

## PRESERVATION

Preservation consists of maintaining an element in a constant state. The three technologies of preservation most used in milk are pasteurization, traditional sterilization and UHT sterilization.

Poor preservation conditions can affect the nutritional value of milk. Light, oxygen and heat can be particularly harmful.

- Preservation of dairy products at too high a temperature ( $> 20^{\circ}\text{C}$ ) contributes to the deterioration of their bacteriological quality and can lead to modifications in taste, appearance and/or to its nutritional value (loss of lysine and vitamins).
- The combined effects of light and oxygen are particularly harmful to riboflavin (vitamin B2) which is very sensitive to light. Vitamin C is very sensitive to oxygen. When exposed to sunlight or to neon, riboflavin loses its effect very rapidly, in fact, up to a 90% loss in two hours. Vitamins A and B-carotene are also photosensitive: 20 to 30% of vitamin A can be destroyed after one hour of exposure.
- Milk fat seems to protect riboflavin and vitamin A from the effects of light; losses are less important in whole milk than in skimmed milk.
- Poor preservation conditions can also lead to interactions between vitamins. For example, the biologically inactive compounds formed following the decomposition of riboflavin by light, can catalyse the oxidation of vitamin C. This vitamin, which is then oxidised, loses its capacity to prevent the oxidation of folic acid.
- In order to prevent these chain reactions, it is necessary to protect milk from light, air and heat.

### **Preservation advice:**

It is advised to preserve milk in its original packaging and to keep milk in the refrigerator as follows:

- Raw milk: one day in the refrigerator. To be boiled before consumption
- Fresh pasteurized milk: 7 days in the refrigerator if in sealed packaging and 2 days once it has been opened.
- Sterilized milk or ultra high temperature (long shelf life): several months in sealed packaging (away from any heat sources). A maximum of 3 days in the refrigerator once it has been opened.

It is not necessary to boil pasteurized, sterilized or UHT milk.