurizers; discontinuous cream pasteurizers; butter churns, khova making, and other special purpose equipments.

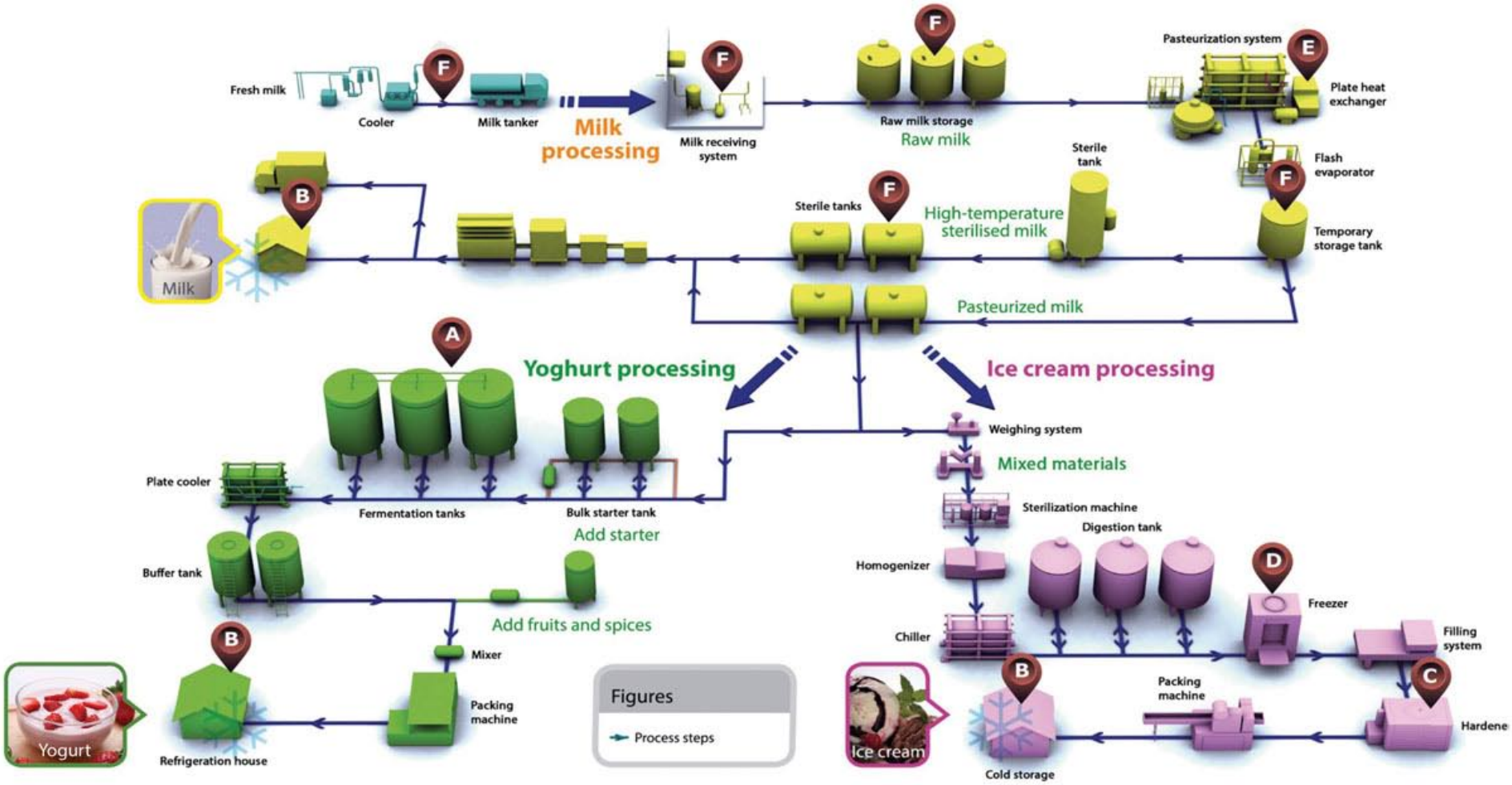
Fifteen years of experience in food-stuff industry, its long lasting cooperation with many companies world wide today SS Engineers is able to meet the uncompromising demands in processing technology and Food production in India.

Professional Food solution Provider

"Small-Medium-Large"

SS Engineers & Consultants

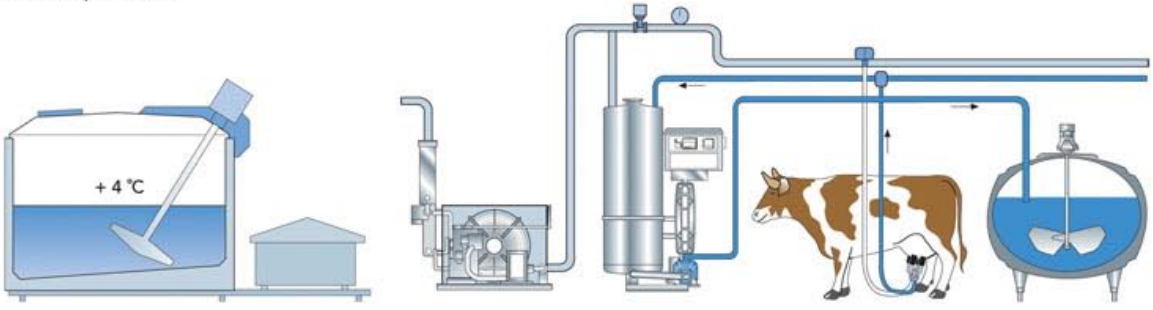
SS Engineers & Consultants



COLLECTION AND RECEPTION OF THE FRESH MILK

KEEPING THE MILK COOL

The milk should be chilled to + 4 °C immediately after milking and be kept at this temperature all the way to the dairy. If the cold chain is broken somewhere along the way, e.g. during transportation, the microorganisms in the milk will start to multiply. This will result in the development of various metabolic products and enzymes. Subsequent chilling will arrest this development, but the damage will already be done. The bacteria count is higher and the milk contains substances that will affect the quality of the end product.



PROCESSING OF PASTEURIZED MARKET MILK

Pasteurized milk products are liquid products made from milk and cream intended for use directly by consumers. This group of products includes whole milk, skim milk, standardized milk and various types of cream.

In most countries, clarification, pasteurization and cooling are compulsory stages in the processing of consumer milk products. In many countries, the fat is routinely homogenized, while in others homogenization is omitted because a good “cream-line” is regarded as evidence of quality. De-aeration is practised in certain cases when the milk has a high air content, as well as when highly volatile off-flavour substances are present in the product. This may occur, for example, if cattle feed contains plants of the onion family.

Processing of market milk products requires first-class raw material and correctly designed process lines in order to attain end products of the highest quality. Gentle handling must be ensured so that the the valuable constituents are not adversely affected.

To ensure milk quality, there are microbiological standards for intra-community trade in milk within Europe, set by Depending on legislation and regulations, the design of process lines for pasteurized market milk varies a great deal from country to country and even from dairy to dairy. For instance, fat standardization (if applied) may be executed in-batch before pasteurization or in-line where the standardization system is integrated into a pasteurization unit. Homogenization may be total or partial.

The simplest process is to pasteurize the whole milk. Here, the process line consists of a pasteurizer, a buffer tank and a filling machine. The process becomes more complicated if it has to produce several types of market milk products, i.e. whole milk, skim milk and standardized milk of varying fat content, as well as cream of varying fat content.

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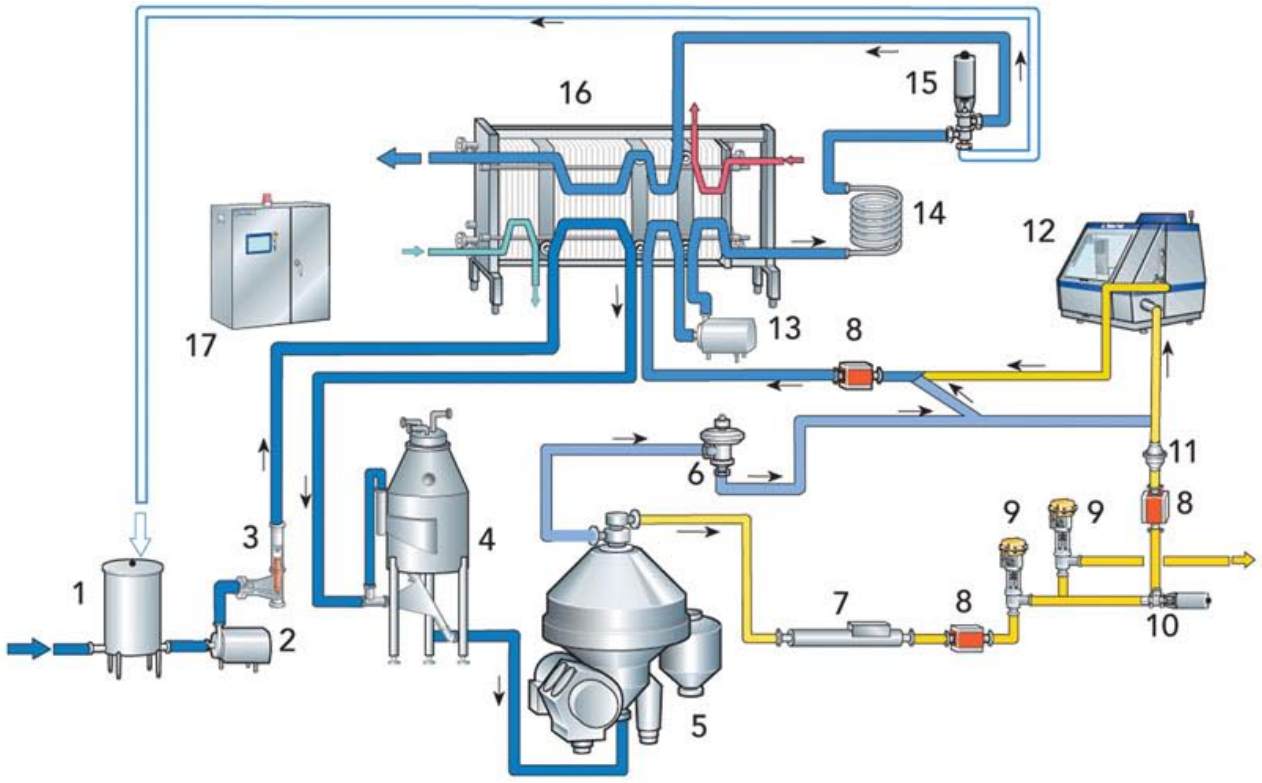
PASTEURIZATION UNIT FOR MARKET MILK WITH PARTIAL HOMOGENIZATION.

- Milk
- Cream
- Skimmilk
- Standardised milk
- Heating medium
- Cooling medium
- Diverted flow



1	Balance Tank
2	Product Feed Pump
3	Flow Controller
4	Deaerator
5	Separator
6	Constant Pressure Valve
7	Density Transmitter
8	Flow Transmitter
9	Regulating Valve
10	Shut-off Valve
11	Check Valve
12	Homogeniser
13	Booster Pump
14	Holding Tube
15	Flow Diversion Valve
16	Plate Heat Exchanger
17	Process Control

FERMENTED MILK PRODUCTS

INTRODUCTION:

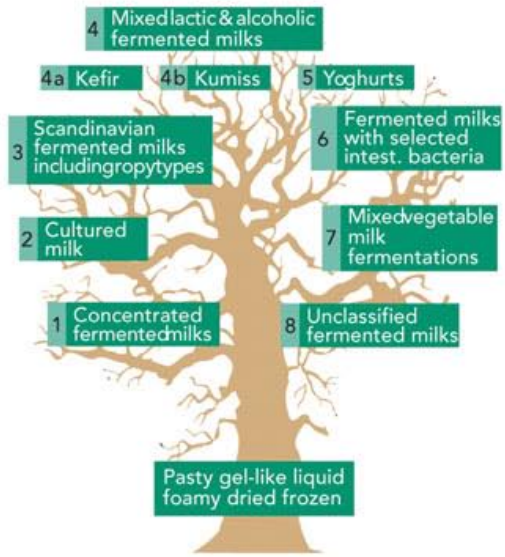
Milk products prepared by lactic acid fermentation (e.g. yoghurt) or a combination of this and yeast fermentation (e.g. Kefir) are called fermented or cultured milks. The term fermented will be used in this chapter.

Fermented milk is the collective name for products such as yoghurt, ymer, kefir, cultured buttermilk, filmjölk (Scandinavian sour milk), cultured cream and koumiss (a product based on mares' milk).

The generic name of fermented milk is derived from the fact that the milk for the product is inoculated with a starter culture which converts part of the lactose to lactic acid. Dependent on the type of lactic acid bacteria used carbon dioxide, acetic acid, diacetyl, acetaldehyde and several other substances are formed in the conversion process, and these give the products their characteristic fresh taste and aroma. The microorganisms used in the production of kefir and koumiss also produce ethyl alcohol.

Fermented milk originates from the Near East and subsequently became popular in Eastern and Central Europe. The first example of fermented milk was presumably produced accidentally by nomads. This milk turned sour and coagulated under the influence of certain microorganisms. As luck would have it, the bacteria were of the harmless, acidifying type and were not toxin-producing organisms.

FERMENTED MILK PRODUCTS FAMILY



YOGHURT

Yoghurt is the best known of all fermented milk products, and the most popular worldwide. The consistency, flavour and aroma vary from one district to another. In some areas, yoghurt is produced in the form of a highly viscous liquid, while in other countries it is in the form of a softer gel. Yoghurt is also produced in frozen form as a dessert, or as a drink.

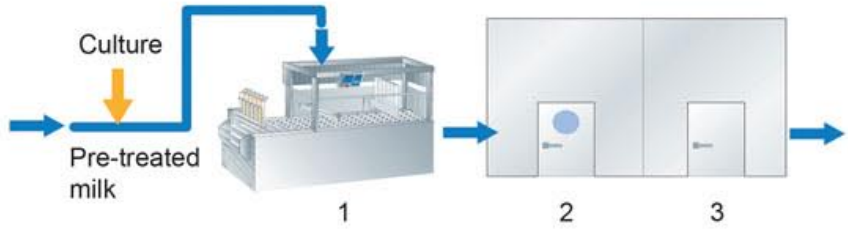
The flavour and aroma of yoghurt differ from those of other acidified products, and the volatile aromatic substances include small quantities of acetic acid and acetaldehyde.

We live milk

Yoghurt is typically classified as follows:

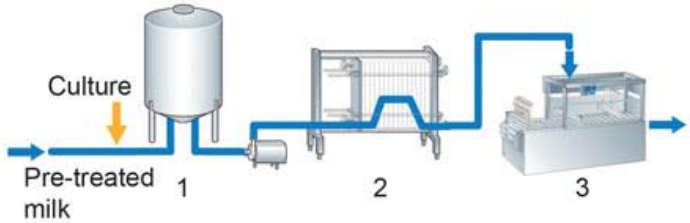
- Set type: incubated and cooled in the package, Figure 1
- Stirred type: incubated in tanks and cooled before packing, Figure 2
- Drinking type: similar to stirred type,
  but the coagulum is broken down to a liquid before being packed, Figure 3
- Frozen type: incubated in tanks and frozen like ice cream, Figure 4
- Concentrated: incubated in tanks, concentrated and cooled before being packed.
  This type is sometimes called Greek yoghurt or strained yoghurt,
  sometimes labneh or labaneh, Figure 5

FIG 01



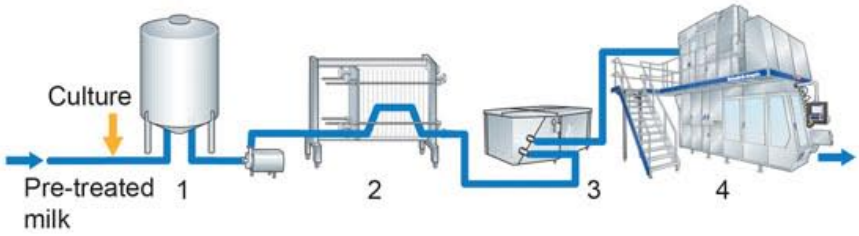
1 Cup Filler
2 Incubation Room
3 Rapid Cooling Room

FIG 02



1 Incubation Tank
2 Cooler
3 Cup Filler

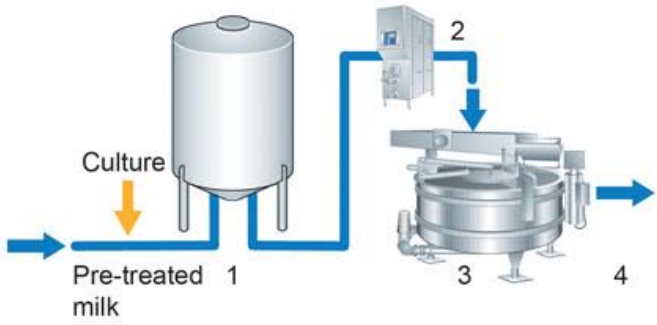
FIG 03



1 Incubation Tank
2 Cooler
3 Homogenizer
4 Filling Machine

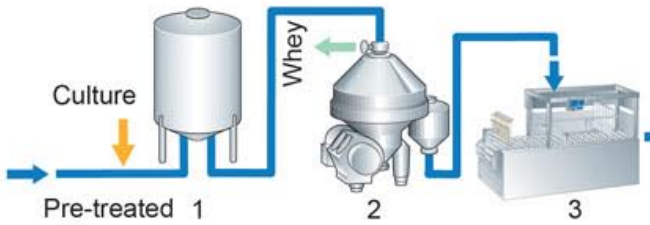
YOGHURT

FIG 04

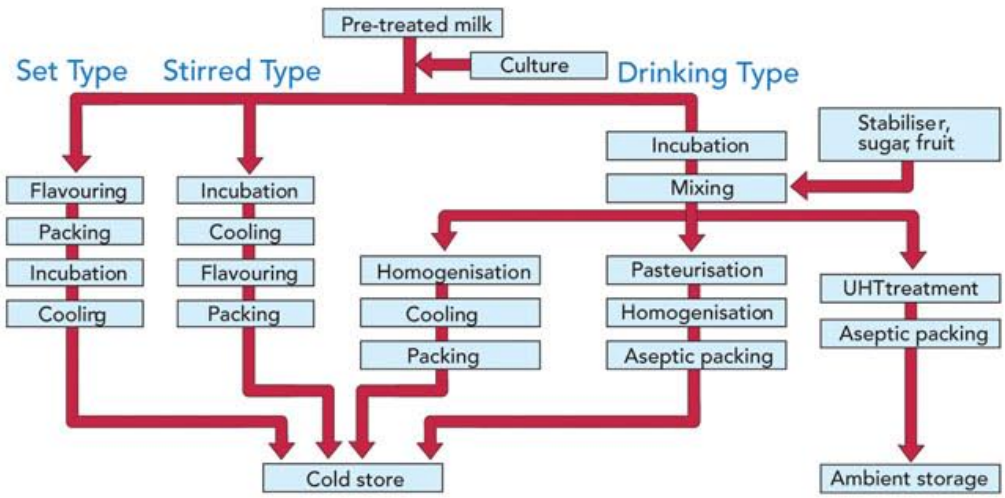


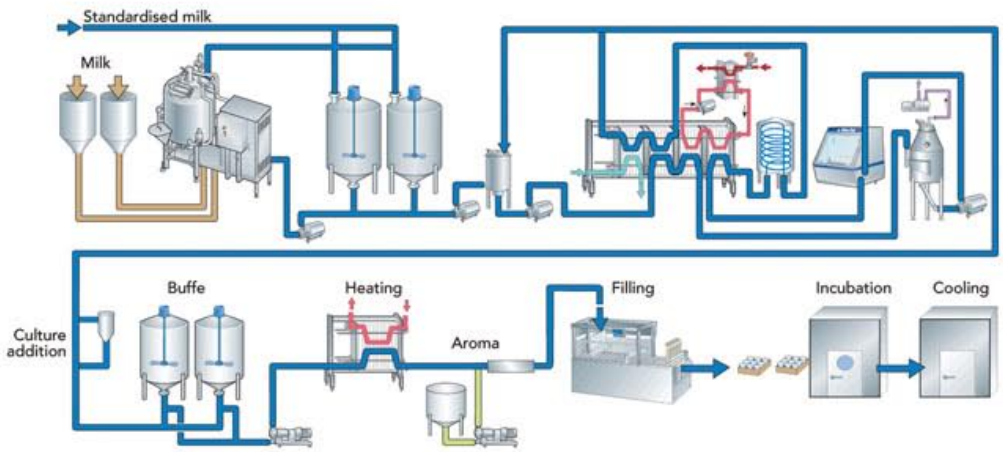
1 Incubation Tank
2 Continuous Freezer
3 Ice cream Bar Freezer
4 To Hardening Tunnel

FIG 05



1 Incubation Tank
2 Separator or Membrane Filtration
3 Cup Filler





RECOMBINED MILK PRODUCTS

Milk is a perishable commodity, and therefore scarce in many countries with little or no dairy production of their own. In such countries raw milk is replaced partly or fully by milk powder as raw material.

Recombination is an alternative method of supplying a product that closely resembles fresh dairy milk to markets where the genuine article is not available.

The manufacture of recombined milk and milk products has been well established in many countries around the world, and a variety of processes and equipment have been developed for this purpose.

The principles of the processes are much the same. The initial applications were fluid milk, but this was followed by production of recombined evaporated milk and sweetened condensed milk.

Today recombination also includes yoghurt, butter and cheese. The processes have been developed over the years from simple batch operations to sophisticated systems with high capacities.

The main processes in the basic reconstitution and recombining operations are:

- Raw material handling
- Weighing and mixing
- Filtration, homogenization and heat treatment

DEFINITIONS

Reconstituted milk is the liquid milk obtained by adding water to skim milk powder (SMP), whole milk powder (WMP) or their mix.

Recombined milk is the liquid milk obtained by adding water to SMP and adding milk fat separately in such a quantity that the desired fat content is achieved.

Reconstituted milk products are the products resulting from addition of water to the dried or condensed form of product in the amounts necessary to re-establish the specified water/solids ratio.

Recombined milk products are manufactured by mixing milk fat and milk solids-non-fat (MSNF), with water. This combination must be made so as to re-establish the specified fat to MSNF ratio and dry matter (DM) to water ratio.

Recombined modified milk and milk products are products made from dairy-product ingredients with compositions other than normal dairy products, e.g. flavoured products, butter from fractionated fat, or dietary evaporated or condensed milk.

Filled milks and milk products are “semi-dairy” products in which the milk fat is replaced by vegetable oils, e.g. liquid milk, evaporated milk, condensed milk or cheese. Alternative terms could be called “imitation” or “substitute” milk products.

Fortified milk is made from fresh milk, reconstituted milk or recombined milk with the addition of one or more ingredients of dairy products. Toned milk is fresh milk mixed with reconstituted or recombined skim milk in order to prepare normal composition milk or modified milk from high-fat milk, by adjusting the MSNF.

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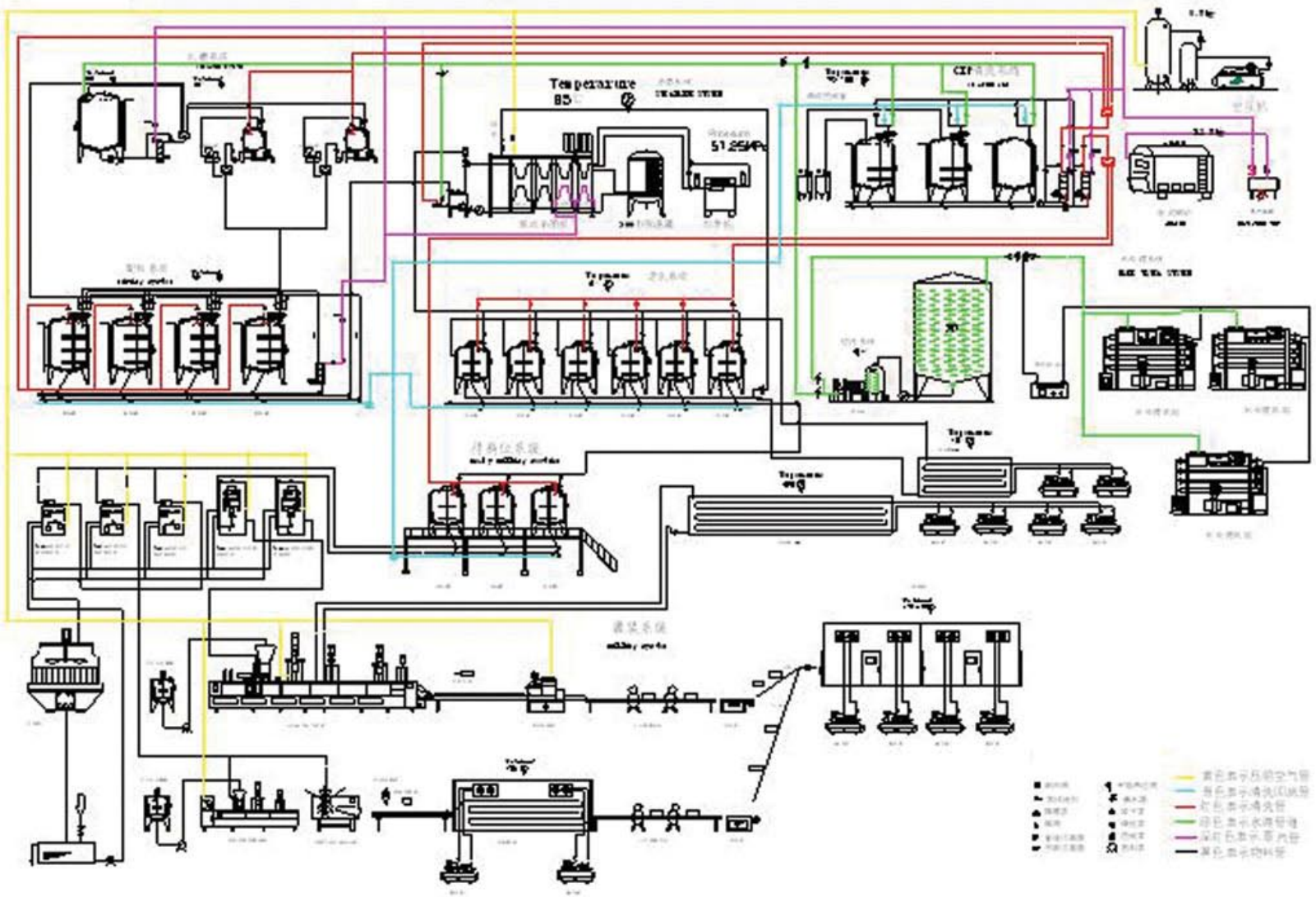

SRI PUMPS & FITTINGS INDUSTRIAL CORPORATION

VALVES, & PIPE FITTINGS

SRI PUMPS MFG. CO,.

PROCESS PUMPS

MRK INDUSTRIES

INDL BALL VALVES

TECHNOLOGY

SS ENGINEERS & CONSULTANTS

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