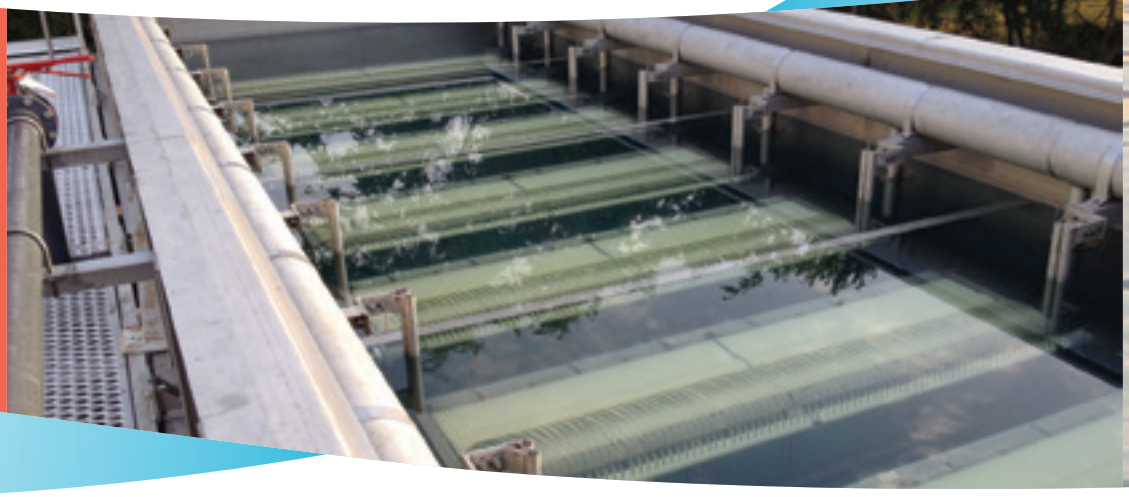
evoqua
WATER TECHNOLOGIES



ADI® MEMBRANE BIOREACTOR (MBR)

AEROBIC WASTEWATER TREATMENT SOLUTION

THE TECHNOLOGY

The ADI® membrane bioreactor (MBR) is an aerobic activated sludge treatment system that improves treatment performance and consistency compared to conventional activated sludge systems. To achieve very high-quality effluent, a physical membrane barrier is used for liquid-solids separation instead of traditional gravity clarification. The physical membranes and the ADI MBR's long solids retention time (SRT) work together to provide consistent removal of organics, ammonia, and nitrogen.

The biochemical oxygen demand (BOD) and total suspended solids (TSS) concentrations discharged from the MBR process are negligible, and very low effluent nitrogen and phosphorus concentrations can also be reached. The technology can be used as a stand-alone process, or it can complement anaerobic technologies by aerobically polishing anaerobically pretreated wastewater.

PRODUCE VERY HIGH-QUALITY EFFLUENT

Treated wastewater from the ADI® MBR is suitable for direct discharge or water reuse.

SIMPLE OPERATION IN A SMALL FOOTPRINT

ADI® MBR monitoring for control purposes is significantly reduced compared to conventional activated sludge systems. The process simply requires a visual inspection once each day. Bi-weekly samples are taken for analysis and adjustments. The MBR system maintains a biomass layer on the membrane surface at an optimum thickness, which improves treatment performance, reduces required cleaning, and enhances membrane life. Cleaning can occur without draining the basin and this process typically only takes two to four hours of downtime every three to six months.

KEY INDUSTRIAL MARKETS

- Food & Beverage
- Brewery
- Distillery
- Biofuel
- Pulp & Paper
- Chemical & Pharmaceutical

PROJECT DELIVERY

Each ADI® MBR system is customized to meet the unique needs of the application. Design/build project delivery offers a number of benefits, including a single point of contact and responsibility, and consistency in design and construction quality throughout the entire project. Technology-only packages are also available. ADI Systems also offers aftercare service with advice by our experienced wastewater treatment specialists.

MEET EVEN THE STRICTEST EFFLUENT DISCHARGE LIMITS

The ADI® MBR system offers many benefits for industrial processors worldwide.

COST SAVINGS

- Eliminate wastewater surcharges
- Reduce sludge handling and disposal costs
    - Low sludge yield
- Save on chemical costs
    - Reduce nutrient requirements
    - Eliminate polymer usage
- Reuse water in plant operations

ENVIRONMENTAL BENEFITS

- Can meet strict discharge limits for BOD, TSS, nitrogen, and phosphorus
- Produces a very high-quality effluent
    - Suitable for water reuse, improving water security
    - Suitable for direct discharge
- Small footprint

PROCESS ADVANTAGES

- Operates at high mixed liquor suspended solids concentrations (8,000 – 15,000 mg/l)
    - Long solids retention time
    - Increased stability against changes in influent characteristics
- Membrane barrier ensures complete solids retention and process stability
- Eliminates issues with gravity clarification
- High hydraulic and organic peak capabilities

OPERATION & MAINTENANCE

- Superior membrane durability and performance with low maintenance:
    - Long lifetime
    - Simple, infrequent cleaning procedure
    - Membranes are cleaned in place
- Low operator attention requirements
- Reduces or eliminates disinfection
- Data trending for process control

ADI® SYSTEMS

WASTEWATER TREATMENT AND WASTE-TO-ENERGY SOLUTIONS

ADI® Systems, an Evoqua brand, is a world-leading wastewater treatment and waste-to-energy technology solution provider with over 35 years of experience treating industrial processing wastewater and organic waste. We understand the complex challenges and strive to engineer unique solutions for the industry. Sustainability is the foundation of our design and construction processes, and innovative clean tech research and development is the building block of our many successful projects around the world.

ADI® Systems
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