

SPORE REMOVAL FROM MILK AND WHEY

with membrane filtration



BACTERIA AND SPORE REMOVAL FROM MILK AND WHEY

Tetra Pak is the world's leading food processing and packaging solutions company. Working closely with our customers and suppliers, we provide safe, innovative and environmentally sound products that each day meet the needs of hundreds of millions of people around the world. Tetra Pak has over 23,000 employees and operations in more than 175 countries.

The Tetra Pak expert center for membrane filtration is Tetra Pak Filtration Solutions, a world-leading hub for advanced liquid separation solutions to the global food & dairy industry. We offer an unmatched range of filtration processing solutions for value-added products and optimized process economy. As an innovative company, Tetra Pak Filtration Solutions cooperates with customers, universities, and other business partners on an ongoing basis in order to develop new applications of separation technologies and constantly push performance. We are located in Silkeborg Denmark and Champlin USA.

Tetra Pak Filtration Solutions has a great deal of experience with effective and environmentally friendly reduction of bacteria and spores by means of microfiltration.

Contact us - and let us help you optimize your product.

Requirements to safe and healthy powders for infant formula and nutritional foods are becoming stricter in the wake of unacceptable incidents with contaminated ingredients, which have seriously jeopardized people's health. Consumer concerns call for better and safer solutions to remove bacteria and spores in milk and whey processing.

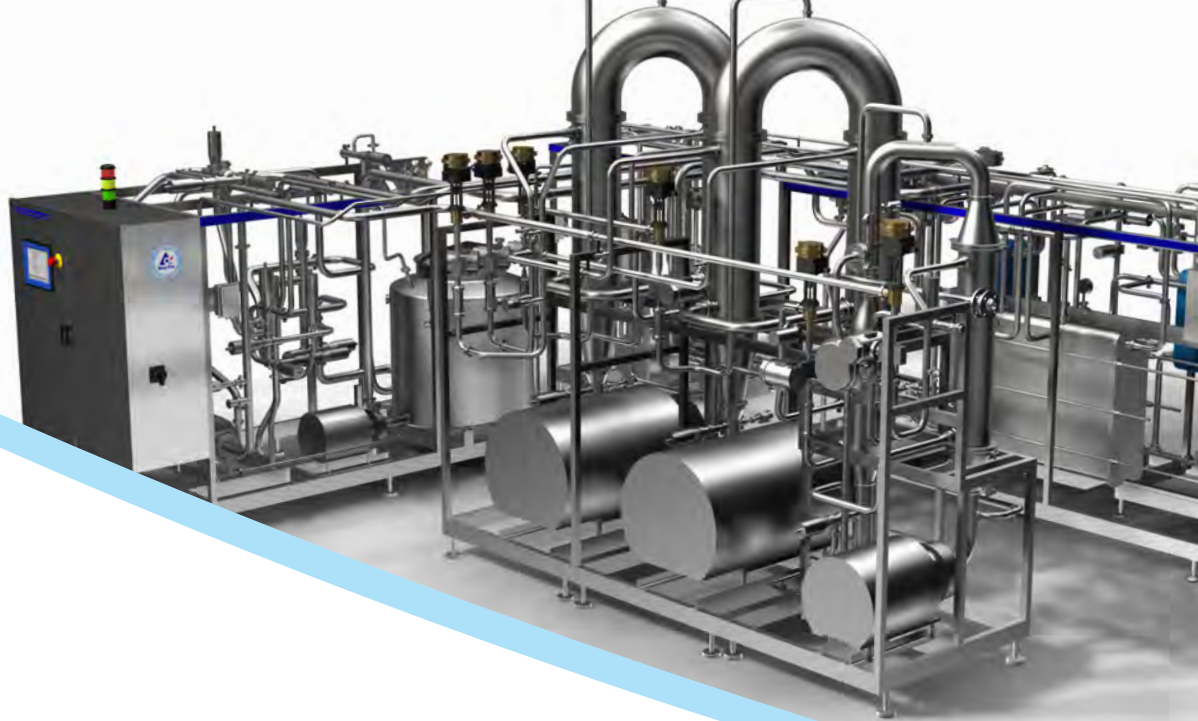
The spore challenge

Bacteria and spores are everywhere. They enter a milk processing plant via soil and dust in the environment, via the cattle's feed and manure, milking equipment, and insufficient hygiene. Once inside the processing plant bacteria and spores will seriously affect the quality of the final product unless controlled effectively.

Combatting spores

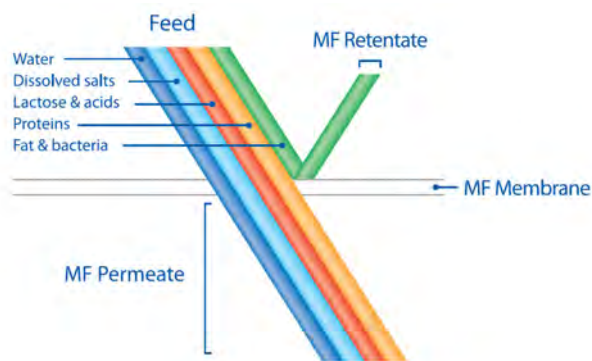
Many methods are being used to kill and remove spores. Spores are particularly difficult to get rid of, being robust and some resistant to pasteurization, UV and gamma radiation, freezing, desiccation, and treatment with chemical compounds. However, these approaches downgrade the quality of the product considerably, consume energy, and affect the environment negatively.





Ceramic microfiltration

An effective way and environmentally friendly way to reduce the number of bacteria and spores drastically is the use of ceramic microfiltration, which ensures up to log 6 reduction. The bacteria and spores are removed from the product stream, along with bacterial enzymes and somatic cells.



The figure shows what passes the membrane in the microfiltration section and what is retained.

Working principle

The microfiltration system provides continuous and inline bacteria and spore removal by means of ceramic membranes. The system consists of cross-flow filtration loops in which the calibrated ceramic membranes are the key components. The pore size of the ceramic filter ranges from 0.8 μ , to 1.4 μ .

Highlights

- Up to log 6 reduction of bacteria and spores
- Bacteria and spores removed from the product
- Flexible and modular design
- Long membrane life 10+ years
- Easy to clean, membranes resistant to high pH and heat sterilizing

Benefits

- Increased product safety
- Improved product quality
- Reduced product loss
- Low heat, high quality ingredients
- Low maintenance costs
- Improved process economy

Environmental focus

In developing our equipment we make every effort to minimize environmental impact.

Our focus on environmental awareness applies to the construction of the equipment as well as the subsequent performance of the equipment. We focus on reduced energy and water consumption, minimum loss of food product, and control of substances in the product. The equipment is prepared for dismantling and re-use of materials when taken out of service.

Tetra Pak Filtration Solutions


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