

DAIRY INDUSTRY

APPLICATION BROCHURE



EPCON EVAPORATION TECHNOLOGY AS

EVAPORATORS – DRYERS – DISTILLATION & DEHYDRATION – HEAT RECOVERY SYSTEMS
ENGINEERING AND AFTERSALES SERVICES

EPCON products

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

Energy saving

EPCONs core competence is energy utilization in evaporation, distillation and drying processes for a number of applications and industries. Energy savings of 80-98% are normally achieved, within a very favorable investment pay-back time.

Applications in dairy industry

Typical applications within dairy industry include:

- Evaporation of sweet whey cream cheese.
- Evaporation of sweet whey cream.
- Evaporation of whey for use in whey protein powders.
- Evaporation of waste whey for animal feed.
- Rebuilding of milk multiple effect/TVR evaporators to MVR for 60-90% energy savings.
- Flash cooling of dairy products for instant cooling to avoid granulation.
- Dewatering of waste water from dairy industry.

EPCON has experience with all the above mentioned applications.

EPCON products for dairy applications:

➤The EPCOVAP-MVR evaporators are a series of standardized compact evaporators with low energy consumption. These are for lower capacity evaporation in the range of 500-2500 kg/h evaporation.

➤Falling film evaporators with MVR to be tailor made for each specific application. EPCONs falling film evaporators are made for being resistant to fouling. They have a compact design, and hence requires a minimum of space.

➤EPCONs forced circulation evaporators with MVR are often used as the last stage in a combined evaporation system or as a stand alone evaporation system for high viscosity applications or where superior resistance to fouling is required.

➤Flash coolers for instant cooling and concentration of high viscosity products.

➤MVR heat pumps for rebuilding multiple effect milk evaporators to MVR. This rebuilding can provide energy savings in the range of 60-80%.

➤Combined evaporation plants. The technologies above are often combined to obtain the best technical solution.



**Refer the EPCON
separate datasheets
for further
information of the
listed process
plants.**



Whey cream cheese

All commercially produced sweet whey cream cheese in Norway is evaporated on EPCON evaporators.

EPCON has delivered more than 10 MVR evaporators to this application during the period of 1986 - 2004.



Case study

Flash cooler for instant cooling.

An EPCON flash cooler was installed for instant cooling of sweet whey cream without having problems with agglomeration.

- Outlet temperature: 40°C
- Delivery: 2004



Case study

Rebuilding of multiple effect milk evaporator to MVR for energy savings.

A multiple effect milk evaporator was rebuilt to MVR.



BEFORE REBUILDING TO MVR

- Evaporation capacity: 6200kg/h
- Steam consumption: 1025kW
- Electric power consumption: 25kW

AFTER REBUILDING TO MVR

- Evaporation capacity: 6200kg/h
- Steam consumption: 155kW
- Electric power consumption: 165kW

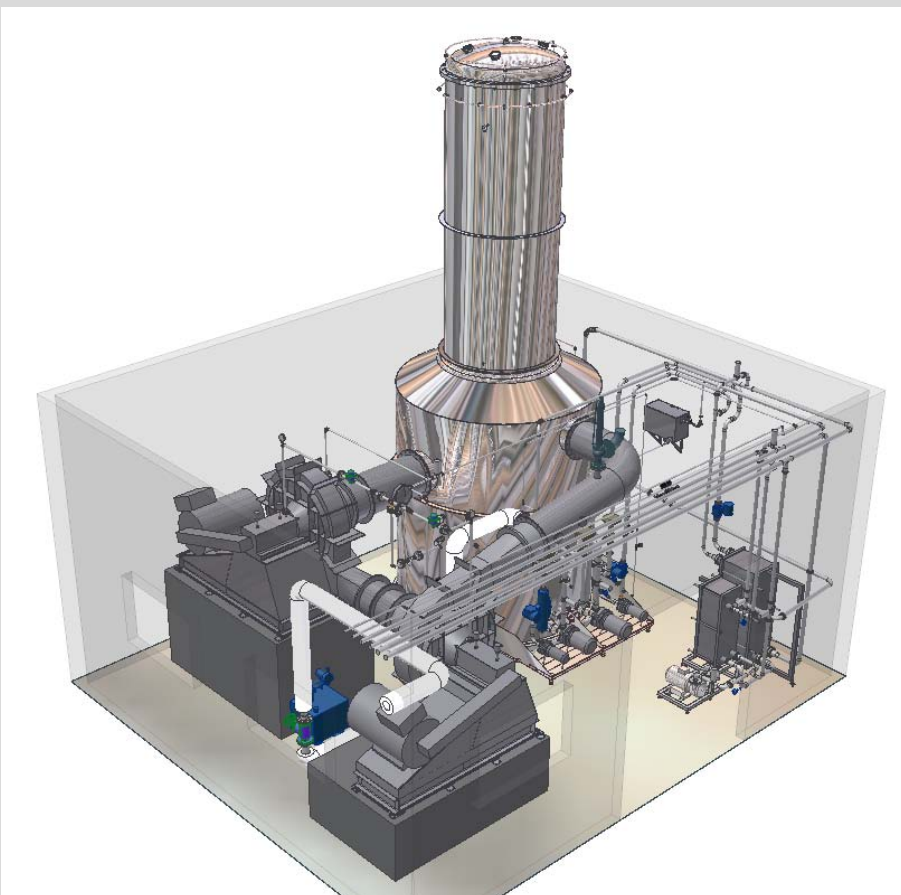
ENERGY SAVINGS

- Energy savings: 730 kW (70%)
- Annual savings: EUR 300.000,-
With an energy cost of 0.0625 EUR/kWh

Case study

Evaporator for sweet whey cream cheese.

An MVR evaporator was delivered for concentration of sweet whey cream cheese in Norway. The evaporator was designed as a two stage MVR falling film evaporator. Pre concentrated whey from an RO filter was used as part of the feed material.



Feed	9441 kg/h
Evaporated mass	7000 kg/th
Product	2441 kg/h
Feed concentration	15 %
Product concentration	58 %
Process temperature	65 °C
Energy consumption	180 kW

Partners & distributors

Finland

AJON APU OY

Viertotie 3

15560 Nastola

Tel: +358 400 467051

Mail: simo.ajo@phnet.fi

South Korea



5th FL, HP building 23-6,

Yoido-Dong

Youngdeungpo-Gu,

Seoul, Korea, 150-724

Tel: +82-2-2167-9093

Fax: +82-2-2167-9178

Mail: evapor@sc-eng.com



Location: Jarleveien 17
Address: N – 7041 Trondheim,
Norway
NO 994 469 126MVA/VAT
Phone: (+47) 73 99 04 50
Fax: (+47) 73 99 04 51
companymail@epcon.org
www.epcon.org