

BIOMARINE

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.

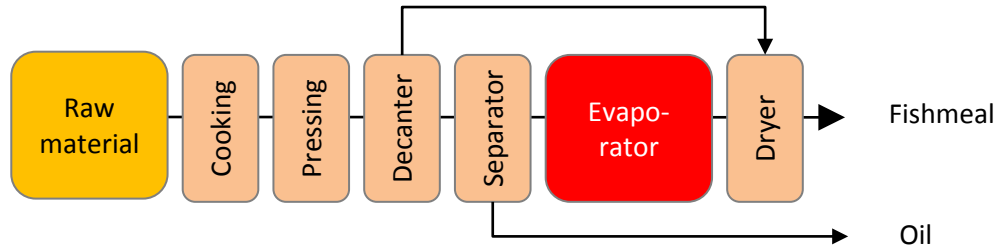
Applications in biomarine industry

Typical applications within biomarine industry include:

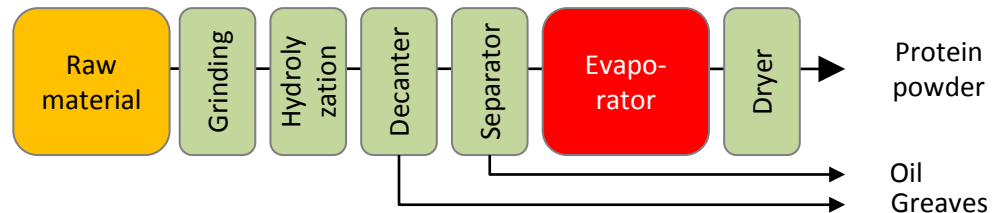
- Evaporation of marine extracts.
- Evaporation of hydrolyzed fish proteins.
- Evaporation of stick water for fishmeal production.
- Evaporation of ensilage.
- Evaporation of alga extracts.
- Instant cooling for high viscosity marine extracts using flash coolers
- Recovery of solvents from marine extraction processes.
- Dewatering of waste water from biomarine industry.

EPCON has experience with all the above mentioned applications.

Example of process route for production of fishmeal.



Example of process route for hydrolyzed marine proteins.



Process route and number of stages may differ from these examples.

EPCON products for biomarine 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 extracts.



➤ Distillation units for solvent recovery of extraction solvents, for instance ethanol, methanol etc.

➤ 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.**

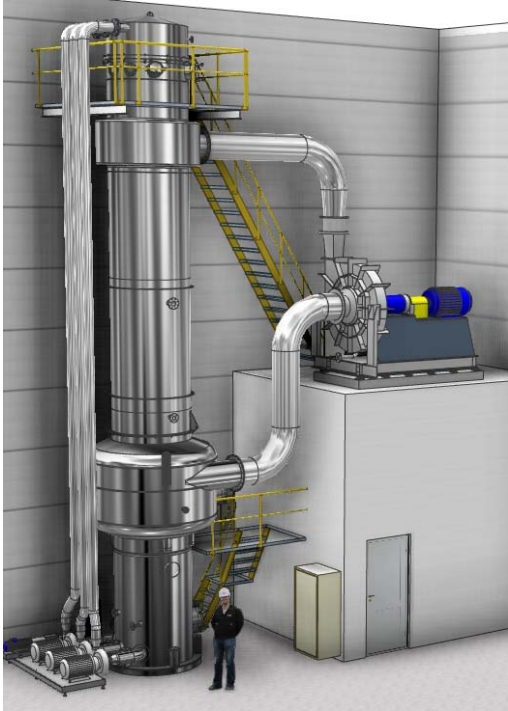


Case study

MVR evaporator for hydrolyzed fish proteins.

An MVR evaporator was delivered for use on hydrolyzed salmon.

- Evaporation capacity: 5500kg/h
- Delivery: 2011



Case study

MVR evaporator for hydrolyzed fish proteins.

An MVR evaporator was delivered for use on hydrolyzed salmon.

- Evaporation capacity: 5000kg/h
- Power consumption: 160kW
- Delivered: 2001



Case study

Stick water evaporator

A stick water MVR evaporator was delivered for use on north atlantic raw material.

- Evaporation capacity 30.000 kg/h
- Delivered 2008

The evaporator was built as a 3 stage falling film evaporator with integrated cyclone.



Case study

MVR evaporator for protein extract.

A mobile MVR falling film evaporator.

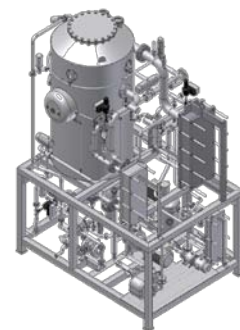
- Evaporation capacity 300-700 kg/h
- Built 2003



Case study

Solvent recovery unit

Recycling of ethanol from biomarine fat rich waste stream after extraction, including reduced deposit cost for dry matter:



- Solvent: Ethanol
- Conc. ethanol: > 90 %
- Capacity: 700 l/h
- Boiling temp.: 55 - 70 °C
- Delivered 2003

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