Brine Concentration Technology Forecast Trends - Market Size, Share, Growth Analysis Report (2025-2034)

Market Report | 2025-07-21 | 161 pages | EMR Inc.

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Report description:

The global brine concentration technology market is expected to grow at a CAGR of 4.50% during the period 2025-2034. North America, Europe and Asia are expected to be key markets.

Market Growth is Expected to be Pushed by Need for Minimisation of Waste and Increasing Water Recycling Needs

Brine concentration has assumed much importance due to rising focus on minimisation of waste, and increasing requirements related to recycling of water and zero liquid discharge (ZLD).

Conventional water recycling and Zero Liquid Discharge (ZLD) approaches are intricate, multiple-stage and expensive in several industrial processes. Companies today offer solutions based on advanced technology to enable customers to attain higher brine concentrations with less volumes of waste water needed for consequent brine crystalliser treatment. In 2017, Modern Water plc announced the first sale of the company's proprietary All-Membrane Brine Concentration (AMBC) technology after a successful pilot testing. The company would offer proprietary AMBC technology for the treatment of wastewater generated by an India-based customer engaged in the textile dyes business. The venture would be carried out in association with Advent Envirocare Technology Pvt.

Need for Cost-effective Solutions to Brine Concentration Requirements Likely to Boost Market Growth

Membrane-based Brine Concentrator, a key advancement in brine concentration technology is expected to significantly decrease brine volumes operating cost of ZLD plants. The non-thermal system only used electrical energy and took up significantly less energy as opposed to thermal systems. The solution functioned like conventional RO systems; it had been employed with success with full size membranes in real life scenarios for extensive pilot studies; it had been shown to be able to concentrate brines upto sixteen percent concentration. The Membrane Brine Concentrator represented the "Make in India" sentiment and highlighted the

need for an economical solution to industries' brine concentration needs in the country.

Environmentally-friendly Solutions and Multiple Applications of Technology Likely to Stimulate Market Growth

Several industrial waste streams carry precipitating salts such as calcium sulphate, or polymerized organic substances such as poly-acrylonitrile. Such matters cannot be concentrated through Reverse Osmosis without comprehensive and expensive pretreatment. In several such organic waste streams, thermal processes (like MVR) are the sole alternative, followed by processes like deep well injection or incineration. Forward Osmosis (FO) is an environmentally-friendly process employing a semi-permeable film to isolate water from dissolved solid matter. FTS offers patented OsmoBC process, leveraging Osmo F?O FO membrane technology. The solution lends forward osmosis to many industrial wastewater treatment applications.

Advancements in Technology Expected to Drive Market Growth

In 2021, FTS H2O announced the commissioning of a membrane-based brine concentration system that featured its OsmoARO branded osmotically assisted reverse osmosis (OARO) technology.

In 2018, Fluid Technology Solutions Inc. (FTS) entered into a strategic partnership in India with Ion Exchange (India) Ltd to provide enhanced effluent wastewater reuse and ZLD solutions to industrial customers in the Indian market. Ion Exchange sought to introduce novel technologies into India and other regions to resolve water treatment needs with lesser ownership cost and greater reliability. Such technologies are likely to boost global brine concentration technology market. Applications of the technology included ZLD schemes for industries such as textile, chemical, food and beverage, power, sugar, CETPs (centralised effluent treatment plants), and others.

Market Segmentation

The EMR's report titled "Brine Concentration Technology Market Report and Forecast 2025-2034 offers a detailed analysis of the market based on the following segments:

By technology, the market is segmented into:

- Closed Circuit Desalination (CCD)
- High Efficiency Reverse Osmosis (HERO)
- Mechanical Vapor Compression (MVC)
- Vertical Tube Falling Film (VTFF)
- Others

By end use, the market is classified into:

- Food and Beverages
- Coal-to-chemicals
- Oil and Gas
- Mining
- Pulp and Paper
- Power
- Steel
- Refining and Petrochemicals
- Textile

- Others

By region, the market is segmented into:

- Europe
- North America
- Latin America
- Asia Pacific
- Middle East and Africa

Key Industry Players in the Market??

Through this report, an extensive analysis of major players in the global brine concentration technology market is presented; the report evaluates their capability, and observes newest developments like plant turnarounds, capacity expansions, and mergers and acquisitions; key players include

- Saltworks Technologies Inc.

- Fluid Technology Solutions, Inc.

- Memsys Water Technologies GmbH

- Modern Water Plc.

- Others

Through SWOT analysis and Porter's Five Forces model, this EMR report offers deep insights into the industry.

Table of Contents:

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