

# VAPOZEM

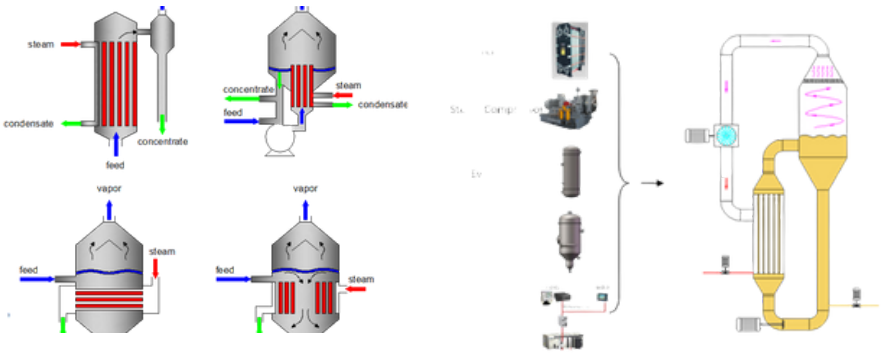
## MVR EVAPORATORS



Name **VAPOZEM** is derived from Vaporisation of **APOZEM** (a concentrated liquor resulting from heating or infusing a substance)

**VAPOZEM** has been designed keeping in view the potential Pharmaceutical, Biotech and Food markets.

The advantages the technology offered by Vaporising at Low Temperatures, also extended to the wastewater management and helping clients meet the ZLD norms.



## Falling film and forced circulation MVR evaporators

VAPOZEM evaporators are bespoke solutions for your critical process applications which are heat sensitive – like foods, proteins, Purees etc. These also find varied applications in wastewater recycling and ZLD

**Evaporation capacity range from 1000 – 100.000 kg/h.**

**Energy consumption is 12 – 40 kWh/t evaporated water.**

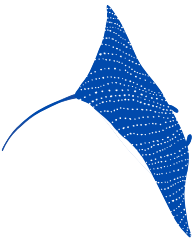


"Did you know that VAPOZEM evaporator reduces industrial wastewater by 90-99%?"

VAPOZEM comes with its inherent advantages :

## RECYCLE AT LOW ENERGY COSTS

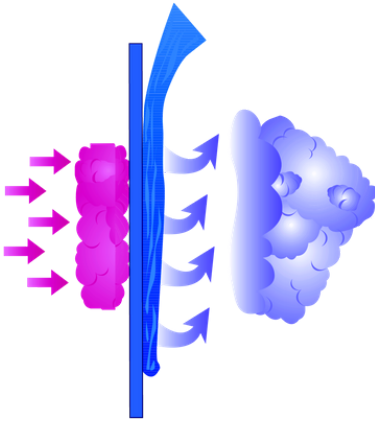
- Capex advantages of reduced footprint area as compared to conventional MEE
- No boiler & steam utility required
- -No cooling towers & condensing station required.
- No Boiler – No Pollution – environmentally friendly
- Fully automated without any manual intervention
- Less maintenance cost
- Low manpower requirement



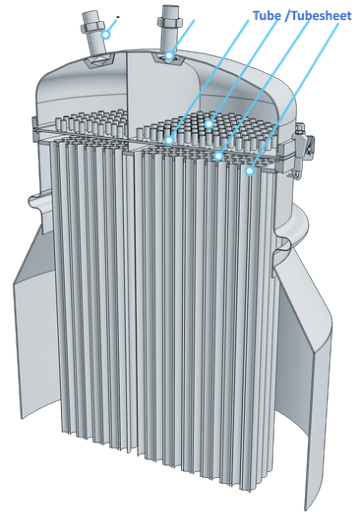
Mechanical Vapour Compression

## SYSTEM DESIGN

System comprises of Plate Type or Tube Type Exchangers alongwith a compressing station the MVR. The high surface area per unit volume makes these Evaporators small and compact design. Proprietary Serrated design gives a high heat transfer coefficient. Water travels downward like a film that is why the name

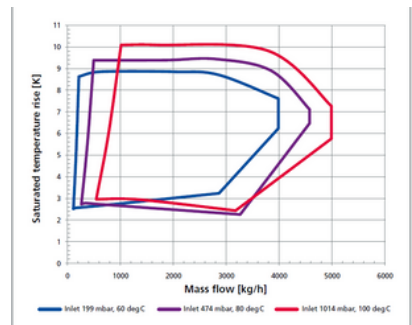


Tube Falling Film Evaporator



## Precision designed MVR

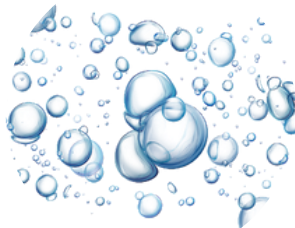
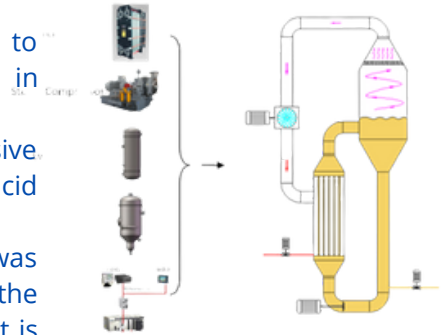
MVR compresses the spent vapor to a higher pressure thereby bringing a temperature rise in the spent vapours. The high temperature vapours are now used in closed loop to recover the enthalpies. The condensate recovered after the heat exchange is used to pre-heat feed product through plate type heat exchanger. This makes the system the most energy efficient system.



## COMPRESSOR - MVR

Heart of the System is the precision and consistent compression. The compressor has some salient features

- Turbine Tip speeds of up to 320 m/s nearing sonic velocities
- Water injection keeps impellers clean and the steam saturated Low wear floating carbon ring labyrinth seals guarantee long term tightness
- Squeeze-oil-damping combines the simplicity of anti-friction bearings with the performance of hydrodynamic bearings
- For higher temperature rises up to four MVR Blowers can be used in series
- Suitable for conditions of corrosive environment such as sulphuric acid vapors
- Mechanical vapor recompression was initially used almost exclusively in the milk and dairy industry. And now it is used in various low temperature evaporation application



## FIELDS OF APPLICATION

- Starch
- Sugar
- Yeast
- Gelatine
- Pectins
- Grain Processing
- Vegetable Processing
- Fruit Juices
- Electrolyte Baths
- Saline Water
- Citric Acid and Acetic
- Sulphuric Acid
- ZLD -Zero Liquid Discharge
- Sewage Sludge
- Lacquer Sludge

- Liquid Manure
- Oil Recycling
- Recycling of special metals
- Seawater Desalination

Wood Drying, Pellets Drying and Peat Drying

- Paper Drying
- Boiler Feedwater
- Blood Plasma
- Commercialisation of Meat and Fish

Petrochemical

- PTA
- EPDM
- Butadiene
- Waste water



For more details :

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