



AquaFit4use

Membrane distillation – Memstill®

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SP 6

PRINCIPLE

Distillation recovers pure water from salt solutions via evaporation and condensation. Memstill® is a membrane based version of this process, and works well at low temperatures (< 100°C). Waste heat and solar heat may be applied. The process has low heating requirements (< 400 MJ/m³ distillate). The same principle may be used to separate volatile components (e.g. ammonia, ethanol), like other distillation processes.

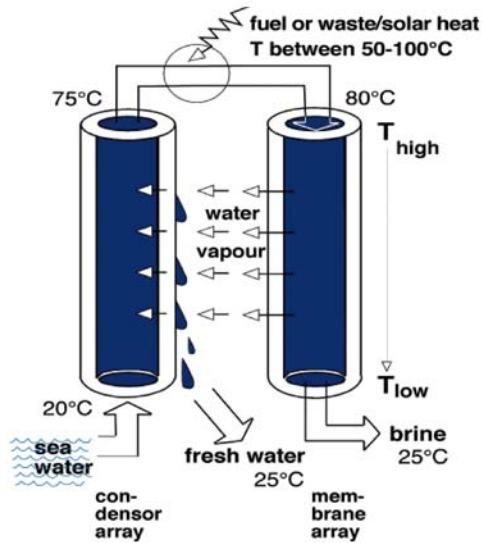


Figure 1: Principle of Memstill®



Figure 2: Modules for first pilot in Singapore

INNOVATIVE ASPECTS

- High separation factors for salts (factor > 10,000). Very small footprint, in comparison to conventional distillation techniques.
- No pressures needed (no expensive pumps).
- No intensive cleaning or pretreatment required.
- Operates with heat sources below 100°C.
- Low internal heat losses.
- De-aeration as pretreatment will improve the process performance in low-temperature range (<< 100°C).

ADVANTAGES

- Creates demin-water quality in one step.
- Competitive to conventional techniques, including reversed osmosis.
- Operates with waste heat or solar heat, so no additional CO₂ emissions.
- Full polymeric modules (no corrosion problems).
- Full recovery of water and crystals is possible, in case of salt solutions.

DISSEMINATION
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