Membrane Bioreactor (MBR) Technology

EcomemXpress™ MBR packaged plant
Ecoligix™ MBR systems replace the Clarifier, Sand filter and Disinfection processes used in Conventional Activated Sludge (CAS) process by removing the suspended materials with Ultra-Filtration membrane. The membranes modules are submerged in a biological tank or side streams tank, with the water being drawn through the membranes under vacuum, leaving the suspended biomass material in the biological aeration tank. The MBR systems have a smaller footprint than CAS systems, produce consistent effluent quality even in varying influent conditions, and provide effective treatment for high BOD levels in wastewater.

EcoMemXpress MBR packaged plant is state-of-the-art pre-engineered sewage treatment system utilizing with Ecologix immersed ultra-filtration membrane technology. EcoMemXpress packaged plant contains the process elements of secondary, tertiary and advanced wastewater treatment in a single containerized package.

There are many EcoMemXpress equipment variations, configurations, and options, all of which are designed to provide the necessary treatment for each wastewater project. Equipment selection is dependent on effluent requirements, ease of maintenance and operation, power consumption, future expansion, and initial capital costs. Above all, the EcoMemXpress packaged plant operating system is designed to be safe and convenient for plant operators.

**EcoMemXpress features and benefits**
- Pre-assembled and pre-skidded equipment package
- Self-contained modular water treatment plant
- Compact with OCU, pre-mounted, pre-piped and pre-wired.
- Factory assembled and tested to minimize installation and commissioning
- Modular add-on packages from 10cmd to 600cmd and available to customize as required
- Minimal operator attention

**Applications**
- Water recycling for toilet flushing and irrigation
- Ground and surface water discharges requiring
- Pre-treatment for RO system
- Smaller municipal and industrial wastewater treatment
- Pharmaceutical projects
- Emergency response wastewater treatment
- Numerous applications for various filtration purposes
- Military bases, School, Parks, Resorts, Shopping mall and Restaurant

600m3/d EcoMemXpress operation in food facility.  
Courtesy by industries mbrs 2014  
Chapter 5, Case studies
Army - Mobile Forces
- Client: United Nations forces in the Middle East
- Flow rate: 75m³/day & 100m³/day
- EcoMemXpress-75PKG & -100PKG
- Effluent: BOD 10mg/L, SS < 5mg/L
- Reuse for toilet flushing, Irrigation

Case study in Industrial mbrs, 2014

Food Processing facility
- Client: Laurel Food, Inc.
- Flow rate: 400m³/day
- EcoMemXpress-400PKG
- Effluent: BOD 15mg/L, SS < 5mg/L
- Reuse for toilet flushing, Irrigation
Resort

- Client: Aboriginal resort
- Flow rate: 50m³/day
- EcoMemXpress-50PKG
- Effluent: BOD 10mg/L, SS < 5mg/L
- Reuse for toilet flushing, Irrigation

Protein processing

- Client: Dabon, Inc.
- Flow rate: 50m³/day
- MBR module: EcoPlate
- Effluent: BOD 10mg/L, SS < 5mg/L
- Reuse for toilet flushing, Irrigation
Food processing
- Client: ChuMau, Inc.
- Flow rate: 50m³/day
- EcoMemXpress-50PKG
- Effluent: BOD 10mg / L, SS < 5mg / L
- Reuse for origin product cleaning

Pharmaceutical
- Client: Swiss, Inc.
- Flow rate: 100m³/day
- EcoMemXpress-100PKG
- Effluent: BOD 15mg / L, SS < 5mg / L
- Reuse for toilet flushing, Irrigation
Food Processing facility
- Client: Laurel Food, Inc.
- Flow rate: 600m³/day
- EcoMemXpress-400PKG
- Effluent: BOD 15mg / L, SS < 5mg / L
- Reuse for toilet flushing, Irrigation

Pig-farm
- Client: Chifong Farms
- Flow rate: 250m³/day
- EcoMemXpress-250PKG
**Chemical facility**

- Client: Tungtai, Thailand
- Flow rate: 10m³/day
- EcoMemXpress-10PKG
- Effluent: BOD 15mg / L, SS < 5mg / L
- Reuse for toilet flushing, Irrigation

**Golf course**

- Client: Philippines
- Flow rate: 50m³/day
- EcoMemXpress-50PKG
- Effluent: BOD 15mg / L, SS < 5mg / L
- Reuse for Irrigation
Municipal wastewater
- Client: ChiaYau University
- Flow rate: 500m³/day
- EcoMemXpress-500PKG
- Effluent: BOD 10mg/L, SS < 5mg/L
- Reuse for toilet flushing and Irrigation

Canting wastewater
- Client: EVEair
- Flow rate: 300m³/day
- MBR module: EcoPlate
- Effluent: BOD 10mg/L, SS < 5mg/L
- Reuse for toilet flushing and Irrigation
Semi conductor

- Client: Foxconn, China
- Flow rate: 100m³/day
- MBR module: EcoPlate
- Effluent: BOD 10mg/L, SS < 5mg/L
- Reuse for toilet flushing and Irrigation

Your best choice - Cooperation with Germany and Japan

- State-of-the-art Flat Plate module-
  Membrane from Microdyn-Nadir, Germany and YUASA membrane systems, Japan
  - High water permeability and high treated quality
  - High fouling resistance
  - Physical strength and chemical stability

Ecologix signed a contract, use Microdyn-Nadir PVDF and PES Asymmetric membrane for EcoPlate flat plate membrane element, achieve the membrane module Increase performance (higher flux), Longevity and Significantly reduce fouling tendency

Germany: PVDF/PES membrane supply
Japan: cPVC, double-side filtration membrane supply and membrane plate assembly technical support.
Taiwan: Membrane plate & Module assembly
Installed area