



Cool and fresh

Alfa Laval beer sterile filtration solutions



Making sure of the best results

Alfa Laval in filtration

Alfa Laval has a well-proven long-term track record in supplying brewing industry customers with a comprehensive range of advanced-technology separation and filtration equipment.

Full range

The unique coupling of Alfa Laval systems and Sartorius membrane filtration know-how means we can supply you with a comprehensive range of solutions for the filtration of both fluids and gases in your brewery operations. These range from complete filtration systems to the supply of individual Sartorius filtration cartridges.

Sterile filtration

Beer sterile filtration processes play a key role in many of the final stages of modern brewing. Many breweries now choose sterile filtration as an alternative to pasteurization, because this makes it possible to remove undesirable micro-organisms before the beer is filled into bottles or kegs.

This enables you to achieve the highest levels of microbiological safety for your beer – and for consumers – while still maintaining the fresh, natural taste that is essential for sales success.

In the highly specialized field of sterile filtration for breweries, Alfa Laval provides state-of-the-art solutions featuring the unique membrane filtration technology available as part of our global alliance with the renowned Sartorius brand. We also provide complete systems based on the best possible combination of Alfa Laval technologies and equipment, fitted with Sartorius filtration cartridges and integrated into supremely effective filtration units and systems.

The exceptional levels of filtration efficiency, a stringent focus on hygiene as an integral part of the design and the best possible process security together make sure your cold filtered beer is always at its best.



Systems for sterile filtration of beer

The systems for beer sterile filtration from Alfa Laval are complete systems including the steps of beer sterile filtration, pre-filtration of CIP and water and sterile filtration of gases.

The complete systems are designed specifically to boost the performance of the Sartorius sterile filtration cartridges. These systems therefore also include a pre-filtration step with Sartorius depth filtration cartridges that maximize the quantities of beer that actually pass through the sterile filtration cartridges, and thus boost productivity.

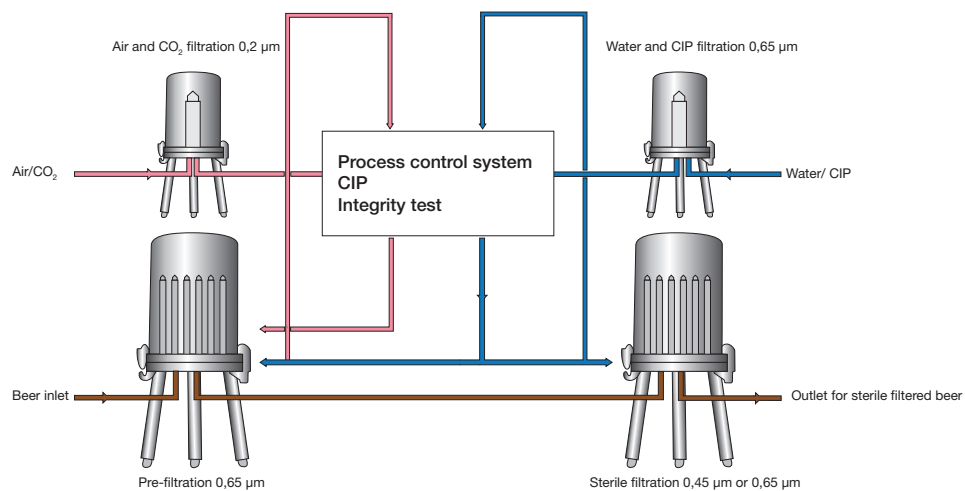
The key benefits of Alfa Laval beer sterile filtration include

- A fresh, natural beer taste
- Maximum process security
- Reliable performance
- Complete removal of micro-organisms that can affect beer quality and taste
- Easy to operate and low on maintenance
- Easy to integrate into existing production lines.





Standard layout for beer sterile filtration



The beer from the bright beer area is initially filtered with Sartorius depth filtration cartridges with a nominal retention rate of 0.65 µm, followed by a sterile filtration step using Sartocool® filtration cartridges with absolute retention rates of either 0.45 µm or 0.65 µm. After the micro-organisms have been removed, the beer is ready to be filled.

Any water and CIP liquids that come in contact with the sterile filtration cartridges are also pre-filtered, to eliminate any risk of soiling these cartridges.

Alfa Laval beer sterile filtration systems are optimized for effective cleaning-in-place of the pre-filtration and sterile filtration cartridges. These are cleaned and regenerated on a regular base with standard caustic solutions. In addition, the complete system – including the cartridges – is sterilized with hot water.

The system also integrates supply of sterile gases for integrity testing and to minimize beer losses at the beginning and end of the production runs. The entire system is automatically controlled to ensure the best possible process conditions along with maximum reliability, safety and the lowest possible costs.

Being sure of the results

Alfa Laval membrane filter solutions enable you to achieve and maintain the highest standards of hygiene during the

sterile filtration of your beer, using special filtration cartridges that are sterilized to prevent any microbiological contamination. The system includes automatic integrity testing that checks the condition of the Sartorius sterile filtration cartridges before and after each batch of beer.

Different requirements, different solutions

Sartocool PS 0.45 µm membranes provide:

- 100% retention of yeast cells as well as all kinds of other bacteria that might risk spoiling the beer
- LRV 7 (Log reduction value) for Lactobacillus bacteria.

Sartocool PS 0.65 µm membranes provide:

- 100% retention of yeast cells
- LRV 7 for Saccharomyces cerevisiae (brewer's yeast).





Microbiological safety

For all breweries, it is essential that your filtered beer is microbiologically stable. Sartocool PS filtration cartridges are available with two different pore sizes – 0.45µm or 0.65 µm – to match the level of retention you specify.

Sartorius filtration cartridges are integrity-tested and validated to ensure the reproducible retention of micro-organisms, to help minimize any risk of the sterile filtered beer getting spoiled.

Chemical compatibility

Sartocool PS filtration cartridges incorporate membranes made of polyethersulfone (PES). This PES membrane was specially developed to meet particularly demanding brewery requirements in terms of cleaning and sterilization cycles. Because it can also tolerate high PH levels (from 1 to 14), you can easily regenerate each filtration cartridge using caustic liquids. This

means Sartocool PS filtration cartridges deliver reliable performance throughout their long service life. Such membranes can withstand exceptional mechanical and thermal stresses, thus guaranteeing the mechanical stability required in many brewery applications – such as the filling of kegs.

Low adsorption

The PES membrane also features low adsorption of undesirable particles, colloids and proteins. This reduces the load on the final membrane, without affecting the characteristics of the beer.

This low adsorption makes it easier to regenerate the membrane, resulting in a longer service life that helps cut filtration costs.

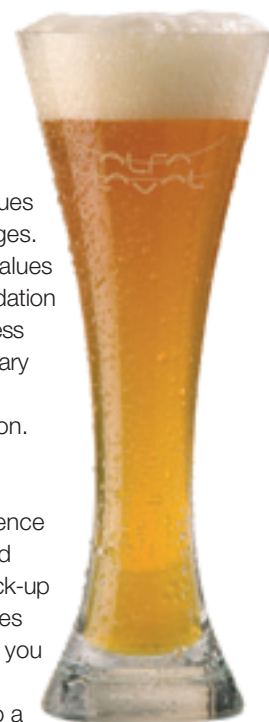
Testable cartridge integrity

The integrity of the Sartocool PS cartridge can be tested on a daily basis, both before and after filtration, to guarantee

maximum microbiological safety. Automatic integrity testers from Sartorius measure the bubble point and diffusion values of the installed cartridges. When the measured values are in line with the validation data, the filtration process provides all the necessary guarantees regarding microbiological retention.

Worldwide back-up

Alfa Laval global presence ensures you easy, rapid access to technical back-up through our local offices worldwide. This helps you keep service costs and downtime to a bare minimum.

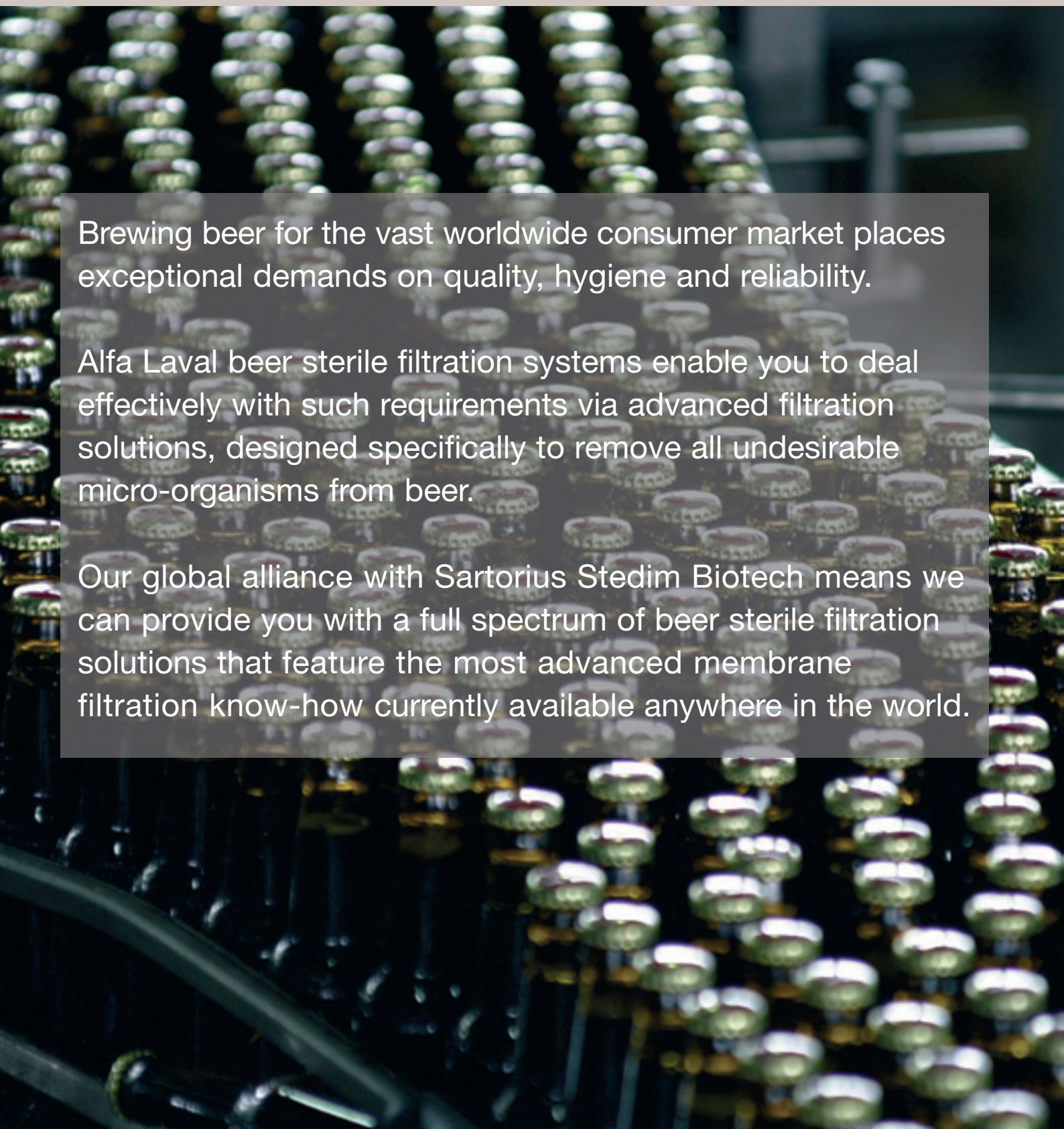


Benefit from Alfa Laval filtration cartridges in your brewing processes

The unique technology used in Sartorius filtration cartridges provides you with:

- Membrane filtration technology specially developed to deal with brewing requirements
- Cartridges made of special inert low-adsorptive, beverage-grade material
- Extremely stable membrane that is highly resistant to chemical, thermal and mechanical stresses
- Reliable retention of micro-organisms that can spoil the beer
- Highly hygienic filtration systems that are easy to clean and sterilize.





Brewing beer for the vast worldwide consumer market places exceptional demands on quality, hygiene and reliability.

Alfa Laval beer sterile filtration systems enable you to deal effectively with such requirements via advanced filtration solutions, designed specifically to remove all undesirable micro-organisms from beer.

Our global alliance with Sartorius Stedim Biotech means we can provide you with a full spectrum of beer sterile filtration solutions that feature the most advanced membrane filtration know-how currently available anywhere in the world.

Alfa Laval in brief

Alfa Laval is a leading global provider of specialized products and engineered solutions. Our equipment, systems and services are dedicated to helping customers to optimize the performance of their processes. Time and time again.

We help our customers to heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuffs, starch and pharmaceuticals.

Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com