



Pure efficiency - today and tomorrow

Alfa Laval evaporation solutions for starch and sweeteners



Evaporation efficiency for starch and sweeteners

Based on our expertise and in-depth knowledge of the starch and sweetener industry, Alfa Laval delivers competitive evaporation system solutions. Solutions that now ensure unrivalled efficiency for hundreds of plants around the world.

Compact and space saving, Alfa Laval's range of plate evaporators increases uptime while giving flexibility for future expansion.

With minimal maintenance and utmost reliability, Alfa Laval evaporation solutions ensure peace of mind towards greater end results.



Compact efficiency –

More output with less input

Alfa Laval offers proven evaporation solutions for all types of starch and sweetener processes.

From single components to full systems, Alfa Laval's evaporation solutions are designed for optimal efficiency, installed and integrated into your process by our experienced engineers.

Compact and space saving, they offer increased uptime, with minimal downtime and offers utmost reliability.

Increased, undisturbed uptime

The special corrugated pattern of the plate evaporators reduces fouling, ensuring longer intervals between cleaning cycles. This in combination with smaller hold up volume ensures lower consumption of cleaning chemicals.

Lower steam consumption

The most effective way to lower steam consumption in evaporation systems is to increase the number of effects.

Adding an AlfaVap to an existing 2-effect system will lower steam consumption by as much as 33%. Due to its compact design, the AlfaVap can easily be retro-fitted in a cost-efficient way in most plants – even where space is an issue.

When Alfa Laval installed an extra effect to the existing 2-effect falling film station at a US process plant, 2500 kg/h steam was saved, which equates to around EUR 378,000 a year – with less than one year pay-back.

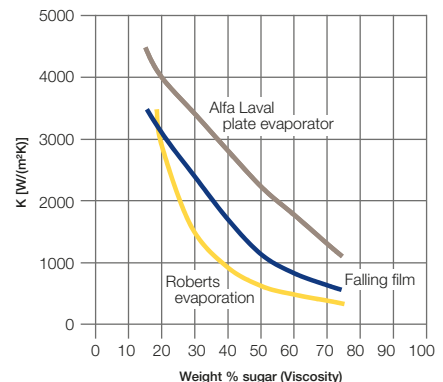
Substantial savings

The unique Alfa Laval solutions provide much higher thermal efficiency than

traditional shell-and-tube evaporators.

With up to three times the heat transfer efficiency versus other technologies, substantial savings can be made, especially at higher concentrations.

Alfa Laval systems can use heat from different sources such as mechanical and thermal compression as well as waste vapours from dryers.



Outstanding heat transfer coefficient for the plate evaporator.

Simplicity and peace of mind

Easy to maintain

All surfaces are easily accessible for maintenance and cleaning can be done onsite within the physical footprint of the unit. Using a simple Cleaning-in-Place (CIP) procedure in combination with the robust AlfaVap gasket, a leading French customer benefitted from eleven years of continual operation before the first re-gasketing.

Improved product quality

The low hold up volume in the AlfaVap

system ensures fast and smooth start-ups with easy control. Low hold up volume also leads to short residence times which secures a high quality end product with minimum colouration.

Alfa Laval commitment

With Alfa Laval, commitment extends beyond product quality. Taking it further than installation and start-up, you can rest assured of ongoing peak performance with support from our experienced staff.



a world of difference

Capacity counts

Compact by design

Where other solutions need several floors, lots of piping and large recirculation pumps, the low height of the AlfaVap makes it possible to install on one floor with no – or only small pumps. This results in significantly lower installation and equipment costs.

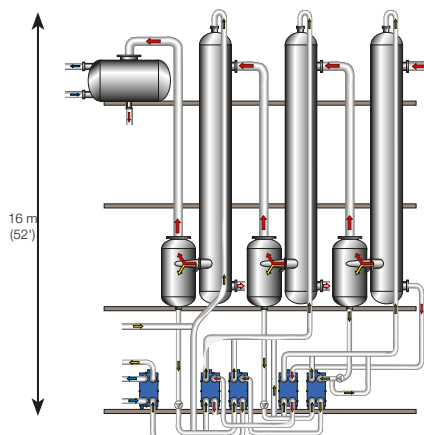
Boosting the capacity

The AlfaVap can be installed as a complete evaporation effect or as a booster unit to any type of existing evaporator – utilizing the existing structures and controls. The booster installation is the most cost-efficient way possible to increase capacity.

Adding plates, adding capacity

The AlfaVap's flexible design makes it easy to be adapted and expanded to

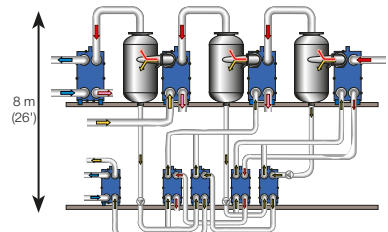
changing capacity demands, simply by adding more plates – with no need for rebuilding the existing plant.



Ideal solution for high viscosity fluids and fouling applications

The AlfaVap can easily handle fluids well beyond 300 cP which is often the limitation for falling film evaporators. The higher the viscosity – the higher the relative efficiency of the AlfaVap over other technologies.

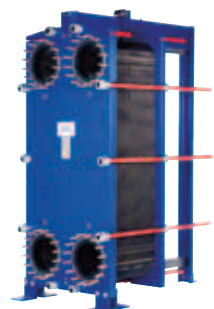
Compared to shell-and-tube, the Alfa Laval solution saves up to 50% space



AlfaFlash - a unique finisher

Suitable for fouling applications, like corn steep liquor (CSL) and wheat effluent. The AlfaFlash is a plate evaporator, working as a forced circulation flash evaporator, often used in the final concentration step as a finisher. It is designed with a high wall shear to minimize viscosity (in case of a shear thinning product), fouling and

to maximize time intervals between cleaning. It offers huge advantages compared to conventional shell-and-tube finishers. The considerably higher shear rate (already at quite moderate flows) leads to substantially higher heat transfer efficiency, much smaller pumps and significantly lower pump costs.





Global experience with local presence

Alfa Laval has been manufacturing the most effective fluid handling, heat transfer, and separation equipment for over 125 years. Our strong global presence not only means access to extensive support wherever you are in the world, it also secures an availability and service on a local basis.

At Alfa Laval, we focus on solutions that pay off, whether it's supplying the smallest spare part, or serving as a long-term performance partner.



The Alfa Laval evaporation range

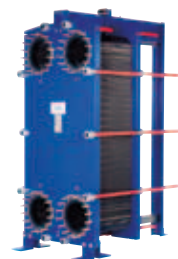
Three strong solutions. The AlfaVap is a plate heat exchanger tailor made for evaporation. The AlfaCond is the world's first plate condenser specifically designed for condensing low pressure vapours. The AlfaFlash is a plate evaporator ideal for viscous and fouling liquids.



AlfaVap



AlfaCond



AlfaFlash

Alfa Laval pump LKH Evap

Alfa Laval pumps for evaporation, LKH Evap, are specifically designed with features for low net positive suction head requirement (NPSHr).

Furthermore, the possibility to operate the pump during cavitation makes it possible to design a simpler evaporation system with shorter residence time, giving a better product quality.



LKH Evap

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

