SeaCURE™ BALLAST WATER MANAGEMENT SYSTEMS
MEETING COMPLIANCE WITH SAFETY, EXPERIENCE & RELIABILITY
Evoqua is a leading provider of electrochemical equipment designed to control biological fouling and corrosion wherever seawater is used as cooling or process water — e.g. land-based power and petrochemical facilities; water treatment facilities; ships; and offshore facilities.

Since 1950, our proprietary Electrocatalytic line of core technologies has provided superior technical solutions to the maritime industry worldwide. Electrocatalytic Chloropac® and CAPAC® Systems are highly-regarded and have been proven to prevent biological fouling of cooling water circuits and ships’ hull corrosion for decades. Now, Evoqua’s newest maritime solution, the SeaCURE™ ballast water management system, enables ship owners and operators to safely and reliably comply with IMO and USCG ballast water regulations.

The Electrocatalytic name is known for proven technologies, safety and reliability. We also support you with a comprehensive range of services during the entire product life cycle - including consulting for retrofits, refurbishments and beyond.
ANSWERS FOR BALLAST WATER TREATMENT

The shipping industry transports over 90% of the world’s goods around the globe every day. One of the side effects of this traffic is the exchange of water used as ballast water around the globe. International legislators have reacted by implementing new environmental regulations to prevent the spread of invasive species over the world’s oceans via ballast water.

The SeaCURE™ system is a Type Approved ballast water management system, with a patented method to control biofouling of filters, which provides a reliable, environmentally sound solution designed to protect against the proliferation of Aquatic Invasive Species (AIS). The system also contains a patented side stream dosing system, and ballast water management controlled by ORP.

ADVANTAGES OF THE SeaCURE™ SYSTEM

- Based on proven, widely deployed Chloropac® systems
- In-situ biocide generation
- Dual purpose Option – Ballast water treatment in port – Marine growth prevention in cooling water circuits during the voyage
- Regulatory compliance: AMS accepted in three salinities
- Treatment on uptake only
- Safe hydrogen removal
- Can treat gravity discharge
- Flexible footprint allows for new builds and retrofit solutions. A containerized solution is also available.

CAPAC® System anodes (left) and power supply (below)
PATENTED TECHNOLOGY FOR OPTIMAL PERFORMANCE

Our patented method of preventing biofouling in filters prolongs the lifetime of equipment, whilst our patented dosing control reduces costs and increases performance efficiency.
ALTERNATE MANAGEMENT SYSTEM

Accepted by the USCG as an alternate management system in 2014 in all salinities

TYPE APPROVAL

Given IMO Type Approval by the German flag state authority BSH in 2014

ALTERNATE MANAGEMENT SYSTEM

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FINAL APPROVAL

Final approval by IMO in 2012
DUAL PURPOSE ENHANCES OPERATIONAL EFFICIENCY AND RETURN ON INVESTMENT

By combining a marine growth prevention system and ballast water system will ensure continual operation and maintenance of an asset, whilst also ensuring there are no operational issues when ballasting.

SEACURE™ SYSTEM FEATURES

The SeaCURE system is based on three pillars:

• Filtration
• Electrochlorination
• Demand-monitor control logic

The major function of the filter in the SeaCURE system is to remove or break up larger organisms using a 40 micron weave wire screen and to provide reliable, non-stop operation at high sediment loads while minimizing backwash flows. The patent pending biofouling control provided to the filter assures its reliable function and minimizes maintenance requirements of the system.

The electrochlorination module of the SeaCURE system uses seawater to produce a sodium hypochlorite (NaOCl) biocide and injects it into the filtered ballast water stream to eliminate biofouling. Sodium hypochlorite, a chlorine compound, has been used for many years to prevent marine growth in seawater piping and heat transfer systems of land-based, offshore and shipboard installations. The SeaCURE system uses the most efficient method of hypochlorination by producing sodium hypochlorite on demand, using Concentric Tube Electrode (CTE) technology, thus reducing the requirement of storing and handling chemicals.

This technology is based on the Chloropac® system. Proprietary control logic of the SeaCURE system monitors the appropriate hypochlorite dose level necessary to provide the required efficacy, while avoiding any detrimental effects on the ship, its crew or the environment. The biocide dosing level is variable, dependent on ballast water conditions — physical, chemical, and biological characteristics, called chlorine demand.

The SeaCURE system treats ballast water only on intake, allowing the system to be sized for ballast water flows (e.g. for one pump), while discharge can be done with higher flow rates (several pumps). This is especially suitable for container and bulk carrier ships that use only one pump on intake and two pumps on discharge.

Another important feature of the SeaCURE system is that the generation of sodium hypochlorite solution takes place in a small side stream, taken off the ballast water main, minimizing footprint and maximizing available space. This feature is very useful for retrofits where space is limited.

Low energy requirements of the SeaCURE system translate into lower operational costs and eliminate additional generator capacity, further helping with any space limitations.

The SeaCURE system can be used for dual operation; it enables ballast water treatment in port, and offers marine growth prevention system (MGPS) for vessel seawater circuits at sea.
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