



# PRODUCTS & SERVICES



# About EPCON

With its history going back to 1986, EPCON Evaporation Technology AS is a technology company with high theoretical and practical competence. Our staff has backgrounds in thermal and heat pump process engineering, construction and mechanical engineering, chemistry and material technology. This gives EPCON a multidisciplinary line-up, with long term experience and references from several industries.

## Products

EPCON supplies evaporation plants for separating different types of fluids or fluids from solid material, based on the principles of evaporation and distillation. EPCON has developed unique energy efficient technical solutions for a number of separation and purification processes.

## Our customers and markets

EPCONs customers are national and international industrial companies. Our process technology is used in the food and dairy industry, mineral industry, chemical industry, biogas and biofuel industry, pharmaceutical industry, in the production of marine products, and for treating industrial process- and wastewater.



## Located in the city of Trondheim, Norway

EPCON is located in the city of Trondheim in the middle part of Norway. Trondheim is internationally well known as a centre for technology, mainly due to the location of the renowned Norwegian University of Science and Technology, NTNU, in the city. SINTEF, the largest independent research organization in Scandinavia, is also located in Trondheim.

## Support you can trust

Additionally to our close support during planning and execution phase, EPCON offers all customers a 24-hour after sales service that includes trouble-shooting, spare parts, preventive and corrective maintenance, as well as inspection of the installation on a regular basis.

## Experience

EPCON delivered its first MVR evaporator in the mid 1980s. Since then our evaporation technology has developed a lot.

## Performance

EPCON always focuses on the lowest possible energy consumption in our evaporators. Our pilot testing facilities ensures our clients that we propose the correct solution for their application. Our evaporators are designed to give our clients the maximum production availability.



*“Why choose EPCON as your partner?”*



## Biogas.

EPCON delivers MVR evaporator for treatment of digestate reject water. The volume of the reject water flow is reduced by 70-90%. The concentrate is often a valuable N, P, K fertilizer.



## Industrial wastewater.

Treating wastewaters from different industries are often a big challenge. With an EPCON MVR evaporator the volume flow can often be reduced by 90-99%. Typical wastewater streams suitable for MVR evaporation includes leachates, wastewater from metal fabrication, wastewater from cleaning of fish nets, wastewater from production of food and ingredients and many more.

## Focused industries



## Biomarine industry.

Several applications in biomarine industry require concentration of liquids. This includes hydrolyzates, stickwater, fish silage and extracts from algae and seaweed.



## Starch industry.

Both in potato starch industry and industries based on starch from corn and grain, there is a need for energy efficient evaporation. This includes liquids such as potato fruit juice, steep liquids and syrups.



## Falling film and forced circulation MVR evaporators

EPCON MVR evaporators are tailor-made and can be delivered for indoor installation or outdoor installation in containers.

Evaporation capacity range from 1000 – 100.000 kg/h.

Energy consumption is 8 – 40 kWh/t evaporated water.



## EPCOVAP-MVR

EPCOVAP-MVR compact evaporators are skid based. They are available in 6 different sizes with evaporation capacity from 100 – 2500 kg/h.

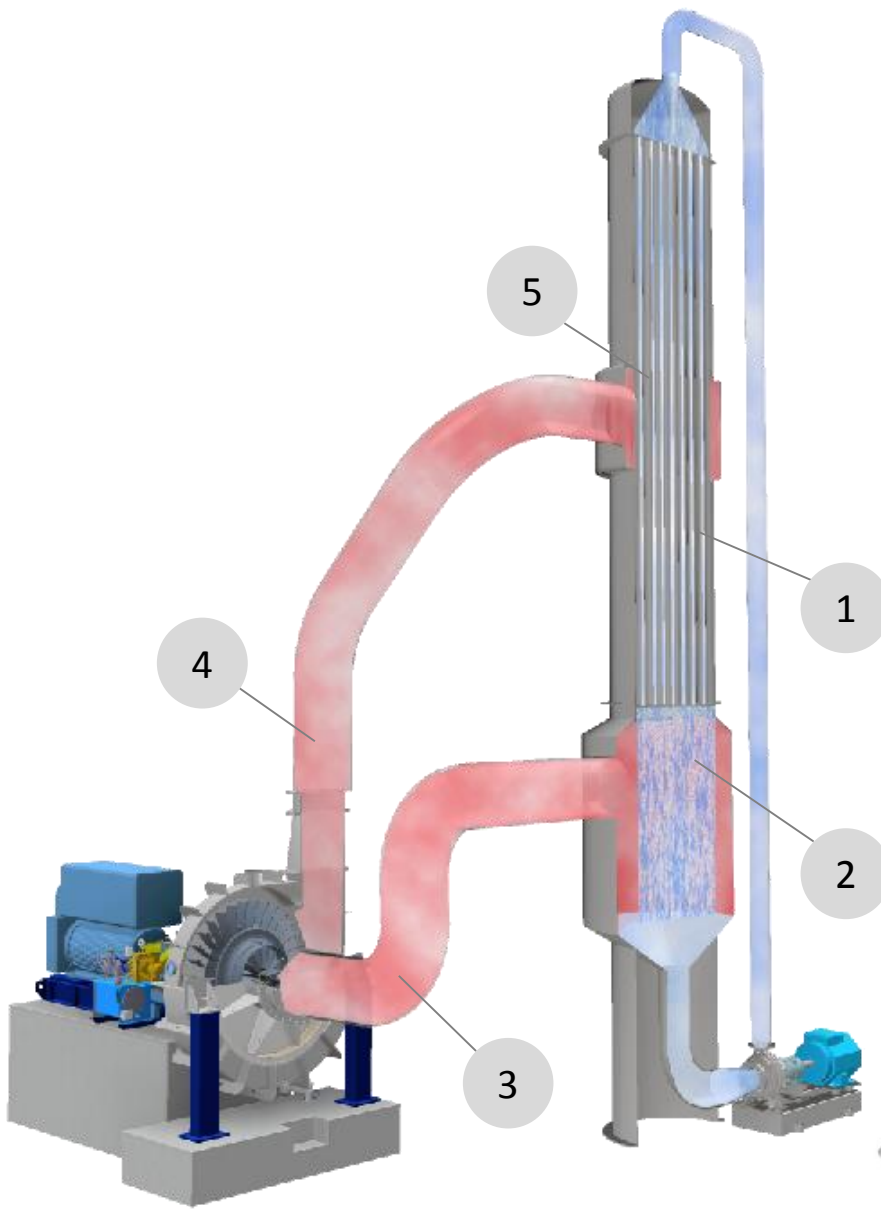
Energy consumption is 15 – 50 kWh/t evaporated water.

## EPCON products



## MVR heat pumps

EPCON MVR heat pumps are used in both revamp of existing thermal process plants and in more traditional waste heat recovery applications. Suitable applications for EPCON MVR heat pumps are: evaporators, multiple effect evaporators, distillation columns, reactors, boilers, dryers, waste heat and district heating.



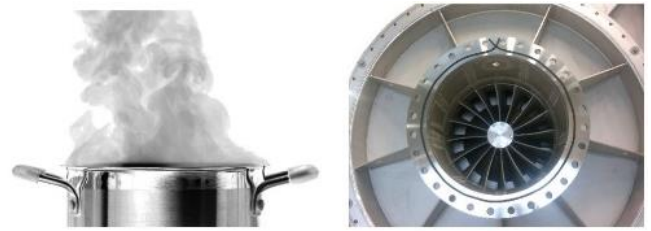
The EPCON MVR evaporator only uses 8-40 kWh per ton evaporated water.

This is a reduction of up to 99% compared to a 1 effect steam driven evaporator.

MVR or Mechanical Vapor Re-compression (also known as MVC) is a technology where the vapor is compressed in a fan or a compressor to a higher temperature and pressure.

This compressed vapor is then used as energy source instead of boiler steam. Most of the products delivered by EPCON are based on MVR technology.

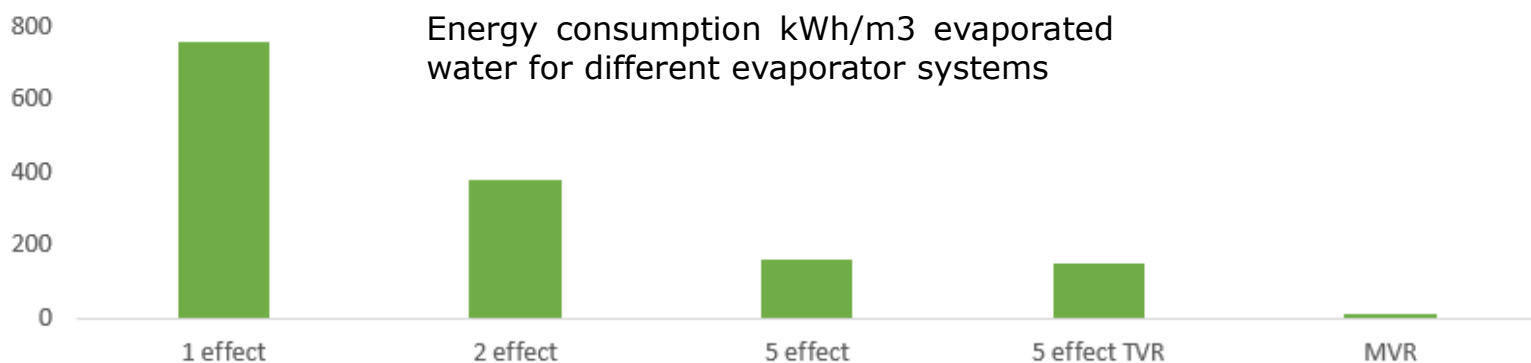
EPCON has 30 years experience with MVR technology.



1. The liquid evaporates in the tubes
2. The liquid is separated from the vapor to give a clean condensate
3. The vapor goes to the MVR fan at 100°C
4. The MVR fan compresses the vapor to higher pressure and temperature (105°C, sat)
5. As the vapor at 105°C is heat exchanged with the evaporating liquid, it condenses into a clean condensate.

The temperatures used here are examples only. EPCON always select the optimum evaporation temperature and temperature rise in the MVR fan. This selection is done based on the liquid properties.

## EPCON MVR technology



*”The EPCON MVR evaporator is built to last for decades. Our After Sales services is your guarantee and is an important part of our concept.”*

EPCON offers all customers the possibility for a 24-hours after sales service that includes troubleshooting, spare parts, preventive and corrective maintenance, as well as inspection of installations.



## Aftersales services

## Lab and pilot testing facilities



EPCON has tested a wide range of fluids. Frequently, the analysis of fluid samples is conducted on the permanent testing equipment at our laboratory in Trondheim. If fluids have to be tested on site, EPCON also has mobile test rigs that can be dispatched anywhere in the world for use at the customer's own plant.





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