

Evaporation plant (EVT)

- 1 Heating temperature up to approx. 90°C
- 2 Operating pressure up to 10 mbar
- 3 Heating surface up to 5000 m² per step
- 4 Single-stage MVR up to 60 tons per hour

Evaporation plant (EVT)

Evaporation systems are suitable where high boil-off rates are wanted for low to medium viscosity products. Since a lot of energy is needed to concentrate the input solution, different energy saving concepts are coming into effect.

Multi-stage evaporation

Evaporation in several stages reduces the required heating energy considerably. Due to the pressure difference inside the individual stages, the boiling temperature of the product is reduced continuously. Vapours from the previous stage heat the subsequent stage, thus further concentrating the product. A two-stage system needs only half the energy of a single-stage system.

Thermal vapour recompression (TVR)

In thermal vapour recompression, the vapours are reused, raising their pressure and temperature level by means of motive steam. The resultant steam can be reused in the evaporation process, thus saving heating energy. Due to thermal vapour recompression, for example, a 4-stage system in terms of mechanical setup becomes a 5-stage system in terms of energy consumption.

Mechanical vapour recompression (MVR)

The vapours are compressed in a mechanical compressor which raises their pressure level. The compressed vapours are guided to the heating side of the evaporator where they condense. The evaporation heat contained in the vapours is used in the same apparatus for concentrating the input solution. The compressor needs only electric energy.

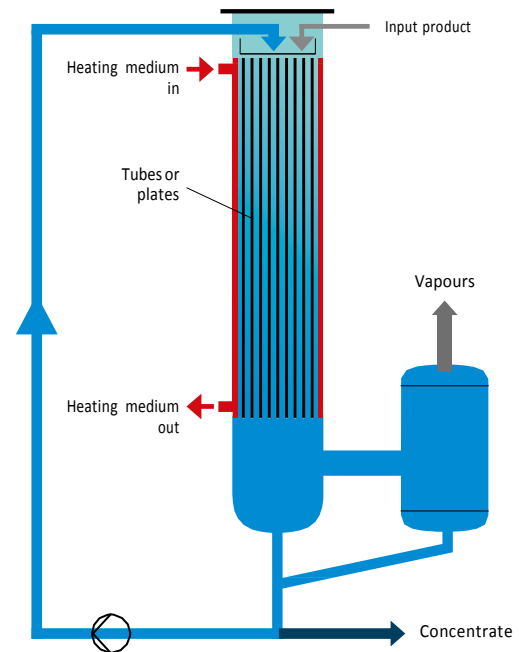
In this field, Kremsmueller offers a wide range of applications in its in-house technology centre, starting from feasibility studies to laboratory and semi-industrial tests to the production of sample quantities. In all this, Kremsmueller can rely on its expert employees with decades of experience.

Typical applications

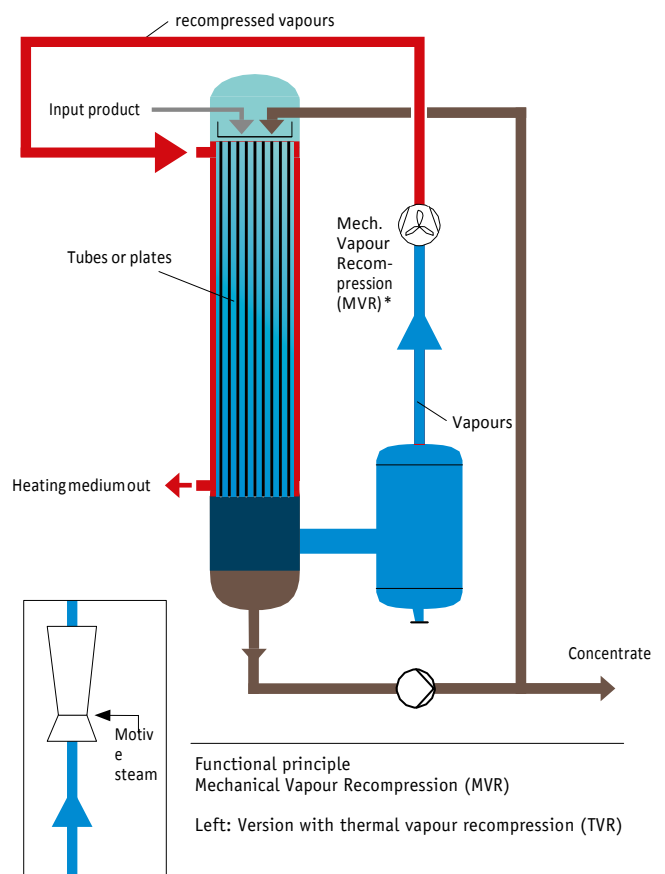
- + Starch solutions
- + Slurry
- + Solvent recovery
- + Black liquor
- + Milk
- + Caprolactam

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Functional principle Falling Film Evaporator (EDA)



Functional principle Mechanical Vapour Recompression (MVR)

Left: Version with thermal vapour recompression (TVR)