www.proceco.com

MECHANICAL VAPOR RECOMPRESSION (MVR) EVAPORATOR

The Éco-Smart® is a Mechanical Vapor Recompression (MVR) evaporator engineered to separate water from non-corrosive wastewater containing oil, dissolved solids, and metals.

The system reclaims up to 98% of your wastewater as clean water that can be re-used in your industrial process. The remaining residual waste is collected as concentrate for disposal. As a result, the Éco-Smart® substantially reduces your wastewater disposal costs and minimizes your environmental footprint.

One of the main advantages of the Éco-Smart® is its low energy consumption – one of the lowest on the market. It evaporates the wastewater under vacuum without heat sources such as electric heaters, gas burners, or steam. In addition, since no cooling water is required for the vapor condensation process, your cost savings are even greater!

The Éco-Smart® MVR evaporator is a cost-effective solution to treat your process wastewater



TREAT 1 GALLON OF WASTEWATER FOR LESS THAN 2¢*

*Based on average US energy cost of 0.08$/kWh

BENEFITS

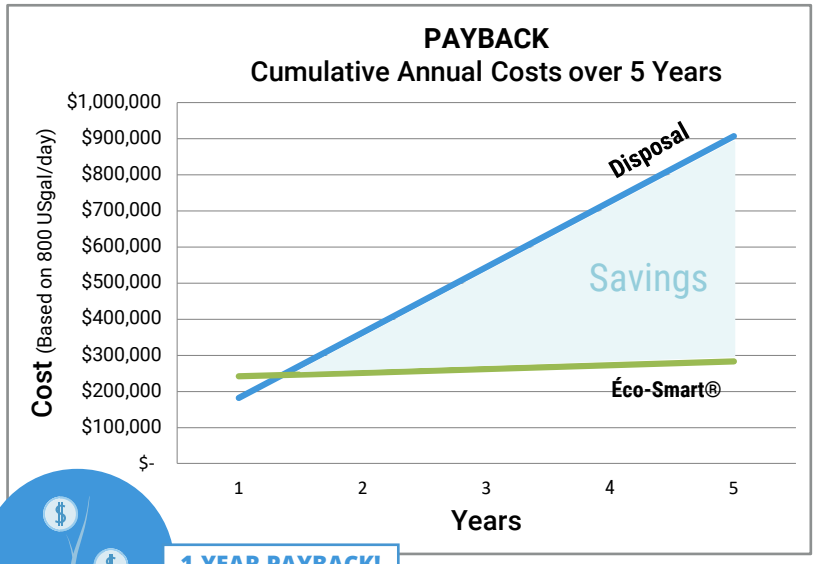
- Low Energy Consumption – 0.25kWh/gal
- Low Operating Costs
- Reduced disposal costs
- Low Maintenance
- High Water Recovery Rate – Up to 98%
- Closed-Loop System – No Air Permits
- Waste Concentrated in Sludge
- Concentration Up to 400,000 mg/L

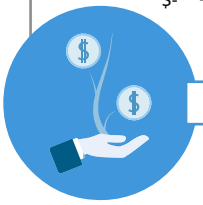
APPLICATIONS

- Surface treatment rinse water
- Fluid penetrant Inspection rinse water
- Spent metalworking fluids
- Parts washing rinse water
- Waste water from heat treating operations
- Oily and die casting emulsions

FEATURES

- Uses No Electric, Gas, or Steam Heat Sources
- Efficient Vapor Compression Technology
- Few Moving Parts – No Pumps
- No Membranes to Replace
- PLC Controlled – Runs Unattended
- Automatic Periodic Blow-Down
- Compact, Portable, and Easy to Install



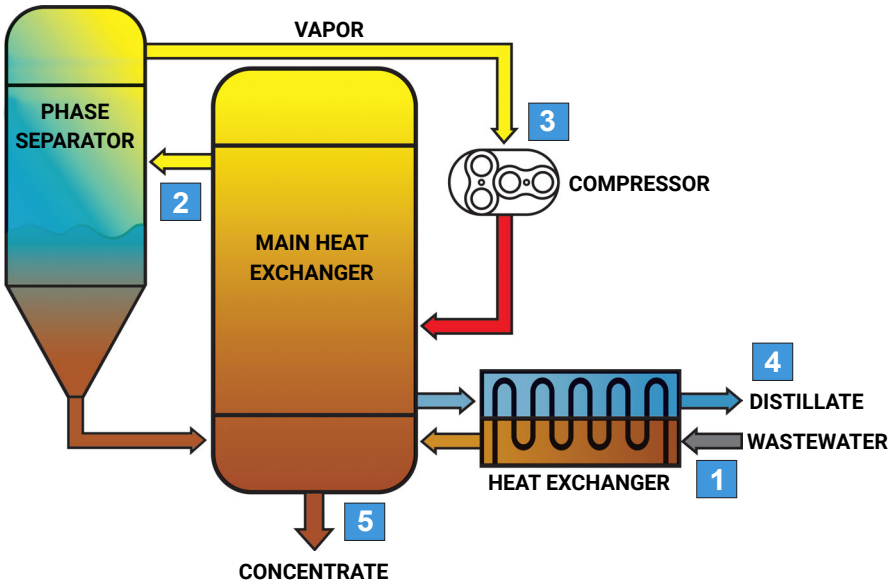


1-YEAR PAYBACK!

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ISO 9001

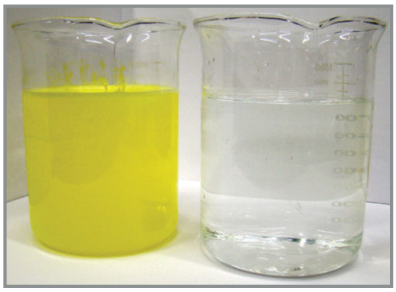
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Principle of Operation

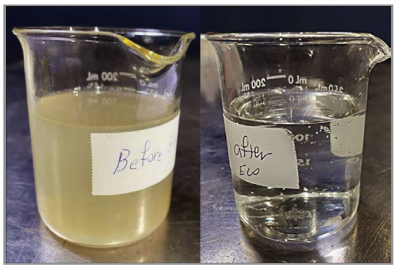
1. Incoming wastewater is pre-heated by the heat available in the distillate being produced.
2. The wastewater evaporates under a partial vacuum in the main heat exchanger and the evaporate (steam) passes through a phase separator.
3. The steam is compressed and returned to the main heat exchanger where it is condensed, thus releasing all of the latent heat for further evaporation.
4. The condensate is released in the form of high-quality distillate in most cases ready for re-use or to send to drain. Up to 98% of wastewater is reclaimed as clean water.
5. Wastewater undergoes continuous concentration to a minimum volume where it is then discharged as a concentrate for waste disposal.

Before | After



Dye penetrant rinse water

Before | After



Wastewater with oil, alkaline detergents, & metalworking fluids

Models	Daily Production*	Motor Power	Dimensions ( )	Weight
Éco-Smart® ES-400	400 USGal/day	10 HP	94" × 52" × 88"	2000 lbs
Éco-Smart® ES-800	800 USGal/day	20 HP	98" × 55" × 100"	3000 lbs
Éco-Smart® ES-1500	1500 USGal/day	30 HP	126" × 61" × 118"	4000 lbs
Éco-Smart® ES-3200	3200 USGal/day	75 HP	150" × 72" × 145"	8000 lbs
Éco-Smart® ES-6000	6000 USGal/day	125 HP	182" × 75" × 180"	13000 lbs
Éco-Smart® ES-11500	11500 USGal/day	200 HP	200" × 84" × 180"	16000 lbs

*Based on 22/24 hours

System specifications are subject to change without notice.

ES-0722

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