More product without increased waste

Hexion Specialty Chemicals – Rotterdam, The Netherlands **Case story**

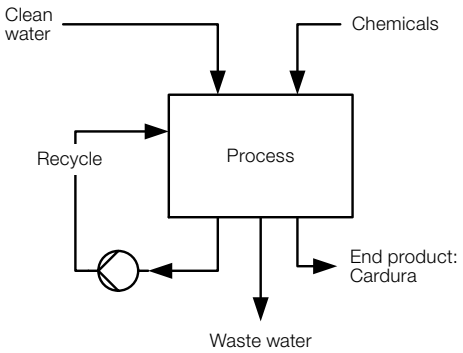
Hexion Specialty Chemicals in Rotterdam produces Cardura – a brand name car paint base product. With an increased market demand for Cardura, the company investigated how they could boost the capacity of their process. Although the production plant itself was capable to produce much more without major modifications, governmental regulations for the amount of waste products were bottle necking the production capacity.

In one of the process steps there is a side reaction where water – that is always present – forms unwanted by-products. More production would therefore automatically lead to more waste products. A solution to this was found by evaporating water from a recycle stream in the process.

Alfa Laval delivered a very compact plug-and-play 2-stage evaporation system, without modifications in the production plant itself. This resulted in 20% more production without increasing the amount of waste products. Production Manager John van de Kreke, said: “With the help of Alfa Laval equipment we have managed to easily increase our production capacity.

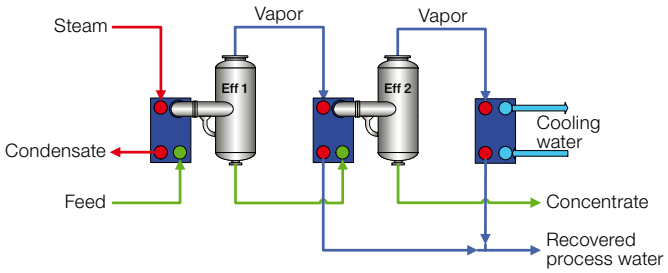
As can be expected from our good operators, we managed to operate the Alfa Laval system far beyond expectations. Soon we will increase our production even more!”

Old process



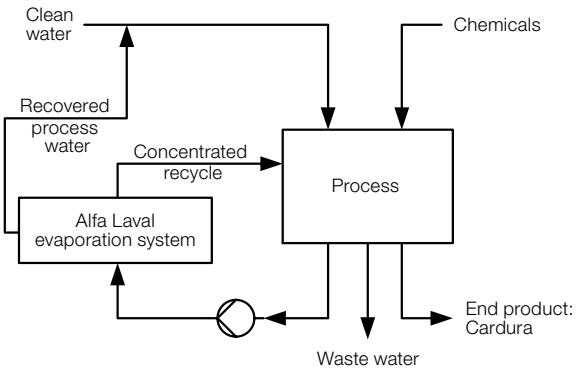
Partner in unit operations

Alfa Laval is not only a supplier for components such as heat exchangers, reboilers and condensers. With supplying complete skid mounted systems they have also proven to be a very experienced partner in unit operations. In these times where customers have less and less time and resources for detailed engineering projects, taking care of the complete unit operation is really filling a gap in the market.



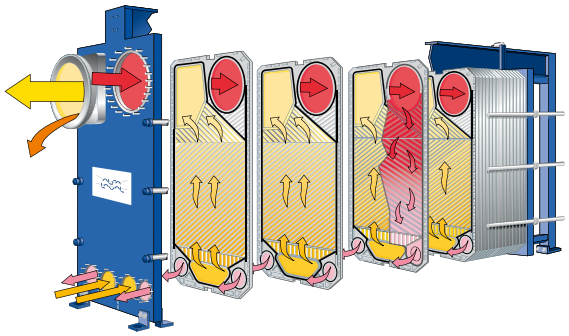
According to Hexion's project manager: "Alfa Laval's knowledge and experience in evaporator projects was very welcome for us. They know best how to connect and tune all the components together for an optimum result. Moreover, as Alfa Laval took care of this complete unit operation, we saved a lot of work and time in this project."

New process



Tailor made evaporators

The modular AlfaVap skid concept includes all the main components of the evaporator, such as one or more cassette evaporator stages with circulation pumps, vapor condenser, vacuum pump station and concentration monitoring equipment. Each cassette stage is arranged within a frame, which can accommodate different numbers of cassettes. This means that any moderate increase of throughput is possible without additional installation work. The special plate pattern, with a preheating area and an evaporation area, promotes turbulence that enhances heat transfer and minimizes fouling.



Key facts about Alfa Laval Plate Evaporator

The Alfa Laval plate evaporator is a high-efficient compact heat exchanger designed for aggressive or hazardous process services. It is available in a wide range of gasketed, semi-welded and fully welded models, with heat transfer areas from 0.7 to 2050 m2. The heat transfer area is made up of a pack of corrugated plates, which are held together in a carbon steel frame. The special corrugated patterns ensure a high degree of turbulence over the whole plate. Due to the low hold-up volume of the plate evaporator it responses very quickly on process control.

Plate materials

Stainless steel 316, 304, 317, 904
Avesta 254 SMO, AL6XN
Titanium, Palladium-stabilized Titanium
Nickel 200/201
Alloy C276, C22, C2000, B2

Specifications

Design pressure min/max: Vacuum / 32 barg (460 psig)
Design temperature min/max: -30/350°C (-20/660°F)
Design code: PED, AD2000, ASME

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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