Saltworks

SaltMaker MVR and MSF

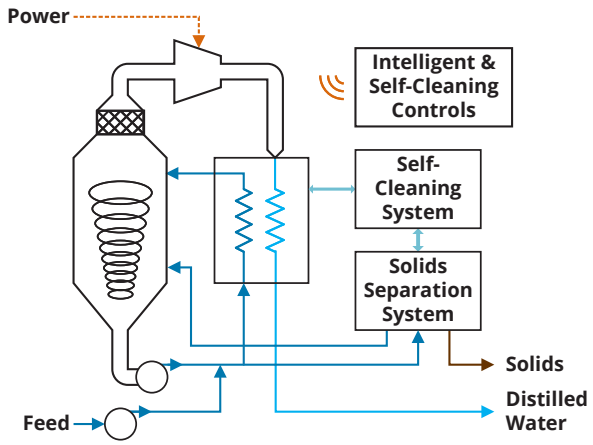
Modernized Evaporators/Crystallizers

MVR: Mechanical Vapor Recompression
MSF: Multi-Stage Flash

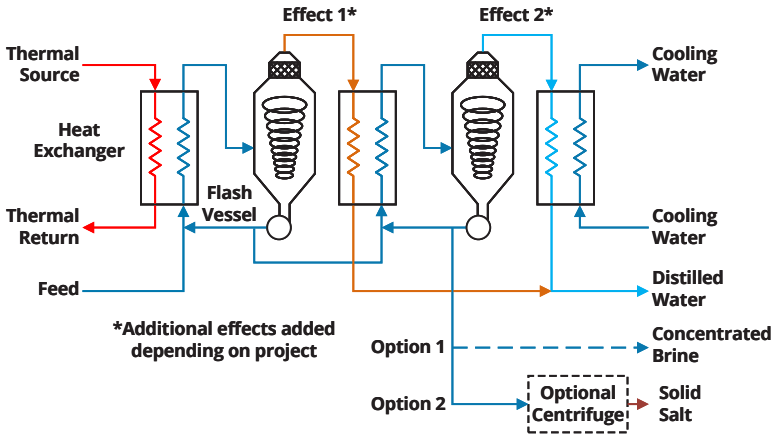
- Modernized forced-circulation evaporators and crystallizers
- Modular blocks for rapid, low-cost site installation
- Intelligent automation for self-cleaning and ease-of-operation
- Robust, quality-assured build
- Minimal liquid discharge (MLD) or zero liquid discharge (ZLD)

A SaltMaker MVR plant being assembled

MVR: Electrically Driven



MSF: Thermally Driven



Process flow diagrams for the SaltMaker MVR and the SaltMaker MSF

Robust and Reliable

Engineered for corrosive and scaling environments. High brine velocities generate shear in key places, with built-in self-cleaning.

Low-Cost Install and Fast Start-Up

Built from pre-assembled and factory-tested modules for easy, low-cost installation at site.

Intelligent Automation

Intelligent automation with self start-up, capacity control, hibernation, and safe shut down. Built-in heat exchanger monitoring and cleaning.

Solid Salt Production and ZLD

Packages available to achieve one comprehensive ZLD system. Systems include an integrated decanter centrifuge and solid slurry management system.

Controlled Production and Supply Chain

Saltworks builds systems at our quality-controlled facility, with in-house supply chain and engineering.

Chemistry Expertise

Evaporation, crystallization, slurry management, and corrosion control require expertise. Our team ensures an optimally designed system built for application.

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Utility Requirements

	MVR	MSF (1 to 4 Effects)
Thermal Source	Not required	>80 °C heat (low-pressure steam common)
Electrical Energy Consumption	40 – 60 kWh/m³	~10 kWh/m³
Power	3-phase; voltage & frequency per customer site	

MVR Capacity, Performance & Size

Two standard factory built MVR capacities are offered. Larger capacities can be served through multiples of the plants below.

		Evaporation Capacity		# of Vessels
		TPH	GPM	
Model	**MVR-15**	15	66	1
	MVR-30	30	132	2
Feed Water Quality	Designed to operate without pre-treatment; contact Saltworks for an assessment			
Evaporator Size	Modules, standard shippable skids: 1 vessel plant: L-65 ft. x W-25 ft. x H-30 ft.			
Crystallizer Size	Add decanter; size varies based on solids load			

SaltMaker MVR-30 3D Render

Primary Features

Cost-Effective	• Rapid site installation: place frames and connect modules • No pre-treatment required • Higher up-time through reliable design and sound automation
Quality Delivered	• Tier 1 components, including heat exchangers, vapour compressors, brine circulation pumps, instrumentation, electrical and controls • Proactive and responsive project management inclusive of project integration • Excellent documentation and training packages
Reliability	• Smart process design for reliable solids production • Avoids scale caused by conventional boiling evaporation on heat-transfer surfaces
Durability	• Corrosion-resistant construction materials balanced with project-specific economics
Automation	• Automated self-cleaning, start, stop, and capacity control: ramp from 25% to 100%, or hibernate at 0% while circulating • Programmed to remove scale before it becomes irreversible • High-quality instrumentation and sensors package • User-friendly graphical interface offering remote login, data logging, and trend analysis • Variable frequency drives (VFD) for energy efficiency

Standard Package & Options

SaltMaker Plant	Complete packaged system, from inlet to discharged water and solids; arrives with technician to support your installation
Training & Support	On-site training and commissioning; comes with videos, tutorials, lists, and remote assistance
Thermal Energy	Waste heat (>80 °C), low-pressure steam, hot water, or gas-fired options
Additional Options	Ongoing operational support: • Remote Operations Asset Management (ROAM): 24/7 remote monitoring and daily reports • Operations packages: Saltworks operates SaltMaker MVR or MSF on-site

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