

UHT Milk Factsheet



UHT milk – overview

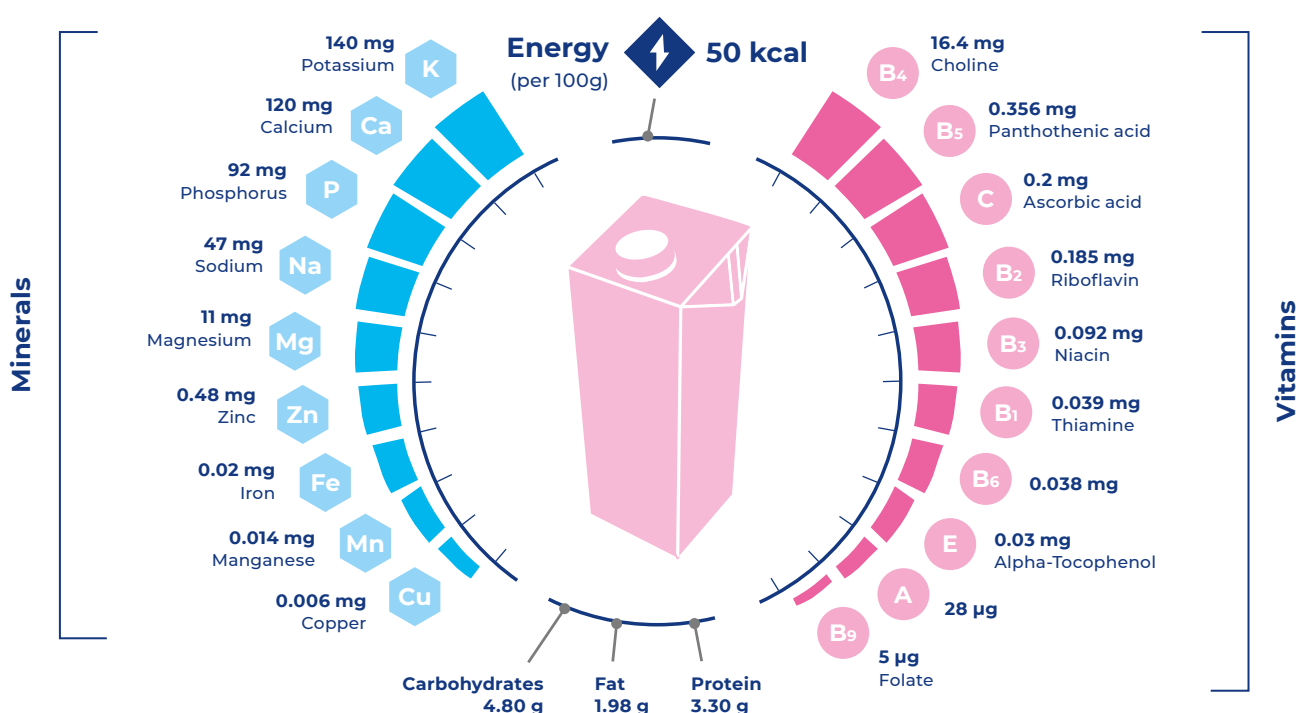
- UHT milk is a milk that has been processed at ultra-high temperatures and is packaged in an aseptic unit.
- The nutritional value of UHT and Pasteurized milk is the same when it comes to the major nutrients of Vitamin (A, B-complex, D, E) minerals (Calcium, Potassium, Magnesium and Phosphorus) and Proteins. However, a loss of sensitive vitamins such as Folic Acid, Ascorbic Acid, Vitamin B-12 and B6 can occur in UHT milk during heat treatment and storage. The degree of these losses does not have a significant impact on the overall nutritional quality of the UHT milk.
- It can be stored unopened for many months without refrigeration. The shelf life of UHT milk, unlike pasteurized milk, is not restricted by the growth of microorganisms, but instead by physical and chemical changes in the milk, such as cream separation or browning reactions.

- UHT milk is a nutritious, tasty and safe product that is sold throughout developed and emerging markets alike. It can be more easily transported over longer distances and at ambient conditions while pasteurised milk has to be transported in chilled conditions.
- Due to the ultra-heat treatment and aseptic packaging used for UHT milk, there is no need to add preservatives to the product.
- UHT milk is available as skimmed, semi-skimmed or full fat as well as lactose-free.

What is UHT?

- UHT is a heat treatment at ultra high temperature (above 135°C) for a few seconds.
- To produce UHT milk, both a sterilizer and an aseptic (i.e. sterile) packaging machine are required.
- The main goal of UHT treatment is to maximise the destruction of microorganisms while minimising [chemical] changes in the product.

Minerals & Vitamins per 100g semi skimmed UHT milk



Vitamine	Losses by (%) UHT Treatment	Sensitivity to	
		Light	Oxygen
Ascorbic acid	0-80	–	+++
Folic acid	10-20	–	++
B ₁₂	0-30	–	–
B ₆	0-20	–	–
B ₂ (riboflavine)	<10	+++	–
Thiamin	<10	+	
A	Very low		
D	Very low		
E	Very low		



How is UHT milk made?

- UHT is a thermal preservation treatment using hot water or steam for the heat treatment of the product. It is a well proven technology that has been used for more than 60 years.
- UHT milk is made by rapidly heating milk to a temperature of at least 135°C, keeping it there for a few seconds, and then quickly cooling it down. This means all microorganisms present in the raw milk, that may grow in the milk when stored at ambient conditions are destroyed, preventing further growth.
- There are two types of UHT treatment that can be used for milk: direct and indirect
 - During direct UHT treatment, steam comes in direct contact with the product, heating it and producing condensate. This is followed by rapid vacuum cooling. The condensate from the steam used for heating is then removed.
 - The brevity of the treatment makes it possible to maintain excellent product quality.
 - With the second technology, indirect heating, the product does not come into direct contact with the heat source (steam), but is instead heated by using a hot surface, which is heated by hot water in heat exchangers. The heating process is more lengthy in an indirect system compared to a direct system. This is a much more cost-effective heating method, as more of the energy is recovered. However it has slightly more impact on the product quality.

How is UHT milk different from traditional chilled milk?

- Chilled milk, also referred to as pasteurized milk, is heat treated typically at 72-74°C for 15-20 seconds.

This is enough to kill all pathogenic microorganisms that can cause disease and illness in humans. However, some microorganisms that cause spoilage will still survive, limiting the shelf life of chilled milk to around seven days when refrigerated.

- UHT milk is heat treated at higher temperatures and packed aseptically (without reinfection). All microorganisms (both pathogenic and spoilage microorganisms) are destroyed and the product can therefore be stored for months without refrigeration.

Packaging and storage

- UHT milk is packaged in sterile containers protecting it from exposure to air, light or microorganisms, which could induce unwanted physical or chemical changes in the product.
- Packaging UHT milk in sterile containers means it can be stored safely for many months without refrigeration.
- It can be served at room temperature or chilled.
- Once opened, UHT milk should be refrigerated and consumed quickly like any other perishable food.
- The easiest way to find out how long an unopened package of UHT milk can be kept for is to check the expiry date on the package.

Taste, health and nutrition

- UHT milk is often described as being creamy in taste compared to traditional pasteurized chilled milk. However, many feel the difference is hardly noticeable when milk is served chilled at a refrigeration temperature.
- The nutritional value of UHT milk and traditional pasteurized chilled milk is not significantly different. Both contain a range of high level of nutrients that are only found together naturally in dairy sources. These include for example calcium, phosphorus, vitamin A and vitamin B₁₂.

Key considerations for UHT milk

- The quality of the raw milk has an impact on the quality of the final UHT milk product.
- Manufacturers must be aware of the dairy farm operation, raw milk transportation, and handling and testing at the processing plant to ensure high quality UHT milk.
- Additionally, poor-quality raw milk can also impact the efficiency and operational cost of processing UHT milk as well as its shelf life.