



IS 4238 - Sterilized and Ultra High Temperature Sterilized Milk

Milk is the normal mammary secretion derived from complete milking of healthy milch animal and free from colostrum.

Sterilization is the process of heating milk in sealed container continuously to at least **115°C for 15 minutes** or equivalent heat treatment to reduce the microbial load in milk whereas Ultra High Temperature sterilization is the process of **heating milk to at least 135°C for a period of one second or more** in a continuous flow and then packing under aseptic condition in **hermetically sealed containers** to ensure **preservation at room temperature for a period not less than 30 days** from the date of manufacture. Both techniques makes it **free from viable bacteria** and preserves it in a sterilized container for consumption as fluid milk for a long period which may be even six months.

Indian Standard specifies the requirements of sterilized/UHT sterilized milk. The standard specifies the requirements for **creaming index** which gives the measure of the stability of fat emulsion in homogenized milk and also for **nizo index** to measure homogenization efficiency in milk. Nizo index of shows that how long the UHT treated milk can stay stable on the shelf without a cream layer forming.

Indian standards specifies that **bacterial spores in UHT treated milk shall be absent** as some spores can survive the high-heat treatment and cause spoilage during storage, leading to reduced shelf life and potential product quality issues.

UHT treated milk should be free from **chemical residues** such as heavy metals and toxins produced by microbes as they are toxic and leads to health risk.

Indian Standard insists the quality requirements to ensure that sterilized and UHT milk is safe to drink, has a **longer shelf life at room temperature**, and retains its nutritional benefits.